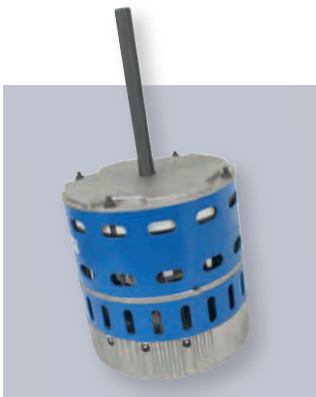




Motors  
Components  
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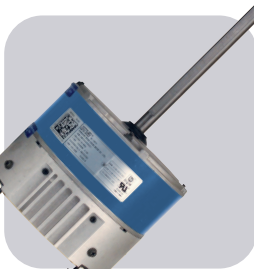
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## AZURE® ECM

### Direct Drive Blower Applications

#### Ball Bearing

Azure® ECM from MARS is a high efficiency variable speed direct drive blower motor for a multitude of applications. Azure® is a replacement for both standard PSC and Constant Torque motors. These motors cover ratings from 1/5 HP to 1 HP at 115V or 230V and CW or CCW.

Azure® features an auto sizing learn mode. In start-up learn mode, Azure® runs for approximately 2 minutes measuring the external static pressure of the system application. Azure® then assigns torque values to each of its speed taps self-programming itself to the correct horsepower for the application.

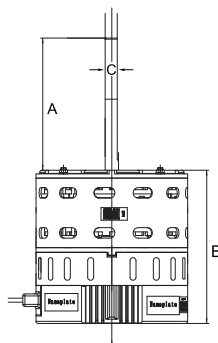
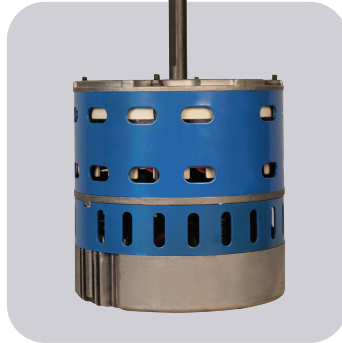
If none of the four speeds provides perfect airflow for the application or if duplicate speeds are desired on 2 or more taps, an optional hand held programmer (MARS No. 08502) can be used. The programmer connects to Azure® and displays the percentage of torque applied to the speed tap being energized. The percentage (motor speed) can then be increased or decreased and permanently set with the programmer. This tool overrides the motor torques established in the auto sizing mode. Unlike other electronically commutated motors, an outboard surge protector is included within Azure's® wire harness. This is a replaceable device (MARS No. 08593).

#### Features:

- Outboard replaceable surge protector
- Adjustable speeds (with optional MARS No. 08502)
- 4 speeds plus 625 RPM constant fan mode
- High efficiency 85%
- Multi-horsepower, dual voltage
- Belly band mount

#### Specifications:

- Class "B" insulation
- Thermal overload protected
- Operating temperature range: -20°C to 55°C (-4°F to 131°F)
- UL Recognized
- For accessories see page M-5



| MARS No. | External Surge Protection | Auto-Sizing | Replaces            |
|----------|---------------------------|-------------|---------------------|
| 10860    | Yes                       | Yes         | PSC/Constant Torque |
| 10861    | Yes                       | Yes         | PSC/Constant Torque |
| 10865    | No                        | No          | PSC                 |
| 10866    | No                        | No          | PSC                 |
| 10867    | No                        | No          | PSC                 |

| MARS NO. | HP      | VOLTS       | RPM  | ROTATION | DIAMETER | DIMENSIONS |      |     |
|----------|---------|-------------|------|----------|----------|------------|------|-----|
|          |         |             |      |          |          | A          | B    | C   |
| 10860    | 1/5-1/2 | 115/230     | 1075 | Rev      | 5-1/2    | 4.93       | 5.72 | 1/2 |
| 10861    | 1/2-1   | 115/230     | 1075 | Rev      | 5-1/2    | 4.93       | 6.66 | 1/2 |
| 10865    | 1/3-1/2 | 115/230     | 1075 | Rev      | 5-1/2    | 4.93       | 5.72 | 1/2 |
| 10866    | 3/4-1   | 115/230     | 1075 | Rev      | 5-1/2    | 4.93       | 6.66 | 1/2 |
| 10867    | 1/8-1/3 | 115/230/277 | 1075 | Rev      | 5        | 5.00       | 5.00 | 1/2 |

## AZURE® ECM

### Direct Drive Blower Applications Bluetooth

#### Ball Bearing

The latest generation of Azure® ECM features integrated Bluetooth control for use with the Azure® ECM smartphone app. While not required for the installation of these motors, the app allows the installer to take full advantage of the ECM technology. While competitive aftermarket ECMs provide only 5 speed taps for setting airflow, the Bluetooth Azure® motors provide more than 50 speed selections and the ability to autosize to the ductwork all with a keystroke or two in the app..

#### One Touch Autosizing

One touch of a button automatically assigns correct torque for the ductwork; additional programming harnesses are not required.

#### Individual Speed Tap Adjustments

Dial in the temperature rise with 1% torque increments. Tune out annoying high frequency harmonics. Optimize CFM.

#### Real Time Data

Monitor motor volts, amps, watts, and RPM's.

#### Drop-in Installation

Simple to wire; connections are the same as the motor being replaced.

#### Features:

- 4 speeds plus 625 RPM constant fan mode
- High efficiency 85%
- Multi-horsepower, dual voltage
- Belly band mount

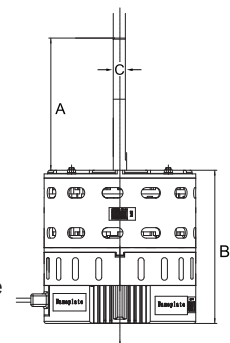
#### Specifications:

- Class "B" insulation
- Thermal overload protected
- Operating temperature range: -20°C to 55°C (-4°F to 131°F)
- UL Recognized
- For accessories see page M-5

| MARS No. | Adjustable Speeds* | Auto-Sizing* | Replaces                        |
|----------|--------------------|--------------|---------------------------------|
| 10858    | Yes                | Yes          | Constant Torque, Ensite, Endura |
| 10859    | Yes                | Yes          | Constant Torque, Ensite, Endura |

\* When Azure® Blower Motor App is used

| MARS NO. | HP        | VOLTS   | RPM  | ROTATION | DIAMETER | DIMENSIONS |      |     |
|----------|-----------|---------|------|----------|----------|------------|------|-----|
|          |           |         |      |          |          | A          | B    | C   |
| 10858    | 1/5 - 1/2 | 115/230 | 1075 | Rev      | 5-1/2    | 4.93       | 5.72 | 1/2 |
| 10859    | 1/2 - 1   | 115/230 | 1075 | Rev      | 5-1/2    | 4.93       | 6.66 | 1/2 |



**Azure<sup>®</sup> ECM**

**Condenser Fan Applications  
Ball Bearing**

Azure<sup>®</sup> is an electronically controlled motor (ECM) that replaces a multitude of applications. These motors cover ratings from 1/8 HP to 1/3 HP at 208-230V 825/1075 RPM and 1/3 HP to 1/2 HP 208-230V 825/1075 RPM and CW or CCW. These motors are simple to install. The Azure<sup>®</sup> condenser fan motors connect the same as a standard PSC condenser fan motor, BUT WITHOUT the capacitor. Just plug the motor into a 115V power source (using supplied programming cable) and select 1 of 4 operating modes and then install the motor:

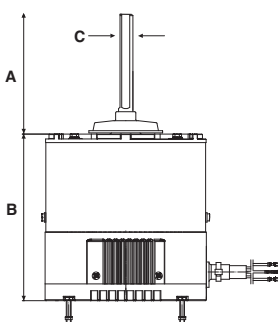
- 1) 1075 RPM CW (LE) - Factory Default
- 2) 1075 RPM CCW (LE)
- 3) 825 RPM CW (LE)
- 4) 825 RPM CCW (LE)

Unlike other ECM motors, an outboard surge protector is included with the Azure<sup>®</sup> wiring harness. This is a replaceable device that is much less expensive to replace than replacing the entire motor in the event of a power surge.

**Specifications:**

- Multi horsepower, self-adjusting
- 825/1075 RPM, single speed
- Reversible rotation
- High efficiency ECM
- No capacitor required
- Water slinger on shaft
- UL Recognized
- For accessories see page M-5

| MARS NO. | HP        | VOLTS   | RPM      | ROTATION | ORIENTATION | RHEEM HOLES | DIMENSIONS |      |     |
|----------|-----------|---------|----------|----------|-------------|-------------|------------|------|-----|
|          |           |         |          |          |             |             | A          | B    | C   |
| 10874    | 1/8 - 1/3 | 208-230 | 825/1075 | Rev      | Shaft Down  | Yes         | 6.50       | 4.33 | 1/2 |
| 10875    | 1/8 - 1/3 | 208-230 | 1075     | Rev      | Horizontal  | No          | 6.50       | 4.33 | 1/2 |
| 10872    | 1/3 - 1/2 | 208-230 | 1075     | Rev      | Horizontal  | No          | 6.00       | 5.95 | 1/2 |



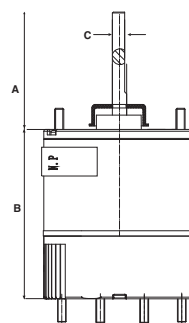
**Azure<sup>®</sup> ECM**

**3.3" Commercial Refrigeration  
Evaporator Fan Motor  
Ball Bearing**

Azure<sup>®</sup> is an electronically controlled 3.3" motor (ECM) that replaces all 1/15 - 1/25 HP, 115/230V, and 1550/600 RPM commercial refrigeration evaporator fan motors for walk in cooler/freezer applications. For 1550 RPM, this motor connects easily to the fan controller via a standard Lyall plug. For 2-speed applications, the Lyall plug can be removed and the motor can be wired directly to a separate 2-speed control module using the included second speed tap for 600 RPM. Motor rotation is set using a simple jumper wire. Azure<sup>®</sup> is rated for 115V or 230V with nothing to set; plug it in to either voltage and it adapts to the correct voltage.

**Specifications:**

- Operating temperature range: -40° to 131°F
- Multi horsepower, self adjusting from 1/15 to 1/25HP
- Reversible rotation
- Auto voltage select (115/230V)
- High efficiency ECM technology
- No capacitor required
- UL Recognized
- For accessories see page M-5

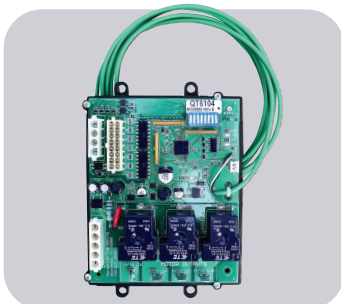


| MARS NO. | HP          | VOLTS   | RPM                 | SPEEDS                | ROTATION             | DIMENSIONS |      |      |
|----------|-------------|---------|---------------------|-----------------------|----------------------|------------|------|------|
|          |             |         |                     |                       |                      | A          | B    | C    |
| 10850    | 1/15 - 1/25 | 115/230 | 1550                | 1                     | Rev                  | 2.5        | 3.74 | 5/16 |
| 10852    | 1/15 - 1/25 | 115/230 | 1550 <sup>(1)</sup> | 1 or 2 <sup>(2)</sup> | CCWLE <sup>(3)</sup> | 2.5        | 3.74 | 5/16 |

- (1) 1550 default; adjustable 600-2000 RPM with optional wireless programmer kit (MARS No. 08505)
- (2) 2-speeds attainable with optional wireless programmer (MARS No. 08505) and optional thermistor kit (MARS No. 08515)
- (3) CCWLE default; reversible with optional wireless programmer (MARS No. 08505)

**Azure<sup>®</sup> Variable Speed Motor Adapter**

The Azure<sup>®</sup> Variable Speed Motor Adapter is a money saving solution to the expensive replacement of a failed OEM variable speed blower motor using an Azure<sup>®</sup> ECM motor. Simply move the OEM wire harnesses to the Azure<sup>®</sup> Variable Speed Adapter and connect the Azure<sup>®</sup> direct drive motor speed taps to the Azure<sup>®</sup> Variable Speed Adapter.



- Allows replacement of 2.0, 2.3, 2.5, and 3.0 variable speed communicating ECM motors
- Allows replacement of variable speed communicating ECM motors from Nidec / US Motors, and Emerson
- Eliminates wasted time & money locating OEM motor
- Allows replacement of all variable speed direct drive ECM 115V / 230V 1/3, 1/2, 3/4, 1HP (not for use to replace X13 style constant torque ECM)

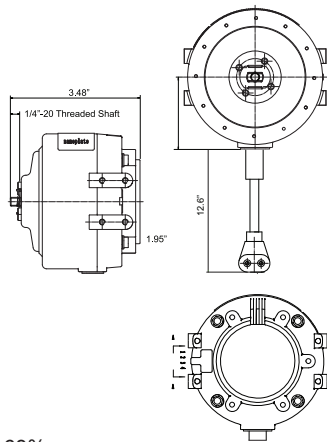
| MARS NO. | DESCRIPTION                  | AZURE <sup>®</sup> MOTOR COMPATIBILITY |
|----------|------------------------------|--|
| 08506    | Variable Speed Motor Adapter | 10865, 10866                           |



# AZURE® ECM

## Commercial Refrigeration Watt (Reach-In) Motor Ball Bearing

MARS ECM watt motor is a Drop in replacement for most OEM / ECM / PSC and standard shaded pole commercial refrigeration evaporator and condenser fan motors. Capable of replacing most 1550 RPM case motors 4 - 25W for reach-in cooler/freezer applications. The microprocessor sets power output to match the fan load ensuring correct CFM and maximum efficiency in every installation. Automatically senses and adapts to the system voltage (115/230V). MARS No. 10891 - Wirelessly Programmable. Download Azure® ECM App to your smart phone/tablet.



### Specifications:

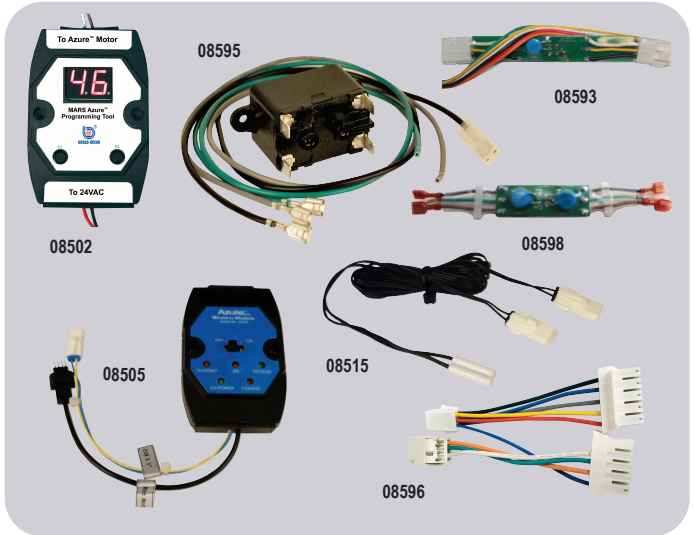
- Submersible - IP67
- Operating temperature range: -40° to 131°F
- Self adjusting from 4 to 25 Watts
- 1550<sup>(1)</sup> RPM
- CWLE<sup>(3)</sup> Rotation
- Auto Voltage Select (115/230V)
- High efficiency ECM technology: 68%
- Estimated Energy Savings: \$33/year (\$46/year total)<sup>(2)</sup>
- 90° Angle Lyall Plug
- Water Resistant: Yes
- UL Recognized
- For accessories see page M-5

| Fan Load | Power Consumption                |                          |
|----------|----------------------------------|--------------------------|
|          | Standard Motor Power Consumption | Azure® Power Consumption |
| 4 W      | 28 W                             | 6 W                      |
| 9 W      | 47 W                             | 14 W                     |
| 16 W     | 77 W                             | 30 W                     |

| MARS NO. | WATTS OUTPUT | VOLTS   | RPM                 | ROTATION            | LEAD LENGTH |
|----------|--------------|---------|---------------------|---------------------|-------------|
| 10891    | 4 - 25       | 115/230 | 1550 <sup>(1)</sup> | CWLE <sup>(3)</sup> | 13"         |

(1) 1550 default; adjustable 600-2000 RPM with optional wireless programmer kit (MARS No. 08505)  
 (2) Estimated energy savings based on replacement of a 9W shaded pole evaporator fan motor with Azure® at \$0.11/kWh. \$33 savings is based solely on the reduction of power consumption. An additional savings of approximately 40% will result from the reduction of the refrigeration load due to Azure®'s lower operating temperature.  
 (3) CWLE default; reversible with optional wireless programmer kit (MARS No.08505)

## Accessories for Azure® ECM



| MARS NO. | DESCRIPTION   |
|----------|---|
| 08502    | Hand Held Programmer 10860/10861/10865/10866/10867/10868/10869                                      |
| 08593    | Replacement Surge Protector 10860/10861   |
| 08595    | Constant Fan Kit 10858/10859/10860/10861/10865/10866  |
| 08598    | Replacement Surge Protector 10872/10874/10875   |
| 08505    | Wireless Programmer Kit; Requires Azure ECM® App and Smart Device (sold separately) for 10891/10852 |
| 08515    | Thermistor Kit for 2-Speed Operation (2/PK) for 10852; Controls up to 5 Motors                      |
| 08596    | Onsite Adapter: Accessory 10856, 10857<br>Replacement Part 10858, 10859                             |

### Tech Tip

All ECM motors are more energy efficient than standard motors even though the amp draw may be similar. ECM motors have lower power factors and thus consume fewer watts. Power Consumption (Watts) = Volts x Amps x Power Factor.

# Condenser Fan Motors

## Outdoor Condenser Fan Motors

### Ball Bearing

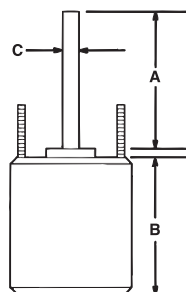
MARS all angle outdoor condenser fan motors are designed for either shaft-up or shaft-down applications. End shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain. All of these motors are suitable for air conditioning or heat pump applications.

#### Features:

- All angle
- Rheem mounting holes w/screws installed
- Water slinger on shaft
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Double full flatted shaft

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Totally enclosed
- 36 inch leads
- UL Recognized



## Outdoor Condenser Fan Motors

### Ball Bearing

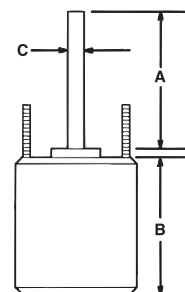
MARS up/down outdoor condenser fan motors are designed for either vertical shaft-up or shaft-down applications. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain. All of these motors are suitable for air conditioning or heat pump applications.

#### Features:

- All angle
- Rheem mounting holes w/screws installed
- Water slinger on shaft
- Thru-bolt or band mounting
- Capacitor requirement noted on motor label
- Extra set of nuts & star washers on mounting studs
- Double full flatted shaft

#### Specifications:

- Class "B" insulation
- Single phase, 60 hertz
- Thermal overload protected
- Totally enclosed
- 36 inch leads
- UL Recognized



### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                 |     |         |      |          |       |      | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |
| 10725           | 1/8 | 208-230 | 0.72 | 5/370    | TEAO  | Ball | 6.50       | 4.12 | 1/2 |
| 10727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 10726           | 1/5 | 208-230 | 1.17 | 5/370    | TEAO  | Ball | 6.50       | 4.12 | 1/2 |
| 10728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 10729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 10730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | Ball | 6.50       | 5.73 | 1/2 |
| 10731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | Ball | 6.50       | 6.23 | 1/2 |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                |     |         |      |          |       |      | A          | B    | C   |
| <b>825 RPM</b> |     |         |      |          |       |      |            |      |     |
| 10411          | 1/8 | 208-230 | 0.80 | 5/370    | TEAO  | Ball | 6.50       | 4.13 | 1/2 |
| 10403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 10412          | 1/5 | 208-230 | 1.3  | 5/370    | TEAO  | Ball | 6.50       | 4.40 | 1/2 |
| 10404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | Ball | 6.50       | 4.48 | 1/2 |
| 10405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 10746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | Ball | 6.50       | 5.70 | 1/2 |

### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | RPM  | CAP REQ. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|------|----------|------------|------|-----|
|                 |     |         |      |      |          | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |      |          |            |      |     |
| 10732           | 1/6 | 208-230 | 0.90 | 1075 | 5/370    | 6.50       | 4.13 | 1/2 |
| 10733           | 1/4 | 208-230 | 1.8  | 1075 | 5/370    | 6.50       | 4.25 | 1/2 |
| 10734           | 1/3 | 208-230 | 2.4  | 1075 | 7.5/370  | 6.50       | 5.10 | 1/2 |
| 10735           | 1/2 | 208-230 | 3.5  | 1075 | 10/370   | 6.50       | 5.70 | 1/2 |
| 10736           | 3/4 | 208-230 | 5.2  | 1075 | 10/370   | 6.50       | 5.11 | 1/2 |

| MARS NO.       | HP  | VOLTS   | AMPS | RPM | CAP REQ. | DIMENSIONS |      |     |
|----------------|-----|---------|------|-----|----------|------------|------|-----|
|                |     |         |      |     |          | A          | B    | C   |
| <b>825 RPM</b> |     |         |      |     |          |            |      |     |
| 10203          | 1/6 | 208-230 | 1.0  | 825 | 5/370    | 5.50       | 4.10 | 1/2 |
| 10204          | 1/4 | 208-230 | 1.6  | 825 | 5/370    | 5.50       | 4.40 | 1/2 |
| 10205          | 1/3 | 208-230 | 1.9  | 825 | 7.5/370  | 5.50       | 5.10 | 1/2 |
| 10747          | 1/2 | 208-230 | 2.8  | 825 | 12.5/370 | 6.50       | 5.70 | 1/2 |



## Outdoor Condenser Fan Motors - Shaft Up Only

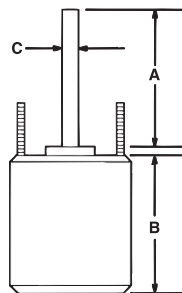
MARS outdoor condenser fan motors are designed for shaft up only used in condenser fan and heat pump units requiring vertical shaft up positioning with "belly band" or extended clamp screw mounting.

### Features:

- Rheem mounting holes w/screws installed
- For shaft up application
- Reversible rotation
- Water slinger on shaft
- Full flatted six inch shaft length
- Capacitor requirement noted on motor label

### Specifications:

- Class "B" insulation
- Single phase, 60/50 Hertz
- Automatic thermal overload protected
- Fan duty, continuous, air over
- 36 inch leads
- Lead end endshield open construction
- UL Recognized



## MARS Three Wire Condenser Fan Motors

### Ball Bearing

MARS 3 Wire condenser fan motors replicate OEM wiring for condenser fan motors speeding installation and saving time.

Condenser fan motors are designed for either shaft-up or shaft-down applications. End shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain. All of these motors are suitable for air conditioning or heat pump applications.

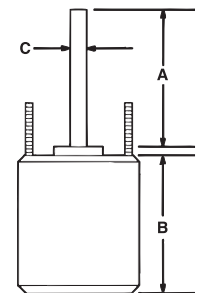


### Features:

- All angle, ball bearing
- Rheem mounting holes w/screws installed
- Water slinger on shaft
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Double full flatted shaft

### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Totally enclosed
- 36 inch leads
- UL Recognized



## 1075 RPM – Shaft-Up – Single Speed

| MARS NO. | HP  | VOLTS   | AMPS | ROTATION | CAP REQ. | BRG.   | DIMENSIONS |      |     |
|----------|-----|---------|------|----------|----------|--------|------------|------|-----|
|          |     |         |      |          |          |        | A          | B    | C   |
| 10327    | 1/6 | 208-230 | 0.9  | REV      | 5/370    | Sleeve | 6.0        | 4.15 | 1/2 |
| 10328    | 1/4 | 208-230 | 1.8  | REV      | 5/370    | Sleeve | 6.0        | 4.15 | 1/2 |
| 10329    | 1/3 | 208-230 | 2.4  | REV      | 7.5/370  | Sleeve | 6.0        | 5.11 | 1/2 |
| 10330    | 1/2 | 208-230 | 3.5  | REV      | 10/370   | Ball   | 6.0        | 5.70 | 1/2 |
| 10331    | 3/4 | 208-230 | 5.2  | REV      | 10/370   | Sleeve | 6.0        | 6.09 | 1/2 |

## Reversible Rotation – Single Speed – 3 Wire

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                 |     |         |      |          |       |      | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |
| 23728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 23729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |

# Condenser Fan Motors

## Outdoor Condenser Fan Motors

### Ball Bearing - 70°C

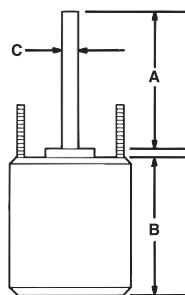
MARS 70°C SunSlinger totally enclosed condenser fan motors are designed for either vertical shaft-up or shaft-down applications in a variety of ambient conditions. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain. All of these motors are suitable for air conditioning or heat pump applications.

#### Features:

- All angle
- Rheem mounting holes w/screws installed
- Trane 4.33 bolt circle mounting holes with self tapping screws
- Thru bolt or band mounting
- Water slinger on shaft
- Capacitor requirement noted on motor label
- Extra set of nuts on mounting studs

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- 70°C/158°F
- Thermal overload protected
- Fan duty, continuous, air over
- Totally enclosed
- 36 inch leads
- UL Recognized



## Outdoor Condenser Fan Motors

### Ball Bearing - 80°C

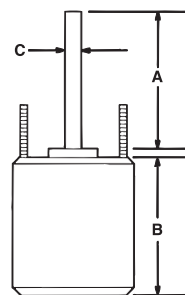
MARS 80°C SunSlinger Max totally enclosed condenser fan replacement motors are designed for all major brands of HVAC equipment applications in a variety of ambient conditions. These 48 frame motors offer the highest performance and available from 1/6HP thru 3/4HP, 1075 RPM and 825 RPM, and 208-230V.

#### Features:

- All angle
- Rheem mounting holes w/screws installed
- Trane 4.33 bolt circle mounting holes with self tapping screws
- Thru bolt or belly band mounting
- Water slinger on shaft
- Capacitor requirement noted on motor label
- Extra set of nuts on mounting studs

#### Specifications:

- Class "F" insulation
- Single phase, 60 Hz
- 80°C (176°F) max ambient
- Thermal overload protection
- Fan duty, continuous, air over
- Totally enclosed
- 36 inch leads
- UL Recognized



### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|----------|-------|------------|------|-----|
|                 |     |         |      |          |       | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |          |       |            |      |     |
| 20727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | 6.50       | 4.25 | 1/2 |
| 20728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | 6.50       | 4.72 | 1/2 |
| 20729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | 6.50       | 5.24 | 1/2 |
| 20730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | 6.50       | 5.91 | 1/2 |
| 20731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | 6.50       | 5.90 | 1/2 |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | DIMENSIONS |      |     |
|----------------|-----|---------|------|----------|-------|------------|------|-----|
|                |     |         |      |          |       | A          | B    | C   |
| <b>825 RPM</b> |     |         |      |          |       |            |      |     |
| 20402          | 1/8 | 208-230 | 0.75 | 5/370    | TEAO  | 6.50       | 4.30 | 1/2 |
| 20403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | 6.50       | 4.52 | 1/2 |
| 20404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | 6.50       | 4.92 | 1/2 |
| 20405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | 6.50       | 5.31 | 1/2 |
| 20746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | 7.00       | 5.90 | 1/2 |

### Reversible Rotation

| MARS NO.        | HP  | VOLTS   | AMPS | RPM  | CAP REQ. | ENCL. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|------|----------|-------|------------|------|-----|
|                 |     |         |      |      |          |       | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |      |          |       |            |      |     |
| 20791           | 3/4 | 208-230 | 4.5  | 1075 | 10/370   | TEAO  | 6.50       | 6.50 | 1/2 |
| <b>825 RPM</b>  |     |         |      |      |          |       |            |      |     |
| 20796           | 1/2 | 208-230 | 2.8  | 825  | 12.5/370 | TEAO  | 7.00       | 6.42 | 1/2 |



## Multi-Horsepower Condenser Fan Motors

### Ball Bearing

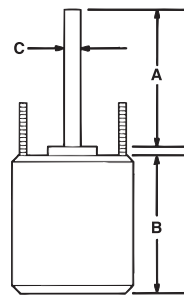
MARS multi-horsepower condenser fan motors are ideal for truck stock. Three 1075 RPM models cover 208-230 volt applications from 1/6 to 1/2 HP. Two 825 RPM models cover 208-230 volt applications from 1/8 to 1/3 HP.

#### Features:

- Rheem mounting holes w/screws installed
- Thru bolt or band mounting
- Water slinger on shaft
- Air conditioning or heat pump duty

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- UL Recognized



## Multi-Horsepower Condenser Fan Motors

### Ball Bearing - 70°C

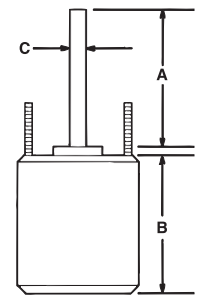
MARS 70°C multi-horsepower SunSlinger condenser fan motors are ideal for truck stock. They are designed to provide reliable operation in a wide range of ambient temperatures. Three 1075 RPM models cover 208-230 volt applications from 1/6 to 1/2 HP. Two 825 RPM models cover 208-230 volt applications from 1/8 to 1/3 HP.

#### Features:

- All angle
- Rheem shell mounting holes with screws installed
- Trane 4.33 bolt circle mounting holes with self tapping screws
- Thru bolt or band mounting
- Water slinger on shaft
- Extra set of nuts on mounting studs

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- 70°C/158°F
- 36 inch leads
- Thermal overload protected
- Fan duty, continuous, air over
- Totally enclosed
- UL Recognized



#### 20458 & 20459:

- Short shell length
- Just ONE capacitor rating per motor
- Quick & Simple 2 wire installation

The Wiz

| MARS NO. | HP        | ROT | RPM/SP. | VOLTS   | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|---------|---------|-------|------|------------|------|-----|--------------|
|          |           |     |         |         |       |      | A          | B    | C   |              |
| 10458    | 1/6 - 1/3 | Rev | 1075    | 208-230 | TEAO  | Ball | 6.50       | 4.52 | 1/2 | 36"          |
| 10459    | 1/8 - 1/3 | Rev | 825     | 208-230 | TEAO  | Ball | 6.50       | 5.48 | 1/2 | 36"          |
| 10465    | 1/6 - 1/3 | Rev | 1075/2  | 208-230 | TEAO  | Ball | 5.00       | 4.73 | 1/2 | 38"          |
| 10468    | 1/5 - 1/2 | Rev | 1075/2  | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 38"          |
| 10469    | 1/6 - 1/3 | Rev | 825/2   | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 42"          |

## Multi-Horsepower – Reversible Rotation

The Wiz

| MARS NO. | HP      | RPM/SPDS | VOLTS   | AMPS | CAP REQ.    | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|---------|----------|---------|------|-------------|-------|------|------------|------|-----|
|          |         |          |         |      |             |       |      | A          | B    | C   |
| 20458    | 1/6-1/3 | 1075     | 208-230 | 2.8  | 7.5/370     | TEAO  | Ball | 6.50       | 5.00 | 1/2 |
| 20459    | 1/8-1/3 | 825      | 208-230 | 1.9  | 10/370      | TEAO  | Ball | 6.50       | 5.71 | 1/2 |
| 20465    | 1/6-1/3 | 1075/2   | 208-230 | 2.5  | 5/7.5/370   | TEAO  | Ball | 7.00       | 5.16 | 1/2 |
| 20468    | 1/5-1/2 | 1075/2   | 208-230 | 3.6  | 10/12.5/370 | TEAO  | Ball | 5.00       | 6.10 | 1/2 |
| 20469    | 1/6-1/3 | 825/2    | 208-230 | 1.9  | 10/7.5/370  | TEAO  | Ball | 5.00       | 6.10 | 1/2 |

## One-On-One™ Replacement Motors

| MARS NO.                  | HP                    | ROT | RPM/SPDS | VOLTS   | AMPS    | CAP REQ.    | ENCL. | BRG. | DIMENSIONS |      |     |
|---------------------------|-----------------------|-----|----------|---------|---------|-------------|-------|------|------------|------|-----|
|                           |                       |     |          |         |         |             |       |      | A          | B    | C   |
| <b>Emerson 5462H</b>      |                       |     |          |         |         |             |       |      |            |      |     |
| 20462                     | 1/3, 1/4, 1/5, 1/6    | REV | 1075/2   | 208-230 | 2.0     | 5/7.5/370   | TEAO  | Ball | 5.00       | 4.91 | 1/2 |
| <b>Emerson 5482H</b>      |                       |     |          |         |         |             |       |      |            |      |     |
| 20471                     | 1/4, 1/3, 1/2, 3/4    | REV | 1075/2   | 208-230 | 4.2/3.6 | 15/440      | TEAO  | Ball | 5.5        | 6.5  | 1/2 |
| <b>AO Smith FE6003F</b>   |                       |     |          |         |         |             |       |      |            |      |     |
| 20470                     | 1/4, 1/2              | REV | 825/2    | 208-230 | 2.6     | 10/12.5/440 | TEAO  | Ball | 6.5        | 6.1  | 1/2 |
| <b>AO Smith ORM5458BF</b> |                       |     |          |         |         |             |       |      |            |      |     |
| 20457                     | 1/8, 1/10, 1/12, 1/15 | REV | 825/1    | 208-230 | 0.75    | 5/440       | TEAO  | Ball | 6.5        | 4.7  | 1/2 |
| <b>AO Smith ORM5454BF</b> |                       |     |          |         |         |             |       |      |            |      |     |
| 20463                     | 1/8 - 1/15            | REV | 1075/1   | 208-230 | 0.65    | 5/440       | TEAO  | Ball | 6.5        | 4.4  | 1/2 |

## Condenser Fan Motors

### MARS 460V Outdoor Condenser Fan Motors

#### Ball Bearing - 70°C

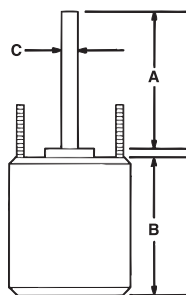
MARS 70°C SunSlinger totally enclosed outdoor condenser fan motors are designed for all angle air conditioning or heat pump applications. A weep hole is provided in each end shield to allow condensate to drain.

#### Features:

- All angle
- Rheem mounting holes w/screws installed
- Trane 4.33 bolt circle mounting holes and self tapping screws
- Extended thru bolt or band mounting and extra nuts
- Capacitor requirement noted on motor label
- Water slinger on shaft
- End shield drain holes w/plugs

#### Specifications:

- Single phase, 60 Hz
- 70°C/158°F
- Thermal overload protected
- Totally enclosed
- 48 inch leads, Multi-HP
- 36 inch leads
- UL Recognized



### MARS 460V Outdoor Condenser Fan Motors – Shaft Up Only

#### Ball Bearing - 70°C

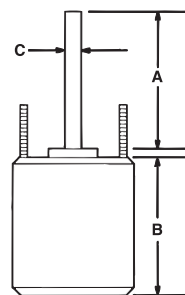
MARS 70°C SunSlinger totally enclosed outdoor condenser fan motors are designed for Shaft Up Only. All of these motors are suitable for air conditioning or heat pump applications. A weep hole is provided in each end shield to allow condensate to drain.

#### Features:

- Shaft up only
- Rheem mounting holes w/screws installed
- Extended thru bolt or band mounting
- Capacitor requirement noted on motor label

#### Specifications:

- Single Phase, 60 Hz
- 70°C/158°F
- Thermal overload protected
- Totally enclosed
- UL Recognized



#### Reversible Rotation

| MARS NO. | HP | VOLTS | AMPS | RPM | CAP REQ. | DIMENSIONS |   |   |
|----------|----|-------|------|-----|----------|------------|---|---|
|          |    |       |      |     |          | A          | B | C |

#### 1075 RPM - Single Speed

|       |     |     |      |      |         |      |      |     |
|-------|-----|-----|------|------|---------|------|------|-----|
| 20835 | 1/6 | 460 | 0.48 | 1075 | 5/440   | 6.50 | 4.32 | 1/2 |
| 20836 | 1/4 | 460 | 0.65 | 1075 | 7.5/440 | 6.50 | 4.52 | 1/2 |
| 20837 | 1/3 | 460 | 0.90 | 1075 | 7.5/440 | 6.50 | 5.38 | 1/2 |
| 20838 | 1/2 | 460 | 1.3  | 1075 | 10/440  | 6.50 | 5.86 | 1/2 |
| 20842 | 3/4 | 460 | 2.0  | 1075 | 10/440  | 6.50 | 6.29 | 1/2 |

| MARS NO. | HP | VOLTS | AMPS | RPM | CAP REQ. | DIMENSIONS |   |   |
|----------|----|-------|------|-----|----------|------------|---|---|
|          |    |       |      |     |          | A          | B | C |

#### 825 RPM - Single Speed

|        |     |     |      |     |         |      |      |     |
|--------|-----|-----|------|-----|---------|------|------|-----|
| 20859* | 1/6 | 460 | 0.53 | 825 | 5/440   | 3.22 | 4.52 | 1/2 |
| 20880  | 1/4 | 460 | 0.90 | 825 | 5/440   | 6.50 | 5.00 | 1/2 |
| 20881  | 1/3 | 460 | 1.0  | 825 | 7.5/440 | 6.50 | 5.62 | 1/2 |
| 20882  | 1/2 | 460 | 1.55 | 825 | 10/440  | 6.50 | 6.34 | 1/2 |

| MARS NO. | HP | VOLTS | AMPS | RPM | CAP REQ. | DIMENSIONS |   |   |
|----------|----|-------|------|-----|----------|------------|---|---|
|          |    |       |      |     |          | A          | B | C |

#### 1075 RPM - Multi-HP

|       |           |     |      |      |         |      |      |     |
|-------|-----------|-----|------|------|---------|------|------|-----|
| 20478 | 1/3 - 1/6 | 460 | 1.2  | 1075 | 7.5/370 | 6.50 | 4.90 | 1/2 |
| 20479 | 1/2 - 1/5 | 460 | 1.5  | 1075 | 10/370  | 6.50 | 5.60 | 1/2 |
| 20480 | 1/2 - 1/6 | 460 | 1.46 | 1075 | 10/440  | 5.50 | 5.70 | 1/2 |
| 20481 | 3/4 - 1/4 | 460 | 2.12 | 1075 | 15/440  | 5.50 | 6.48 | 1/2 |

#### One-On-One™ Replacement Motor for AO Smith ORM4688BF

| MARS NO. | HP                      | ROT | RPM/SPDS | VOLTS | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |     |     |
|----------|-------------------------|-----|----------|-------|------|----------|-------|------|------------|-----|-----|
|          |                         |     |          |       |      |          |       |      | A          | B   | C   |
| 20884    | 1/8, 1/6, 1/5, 1/4, 1/3 | REV | 825/1    | 460   | 1.0  | 7.5/370  | TEAO  | Ball | 6.50       | 5.3 | 1/2 |

\* CW Rotation-opposite shaft end

## Super-Fit™ Multi-Horsepower Condenser 42 Frame Fan Motors

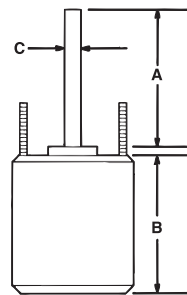
### Ball Bearing

MARS 42 frame Super-Fit™ multi-horsepower condenser fan motors are ideal for truck stock. Two models cover 208-230V applications from 1/12 HP through 1/4 HP replacing many AOS, Westinghouse, Fasco, Emerson and GE motor designs.



#### Features:

- Super-Fit™ mounting holes for Trane 4.33, 4.42 and 4.62 bolt circle mounting. Includes self threading screws.
- All angle mount
- Reversible rotation
- Multi-HP
- Capacitor requirement noted on motor label
- 1/2 inch dia. flatted shaft
- Totally enclosed



#### Specifications:

- Class "B" insulation
- 42 frame
- Single phase, 60 Hz
- Continuous air over
- Thermal overload protected
- Continuous duty
- 36 inch leads
- UL Recognized

### Reversible Rotation – Single Speed

| MARS NO. | HP              | VOLTS   | AMPS | RMP  | CAP     | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----------------|---------|------|------|---------|-------|------|------------|------|-----|
|          |                 |         |      |      |         |       |      | A          | B    | C   |
| 10722    | 1/8, 1/10, 1/12 | 208-230 | 0.75 | 1075 | 5/370   | TEAO  | Ball | 3.00       | 4.13 | 1/2 |
| 10723    | 1/4, 1/5, 1/6   | 208-230 | 1.5  | 1075 | 7.5/370 | TEAO  | Ball | 3.00       | 4.72 | 1/2 |
| 10724    | 1/4, 1/5, 1/6   | 208-230 | 1.35 | 1625 | 5/370   | TEAO  | Ball | 3.00       | 4.60 | 1/2 |



# Direct Drive Blower Motors

## Direct Drive Blower Motors

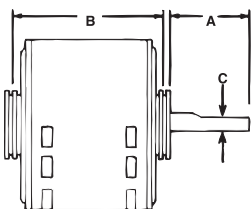
MARS direct drive furnace blower motors are three speed standard efficiency models. All models are electrically reversible and include 2-1/4 inch resilient rings for base mounting. These models have all angle sleeve bearings and have open air over enclosures.

**Features:**

- Sleeve bearing
- Rheem mounting holes
- 3 speeds
- 1/2 inch extended thru bolts
- 2-1/4 inch resilient rings
- For accessories see pages M-44 – M-46

**Specifications:**

- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Open construction
- 36 inch leads
- UL Recognized



## High Efficiency Direct Drive Blower Motors – MARS Energy Master

### Ball Bearing

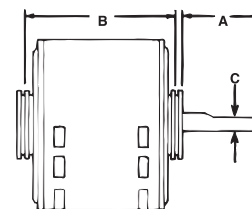
MARS High Efficiency direct drive blower motors save ENERGY. Designed for continuous air over applications, such as furnace blowers or central air handling units with single shaft requirements.

**Features:**

- Optimized high efficiency design
- 12-15% more efficient compared to standard motors
- Permanently lubricated ball bearings
- Rheem mounting holes
- Extended thru bolts, shaft end
- 3 Speeds
- Open Construction
- 2-1/4 resilient rings - plus 2-1/2 split rings included

**Specifications:**

- Class "B" insulation
- Single phase, 60 Hertz
- Fan duty, continuous air over
- Automatic thermal overload protection
- 36 inch leads
- UL Recognized



### 1075 RPM – Three Speed – Reversible Rotation

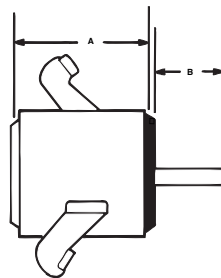
| MARS NO. | HP  | ROT | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----|-----|---------|------|----------|-------|------|------------|------|-----|
|          |     |     |         |      |          |       |      | A          | B    | C   |
| 10583    | 1/4 | Rev | 115     | 4.2  | 5/370    | OAO   | Slv  | 4.50       | 4.89 | 1/2 |
| 10584    | 1/4 | Rev | 208-230 | 1.8  | 5/370    | OAO   | Slv  | 4.50       | 4.89 | 1/2 |
| 10585    | 1/3 | Rev | 115     | 6.1  | 5/370    | OAO   | Slv  | 4.50       | 5.14 | 1/2 |
| 10586    | 1/3 | Rev | 208-230 | 2.7  | 5/370    | OAO   | Slv  | 4.50       | 5.14 | 1/2 |
| 10587    | 1/2 | Rev | 115     | 7.5  | 10/370   | OAO   | Slv  | 4.50       | 5.89 | 1/2 |
| 10588    | 1/2 | Rev | 208-230 | 3.2  | 7.5/370  | OAO   | Slv  | 4.50       | 5.64 | 1/2 |
| 10589    | 3/4 | Rev | 115     | 11.2 | 15/370   | OAO   | Slv  | 4.50       | 6.14 | 1/2 |
| 10590    | 3/4 | Rev | 208-230 | 4.5  | 10/370   | OAO   | Slv  | 4.50       | 6.14 | 1/2 |
| 10591    | 1   | Rev | 115     | 11.8 | 20/370   | OAO   | Ball | 4.50       | 5.80 | 1/2 |
| 10592    | 1   | Rev | 208-230 | 5.6  | 15/370   | OAO   | Ball | 4.50       | 5.80 | 1/2 |

### 1075 RPM – Reversible Rotation

| MARS NO. | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----|---------|------|----------|-------|------|------------|------|-----|
|          |     |         |      |          |       |      | A          | B    | C   |
| 10573    | 1/4 | 115     | 2.9  | 7.5/370  | OPAO  | Ball | 4.50       | 4.07 | 1/2 |
| 10574    | 1/4 | 208-230 | 1.3  | 5/370    | OPAO  | Ball | 4.50       | 4.07 | 1/2 |
| 10575    | 1/3 | 115     | 3.9  | 10/370   | OPAO  | Ball | 4.50       | 4.58 | 1/2 |
| 10576    | 1/3 | 208-230 | 1.6  | 7.5/370  | OPAO  | Ball | 4.50       | 4.58 | 1/2 |
| 10577    | 1/2 | 115     | 5.2  | 15/370   | OPAO  | Ball | 4.50       | 5.28 | 1/2 |
| 10578    | 1/2 | 208-230 | 2.5  | 10/370   | OPAO  | Ball | 4.50       | 5.28 | 1/2 |
| 10579    | 3/4 | 115     | 8.0  | 20/370   | OPAO  | Ball | 4.50       | 5.60 | 1/2 |
| 10580    | 3/4 | 208-230 | 3.5  | 15/370   | OPAO  | Ball | 4.50       | 5.60 | 1/2 |

## MARS 48 Frame Torsion Flex Mount Motors

MARS torsion flex mount motors are designed for direct drive furnace blower applications. The unique torsion flex mounting speeds installation while the special steel of the torsion flex bracket absorbs vibration for quieter operations. All models are electrically reversible, 3 speed motors.



### Features:

- Sleeve bearing
- Torsion flex mount
- 3 speeds
- 4-1/2 inch long, 1/2 inch diameter shaft
- Torsion mount sleeves and grommets included

### Specifications:

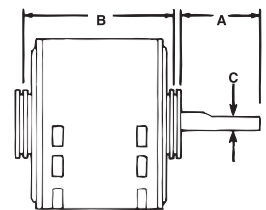
- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Open construction
- 36 inch leads
- UL Recognized

### 1075 RPM – Three Speed – Reversible Rotation

| MARS NO. | HP  | ROTATION | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----|----------|---------|------|----------|-------|------|------------|------|-----|
|          |     |          |         |      |          |       |      | A          | B    | C   |
| 10683    | 1/4 | REV      | 115     | 4.2  | 5/370    | OAO   | SLV  | 4.50       | 4.89 | 1/2 |
| 10684    | 1/4 | REV      | 208-230 | 1.8  | 5/370    | OAO   | SLV  | 4.50       | 4.89 | 1/2 |
| 10685    | 1/3 | REV      | 115     | 6.1  | 5/370    | OAO   | SLV  | 4.50       | 5.14 | 1/2 |
| 10686    | 1/3 | REV      | 208-230 | 2.7  | 5/370    | OAO   | SLV  | 4.50       | 5.14 | 1/2 |
| 10687    | 1/2 | REV      | 115     | 7.5  | 10/370   | OAO   | SLV  | 4.50       | 5.89 | 1/2 |
| 10688    | 1/2 | REV      | 208-230 | 3.2  | 7.5/370  | OAO   | SLV  | 4.50       | 5.64 | 1/2 |
| 10689    | 3/4 | REV      | 115     | 11.2 | 15/370   | OAO   | SLV  | 4.50       | 6.14 | 1/2 |
| 10690    | 3/4 | REV      | 208-230 | 4.5  | 10/370   | OAO   | SLV  | 4.50       | 6.14 | 1/2 |

## Multi-Horsepower Direct Drive Blower Motors

MARS multi-horsepower direct drive blower motors are ideal for truck stock. Four models cover both 115 volt and 208-230 volt applications from 1/6 through 3/4 HP. All MARS multi-horsepower motors feature Rheem shell mounting holes.



### Features:

- Rheem mounting holes
- 2-1/4 inch resilient rings

### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- 36 & 41 inch leads
- UL Recognized

### Four Speed

| MARS NO. | HP        | ROT | VOLTS   | RPM  | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|---------|------|-------|------|------------|------|-----|--------------|
|          |           |     |         |      |       |      | A          | B    | C   |              |
| 10463    | 1/6 - 1/2 | Rev | 115     | 1075 | OAO   | Slv  | 5.50       | 4.73 | 1/2 | 41"          |
| 10464    | 1/6 - 1/2 | Rev | 208-230 | 1075 | OAO   | Slv  | 5.50       | 4.73 | 1/2 | 41"          |
| 10466    | 1/5 - 3/4 | Rev | 115     | 1075 | OAO   | Ball | 5.80       | 5.73 | 1/2 | 41"          |
| 10467    | 1/5 - 3/4 | Rev | 208-230 | 1075 | OAO   | Ball | 5.60       | 5.23 | 1/2 | 41"          |
| 10479    | 1/8 - 1/3 | Rev | 208-230 | 825  | OAO   | Slv  | 4.50       | 5.30 | 1/2 | 36"          |

## MARS 460V Direct Drive Blower Motors

### Ball Bearing

MARS direct drive blower motors are installed in residential and commercial furnaces, air conditioners, exhaust fans, and other air handling equipment.



### Features:

- All angle
- 2 speeds
- Extended studs
- 2-1/4 inch resilient rings

### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- 36 inch leads
- UL Recognized

### Reversible Rotation

| MARS NO. | HP  | VOLTS | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----|-------|------|----------|-------|------|------------|------|-----|
|          |     |       |      |          |       |      | A          | B    | C   |
| 20538    | 1/2 | 460   | 1.8  | 10/370   | OAO   | Ball | 6.50       | 5.25 | 1/2 |

### 1075 RPM - Two Speed

### Multi-Horsepower – Reversible Rotation

| MARS NO. | HP        | VOLTS | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----------|-------|------|----------|-------|------|------------|------|-----|
|          |           |       |      |          |       |      | A          | B    | C   |
| 20580    | 1/3 - 1/4 | 460   | 0.95 | 7.5/370  | OAO   | Ball | 6.50       | 4.50 | 1/2 |
| 20581    | 3/4 - 1/2 | 460   | 2.1  | 15/370   | OAO   | Ball | 4.50       | 5.80 | 1/2 |

See diagram above for dimensions

# Fan & Blower Motors

## Belted Fan & Blower Motors

### Ball Bearing

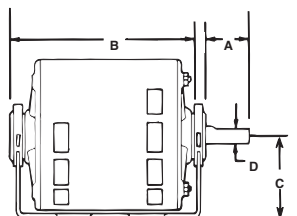
MARS belted blower motors are designed to meet manufacturer's requirements for belted fan or blowers.

#### Features:

- Resilient base mounted
- Single speed
- Slotted holes in base match 48 or 56 frame bolt patterns
- 1/2 inch shaft diameter

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- Open construction
- Continuous duty
- UL Recognized



### 1725 RPM – Single Speed – Reversible Rotation

| MARS NO. | HP  | VOLTS | FLA | SF   | DIMENSIONS |      |      |     | NEMA FRAME |
|----------|-----|-------|-----|------|------------|------|------|-----|------------|
|          |     |       |     |      | A          | B    | C    | D   |            |
| 10401    | 1/4 | 115   | 4.3 | 1.35 | 1.85       | 6.25 | 3.00 | 1/2 | 48/56      |
| 10406    | 1/3 | 115   | 5.8 | 1.35 | 1.85       | 6.25 | 3.00 | 1/2 | 48/56      |
| 10408    | 1/2 | 115   | 7.7 | 1.25 | 1.85       | 6.88 | 3.00 | 1/2 | 48/56      |

### Tech Tip

When replacing a blower or fan motor, inspect the blower wheel or fan and replace or clean as necessary to optimize performance.

## Belted Fan & Blower Motors, Split Phase

### Ball Bearing

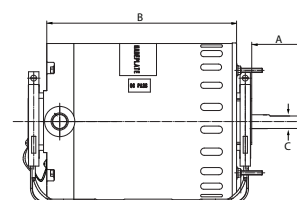
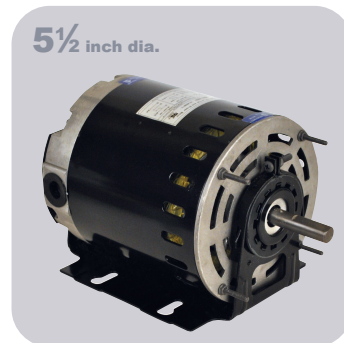
MARS belted blower motors are designed to meet manufacturer's requirements for belted fan or blowers.

#### Features:

- Single speed, split phase
- 48/56 frame mounting holes
- Heavy gauge steel construction frame and base
- 1/2" x 1-7/8" Shaft with 1-5/8" Flat
- Extended thru bolts

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Continuous duty
- Automatic thermal overload protection, as noted
- cULus



### Cross Reference:

| MARS No. | AO Smith/ Century | Baldor   | Emerson/ US Motors | Genteq     | Magnetek | Marathon   |
|----------|-------------------|----------|--------------------|------------|----------|------------|
| 10302    | 919L              | -        | DB14B2N4Z          | -          | 919      | B302       |
| 10303    | 920L, GF2024      | RSP1441A | 8000, 3618         | 4701, 4730 | 808      | B303, B206 |
| 10304    | 921L, RB2034L     | -        | D13B2N4Z9          | -          | 921      | B304       |
| 10305    | 922L, RB2034      | -        | 8100, PD6004       | -          | 922      | B305, B207 |
| 10306    | -                 | -        | D12C2J49           | -          | -        | B306       |
| 10307    | GF2054            | RSP3451A | 8200, PD6006       | 4708, 4733 | -        | B307       |

### 1725 RPM - Reversible - Dripproof

| MARS NO. | HP  | VOLTS | AMPS | S.F  | ENCL. | BRG. | NEMA FRAME | DIMENSIONS |      |     |
|----------|-----|-------|------|------|-------|------|------------|------------|------|-----|
|          |     |       |      |      |       |      |            | A          | B    | C   |
| 10303*   | 1/4 | 115   | 4.3  | 1.35 | DP    | Ball | 48Y        | 1.85       | 6.25 | 1/2 |
| 10305*   | 1/3 | 115   | 5.8  | 1.35 | DP    | Ball | 48Y        | 1.85       | 6.25 | 1/2 |
| 10307*   | 1/2 | 115   | 7.7  | 1.25 | DP    | Ball | 48Y        | 1.85       | 6.88 | 1/2 |
| 10302    | 1/4 | 115   | 4.3  | 1.35 | DP    | Ball | 48Y        | 1.85       | 6.25 | 1/2 |
| 10304    | 1/3 | 115   | 5.8  | 1.35 | DP    | Ball | 48Y        | 1.85       | 6.25 | 1/2 |
| 10306    | 1/2 | 115   | 5.8  | 1.35 | DP    | Ball | 48Y        | 1.85       | 6.88 | 1/2 |

\* Automatic Thermal Overload Protection



## Fan & Blower Motors, Capacitor Start

### Ball Bearing

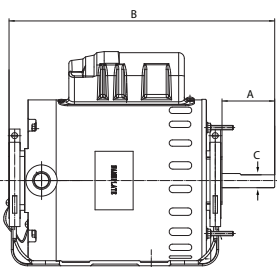
MARS fan & blower motors are designed for applications like commercial fans and blowers, direct and belt drive air handlers and exhaust fans.

#### Features:

- Single speed, capacitor start
- 48/56 frame mounting holes
- Heavy gauge steel construction frame and base
- 5/8" Shaft dia. with keyway
- Extended thru bolts

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Continuous duty
- Automatic thermal overload Protection, as noted
- cULus



### Cross Reference:

| MARS No. | AO Smith/ Century | Baldor  | Emerson/ US Motors | Fasco | Leeson    | Magnetek | Marathon |
|----------|-------------------|---------|--------------------|-------|-----------|----------|----------|
| 10313    | C196L             | RL1203A | D12CPA2P49         | -     | 100109.00 | C196     | B313     |
| 10315    | RBF1034A          | -       | 180                | -     | -         | -        | B315     |
| 10317    | BK1054, C412V1    | -       | D12CPA2PH9         | D6084 | 100011.00 | -        | B317     |
| 10319    | C426V1, RB1074A   | RL1307A | 1893               | -     | 100012.00 | -        | B319     |
| 10321    | C523V1            | RL1310A | D1CPA2PH9          | D6088 | 110007.00 | -        | 4688     |

## 1725 RPM - Reversible - Dripproof

| MARS NO. | HP  | VOLTS       | AMPS         | S.F  | ENCL. | BRG. | NEMA FRAME | DIMENSIONS |       |     |
|----------|-----|-------------|--------------|------|-------|------|------------|------------|-------|-----|
|          |     |             |              |      |       |      |            | A          | B     | C   |
| 10313    | 1/4 | 115/208-230 | 5.0/2.4-2.5  | 1.35 | DP    | Ball | 48YZ       | 1.85       | 10.30 | 1/2 |
| 10315    | 1/3 | 115/208-230 | 5.4/2.6-2.7  | 1.35 | DP    | Ball | 48Z        | 1.93       | 10.22 | 1/2 |
| 10317    | 1/2 | 115/208-230 | 8.0/4.1-4.0  | 1.25 | DP    | Ball | 56         | 1.93       | 10.41 | 5/8 |
| 10319    | 3/4 | 115/208-230 | 10.0/5.2-5.0 | 1.25 | DP    | Ball | 56         | 1.93       | 11.00 | 5/8 |
| 10321    | 1   | 115/208-230 | 14.4/7.2-7.2 | 1.00 | DP    | Ball | 56         | 1.95       | 11.26 | 5/8 |

## Commercial Condenser Fan Motors, Rigid Base, 3 Phase

### Ball Bearing

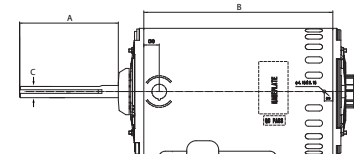
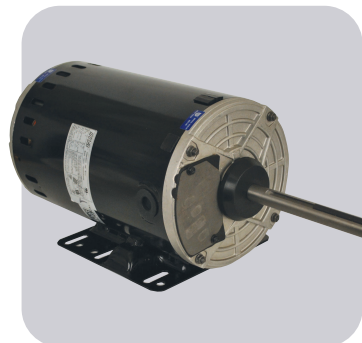
MARS Commercial condenser fan motors may be installed outdoors. These motors need to be mounted within the airflow of the fan for proper cooling. 56Z or 56HZ rigid base is easy to remove and provides mounting flexibility. Use on Trane, Carrier, Climatrol and York units, 5 tons and larger.

#### Features:

- 70°C ambient except as noted
- VFD Compatible
- Water slinger on shaft
- Rigid Base - Horizontal or Vertical mounting
- Enclosed shaft end bracket, vented frame
- Flat and keyway on shaft

#### Specifications:

- Class "H1" insulation
- Three Phase, 60/50 Hz
- Continuous duty, air over
- Automatic thermal overload protected
- cULus



### Cross Reference:

| MARS No. | AO Smith/ Century | Baldor   | Emerson/ US Motors | Leeson | Marathon |
|----------|-------------------|----------|--------------------|--------|----------|
| 10513    | H1050A            | -        | 1820H, 1820V       | -      | X513     |
| 10523    | H1051A            | CFM3166A | 1821H, 1821V       | 111148 | X523     |
| 10531    | H1054A            | -        | 1831H, 1831V, 1100 | -      | X531     |

| MARS NO. | HP | VOLTS | AMPS | S.F | ENCL. | BRG. | NEMA FRAME | DIMENSIONS |   |   |
|----------|----|-------|------|-----|-------|------|------------|------------|---|---|
|          |    |       |      |     |       |      |            | A          | B | C |

## 1140 RPM - Reversible - Three Phase

|        |       |             |             |     |      |      |      |      |      |     |
|--------|-------|-------------|-------------|-----|------|------|------|------|------|-----|
| 10533* | 1/2   | 208-230/460 | 2.1-2.0/1.0 | 1.0 | OPAO | Ball | 56Z  | 5.50 | 7.14 | 5/8 |
| 10513  | 1     | 208-230/460 | 4.1-4.5/2.3 | 1.0 | OPAO | Ball | 56HZ | 5.00 | 7.66 | 5/8 |
| 10523  | 1-1/2 | 208-230/460 | 5.7-5.8/2.9 | 1.0 | OPAO | Ball | 56HZ | 5.00 | 8.45 | 5/8 |

## 850 RPM - Reversible - Three Phase

|       |       |             |             |     |      |      |      |      |      |     |
|-------|-------|-------------|-------------|-----|------|------|------|------|------|-----|
| 10531 | 1-1/2 | 208-230/460 | 6.5-6.7/3.4 | 1.0 | OPAO | Ball | 56HZ | 5.00 | 9.23 | 5/8 |
|-------|-------|-------------|-------------|-----|------|------|------|------|------|-----|

\* 60 Deg C

# Commercial Condenser Fan Motors / Heating Motors

## Commercial Condenser Fan Motors, Belly Band, 3 Phase

### Ball Bearing

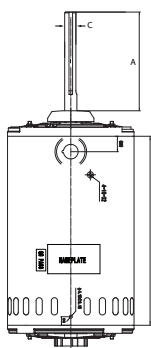
MARS Commercial condenser fan motors may be installed outdoors. These motors need to be mounted within the airflow of the fan for proper cooling. Use on Trane, Carrier, Climatrol and York units, 5 tons and larger.

#### Features:

- 70°C ambient
- VFD Compatible, except 575V
- Water slinger on shaft
- Four locating screws 90° apart, 3-3/8" from outer edge of shaft slinger
- Enclosed shaft end bracket, vented frame
- Flat and keyway on shaft
- Belly Band and Resilient Ring Mounting

#### Specifications:

- Class "H1" insulation
- Three Phase, 60/50 Hz, 575V - 60 Hz only
- Continuous duty, air over
- Automatic thermal overload protected
- cULus



## Unit Heater Motors, PSC

### Ball Bearing

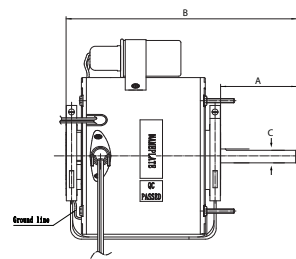
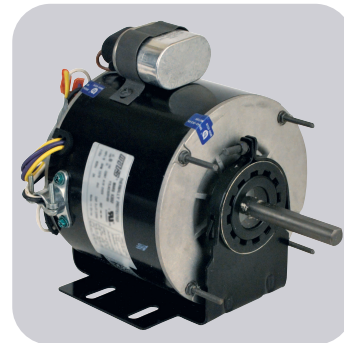
MARS replacement unit heater motors need to be mounted within the airstream for proper cooling.

#### Features:

- Totally enclosed, air over
- Horizontal or vertical mount
- 1" extended thru-bolts
- Reversing plug
- BX connector mounted in frame

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Continuous duty
- Automatic reset thermal overload
- 37 inch leads
- cULus



#### Cross Reference:

| MARS No. | AO Smith/ Century | Emerson/ US Motors | Marathon |
|----------|-------------------|--------------------|----------|
| 30301    | UH1016, US1016    | 1386               | X302     |
| 30303    | 566A, UH1026      | 1384               | X303     |
| 30305    | UH1036            | 1388               | X304     |

#### Cross Reference:

| MARS No. | AO Smith/ Century | Baldor   | Emerson/ US Motors | Fasco | Magnetek | Marathon |
|----------|-------------------|----------|--------------------|-------|----------|----------|
| 10502    | FC3106F           | CFM3156A | 1818H              | -     | H667     | X502     |
| 10503    | H1051A            | CFM3166A | 1819H              | D6610 | H767     | X503     |
| 10507    | H1053A            | -        | 1828H, 1828V       | -     | H686     | X507     |
| 10509    | H698              | -        | 8987V              | -     | -        | X509     |
| 10530    | H1054A, H1053A    | -        | 1832H, 1832V       | -     | -        | X530     |

## 1075 RPM - Reversible

| MARS NO. | HP  | VOLTS | AMPS | CAPACITOR INCLUDED | ENCL. BRG. | NEMA FRAME | DIMENSIONS |      |      |     |
|----------|-----|-------|------|--------------------|------------|------------|------------|------|------|-----|
|          |     |       |      |                    |            |            | A          | B    | C    |     |
| 30301    | 1/6 | 115   | 3.0  | 5/370              | TEAO       | Ball       | 48Y        | 2.75 | 8.25 | 1/2 |
| 30303    | 1/4 | 115   | 4.1  | 7.5/370            | TEAO       | Ball       | 48Y        | 2.75 | 8.25 | 1/2 |
| 30305    | 1/3 | 115   | 6.5  | 7.5/370            | TEAO       | Ball       | 48Y        | 2.75 | 9.70 | 1/2 |

| MARS NO. | HP | VOLTS | AMPS | S.F | ENCL. | BRG. | NEMA FRAME | DIMENSIONS |   |   |
|----------|----|-------|------|-----|-------|------|------------|------------|---|---|
|          |    |       |      |     |       |      |            | A          | B | C |

### 1140 RPM - Reversible - Three Phase

|       |       |             |                |     |      |      |     |      |      |     |
|-------|-------|-------------|----------------|-----|------|------|-----|------|------|-----|
| 10502 | 1     | 208-230/460 | 4.18-4.38/2.19 | 1.0 | OPAO | Ball | 56Y | 5.00 | 7.66 | 5/8 |
| 10503 | 1-1/2 | 208-230/460 | 5.3-5.09/2.55  | 1.0 | OPAO | Ball | 56Y | 5.00 | 8.84 | 5/8 |
| 10509 | 2     | 208-230/460 | 7.3-7.0/3.7    | 1.0 | OPAO | Ball | 56Y | 5.00 | 9.62 | 5/8 |

### 850 RPM - Reversible - Three Phase

|       |       |             |               |     |      |      |     |      |      |     |
|-------|-------|-------------|---------------|-----|------|------|-----|------|------|-----|
| 10507 | 1     | 208-230/460 | 5.1-5.1/2.53  | 1.0 | OPAO | Ball | 56Y | 5.00 | 8.84 | 5/8 |
| 10530 | 1-1/2 | 208-230/460 | 7.05-6.7/3.57 | 1.0 | OPAO | Ball | 56Y | 5.00 | 9.62 | 5/8 |

## MARS Oil Burner Motors

### Ball Bearing

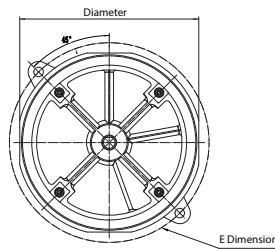
MARS Oil Burner Motors are replacement motors for residential and commercial oil burners, hot water pressure/steam cleaners and other applications where 48M or 48N flange mounting is required.

#### Features:

- All angle
- Split Phase and PSC
- Semi or totally enclosed
- Two bolt direct mounting for 48M and 48N

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- Continuous duty
- Manual reset overload protection
- Auto reset protection for PSC
- cULus



### Cross Reference:

| MARS No. | AO Smith/ Century | Beckett | Emerson/ US Motors | Marathon |
|----------|-------------------|---------|--------------------|----------|
| 30004    | EL2022            | -       | 2302               | O004     |
| 30011    | OI2052D           | -       | 3267               | O011     |
| 30100    | EL2002            | -       | 3083               | O100     |
| 30600    | EL2005            | -       | 3196               | O600     |
| 30601    | XEL2014           | -       | 3252               | O601     |
| 30701    | -                 | 21805U  | 3274               | O701     |

| MARS NO. | DIA. | HP | RPM/ SPD | VOLTS | AMPS | ROT. | FRAME | ENCL. | S.F. | SHAFT LGTH | SHAFT DIA. | E DIM. |
|----------|------|----|----------|-------|------|------|-------|-------|------|------------|------------|--------|
|----------|------|----|----------|-------|------|------|-------|-------|------|------------|------------|--------|

#### Split Phase

|       |       |     |        |     |     |     |     |               |     |         |     |       |
|-------|-------|-----|--------|-----|-----|-----|-----|---------------|-----|---------|-----|-------|
| 30100 | 5-1/2 | 1/7 | 3450/1 | 115 | 2.4 | Rev | 48M | Semi Enclosed | 1.0 | 1-3/4   | 1/2 | 6-3/4 |
| 30600 | 6-1/2 | 1/8 | 1725/1 | 115 | 2.7 | Rev | 48N | TENV          | 1.0 | 1-3/4   | 1/2 | 7-1/4 |
| 30601 | 6-1/2 | 1/6 | 1725/1 | 115 | 2.8 | Rev | 48N | TENV          | 1.0 | 1-3/4   | 1/2 | 6-1/2 |
| 30004 | 6-1/2 | 1/4 | 3450/1 | 115 | 3.8 | Rev | 48N | Semi Enclosed | 1.0 | 1-13/16 | 1/2 | 7-1/4 |

#### Oil Burner, PSC

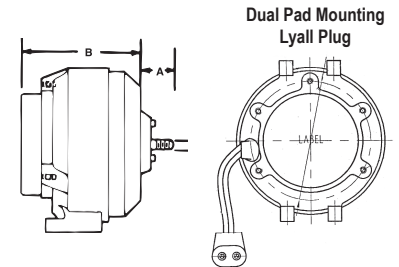
|       |       |     |        |             |         |        |     |               |     |       |     |       |
|-------|-------|-----|--------|-------------|---------|--------|-----|---------------|-----|-------|-----|-------|
| 30701 | 5-1/2 | 1/7 | 3450/1 | 115         | 1.5     | CCW SE | -   | Semi Enclosed | -   | 1-3/4 | 1/2 | 5-1/4 |
| 30011 | 6-1/2 | 1/2 | 3450/1 | 115/208-230 | 8.2/4.1 | Rev    | 48N | Semi Enclosed | 1.0 | 1-3/4 | 1/2 | 7-1/4 |

## 51 Frame Unit Bearing Cast Iron Motors

MARS 51 frame motors are used on refrigerators, freezers, food & beverage coolers, vending machines, display cases, and many other fan duty applications.

#### Features:

- Cast iron construction
- Packed with vibration dampener, speed nut & screws
- Shaded pole, single phase
- Fan duty, continuous, air over
- Impedance protected
- For accessories see pages M-44 – M-46
- Class "A" insulation
- 60/50 Hertz



| MARS NO. | WATTS | ROT OSE | VOLTS | AMPS | LEAD LENGTH | DIMENSIONS |   |   |
|----------|-------|---------|-------|------|-------------|------------|---|---|
|          |       |         |       |      |             | A          | B | C |

#### 1550 RPM—1/4-20 Threaded Shaft - Dual Pad Mounting - Lyall Plug

|                      |    |     |     |      |     |      |      |     |
|----------------------|----|-----|-----|------|-----|------|------|-----|
| 05211 <sup>(1)</sup> | 4  | CW  | 115 | 0.33 | 24" | 0.66 | 2.64 | 1/4 |
| 05212 <sup>(1)</sup> | 4  | CCW | 115 | 0.33 | 24" | 0.66 | 2.64 | 1/4 |
| 05221 <sup>(1)</sup> | 4  | CW  | 230 | 0.19 | 24" | 0.66 | 2.64 | 1/4 |
| 05222 <sup>(1)</sup> | 4  | CCW | 230 | 0.19 | 24" | 0.66 | 2.64 | 1/4 |
| 05311                | 6  | CW  | 115 | 0.46 | 24" | 0.66 | 3.14 | 1/4 |
| 05312                | 6  | CCW | 115 | 0.46 | 24" | 0.66 | 3.14 | 1/4 |
| 05411                | 9  | CW  | 115 | 0.62 | 24" | 0.66 | 3.14 | 1/4 |
| 05412                | 9  | CCW | 115 | 0.62 | 24" | 0.66 | 3.14 | 1/4 |
| 05421                | 9  | CW  | 230 | 0.33 | 24" | 0.66 | 3.14 | 1/4 |
| 05422                | 9  | CCW | 230 | 0.33 | 24" | 0.66 | 3.14 | 1/4 |
| 05811 <sup>(2)</sup> | 16 | CW  | 115 | 0.95 | 24" | 0.66 | 3.34 | 1/4 |
| 05812 <sup>(2)</sup> | 16 | CCW | 115 | 0.95 | 24" | 0.66 | 3.34 | 1/4 |
| 05821 <sup>(2)</sup> | 16 | CW  | 230 | 0.48 | 24" | 0.66 | 3.34 | 1/4 |
| 05822 <sup>(2)</sup> | 16 | CCW | 230 | 0.48 | 24" | 0.66 | 3.34 | 1/4 |

#### 1500 RPM—Smooth Shaft

|                      |    |    |     |      |     |      |      |     |
|----------------------|----|----|-----|------|-----|------|------|-----|
| 05521 <sup>(2)</sup> | 50 | CW | 230 | 0.85 | 22" | 1.50 | 4.50 | 3/8 |
|----------------------|----|----|-----|------|-----|------|------|-----|

(1) Class A Insulation

(2) Automatic Reset Overload Protection

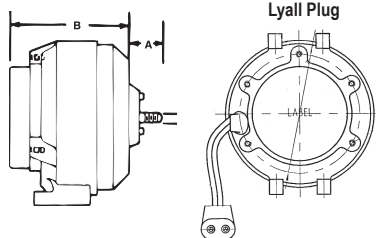
# Unit Bearing Motors / C-Frame Motors

## 51 Frame Unit Bearing Aluminum Motors

MARS aluminum 51 frame motors are economical replacements for cast iron motors. They feature an improved oiling system and class B insulation for longer life.

**Features:**

- Aluminum construction
- Unit bearing design
- Packed with vibration dampener, speed nut & screws
- Shaded pole, single phase
- Fan duty, continuous, air over
- Impedance protected
- For accessories see pages M-44 – M-46
- Class "B" insulation
- 60/50 Hertz



| MARS NO.   | WATTS | ROT OSE | VOLTS | AMPS | LEAD LENGTH | DIMENSIONS |      |     |
|--|-------|---------|-------|------|-------------|------------|------|-----|
|  |       |         |       |      |             | A          | B    | C   |
| <b>1550 RPM—1/4-20 Threaded Shaft - Dual Pad Mounting - Lyall Plug</b> |       |         |       |      |             |            |      |     |
| 05213 <sup>(1)</sup>   | 4     | CW      | 115   | 0.33 | 24"         | 0.66       | 2.64 | 1/4 |
| 05223 <sup>(1)</sup>   | 4     | CW      | 230   | 0.19 | 24"         | 0.66       | 2.64 | 1/4 |
| 05313  | 6     | CW      | 115   | 0.46 | 24"         | 0.66       | 3.14 | 1/4 |
| 05413  | 9     | CW      | 115   | 0.62 | 24"         | 0.66       | 3.14 | 1/4 |
| 05414  | 9     | CCW     | 115   | 0.62 | 24"         | 0.66       | 3.14 | 1/4 |
| 05423  | 9     | CW      | 230   | 0.33 | 24"         | 0.66       | 3.14 | 1/4 |
| 05813 <sup>(1)(2)</sup>  | 16    | CW      | 115   | 0.95 | 24"         | 0.66       | 3.34 | 1/4 |
| 05814 <sup>(1)(2)</sup>  | 16    | CCW     | 115   | 0.95 | 24"         | 0.66       | 3.34 | 1/4 |
| 05823 <sup>(1)(2)</sup>  | 16    | CW      | 230   | 0.48 | 24"         | 0.66       | 3.34 | 1/4 |

(1) Class B Insulation  
 (2) Automatic Reset Overload Protection

## Super-Fit™ 3000 RPM Replacement Motor\*

The MARS 90999 Super-Fit™ replacement fan motor is designed to replace virtually any refrigerator evaporator fan motor.

The MARS 90999 motor incorporates a unique new system which duplicates any OEM mounting quickly and easily. The rotor is reversible in the field for either clockwise or counterclockwise rotation.

In addition the MARS 90999 motor has the power to perform in even the largest refrigerators.

The MARS 90999 Super-Fit™ motor comes complete with mounting accessories and hardware.

\*U.S. Patent

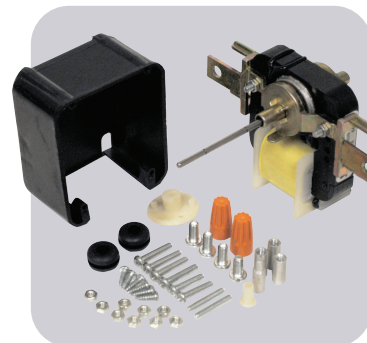
**Features:**

- Reversible rotation
- Duplicates any OEM motor
- Break-off shaft
- Easy-to-use, fewer parts to assemble than competitive motors
- Stock one motor - save on inventory
- Complete with accessories and instructions

**Specifications:**

- Electrical rating: 90999, 115V, 50/60 Hertz
- Overload protection: impedance protected
- Speed: 3000 RPM
- Shaft: 1/8 inch diameter with adaptors for 3/16 inch and hubless fans

| MARS NO. | DESCRIPTION                        | VOLTS          |
|----------|------------------------------------|----------------|
| 90999    | "Super-Fit" motor with accessories | 115V, 50/60 Hz |



Replaces these popular motors... and hundreds more!

**WHIRLPOOL/COLDSLOT**

**FRIGIDAIRE**

**GIBSON**

**WESTINGHOUSE**

**PHILCO**



## Super-Fit™ 3000 RPM Commercial Replacement Motor\*

MARS 90970 Super-Fit™ commercial evaporator fan motor is the most versatile, easy-to-use, heavy-duty replacement evaporator fan motor available.

MARS 90970 is the first motor of this type with a dual voltage coil so you can stock one motor for both 115 volt and 230 volt applications. The unique system of slide locator screws lets you match OEM mountings quickly and easily.

The reversible 90970 features rugged, die cast bearing housings with self-aligning bearings and generous oil reservoir. The break-off shaft has adaptors to fit 1/8, 3/16, 1/4, 5/16 inch bores and hubless fan blades.

Each kit includes: Motor, 5.5" white plastic blade, accessory package.

\*U.S. Patent



### MARS 90970 Replaces:

| ACME MIAMI | GEM         | UNI-LINE ROBERT SHAW |
|------------|-------------|----------------------|
| 750        | EM675 EM680 | 14011                |
| 7502       | EM675 EM683 | 14019                |
| 780        |             |                      |

### Features:

- Dual voltage coil, 110-120/208-240 VAC
- 50/60 Hertz
- Mechanically reversible

### Specifications:

- Electrical: 110-120/208-240 VAC; 50/60 Hertz
- Protection: thermal overload protected
- HP: 1/50
- RPM: 3000

### 3000 RPM – Mechanically Reversible

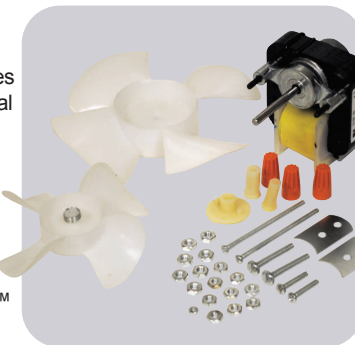
| MARS NO. | HP   | AMPS | STACK HT. IN. | SHAFT         | VOLTS           |
|----------|------|------|---------------|---------------|-----------------|
| 90970    | 1/50 | 1.33 | .75           | 2.174 X .1875 | 110-120/208-240 |

## Super-Fit™ 3000 RPM Replacement Motor Kit With Fan Blades

The MARS 90971 Super-Fit™ replacement motor kit with fan blades is designed to provide all the material necessary to replace virtually any existing application that requires a 3/8", 1/2", or 5/8" stack motor.

The motor features a specially designed recirculating oil system for long life.

Each kit includes: MARS Super-Fit™ Motor, hardware plus a 4" diameter fan blade and a 5.5" diameter fan blade.



### Features:

- Sleeve bearings
- All angle mount
- UL and CSA recognized
- Impedance protection
- Mechanically reversible
- Recirculating oil system

### Specifications:

- Class "A" insulation
- 3000 RPM
- 60 Hz

### 3000 RPM – Mechanically Reversible

| MARS NO. | HP    | VOLTS | AMPS | SHAFT         | STACK |
|----------|-------|-------|------|---------------|-------|
| 90971    | 1/130 | 120   | 0.41 | 1.42" x 3/16" | 5/8"  |

## MARS 3.3" Commercial Refrigeration Multi-Horsepower Motors

These motors replace hundreds of OEM shaded pole evaporator fan motors found in Bohn, Nutone, Chandler, Larkin, Kramer, Climate Control, McQuay, Heatcraft and reduce truck stock costs.

These PSC type motors deliver more power and lower amp draw compared to shaded pole.

### Features:

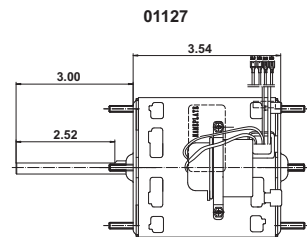
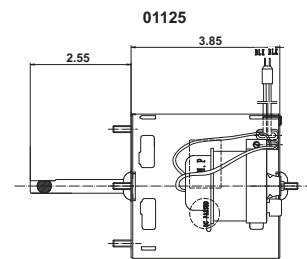
- Sleeve bearing, single speed
- Mounting - extended thru-bolt with nuts
- Low temp lubricant
- Capacitor included
- Open ventilation

### Specifications:

- Class "B" insulation
- 60 Hz
- Thermal overload protected

### Replaces 12 Motor Ratings:

- 1/12HP CW or CCW 115V or 230V
- 1/15HP CW or CCW 115V or 230V
- 1/20HP CW or CCW 115V or 230V



### 1550 RPM

| MARS NO. | HP               | VOLTS   | ROT   | AMPS      | CAP INCLUDED | SHAFT LENGTH AND DIAMETER |
|----------|------------------|---------|-------|-----------|--------------|---------------------------|
| 01125    | 1/12, 1/15, 1/18 | 208-230 | CW LE | 0.56/0.50 | 4 MFD 370V   | 2.55 x 5/16               |
| 01127    | 1/12, 1/15, 1/20 | 115/230 | REV   | 1.1/0.60  | 7.5 MFD 370V | 3.00 x 5/16               |

### Cross Reference:

| MARS NO. | ACME MIAMI                   | GEM   | UNI-LINE ROBERT SHAW | SUPCO  |
|----------|------------------------------|-------|----------------------|--------|
| 90971    | 600<br>700<br>710<br>AM-4670 | EM670 | 33-670 (14001)       | SM-670 |

# Refrigeration Fan Motors / Draft Inducer Blowers

## MARS Super-Fit™ 3.3" Commercial Refrigeration Evaporator Fan and Blower Motors

### Application:

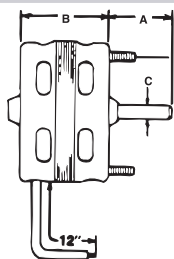
Can be used to replace virtually all popular 3.3" dia. commercial refrigeration evaporator fan motors.

### Features:

- Adaptable to front or rear mount
- All angle operation
- Specially selected low temp. oil
- Full flatted black oxide shafts
- U.L. and C.S.A. recognized thermal protection

### Specifications:

- Single phase, 60 Hertz
- Thermal overload protected
- 12 inch leads



### 1550 RPM

| MARS NO. | HP   | VOLTS   | AMPS | ROT OLE | DIMENSIONS |      |      | MOUNTING STUD LOCATION |
|----------|------|---------|------|---------|------------|------|------|------------------------|
|          |      |         |      |         | A          | B    | C    |                        |
| 09917    | 1/20 | 115     | 1.7  | CW      | 2.50       | 2.96 | 5/16 | SE                     |
| 09927    | 1/20 | 208/230 | 0.96 | CW      | 2.50       | 2.96 | 5/16 | SE                     |

## MARS One-On-One™ 3.3" Commercial Refrigeration Evaporator Fan and Blower Motors

These motors feature original OEM-type plugs, wiring harness and conduit box (where appropriate).

### Features:

- Sleeve bearing
- Original OEM-type mounting
- Original OEM-type wiring
- Specially selected low temp oil
- Full flatted black oxide shafts

### Specifications:

- Single phase
- Thermal overload protected
- 12-1/2 inch leads



### Bohn Applications/with Lyall Plug

| MARS NO. | HP   | RPM  | VOLTS | AMPS | ROT OLE | DIMENSIONS |     |      | MOUNTING STUD LOCATION |
|----------|------|------|-------|------|---------|------------|-----|------|------------------------|
|          |      |      |       |      |         | A          | B   | C    |                        |
| 09930    | 1/20 | 1550 | 115   | 1.7  | CW      | 3          | 3   | 5/16 | LE and SE              |
| 09931    | 1/15 | 1550 | 230   | 1.1  | CW      | 3          | 3.5 | 5/16 | SE                     |

### 1550 RPM – Larkin Applications/with Lyall Plug

| MARS NO. | HP   | VOLTS   | AMPS | ROT OLE | DIMENSIONS |      |      | MOUNTING STUD LOCATION |
|----------|------|---------|------|---------|------------|------|------|------------------------|
|          |      |         |      |         | A          | B    | C    |                        |
| 09932    | 1/20 | 115     | 1.7  | CCW     | 2.25       | 2.75 | 5/16 | LE                     |
| 09933    | 1/20 | 208/230 | 1.0  | CCW     | 2.25       | 3    | 5/16 | LE                     |

### 1550 RPM – McQuay Applications

| MARS NO. | HP   | VOLTS   | AMPS    | ROT OLE | DIMENSIONS |     |      | MOUNTING STUD LOCATION |
|----------|------|---------|---------|---------|------------|-----|------|------------------------|
|          |      |         |         |         | A          | B   | C    |                        |
| 09934    | 1/15 | 115/230 | 2.1/1.1 | CW      | 2.5        | 3.5 | 5/16 | SE                     |

See diagram above for dimensions

## Draft Inducer Blowers

### Ball Bearing

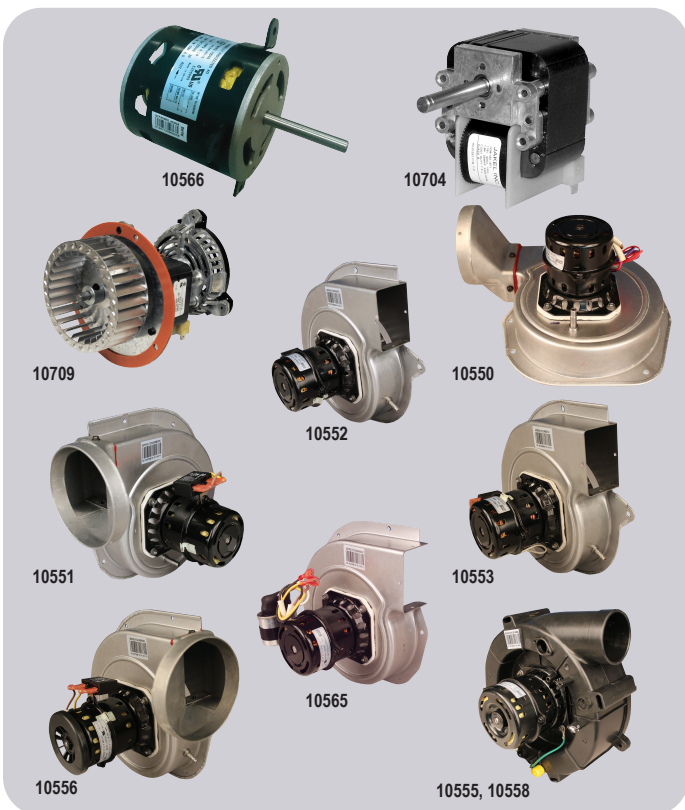
MARS draft inducer blower assemblies are designed and manufactured to serve as drop-in, exact replacements.

### Specifications:

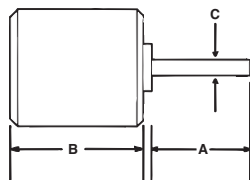
- C-Frame
- Single Speed
- 60 Hz
- Thermal protected, air over
- Single phase

### Draft Inducer Blowers

| MARS NO. | OEM     | OEM NO.     | APPL.       | HP   | VOLTS   | AMPS | RPM       | CAP INCL. |
|----------|---------|-------------|-------------|------|---------|------|-----------|-----------|
| 10566    | Carrier | HC27Q118    | 80+ Furnace | 1/4  | 115     | 0.38 | 3030      | 5MFD/370V |
| 10704    | Carrier | HC21ZE117   | 80+ Furnace | 1/22 | 115     | 1.9  | -         | -         |
| 10709    | Carrier | HC24HE230   | 80+ Furnace | 1/40 | 208/230 | 1.0  | -         | -         |
| 10556    | Nordyne | 622567      | 80+ Furnace | 1/33 | 115     | 0.43 | 3000      | 4MFD/250V |
| 10558    | Nordyne | 622302      | 90+ Furnace | 1/31 | 115     | 0.46 | 3300      | 6MFD/250V |
| 10550    | Goodman | 0131G00007  | 80+ Furnace | 1/50 | 230     | 0.24 | 3000      | 2MFD/370V |
| 10551    | Goodman | 0131G00009  | 80+ Furnace | 1/32 | 230     | 0.24 | 3000      | 2MFD/370V |
| 10552    | Goodman | 0131M00121  | 80+ Furnace | 1/50 | 230     | 0.22 | 3000      | 2MFD/370V |
| 10553    | Goodman | 0131M00002P | 80+ Furnace | 1/50 | 115     | 0.40 | 3000      | 6MFD/250V |
| 10555    | Goodman | 0271F00126  | 90+ Furnace | 1/32 | 115     | 0.46 | 3150/2950 | 6MFD/250V |
| 10563    | Trane   | D965130P01  | 80+ Furnace | 1/39 | 230     | 0.22 | 2800/1500 | 2MFD/370V |
| 10564    | Trane   | D965129P01  | 80+ Furnace | 1/39 | 230     | 0.22 | 2800/1500 | 2MFD/370V |
| 10565    | Trane   | D965128P01  | 80+ Furnace | 1/34 | 230     | 0.24 | 3000      | 2MFD/370V |



## One-On-One™ Direct Replacement Motors



### Replaces: Carrier HC33GE233

**MARS USA**, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CW OSE

| MARS NO. | HP   | VOLTS   | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|------|---------|------------|---------|------|------------|-----|-----|
|          |      |         |            |         |      | A          | B   | C   |
| 10234    | 1/10 | 208/230 | 1100/1     | CW      | 0.77 | 1.8        | 3.8 | 1/2 |

### Replaces: Goodman 0131M00019P

**MARS USA**, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW OSE

| MARS NO. | HP  | VOLTS   | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|---------|------------|---------|------|------------|-----|-----|
|          |     |         |            |         |      | A          | B   | C   |
| 10230    | 1/4 | 208/230 | 1100/1     | CCW     | 1.26 | 3          | 4.1 | 1/2 |

### Replaces: Goodman 0131M00060

**MARS USA**, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW OSE

| MARS NO. | HP  | VOLTS   | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|---------|------------|---------|------|------------|-----|-----|
|          |     |         |            |         |      | A          | B   | C   |
| 10232    | 1/6 | 208/230 | 810/1      | CCW     | 1.1  | 3          | 4.1 | 1/2 |

### Replaces: Goodman G3911

**MARS USA**, 5 1/2 inch diam. Totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW OSE

| MARS NO. | HP  | VOLTS   | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |      |     |
|----------|-----|---------|------------|---------|------|------------|------|-----|
|          |     |         |            |         |      | A          | B    | C   |
| 03242    | 1/6 | 208/230 | 1075/1     | CCW     | 1.0  | 1          | 2.75 | 1/2 |

### Replaces: Goodman 0131M00294

**MARS USA**, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW OSE

| MARS NO. | HP  | VOLTS   | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|---------|------------|---------|------|------------|-----|-----|
|          |     |         |            |         |      | A          | B   | C   |
| 10233    | 1/8 | 208/230 | 1050/1     | CCW     | 0.70 | 2.5        | 4.1 | 1/2 |

### Replaces: Goodman 0131F00022

**MARS USA**, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 20 MFD @ 370V (MARS No. 12014, 12914, 14014), CW OSE

| MARS NO. | HP  | VOLTS | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|-------|------------|---------|------|------------|-----|-----|
|          |     |       |            |         |      | A          | B   | C   |
| 10594    | 1/2 | 115   | 1130/4     | CW      | 8.1  | 4          | 5.1 | 1/2 |

### Replaces: For use with Coleman and Evcon Equipment

5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 440V (MARS No. 12029, 12929, 14029), CCW OSE

| MARS NO. | HP  | VOLTS/PHASE | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|-------------|------------|---------|------|------------|-----|-----|
|          |     |             |            |         |      | A          | B   | C   |
| 10570    | 1/3 | 575/1       | 850/1      | CCW     | 0.66 | 2.5        | 6.6 | 1/2 |

### Replaces: For use with Coleman and Evcon Equipment

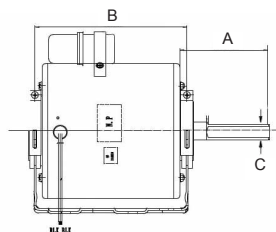
5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 10 MFD @ 440V (MARS No. 12032, 12932, 14032), CCW OSE

| MARS NO. | HP  | VOLTS/PHASE | RPM/SPEEDS | ROT OSE | AMPS | DIMENSIONS |     |     |
|----------|-----|-------------|------------|---------|------|------------|-----|-----|
|          |     |             |            |         |      | A          | B   | C   |
| 10571    | 3/4 | 575/1       | 1100/1     | CW-LE   | 1.35 | 3.5        | 5.7 | 1/2 |

## OEM Direct Replacement Motors For Copeland

### Specifications:

- Class "B" insulation
- 50/60 Hz
- Single phase
- Single speed
- Thermal overload protected
- Continuous air over



| MARS NO. | HP  | VOLTS   | ROT OSE | AMPS | RPM  | CAP INCLUDED | ENCL. | DIMENSIONS |      |     |
|----------|-----|---------|---------|------|------|--------------|-------|------------|------|-----|
|          |     |         |         |      |      |              |       | A          | B    | C   |
| 10227    | 1/3 | 230     | CW      | 2.2  | 1625 | 4MFD/370V    | TEAO  | 1.75       | 5.87 | 1/2 |
| 10228    | 1/6 | 208-230 | CW      | 1.1  | 1550 | 3MFD/370V    | OAO   | 3.07       | 3.69 | 1/2 |
| 10229    | 1/4 | 208-230 | CW      | 1.5  | 1625 | 5MFD/370V    | OAO   | 3.07       | 4.32 | 1/2 |
| 10264    | 1/4 | 230     | CW      | 2.1  | 1550 | 5MFD/370V    | ODP   | 3.00       | 4.20 | 1/2 |
| 10265    | 1/6 | 208-230 | Rev     | 1.1  | 1550 | 3MFD/370V    | OAO   | 3.00       | 3.73 | 1/2 |

### Tech Tip

Always replace the capacitor when replacing a PSC motor.

| MARS No.                              | Description  | Century / AO Smith           | US Motors/ Emerson | Fasco     | GE/ Gentedq | Marathon | Packard | Nordyne/ Partners Choice | Rheem/Ruud Protech | Carrier/ Totaline RCD | Wagner   | York Source 1 | ROTHOM    |
|---------------------------------------|--|------------------------------|--------------------|-----------|-------------|----------|---------|--------------------------|--------------------|-----------------------|----------|---------------|-----------|
| <b>Condenser Fan</b>                  |  |                              |                    |           |             |          |         |                          |                    |                       |          |               |           |
| 10725                                 | 1/8 HP, 208-230 V, 1075 RPM, B/B                     | -                            | -                  | D919      | -           | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10727                                 | 1/6 HP, 208-230 V, 1075 RPM, B/B                     | FSE1016                      | 1859               | D917      | 3727        | X411     | 43727   | 01-0160                  | W51-16CJA1-01      | P257-8727             | WG840727 | S1-FHM3727    | -         |
| 10728                                 | 1/4 HP, 208-230 V, 1075 RPM, B/B                     | FSE1026                      | 1860               | D909      | 3728        | X412     | 43728   | 01-0161                  | W51-14CJA1-01      | P257-8728             | WG840728 | S1-FHM3728    | -         |
| 10729                                 | 1/3 HP, 208-230 V, 1075 RPM, B/B                     | FSE1036                      | 1861               | D908      | 3729        | X413     | 43729   | 01-0162                  | W51-13CJA1-01      | P257-8729             | WG840729 | S1-FHM3729    | -         |
| 10730                                 | 1/2 HP, 208-230 V, 1075 RPM, B/B                     | FSE1056                      | 1862               | D907      | 3730        | X414     | 43730   | 01-0163                  | W51-12CJA1-01      | P257-8730             | WG840730 | S1-FHM3730    | -         |
| 10731                                 | 3/4 HP, 208-230 V, 1075 RPM, B/B                     | FSE1076                      | 1868               | D933      | 3731        | -        | 43731   | 01-0164                  | 51-42534-19        | P257-8731             | WG840731 | S1-FHM3731    | -         |
| 10403                                 | 1/6 HP, 208-230 V, 825 RPM, B/B                      | FSE1018SF                    | 1873               | D798      | 3403        | X465     | 60825   | 0165                     | 51-23055-12        | -                     | -        | -             | -         |
| 10404                                 | 1/4 HP, 208-230 V, 825 RPM, B/B                      | FSE1028SF                    | 1874               | D934      | 3404        | -        | 40825   | 0166                     | 51-23054-13        | -                     | WG840204 | S1-FHM3204    | R22445    |
| 10405                                 | 1/3 HP, 208-230 V, 825 RPM, B/B                      | FSE1038SF                    | 1875               | D796      | 3405        | X451     | 30825   | 0167                     | -                  | P257-8026             | WG840205 | S1-FHM3205    | R22345    |
| 10746                                 | 1/2 HP, 208-230 V, 825 RPM, B/B                      | FSE1058SF                    | 1870               | D713      | 3746        | X452     | -       | 0168                     | -                  | -                     | -        | -             | R22245    |
| 10203                                 | 1/6 HP, 208-230 V, 825 RPM, B/B                      | FE1018SF, FSE1018SF          | -                  | D793      | 3203        | X465     | 3203    | -                        | -                  | -                     | -        | -             | CF-816    |
| 10204                                 | 1/4 HP, 208-230 V, 825 RPM, B/B                      | FE1028SF, FSE1028SF          | 1874               | -         | 3204        | X450     | 40825   | -                        | -                  | -                     | -        | S1-FHM3204    | CF-814    |
| 10205                                 | 1/3 HP, 208-230 V, 825 RPM, B/B                      | FE1038SF, FSE1038SF          | 1875               | -         | 3205        | X451     | 30825   | -                        | -                  | -                     | -        | S1-FHM3205    | -         |
| 10747                                 | 1/2 HP, 208-230 V, 825 RPM                           | F1058                        | -                  | -         | 3736        | X452     | -       | -                        | -                  | -                     | -        | -             | -         |
| 10732                                 | 1/6 HP, 208-230 V, 1075 RPM, B/B                     | FE1016SF                     | 2246               | -         | 3726        | X427     | -       | -                        | -                  | -                     | -        | -             | CF-3726   |
| 10733                                 | 1/4 HP, 208-230 V, 1075 RPM, B/B                     | F1026S, FE1026SF, FSE1026SV1 | 1876               | D7909     | 3732        | X428     | 43732   | -                        | -                  | -                     | -        | -             | CF-3732   |
| 10734                                 | 1/3 HP, 208-230 V, 1075 RPM, B/B                     | F1036S, FE1036S              | 1877               | D7908     | 3733        | X413     | 43733   | -                        | -                  | -                     | -        | -             | CF-3733   |
| 10735                                 | 1/2 HP, 208-230 V, 1075 RPM, B/B                     | F1056S, FE1056SF             | 1878               | D7907     | 3734        | X414     | 43734   | -                        | -                  | -                     | -        | -             | CF-3734   |
| 10736                                 | 3/4 HP, 208-230 V, 1075 RPM, B/B                     | F1076SF, FS1076S             | 1879               | -         | 3735        | -        | 43735   | -                        | -                  | -                     | -        | -             | CF-3735   |
| 10327                                 | 1/6 HP, 208-230 V, 1075 RPM                          | -                            | 8661               | D718      | 3327        | -        | -       | -                        | W51-16CJA1-01      | -                     | -        | -             | -         |
| 10328                                 | 1/4 HP, 208-230 V, 1075 RPM                          | FS1026S                      | 3851               | D823      | 3328        | -        | -       | -                        | W51-14CJA1-01      | -                     | -        | -             | -         |
| 10329                                 | 1/3 HP, 208-230 V, 1075 RPM                          | FS1036S                      | 6880               | D748/D749 | 3329        | -        | -       | -                        | W51-13CJA1-01      | -                     | -        | -             | -         |
| 10330                                 | 1/2 HP, 208-230 V, 1075 RPM, B/B                     | FS1056S                      | 3852               | D745/D804 | 3330        | -        | -       | -                        | W51-12CJA1-01      | -                     | -        | -             | -         |
| 10331                                 | 3/4 HP, 208-230 V, 1075 RPM                          | FS1076S                      | 3097               | D929      | 3331        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 23728                                 | 1/4HP 208-230V 1075RPM 3W                            | FSE1026S                     | 1860               | D909      | 3728        | X412     | 43728   | 01-0161                  | W51-14CJA1-01      | P257-8728             | WG840729 | S1-FHM3728    | -         |
| 23729                                 | 1/3HP 208-230V 1075RPM 3W                            | FSE1036S                     | 1861               | D908      | 3729        | X413     | 43729   | 01-0162                  | W51-13CJA1-01      | P257-8729             | WG840729 | S1-FHM3729    | -         |
| <b>Multi-Horsepower Condenser Fan</b> |  |                              |                    |           |             |          |         |                          |                    |                       |          |               |           |
| 10458                                 | 1/6, 1/5, 1/4, 1/3, 1075 RPM, 208-230 V, WIZ, B/B    | ORM5458                      | 5458               | -         | 3458        | -        | -       | -                        | W51-MHCJA1-01      | -                     | -        | -             | R22402    |
| 10459                                 | 1/8, 1/6, 1/5, 1/4, 1/3, 825RPM, 208-230 V, WIZ, B/B | ORM5488B                     | 5464               | -         | 3459        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10465                                 | 1/6, 1/5, 1/4, 1/3, 1075 RPM, 208-230 V, B/B         | FE6000                       | 5462               | D2827     | 3465        | X072     | -       | 01-0695                  | 51-23053-21        | P257-E5462            | WG840465 | S1-FHM3465    | R22605    |
| 10468                                 | 1/5, 1/4, 1/3, 1/2, 1075 RPM, 208-230 V, B/B         | FE6002                       | 5465               | -         | 3468        | X076     | -       | 01-0697                  | -                  | P257-E5465            | WG840468 | S1-FHM3468    | R22602    |
| 10469                                 | 1/6, 1/5, 1/4, 1/3, 825 RPM, 208-230 V, B/B          | FE6001                       | 5464               | D2826     | 3469        | -        | -       | 01-0696                  | 51-20760-11        | P257-E5464            | WG840469 | S1-FHM3469    | R22601    |
| <b>Direct Drive</b>                   |  |                              |                    |           |             |          |         |                          |                    |                       |          |               |           |
| 10583                                 | 1/4 HP, 115 V, 1075 RPM                              | DL1026                       | 1863               | D721      | 3583        | X000     | 43583   | 01-0169                  | W51-14BAA3-01      | P257-8583             | WG840583 | S1-FHM3583    | DD-3583   |
| 10584                                 | 1/4 HP, 208-230 V, 1075 RPM                          | D1026                        | 1971               | D725      | 3584        | X001     | 43584   | 01-0173                  | W51-14BJA3-01      | P257-8584             | WG840584 | S1-FHM3584    | DD-3584   |
| 10585                                 | 1/3 HP, 115 V, 1075 RPM                              | DL1036                       | 1864               | D727      | 3585        | X002     | 43585   | 01-0170                  | W51-13BAA3-01      | P257-8585             | WG840585 | S1-FHM3585    | DD-3585   |
| 10586                                 | 1/3 HP, 208-230 V, 1075 RPM                          | D1036                        | 1972               | D923      | 3586        | X003     | 43586   | 01-0174                  | W51-13BJA3-01      | P257-8586             | WG840586 | S1-FHM3586    | DD-3586   |
| 10587                                 | 1/2 HP, 115 V, 1075 RPM                              | DL1056                       | 1865               | D701      | 3587        | X004     | 43587   | 01-0171                  | W51-12BAA3-01      | P257-8587             | WG840587 | S1-FHM3587    | DD-3587   |
| 10588                                 | 1/2 HP, 208-230 V, 1075 RPM                          | D1056                        | 1973               | D703      | 3588        | X005     | 43588   | 01-0175                  | W51-12BJA3-01      | P257-8588             | WG840588 | S1-FHM3588    | DD-3588   |
| 10589                                 | 3/4 HP, 115 V, 1075 RPM                              | DL1076                       | 8904               | D728      | 3589        | X009     | 43589   | 01-0172                  | W51-34BAA3-01      | P257-8589             | WG840589 | S1-FHM3589    | DD-3589   |
| 10590                                 | 3/4 HP, 208-230 V, 1075 RPM                          | D1076                        | 8905               | D729      | 3590        | X010     | 43590   | 01-0176                  | W51-34BJA3-01      | P257-8590             | WG840590 | S1-FHM3590    | DD-3590   |
| 10591                                 | 1 HP, 115 V, 1075 RPM                                | BDL1106                      | 8906               | D712      | 3595        | -        | -       | -                        | -                  | -                     | WG840595 | S1-FHM3595    | R6-R42812 |
| 10592                                 | 1 HP, 208-230 V, 1075 RPM                            | BD1106                       | 8907               | D711      | 3596        | X023     | 48907   | -                        | -                  | -                     | WG840596 | S1-FHM3596    | R6-R42842 |
| 10683                                 | 1/4 HP, 115 V, 1075 RPM                              | FML1026                      | 3783               | D1730     | 3783        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10684                                 | 1/4 HP, 208-230 V, 1075 RPM                          | FML1026                      | 3784               | D1733     | 3784        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10685                                 | 1/3 HP, 115 V, 1075 RPM                              | FML1036                      | 3785               | D1731     | 3785        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10686                                 | 1/3 HP, 208-230 V, 1075 RPM                          | FM1036                       | 3786               | D1734     | 3786        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10687                                 | 1/2 HP, 115 V, 1075 RPM                              | FML1056                      | 3787               | D1732     | 3787        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10688                                 | 1/2 HP, 208-230 V, 1075 RPM                          | FM1056                       | 3788               | D1735     | 3788        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10689                                 | 3/4 HP, 115 V, 1075 RPM                              | FML1076V1                    | -                  | -         | 3789        | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 10690                                 | 3/4 HP, 208-230 V, 1075 RPM                          | FM1076                       | -                  | -         | 3790        | -        | -       | -                        | -                  | -                     | -        | -             | -         |

Disclaimer: Every effort has been made to insure the accuracy of motor data and cross reference information. Design changes may result in different operating characteristics or dimensional changes from one manufacturer to another. Therefore, MARS cannot accept responsibility for the ultimate selection. For additional information, please contact MARS.

Note: B/B – Ball Bearing



| MARS No.                             | Description  | Century / AO Smith | US Motors/ Emerson | Fasco | GE/ Genteq | Marathon | Packard | Nordyne/ Partners Choice | Rheem/Ruud Protech | Carrier/ Totaline RCD | Wagner   | York Source 1 | ROTHM     |
|--------------------------------------|--|--------------------|--------------------|-------|------------|----------|---------|--------------------------|--------------------|-----------------------|----------|---------------|-----------|
| <b>Multi-Horsepower Direct Drive</b> |  |                    |                    |       |            |          |         |                          |                    |                       |          |               |           |
| 10463                                | 1/6, 1/5, 1/4, 1/3, 1/2 HP, 115 V, 1075 RPM          | FDL6001            | 5460               | D2835 | 3463       | X077     | -       | 01-0698                  | 51-23012-41        | P257-E5460            | WG840463 | S1-FHM3463    | R43600    |
| 10464                                | 1/6, 1/5, 1/4, 1/3, 1/2 HP, 208-230 V, 1075 RPM      | FD6000             | 5461               | D833  | 3464       | X073     | -       | 01-0699                  | 51-23022-41        | P257-E5461            | WG840464 | S1-FHM3464    | R43601    |
| 10466                                | 1/5, 1/4, 1/3, 1/2, 3/4 HP, 115 V, 1075 RPM, B/B     | FDL6002            | 5470               | D2832 | 3466       | X074     | -       | 01-0701                  | 51-23017-42        | P257-E5470            | WG840466 | S1-FHM3466    | R43602    |
| 10467                                | 1/5, 1/4, 1/3, 1/2, 3/4 HP, 208-230 V, 1075 RPM, B/B | FD6001             | 5471               | D2833 | 3467       | X075     | -       | 01-0702                  | 51-23022-41        | P257-E5471            | WG840467 | S1-FHM3467    | R43603    |
| 10479                                | 1/8, 1/4, 1/3 HP, 825 RPM, 208-230 V                 | -                  | 5469               | -     | -          | -        | -       | -                        | -                  | -                     | -        | -             | -         |
| 20538                                | 1/2 HP, 460 V, 1075 RPM, B/B                         | -                  | -                  | -     | -          | X038     | -       | -                        | -                  | -                     | -        | -             | -         |
| 20580                                | 1/4, 1/3 HP, 460 V, 1075 RPM, B/B                    | BDH1036*           | -                  | -     | 3280       | -        | -       | -                        | -                  | -                     | -        | -             | M2-R32712 |
| 20581                                | 3/4, 1/2 HP, 460 V, 1075 RPM, B/B                    | BDH1076*           | 8947               | -     | 3290       | -        | -       | -                        | -                  | -                     | -        | -             | M2-R32426 |

| MARS No.   | Description   | Century/ AO Smith | US Motors/ Emerson | Fasco | GE/Genteq | Rheem/Ruud Protech | Wagner     | York Source 1 | ROTHM  |
|--|---|-------------------|--------------------|-------|-----------|--------------------|------------|---------------|--------|
| <b>Sunslinger Condenser Fan 70°C</b>                       |   |                   |                    |       |           |                    |            |               |        |
| 20727  | 1/6 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1016SF          | 1859H              | -     | 3726HS    | -                  | WG840727HT | -             | -      |
| 20728  | 1/4 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1026SF          | 1860H              | -     | 3732HS    | -                  | WG840728HT | S1-FHM3728HT  | -      |
| 20729  | 1/3 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1036SF          | 1861H              | -     | 3733HS    | -                  | WG840729HT | S1-FHM3729HT  | -      |
| 20730  | 1/2 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1056SF          | 1862H              | -     | 3734HS    | -                  | WG840730HT | S1-FHM3730HT  | -      |
| 20731  | 3/4 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1076SF          | 1868H              | -     | 3735HS    | -                  | WG840731HT | -             | -      |
| 20402  | 1/8 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | FE1008SF          | 1872H              | -     | 3202HS    | -                  | -          | -             | -      |
| 20403  | 1/6 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | FE1018SF          | 1873H              | -     | 3203HS    | -                  | -          | -             | -      |
| 20404  | 1/4 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | FE1028SF          | 1874H              | -     | 3204HS    | -                  | WG840204HT | S1-FHM3204HT  | -      |
| 20405  | 1/3 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | FE1038SF          | 1875H              | -     | 3205HS    | -                  | WG840405HT | S1-FHM3205HT  | -      |
| 20746  | 1/2 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | FE1058SF          | 1870H              | -     | 3747HS    | -                  | -          | -             | -      |
| 20846  | 1/4 HP Condenser Fan, 460 V, 1075 RPM, B/B, Shaft Up                    | FEH1026S          | 3736H              | D980  | 3736HS    | 51-19704-01        | WG840736HT | S1-FHM3736HT  | R31710 |
| 20847  | 1/3 HP Condenser Fan, 460 V, 1075 RPM, B/B, Shaft Up                    | FEH1036S          | 3737H              | D982  | 3737HS    | 51-23063-11        | WG840737HT | S1-FHM3737HT  | R31712 |
| 20848  | 1/2 HP Condenser Fan, 460 V, 1075 RPM, B/B, Shaft Up                    | FEH1056S          | 3738H              | D802  | 3738HS    | 51-20929-01        | WG840738HT | S1-FHM3738HT  | R31718 |
| 20849  | 3/4 HP Condenser Fan, 460 V, 1075 RPM, B/B, Shaft Up                    | FEH1076S          | 3739H              | -     | 3739HS    | -                  | WG840739HT | -             | -      |
| <b>Sunslinger Multi-Horsepower Condenser Fan 70°C</b>      |   |                   |                    |       |           |                    |            |               |        |
| 20458  | 1/6, 1/5, 1/4, 1/3 Multi-HP, Condenser Fan, 1075 RPM, 208-230 V, B/B    | ORM5458F          | 3323H              | -     | 3458HS    | -                  | -          | -             | -      |
| 20459  | 1/8, 1/6, 1/5, 1/4, 1/3 Multi-HP, Condenser Fan, 825RPM, 208-230 V, B/B | ORM5488F          | 1874H              | -     | 3459HS    | -                  | -          | -             | -      |
| 20465  | 1/6, 1/5, 1/4, 1/3 Multi-HP, Condenser Fan, 1075 RPM, 208-230 V, B/B    | FE6000F           | 5462H              | -     | 3465HS    | -                  | -          | S1-FHM3465HT  | -      |
| 20468  | 1/5, 1/4, 1/3, 1/2 Multi-HP, Condenser Fan, 1075 RPM, 208-230 V, B/B    | FE6002F           | 5465H              | -     | 3468HS    | -                  | -          | -             | -      |
| 20469  | 1/6, 1/5, 1/4, 1/3 Multi-HP, Condenser Fan, 825 RPM, 208-230 V, B/B     | FE6002F           | 5464H              | -     | 3469HS    | -                  | -          | S1-FHM3469HT  | -      |
| <b>Sunslinger 460V Condenser Fan 70°C</b>                  |   |                   |                    |       |           |                    |            |               |        |
| 20859  | 1/6 HP Condenser Fan, 460 V, 825 RPM, B/B                               | -                 | -                  | -     | -         | 51-101774-06       | -          | -             | R31716 |
| 20880  | 1/4 HP Condenser Fan, 460 V, 825 RPM, B/B                               | FEH1028S          | 1880               | -     | -         | 51-23064-12        | -          | -             | R22275 |
| 20881  | 1/3 HP Condenser Fan, 460 V, 825 RPM, B/B                               | -                 | 1881               | D960  | -         | 51-100998-26       | -          | -             | R32714 |
| 20882  | 1/2 HP Condenser Fan, 460 V, 825 RPM, B/B                               | -                 | 1882               | D961  | -         | -                  | -          | -             | -      |
| 20835  | 1/6 HP Condenser Fan, 460 V, 1075 RPM, B/B                              | -                 | -                  | -     | -         | -                  | -          | -             | -      |
| 20836  | 1/4 HP Condenser Fan, 460 V, 1075 RPM, B/B                              | 788A, FEH1026SF   | 3736H              | D980  | 3736      | 51-19704-01        | WG840736HT | S1-FHM3736HT  | R31710 |
| 20837  | 1/3 HP Condenser Fan, 460 V, 1075 RPM, B/B                              | 789A, FEH1036SF   | 3737H              | D982  | 3737      | 51-23063-11        | WG840737HT | S1-FHM3737HT  | R31712 |
| 20838  | 1/2 HP Condenser Fan, 460 V, 1075 RPM, B/B                              | 790A, FEH1056SF   | 3738H              | D802  | 3738      | 51-20929-01        | WG840738HT | S1-FHM3738HT  | R31718 |
| 20842  | 3/4 HP Condenser Fan, 460 V, 1075 RPM, B/B                              | FEH1076SF         | 3742H              | -     | 3739      | -                  | WG840739HT | -             | -      |
| <b>Sunslinger 460V Multi-Horsepower Condenser Fan 70°C</b> |   |                   |                    |       |           |                    |            |               |        |
| 20478  | 1/5, 1/4, 1/3, 1/2 Multi-HP, Condenser Fan, 1075 RPM, 460 V, B/B        | ORM4658BF         | -                  | -     | -         | -                  | -          | -             | -      |
| 20479  | 1/6, 1/5, 1/4, 1/3, Multi-HP, Condenser Fan, 1075 RPM, 460 V, B/B       | ORM4659BF         | -                  | -     | -         | -                  | -          | -             | -      |
| 20480  | 1/6, 1/5, 1/4, 1/3, 1/2 Multi-HP, Condenser Fan, 1075 RPM, 460 V, B/B   | -                 | 5480H              | -     | -         | -                  | -          | -             | -      |
| 20481  | 3/4, 1/2, 1/3, 1/4 Multi-HP, Condenser Fan, 1075 RPM, 460 V, B/B        | -                 | 5481H              | -     | -         | -                  | -          | -             | -      |
| <b>Sunslinger MAX Condenser Fan 80°C</b>                   |   |                   |                    |       |           |                    |            |               |        |
| 20791  | 3/4 HP Condenser Fan, 208-230 V, 1075 RPM, B/B                          | FE1076SU          | -                  | -     | -         | -                  | -          | -             | -      |
| 20796  | 3/4 HP Condenser Fan, 208-230 V, 825 RPM, B/B                           | -                 | -                  | -     | -         | -                  | -          | -             | -      |

Disclaimer: Every effort has been made to insure the accuracy of motor data and cross reference information. Design changes may result in different operating characteristics or dimensional changes from one manufacturer to another. Therefore, MARS cannot accept responsibility for the ultimate selection. For additional information, please contact MARS.

Note: B/B – Ball Bearing  
\* 2 Speed Motor



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# Cross Reference / MARS Motors

| MARS No.                                   | Description                             | Century/<br>AO Smith    | US Motors/<br>Emerson | Fasco       | Genteq     | Magnetek | Marathon | Packard      | Rheem/Ruud                            | ROTOM          | Wagner             |
|--|---|-------------------------|-----------------------|-------------|------------|----------|----------|--------------|---------------------------------------|----------------|--------------------|
| <b>High Efficiency Direct Drive Motors</b> |   |                         |                       |             |            |          |          |              |                                       |                |                    |
| 10573                                      | 1/4 HP Direct Drive, 115V, 1075 RPM     | DL1026, FDL1026         | 5460, 1863            | D721, D2836 | 3983, 3583 | 0533     | X000     | 43583, 63983 | 51-17947-11, 51-23012-41, 51-23014-32 | R43600         | WG840463, WG840583 |
| 10574                                      | 1/4 HP Direct Drive, 208-230V, 1075 RPM | D1026, FD1026           | 5461, 1971            | D725        | 3984, 3584 | 0530     | X001     | 43884, 63984 | 51-23022-41, 51-23024-31              | DD3584, R43584 | WG840584           |
| 10575                                      | 1/3 HP Direct Drive, 115V, 1075 RPM     | DL1036, FDL1036         | 5460, 1864            | D727        | 3985, 3585 | 0532     | X002     | 43585, 63985 | -                                     | -              | -                  |
| 10576                                      | 1/3 HP Direct Drive, 208-230V, 1075 RPM | D1036, FD1036           | 5461, 1972            | D923        | 3986, 3586 | 0529     | X003     | 43586, 63986 | -                                     | -              | -                  |
| 10577                                      | 1/2 HP Direct Drive, 115V, 1075 RPM     | DL1056, FDL1056         | 5460, 1865            | D701        | 3987, 3587 | 0531     | X004     | 43587, 63987 | -                                     | -              | -                  |
| 10578                                      | 1/2 HP Direct Drive, 208-230V, 1075 RPM | D1056, FD1056, F1076SV1 | 5461, 1973            | D703        | 3988, 3588 | 0528     | X005     | 43588, 63988 | -                                     | -              | -                  |
| 10579                                      | 3/4 HP Direct Drive, 115V, 1075 RPM     | DL1076, FDL1076         | 5470, 8904            | D728        | 3989, 3589 | 0678     | X009     | 43589, 63989 | -                                     | -              | -                  |
| 10580                                      | 3/4 HP Direct Drive, 208-230V, 1075 RPM | D1076, FD1076           | 5471, 8905            | D729        | 3990, 3590 | 0679     | X010     | 43590, 63990 | -                                     | -              | -                  |

| MARS No.   | Description                     | Century/<br>AO Smith | Baldor   | US Motors/<br>Emerson | Leeson | Marathon |
|--|---------------------------------|----------------------|----------|-----------------------|--------|----------|
| <b>Commercial Condenser Fan - Three Phase - Rigid Base</b> |                                 |                      |          |                       |        |          |
| 10513  | 1HP 1140 RPM 208-230/460 CF     | H1050A               | -        | 1820H                 | -      | X513     |
| 10523  | 1-1/2HP 1140 RPM 208-230/460V   | H1051A               | CFM3166A | 1821H                 | 111148 | X523     |
| 10531  | 1-1/2 HP 850 RPM 208-230/460 CF | H1054A               | -        | 1831H                 | -      | X531     |
| 10533  | 1/2 HP 1140 RPM 208-230/460 CF  | -                    | -        | -                     | -      | X533     |

| MARS No.   | Description                     | Century/<br>AO Smith | Baldor   | US Motors/<br>Emerson | Fasco | KeepRite | Magnetek | Marathon |
|--|---------------------------------|----------------------|----------|-----------------------|-------|----------|----------|----------|
| <b>Commercial Condenser Fan - Three Phase - Belly Band</b> |                                 |                      |          |                       |       |          |          |          |
| 10502  | 1 HP 1140 RPM 208-230/460 CF    | FC3106F              | CFM3156A | 1818H                 | -     | -        | H667     | X502     |
| 10503  | 1-1/2 HP 1140 RPM 208-230/460   | H1051A               | CFM3166A | 1819H                 | D6610 | -        | H767     | X503     |
| 10507  | 1 HP 850 RPM 208-230/460 CF     | H1053A               | -        | 1828H                 | -     | -        | H686     | X507     |
| 10509  | 2 HP 1140 RPM 208-230/460 CF    | H698                 | -        | -                     | -     | -        | -        | X509     |
| 10530  | 1-1/2 HP 85 ORPM 208-230/460 CF | H1054A               | -        | 1832H                 | -     | -        | -        | X530     |

| MARS No.  | Description                    | Century/<br>AO Smith | Baldor   | US Motors/<br>Emerson | Genteq     | Magnetek | Marathon   |
|---|--------------------------------|----------------------|----------|-----------------------|------------|----------|------------|
| <b>1 Phase Heating - Split Phase Fan &amp; Blower</b> |                                |                      |          |                       |            |          |            |
| 10302   | 1/4 HP 1725RPM 115V FAN & BLWR | 919L                 | -        | DB14B2N49             | -          | 919      | B302       |
| 10303   | 1/4 HP 1725RPM 115V FAN & BLWR | 920L, GF2024         | RSP1441A | 8000, 3618            | 4701, 4730 | 808      | B303, B206 |
| 10304   | 1/3 HP 1725RPM 115V FAN & BLWR | 921L, RB2034L        | -        | D13B2N4Z9             | -          | 921      | B304       |
| 10305   | 1/3 HP 1725RPM 115V FAN & BLWR | 922L, RB2034         | -        | 8100                  | -          | 922      | B305, B207 |
| 10306   | 1/2 HP 1725RPM 115V FAN & BLWR | -                    | -        | D12C2J49              | -          | -        | B306       |
| 10307   | 1/2 HP 1725RPM 115V FAN & BLWR | GF2054               | RSP3451A | 8200, PD6006          | 4708, 4733 | -        | B307       |

| MARS No.  | Description                  | Century/<br>AO Smith | Baldor  | US Motors/<br>Emerson | Fasco | Leeson    | Magnetek | Marathon |
|---|------------------------------|----------------------|---------|-----------------------|-------|-----------|----------|----------|
| <b>1 Phase Heating - Cap Start Fan &amp; Blower</b> |                              |                      |         |                       |       |           |          |          |
| 10313   | 1/4 HP 1725 RPM 115/208-230V | C196L                | RL1203A | D14CA2P4Z9            | -     | 100109.00 | C196     | B313     |
| 10315   | 1/3 HP 172 5RPM 115/208-230V | RBF1034A             | -       | D13CA3J9              | -     | -         | -        | B315     |
| 10317   | 1/2 HP 1725 RPM 115/208-230V | BK1054, C412V1       | -       | D12CA2J9              | D6084 | 100011.00 | -        | B317     |
| 10319   | 3/4 HP 1725 RPM 115/208-230V | C426V1, RB1074A      | RL1307A | D34CA2JH9             | -     | 100012.00 | -        | B319     |
| 10321   | 1 HP 1725 RPM 115/208-230V   | C523V1               | RL1310A | D1CA2JH9              | D6088 | 110007.00 | -        | 4688     |

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Note: B/B – Ball Bearing

| MARS No.                 | Description             | Century/<br>AO Smith | US Motors/<br>Emerson | Marathon |
|--------------------------|-------------------------|----------------------|-----------------------|----------|
| <b>Oil Burner Motors</b> |                         |                      |                       |          |
| 30004                    | 1/4 HP 115V 3450 RPM    | EL2022               | 2302                  | O004     |
| 30011                    | 1/2 HP 115/230 3450 RPM | -                    | 3267                  | O011     |
| 30100                    | 1/7 HP 115V 3450 RPM    | EL2002               | 3083                  | O100     |
| 30600                    | 1/8 HP 115V 1725 RPM    | EL2005               | 3196                  | O600     |
| 30601                    | 1/6 HP 115V 1725 RPM    | XEL2014              | 3252                  | O601     |
| 30701                    | 1/7 HP 115V 3450 RPM    | -                    | 3247                  | O701     |

| MARS No.                       | Description                 | Century/<br>AO Smith | US Motors/<br>Emerson | Marathon |
|--------------------------------|-----------------------------|----------------------|-----------------------|----------|
| <b>Unit Heater - PSC, TEAO</b> |                             |                      |                       |          |
| 30301                          | 1/6 HP 1075RPM 115 UNIT HTR | UH1016, US1016       | 1386                  | X302     |
| 30303                          | 1/4 HP 1075RPM 115 UNIT HTR | 566A, UH1026         | 1384                  | X303     |
| 30305                          | 1/3 HP 1075RPM 115 UNIT HTR | UH1036               | 1388                  | X304     |

| MARS No.                       | Description  | Replaces            | Azure® | Century/<br>AO Smith            | US Motors/<br>Emerson  | GE/Genteq                                     |
|--------------------------------|--|---------------------|--------|---------------------------------|--|---|
| <b>Azure® ECM Direct Drive</b> |  |                     |        |                                 |  |   |
| 10860                          | 1/5-1/2 HP, Direct Drive ECM, 115/230 V, 1075 RPM, B/B     | X13, PSC            | 10800  | Comfort Select: CS1056, CSL1056 | Rescue Ecotech: 5522ET, 5532ET, 5542ET (1/3HP & 1/2HP), 5552ET (1/2HP), 6631RS (1/2-1/3HP), 6630RS (1/2-1/3HP) | 6001, 6002, 6005, 6103E, 6203E, 6105E, 6205E  |
| 10861                          | 1/2-1 HP, Direct Drive ECM, 115/230 V, 1075 RPM, B/B       | X13, PSC            | 10801  | Comfort Select: CS1106, CSL1106 | Rescue Ecotech: 5552ET, 5542ET (3/4HP), 6651RS (1HP), 6641RS (3/4HP), 6650RS (1HP), 6640RS (3/4HP)             | 6003, 6004, 6010, 6107E, 6207E, 6110E, 6210E  |
| 10867                          | 1/8-1/3 HP, Direct Drive ECM, 115/230/277 V, 1075 RPM, B/B | 5" PSC Direct Drive | -      | -                               | -  | -   |
| 10865                          | AZURE 1/3 - 1/2 HP ECM D/D                                 | PSC                 | -      | -                               | Rescue Ecotech 5522ET, 5532ET  | Evergreen 6005                                |
| 10866                          | AZURE 3/4 - 1 HP ECM D/D                                   | PSC                 | -      | -                               | Rescue Ecotech 5542ET, 5552ET  | Evergreen 6010                                |
| 10858                          | 1/5-1/2 HP AZURE FOR X13                                   | X13, Ensite, Endura | -      | -                               | Rescue EZ13 5632, Rescue Select Pro 6633   | Evergreen 6103E, 6203E, 6105E, 6205E          |
| 10859                          | 1/2-1 HP AZURE FOR X13                                     | X13, Ensite, Endura | -      | -                               | Rescue EZ13 5642, EZ13 5652, Rescue Select Pro 6643, 6653  | Evergreen 6107E, 6207E, 6110E, 6210E          |
| 10856                          | AZURE VS 1/4-1/2 HP D/D                                    | Variable Speed      | -      | -                               | Rescue EZ16 5862, EZ5863   | Evergreen 6503V, 6505V, Interface Board 56010 |
| 10857                          | Azure VS 1/2 to 1 HP D/D                                   | Variable Speed      | -      | -                               | Rescue EZ16 5860, EZ16 5861  | Evergreen 6507V, 6510V, Interface Board 56010 |

| MARS No.                        | Description   | Replaces                 |
|---------------------------------|---|--------------------------|
| <b>Azure® ECM Condenser Fan</b> |   |                          |
| 10874                           | 1/8 - 1/3 HP, Condenser Fan ECM, 208-230 V, 825/1075 RPM, B/B | PSC motors 1/8 to 1/3 HP |
| 10875                           | 1/8 - 1/3 HP, Condenser Fan ECM, 208-230 V, 1075 RPM, B/B     | PSC motors 1/8 to 1/3 HP |
| 10872                           | 1/3 - 1/2 HP, Condenser Fan ECM, 208-230 V, 1075 RPM, B/B     | PSC motors 1/3 to 1/2 HP |

| MARS No.  | Description   | Replaces             | Bohn         | Regal Beloit/Morrill   | Wellington | US Motors        |
|---|---|----------------------|--------------|--|------------|------------------|
| <b>Azure® ECM 3.3" Commercial Refrigeration</b> |   |                      |              |  |            |                  |
| 10850   | 1/15-1/25 HP, 3.3" Commercial Refrigeration ECM, 115/230 V, 1550/800 RPM, B/B | -                    | -            | 5100, 5105, 5106, 5101, 5111, 5200, 5201, 5205, 5206, 5211       | ECR 85/95  | EC5404D, EC5405D |
| 10852   | 1/15-1/25 HP, 3.3" Commercial Refrigeration ECM, 115/230 V, 1550 RPM, B/B     | Standard 3.3" motors | 5008S, 5008T | 5100, 5101, 5102, 5105, 5106, 5111, 5200, 5201, 5205, 5206, 5211 | -          | EC5404D, EC5405D |

| MARS No.   | Description  | Replaces                         | MARS  | Century Motor                    | Hussmann | Morrill | US Motors Rescue |
|--|--|----------------------------------|-------|----------------------------------|----------|---------|------------------|
| <b>Azure® Commercial Refrigeration Watt (Reach-In) Motor</b> |  |                                  |       |                                  |          |         |                  |
| 10891  | 4-25 Watts, Commercial Refrigeration ECM, 115/230 V, 1550 RPM, B/B | All standard watt motors: 4-25 W | 10890 | 9207F2, 9208F2, 9211, 9212, 9213 | 4410547  | 5R999   | EC5411D, EC5412D |

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Note: B/B – Ball Bearing



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# Cross Reference / MARS Motors

| MARS No.                       | Description                                  | Century/<br>AO Smith | US Motors/<br>Emerson | GE/Genteq | Magnetek  | Marathon   | Packard | ROTOM   |
|--------------------------------|--|----------------------|-----------------------|-----------|-----------|------------|---------|---------|
| <b>Belted Fan &amp; Blower</b> |  |                      |                       |           |           |            |         |         |
| 10401                          | 1/4 HP, Belted Fan & Blower, 115 V, 1725 RPM | GF2024, RB2024       | 2889, 8000            | 4701      | 808, 802  | B303, B206 | 45014   | BF-4701 |
| 10406                          | 1/3 HP, Belted Fan & Blower, 115 V, 1725 RPM | GF2034, RB2034       | 2888, 8100            | 4706      | 922, 805  | B305, B207 | 45013   | BF-4706 |
| 10408                          | 1/2 HP, Belted Fan & Blower, 115 V, 1725 RPM | GF2054, BF2054       | 2887, 8200            | 4708      | F681, 811 | B208       | 45012   | BF-4708 |

| MARS No.  | Description                              | Century/<br>AO Smith                | US Motors/<br>Emerson | Fasco                     | GE/Genteq   | Magnetek           |
|---|--|-------------------------------------|-----------------------|---------------------------|---|--------------------|
| <b>21/29 Frame Replacement Commercial Refrigeration</b> |  |                                     |                       |                           |   |                    |
| 10611   | 1/20 HP, Commercial, 115/230 V, 1550 RPM | -                                   | F1468                 | D484, D485                | 2331, 2332, 2341, 2342                            | 610, 611           |
| 10615   | 1/10 HP, Commercial, 115/230 V, 1550 RPM | 329P118, 326P119,<br>RF4400, RF4401 | F1469, F1470          | D480, D481,<br>D482, D483 | 2131, 2132, 2141, 2142,<br>2231, 2232, 2241, 2242 | 614, 615, 612, 613 |

| MARS No.   | Description  | Century/<br>AO Smith | US Motors/<br>Emerson | Fasco | GE/Genteq   | Heil Quaker | York<br>Source 1              |
|--|--|----------------------|-----------------------|-------|---|-------------|-------------------------------|
| <b>Super-Fit™ Multi-Horsepower Condenser Fan</b> |  |                      |                       |       |   |             |                               |
| 10722  | 1/8, 1/10, 1/12 HP, Multi-HP,<br>Condenser Fan, 208-230 V, 1075 RPM, B/B | 9722                 | 5440*                 | -     | 5KCP29DCA323S, 5KCP29ECA328S,<br>5KCP29DCA329S, 5KCP29FCA322S, 02243,<br>02248, 02249, 02251                          | -           | 17416, 17465,<br>17483, 17484 |
| 10723  | 1/4, 1/5, 1/6 HP, Multi-HP, Condenser Fan,<br>208-230 V, 1075 RPM, B/B   | 9723                 | 5441*, 1901           | D1071 | 5KCP29JCA324S, 5KCP29JCA325S,<br>5KCP29HCA326S, 5KCP29JCA327S,<br>5KCP29ECA321S, 02244, 02245,<br>02246, 02247, 02250 | HQ1052662EM | -                             |
| 10724  | 1/4, 1/5, 1/6 HP, Multi-HP, Condenser Fan,<br>208-230 V, 1675 RPM, B/B   | 9724                 | -                     | -     | -   | -           | -                             |

\*70°C Heat Shield

| MARS No.  | Description   | Century/<br>AO Smith | US Motors/<br>Emerson                       | Fasco  | GE/Genteq   | Packard |
|---|---|----------------------|---|--|---|---------|
| <b>3.3" Multi-Horsepower Commercial Refrigeration</b> |   |                      |   |  |   |         |
| 01125   | 1/12, 1/15, 1/18 HP, Evap Fan Motor,<br>208-230 V, 1550 RPM | 9720A                | 9656, 8658, 9664                            | 7190-0442, D1125   | -   | 41125   |
| 01127   | 1/12, 1/15, 1/20 HP, Evap Fan Motor,<br>115/230 V, 1550 RPM | 9721                 | 9650, 9651, 9652, 9653,<br>9656, 9662, 9664 | D1101, D1103, D1122, D1123,<br>D1124, D1125, D1126, D1127, D1152, D1154,<br>PD1125, PD1127, 7163-2113,<br>7163-3371 7190-0442, 7190-2084,<br>7190-2255, 7190-2285, 7190-2969 | 5KSM59ES2001<br>5KSM59JSK143S<br>5KSM59JS036S<br>5KSM59LS2262AS | 49101   |

| MARS No.                             | Description                                 | Century/<br>AO Smith | US Motors/<br>Emerson | Fasco      | Magnetek         | Packard | RMR     |
|--------------------------------------|---|----------------------|-----------------------|------------|------------------|---------|---------|
| <b>3.3" Commercial Refrigeration</b> |   |                      |                       |            |                  |         |         |
| 09916                                | 1/30 HP, Evap Fan Motor, 115 V 1550 RPM     | AO126, AO127         | -                     | D532, D181 | 28, 29           | -       | RR-1106 |
| 09917                                | 1/20 HP, Evap Fan Motor, 115 V 1550 RPM     | AO132, AO133         | -                     | D132       | 572, 574, 30, 31 | 40132   | RR-1107 |
| 09927                                | 1/20 HP, Evap Fan Motor, 208-230 V 1550 RPM | AO188, AO189         | -                     | D188, D189 | 575              | 40188   | RR-4107 |
| 09938                                | 1/30 HP, Evap Fan Motor, 115 V 1550 RPM     | -                    | 9656                  | D1125      | -                | -       | -       |

| MARS No.                          | Description             | Century/<br>AO Smith | Fasco | GE   | Magnetek/UE |
|-----------------------------------|-------------------------|----------------------|-------|------|-------------|
| <b>Fan Coil Replacement Motor</b> |                         |                      |       |      |             |
| 10889                             | 1/10 HP, 115 V 1050 RPM | DBL6409              | D289  | 2089 | 89          |

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Note: B/B – Ball Bearing





**One-On-One™ Replacement Motors**

| MARS No.  | Description                                | Copeland                 | US Motors/Emerson   | GE/Genteq                 | Packard |
|---|--|--------------------------|---------------------|---------------------------|---------|
| <b>One-On-One™ Replacement Motor for Copeland</b> |  |                          |                     |                           |         |
| 10227   | 1/3 HP, Condenser Fan, 208-230 V, 1625 RPM | 050-0108-00              | 6127, K55HXECE2645  | 5KCP32KG2598, 5KCP32KG175 | -       |
| 10228   | 1/6 HP, Condenser Fan, 208-230 V, 1550 RPM | 050-0251-00              | 6128, K55HSJNG-2974 | 5KCP32KG221               | 40251   |
| 10229   | 1/4 HP, Condenser Fan, 208-230 V, 1625 RPM | 050-0250-00              | 6129, K55HXJZJ-3126 |                           | 40250   |
| 10264   | 1/4 HP, Condenser Fan, 230 V, 1550 RPM     | 050-0238-00, 050-0107-01 | 6124, K55BZY-1439   | 5KCP39GG357S              | -       |
| 10265   | 1/6 HP, Condenser Fan, 208-230 V, 1550 RPM | 050-0265-00              | K55PGP5104          |                           | 40265   |

| MARS No.   | Description                        | Carrier   |
|--|------------------------------------|-----------|
| 10234  | 1/10 HP, 208-230 V, 1100/1, CW OSE | HC33GE233 |
| MARS USA, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CW Shaft End |                                    |           |

| MARS No.  | Description                        | Goodman     |
|---|------------------------------------|-------------|
| 10230   | 1/4 HP, 208-230 V, 1100/1, CCW OSE | 0131M00019P |
| MARS USA, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW Shaft End |                                    |             |
| 10232   | 1/6 HP, 208-230 V, 810/1 CCW OSE   | 0131M00060  |
| MARS USA, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW Shaft End |                                    |             |
| 03242   | 1/6 HP, 208-230 V, 1075/1 CCW OSE  | G3911       |
| MARS USA, 5 1/2 inch diam. Totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW Shaft End  |                                    |             |
| 10233   | 1/8 HP, 208-230 V, 1050/1 CCW OSE  | 0131M00294  |
| MARS USA, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW Shaft End |                                    |             |
| 10594   | 1/2 HP, 115 V, 1130/4 CW OSE       | 0131F00022  |
| MARS USA, 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 20 MFD @ 370V (MARS No. 12014, 12914, 14014), CW Shaft End |                                    |             |

| MARS No.  | Description                         | York Source 1  |
|---|-------------------------------------|----------------|
| 10570   | 1/3 HP, 575/1/60, 850 RPM, CCW OSE  | S1-02434550003 |
| 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 5 MFD @ 370V (MARS No. 12005, 12905, 14005), CCW OSE  |                                     |                |
| 10571   | 3/4 HP, 575/1/60, 1100 RPM, CCW OSE | S1-02434551003 |
| 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required, 10 MFD @ 440V (MARS No. 12032, 12932, 14032), CCW OSE |                                     |                |

**Sunslinger One-On-One™ Replacement Motor**

| MARS No.   | Description   | Century/AO Smith |
|--|---|------------------|
| 20884  | 1/8, 1/6, 1/5, 1/4, 1/3 HP, 460 V, 825/1 Reversible | ORM4688BF        |
| 5-1/2 inch diam., totally enclosed, ball bearing, capacitor required 7.5 MFD @ 370V (MARS No. 12007, 12907, 14007), Reversible |   |                  |

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Note: B/B – Ball Bearing



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# Unit Bearing / Condenser Fan Motors

## Unit Bearing Motors

JARD Unit Bearing Cast Iron Motors are used on refrigerators, freezers, food & beverage coolers, vending machines, display cases, and many other fan duty applications.

**Features:**

- Cast iron construction
- Universal mount
- Mounting screws included
- Individually boxed

**Specifications:**

- Class "A" insulation
- UL Recognized



| MARS NO. | WATTS | VOLTAGE | ROTATION | AMPS | LEAD LENGTH |
|----------|-------|---------|----------|------|-------------|
| 15109    | 2     | 115     | CW       | 0.28 | 24"         |
| 15211    | 4     | 115     | CW       | 0.33 | 24"         |
| 15212    | 4     | 115     | CCW      | 0.33 | 24"         |
| 15221    | 4     | 230     | CW       | 0.19 | 24"         |
| 15222    | 4     | 230     | CCW      | 0.19 | 24"         |
| 15311    | 6     | 115     | CW       | 0.46 | 24"         |
| 15312    | 6     | 115     | CCW      | 0.46 | 24"         |
| 15119*   | 9     | 115     | CW       | 0.62 | 13"         |
| 15411    | 9     | 115     | CW       | 0.62 | 24"         |
| 15412    | 9     | 115     | CCW      | 0.62 | 24"         |
| 15421    | 9     | 230     | CW       | 0.33 | 24"         |
| 15422    | 9     | 230     | CCW      | 0.33 | 24"         |
| 15811    | 16    | 115     | CW       | 0.95 | 24"         |
| 15812    | 16    | 115     | CCW      | 0.95 | 24"         |
| 15821    | 16    | 230     | CW       | 0.48 | 24"         |
| 15822    | 16    | 230     | CCW      | 0.48 | 24"         |

\* Note: 13" lead with lyall plug

## Condenser Fan Motors

### Ball Bearing

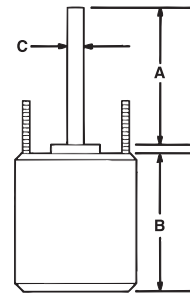
JARD replacement condenser fan motors are designed for residential and light commercial HVAC/R applications suitable for either vertical shaft-up or shaft-down mounting. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain.

**Features:**

- All angle, sleeve or ball bearing
- Rheem mounting holes w/screws
- Reversible rotation
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Up/Down design

**Specifications:**

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- Fan duty, continuous air over
- 26 & 36 inch leads
- UL Recognized



### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|                 |     |         |      |          |       |      | A          | B    | C   |              |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |              |
| 22727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 26"          |
| 22728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 26"          |
| 22729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 | 26"          |
| 22730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | Ball | 6.50       | 5.73 | 1/2 | 26"          |
| 22731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | Ball | 6.50       | 6.23 | 1/2 | 30.5"        |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------------|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|                |     |         |      |          |       |      | A          | B    | C   |              |
| <b>825 RPM</b> |     |         |      |          |       |      |            |      |     |              |
| 22403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 36"          |
| 22404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | Ball | 6.50       | 4.48 | 1/2 | 36"          |
| 22405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 | 36"          |
| 22746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | Ball | 6.50       | 5.70 | 1/2 | 36"          |

## Direct Drive Blower Motors



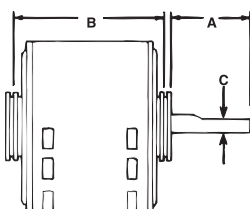
JARD direct drive blower motors are ideal for use in commercial and residential furnaces and air-conditioners. All models are three speed standard efficiency and are electrically reversible.

### Features:

- All angle sleeve bearing
- Rheem mounting holes
- 3 speeds
- 1/2 inch extended thru bolts
- 2-1/4 inch resilient rings
- 4 inch long, 1/2 inch diameter shaft

### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Open construction
- 26 & 30 inch leads
- UL Recognized



### 1075 RPM – Three Speed – Reversible Rotation

| MARS NO. | HP  | ROT | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|          |     |     |         |      |          |       |      | A          | B    | C   |              |
| 22583    | 1/4 | Rev | 115     | 4.2  | 5/370    | OAO   | Ball | 4.50       | 4.89 | 1/2 | 26"          |
| 22584    | 1/4 | Rev | 208-230 | 1.8  | 5/370    | OAO   | Ball | 4.50       | 4.89 | 1/2 | 26"          |
| 22585    | 1/3 | Rev | 115     | 6.1  | 5/370    | OAO   | Ball | 4.50       | 5.14 | 1/2 | 30"          |
| 22586    | 1/3 | Rev | 208-230 | 2.7  | 5/370    | OAO   | Ball | 4.50       | 5.14 | 1/2 | 26"          |
| 22587    | 1/2 | Rev | 115     | 7.5  | 10/370   | OAO   | Ball | 4.50       | 5.89 | 1/2 | 30"          |
| 22588    | 1/2 | Rev | 208-230 | 3.2  | 7.5/370  | OAO   | Ball | 4.50       | 5.64 | 1/2 | 30"          |
| 22589    | 3/4 | Rev | 115     | 11.2 | 15/370   | OAO   | Ball | 4.50       | 6.14 | 1/2 | 30"          |
| 22590    | 3/4 | Rev | 208-230 | 4.5  | 10/370   | OAO   | Ball | 4.50       | 6.14 | 1/2 | 30"          |

## Multi-Horsepower Direct Drive Motors



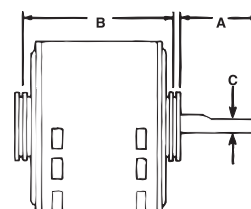
JARD multi-horsepower direct drive blower motors are used in residential and commercial furnaces, air conditioners, exhaust fans, and other air handling equipment installed in clean and dry environments. Four models cover both 115 and 208-230 volt applications from 1/6 through 3/4 HP. All models feature Rheem shell mounting holes.

### Features:

- Rheem mounting holes
- Reversible rotation
- 2-1/4 inch resilient rings

### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- 41 inch leads
- UL Recognized



### 1075 RPM - Four Speed - Reversible Rotation

| MARS NO. | HP        | ROT | VOLTS | ENCL. | BRG.   | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|-------|-------|--------|------------|------|-----|--------------|
|          |           |     |       |       |        | A          | B    | C   |              |
| 22463    | 1/6 - 1/2 | Rev | 115   | OAO   | Sleeve | 5.50       | 4.73 | 1/2 | 42"          |
| 22464    | 1/6 - 1/2 | Rev | 230   | OAO   | Sleeve | 5.50       | 4.73 | 1/2 | 41"          |
| 22466    | 1/5 - 3/4 | Rev | 115   | OAO   | Ball   | 5.80       | 5.73 | 1/2 | 41"          |
| 22467    | 1/5 - 3/4 | Rev | 230   | OAO   | Ball   | 4.60       | 5.23 | 1/2 | 41"          |

### Tech Tip

Motor leads are for carrying electrical current, only. Carrying your motor by the leads may cause internal damage to the motor.

# Multi-Horsepower Motors / Condenser Fan Motors

## Multi-Horsepower Condenser Fan Motors

### Ball Bearing

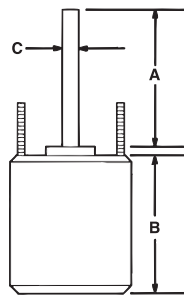
JARD multi-horsepower condenser fan motors are designed for either shaft up or shaft down applications. All motors are suitable for air conditioning or heat pump applications. These motors need to be mounted within the airflow of the fan for proper cooling.

#### Features:

- Rheem mounting holes w/screws installed
- Thru bolt or band mounting
- Water slinger on shaft
- Air conditioning or heat pump duty

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- UL Recognized



### Reversible Rotation – Single Speed

| MARS NO. | HP        | ROT | RPM/SPEED | VOLTS   | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|-----------|---------|-------|------|------------|------|-----|--------------|
|          |           |     |           |         |       |      | A          | B    | C   |              |
| 22458    | 1/6 - 1/3 | Rev | 1075      | 208-230 | TEAO  | Ball | 6.50       | 3.82 | 1/2 | 36"          |
| 22459    | 1/8 - 1/3 | Rev | 825       | 208-230 | TEAO  | Ball | 6.50       | 5.48 | 1/2 | 36"          |
| 22465    | 1/6 - 1/3 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 4.73 | 1/2 | 38"          |
| 22468    | 1/8 - 1/2 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 38"          |
| 22469    | 1/6 - 1/3 | Rev | 825/2     | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 42"          |

## Condenser Fan Motors

### Ball Bearing

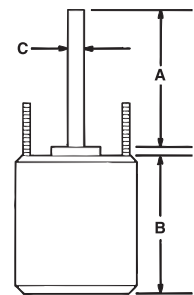
JARD replacement condenser fan motors are designed for residential and light commercial HVAC/R applications suitable for either vertical shaft-up or shaft-down mounting. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain.

#### Features:

- All angle, ball bearing
- Rheem mounting holes w/screws
- Reversible rotation
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Up/Down design
- 48" Leads

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- 70°C, 158°F
- Thermal overload protected
- Fan duty, continuous air over
- UL Recognized



### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                 |     |         |      |          |       |      | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |
| 26726           | 1/5 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 26730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | Ball | 6.50       | 5.73 | 1/2 |
| 26731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | Ball | 6.50       | 6.23 | 1/2 |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                |     |         |      |          |       |      | A          | B    | C   |
| <b>825 RPM</b> |     |         |      |          |       |      |            |      |     |
| 26403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | Ball | 6.50       | 4.48 | 1/2 |
| 26405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 26746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | Ball | 6.50       | 5.70 | 1/2 |



## Multi-Horsepower Condenser Fan Motors

### Ball Bearing

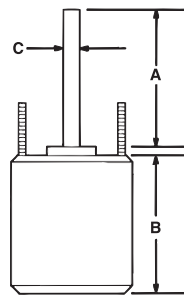
JARD multi-horsepower condenser fan motors are designed for either shaft up or shaft down applications. All motors are suitable for air conditioning or heat pump applications. These motors need to be mounted within the airflow of the fan for proper cooling.

#### Features:

- Rheem mounting holes w/screws installed
- Thru bolt or band mounting
- Water slinger on shaft
- Air conditioning or heat pump duty
- 48" Leads

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- 70°C, 158°F
- Thermal overload protected
- UL Recognized



| MARS NO. | HP        | ROT | RPM/SPEED | VOLTS   | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----------|-----|-----------|---------|-------|------|------------|------|-----|
|          |           |     |           |         |       |      | A          | B    | C   |
| 26458    | 1/6 - 1/3 | Rev | 1075      | 208-230 | TEAO  | Ball | 6.50       | 3.82 | 1/2 |
| 26459    | 1/8 - 1/3 | Rev | 825       | 208-230 | TEAO  | Ball | 6.50       | 5.48 | 1/2 |
| 26465    | 1/6 - 1/3 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 4.73 | 1/2 |
| 26468    | 1/8 - 1/2 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 |
| 26469    | 1/6 - 1/3 | Rev | 825/2     | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 |

### JARD Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22403    | EM3403      | -              | -                  | 60825   | 1873              |
| 22404    | EM3404      | SE3338         | WG840204           | 40825   | 1874              |
| 22405    | EM3405      | SE3339         | WG840205           | 30825   | 1875              |
| 22746    | EM3746      | -              | -                  | -       | 1870              |
| 22727    | EM3727      | SE3727         | WG840727           | 43727   | 1859              |
| 22728    | EM3728      | SE3728         | WG840728           | 43728   | 1860              |
| 22729    | EM3729      | SE3729         | WG840729           | 43729   | 1861              |
| 22730    | EM3730      | SE3730         | WG840730           | 43730   | 1862              |
| 22731    | EM3731      | SE3731         | WG840731           | 43731   | 1868              |
| 22583    | EM3583      | SE3583         | WG840583           | 43583   | 1863              |
| 22584    | EM3584      | SE3584         | WG840584           | 43584   | 1971              |
| 22585    | EM3585      | SE3585         | WG840585           | 43585   | 1864              |
| 22586    | EM3586      | SE3586         | WG840586           | 43586   | 1972              |
| 22587    | EM3587      | SE3587         | WG840587           | 43587   | 1865              |
| 22588    | EM3588      | SE3588         | WG840588           | 43588   | 1973              |
| 22589    | EM3589      | SE3589         | WG840589           | 43589   | 8904              |
| 22590    | EM3590      | SE3590         | WG840590           | 43590   | 8905              |
| 22463    | EM3463      | SE3463         | WG840463           | 45460   | 5460              |
| 22464    | EM3464      | SE3464         | WG840464           | 45461   | 5461              |
| 22466    | EM3466      | SE3466         | WG840466           | 45470   | 5470              |
| 22467    | EM3467      | SE3467         | WG840467           | 45471   | 5471              |
| 22458    | EM3458      | -              | -                  | 45458BF | 5458              |
| 22459    | EM3459      | -              | -                  | 45488BF | 5464              |
| 22465    | EM3465      | SE3465         | WG840465           | 45458B  | 5462              |
| 22468    | EM3468      | SE3468         | WG840468           | -       | 5465              |
| 22469    | EM3469      | SE3469         | WG840469           | -       | 5464              |
| 26726    | -           | -              | -                  | -       | -                 |
| 26727    | EM3727      | -              | WG840727           | 43727   | 1859              |
| 26728    | EM3728      | -              | WG840728           | 43728   | 1860              |
| 26729    | EM3729      | -              | WG840729           | 43729   | 1861              |
| 26730    | EM3730      | -              | WG840730           | 43730   | 1862              |
| 26731    | EM3731      | -              | WG840731           | 43731   | 1868              |
| 26403    | EM3403      | -              | -                  | 60825   | 1873              |
| 26404    | EM3404      | -              | WG840204           | 40825   | 1874              |
| 26405    | EM3405      | -              | WG840205           | 30825   | 1875              |
| 26746    | EM3746      | -              | -                  | -       | 1870              |
| 26458    | EM3458      | -              | -                  | -       | 5458              |
| 26459    | EM3459      | -              | -                  | -       | 5464              |
| 26465    | EM3465      | -              | WG840465           | -       | 5462              |
| 26468    | EM3468      | -              | WG840468           | -       | 5465              |
| 26469    | EM3469      | -              | WG840469           | -       | 5464              |

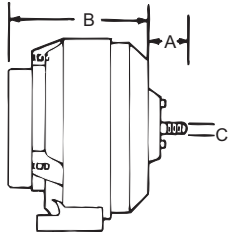
## EM&S ESP-L Shaded Pole Motors

### Features:

- Cast iron unit bearing
- Single speed
- End or side pad mounting
- Horizontal operation
- With flatted smooth shaft

### Specifications:

- Single phase, 60 Hertz
- Overload protection
- Continuous, air over



## EM&S High Efficiency ESP-L Shaded Pole and PSC Motors



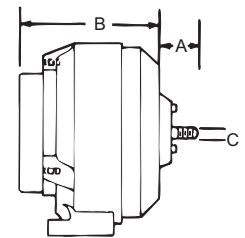
The ESP line of motors is a unique and patented design that makes possible a higher output in a smaller frame.

### Features:

- Cast iron unit bearing
- Single speed
- End or side pad mounting
- Horizontal operation
- Threaded or smooth shaft
- Heat isolated oil pump and reservoir

### Specifications:

- Single phase, 60 Hertz
- 22" leads
- Overload protection
- Continuous, air over



### For Tecumseh – Replaces No. 810M050A62

| MARS NO. | EMS NO. ESP | WATTS OUTPUT | VOLTS | AMPS | RPM  | ROT LE | DIMENSIONS |      |      | SHAFT TYPE |
|----------|-------------|--------------|-------|------|------|--------|------------|------|------|------------|
|          |             |              |       |      |      |        | A          | B    | C    |            |
| 00507    | OL50EMJR21  | 50           | 230   | 0.85 | 1500 | CCW    | 2.00       | 4.25 | 5/16 | with flat  |

### For Kelvinator – Replaces Nos. 24-0366, ESP-L15EMJR11

| MARS NO. | EMS NO. ESP | WATTS OUTPUT | VOLTS | AMPS | RPM  | ROT LE | DIMENSIONS |      |      | SHAFT TYPE |
|----------|-------------|--------------|-------|------|------|--------|------------|------|------|------------|
|          |             |              |       |      |      |        | A          | B    | C    |            |
| 00152    | OL15EMJR11  | 15           | 115   | 0.60 | 1500 | CCW    | 7.00       | 3.50 | 5/16 | with flat  |

### 1550 RPM – 1/4" Threaded Shaft

| MARS NO. | EMS NO. ESP | WATTS OUTPUT | VOLTS | AMPS | ROT OSE | DIMENSIONS |      |     |
|----------|-------------|--------------|-------|------|---------|------------|------|-----|
|          |             |              |       |      |         | A          | B    | C   |
| 00251    | L25EM1      | 25           | 115   | 1.1  | CW      | .50        | 3.50 | 1/4 |
| 00253    | L25EM2      | 25           | 230   | 0.60 | CW      | .50        | 3.50 | 1/4 |
| 00351    | L35EM1      | 35           | 115   | 1.4  | CW      | .50        | 3.50 | 1/4 |
| 00352    | L35EMR1     | 35           | 115   | 1.4  | CCW     | .50        | 3.50 | 1/4 |
| 00353    | L35EM2      | 35           | 230   | 0.70 | CW      | .50        | 3.50 | 1/4 |
| 00354    | L35EMR2     | 35           | 230   | 0.70 | CCW     | .50        | 3.50 | 1/4 |

### 1550 RPM – 3/8" & 5/16" Smooth Flatted Shaft

| MARS NO. | EMS NO. ESP | WATTS OUTPUT | VOLTS   | AMPS | ROT OSE | DIMENSIONS |      |      |
|----------|-------------|--------------|---------|------|---------|------------|------|------|
|          |             |              |         |      |         | A          | B    | C    |
| 00501    | OL50EM1     | 50           | 115     | 1.7  | CW      | 1.50       | 4.50 | 3/8  |
| 00502    | OL50EMR1    | 50           | 115     | 1.7  | CCW     | 1.50       | 4.50 | 3/8  |
| 00505    | OL50EM2B    | 50           | 230     | 0.85 | CW      | 1.50       | 4.50 | 5/16 |
| 00503    | OL50EM2     | 50           | 230     | 0.85 | CW      | 1.50       | 4.50 | 3/8  |
| 00504    | OL50EMR2    | 50           | 230     | 0.85 | CCW     | 1.50       | 4.50 | 3/8  |
| 00508(1) | OL50EM1B1   | 50           | 115     | 1.7  | CW      | 2.89       | 4.50 | 5/16 |
| 00513    | OL60EM2     | 50           | 208-230 | 1.2  | CW      | 2.89       | 4.50 | 3/8  |

(1) 2 female spade terminals at end of each wire



## ECM 51 Frame Commercial Refrigeration Motors



EM&S manufactures an ECM unit bearing construction motor that can serve as a drop-in replacement for the obsolete GE 55/44 frame ECM 1650 or 1850 rpm motor. This motor is available in a 9 watt and a 16 watt version. This promises substantial energy savings and potentially fast pay-back on the cost of conversion.



### Features:

- Ultra high efficiency
- Improved reliability
- Enhanced airflow performance
- Energy savings of 66 percent over a wide speed range
- Low operating temperature
- Lyall plug or EMF plug
- Accessories included with each motor; (1) speed nut, (1) resilient fan silencer, (3) 8-36 mounting screws, (1) rainshield
- Replaces GE ECM 55/44 frame motors

### Specifications:

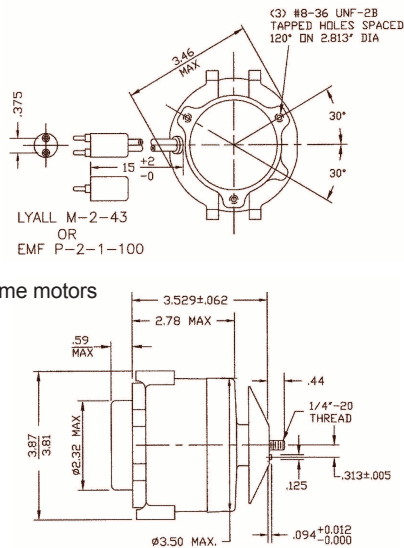
- Totally enclosed air over
- Unit bearing
- 1/4" - 20 Threaded shaft
- 60/50 Hertz

ECM installation's average annual energy savings versus shaded pole motors

|       |       |
|-------|-------|
| 05443 | \$ 35 |
| 05444 | \$ 55 |

@ 8¢ KWH and 1.75 multiplier on energy saving

| MARS NO. | WATTS | RPM  | ROT OSE | VOLTS | AMPS | LEAD LENGTH |
|----------|-------|------|---------|-------|------|-------------|
| 05443    | 9     | 1650 | CW      | 115   | 0.32 | 12"         |
| 05444    | 16    | 1850 | CW      | 115   | 0.40 | 12"         |



## 58 MM Series Replacement ECM Fan/Motor System

The 58MM Series replacement ECM Fan/Motor systems are primarily used in commercial refrigeration air moving applications demanding high efficiency and dependability. These motors are moisture resistant, reliable, quiet unit bearing design with efficiencies three times higher than shaded pole motors and 45% higher than PSC. These replacement ECM Fan/Motor systems are all metal in design and have 1 discrete speed, variable torque, low temperature lubrication system which makes them extremely quiet with low vibration.

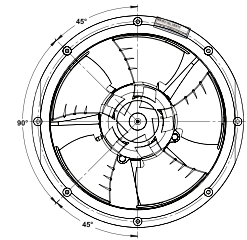


### Features:

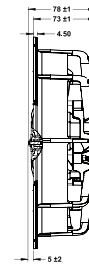
- Lyall plug
- Class B insulation
- 60 Hertz
- Thermal protection
- Single phase

### Specifications:

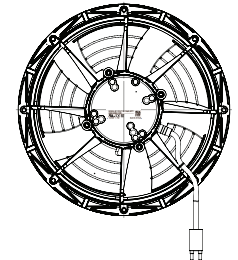
- -40 to 55°C ambient operating temp.
- Single speed
- Maximum watts 36



Front View



Side View



Rear View

| MARS NO. | GE NO. 5SME58 | REPLACES RPM | VOLTS | MAX AMPS | ROT. OSE | AT 0.05" CFM | AT 0.10" CFM | AT 0.15" CFM |
|----------|---------------|--------------|-------|----------|----------|--------------|--------------|--------------|
| 05470    | AAF1027       | 1340         | 115   | 0.30     | CW       | 330          | 270          | 210          |
| 05471    | AAF1026       | 1470         | 115   | 0.40     | CW       | 370          | 300          | 200          |
| 05472    | AAF1031       | 1650         | 115   | 0.40     | CW       | 400          | 360          | 255          |



## ECM Technology

These 51 frame unit bearing motors are primarily used in commercial refrigeration applications, both evaporator and condenser, but can be used in any application demanding high efficiency and dependability with output ratings between 4 – 12 watts and 13 – 23 watts.

These motors significantly outperform both shaded pole and PSC technology. With efficiencies three times higher than shaded pole motors and 45% higher than PSC, in addition to the reliable and quiet unit bearing design, they provide users great reliability and excellent energy savings for their applications



### Environmental Summary:

- Storage Temps: -40 to 80° C ambient
- Operating Temps: -40 to 55° C ambient
- Design Life: 10 years, 83,720 hours on time

### Mechanical Summary

- 3.3" Electronically commutated aluminum or cast iron unit bearing
- 1/4" x 20 threaded shaft
- Aluminum enclosure (totally enclosed)
- Five .150" diameter cored mounting holes on rear
- Horizontal shaft (+/- 15°) or vertical shaft up operating position
- Standard 18 gauge, 2 conductor leads
- Lead cord may be terminated with 1/2" stripped wire, in-house molded plugs, eyelets, 1/4" quick connects, or special terminals
- RoHS compliant

### Applications:

- Bottle coolers
- Display cases
- Reach-In coolers
- Vending machines

### Features:

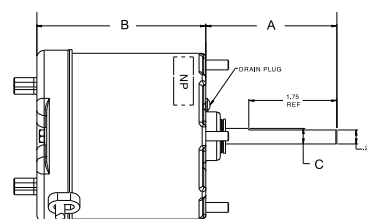
- Output 4 – 12W and 13 – 23W
- ~66% peak efficiency
- Speed regulated within +/-6%
- Regulated speed; +/-6% Full Scale
- 1 Discrete speed
- 51fr Unit bearing motor; cast aluminum frame
- Side pedestal mounting feet (2 sets standard)

| MARS NO. | APPLICATIONS                          | OUTPUT WATTS | VOLTS | ROT | RPM  | MARS PACK |
|----------|---------------------------------------|--------------|-------|-----|------|-----------|
| 00650    | Evaporator/Condenser                  | 4-12         | 115   | CW  | 1550 | 1         |
| 00651    | Evaporator/Condenser                  | 4-12         | 230   | CW  | 1550 | 1         |
| 00652    | Evaporator/Condenser (90° lyall plug) | 4-12         | 115   | CW  | 1550 | 1         |
| 00654    | Evaporator/Condenser                  | 13-23        | 115   | CW  | 1550 | 1         |
| 00655    | Evaporator/Condenser                  | 13-23        | 230   | CW  | 1550 | 1         |
| 00656    | Evaporator/Condenser                  | 13-23        | 115   | CCW | 1550 | 1         |
| 00657    | Evaporator/Condenser                  | 13-23        | 230   | CCW | 1550 | 1         |

## ARKTIC™ 59 Ball Bearing



The Morrill ARKTIC 59 motor is primarily used in the evaporator of commercial refrigeration walk-in coolers and freezers, but can be used in any application demanding high efficiency and dependability with output ratings up to 50 watts. The ARKTIC 59 significantly outperforms both shaded pole and PSC technology with efficiencies three times higher than shaded pole motors and 40% higher than PSC. In addition to the reliable design, the ARKTIC 59 provides users the ease of drop-in replacement and extraordinary energy savings for their applications.



### Features:

- Universal "Drop-In" replacement for walk-in evaporator applications
- Totally enclosed, non-vented
- Shaft water slinger
- Standard thru-bolt configuration
- All angle mount
- Power cord with lyall plug

### Specifications:

- Automatic torque variation, constant speed
- Low temp (-20° F) lubrication system
- 50/60 Hz
- 1 Discrete speed
- CUL (CE & VDE pending) UL file # E306123
- Thermally protected

### 1550 RPM - Front Or Rear Thru-Bolt Mount

| MARS NO. | MFG MODEL 5SME59 | NOMINAL HP | VOLTS   | AMPS | OSE ROT | DIMENSIONS |      |      |
|----------|------------------|------------|---------|------|---------|------------|------|------|
|          |                  |            |         |      |         | A          | B    | C    |
| 05105    | BVA1038          | 1/15       | 115     | 1.1  | CCW     | 2.61       | 3.36 | 5/16 |
| 05204    | BVA2037          | 1/15       | 208-230 | 0.63 | CW      | 2.61       | 3.36 | 5/16 |
| 05205    | BVA2039          | 1/15       | 208-230 | 0.63 | CCW     | 2.61       | 3.36 | 5/16 |

### 1550/800 RPM - Two Speed - Front or Rear Thru Bolt Mount

| MARS NO. | MFG MODEL 5SME59 | NOMINAL HP | VOLTS | AMPS | OSE ROT | DIMENSIONS |      |      |
|----------|------------------|------------|-------|------|---------|------------|------|------|
|          |                  |            |       |      |         | A          | B    | C    |
| 05127    | BVA1065          | 1/15       | 115   | 1.1  | CCW     | 2.61       | 3.36 | 5/16 |
| 05128    | BVA1066          | 1/15       | 115   | 1.1  | CW      | 2.61       | 3.36 | 5/16 |

| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 08040    | Krack Refrigeration Retrofit Bracket Kit | 1         |



# Unit Bearing Motors / OEM Direct Replacement Motors

## 51 Frame Motors For Domestic Refrigeration



### Features:

- Single phase, shaded pole
- Fan duty, continuous, air over
- Class A insulation
- 60/50 Hertz
- Impedance protected
- For accessories see pages M-44 – M-46



### 1550 RPM

| MARS NO. | GE NO. 5KS | WATTS | ROT OSE | VOLTS | AMPS | SHAFT           | REPLACES                        | MARS PACK |
|----------|------------|-------|---------|-------|------|-----------------|---------------------------------|-----------|
| 05109    | M81FFL0065 | 2     | CW      | 115   | 0.25 | 1/4-20 threaded | most refrigerators and freezers | 12        |

## Tyler Refrigeration OEM Direct Replacement Refrigeration Motors



### Features:

- Universal 5 hole rear mount
- Dual mounting pads



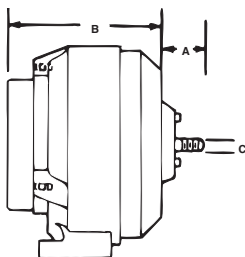
| MARS NO. | WATTS | VOLTS | RPM  | AMPS | ROTATION | CONSTRUCTION | TYLER NO. |
|----------|-------|-------|------|------|----------|--------------|-----------|
| 00660    | 5     | 115   | 1550 | 0.34 | CW       | cast iron    | 51255320  |
| 00661    | 9     | 115   | 1550 | 0.53 | CW       | aluminum     | 52434980  |

## EM&S PSC Type Replacement For GE



### Features:

- Drop-in replacement
- Single phase PSC
- Fan duty, continuous, air over
- Low temp oil
- Reliable unit bearing
- Internal capacitor



### 1660 RPM 1/4"- 20 Threaded

| MARS NO. | GE NO. 5KS | WATTS | ROT OSE | VOLTS | AMPS | DIMENSIONS |      |
|----------|------------|-------|---------|-------|------|------------|------|
|          |            |       |         |       |      | A          | B    |
| 00114    | RS4BEB6E14 | 4     | CW      | 115   | 0.20 | 0.40       | 2.50 |
| 00117*   | RS4BEB9E12 | 9     | CW      | 115   | 0.26 | 0.40       | 2.50 |

\* 00117 replaces Hussmann SVC 441-302

**11 Frame Unit Bearing Shaded Pole Motors**



MARS unit bearing shaded pole motors are suitable for use in a wide variety of fan duty applications. Proven all-angle unit bearing design for trouble free operation. Can be resilient base, strap, or end mounted.

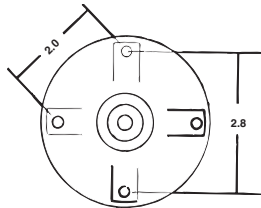
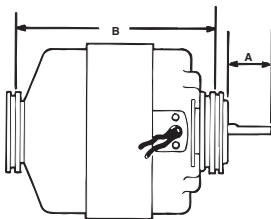


**Features:**

- All angle unit sleeve bearings
- Resilient base, strap, or end mounting
- 5/16 inch shaft diameter ground lead
- 12 inch leads
- For accessories see pages M-44 – M-46
- See the airMARS section of this catalog for fan blades & accessories

**Specifications:**

- Single phase, 60 Hertz
- Overload protection
- Fan duty, continuous, air over
- Shaft end has four 8-32 tapped holes
- UR/CSA



**1550 RPM – 4 Pole**

| MARS NO.    | GE NO. 5KSM92 | HP   | VOLTS   | AMPS | ROT OSE | ENCL | DIMENSIONS |           | BASE NO. |
|-------------|---------------|------|---------|------|---------|------|------------|-----------|----------|
|             |               |      |         |      |         |      | A          | B         |          |
| 01431       | KFL2005S      | 1/30 | 115     | 1.74 | CW      | OPEN | 1.25       | 4.82/4.70 | 08042    |
| 01441       | KFL2003S      | 1/30 | 115     | 1.74 | CCW     | OPEN | 1.25       | 4.82/4.70 | 08042    |
| 01432       | KFL200(S)     | 1/20 | 208-230 | 0.76 | CW      | OPEN | 1.25       | 4.82/4.70 | 08042    |
| 01442       | KFL1009S      | 1/30 | 208-230 | 0.87 | CCW     | OPEN | 1.25       | 4.82/4.70 | 08042    |
| 01332(1)    | KFL2007S      | 1/20 | 208-230 | 1.1  | CW      | OPEN | 2.00       | 4.82/4.70 | 08042    |
| 01232(2)(3) | KFL3006S      | 1/15 | 230     | 1.2  | CW      | OPEN | 1.50       | 4.875     | NONE     |

(1) 34 inch leads  
 (2) 30 inch leads  
 (3) 60/50 Hertz

**NU Series Shaded Pole Motors**



MARS is proud to introduce Elco NU Series shaded pole motors which are widely used in the HVAC & Refrigeration industry. These motors are suitable for all angle operation and have multiple mounting features. The NU series motors are used in industrial and commercial refrigeration for condensing and evaporating units, ventilating units, freezers, walk-in and reach-in coolers, food and beverage coolers and many other fan duty applications.



**Features:**

- Single speed
- Output 4 to 34 watts
- Totally enclosed
- Continuous air over
- 1 year Limited warranty

**Specifications:**

- Impedance or thermally protected
- All angle, sleeve bearing
- Class B insulation
- 50/60 Hz
- Standard operating temperature: -40°F to 104°F (-40°C to 40°C)
- 3 Tapped holes @ 120° & 2 @ 180°
- Single side pad mounting
- 4 Shaft end studs
- UL Recognized, CSA and CE Certified

| MARS NO. | MFG STOCK NO. | WATTS | ROT. S.E | HP    | VOLTS | AMPS | PROT. | BLADE DIA. IN. | BLADE PITCH | AIR FLOW (CFM) @ 0 IN. STATIC | AIR FLOW (CFM) @ .1 IN. STATIC |
|----------|---------------|-------|----------|-------|-------|------|-------|----------------|-------------|-------------------------------|--------------------------------|
| 00805    | EC6W115       | 6     | CCW      | 1/125 | 115   | 0.41 | Imp   | 7              | 31          | 206                           | 119                            |
| 00807    | EC9W115       | 9     | CCW      | 1/83  | 115   | 0.58 | Therm | 8              | 22          | 262                           | 186                            |
|          |               |       |          |       |       |      |       |                | 28          | 325                           | 240                            |
| 00808    | EC9W230       |       |          |       | 230   | 0.35 |       | 9              | 28          | 418                           | 301                            |
|          |               |       |          |       |       |      |       |                | 28          | 476                           | 395                            |
| 00809    | EC16W115      | 18    | CCW      | 1/47  | 115   | 0.89 | Therm | 9              | 31          | 490                           | 410                            |
|          |               |       |          |       |       |      |       |                | 34          | 557                           | 466                            |
|          |               |       |          |       |       |      |       |                | 22          | 510                           | 425                            |
| 00810    | EC16W230      | 16    |          |       | 230   | 0.50 |       | 10             | 28          | 610                           | 470                            |
|          |               |       |          |       |       |      |       |                | 28          | 610                           | 470                            |
| 00817    | EC34W115      | 34    | CCW      | 1/20  | 115   | 1.6  | Therm | 12             | 19          | 796                           | 697                            |
| 00818    | EC34W230      |       |          |       | 230   | 0.80 |       |                | 28          | 1024                          | 785                            |

# Refrigeration Fan Motors

## ECM High Efficiency Motors

MARS Hi Efficiency ECM motors are drop in replacements of the traditional front mount shaded pole motors. They use all the same accessories with no extra work for an easy and hassle-free installation. These are built with ECM technology to run more efficiently, reduced CO2 emissions, longer life expectancy and quieter than the normal PSC shaded pole motors. They offer better airflow control than a PSC, up to 70%, 4 to 5 times more efficient than a regular shaded pole motor. Higher efficiency means cooler motor operation and reduced heat delivered to the refrigeration cycle, for a combined energy saving advantage and improved refrigeration quality. The ECM Series offers IP65 moisture protection grade, one of the highest in the industry. These motors are designed to satisfy the growing demands of energy savings.



### Features:

- Life expectancy of 60,000+ hrs.
- Protection rating - IP65 moisture protection grade
- Totally enclosed
- All angle
- Continuous air over
- Long life sealed ball bearings

### Specifications:

- Working temp: -40°C +55°C
- 50/60 Hz
- M4 Studs on 3.72" B.C. for shroud/guard
- UL recognized & CE Certified

### Cross Reference:

|                                |              |                              |
|--------------------------------|--------------|------------------------------|
| EDA15253UC0176, EDA10153UC0182 | Hill Phoenix | P078449H, P079441C, P066237A |
|--------------------------------|--------------|------------------------------|

| MARS NO. | WATTS | VOLTS   | RPM  | ROT. S.E | AMPS    | TERM.PLUG   |
|----------|-------|---------|------|----------|---------|-------------|
| 00892    | 1-30  | 120/240 | 1600 | CCW      | 0.7/0.4 | 2 pin Lyall |



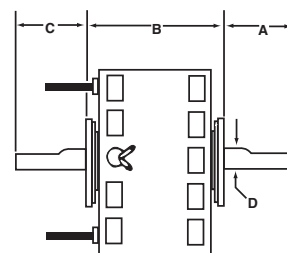
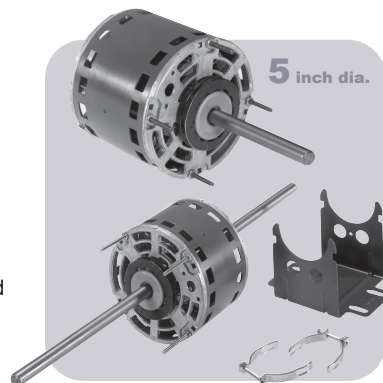
## 5KCP29 — Form G PSC Motors



Designed for virtually every fan and blower application.

### Features:

- All angle sleeve bearings
- Open construction
- Aluminum end shields
- 26 inch color-coded leads
- 2-1/2 inch resilient ring mounting
- Double shaft models shipped with base mounted (3.5 inch shaft height)
- Extended thru bolts on shaft end—extended 3/4 inch on single shaft and 1-1/2 inch on double shaft motors (on 4.6 inch bolt circle)
- Energy Saver® design
- Motor reversing leads have terminals for quick change to opposite rotation
- For accessories see pages M-44 – M-46



### Specifications:

- Single phase, 60 Hertz
- Automatic reset overload protection
- Fan duty, continuous, air over
- Advanced Class B insulation
- 5 Mfd @ 370V capacitor required (MARS No. 12005)

| MARS NO.  | GE NO. 5KCP29 | HP   | VOLTS | AMPS | ROT LE | RPM  | DIMENSIONS |           |      |     |
|---|---------------|------|-------|------|--------|------|------------|-----------|------|-----|
|   |               |      |       |      |        |      | A          | B         | C    | D   |
| <b>1075 RPM - Single Shaft - Three Speed - 6 Pole</b> |               |      |       |      |        |      |            |           |      |     |
| 02840(1)  | BG5866S       | 1/30 | 115   | .61  | REV    | 1075 | 8.00       | 6.00/4.50 | —    | 1/2 |
| 02824   | EG5854S       | 1/8  | 115   | 2.45 | REV    | 1075 | 4.00       | 5.06      | —    | 1/2 |
| 02825   | KG5855S       | 1/5  | 115   | 3.51 | REV    | 1075 | 4.00       | 5.56      | —    | 1/2 |
| <b>1075 RPM - Double Shaft - Four Speed - 6 Pole</b>  |               |      |       |      |        |      |            |           |      |     |
| 02830   | BG5860S       | 1/15 | 115   | 1.4  | CCW    | 1075 | 8.00       | 4.67      | 8.00 | 1/2 |
| <b>1625 RPM - Double Shaft - Four Speed - 4 Pole</b>  |               |      |       |      |        |      |            |           |      |     |
| 02837   | FG5869S       | 1/6  | 115   | 2.1  | CCW    | 1625 | 8.00       | 5.42      | 8.00 | 1/2 |

(1) Model has resilient ring length adapter kit included in carton

## “Cap-Can” Construction Vertical Shaft Down Condenser Fan And Heat Pump Motors

### Ball Bearing

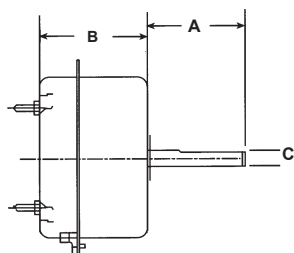
These new permanent split capacitor motors from GE are designed for use in residential outdoor condenser fan and heat pump units (primarily up to 3.5 tons), requiring vertical shaft down with stud or flange mounting.

#### Features:

- “Cap-Can” construction
- Automatic thermal overload protection
- #8-32 extended stud or flange mount
- Water slinger on shaft
- Vertical shaft down mounting orientation
- CW or CCW rotation in several ratings
- Designed for 370 volt capacitor (not furnished)
- Class B insulation
- For accessories see pages M-44 – M-46

#### Specifications:

- All models are single-speed
- 60 Hz
- 208-230 Volts
- 1/2" Shaft diameter
- 26" Leads
- Continuous duty, air-over



| MARS NO. | GE NO.        | HP  | RPM  | AMPS | ROT OSE | 370V CAP REQUIRED | DIMENSIONS |      |      |
|----------|---------------|-----|------|------|---------|-------------------|------------|------|------|
|          |               |     |      |      |         |                   | A          | B    | C    |
| 02248    | 5KCP29ECA328S | 1/8 | 1075 | 0.86 | CW      | 5 MFD             | 2.75       | 3.85 | 1/2" |

## SOS™ Multi-Horsepower Direct Drive Blower Motors



MARS SOS™ multi-horsepower direct drive blower motors are ideal for truck stock. Four models cover both 115 volt and 208-230 volt applications from 1/6 through 3/4 HP.

All SOS™ motors feature easy mounting in Rheem applications.

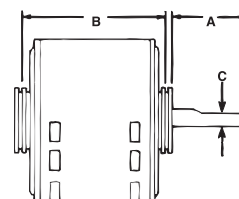
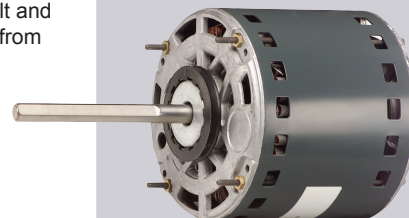
#### Features:

- Multi-HP
- Open end shields
- Extended mounting studs
- 2-1/2 inch resilient rings
- Reversible rotation
- All angle sleeve or ball bearings
- Capacitor requirement noted on motor label
- For accessories see pages M-44 – M-46

#### Specifications:

- Single phase, 60 Hz
- Overload protection
- Fan duty, continuous air over
- Open construction

5 1/2 inch dia.



#### Cross Reference:

| MARS No. | A.O. SMITH | EMERSON |
|----------|------------|---------|
| 03466    | FDL6002    | 5470    |

## 1075 RPM Multi-Horsepower Reversible Rotation – 6 Pole

| MARS NO. | GE NO. 5KCP39 | HP                      | VOLTS | AMPS | DIMENSIONS |      |     |
|----------|---------------|-------------------------|-------|------|------------|------|-----|
|          |               |                         |       |      | A          | B    | C   |
| 03466*   | SGU363AS      | 3/4, 1/2, 1/3, 1/4, 1/5 | 115   | 8.4  | 5.00       | 5.98 | 1/2 |

\* Ball Bearing



## SOS™ Multi-Horsepower Outdoor Condenser Fan Motors

### Ball Bearing

MARS SOS™ multi-horsepower condenser fan motors are ideal for truck stock. Three 1075 RPM models cover 208-230 volt applications from 1/6 to 1/2 HP.

New Slim Stack™ #03458, **WIZARD**, and the new **WIZARD 825** fit in many 1/3 HP installations that will not accept other manufacturer's motors.

The 03458 is a single speed "wide-range" motor that will run at any fan load from 1/6 to 1/3 HP at a nominal 1075 RPM. MARS #03459, the new **WIZARD 825**, will run at any fan load from 1/8 to 1/3 HP at a nominal 825 RPM.

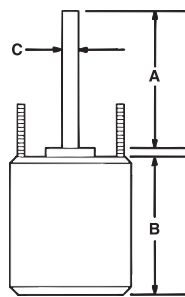
All SOS™ motors feature easy mounting in Rheem applications.

#### Features:

- Multi-HP
- Thru bolt or band mounting
- Rheem mounting capability
- Water slinger on shaft
- Air conditioning or heat pump duty
- Capacitor requirement noted on motor label
- End Shield drain holes w/plugs

#### Specifications:

- Single phase, 60 Hz
- Overload protection
- Fan duty, continuous air over
- Totally enclosed, Non-ventilated
- Class B insulation



\* Heat Shield

#### Cross Reference:

| MARS No. | A.O. SMITH | EMERSON |
|----------|------------|---------|
| 03459    | ORM5488B   | 5464    |
| 03468    | FE6002     | 5465    |
| 03469    | FE6001     | 5464    |

## Vertical Outdoor Condenser Fan Motors Shaft-Up/Down

### Ball Bearing

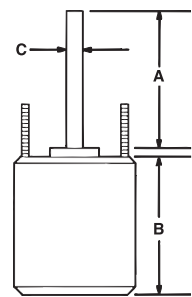
GE up/down outdoor condenser fan motors are designed for either vertical shaft-up or shaft-down applications. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain. A plastic plug is provided to seal the weep hole in the end shield exposed to the weather. All of these motors are suitable for air conditioning or heat pump applications. All feature reversible rotation, 208-230 volts, six inch shaft length and extended thru bolts extending from both ends.

#### Features:

- Thru bolt or band mounting
- All angle mounting
- Water slinger on shaft
- Serrated end cap on shaft end only
- For air conditioning or heat pumps
- Full six inch shaft length with two full flats at 90°
- Reversible rotation
- For accessories see pages M-44 – M-46
- Rheem mtg. holes (mtg. hardware included)

#### Specifications:

- 60 Hertz
- Single phase
- Overload protected
- Fan duty, continuous, air over
- 48 inch leads
- Totally enclosed, non-ventilated
- Class B insulation



\* Heat Shield

#### Reversible Rotation

| MARS NO.  | GE NO. 5KCP39 | HP  | VOLTS   | AMPS | RPM (1) | CAP REQ. | DIMENSIONS |      |     |
|---|---------------|-----|---------|------|---------|----------|------------|------|-----|
|   |               |     |         |      |         |          | A          | B    | C   |
| <b>825 RPM - Single Speed - Standard Efficiency - 8 Pole</b>  |               |     |         |      |         |          |            |      |     |
| 03203*  | HFBA79S       | 1/6 | 208-230 | 0.90 | 825     | 5/370    | 6.0        | 4.30 | 1/2 |
| 03204*  | JFBA83        | 1/4 | 208-230 | 1.3  | 825     | 7.5/370  | 6.0        | 5.03 | 1/2 |
| 03205*  | NFBA82S       | 1/3 | 208-230 | 1.8  | 825     | 10/370   | 6.0        | 5.80 | 1/2 |
| <b>1075 RPM - Single Speed - Standard Efficiency - 6 Pole</b> |               |     |         |      |         |          |            |      |     |
| 03733(2)*   | LGU715S       | 1/3 | 208-230 | 2.6  | 1075    | 7.5/370  | 6.0        | 4.48 | 1/2 |
| 03734(2)*   | RGU718S       | 1/2 | 208-230 | 3.0  | 1075    | 10/370   | 6.0        | 5.23 | 1/2 |
| 03735(2)*   | SGU717S       | 3/4 | 208-230 | 4.1  | 1075    | 10/370   | 6.0        | 5.98 | 1/2 |

(1) Low speed approximately 300 RPM less than high speed depending on fan load  
\* Heat Shield

## Multi-Horsepower, Reversible Rotation

| MARS NO.                 | GE NO. 5KCP39             | HP                      | VOLTS   | AMPS | DIMENSIONS |      |     |
|--------------------------|---------------------------|-------------------------|---------|------|------------|------|-----|
|                          |                           |                         |         |      | A          | B    | C   |
| <b>1075 RPM - 6 Pole</b> |                           |                         |         |      |            |      |     |
| 03458HS*                 | <b>Wizard</b> LGU7215     | 1/3, 1/4, 1/5, 1/6      | 208-230 | 2.6  | 6.50       | 5.23 | 1/2 |
| <b>825 RPM - 8 Pole</b>  |                           |                         |         |      |            |      |     |
| 03459*                   | <b>Wizard 825</b> NFBA87S | 1/3, 1/4, 1/5, 1/6, 1/8 | 208-230 | 1.8  | 6.50       | 5.48 | 1/2 |

\* Heat Shield

## Shaft-Up Outdoor Condenser Fan Motors



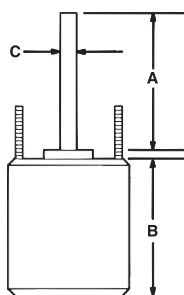
GE outdoor condenser fan motors for vertical shaft-up applications are also suitable for horizontal mounting. GE vertical shaft-up outdoor condenser fan motors are designed for 60°C ambient temperature. Add MARS No. 08105 resilient rings to base mount.

GE commercial 460 volt outdoor condenser fan motors are designed for 70°C ambient so lower operating temperatures = improved life and reliability.



### Features:

- Reversible rotation
- Thru bolt or band mounting
- Water slinger on shaft
- Serrated end caps on vertical shaft-up models
- Full six inch shaft length
- For accessories see pages M-44 – M-46



### Specifications:

- Class B insulation
- Single phase, 60/50 Hertz
- Automatic thermal overload protected
- Fan duty, continuous, air over
- 26 inch leads shaft-up, 46 inch leads all angle
- Lead end endshield open construction



\* Heat Shield

### Reversible Rotation

| MARS NO. | GE NO. 5KCP39 | HP | VOLTS | AMPS | RPM | CAP REQ. | DIMENSIONS |   |   |
|----------|---------------|----|-------|------|-----|----------|------------|---|---|
|          |               |    |       |      |     |          | A          | B | C |

#### 1075 RPM - Shaft-Up - Single Speed - Sleeve Bearings - Standard Efficiency - 6 Pole

|                         |         |     |         |     |      |         |     |      |     |
|-------------------------|---------|-----|---------|-----|------|---------|-----|------|-----|
| 03329 <sup>(1)(2)</sup> | HGP698S | 1/3 | 208-230 | 2.4 | 1075 | 7.5/370 | 6.0 | 5.31 | 1/2 |
| 03330 <sup>(1)(2)</sup> | MGK209S | 1/2 | 208-230 | 3.6 | 1075 | 10/370  | 6.0 | 6.60 | 1/2 |
| 03331 <sup>(1)(2)</sup> | PFM210S | 3/4 | 208-230 | 5.1 | 1075 | 10/370  | 6.0 | 6.06 | 1/2 |

#### 1075 RPM - 460V - Single Speed - All Angle Ball Bearing - 6 Pole

|                          |         |     |     |     |      |         |     |      |     |
|--------------------------|---------|-----|-----|-----|------|---------|-----|------|-----|
| 03737 <sup>(1)(3)*</sup> | NGU724S | 1/3 | 460 | 1.2 | 1075 | 7.5/370 | 6.0 | 5.30 | 1/2 |
| 03738 <sup>(1)(3)*</sup> | RGU723S | 1/2 | 460 | 1.7 | 1075 | 10/370  | 6.0 | 5.80 | 1/2 |
| 03739 <sup>(1)(3)*</sup> | SGU725S | 3/4 | 460 | 2.0 | 1075 | 15/370  | 6.0 | 6.50 | 1/2 |

(1) 60 Hertz only

(2) Class A Insulation

(3) Rheem shell mtg. holes

\* Heat Shield

## 5KCP39 PSC 460 Volt Motors

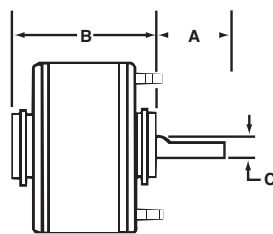
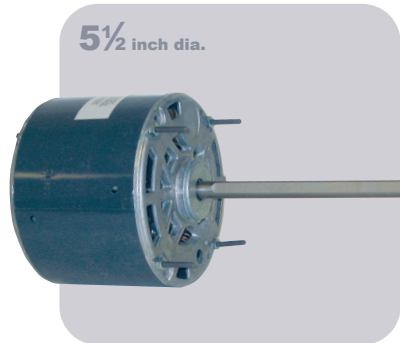
### Ball Bearing

#### Features:

- Energy Saver®
- For use in air moving applications
- 460 volt, 2-speed
- All angle
- Extended thru bolts
- Capacitor included
- 08105 for cradle mount, serrated end caps
- For accessories see pages M-44 – M-46

#### Specifications:

- Single phase, 60/50 Hz
- Overload protection
- Fan duty, continuous, air over
- Enclosed shell, open end shields
- 26 inch leads
- Class A insulation



### 1075 RPM – Reversible Rotation - 6 Pole

| MARS NO. | GE NO. 5KCP39 | HP  | VOLTS | AMPS | CAP. (FURNISHED) | DIMENSIONS |      |     | BASE NO. |
|----------|---------------|-----|-------|------|------------------|------------|------|-----|----------|
|          |               |     |       |      |                  | A          | B    | C   |          |
| 03290    | PGC520ET      | 3/4 | 460   | 2.1  | 15/370           | 6.0        | 6.31 | 1/2 | 08060    |



## PSC Direct Drive Blower Motors



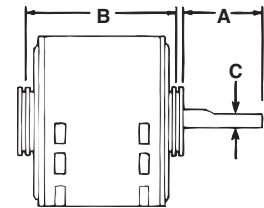
These GE 5KCP39 PSC motors are designed for use as direct drive furnace blower motors. All are three speed, high efficiency, Energy Saver® models and are electrically reversible. Motors have 2-1/4 inch resilient rings for base mounting. Four (4) split rings included if 2-1/2 inch diameter is required. Bases are sold separately.

#### Features:

- All angle sleeve bearings
- 3 speeds
- 1/2 inch extended thru bolts
- Ring kit allows 2-1/4 inch & 2-1/2 inch resilient ring mounting
- Reversible rotation
- 4 inch long, 1/2 inch diameter shaft
- For accessories see pages M-44 – M-46

#### Specifications:

- Single phase, 60/50 Hertz
- Overload protection
- Fan duty, continuous, air over
- Open construction
- 26 inch leads
- Class B insulation



### Reversible Rotation — Energy Saver®

| MARS NO. | GE NO. 5KCP39 | HP  | VOLTS   | AMPS | CAP. REQ. | DIMENSIONS |      |     | BASE NO. |
|----------|---------------|-----|---------|------|-----------|------------|------|-----|----------|
|          |               |     |         |      |           | A          | B    | C   |          |
| 03999    | PGE416T       | 3/4 | 208-230 | 4.0  | 7.5/370   | 4.0        | 6.14 | 1/2 | 08060    |

### 1625 RPM<sup>(1)</sup> — Three Speed - 4 Pole

### 1075 RPM — Reversible Rotation - Standard Efficiency - 6

| MARS NO. | GE NO. 5KCP39 | HP | VOLTS | AMPS | CAP. REQ. | DIMENSIONS |   |   | BASE NO. |
|----------|---------------|----|-------|------|-----------|------------|---|---|----------|
|          |               |    |       |      |           | A          | B | C |          |

#### Three Speed<sup>(1)</sup>

|                      |         |     |         |      |        |     |      |     |       |
|----------------------|---------|-----|---------|------|--------|-----|------|-----|-------|
| 03583 <sup>(2)</sup> | FGN651T | 1/4 | 115     | 4.2  | 5/370  | 4.0 | 4.89 | 1/2 | 08055 |
| 03586 <sup>(2)</sup> | JGN654T | 1/3 | 208-230 | 2.9  | 5/370  | 4.0 | 5.14 | 1/2 | 08056 |
| 03588 <sup>(2)</sup> | NGN656T | 1/2 | 208-230 | 4.3  | 5/370  | 4.0 | 5.89 | 1/2 | NA    |
| 03595 <sup>(2)</sup> | SGL854S | 1   | 115     | 11.8 | 20/370 | 4.0 | 6.90 | 1/2 | 08060 |

#### Two Speed<sup>(3)</sup>

|                      |         |     |     |      |        |     |      |     |       |
|----------------------|---------|-----|-----|------|--------|-----|------|-----|-------|
| 03383 <sup>(2)</sup> | FGM421S | 1/4 | 115 | 4.2  | 5/370  | 4.0 | 4.89 | 1/2 | 08055 |
| 03387                | PGM438S | 1/2 | 115 | 9.0  | 5/370  | 4.0 | 6.14 | 1/2 | 08060 |
| 03389                | PGN091T | 3/4 | 115 | 10.3 | 15/370 | 4.0 | 6.14 | 1/2 | 08060 |

(1) Approximately 150RPM differential between speeds depending on fan load

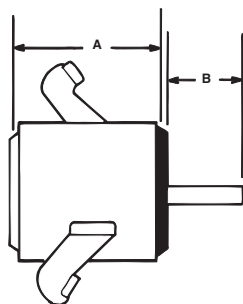
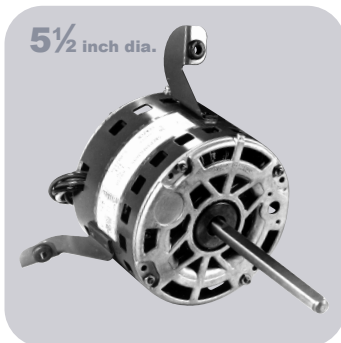
(2) 60 Hz only

(3) Approximately 300RPM differential between speeds depending on fan load

## 5KCP39 PSC Torsion Flex Mount Motors



GE torsion-flex mount motors are designed for direct drive furnace blower applications. The unique torsion-flex mounting speeds installation while the special steel of the torsion-flex bracket absorbs vibration for quieter operation. All models are electrically reversible, 3-speed motors of high efficiency Energy Saver® design.



### Features:

- Energy Saver®
- All angle sleeve bearings
- 3-Speed 1075/925/775 RPM<sup>(1)</sup>
- Torsion-flex mounting, grommets and sleeves included
- 5.0 inch long, 1/2 inch diameter shaft
- Reversible rotation

### Specifications:

- Class A insulation
- Single phase, 60/50 Hertz
- Overload protection
- Fan duty, continuous, air over
- Open construction
- 26 inch leads

### 1075 RPM<sup>(1)</sup> — Three Speed – Reversible Rotation - 6 Pole

| MARS NO.             | GE NO. 5KCP39 | HP  | VOLTS   | AMPS | CAP. REQ. | DIMENSIONS |      | BLOWER SIZE |
|----------------------|---------------|-----|---------|------|-----------|------------|------|-------------|
|                      |               |     |         |      |           | A          | B    |             |
| 03785 <sup>(2)</sup> | LGP732S       | 1/3 | 115     | 4.9  | 7.5/370   | 5.0        | 4.98 | 9 in.       |
| 03786                | JGP733S       | 1/3 | 208-230 | 2.5  | 5/370     | 5.0        | 4.73 | 9 in.       |
| 03787                | PGP734S       | 1/2 | 115     | 7.3  | 10/370    | 5.0        | 5.48 | 10 in.      |

<sup>(1)</sup> Approximately 150RPM differential between speeds depending on fan load

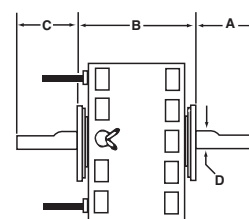
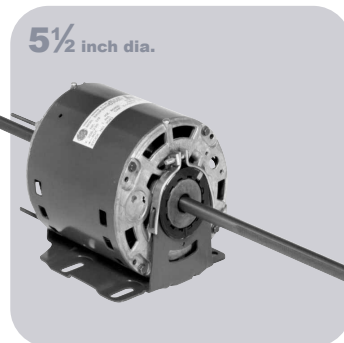
<sup>(2)</sup> 60 Hz only

## PSC Motors Replace 5KCP32 & 5KCP38



### Features:

- Energy Saver®
- Replace GE 5KCP32-38
- All angle sleeve bearings
- Two-speed, 1075/775 RPM(2) double shaft
- Extended thru bolts, base included, plus 4 split rings
- 14 inch leads
- For accessories see pages M-44 – M-46



### Specifications:

- Single phase, 60/50 Hertz
- Open construction
- Overload protected
- Fan duty, continuous, air over
- 3 inch shaft height when base mounted

### 1075/775 RPM<sup>(1)</sup>

| MARS NO.             | GE NO. 5KCP | HP  | VOLTS   | AMPS | ROT LE | CAP. REQ. | DIMENSIONS |      |      |     |
|----------------------|-------------|-----|---------|------|--------|-----------|------------|------|------|-----|
|                      |             |     |         |      |        |           | A          | B    | C    | D   |
| 03092 <sup>(2)</sup> | 39NGD369T   | 1/2 | 208-230 | 3.8  | CCW    | 5/370     | 8.00       | 6.46 | 8.50 | 1/2 |

<sup>(1)</sup> Approximately 300 RPM differential between speeds depending on fan load

<sup>(2)</sup> 60 Hertz only

## 5KCP39 PSC Double Shaft Motors

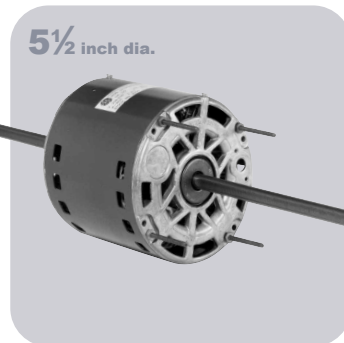


GE Commercial Motors

By Regal-Beloit

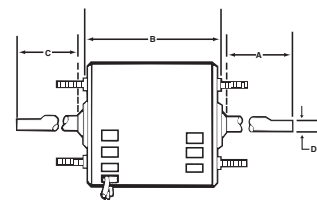
### Features:

- All angle sleeve bearings
- 3 speed, 1075/925/775 RPM
- Extended thru bolts
- Base mount using mounting kit 08095 and appropriate base
- Double 1/2 inch diameter shafts
- For accessories see pages M-44 – M-46



### Specifications:

- Single phase, 60/50 Hertz
- Overload protected
- Fan duty, continuous, air over
- Open construction
- Requires 5 mfd, 370 volt capacitor (MARS No. 12005)
- 14 inch numbered leads



### 1075/925/775 RPM<sup>(1)</sup>

| MARS NO. | GE NO. 5KCP39 | HP  | VOLTS   | AMPS | RPM <sup>(1)</sup> | ROT LE | DIMENSIONS |      |      |     | BASE NO. |
|----------|---------------|-----|---------|------|--------------------|--------|------------|------|------|-----|----------|
|          |               |     |         |      |                    |        | A          | B    | C    | D   |          |
| 03696    | NGA407T       | 1/2 | 208-230 | 3.5  | 1075/975/775       | CCW    | 7.50       | 5.25 | 7.25 | 1/2 | 08060    |

<sup>(1)</sup> Approximately 150 RPM differential between speeds depending on fan load



## GE TECMate Pro™ Service Tool



The Tecmate Pro™ Service Tool, MARS stock #08500 is the latest advance in ECM technology developed by and for Genteq Motors. The Tecmate allows the service technician to analyze a Genteq ECM motor independently of the HVAC system in which it is installed. The Tecmate can test all the basic settings of a Genteq ECM motor, and can detect and isolate motor failures from HVAC system failures.

**Compact**

**Easy To Use**



| MARS NO. | DESCRIPTION                  |
|----------|------------------------------|
| 08500    | TECMate Pro ECM Motor Tester |

## Broad Ocean ECM Motor Tester (Digimotor Test Tool)

Save time and money with the Broad Ocean ECM Motor Tester

- Isolates any issues to either the motor or the control board and the control wiring

**NOTE:** This tool is for Broad Ocean OEM Digi-Motors only.

This tool is not compatible with Azure®.

### Kit Contents:

- Broad Ocean ECM Tool
- Type A test Connector (Furnaces, AH & Packaged)
- Type B Test Connector (Packaged Units)
- Type C Test Connector (Air Handlers)
- Type D Test Connector (Outdoor Condenser Fan Motors)



| MARS NO. | DESCRIPTION                  | MARS PACK |
|----------|------------------------------|-----------|
| 08503    | Broad Ocean ECM Motor Tester | 1         |

## ECM Protectors

### Saves Equipment

ECM protectors plug into existing motor connectors or plugs. They help to protect these valuable motors from voltage spikes, surges, and transients that often damage them.

### Fast Installation

These protectors simply plug in between the motor connector and the existing wiring harness. A ground strap with a ring terminal is provided for additional protection.

### Protect Your Investment

The most common cause of ECM motor failure is damage to the electronics module as a result of poorly conditioned incoming power.

| MARS NO. | USED ON              | MARS PACK |
|----------|----------------------|-----------|
| 08552    | GE X-13 ECM          | 1         |
| 08553    | OEM ECM Applications | 1         |



## ECM Repair Kit

Repairs many ECM motor modules that have been damaged by voltage problems and power surges

- Full instructions included in kit
- Kit includes **OCPD** device and helpful circuit board releaser tool
- Using the kit requires a soldering gun or iron and rosin core solder

ECM's have **\*Over Current Protection Devices** that are designed to keep excessive power from damaging other system components. Frequently, only this part needs replacement to restore an expensive ECM to an operation condition.

Not every ECM module can be repaired. Because of this, the repair kit is not guaranteed to fix every motor-but because of the motor's high cost vs. the repair kit's low cost- it's often worth the effort.

| MARS NO. | DESCRIPTION    | MARS PACK |
|----------|----------------|-----------|
| 08551    | ECM Repair Kit | 1         |



## Variable Speed Zebra



Complete diagnostics for systems where an ECM motor is not working properly

Uses simple-to-operate microprocessor controlled tests to:

- accurately diagnose exactly which component has failed in a variable speed system that is not working correctly
- assist in system setup by reporting CFM airflow and motor RPM as room vents and other controls are adjusted
- allows easy adjustment of all available settings and options on ECM blower motors to obtain maximum customer comfort



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 08550    | ECM Diagnostic System  | 1         |
| 08562    | 2 Pc Adapter Set for New GE X-13 & Evergreen Motors (Variable Speed) | 1         |

## Universal Zebra



A tool designed to troubleshoot every ECM motor in HVAC/R systems!

- Three 3-position switches test up to 6 speeds
- LED's indicate power and signals being sent
- Rugged case protects your tools & leads

### Adapters for Universal Zebra

- Adapters quickly plug into motor and Universal Zebra
- Magnetic reference cards show what each switch does & what each LED means for that motor



| MARS NO. | DESCRIPTION                     | MARS PACK |
|----------|---------------------------------|-----------|
| 08554    | Universal ECM Diagnostic System | 1         |

### MARS #

**08555 Adapter "A"** – for GE 2.0 & 2.3 ECM's

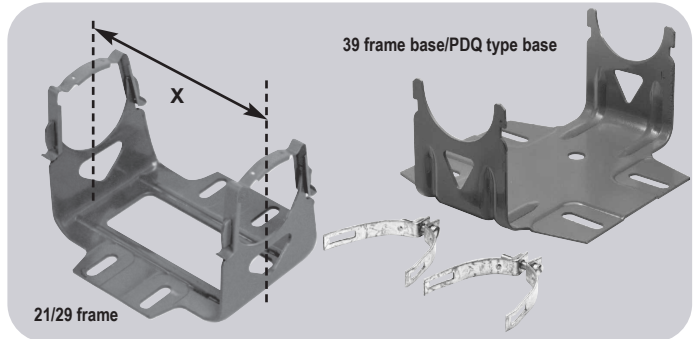
**08556 Adapter "B"** – for Genteq 3.0 ECM's

**08557 Adapter "C"** – for X-13 & X-mtr ECM's

**08558 Adapter "E"** – for ECM 142 & Signal Select ECM's

## Motor Mounting Bases

Designed for use with GE motors. Bases include clips.



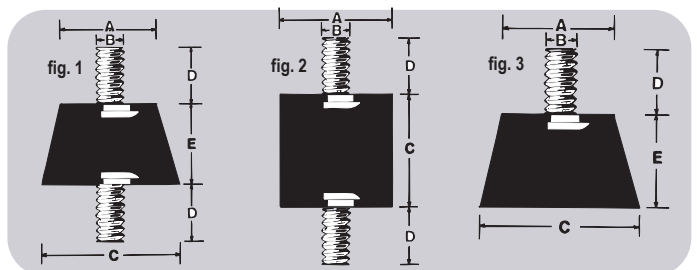
### Mounting Bases

| MARS NO. | FOR USE ON      | GE NO.  | SHAFT HEIGHT | X DIMENSION |
|----------|-----------------|---------|--------------|-------------|
| 08060    | 39 frame motors | 920AB10 | 3-1/2        | 5.98/6.14   |

### Mounting Accessories

| MARS NO. | USED ON  | DESCRIPTION                    | PAK QUAN |
|----------|----------|--------------------------------|----------|
| 08096    | 39 frame | clips for 39 frame motor bases | 2 pieces |

## Vibration Insulators



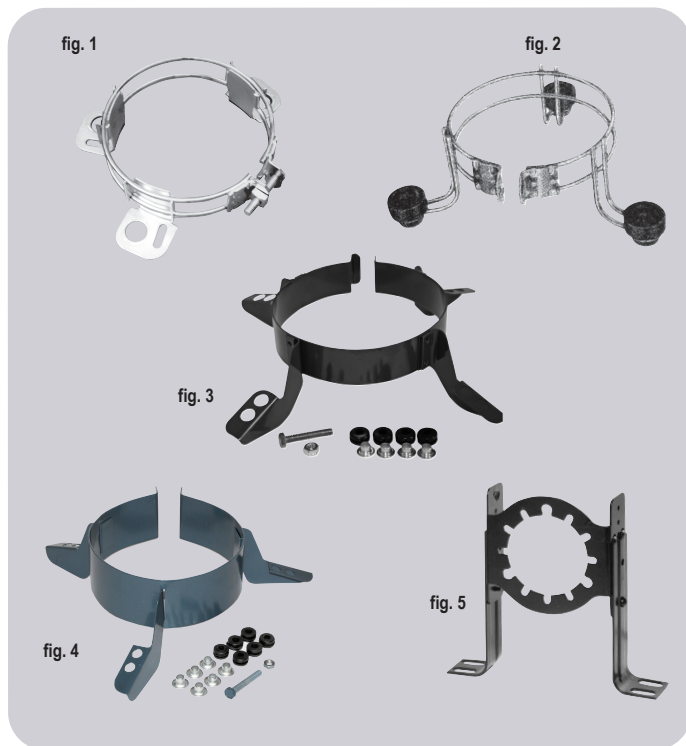
| MARS NO. | MFR. NO. | DIMENSIONS |      |       |     |       | MAX. LOAD IN POUNDS |             |       | FIG. NO. |
|----------|----------|------------|------|-------|-----|-------|---------------------|-------------|-------|----------|
|          |          | A          | B    | C     | D   | E     | THD.                | COMPRESSION | SHEAR |          |
| 07801    | K30      | 1-3/16     | 5/16 | 1-5/8 | 5/8 | 1-1/2 | 18                  | 60          | -     | 1        |
| 07802    | K33      | 1-3/8      | 5/16 | 1-5/8 | 5/8 | 1.0   | 18                  | 100         | -     | 1        |
| 07804    | K44      | 1.0        | 5/16 | 1.0   | 5/8 | -     | 18                  | 40          | 10    | 2        |
| 07805    | K47      | 1.0        | 1/4  | 3/4   | 1/2 | -     | 20                  | 50          | 10    | 2        |
| 07807    | K133     | 1-3/8      | 5/16 | 1-5/8 | 5/8 | 1.0   | 18                  | 100         | -     | 3        |

## Plastic Rain Shields



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 93581    | 6-3/4 in. diameter for motors with 1/2 in. diameter shaft | 1 piece   |
| 93582    | 6-3/4 in. diameter for motors with 5/8 in. diameter shaft | 1 piece   |

## Mounting Brackets



| MARS NO. | USED ON  | DESCRIPTION   | FIG. NO. |
|----------|--|---|----------|
| 08020    | 39 frame and 5-1/2 in. diam. motors              | adj. lug mounting bracket fits triangular bolt patterns of 6-1/8 in. to 6-9/16 in. bolt to bolt (1/4 in. x 7/8 in. and 3/4 in. x 1-3/8 in. knockouts) | 1        |
| 08021    | 5-1/2 in. fixed motor mtg. bracket with grommets | for mounting blower motor with large wheel opening fits any 5-1/2 in. diameter motor  | 2        |
| 08024    | 5 in. fixed motor mtg. bracket with grommets     | for mounting blower motor with large wheel opening fits any 5 in. diameter motor  | 2        |
| 08049    | 29 and 39 frame motors, 5 in. motors             | 3 Wing Torsion-Flex mounting adapter kit for 9 in. and 10 in. blowers   | 4        |
| 08050    | 48 frame, 5-5/8 in. and 5-1/2 in. diam. motors   | 3 Wing Torsion-Flex mounting adapter kit for 9 in. and 10 in. blowers   | 4        |
| 08047    | 48 frame, 5-5/8 in. and 5-1/2 in. diam. motors   | 4 Wing Torsion-Flex mounting adapter kit for 9 in. and 10 in. blowers   | 3        |
| 08004    | 51 frame motors                                  | shaft height adjustable 4-1/8 in. to 5-3/8 in.  | 5        |

## Premium Belly Bands

### Applications:

Residential HVAC,  
Direct Drive Blowers

- Welded 3-ring bracket
- Anodized steel rod construction
- Includes 3 sets of rubber grommets, 3 sheet metal screws, 3 galvanized steel sleeves, 1 bolt, 1 nut



| MARS NO. | DESCRIPTION      |
|----------|------------------|
| 08025    | 10" Bolt Pattern |
| 08026    | 11" Bolt Pattern |

### Applications:

Residential HVAC,  
Direct Drive Blowers

- Welded 4-ring bracket
- Anodized steel rod construction
- Includes 4 sets of rubber grommets, 4 sheet metal screws, 4 galvanized steel sleeves, 1 bolt, 1 nut



| MARS NO. | DESCRIPTION      |
|----------|------------------|
| 08027    | 13" Bolt Pattern |

## Rheem Adapter Belly Bands

### Applications:

Rheem Blower Assemblies

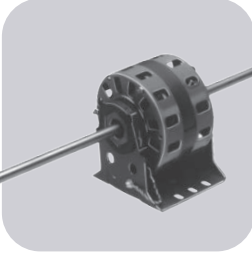
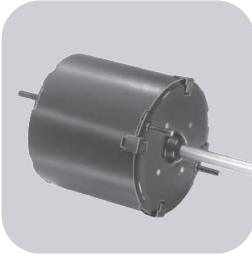
This kit allows the use of standard 5.5" blower motors (without Rheem mounting holes) in Rheem original equipment blower applications.

- Welded 4-ring bracket
- Anodized steel rod construction
- Includes bracket, blower housing tabs, hardware & grommets



| MARS NO. | DESCRIPTION   |
|----------|---------------|
| 08028    | Rheem Adapter |

**Fasco**





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|---|----------|
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FASCO reserves the right to change or modify product revision levels without notice.  
PSC Motors use 5M 370V capacitors unless otherwise indicated.

### PSC - 3.3 DIAMETER

| MODEL | DIA. | HP   | VOLTS   | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.   |
|-------|------|------|---------|------|------|------|------------|------|-------|--------------|
| D1125 | 3.3  | 1/12 | 208-230 | 1550 | 1    | 0.5  | Open Vent. | CCW  | SLV   | 5/16 X 2 5/8 |

### SP - 3.3" DIAMETER

| MODEL | DIA. | HP          | VOLTS       | RPM      | SPD. | AMPS    | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.           |
|-------|------|-------------|-------------|----------|------|---------|---------------|------|-------|----------------------|
| D121  | 3.3  | 1/70        | 115         | 1500     | 1    | 0.7     | Open Vent.    | CCW  | SLV   | 1/4 X 2 1/4          |
| D1100 | 3.3  | 1/50        | 115         | 1550/900 | 2    | 1.2/7   | Open Vent.    | CW   | SLV   | 5/16 X 2 3/8         |
| D125  | 3.3  | 1/50        | 115         | 1500     | 1    | 0.75    | Totally Encl. | CCW  | SLV   | 1/4 X 2 1/4          |
| D1190 | 3.3  | 1/30        | 115         | 3000     | 1    | 1.6     | Open Vent.    | CW   | SLV   | 5/16 X 1 3/4         |
| D1164 | 3.3  | 1/25        | 115/230     | 1550     | 1    | 1.3-.65 | Totally Encl. | CW   | SLV   | 5/16 X 2 1/2         |
| D1101 | 3.3  | 1/20        | 115         | 1500     | 1    | 1.9     | Open Vent.    | CCW  | SLV   | 5/16 X 2 1/4         |
| D1103 | 3.3  | 1/20        | 208-230     | 1500     | 1    | 1.15    | Open Vent.    | CCW  | SLV   | 5/16 X 2 1/4         |
| D1121 | 3.3  | 1/20        | 208-230     | 1550     | 1    | 1       | Open Vent.    | CW   | SLV   | 5/16 X 2 1/2         |
| D1124 | 3.3  | 1/20        | 115         | 1550     | 1    | 2.1     | Open Vent.    | CW   | SLV   | 5/16 X 3             |
| D1152 | 3.3  | 1/20        | 115         | 1500     | 1    | 1.7     | Open Vent.    | CW   | SLV   | 5/16 X 2 3/8         |
| D1154 | 3.3  | 1/20        | 230         | 1550     | 1    | 1       | Open Vent.    | CW   | SLV   | 5/16 X 2 3/8         |
| D1189 | 3.3  | 1/20        | 115/208-230 | 1550     | 1    | 1.4-.76 | Totally Encl. | CW   | BALL  | 5/16 X 1 5/8         |
| D132  | 3.3  | 1/20        | 115         | 1500     | 1    | 1.8     | Open Vent.    | CW   | SLV   | 5/16 X 2 1/4         |
| D471  | 3.3  | 1/20        | 208-230     | 1550     | 1    | 1.1     | Open Vent.    | CCW  | SLV   | 5/16 X 2 1/2         |
| D1126 | 3.3  | 1/15        | 208-230     | 1550     | 1    | 1.1     | Open Vent.    | CW   | SLV   | 5/16 X 3             |
| D366  | 3.3  | 1/14 - 1/25 | 115         | 1550     | 2    | 2.5-1.5 | Open Vent.    | DS   | SLV   | 6 3/8 X 5/16 X 6 3/8 |

### SP - 4.4" DIAMETER

| MODEL | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  |
|-------|------|------|-------|------|------|------|------------|------|-------|-------------|
| D116  | 4.4  | 1/15 | 115   | 1500 | 1    | 2.4  | Open Vent. | CW   | SLV   | 3/8 X 2 3/8 |

### PSC -5.0" DIAMETER

| MODEL | DIA. | HP                               | VOLTS   | RPM  | SPD. | AMPS             | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.            |
|-------|------|----------------------------------|---------|------|------|------------------|---------------|------|-------|-----------------------|
| D290  | 5    | 1/10 - 1/15 - 1/25 - 1/40        | 115     | 1050 | 4    | 2.2-1.4-1-.7     | Open Vent.    | REV  | SLV   | 1/2 X 8 1/2           |
| D277  | 5    | 1/10 - 1/12 - 1/20               | 277     | 1050 | 3    | .7-.5-.4         | Open Vent.    | DS   | SLV   | 8 1/2 X 1/2 X 8 1/2   |
| D1059 | 5    | 1/6                              | 115-127 | 1450 | 3    | 2.3              | Open Vent.    | DS   | SLV   | 8 3/4 X 1/2 X 9       |
| D1071 | 5    | 1/6                              | 208-230 | 1100 | 1    | 0.99             | Totally Encl. | REV  | SLV   | 1/2 X 2 1/8           |
| D1016 | 5    | 1/4                              | 230     | 1100 | 1    | 2                | Open Vent.    | CW   | SLV   | 1/2 X 4 1/8           |
| D140  | 5    | 1/15                             | 115     | 1050 | 1    | 2.7              | Open Vent.    | CW   | SLV   | 3/8 X 2 3/8           |
| D289  | 5    | 1/10 - 1/30 - 1/40 - 1/45 - 1/50 | 115     | 1050 | 5    | 3.6-1.6-1.2-8-.6 | Open Vent.    | DS   | SLV   | 10 3/4 X 1/2 X 10 3/4 |
| D318  | 5    | 1/6 - 1/8                        | 230     | 1050 | 2    | 3.1-2.2          | Open Vent.    | CW   | SLV   | 1/2 X 3 1/2           |

### PSC - 5.6" DIAMETER

| MODEL | DIA. | HP                    | VOLTS   | RPM  | SPD. | AMPS            | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.  |
|-------|------|-----------------------|---------|------|------|-----------------|---------------|------|-------|-------------|
| D832  | 5.6  | 1/8                   | 208-230 | 825  | 1    | 1.1             | Totally Encl. | REV  | SLV   | 1/2 X 4 3/4 |
| D847  | 5.6  | 1/8                   | 208-230 | 1125 | 1    | 0.9             | Totally Encl. | CCW  | SLV   | 1/2 X 3 1/2 |
| D895  | 5.6  | 1/8                   | 208-230 | 1650 | 1    | 0.8             | Totally Encl. | CW   | SLV   | 1/2 X 1 1/2 |
| D917  | 5.6  | 1/6                   | 208-230 | 1075 | 1    | 1               | Totally Encl. | REV  | SLV   | 1/2 X 6 1/2 |
| D5458 | 5.6  | 1/5, 1/4, 1/3         | 208-230 | 1075 | 1    | 2.0             | Totally Encl. | REV  | SLV   | 1/2 X 6 3/4 |
| D2840 | 5.6  | 1/5                   | 208/230 | 1075 | 1    | 1.3             | Totally Encl. | CW   | SLV   | 1/2 X 4 1/8 |
| D743  | 5.6  | 1/5                   | 208-230 | 1075 | 1    | 1.2             | Open Vent.    | REV  | SLV   | 1/2 X 6     |
| D725  | 5.6  | 1/4 - 1/6 - 1/8       | 208-230 | 1075 | 3    | 2.2-1.5-1.1     | Open Vent.    | REV  | SLV   | 1/2 X 6     |
| D721  | 5.6  | 1/4 - 1/5 - 1/6       | 115     | 1075 | 3    | 4.8-3.3-2.6     | Open Vent.    | REV  | SLV   | 1/2 X 6     |
| D7749 | 5.6  | 1/4                   | 208-230 | 1075 | 1    | 1.7             | Open Vent.    | REV  | BALL  | 1/2 X 6 1/2 |
| D7909 | 5.6  | 1/4                   | 208-230 | 1075 | 1    | 1.8             | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 |
| D934  | 5.6  | 1/4                   | 208-230 | 825  | 1    | 1.9             | Totally Encl. | REV  | SLV   | 1/2 X 6     |
| D727  | 5.6  | 1/3 - 1/4 - 1/5       | 115     | 1075 | 3    | 5.9-4.6-3.8     | Open Vent.    | REV  | SLV   | 1/2 X 6     |
| D923  | 5.6  | 1/3 - 1/4 - 1/5       | 208-230 | 1075 | 3    | 2.9-2.2-1.7     | Open Vent.    | REV  | SLV   | 1/2 X 6     |
| D7748 | 5.6  | 1/3                   | 208-230 | 1075 | 1    | 2.9             | Open Vent.    | REV  | BALL  | 1/2 X 6 1/2 |
| D7908 | 5.6  | 1/3                   | 208-230 | 1075 | 1    | 2.6             | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 |
| D701  | 5.6  | 1/2 - 1/3 - 1/4 - 1/5 | 115     | 1075 | 4    | 7.7-5.5-4.2-3.3 | Open Vent.    | REV  | SLV   | 1/2 X 5 1/2 |
| D7907 | 5.6  | 1/2                   | 208-230 | 1075 | 1    | 3.7             | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 |

# General Purpose Motors

3.3 inch dia.



FIG. A D1127



FIG. B D121



FIG. C D132

| FASCO MODEL | TYPE | HP   | VOLTS   | RPM  | SPD. | AMPS      | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | FIG. | NOTES |
|-------------|------|------|---------|------|------|-----------|------------|------|-------|--------------|----------|------|-------|
| D1127       | PSC  | 1/12 | 115/230 | 1550 | 1    | 1.1 / 0.6 | Open Vent. | REV  | SLV   | 5/16 X 3     | 3 1/2    | A    | 75    |
| D121        | SP   | 1/70 | 115     | 1500 | 1    | 0.7       | Open Vent. | CCW  | SLV   | 1/4 X 2 1/4  | 2 1/8    | B    | 85    |
| D132        | SP   | 1/20 | 115     | 1500 | 1    | 1.8       | Open Vent. | CW   | SLV   | 5/16 X 2 1/4 | 2 3/4    | C    | 85    |

NOTES: 75: Shell Turbo 68, low temp. oil (-40°F) 85: Air Over

3.3 inch dia.



FIG. A D125



FIG. B D1164

| FASCO MODEL | TYPE | HP   | VOLTS   | RPM  | SPD. | AMPS    | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | FIG. | NOTES |
|-------------|------|------|---------|------|------|---------|---------------|------|-------|--------------|----------|------|-------|
| D125        | SP   | 1/50 | 115     | 1500 | 1    | 0.75    | Totally Encl. | CCW  | SLV   | 1/4 X 2 1/4  | 2 1/2    | A    | 85    |
| D1164       | SP   | 1/25 | 115/230 | 1550 | 1    | 1.3-.65 | Totally Encl. | CW   | SLV   | 5/16 X 2 1/2 | 3 1/8    | B    | 85    |

NOTES: 85: Air Over

# Refrigeration Fan Motors

3.3 inch dia.

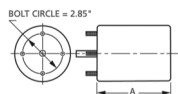
FIG. A D471



| FASCO MODEL | TYPE | HP   | VOLTS   | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | FIG. | NOTES    |
|-------------|------|------|---------|------|------|------|------------|------|-------|--------------|----------|------|----------|
| D471        | SP   | 1/20 | 208-230 | 1550 | 1    | 1.1  | Open Vent. | CCW  | SLV   | 5/16 X 2 1/2 | 4 1/4    | A    | 173, 174 |

NOTES: 173: 3.9" diameter 174: Includes 1/2" studs for mounting

Products on page F-4 & F-5 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.



3.3 inch dia.



FIG. A D1152, D1154, D101, D1103



FIG. B D1121



FIG. C D1124, D1126



FIG. D D1125



FIG. E D1164

| FASCO MODEL           | TYPE | HP   | VOLTS   | RPM  | SPD. | AMPS    | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | FIG. | NOTES   |
|-----------------------|------|------|---------|------|------|---------|---------------|------|-------|--------------|----------|------|---------|
| <b>BOHN</b>           |      |      |         |      |      |         |               |      |       |              |          |      |         |
| D1124                 | SP   | 1/20 | 115     | 1550 | 1    | 2.1     | Open Vent.    | CW   | SLV   | 5/16 X 3     | 3        | C    | 75      |
| D1126                 | SP   | 1/15 | 208-230 | 1550 | 1    | 1.1     | Open Vent.    | CW   | SLV   | 5/16 X 3     | 3 1/2    | C    | 75      |
| D1125                 | PSC  | 1/12 | 208-230 | 1550 | 1    | 0.5     | Open Vent.    | CCW  | SLV   | 5/16 X 2 5/8 | 3 3/4    | D    | 29      |
| <b>KEEPRITE</b>       |      |      |         |      |      |         |               |      |       |              |          |      |         |
| D1121                 | SP   | 1/20 | 208-230 | 1550 | 1    | 1       | Open Vent.    | CW   | SLV   | 5/16 X 2 1/2 | 3 1/2    | B    |         |
| <b>KRAMER/TRENTON</b> |      |      |         |      |      |         |               |      |       |              |          |      |         |
| D1152                 | SP   | 1/20 | 115     | 1500 | 1    | 1.7     | Open Vent.    | CW   | SLV   | 5/16 X 2 3/8 | 2 7/8    | A    |         |
| D1154                 | SP   | 1/20 | 230     | 1550 | 1    | 1       | Open Vent.    | CW   | SLV   | 5/16 X 2 3/8 | 3 1/8    | A    |         |
| <b>LARKIN COIL</b>    |      |      |         |      |      |         |               |      |       |              |          |      |         |
| D1101                 | SP   | 1/20 | 115     | 1500 | 1    | 1.9     | Open Vent.    | CCW  | SLV   | 5/16 X 2 1/4 | 2 3/4    | A    | 75      |
| D1103                 | SP   | 1/20 | 208-230 | 1500 | 1    | 1.15    | Open Vent.    | CCW  | SLV   | 5/16 X 2 1/4 | 3        | A    | 75, 201 |
| <b>SINGER</b>         |      |      |         |      |      |         |               |      |       |              |          |      |         |
| D1164                 | SP   | 1/25 | 115/230 | 1550 | 1    | 1.3-.65 | Totally Encl. | CW   | SLV   | 5/16 X 2 1/2 | 3 1/8    | E    |         |

NOTES: 29: 4M 370V capacitor included 75: Shell Turbo 68, low temp. oil (-40°F) 201: Not a direct replacement for 253-1194, but is an acceptable substitute

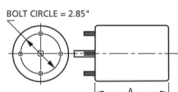
## Window A/C Motors

3.3 inch dia.



FIG. A D366

| FASCO MODEL | TYPE | HP          | VOLTS | RPM  | SPD. | AMPS    | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.           | "A" DIM. | FIG. | NOTES |
|-------------|------|-------------|-------|------|------|---------|------------|------|-------|----------------------|----------|------|-------|
| D366        | SP   | 1/14 - 1/25 | 115   | 1550 | 2    | 2.5-1.5 | Open Vent. | DS   | SLV   | 6 3/8 X 5/16 X 6 3/8 | 3 1/4    | A    |       |



Thermally protected • UL recognized • CSA or ULc certified  
 NOTE: Rotation is determined by looking at shaft end. Shaft length is measured from motor face.



## Flue Exhaust and Draft Booster Blower Motors

3.3 inch dia.



FIG. A D1190

| FASCO MODEL | TYPE | HP   | VOLTS | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.   | FIG. | NOTES |
|-------------|------|------|-------|------|------|------|------------|------|-------|--------------|------|-------|
| D1190       | SP   | 1/30 | 115   | 3000 | 1    | 1.6  | Open Vent. | CW   | SLV   | 5/16 X 1 3/4 | A    | 33    |

NOTES: 33: Stainless steel shaft

## General Purpose Motors

4.4 inch dia.



FIG. A D116

| FASCO MODEL | TYPE | HP   | VOLTS | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES |
|-------------|------|------|-------|------|------|------|------------|------|-------|-------------|----------|------|-------|
| D116        | SP   | 1/15 | 115   | 1500 | 1    | 2.4  | Open Vent. | CW   | SLV   | 3/8 X 2 3/8 | 3        | A    |       |

## Fan Coil Air-Conditioning and Heating Unit Motors

5.0 inch dia.



FIG. A D289



FIG. B D290

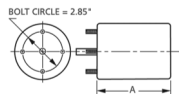


FIG. C D277, D258

| FASCO MODEL | TYPE | HP                               | VOLTS   | RPM  | SPD. | AMPS             | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.            | "A" DIM. | FIG. | NOTES        |
|-------------|------|----------------------------------|---------|------|------|------------------|------------|------|-------|-----------------------|----------|------|--------------|
| D289        | SP   | 1/10 - 1/30 - 1/40 - 1/45 - 1/50 | 115     | 1050 | 5    | 3.6-1.6-1.2-8-.6 | Open Vent. | DS   | SLV   | 10 3/4 X 1/2 X 10 3/4 | 3 1/4    | A    |              |
| D290        | PSC  | 1/10 - 1/15 - 1/25 - 1/40        | 115     | 1050 | 4    | 2.2-1.4-1-7      | Open Vent. | REV  | SLV   | 1/2 X 8 1/2           | 3 1/4    | B    | 29, 128, 147 |
| D277        | PSC  | 1/10 - 1/12 - 1/20               | 277     | 1050 | 3    | .7-5-4           | Open Vent. | DS   | SLV   | 8 1/2 X 1/2 X 8 1/2   | 3 7/8    | C    | 29, 147      |
| D258        | PSC  | 1/5 - 1/10                       | 208-230 | 1550 | 2    | 2.8-1.3          | Open Vent. | DS   | SLV   | 8 X 1/2 X 8           | 3 3/8    | C    | 54, 147      |

NOTES: 29: 4M 370V capacitor included 54: 5M 370V capacitor included 128: Electrically Reversible 147: COMES WITH 2 1/2" O.D. RUBBER MOUNTING RINGS

Products on page F-6 & F-7 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.



5.0 inch dia.



FIG. F D318

| FASCO MODEL | TYPE | HP        | VOLTS | RPM  | SPD. | AMPS    | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES |
|-------------|------|-----------|-------|------|------|---------|------------|------|-------|-------------|----------|------|-------|
| D318        | SP   | 1/6 - 1/8 | 230   | 1050 | 2    | 3.1-2.2 | Open Vent. | CW   | SLV   | 1/2 X 3 1/2 | 4        | F    |       |

Ventilator and Unit Heater Motors

5.0 inch dia.



FIG. A D140

| FASCO MODEL | TYPE | HP   | VOLTS | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES |
|-------------|------|------|-------|------|------|------|------------|------|-------|-------------|----------|------|-------|
| D140        | SP   | 1/15 | 115   | 1050 | 1    | 2.7  | Open Vent. | CW   | SLV   | 3/8 X 2 3/8 | 2 5/8    | A    |       |

Condenser Fan Motors

5.6 inch dia.



FIG. A D743



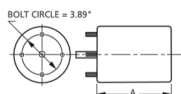
FIG. B D7749



FIG. C D7748

| FASCO MODEL                     | TYPE | HP  | VOLTS   | RPM  | SPD. | AMPS | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES                  |
|---------------------------------|------|-----|---------|------|------|------|------------|------|-------|-------------|----------|------|------------------------|
| <b>SHAFT DOWN OR HORIZONTAL</b> |      |     |         |      |      |      |            |      |       |             |          |      |                        |
| D743                            | PSC  | 1/5 | 208-230 | 1075 | 1    | 1.2  | Open Vent. | REV  | SLV   | 1/2 X 6     | 3 1/2    | A    | 36, 128, 189, 97       |
| <b>SHAFT UP OR HORIZONTAL</b>   |      |     |         |      |      |      |            |      |       |             |          |      |                        |
| D7749                           | PSC  | 1/4 | 208-230 | 1075 | 1    | 1.7  | Open Vent. | REV  | BALL  | 1/2 X 6 1/2 | 3 3/4    | B    | 128, 187, 188, 189, 97 |
| D7748                           | PSC  | 1/3 | 208-230 | 1075 | 1    | 2.9  | Open Vent. | REV  | BALL  | 1/2 X 6 1/2 | 4 1/4    | C    | 128, 187, 188, 189, 97 |

NOTES: 36: Has 4 drilled and tapped holes in shell 97: All angle mount bearings 128: Electrically Reversible 187: Includes shaft water slinger  
188: 60° ambient temperature rating 189: Closed end shield shaft end



Thermally protected • UL recognized • CSA or ULc certified  
NOTE: Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

# Condenser Fan Motors

5.6 inch dia.



FIG. A D934



FIG. B D917

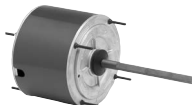


FIG. C D7909, D7908

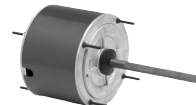


FIG. D D7907

| FASCO MODEL                    | TYPE | HP  | VOLTS   | RPM  | SPD. | AMPS | ENCLOSURE     | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES                 |
|--------------------------------|------|-----|---------|------|------|------|---------------|------|-------|-------------|----------|------|-----------------------|
| <b>825 RPM MOTORS</b>          |      |     |         |      |      |      |               |      |       |             |          |      |                       |
| D934                           | PSC  | 1/4 | 208-230 | 825  | 1    | 1.9  | Totally Encl. | REV  | SLV   | 1/2 X 6     | 4 1/3    | A    | 36, 128, 188, 190     |
| <b>TOTALLY ENCLOSED MOTORS</b> |      |     |         |      |      |      |               |      |       |             |          |      |                       |
| D917                           | PSC  | 1/6 | 208-230 | 1075 | 1    | 1    | Totally Encl. | REV  | SLV   | 1/2 X 6 1/2 | 3 3/4    | B    | 36, 97, 128, 188      |
| D7909                          | PSC  | 1/4 | 208-230 | 1075 | 1    | 1.8  | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 | 4        | C    | 36, 97, 128, 188      |
| D7908                          | PSC  | 1/3 | 208-230 | 1075 | 1    | 2.6  | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 | 4 1/2    | C    | 13, 36, 128, 190, 188 |
| D7907                          | PSC  | 1/2 | 208-230 | 1075 | 1    | 3.7  | Totally Encl. | REV  | BALL  | 1/2 X 6 1/2 | 5        | D    | 12, 128, 188, 97      |

NOTES: 12: 10M 370V Capacitor 13: 7.5M 370V Capacitor 36: Has 4 drilled and tapped holes in shell 97: All angle mount bearings 128: Electrically Reversible 188: 60° ambient temperature rating 190: All angle mount bearings. Use rain shield when necessary.

5.6 inch dia.

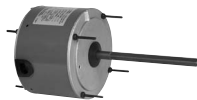
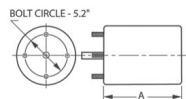


FIG. A D5458

| FASCO MODEL               | TYPE | HP            | VOLTS   | RPM  | AMPS | ENCLOSURE     | ROT. | BRING. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES       |
|---------------------------|------|---------------|---------|------|------|---------------|------|--------|-------------|----------|------|-------------|
| <b>208/230 VAC MOTORS</b> |      |               |         |      |      |               |      |        |             |          |      |             |
| D5458                     | PSC  | 1/5, 1/4, 1/3 | 208-230 | 1075 | 2.0  | Totally Encl. | REV  | SLV    | 1/2 X 6 3/4 | 4 1/4    | A    | 13, 128, 36 |

NOTES: 13: 7.5M 370V Capacitor 36: Has 4 drilled and tapped holes in shell 128: Electrically Reversible 188: 60° ambient temperature rating

Products on page F-8 & F-9 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.



5.6 inch dia.



FIG. A D721, D727, D701



FIG. B D725, D923

| FASCO MODEL             | TYPE | HP                    | VOLTS   | RPM  | SPD. | AMPS            | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | FIG. | NOTES            |
|-------------------------|------|-----------------------|---------|------|------|-----------------|------------|------|-------|-------------|----------|------|------------------|
| <b>OPEN VENTILATION</b> |      |                       |         |      |      |                 |            |      |       |             |          |      |                  |
| D721                    | PSC  | 1/4 - 1/5 - 1/6       | 115     | 1075 | 3    | 4.8-3.3-2.6     | Open Vent. | REV  | SLV   | 1/2 X 6     | 4        | A    | 99, 137, 128     |
| D727                    | PSC  | 1/3 - 1/4 - 1/5       | 115     | 1075 | 3    | 5.9-4.6-3.8     | Open Vent. | REV  | SLV   | 1/2 X 6     | 4 1/4    | A    | 99, 137, 128     |
| D701                    | PSC  | 1/2 - 1/3 - 1/4 - 1/5 | 115     | 1075 | 4    | 7.7-5.5-4.2-3.3 | Open Vent. | REV  | SLV   | 1/2 X 5 1/2 | 5 1/4    | A    | 99, 137, 12, 128 |
| D725                    | PSC  | 1/4 - 1/6 - 1/8       | 208-230 | 1075 | 3    | 2.2-1.5-1.1     | Open Vent. | REV  | SLV   | 1/2 X 6     | 4        | B    | 98, 128          |
| D923                    | PSC  | 1/3 - 1/4 - 1/5       | 208-230 | 1075 | 3    | 2.9-2.2-1.7     | Open Vent. | REV  | SLV   | 1/2 X 6     | 4 1/4    | B    | 98, 128          |

NOTES: 12: 10M 370V Capacitor 98: All angle mount bearings. Use rainshield when necessary. 99: All angle mount bearings. 128: Electrically Reversible 137: Ideal for blowers and fans used in furnaces and air-conditioners.

Window A/C, Condenser Fan & Direct Drive Blower Motors

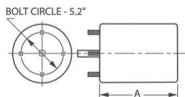
5.6 inch dia.



FIG. A D788, D784

| FASCO MODEL | TYPE | HP              | VOLTS   | RPM  | SPD. | AMPS        | ENCLOSURE  | ROT. | BRNG. | SHAFT DIM. | "A" DIM. | FIG. | NOTES |
|-------------|------|-----------------|---------|------|------|-------------|------------|------|-------|------------|----------|------|-------|
| D788        | PSC  | 1/2             | 208-230 | 1625 | 1    | 3.9         | Open Vent. | REV  | SLV   | 1/2 X 6    | 5        | A    | 191   |
| D784        | PSC  | 1/2 - 1/3 - 1/4 | 208-230 | 1625 | 3    | 3.8-2.8-2.1 | Open Vent. | REV  | SLV   | 1/2 X 6    | 5        | A    | 191   |

NOTES: 191: Should not be used for replacements where original motor is rated below 1500 RPM



Thermally protected • UL recognized • CSA or ULc certified  
 NOTE: Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

# Specific Purpose Blowers



FIG. A A129



FIG. B A088



FIG. C A110

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.   | FIG. | NOTES |
|-------------|------|-------|------|------|--|------|-------|
| A129        | SP   | 115   | 1    | 1.95 | Amana 7021-9064, 7021-9259                                       | A    |       |
| A088        | SP   | 115   | 1    | 1.3  | Coleman 7021-6759, Dornback 7021-5478, York 7021-8629, 7021-7105 | B    |       |
| A110        | SP   | 115   | 1    | 0.76 | Frymaster 7002-3512  | C    |       |



FIG. A A157



FIG. B A180

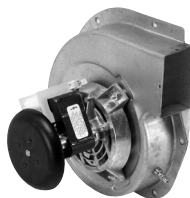


FIG. C A182

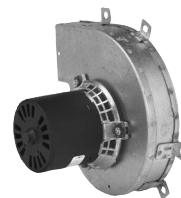


FIG. D A281

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.                  | FIG. | NOTES |
|-------------|------|-------|------|------|-----------------------------|------|-------|
| A157        | SP   | 115   | 1    | 1.3  | Goodman 7002-2307           | A    |       |
| A180        | SP   | 115   | 1    | 1.8  | Goodman 7021-9625, 20190601 | B    |       |
| A182        | SP   | 115   | 1    | 1.2  | Goodman 7002-3036, B4059000 | C    |       |
| A281        | SP   | 115   | 1    | 0.9  | Goodman 7021-8252, D6996405 | D    |       |



FIG. A A173

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.                                       | FIG. | NOTES |
|-------------|------|-------|------|------|--|------|-------|
| A173        | PSC  | 115   | 1    | 0.8  | ICP 1011350, Alltemp (Rotom)7062-4578, 7062-4832 | A    |       |

Products on page F-10 & F-11 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.







FIG. A A135



FIG. B A163



FIG. C A200

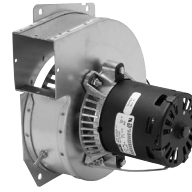


FIG. D A206

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.                  | FIG. | NOTES |
|-------------|------|-------|------|------|-----------------------------|------|-------|
| A135        | SP   | 120   | 1    | 0.7  | Lennox 7021-8812, 7021-8819 | A    |       |
| A163        | SP   | 115   | 1    | 1.8  | Lennox 7021-9450            | B    |       |
| A200        | SP   | 115   | 1    | 1.95 | Lennox 7002-2975            | C    |       |
| A206        | SP   | 115   | 1    | 1.5  | Lennox 7021-8473, 7021-8983 | D    |       |



FIG. A A324



FIG. B A079

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.  | FIG. | NOTES |
|-------------|------|-------|------|------|---|------|-------|
| A324        | PSC  | 230   | 1    | .44  | Lennox 7062-1909, 28G6601, 7062-1794  | A    |       |
| A079        | SP   | 115   | 1    | 1.1  | Rheem Ruud 74-70-21496-03-01, 74-70-21504-03-04, Goodman B1859000, 7021-6804, JA1M106, JA1M137, Trane B1W24, WG94X167 | B    |       |



FIG. A A136



FIG. B A139



FIG. C A247

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.       | FIG. | NOTES |
|-------------|------|-------|------|------|------------------|------|-------|
| A136        | PSC  | 115   | 1    | 0.75 | Rheem 7062-3861  | A    |       |
| A139        | SP   | 115   | 1    | 0.95 | Rheem 7021-7577  | B    |       |
| A247        | PSC  | 115   | 2    | 0.95 | Rheem 7062-5519S | C    |       |



FIG. A A197

| FASCO MODEL | TYPE    | VOLTS  | SPD. | AMPS | CROSS REF.                  | FIG. | NOTES |
|-------------|---------|--------|------|------|-----------------------------|------|-------|
| A197        | 3 PHASE | 33-110 | VAR. | 1    | Trane 7092-0238S, 7092-0238 | A    |       |

Thermally protected • UL recognized • CSA or ULc certified  
**NOTE:** Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

# Specific Purpose Blowers



FIG. A A276

| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.      | FIG. | NOTES |
|-------------|------|-------|------|------|-----------------|------|-------|
| A276        | SP   | 115   | 1    | 1    | Trane 7021-9011 | A    |       |



FIG. A A165



FIG. B A224



FIG. C A225



FIG. D A228

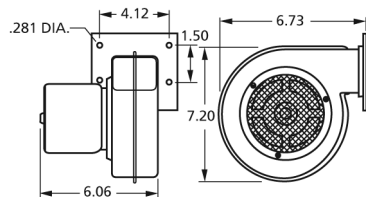
| FASCO MODEL | TYPE | VOLTS | SPD. | AMPS | CROSS REF.   | FIG. | NOTES |
|-------------|------|-------|------|------|--|------|-------|
| A165        | PSC  | 115   | 1    | 0.7  | York 7062-3958   | A    |       |
| A224        | SP   | 115   | 2    | 0.8  | York 7062-5048, 024-27654-000, 7062-4743                       | B    |       |
| A225        | SP   | 115   | 1    | 2.25 | York 7021-11577, 17503, 7021-11577S, 7021-11830, 024-34558-000 | C    |       |
| A228        | SP   | 115   | 1    | 2    | York 7002-3285, 024-31957-000, 7002-2941                       | D    |       |

# Centrifugal Blowers

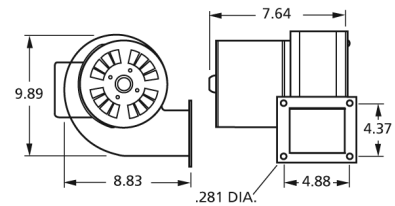
## 80 to 125 Free Air Output



50752-D500



B45227



| FASCO MODEL | CFM AT STATIC PRESSURE SHOWN |     |     |     |     |     |     |     |     |     | NAME-PLATE CFM | VOLTS | FREQ. | NO. OF SPEEDS | RPM@ FREE AIR | AMPS@ FREE AIR | BRNG. |
|-------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|-------|-------|---------------|---------------|----------------|-------|
|             | 0.1                          | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |                |       |       |               |               |                |       |
| 50752-D500  | 108                          | 105 | 97  | 93  | 90  | 83  | 77  | 65  | 32  | -   | 135            | 115   | 60    | 1             | 3100          | 1.1            | SLV   |
| B45227      | 230                          | 212 | 191 | 175 | 130 | 27  | -   | -   | -   | -   | 265            | 115   | 60    | 1             | 1650          | 1.86           | SLV   |

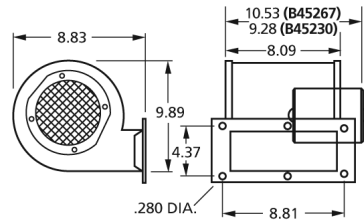
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320 to 1000 Free Air Output



B45267

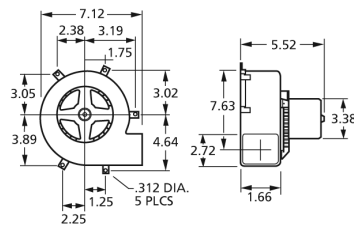


| FASCO MODEL | CFM AT STATIC PRESSURE SHOWN<br>STATIC PRESSURE (INCHES OF WATER) |         |         |         |         |       |     |     |     |     |   | NAME-PLATE CFM | VOLTS | FREQ. | NO. OF SPEEDS | RPM@ FREE AIR | AMPS@ FREE AIR | BRNG |
|-------------|---|---------|---------|---------|---------|-------|-----|-----|-----|-----|---|----------------|-------|-------|---------------|---------------|----------------|------|
|             | 0.1   | 0.2     | 0.3     | 0.4     | 0.5     | 0.6   | 0.7 | 0.8 | 0.9 | 1.0 |   |                |       |       |               |               |                |      |
| B45267      | 393/356   | 359/331 | 318/297 | 254/240 | 187/167 | 64/58 | -   | -   | -   | -   | - | 460            | 115   | 60    | 2             | 1600/1400     | 2.9            | SLV  |

64 to 1200 Free Air Output



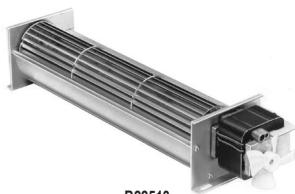
A079



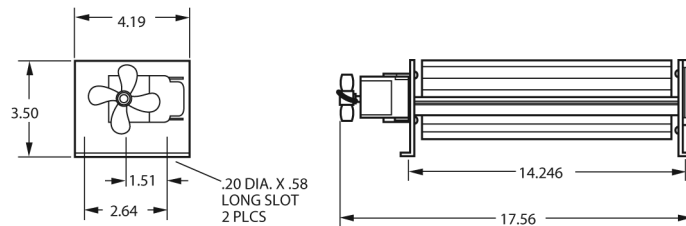
| FASCO MODEL | CFM AT STATIC PRESSURE SHOWN<br>STATIC PRESSURE (INCHES OF WATER) |     |     |     |    |     |     |     |     |   |     | NAME-PLATE CFM | VOLTS | FREQ. | NO. OF SPEEDS | RPM@ FREE AIR | AMPS@ FREE AIR | BRNG |     |     |
|-------------|---|-----|-----|-----|----|-----|-----|-----|-----|---|-----|----------------|-------|-------|---------------|---------------|----------------|------|-----|-----|
|             | 0.2   | 0.4 | 0.6 | 0.8 | 1  | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 |                |       |       |               |               |                |      | 2.4 | 2.6 |
| A079        | 85  | 81  | 77  | 73  | 65 | 51  | 22  | -   | -   | - | -   | -              | -     | 89    | 115           | 60            | 1              | 2200 | 1.1 | SLV |

Transflo® Direct Drive Blowers

80 to 215 CFM Free Air Output



B22513



| FASCO MODEL | CFM AT STATIC PRESSURE SHOWN<br>STATIC PRESSURE (INCHES OF WATER) |     |     |     |     |     |     |     |     |     |   | NAME-PLATE CFM | VOLTS | FREQ. | NO. OF SPEEDS | RPM@ FREE AIR | AMPS@ FREE AIR | BRNG |
|-------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|----------------|-------|-------|---------------|---------------|----------------|------|
|             | 0.1   | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |   |                |       |       |               |               |                |      |
| B22513      | 196   | 70  | -   | -   | -   | -   | -   | -   | -   | -   | - | 215            | 115   | 60    | 1             | 2780          | 1.3            | SLV  |

Thermally protected • UL recognized • CSA or ULc certified  
 NOTE: Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

# OEM Direct Replacement Motors



FIG. A A129



FIG. B A180

| FASCO MODEL  | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM. | "A" DIM. | CROSS REF.                    | FIG. | NOTES |
|--------------|------|------|------|-------|------|------|------|------|-------|------------|----------|-------------------------------|------|-------|
| <b>AMANA</b> |      |      |      |       |      |      |      |      |       |            |          |                               |      |       |
| A129         | SP   | 3.3  | 1/20 | 115   | 3250 | 1    | 1.95 | CW   | SLV   |            |          | Amana, 7021-9064<br>7021-9259 | A    |       |
| A180         | SP   | 3.3  | 1/30 | 115   | 3400 | 1    | 1.8  | CCW  | BALL  |            |          | 7021-9625, 20190601           | B    |       |



FIG. A D847

| FASCO MODEL         | TYPE | DIA. | HP  | VOLTS   | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | CROSS REF.                        | FIG. | NOTES |
|---------------------|------|------|-----|---------|------|------|------|------|-------|-------------|----------|-----------------------------------|------|-------|
| <b>BRYANT/PAYNE</b> |      |      |     |         |      |      |      |      |       |             |          |                                   |      |       |
| D847                | PSC  | 5.6  | 1/8 | 208-230 | 1125 | 1    | 0.9  | CCW  | SLV   | 1/2 X 3 1/2 | 3 3/4    | K1543, HC35VE-230<br>KA55CGD-9658 | A    |       |



FIG. A A088

| FASCO MODEL    | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM. | "A" DIM. | CROSS REF. | FIG. | NOTES |
|----------------|------|------|------|-------|------|------|------|------|-------|------------|----------|------------|------|-------|
| <b>COLEMAN</b> |      |      |      |       |      |      |      |      |       |            |          |            |      |       |
| A088           | SP   | 3.3  | 1/25 | 115   | 3200 | 1    | 1.3  | CW   | SLV   |            |          | 7021-5478  | A    |       |



FIG. A D1160

| FASCO MODEL  | TYPE | DIA. | HP    | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.                              | FIG. | NOTES |
|--------------|------|------|-------|-------|------|------|------|------|-------|--------------|----------|---|------|-------|
| <b>FASCO</b> |      |      |       |       |      |      |      |      |       |              |          |   |      |       |
| D1160        | SP   | 3.3  | 1/100 | 115   | 1480 | 1    | 0.58 | CW   | SLV   | 5/16 X 1 1/2 | 2 1/8    | 7163-2593, 663, 668, 763, 768, 661, 761 | A    |       |

Products on page F-14 & F-15 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.



FIG. A D1016



FIG. B A110

| FASCO MODEL      | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | CROSS REF.               | FIG. | NOTES |
|------------------|------|------|------|-------|------|------|------|------|-------|-------------|----------|--------------------------|------|-------|
| <b>FEDDERS</b>   |      |      |      |       |      |      |      |      |       |             |          |                          |      |       |
| D1016            | PSC  | 5    | 1/4  | 230   | 1100 | 1    | 2    | CW   | SLV   | 1/2 X 4 1/8 | 3 7/8    | Condenser Fan; S196-18-2 | A    |       |
| <b>FRYMASTER</b> |      |      |      |       |      |      |      |      |       |             |          |                          |      |       |
| A110             | SP   | -    | 1/70 | 115   | 3212 | 1    | 0.76 | CW   | BALL  |             |          | 7021-0898                | B    | 195   |

NOTES: 195: 50/60 Hz

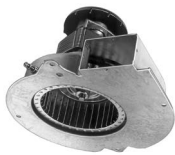


FIG. A A157



FIG. B A079

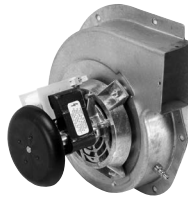


FIG. C A182

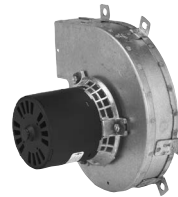


FIG. D A281

| FASCO MODEL    | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | CROSS REF.          | FIG. | NOTES |
|----------------|------|------|------|-------|------|------|------|------|-------|---------------------|------|-------|
| <b>GOODMAN</b> |      |      |      |       |      |      |      |      |       |                     |      |       |
| A157           | SP   | -    | 1/35 | 115   | 3000 | 1    | 1.3  | CCW  | SLV   | 7002-2307           | A    |       |
| A079           | SP   | 3.3  | 1/50 | 115   | 3000 | 1    | 1.1  | CCW  | SLV   | 7021-6804           | B    |       |
| A182           | SP   | 3.3  | 1/35 | 115   | 3125 | 1    | 1.2  | CCW  | SLV   | 7002-3036, B4059000 | C    |       |
| A281           | SP   | 3.3  | 1/40 | 115   | 3000 | 1    | 0.9  | CW   | SLV   | 7021-8252, D6996405 | D    |       |

Thermally protected • UL recognized • CSA or ULc certified

NOTE: Rotation is determined by looking at shaft end. Shaft length is measured from motor face.





FIG. A D1071

| FASCO MODEL        | TYPE | DIA. | HP  | VOLTS   | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | CROSS REF.                    | FIG. | NOTES |
|--------------------|------|------|-----|---------|------|------|------|------|-------|-------------|----------|-------------------------------|------|-------|
| <b>HEIL-QUAKER</b> |      |      |     |         |      |      |      |      |       |             |          |                               |      |       |
| D1071              | PSC  | 5    | 1/6 | 208-230 | 1100 | 1    | 0.99 | REV  | SLV   | 1/2 X 2 1/8 |          | HQ 1052662EM;<br>48HXCLW-1562 | A    |       |

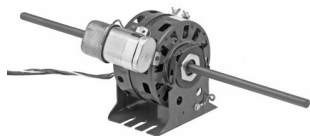


FIG. A D1059

| FASCO MODEL | TYPE | DIA. | HP  | VOLTS   | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.      | "A" DIM. | CROSS REF.            | FIG. | NOTES |
|-------------|------|------|-----|---------|------|------|------|------|-------|-----------------|----------|-----------------------|------|-------|
| <b>IEC</b>  |      |      |     |         |      |      |      |      |       |                 |          |                       |      |       |
| D1059       | PSC  | 5    | 1/6 | 115-127 | 1450 | 3    | 2.3  | DS   | SLV   | 8 3/4 X 1/2 X 9 | 3 1/3    | 5KCP29DK8384S, S89208 | A    | 31    |

NOTES: 31: 5M 370V Capacitor



FIG. A A171



FIG. B A172



FIG. C A173

| FASCO MODEL               | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | CROSS REF.          | FIG. | NOTES |
|---------------------------|------|------|------|-------|------|------|------|------|-------|---------------------|------|-------|
| <b>INTERCITY PRODUCTS</b> |      |      |      |       |      |      |      |      |       |                     |      |       |
| A171                      | PSC  | 3.3  | 1/25 | 115   | 3450 | 1    | 0.7  | CCW  | BALL  | 7062-4783, 1011412  | A    |       |
| A172                      | SP   | -    | 1/35 | 115   | 3000 | 1    | 1.6  | CW   | BALL  | 7002-2792, 1010975P | B    |       |
| A173                      | PSC  | 3.3  | 1/18 | 115   | 3450 | 1    | 0.8  | CCW  | BALL  | 7062-4578, 1011350  | C    |       |

Products on page F-16 & F-17 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.





FIG. A A302

| FASCO MODEL               | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM. | "A" DIM. | CROSS REF.                               | FIG. | NOTES |
|---------------------------|------|------|------|-------|------|------|------|------|-------|------------|----------|--|------|-------|
| <b>INTERCITY PRODUCTS</b> |      |      |      |       |      |      |      |      |       |            |          |  |      |       |
| A302                      | SP   | 3.3  | 1/25 | 115   | 3060 | 1    | 1.5  | CW   | SLV   |            |          | 7021-9499, 1010324P, 7021-7700, 1708-607 | A    |       |

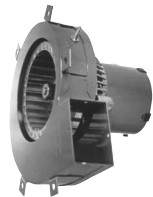


FIG. A A079



FIG. B D1121

| FASCO MODEL     | TYPE | DIA. | HP   | VOLTS   | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.         | FIG. | NOTES |
|-----------------|------|------|------|---------|------|------|------|------|-------|--------------|----------|--------------------|------|-------|
| <b>JANITROL</b> |      |      |      |         |      |      |      |      |       |              |          |                    |      |       |
| A079            | SP   | 3.3  | 1/50 | 115     | 3000 | 1    | 1.1  | CCW  | SLV   |              |          | 7021-6804          | A    |       |
| <b>KEEPRITE</b> |      |      |      |         |      |      |      |      |       |              |          |                    |      |       |
| D1121           | SP   | 3.3  | 1/20 | 208-230 | 1550 | 1    | 1    | CW   | SLV   | 5/16 X 2 1/2 | 3 1/2    | 7163-8861, 1043766 | B    |       |



FIG. A D1152, D1154



FIG. B A135



FIG. C A163



FIG. D A200

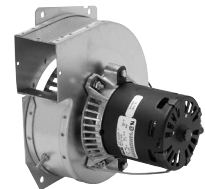


FIG. E A206

| FASCO MODEL           | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.                                 | FIG. | NOTES |
|-----------------------|------|------|------|-------|------|------|------|------|-------|--------------|----------|--|------|-------|
| <b>KRAMER/TRENTON</b> |      |      |      |       |      |      |      |      |       |              |          |  |      |       |
| D1152                 | SP   | 3.3  | 1/20 | 115   | 1500 | 1    | 1.7  | CW   | SLV   | 5/16 X 2 3/8 | 2 7/8    | 5KSM59ES2001                               | A    |       |
| D1154                 | SP   | 3.3  | 1/20 | 230   | 1550 | 1    | 1    | CW   | SLV   | 5/16 X 2 3/8 | 3 1/8    | JA2R140N                                   | A    |       |
| <b>LARKIN COIL</b>    |      |      |      |       |      |      |      |      |       |              |          |  |      |       |
| D1101                 | SP   | 3.3  | 1/20 | 115   | 1500 | 1    | 1.9  | CCW  | SLV   | 5/16 X 2 1/4 | 2 3/4    | Larkin No. 253-1194<br>Fasco No. 7163-2113 | A    | 75    |
| <b>LENNOX</b>         |      |      |      |       |      |      |      |      |       |              |          |  |      |       |
| A135                  | SP   | 3.3  | 1/60 | 120   | 3000 | 1    | 0.7  | CCW  | SLV   |              |          | LENNOX, 7021-8812, 7021-8819               | B    |       |
| A163                  | SP   | 3.3  | 1/20 | 115   | 3400 | 1    | 1.8  | CCW  | BALL  |              |          | LENNOX, 7021-9450                          | C    |       |
| A200                  | SP   | -    | 1/30 | 115   | 3000 | 1    | 1.95 | CCW  | SLV   |              |          | 7002-2975, 31L5501                         | D    |       |
| A206                  | SP   | 3.3  | 1/25 | 115   | 3000 | 1    | 1.5  | CW   | SLV   |              |          | 7021-8473, 65204100/20J8901                | E    |       |



Thermally protected • UL recognized • CSA or ULc certified  
**NOTE:** Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

OEM Direct Replacement Motors



FIG. A A324

| FASCO MODEL   | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM. | "A" DIM. | CROSS REF.                    | FIG. | NOTES |
|---------------|------|------|------|-------|------|------|------|------|-------|------------|----------|-------------------------------|------|-------|
| <b>LENNOX</b> |      |      |      |       |      |      |      |      |       |            |          |                               |      |       |
| A324          | PSC  | 3.3  | 1/12 | 230   | 3200 | 1    | .44  | CW   | BALL  |            |          | 7062-1909, 28G6601, 7062-1794 | A    |       |



FIG. A D1100

| FASCO MODEL       | TYPE | DIA. | HP   | VOLTS | RPM      | SPD. | AMPS    | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.               | FIG. | NOTES |
|-------------------|------|------|------|-------|----------|------|---------|------|-------|--------------|----------|--------------------------|------|-------|
| <b>LOREN COOK</b> |      |      |      |       |          |      |         |      |       |              |          |                          |      |       |
| D1100             | SP   | 3.3  | 1/50 | 115   | 1550/900 | 2    | 1.2/1.7 | CW   | SLV   | 5/16 X 2 3/8 | 2 7/8    | 7173-1580, GC/GN 142/144 | A    |       |



FIG. A A241



FIG. B A247



FIG. C D2840

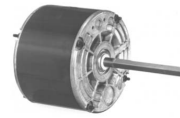
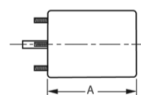


FIG. D D832

| FASCO MODEL       | TYPE | DIA. | HP   | VOLTS   | RPM       | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | CROSS REF.                    | FIG. | NOTES |
|-------------------|------|------|------|---------|-----------|------|------|------|-------|-------------|----------|-------------------------------|------|-------|
| <b>RHEEM/RUUD</b> |      |      |      |         |           |      |      |      |       |             |          |                               |      |       |
| A241              | SP   | 3.3  | 1/25 | 208-230 | 3200      | 1    | 0.62 | CW   | SLV   |             |          | 7021-9567, 70-23641-81        | A    |       |
| A247              | PSC  | 3.3  | 1/40 | 115     | 3250/2800 | 2    | .95  | CW   | SLV   |             |          | 7062-5519                     | B    |       |
| D2840             | PSC  | 5.6  | 1/5  | 208/230 | 1075      | 1    | 1.3  | CW   | SLV   | 1/2 X 4 1/8 | 3 3/4    | 51-21853-82                   | C    |       |
| D832              | PSC  | 5.6  | 1/8  | 208-230 | 825       | 1    | 1.1  | REV  | SLV   | 1/2 X 4 3/4 | 4        | 21276-02, 21276-01, 512076-01 | D    |       |

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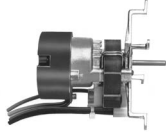


FIG. A K628

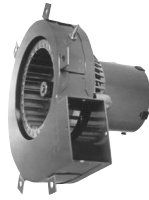


FIG. B A079



FIG. C A136



FIG. D A139

| FASCO MODEL       | TYPE | DIA. | HP    | VOLTS   | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | "A" DIM. | CROSS REF.  | FIG. | NOTES |
|-------------------|------|------|-------|---------|------|------|------|------|-------|-------------|----------|---|------|-------|
| <b>RHEEM/RUUD</b> |      |      |       |         |      |      |      |      |       |             |          |   |      |       |
| K628              | SP   | -    | 1/200 | 208-230 | 3000 | 1    | 0.25 | CW   | SLV   | 1/4 X 1 1/2 | 5        | 51-21964-01, 7102-0628  | A    |       |
| A079              | SP   | 3.3  | 1/50  | 115     | 3000 | 1    | 1.1  | CCW  | SLV   |             |          | 74-70-21504-03-04, 74-70-21496-03-01, JAIM106, JAIM137, 7021-5615 | B    |       |
| A136              | PSC  | 3.3  | 1/20  | 115     | 3450 | 1    | 0.75 | CW   | SLV   |             |          | RHEEM, 7062-3861  | C    | 38    |
| A139              | SP   | 3.3  | 1/55  | 115     | 3000 | 1    | 0.95 | CW   | SLV   |             |          | RHEEM, 7021-7577  | D    |       |

NOTES: 38: 4MFD, 370VAC capacitor rating (not included)



FIG. A D1164

| FASCO MODEL   | TYPE | DIA. | HP   | VOLTS   | RPM  | SPD. | AMPS    | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.          | FIG. | NOTES |
|---------------|------|------|------|---------|------|------|---------|------|-------|--------------|----------|---------------------|------|-------|
| <b>SINGER</b> |      |      |      |         |      |      |         |      |       |              |          |                     |      |       |
| D1164         | SP   | 3.3  | 1/25 | 115/230 | 1550 | 1    | 1.3-.65 | CW   | SLV   | 5/16 X 2 1/2 | 3 1/8    | JA2P091N, JA2P0901N | A    |       |



FIG. A A197



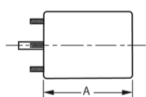
FIG. B A276



FIG. D D895

| FASCO MODEL  | TYPE    | DIA. | HP   | VOLTS   | RPM       | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.  | CROSS REF.              | FIG. | NOTES |  |
|--------------|---------|------|------|---------|-----------|------|------|------|-------|-------------|-------------------------|------|-------|--|
| <b>TRANE</b> |         |      |      |         |           |      |      |      |       |             |                         |      |       |  |
| A197         | 3 PHASE | 3.3  | 1/70 | 33-110  | 1500-4700 | VAR. | 1    | CW   | BALL  |             | 7092-0238, D342097P01   | A    |       |  |
| A276         | SP      | 3.3  | 1/55 | 115     | 3000      | 1    | 1    | CW   | SLV   |             | 7021-9011, D330757P01   | B    |       |  |
| D895         | PSC     | 5.6  | 1/8  | 208-230 | 1650      | 1    | 0.8  | CW   | SLV   | 1/2 X 1 1/2 | 5KCP39BGR426S, MOT 6363 | D    | 1     |  |

NOTES: 1: 4M 370V capacitor



Thermally protected • UL recognized • CSA or ULc certified  
**NOTE:** Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

OEM Direct Replacement Motors



FIG. A D1190

| FASCO MODEL        | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM.   | "A" DIM. | CROSS REF.         | FIG. | NOTES |
|--------------------|------|------|------|-------|------|------|------|------|-------|--------------|----------|--------------------|------|-------|
| <b>WEIL MCLAIN</b> |      |      |      |       |      |      |      |      |       |              |          |                    |      |       |
| D1190              | SP   | 3.3  | 1/30 | 115   | 3000 | 1    | 1.6  | CW   | SLV   | 5/16 X 1 3/4 | 4 7/8    | 7121-5750, JA1N074 | A    |       |



FIG. A A165



FIG. B A224



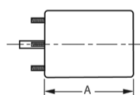
FIG. C A225



FIG. D A228

| FASCO MODEL | TYPE | DIA. | HP   | VOLTS | RPM  | SPD. | AMPS | ROT. | BRNG. | SHAFT DIM. | CROSS REF.                                   | FIG. | NOTES |  |
|-------------|------|------|------|-------|------|------|------|------|-------|------------|--|------|-------|--|
| <b>YORK</b> |      |      |      |       |      |      |      |      |       |            |  |      |       |  |
| A165        | PSC  | 3.3  | 1/25 | 115   | 3450 | 1    | 0.7  | CW   | BALL  |            | 7062-3958                                    | A    |       |  |
| A224        | SP   | 3.3  | 1/18 | 115   | 3450 | 2    | 0.8  | CW   | SLV   |            | 7062-5048, 024-27654-000, 7062-4743          | B    |       |  |
| A225        | SP   | 3.3  | 1/15 | 115   | 3200 | 1    | 2.25 | CW   | BALL  |            | 7021-11577, 17503, 7021-11830, 024-34558-000 | C    |       |  |
| A228        | SP   | -    | 1/25 | 115   | 3000 | 1    | 2    | CW   | BALL  |            | 7002-3285, 024-31957-000, 7002-2941          | D    |       |  |

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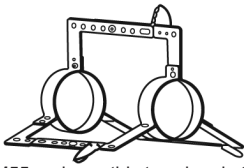
**Fas Mount Bracket Kits**

**FM50**

Motor diameter 5.0"  
Bolt circle 9" and 10.18"

**FM554**

Motor diameter 5.5"  
Bolt circle 9" and 10.18"  
These kits are designed for direct drive blower motors using the flexible bracket mounting arrangement. Grommets and eyelets are included.

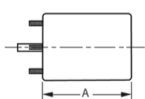


FM55 replaces this type bracket

**Mounting Kits**

**KIT200**

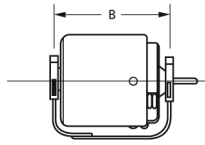
Holes for 4.4" and 5.6" diameter motors.  
One kit will adapt both ends of motor for base mounting.



**NOTES:** 13: 7.5M 370V Capacitor 205: Window A/C Using Delco Inside-Outside Motor 485932, KCP39PG9769S

Thermally protected • UL recognized • CSA or ULc certified  
**NOTE:** Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

Two base clamps ship with each base.

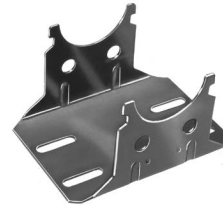


Specify shaft height 3.00" or 3.50" and motor model.



NOTE: The current base numbering system uses the first two numbers to indicate shaft height (30 is 3.0" and 35 is 3.5") and the last three numbers represent distance between cradle arms (386 is 3.86" etc.). Example: 35-417 has a 3.5" shaft height and 4.17" cradle base. To achieve the shaft height listed, the 2 1/2" diameter rings must be used.

For motors not listed: Add .8 to "A" dimension of 4 7/16" diameter motors for base "B" dimension. Add .9 to "A" dimension of 5" diameter motors for base "B" dimension. Add .5 to "A" dimension of 5 5/8" diameter motors for base "B" dimension.



| CRADLE BASE "B" DIMENSION | 3-1/2" BASE NO. | 3" BASE NO. |
|---------------------------|-----------------|-------------|
| 3.54                      | 35-354          | 30-354      |
| 3.86                      | 35-386          | 30-386      |
| 4.08                      | 35-408          | 30-408      |
| 4.17                      | 35-417          | -           |
| 4.35                      | 35-435          | 30-435      |
| 4.61                      | 35-461          | 30-461      |
| 4.79                      | 35-479          | 30-479      |
| 4.92                      | 35-492          | 30-492      |
| 5.17                      | 35-517          | 30-517      |
| 5.42                      | 35-542          | 30-542      |
| 5.58                      | 35-558          | 30-558      |
| 5.95                      | 35-595          | 30-595      |
| 7.05                      | 35-705          | 30-705      |

| RESILIENT MOTOR BASES |              |             |              |             |              |             |              |             |              |             |              |
|-----------------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
| FASCO MODEL           | RECOMM. BASE | FASCO MODEL | RECOMM. BASE | FASCO MODEL | RECOMM. BASE | FASCO MODEL | RECOMM. BASE | FASCO MODEL | RECOMM. BASE | FASCO MODEL | RECOMM. BASE |
| D112                  | 517*         | D338        | 492          | D703        | 558          | D816        | 461          | D939        | 461          | D1749       | 461          |
| D117                  | 386          | D339        | 492          | D711        | 595          | D818        | 705*         | D940        | 595*         | D1853       | 492          |
| D148                  | 354          | D347        | 386          | D721        | 461          | D821        | 542          | D951        | 595*         | D1910       | 595          |
| D150                  | 492*         | D356        | 417          | D723        | 517          | D823        | 595          | D966        | 517*         | D1911       | 558          |
| D151                  | 492*         | D435        | 517*         | D725        | 461          | D825        | 705          | D967        | 558          | D2700       | 595          |
| D152                  | 492*         | D474        | 542          | D726        | 558*         | D838        | 595          | D968        | 595          | D2701       | 558          |
| D154                  | 558          | D480        | 542          | D727        | 479          | D860        | 595          | D970        | 595          | D2702       | 595*         |
| D156                  | 479*         | D481        | 542          | D728        | 595          | D870        | 542          | D971        | 542          | D2703       | 595*         |
| D158                  | 479*         | D482        | 492          | D729        | 595          | D896        | 435          | D972        | 492          | D2704       | 595*         |
| D160                  | 479*         | D483        | 492          | D730        | 595          | D897        | 435          | D973        | 461          | D2705       | 705*         |
| D164                  | 479*         | D484        | 492          | D733        | 492          | D902        | 595          | D974        | 595          | D2814       | 595*         |
| D166                  | 479*         | D485        | 492          | D735        | 595          | D910        | 595          | D975        | 461          | D2816       | NONE         |
| D174                  | 417          | D486        | 517*         | D737        | 517          | D911        | 558          | D1016       | 479          | D2817       | 595*         |
| D176                  | 354*         | D487        | 517*         | D739        | 492          | D912        | 479          | D1025       | 492          | D2818       | NONE         |
| D178                  | 417          | D488        | 517          | D745        | 517          | D913        | 479          | D1033       | 479          | D2832       | 595*         |
| D236                  | 435          | D489        | 542          | D748        | 492          | D914        | 595          | D1042       | 492          | D2833       | 595          |
| D260                  | 479          | D490        | 558          | D780        | 517          | D915        | 595          | D1046       | 386          | D7745       | 517          |
| D261                  | 461          | D491        | 558          | D782        | 492          | D916        | 595          | D1051       | 408          | D7748       | 492          |
| D264                  | 408*         | D492        | 558          | D783        | 461          | D918        | 479          | D1061       | 492          | D7749       | 435          |
| D312                  | 492          | D493        | 558          | D784        | 558          | D920        | 595          | D1065       | 408*         | S2846       | 705          |
| D314                  | 517*         | D494        | 492          | D785        | 542          | D923        | 492          | D1086       | 435          | S2848       | NONE         |
| D316                  | 461*         | D495        | 492          | D786        | 595          | D927        | 435          | D1089       | 435          | S156        | 435          |
| D329                  | 435          | D497        | 542          | D787        | 492          | D928        | 435          | D1246       | 435          |             |              |
| D333                  | 386*         | D635        | 435          | D788        | 558          | D929        | 558*         | D1709       | 595*         |             |              |
| D335                  | 408          | D656        | 479          | D789        | 592          | D930        | 558*         | D1710       | 705*         |             |              |
| D336                  | 435          | D658        | 479          | D807        | 435          | D935        | 558          | D1745       | 558          |             |              |
| D337                  | 435          | D701        | 595          | D812        | 492          | D937        | 461          | D1748       | 461          |             |              |

\* May need to reverse one or more mounting rings

Products on page F-22 & F-23 are NOT SUITABLE for unattended equipment unless indicated by ►. See inside back cover for additional information.

## Below is a quick reference listing of numbers you will find in the notes column of FASCO's model charts throughout the catalog, and their respective meanings.

- 1 4M 370V capacitor  
 2 7.5M 370V capacitor not included  
 3 6M 370V capacitor  
 4 Water Heater Draft Inducer  
 5 Special low-temperature oil  
 6 Includes 4M 370V capacitor  
 7 Includes shaft bushing  
 8 Does not have shaft bushing  
 9 3M 370V capacitor  
 10 Has hall effect sensor  
 11 5M 440V Capacitor  
 12 10M 370V Capacitor  
 13 7.5M 370V Capacitor  
 14 7.5M 440V Capacitor  
 15 20M 370V Capacitor  
 16 Rotation is determined by viewing lug end  
 17 7.5M 370V Cap installed  
 18 Rotation is determined by viewing lug end.  
 19 Original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing shaft end of motor to prevent moisture from entering motor.  
 20 Not a direct replacement, but suitable for referenced models.  
 21 Rotation is determined from viewing lug end  
 22 2M 370V Capacitor  
 23 4 MFD 370V Capacitor  
 24 15M 370V Capacitor  
 25 Equipped with KFAN6046 fan blade  
 26 4M 250V Capacitor included  
 27 12.5M 370V Capacitor  
 28 4MFD 370V Capacitor included  
 29 4M 370V capacitor included  
 30 Special low temperature oil  
 31 5M 370V Capacitor  
 32 Not a direct replacement for 5KCP49SG1010S, but is an acceptable substitute.  
 33 Stainless steel shaft  
 34 Mounts on (3) P/N 0061-1518 Coleman Mounts  
 35 Has 8 drilled and tapped holes in shell  
 36 Has 4 drilled and tapped holes in shell  
 37 Includes 8 drilled and tapped holes in shell  
 38 4MFD, 370VAC capacitor rating (not included)  
 39 4MFD, 370VAC capacitor rating (included)  
 40 Original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing shaft end of motor to prevent moisture from entering motor.  
 41 Includes centrifugal switch  
 42 25M 370V Capacitor  
 43 Packed 6 per carton  
 44 Packed 1 per carton  
 45 Speed nut and vibration damper included.  
 46 Belted Fan & Blower Motor  
 47 56H Mounting  
 48 145T Frame  
 49 Mechanically Reversible  
 50 3M 370V Capacitor Included  
 51 3-1/2" SHAFT HEIGHT  
 52 6M 370V capacitor included  
 53 4M 370 capacitor included  
 54 5M 370V capacitor included  
 55 Has internal fan & 3.5" BC mounting holes for GE 21/29 Frame replacement.  
 56 Drilled and tapped holes in case for Coleman mounting  
 57 Luxaire/Whisperaire  
 58 With plug for Penn Ventilator  
 59 Repl. For Siegler & Williams Wall Heaters  
 60 Penn Ventilator  
 61 Repl. For Butler & Leslie-Locke Roof Ventilator--BX Connector  
 62 Hub only on shaft end  
 63 Repl. For Leslie-Locke Roof Ventilator  
 64 Sterling Radiator Co.  
 65 For use with Greenheck Fan  
 66 Shaft stepped down from 3/8" dia. Shaft  
 67 OEM direct replacement for Jenn Air 80CR  
 68 Used in Jenn Air units. P/N 7108-2101  
 69 Used in Leslie Locke ventilators original P/N 7108-5056  
 70 Used in Acme Eng. Roof Vents  
 71 ILG ventilator 7108-2171. Has internal fan.  
 72 External oil retainer to accommodate resilient rings and cradle base, drilled and tapped holes in case for mounting in Coleman applications. (2 holes each end on case OD).  
 73 Mechanically Reversible  
 74 Popular Ice Machine pump motor  
 75 Shell Turbo 68, low temp. oil (-40°F)  
 76 Impedence Protected  
 77 Has hubs for end rings  
 78 Closed construction  
 79 See Tecumseh OEM section for cross references  
 80 With conduit box  
 81 PSC motor requiring a 10 MFD 370V cap  
 82 Rotation determined by viewing lug end  
 83 Totally enclosed, Sears-Whirlpool 5000-8000 BTU units.  
 84 4M 370V capacitor (similar to GE WJ94X306)  
 85 Air Over  
 86 Drilled & Tapped Holes (No. 8-32NC) in face of case at shaft end for mounting in various Coleman mobile home furnace applications, also has mounting studs.  
 87 Used in Economite, "E-20", LS1/Miller and Mid Continent gas units.  
 88 3 small lugs for Kit 55S  
 89 4 grommets to fit lugs on Kits 34, 49, 50, 55L, 55S  
 90 15 MFD 370V  
 91 7.5MFD 370VAC capacitor  
 92 Shaft up or horizontal applications  
 93 Motor has increased stack for higher ambient temperatures  
 94 7.5 m 440V Capacitor  
 95 Comes with unmounted conduit box.  
 96 Has maximum ventilation for high ambient temperatures  
 97 All angle mount bearings  
 98 All angle mount bearings. Use rainshield when necessary.  
 99 All angle mount bearings.  
 100 10 MFD 370V  
 101 7.5 MFD 370V  
 102 20 MFD 370V  
 103 Ideal for blowers and fans used in furnaces and air-conditioners  
 104 The capacitor and base are included  
 105 Ideal versatility using Kit 200 "X" brackets to accommodate various cradle base lengths  
 106 Includes dust seal  
 107 Includes pull-chain switch  
 108 12.5MFD 370V capacitor included  
 109 No pedestal yoke mount  
 110 Blower system designed to enhance heat output from home fireplaces. Kit includes variable speed control and temperature sensor switch.  
 111 Application: Designed for use in residential outdoor condenser fan and heat pump units (primarily up to 3.5 ton)  
 112 Vibration motor  
 113 PSC version of D1189 (OEM Replacement for Krack Refrigeration.  
 114 Separate connection for each voltage  
 115 Not a direct replacement for 253-1194, but is an acceptable substitute  
 116 Replacement for Airease  
 117 Not a direct replacement for 253-1194, but is an acceptable substitute  
 118 10M 370V capacitor not included  
 119 Has special OEM wiring configuration. Not for general purpose 3 speed applications  
 120 Use Fan Blades with round hub I.D.  
 121 Two Speed Motor  
 122 K110 has maximum flat length  
 123 Double Shafted  
 124 All mounting holes drilled and tapped.  
 125 Continuous Duty  
 126 3/8" shaft diameter with adapter to convert to 1/2" diameter  
 127 Front endshield drilled and tapped with four 10-32 threads on 3.5" bolt circle  
 128 Electrically Reversible  
 129 Repl. For ITT REZNOR  
 130 Do not have extended hubs or rubber rings for base mount  
 131 Motors include shaft bushing  
 132 Open vented on opposite shaft end  
 133 Shaft down or horizontal applications  
 134 Does not have removable conduit boxes  
 135 Special wiring configuration. Cannot be used with SPDT switching.  
 136 Does not come with conduit box.  
 137 Ideal for blowers and fans used in furnaces and air-conditioners.  
 138 Not CSA certified  
 139 All angle mount bearings. Use rainshield when necessary  
 140 Has 10' cordset  
 141 Keyed shaft  
 142 Vertical shaft down application.  
 143 All motors individually boxed.  
 144 Resilient Base  
 145 Interchangeable with GE 21 & 29 Frame motors and other Emerson, Universal and Franklin refrigeration motors  
 146 Interchangeable with GE 21/29 Frame and Universal Motors  
 147 Comes with 2 1/2" O.D. Rubber Mounting Rings  
 148 Weld nuts on 3.5" B.C. for stud mount  
 149 Wiring slightly different from OEM PSC; check nameplate connection diagram. Capacitor and Bracket included. Replaces 2 and 3 speed SP and PSC motor. Motor in Gibson/Belding window units.  
 150 Endshield on D520 is easily removed, allowing rotor and shaft to be rotated, thereby reversing motor rotation.  
 151 Has keyed shaft  
 152 Ideal for unit heaters  
 153 Agricultural applications  
 154 Extended hubs with rubber rings for base mount  
 155 Includes 8 drilled and tapped holes in shell.  
 156 Interchangeable with GE 21 & 29 Frame motors & other Emerson, Universal & Franklin Refrigeration motors  
 157 All angle mount sleeve bearings  
 158 All Rubber rings are used with direct drive blower motors and "Clamp" type supports.  
 159 D180 for International Oil Burner Co.- Furnaces MAC5A, 1045, 1052, 1060, 1145, 1155, 1165, 1175, 1265, 1380, 7040, 7060.  
 160 Henrite are rubber mounting rings with steel band, used with cradle bases and knife edge motor supports.  
 161 Hubless endshields for flush mounting  
 162 Ideal for lug mounting using lug Kit 55L or 55S  
 163 Internal cooling fan  
 164 Rotation is facing side opposite hub  
 165 Skeleton Motor  
 166 3.25" Diameter  
 167 Self-Cooled  
 168 10M 440V Capacitor  
 169 Mounting bracket designed to match the original motor (four 8-36 drilled and tapped holes)  
 170 Mounting hardware included  
 171 Has 22" leads with 1/16" thick insulation  
 172 Three studs opposite shaft end are 8-32 on a standard 2.84" bolt circle, 120° apart  
 173 3.9" diameter  
 174 Includes 1/2" studs for mounting  
 175 Bolt circle = 3.15"  
 176 Endshield on D520 is easily removed, allowing rotor and shaft to be rotated, thereby reversing motor rotation.  
 177 Used in Economite, "E-20", LS1/Miller and Mid Continent gas units.  
 178 External oil retainer to accommodate resilient rings and cradle base, drilled and tapped holes in case for mounting in Coleman applications. (2 holes each end on case OD).  
 179 Self cooled for mechanical duty  
 180 Can be operated on 50Hz with air-over applications  
 181 3 1/2" shaft height  
 182 Has internal fan & 3.5" BC mounting holes for GE 21/29 Frame replacement.  
 183 Drilled and tapped holes in case for Coleman mounting  
 184 D180 for International Oil Burner Co.- Furnaces MAC5A, 1045, 1052, 1060, 1145, 1155, 1165, 1175, 1265, 1380, 7040, 7060.  
 185 Rooftop Ventilator  
 186 Unit Heater  
 187 Includes shaft water slinger  
 188 60° ambient temperature rating  
 189 Closed end shield shaft end  
 190 All angle mount bearings. Use rain shield when necessary.  
 191 Should not be used for replacements where original motor is rated below 1500 RPM  
 192 Ideal versatility using Kit 200 "X" brackets to accommodate various cradle base lengths  
 193 Poultry and Hog House fan motor  
 194 Condenser Fan Motor  
 195 50/60 Hz  
 196 Draft Booster/ Flue Exhaust/ Switch Motors  
 197 For 208V use 7.5M 370V Capacitor and 240V use 6M 370V Capacitor  
 198 Has special OEM wiring configuration. Not for general purpose 3 speed applications  
 199 Original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing shaft end of motor to prevent moisture from entering motor  
 200 Not a direct replacement for 5KCP49SG1010S, but is an acceptable substitute.  
 201 Not a direct replacement for 253-1194, but is an acceptable substitute  
 202 Original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing shaft end of motor to prevent moisture from entering motor.  
 203 Leads require modification  
 204 100,000 BTU Furnaces  
 205 Window A/C Using Delco Inside-Outside Motor 485932, KCP39PG9769S

Thermally protected • UL recognized • CSA or ULc certified

**NOTE:** Rotation is determined by looking at shaft end. Shaft length is measured from motor face.

**NOTE:**

Underwriters Laboratories has developed additional safety requirements for motors used in equipment where abnormal unit operation could likely be undetected by the user, thus increasing the risk of personal injury or property damage.

For example, a motor with a locked shaft could operate undetected for an extended period of time in an attic ventilator fan, thus increasing the risk of fire.

Fasco General Replacement and OEM Direct Replacement products for use in attic ventilators, bathroom ventilators, whole house fans, wall furnaces and other units in the category have been modified to meet these new standards.

Special attention must be given to ensure that ONLY the modified products are supplied to customers with units of this type.

Motors that are NOT SUITABLE for use in unattended equipment are clearly marked as such with a warning lable indicating the increased risk of fire.

The new safety requirements for air moving equipment used in unattended locations within a structure are documented in UL Standard 507, Electric Fans.

# Marathon

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**Marathon Motors Nameplate Information – How To Read The Nameplate**

The nameplate is the key to selecting the proper replacement motor.

Motor Specifications (Example)

Agency Symbols

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1. <b>MODEL</b> - The ID number</li> <li>2. <b>DATE CODE</b> - The month and year manufactured</li> <li>3. <b>MTG.</b> - Mounting</li> <li>4. <b>FRAME</b> - The size &amp; mounting</li> <li>5. <b>PART NO.</b> - Customer part number</li> <li>6. <b>SER.</b> - Serial number</li> <li>7. <b>TYPE</b> - Electrical type</li> <li>8. <b>DES.</b> - Code by NEMA or IEC</li> <li>9. <b>PH</b> - Electrical phase usually 1 or 3</li> <li>10. <b>INS CL</b> - Insulation Class</li> <li>11. <b>DUTY</b> - Time rating under load</li> <li>12. <b>MAX AMB</b> - The allowable surrounding air temperature</li> <li>13. <b>ENCL</b> - Enclosure (i.e. TEFC)</li> <li>14. <b>RISE</b> - The temperature rise over ambient expressed in degrees Celsius when the motor operates at nameplated HP or KW</li> <li>15. <b>IP</b> - Inherent Protection of the enclosure to solids and liquids as defined by IEC 34-5</li> <li>16. <b>IC</b> - Inherent Cooling</li> <li>17. <b>CODE</b> - NEMA locked-rotor KVA</li> </ul> | <ul style="list-style-type: none"> <li>18. <b>MTH/YR MFG.</b> - Month and year motor was manufactured</li> <li>19. <b>WT/LBS</b> - Motor weight in pounds</li> <li>20. <b>WT/KG</b> - Motor weight in kilograms</li> <li>21. <b>HZ</b> - Input frequency of the power supply, usually 50 or 60 HZ</li> <li>22. <b>VOLTS</b> - Voltage rating of the motor at the operating frequency</li> <li>23. <b>HP</b> - Rated horsepower the motor will produce</li> <li>24. <b>KW</b> - Rated output in watts</li> <li>25. <b>F.L. AMPS</b> - The rated load current expressed in amps at nameplated horsepower with nameplate voltage and frequency</li> <li>26. <b>S.F.</b> - Percentage of the rated horsepower the motor can safely operate at:<br/>Example: 1.15 SF (115% of rated HP)</li> <li>27. <b>PF / COS</b> - Power Factor / Cosine is the ratio of actual power to the apparent power</li> <li>28. <b>RPM</b> - Full load speed at rated frequency</li> <li>29. <b>NOM EFF</b> - Average Efficiency</li> <li>30. <b>SHAFT END BEARING</b> - Manufacturer drive end bearing number</li> <li>31. <b>OPP. END BEARING</b> - Manufacturer opposite drive end bearing number</li> <li>32. <b>SHAFT END BRG</b> - Drive end bearing size</li> <li>33. <b>OPP</b> - Opposite drive end bearing size</li> </ul> |
|---|--|

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



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# General Information

## How To Read A Model Number:

Each Marathon Motors motor carries a model number that can be used to define some of the motor's physical and electrical characteristics.

Example (For Fractional): 1PC48C17D2000AP

This is a breakdown of the model on the nameplate:

|          |          |          |           |          |           |          |             |          |          |
|----------|----------|----------|-----------|----------|-----------|----------|-------------|----------|----------|
| <u>1</u> | <u>P</u> | <u>C</u> | <u>48</u> | <u>C</u> | <u>17</u> | <u>D</u> | <u>2000</u> | <u>A</u> | <u>P</u> |
| 1        | 2        | 3        | 4         | 5        | 6         | 7        | 10          | 11       | 12       |

This is a breakdown of the model in the catalog:

|           |          |           |          |             |
|-----------|----------|-----------|----------|-------------|
| <u>48</u> | <u>C</u> | <u>17</u> | <u>D</u> | <u>2000</u> |
| 4         | 5        | 6         | 7        | 10          |

Example (For Integral): 2QA215TBDR A 7076 AL L

This is a breakdown of the model on the nameplate:

|          |          |          |             |          |          |          |          |             |           |          |
|----------|----------|----------|-------------|----------|----------|----------|----------|-------------|-----------|----------|
| <u>2</u> | <u>Q</u> | <u>A</u> | <u>215T</u> | <u>B</u> | <u>D</u> | <u>R</u> | <u>A</u> | <u>7076</u> | <u>AL</u> | <u>L</u> |
| 1        | 2        | 3        | 4           | 5        | 7        | 8        | 9        | 10          | 11        | 12       |

This is a breakdown of the model in the catalog:

|             |          |          |          |          |             |
|-------------|----------|----------|----------|----------|-------------|
| <u>215T</u> | <u>B</u> | <u>D</u> | <u>R</u> | <u>A</u> | <u>7076</u> |
| 4           | 5        | 7        | 8        | 9        | 10          |

- Date Code** - Year of Manufacture  
(Not shown in catalog listings.)
- Thermal Protection** (Not shown in catalog listings.)

|                 | UL Recognized Motor Protector <u>Combination</u> | UL Recognized Motor <u>Construction</u> |
|-----------------|--|---|
| Automatic Reset | Automatic Reset                                  | Automatic Reset                         |
| Q               | Yes  | Yes                                     |
| S               | No   | No                                      |
| U               | No   | Yes                                     |
| W               | #  | Yes                                     |
| Manual Reset    | Manual Reset                                     | Manual Reset                            |
| P               | Yes  | Yes                                     |
| Z               | No   | Yes                                     |
| X               | No   | No                                      |
| None            | None   | None                                    |
| V               | No   | Yes                                     |

# Motor protector combination is U.L. recognized only if motor is used in direct drive fan duty application, and is under locked rotor condition, or is running under no-load condition.

- Date Code** - Month of Manufacturer (Not shown in catalog listings.)
- NEMA Frame Size** - (Integral motors - T and U designate standard shaft, TS and US designate short shaft)

## 5. Electrical Type

Single Phase:

- A = Permanent split capacitor
- B = Capacitor start, capacitor run
- C = Capacitor start, induction run
- N = Split phase start, capacitor run
- S = Split phase

Three Phase:

- T = Three phase
- H = Inverter Duty/IEEE841 Inverter Duty
- V = Medium Voltage

DC Power:

- E = Permanent Magnet DC

## 6. RPM or Speed at 60 Hz (Fractional Only)

- 34=2-Pole, 3600 rpm
- 17=4-Pole, 1800 rpm
- 11=6-Pole, 1200 rpm
- 8 = 8-Pole, 900 rpm

## 7. Enclosure

- D = Dripproof
- E = Explosion proof, non-ventilated
- F = Totally enclosed, fan cooled
- G = Explosion proof, fan cooled
- O = Open
- P = Partial
- S = Semi-enclosed
- T = Totally enclosed, non-ventilated
- V = Washdown, non-ventilated
- W = Washdown, fan cooled

## 8. Frame Construction

### Integral

- L = Aluminum (Full Frame)
- Y = Aluminum (Full Frame)
- Z = Aluminum (High Mount Down Frame)
- H = Aluminum - Sourced
- R = Rolled Steel (Full Frame)
- W = Rolled Steel (Full Frame)
- X = Rolled Steel (High Mount Down Frame)
- B = Rolled Steel - Sourced
- S = Cast Iron (Full Frame)
- N = Cast Iron (Full Frame)
- P = Cast Iron (High Mount Down Frame)
- C = Cast Iron - Sourced
- D = Stainless Steel

### Fractional

- B = Rolled Steel - Sourced
- D = Stainless Steel - Sourced
- U = Frameless - Sourced

## 9. Style Letter (A, B, C, etc. indicate redesign)

## 10. Sequence Number

## 11. Minor Modification Letter(s)

**Fractional** - 1 letter; **Integral** - 2 letters

## 12. Manufacturing Code - A code for the factory where the motor was manufactured.

**How To Read A Model Number:** Continued

Example (“harmonized” motor design):

| A | B  | C | D | E | F | G   | H | I |
|---|----|---|---|---|---|-----|---|---|
| 5 | KH | 3 | 6 | K | G | 142 | - | X |

**A. Rotating Device**

**B. Type of Winding**

- KH - Split Phase
- KC - Capacitor Start, Induction Run
- K - Polyphase
- KCP - Permanent Split Capacitor
- KCR - Capacitor Start, Capacitor Run

**C. Lamination Size**

3 - 48 frame, 4 - 56 frame

**D. Length of Frame**

|   | 48 frame | 56 frame |
|---|----------|----------|
| 2 | 5.17     | 5.73     |
| 3 | 5.42     | 6.63     |
| 4 | None     | None     |
| 5 | 5.80     | 7.11     |
| 6 | 6.23     | None     |
| 7 | 6.63     | 7.63     |
| 8 | 7.23     | 8.44     |
| 9 | Spec.    | Spec.    |

**E. Stack Length**

|            |            |            |            |
|------------|------------|------------|------------|
| A - 5/8"   | F - 1-1/4" | L - 1-7/8" | S - 3.0"   |
| B - 3/4"   | G - 1-3/8" | M - 2.0"   | T - 3-1/4" |
| C - 7/8"   | H - 1-1/2" | N - 2-1/4" | U - 3-1/2" |
| D - 1.0"   | J - 1-5/8" | P - 2-1/2" | W - 4.0"   |
| E - 1-1/8" | K - 1-3/4" | R - 2-3/4" | Q - Spec.  |

**F. Endshield Construction**

- G & N - Aluminum
- K - Steel
- C - Cap/Can

**G. Sequence Number**

**H. Current Revision (blank if original)**

**I. Type of Overload**

- X - UL Auto running & locked rotor
- Y - UL Manual running & locked rotor
- S - UL Auto locked rotor
- T - Non-UL Auto running & locked rotor
- U - Non-UL Manual running & locked rotor
- V - Thermostat
- W - UL Motor Parts

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



## Agency Listings

### UL and CSA

Marathon Motors's Fire Pump and Explosion Proof motors are UL Listed. Other motor types are UL Recognized, including models with inherent overheating protection as noted (i.e. thermally protected models). Marathon motors are also CSA Certified for both explosion proof and non-explosion proof enclosures.

### AC Motors

| Non-Explosion Proof                          | UL File No.              | CSA File No.        |
|--|--------------------------|---------------------|
| NEMA 48-449 Frame                            | E49747                   | LR2025              |
| All 5K type models numbers                   | E46035                   | MC236833            |
| NEMA 500 and 5000 Frame                      | —                        | LR2025*             |
| IEC 63-90 Frame                              | E49747                   | LR2025              |
| IEC 100-280 Frame                            | E49747                   | LR2025 <sup>#</sup> |
| Thermally Protected motors                   | E6312                    | LR2025              |
| Thermally Protected 5K motors                | E14133                   | MC236833            |
| Insulation Systems                           | E37900                   | LR2025              |
| * Does not include coverage for use with VFD |                          |                     |
| <sup>#</sup> Domestic product only           |                          |                     |
| Explosion Proof                              | UL File No.              | CSA File No.        |
| NEMA 56-326 Frame                            | E12044                   | LR47504             |
| NEMA 364-449 Frame                           | E12044                   | LR21839             |
| Fire Pump Motors                             | UL File No.              | CSA File No.        |
| NEMA 143-510                                 | EX5190                   | LR2025              |
| Class I, Division 2/Zone 2                   | UL File No.              | CSA File No.        |
| NEMA 48-449, 5000 Frame                      | —                        | LR21839             |
| European ATEX Zone 2                         | Intertek Certificate No. |                     |
| NEMA 143-449, IEC 112-280                    | ITS06ATEX45370           |                     |

### PMDC Motors

| Non-Explosion Proof | UL File No. | CSA File No. |
|---------------------|-------------|--------------|
| NEMA 56-145         | E49747      | E49747       |

### CE (Conformity Europeanne)

CE marking on the nameplates of Marathon Motors motors is available upon request for most motors rated 600V or less. We do not apply the CE Marking to explosion proof motors. The European "Low Voltage" Directive applies to electric motors. Contact a factory representative for details. Non-explosion proof microMAX™, BlackMax® and BlueMax® (TENV and TEFC) standard (catalog) models have the CE Mark on the nameplate.

### ATEX Directive (ATmospheres EXplosibles)

Mandatory by law, the European Union (EU) Directive 94/9/EC requires that electric motors for use in explosive atmospheres carry the CE mark, notified body identifier, Ex symbol, equipment group and category, plus the date code. See "European Installations" for additional details, located on the next page.

### NEMA (National Electrical Manufacturers Association)

Marathon Motors motors are manufactured in accordance with all applicable areas of NEMA standards in MG1-2006. When applied in accordance with the "Guidelines for Application of Three Phase Motors on Variable Frequency Drives", **Marathon Motors motors are in**

full compliance with NEMA MG1-2006, Part 31, Section 4.4.2, as pertaining to voltage spikes. 460 volt motors must withstand voltage spikes of up to 1426 volts; 575 volt motors must withstand spikes up to 1788 volts. See "Insulation Systems" for additional detail on this subject.

### Commitment to RoHS and WEEE European Directives

European Directive 2002/95/EC "Restriction of Use of Certain Hazardous Substances" (RoHS) and Directive 2002/96/EC "Directives on Waste Electrical and Electronic Equipment" (WEEE) were enacted to control the amount of certain hazardous substances contained in products shipped into the E.U. Restricted substances include lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated dipheynl ethers.

The scope of products covered, affecting motors, is:

- Large household appliances
- Small household appliances
- IT and telecommunications equipment
- Consumer equipment
- Electrical and electronic tools (except large scale stationary and industrial tools)
- Toys, leisure and sports equipment
- Automatic dispensers

The Directives do not currently apply to medical devices, monitoring and control instruments, spare parts for the repair or reuse of electrical and electronic equipment placed on the market before July 1, 2006, and most military and state security equipment.

Regal Beloit Corporation worked closely with suppliers to assure that product falling within the scope of these Directives meets the specified levels of these substances. The Directives took affect July 1st, 2006 however many products were converted in May and June. The products converted are motors in NEMA frame size 145 and below, both AC and DC motors with the following exceptions:

- Sleeve bearing motors
- Brake motors in 56-145 frame will have to be ordered specifically as RoHS compliant.
- Some motors with specialty electro-mechanical components.

### Bearings

| Frame Size  | Standard Type      | Comments               |
|-------------|--------------------|------------------------|
| 48          | Shield Ball        |                        |
| 56 - 184T   | Sealed Ball        |                        |
| 182 - 444T  | Double Shield Ball |                        |
| 284 - 449TS | Single Shield Ball |                        |
| 445T - 6805 | Double Shield Ball | Direct - coupled loads |
| 445T - 6805 | Roller (DE)/Ball   | Belted loads           |

\* **Belting data must be provided on all belted applications**

Standard horizontal motors can be mounted in a vertical shaft down orientation (except brakemotors). Contact a factory representative for shaft up mounting arrangements.

Motors for use in vertical shaft up or shaft down configurations must be reviewed by Engineering before ordering.

Continued on next page.



Marathon Motors motors employ the use of Mobil POLYREX® EM grease, a specially formulated bearing grease designed for electric motors. POLYREX® EM provides superior lubricity, durability and resists corrosion, rust and washout. POLYREX® EM is a registered trademark of Mobil Corporation.

Maximum safe mechanical speed capability is a function of bearing size, type and grease selection, as well as rotor balance specifications. Consult the "Maximum Safe Mechanical Speed Limits" chart in the "Overspeed Capability" section.

Note that these values do not imply maximum constant horsepower RPM.

## Efficiency

The efficiency of a motor is the ratio of its useful power output to its total power input and is usually expressed in a percentage. Marathon Motors offers standard, high efficient EAct, and NEMA Premium® efficient (XRI) ratings. Standard efficiency motors may only be used on applications that are exempt from legislated efficiencies. The high efficient motor line is in compliance with the Energy Policy Act of 1992 (EAct) and/or Canadian efficiencies as set by NRCAN. The Energy Independence and Security Act of 2007 (EISA07) will become law on December 19, 2010, requiring current EAct-compliant motors to meet NEMA Premium® efficiencies, and most EAct-exempt motors to meet EAct levels. XRI Premium efficient motors in this catalog meet NEMA Premium® unless otherwise noted.

The XRI® line is a premium efficiency line, which exceeds mandated efficiencies of EAct and /or NRCAN. Unless otherwise noted, XRI® premium efficient motors in this catalog meet NEMA Premium® the newly promoted efficiency levels by NEMA and the Consortium for Energy Efficiency (CEE).

## Electrical Type/Starting Method

Motors in this catalog are capacitor start, split phase, permanent split capacitor, or three phase. Capacitor Start motors have high starting torque, high breakdown torque, and relatively low starting current. Split phase motors have medium starting torque and medium starting current. Permanent split capacitor motors have low starting torque and low starting current. Three phase motors have high starting, extra breakdown torque, and typically very low starting current. Single phase motors cannot be applied on variable frequency drives with three phase output.

## Enclosure And Method Of Cooling

Marathon Motors motors are available in various enclosures; Dripproof (DP), Dripproof Force Ventilated (DPFV), Totally Enclosed Fan Cooled (TEFC), Totally Enclosed Non-Ventilated (TENV), Totally Enclosed (TEAO) and Totally Enclosed Blower Cooled (TEBC). Application conditions will determine the type of motor enclosure required.

Dripproof motors have open enclosures and are suitable for indoor use and in relatively clean atmospheres. Dripproof motors have ventilating openings constructed so that drops of liquid or solid particles falling on the machine at an angle of not greater than 15 degrees from the vertical cannot enter the machine.

Totally enclosed motors are suitable for use in humid environments or dusty, contaminated atmospheres. Totally enclosed non-ventilated motors are NOT cooled by external means. Totally enclosed fan cooled motors are cooled by external means that are part of the motor

but not in the internal workings of the motor. Totally enclosed air over motors are sufficiently cooled by external means, provided by the customer.

## Hazardous Duty™

Hazardous Duty™ motors are totally enclosed (fan cooled or non-ventilated) motors designed for applications in hazardous atmospheres containing explosive gases and/or combustible dusts.

### North American installations

North American standards for electric motors generally fall into one of two divisions. Division 1 Explosion Proof motors are UL Listed in accordance with NFPA Class I (Flammable Gases) or Class II (Combustible Dusts) and Groups (gases or dusts), depending upon the atmosphere. Division 2 motors are CSA Certified and are marked similarly to Division 1 equipment. Inverter Duty motors through 449T frames are CSA Certified for use in Division 2 locations.

### European installations

Motors for hazardous locations in Europe must meet a different set of standards and require different markings than those of North America. CENELEC sets the standards for equipment in hazardous locations for Europe. Motors for use in explosive atmospheres in Europe are often referred to as flameproof (Zone 1) or non-sparking (Zone 2) motors. These motors must comply with the ATEX Directive. The ATEX Directive covers all electrical equipment used in explosive atmospheres. To ensure compliance with the Directive, equipment must meet the essential ATEX requirements and carry the CE mark on the nameplate. Other information required on the nameplate includes the Ex symbol, group & category, Ex protection method, gas group, and temperature code, example (Ex)II 3 G Ex nA IIC T3).

The tables on the next page describe Marathon Motors's capabilities by Area Classification and by Temperature Code.

## IEC Degrees Of Protection vs. Marathon Motor's Standard Construction

The enclosure terminology for an IEC motor is a combination of the IP (Ingress Protection) and IC (Inherent Cooling) codes. Each number in the IP code stands for a different degree of protection.

- IP12 - Dripproof
- IP22 - Dripproof with screens, or die cast aluminum bracket
- IP43 - Totally Enclosed
- IP54 - Totally Enclosed Severe Duty
- IP55 - Totally Enclosed Severe Duty with V-Ring Shaft seals, and/or "Smart Ring" rotating shaft seal and Neoprene gaskets
- IP56 - Totally Enclosed Severe Duty with rotating Shaft seals (eg. Inpro/Seal® VBX bearing isolator) and Neoprene gaskets

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.

## Marathon Motors Hazardous Duty Motor Area Classification Chart

| Class I Area Classification<br>(Flammable Gases, Vapors or Mists) |                              |   |                        | Class II Area Classification<br>(Combustible Dusts) |                      |                                       |                         |
|---|------------------------------|---|------------------------|---|----------------------|---------------------------------------|-------------------------|
| North America   |                              | Europe - ATEX<br>(Category G - Gases)                         |                        | North America                                       |                      | Europe - ATEX<br>(Category D - Dusts) |                         |
| Division 1<br>Explosion<br>Proof                                  | Division 2<br>TEFC &<br>TENV | Zone 1<br>Flameproof  | Zone 2<br>Non-Sparking | Division 1<br>Explosion Proof                       | Division 2           | Zone 21<br>Flameproof                 | Zone 22<br>Non-Sparking |
| Group A   | Group A                      | Contact<br>Marathon Motors<br>for ATEX Zone 1<br>capabilities | Group IIC, Category G  | -   | -                    | -                                     | -                       |
| Group B   | Group B                      |   | Group IIC, Category G  | -   | -                    | -                                     | -                       |
| Group C   | Group C                      |   | Group IIB, Category G  | -   | -                    | -                                     | -                       |
| Group D   | Group D                      |   | Group IIA, Category G  | -   | -                    | -                                     | -                       |
| -   | -                            | -   | -                      | Group E   | -                    | Category D                            | Category D              |
| -   | -                            | -   | -                      | Group F   | Group F <sup>①</sup> | Category D                            | Category D              |
| -   | -                            | -   | -                      | Group G   | Group G <sup>②</sup> | Category D                            | Category D              |

- Group is not applicable to that Division or Zone, or is not defined.

① Group is not available from Marathon Motors.

② Contact factory representative for availability.

## Marathon Motors Hazardous Duty Motor Temperature Code Chart

| Temperature Codes |        |         | Division 1 Explosion Proof/Zone 1 Flameproof   |   | Division 2/Zone 2 Non-Sparking  |
|-------------------|--------|---------|--|---|---|
|                   |        |         | Class I Area Classification<br>(Flammable Gases, Vapors or Mists)  | Class II Area Classification*<br>(Combustible Dusts)  | Class I Area Classification<br>(Flammable Gases, Vapors or Mists)   |
| Temp.             | UL/CSA | ATEX    | Division 1/Zone 1  | Division 1/Zone 21  | Division 2/Zone 2   |
| 280°C             | T2A    | T2(280) |  |   |   |
| 260°C             | T2B    | T2(260) |  |   | XRI <sup>®</sup> Severe Duty & IEEE-841 @ 1.15 S.F.,<br>Class I, Groups A,B,C,D (Sine wave power)   |
| 215°C             | T2D    | T2(215) |  |   | Available through Marathon's Mod Central<br>on Totally Enclosed EPAct, XRI <sup>®</sup> , XRI <sup>®</sup> Severe<br>Duty or IEEE-841 @ 1.0 S.F. on PWM VFD,<br>Class I, Groups A, B, C, D      |
| 200°C             | T3     | T3      |  |   | Available through Marathon's Mod Central<br>on Totally Enclosed EPAct, XRI <sup>®</sup> , XRI <sup>®</sup> Severe<br>Duty or IEEE-841 @ 1.0 S.F., Sine wave power<br>Class I, Groups A, B, C, D |
| 165°C             | T3B    | T3(165) | Explosion Proof - Class I, Group D<br>(Group C as noted), Sine wave or<br>PWM power                                      | Explosion Proof - Class II,<br>Groups F & G, Sine wave<br>or PWM power  |   |
| 160°C             | T3C    | T3(160) | Available through Marathon's Mod<br>Central on Explosion Proof - Class I,<br>Group C & D @ 1.0 S.F. -<br>Contact Factory | Available through Marathon's Mod<br>Central on Explosion Proof - Class II,<br>Group F & G @ 1.0 S.F. -<br>Contact Factory |   |
| 135°C             | T4     | T4      | ATEX compliant motors  | ATEX compliant motors   |   |

Division I & II ambient range is -25°C to +40°C

ATEX ambient range is -20°C to +40°C

Consult Marathon Motors for higher ambients

## Insulation Systems

**Class B** – General Purpose motors that employ Class B insulation systems have a total temperature rating of 130°C and maximum allowable temperature rise of 80°C at 1.0 S.F.

**Class F** – Motors with a Class F system have a total temperature rating of 155°C, with a maximum temperature rise of 105°C at 1.0 S.F. Many Marathon Motors designs utilize a Class F system but limit temperature rise to no higher than “B” rise, providing thermal “headroom” for longer insulation life.

**Class H** – Class H insulated motors have a total temperature rating of 180°C and maximum allowable temperature rise of 125°C. All Marathon Motors motors that employ a Class H system are designed to operate between “B” and “F” rise, giving the user a generous thermal cushion.

“**CR200**” – Corona Resistant, 200° rated magnet wire is utilized in numerous general purpose and inverter duty motor designs to extend insulation life under the rigors of steep fronted voltage spikes, common with today’s IGBT inverters. Refer to page 17 for product lines that employ the use of CR200 magnet wire.

Motors with the CR200 insulation system can be operated at up to 475 feet from the drive on 460 volt systems, at 3 KHz carrier frequency. For other voltages and/or carrier frequency combinations, contact a factory representative.

**MAX GUARD®** – All Black Max®, Blue Max®, Blue Chip®, XRI® Severe Duty and XRI®-841 (IEEE841) motors feature the MAX GUARD® insulation system, either in conjunction with Class F or Class H materials. Combining corona-resistant magnet wire (CR200) with our patented “low stress” winding configuration and uncompromising quality standards, MAX GUARD® delivers long, dependable motor life under the adverse thermal and dielectric stresses imposed by IGBT-based variable frequency drives. MAX GUARD® surpasses the requirements of NEMA MG1-2006, Part 31, Section 4.4.2.

460 Volt (or lower) motors equipped with MAX GUARD® can be operated at any distance from the drive and at any carrier frequency. 575 Volt motors can be operated at up to 650 feet cable length at 3 KHz.

## Mounting

Most Marathon Motors motors are designed for horizontal mounting (shaft parallel with ground), unless designed otherwise, such as Vertical P Base motors. As a general rule, a horizontal motor can also be mounted in a vertical shaft down orientation. Horizontal motors should never be mounted in a vertical shaft up orientation without consulting your application engineer, as this practice can cause damage to the motor, which is not covered under warranty. Brakemotors should not be mounted vertically (up or down), unless the brake has been specifically designed for such.

## Nema Service Factor Ratings

The table below lists the NEMA service factors for single phase, dripproof motors. Totally enclosed and explosion proof motors have 1.0 service factor except where noted.

### Single Phase

#### NEMA SERVICE FACTOR @ RPM LISTED

| HP       | 3600 | 1800 | 1200 | 900  |
|----------|------|------|------|------|
| 1/12     | 1.4  | 1.4  | 1.4  | 1.4  |
| 1/8      | 1.4  | 1.4  | 1.4  | 1.4  |
| 1/6      | 1.35 | 1.35 | 1.35 | 1.35 |
| 1/4      | 1.35 | 1.35 | 1.35 | 1.35 |
| 1/3      | 1.35 | 1.35 | 1.35 | 1.35 |
| 1/2      | 1.25 | 1.25 | 1.25 | 1.15 |
| 3/4      | 1.25 | 1.25 | 1.15 | 1.15 |
| 1        | 1.25 | 1.15 | 1.15 | 1.15 |
| 1.5 & Up | 1.15 | 1.15 | 1.15 | 1.15 |

## Overload Protection

There are four choices in protection: manual (inherent type), automatic (inherent type), thermostats, and none. A manual overload must be physically reset to restart the motor. An automatic thermal overload will stop the motor when it is overloaded or overheated and restart it after the motor has cooled down. None means the motor has no protection. Thermostats are embedded in the winding and connected to the motor starter control circuit. Marathon Motors’s standards are normally closed thermostats, one per phase.



A motor with an automatic reset protector must not be used where automatic restarting (after motor cool-down) would endanger personnel or equipment. Such applications should use a manual reset protector.

## Phase/Power Supply

Is the power supply three phase or single phase? Most home and farm applications require single phase motors, while most factories, large commercial and industrial users require three phase motors. Single phase motors can be used on three phase systems. Three phase motors, however, cannot be operated from single phase systems. Motor damage will result.

## Rotation

Most motors in this catalog are reversible by electrical reconnection or by physical orientation. Marathon Motors’s standard rotation from the factory for single phase motors is counterclockwise, when viewing the opposite shaft end of the motor.

## Speed/Rpm

3600, 1800, and 1200 are the most common 60 HZ synchronous speeds with full load speed equivalents of 3450, 1725, and 1150.

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



## Terminology

**Ambient Temperature** – Temperature of the medium, such as air, water or earth, into which the heat of the equipment is dissipated.

**Across The Line Start** – A method of motor starting that applies full line voltage to the motor. The motor is connected directly to the power source.

**Base Speed** – Nameplate rating where the motor will develop rated HP at rated load and voltage. With AC systems, it is commonly the point where 60 Hz is applied to the induction motor.

**Breakaway Torque** – The torque required to start a machine from standstill.

**Breakdown Torque (BDT)** – The maximum torque that an AC motor will develop with rated voltage applied at rated frequency while rotating.

**Cogging** – A condition in which a motor does not rotate smoothly but “steps” or “jerks” from one position to another during shaft revolution. Cogging is most pronounced at low motor speeds and can cause objectionable vibrations in the driven machine.

**Continuous Duty** – The continuous rating is the maximum constant load that can be carried continuously without exceeding established temperature rise limitations under prescribed conditions of load and within the limitations of established standards.

**Definite Purpose Motor** – Any motor design, listed and offered in standard ratings with standard operating characteristics and mechanical construction, for use under service conditions other than usual or for use on a particular type of application (NEMA).

**Duty Cycle** – The relationship between the operating and resting times or repeatable operation at different loads and/or speeds.

**Efficiency** – Ratio of power output to power input indicated as a percentage. In motors, it is the effectiveness with which a motor converts electrical power into mechanical power.

**Frequency** – Number of cycles per second of alternating current 60HZ used primarily in the United States, 50HZ normally used overseas.

**Full Load Torque (FLT)** – The torque necessary to produce rated horsepower at full load speed.

**General Purpose Motor** – This motor has a continuous duty rating and NEMA A or B design, listed and offered in standard ratings with standard operating characteristics and mechanical construction for use under usual service conditions without restriction to a particular application or type of application (NEMA).

**Inertia** – A measure of a body's resistance to changes in velocity, whether the body is at rest or moving at a constant velocity. The velocity can be either linear or rotational. The moment of inertia (WK<sup>2</sup>) is the product of the weight (W) of an object and the square of the radius of gyration (K<sup>2</sup>). The radius of gyration is a measure of how the mass of the object is distributed about the axis of rotation. WK<sup>2</sup> is usually expressed in units of lb-ft<sup>2</sup>.

**Inrush Current** – The initial surge of current into the windings. Inrush current can be up to ten times higher than the continuously needed current because there is low initial resistance.

**Intermittent Duty** – A motor that never reaches equilibrium temperature, but is permitted to cool down (to ambient temperature) between operations. For example, a crane, hoist or machine tool motor is often rated for 15, 30 or 60 minute duty.

**Load Sharing** – An application condition in which two or more similar-sized AC Induction motors are mechanically connected to each other and powered from the same inverter. Optimum load sharing is achieved with higher slip (NEMA Design B or C) motors.

**Locked Rotor Current (LRA)** – Steady state current taken from the line with the rotor at standstill, at rated voltage and frequency. This is the current when starting the motor and load across the line.

**Locked Rotor Torque (LRT)** – The minimum torque that a motor will develop at rest for all angular positions of the rotor, with rated voltage applied at rated frequency.

**No Load (Conditions)** – The state of a machine rotating at normal speed under rated conditions, but when no output is required from it.

**Part Winding Start (PWS)** – A method of reduced voltage starting that applies power to only one set of windings, then to the other set as the motor comes up to speed.

**Power Factor** – Power factor is the ratio of real power (kW) to total kVA, or the ratio of actual power (W) to apparent power (volt-amperes).

**Reactance** – The opposition to the flow of current made by an induction coil or a capacitor. Performance data expresses stator reactance as X1 and rotor reactance as X2.

**Resistance** – The opposition to voltage or current in an electrical circuit. Performance data expresses stator resistance as R1 and rotor resistance as R2.

**Rotor** – The rotating member of a machine with a shaft.

**Service Factor (SF)** – When used on a motor nameplate, a number which indicates how much above the nameplate rating a motor can be loaded intermittently without causing serious degradation (i.e. a motor with 1.15 SF can produce 15% greater torque than one with 1.0 SF, within temperature constraints).

Continued on next page.

## Terminology

**Squirrel Cage Induction Motor** – When used on a motor nameplate, a number which indicates how much above the nameplate rating a motor can be loaded without causing serious degradation (i.e. a motor with 1.15 SF can produce 15% greater torque than one with 1.0 SF, within temperature constraints).

**Shock Load** – The load seen by a clutch, brake or motor in a system that transmits high peak loads. This type of load is present in crushers, separators, grinders, conveyors, winches and cranes.

**Slip** – The difference between the speed of the rotating magnetic field (synchronous speed) and mechanical rotational speed (rotor speed) of AC induction motors. Usually expressed as a percentage of synchronous speed.

**Special Purpose Motor** – A motor with special operating characteristics, special mechanical construction, or both, designed for a particular application and not falling within the definition of a general purpose or definite purpose motor (NEMA).

**Speed Range** – The minimum and maximum speeds at which a motor must operate under constant or variable torque load conditions. A 50:1 speed range for a motor with top speed of 1800 RPM means the motor must operate as low as 36 RPM and still operate within specifications.

**Starting Torque** – The torque exerted by the motor during the starting period.

**Stator** – The stationary portion of the magnetic circuit and the associated windings and leads of a rotating machine.

**Synchronous Speed** – The speed of an AC induction motor's rotating magnetic field. It is determined by the frequency applied to the stator and the number of magnetic poles present in each phase of the stator windings. Mathematically, it is expressed as Sync Speed (RPM) = 120 x Applied Frequency (Hz)/Number of Poles per phase.

**Torque** – A turning force applied to a shaft, tending to cause rotation. Torque is normally measured in "pound-feet" and is equal to the force applied times the radius through which it acts.

**Torque-to-Inertia Ratio** – The rated motor torque divided by its rotor inertia. Helps determine a motor's ability to accelerate loads and/or respond to commands from a drive to change speed or direction.

**Voltage Drop** – The reduction in voltage level from the source to the load caused by conductor resistance.

**Wye Start Delta Run (YD)** – A method of reduced voltage starting that first connects a motor in a wye to reduce voltage, then reconnects the motor in a delta to provide full line voltage.

## Formulas & Conversion Factors

$$\text{Horsepower (HP)} = \text{Torque (lb-ft)} \times \text{RPM} / 5252$$

$$\text{Horsepower (HP)} = \text{Torque (lb-in)} \times \text{RPM} / 63025$$

$$\text{Torque (lb-ft)} = \text{HP} \times 5252 / \text{RPM}$$

$$\text{Torque (lb-in)} = \text{HP} \times 63025 / \text{RPM}$$

$$\text{Efficiency} = \text{Power Out} / \text{Power In}$$

$$\text{Synchronous RPM} = 120 \times \text{Frequency} / \# \text{ Poles}$$

$$\text{Ohms} = \text{Volts} / \text{Amperes} (R = E/I)$$

$$\text{Amperes} = \text{Volts} / \text{Ohms} (I = E/R)$$

$$\text{Volts} = \text{Amperes} \times \text{Ohms} (E = IR)$$

$$\begin{aligned} \text{Static Torque (T)} &= F \times R \text{ (lb-ft)}, \\ F &= \text{Force (lb)}, \\ R &= \text{pulley or drum radius (ft)} \end{aligned}$$

$$\text{Pound-feet (torque)} = .7376 \times \text{Newton-meters}$$

$$\text{Newton-meters (torque)} = 1.3558 \times \text{lb-ft}$$

$$\text{Power (HP)} = \text{Torque (lb-ft)} \times 2\pi \times \text{RPM} / 33000$$

$$\text{Temperature (Celsius)} = 5/9 \times (F^\circ - 32)$$

$$\text{Temperature (Fahrenheit)} = (9/5 \times C^\circ) + 32$$

$$1 \text{ Kilowatt (KW)} = 1.341 \text{ Horsepower}$$

$$1 \text{ Horsepower} = 746 \text{ watts (.746 KW)}$$

$$\text{Brake Torque} = (5252 \times P / N) \times \text{SF}, P = \text{HP}, N = \text{RPM}, \text{SF} = 1.4$$

Use 2.0 to 2.5 SF for cranes and hoists  
(consult crane manufacturer or user).



# Variable Speed Operation

## Variable Speed Operation

Guidelines for Application of General Purpose, Three Phase, Single Speed Motors on Variable Frequency Drives Meets NEMA MG1-2006 Part 30 and Part 31 Section 4.4.2 Unless stated otherwise, motor nameplates do NOT include listed speed range.

| Enclosure       | Efficiency              | Variable Torque   | Constant Torque |          |            |                     |            |                     |            |        |            |
|-----------------|-------------------------|---|-----------------|----------|------------|---------------------|------------|---------------------|------------|--------|------------|
|                 |                         |   | All Frames      | 56       | 143-215    |                     | 254-286    |                     | 324-365    |        | 404-449    |
| NEMA Motors     |                         | All Poles   | All Poles       | 2-Pole   | 4 & 6 Pole | 2-Pole              | 4 & 6 Pole | 2-Pole              | 4 & 6 Pole | 2-Pole | 4 & 6 Pole |
| ODP             | Standard (EPAct exempt) | 10:1  | 2:1             | 2:1      | 2:1        | Contact Engineering |            |                     |            |        |            |
|                 | EPAct compliant         | 10:1  | N/A             | 2:1      | 2:1        | 2:1                 | 2:1        | Contact Engineering |            |        |            |
|                 | NEMA Premium            | 10:1  | N/A             | 10:1     | 10:1       | 10:1                | 10:1       | 10:1                | 10:1       | 2:1    | 2:1        |
| TEFC            | Standard (EPAct exempt) | 10:1  | 2:1             | 2:1      | 2:1        | Contact Engineering |            |                     |            |        |            |
|                 | EPAct compliant         | 10:1  | N/A             | 2:1      | 10:1       | 2:1                 | 10:1       | 2:1                 | 2:1        | 2:1    | 2:1        |
|                 | NEMA Premium            | 10:1  | N/A             | 2:1      | 20:1       | 2:1                 | 20:1       | 2:1                 | 20:1 (1)   | 2:1    | 20:1 (1)   |
| TENV            | EPAct compliant         | 10:1  | N/A             | N/A      | 1000:1     | 1000:1              | 1000:1     | 1000:1              | 1000:1     | 1000:1 | 1000:1     |
|                 | NEMA Premium            | 10:1  | 1000:1          | 1000:1   | 1000:1     | 1000:1              | 1000:1     | 1000:1              | 1000:1     | 1000:1 | 1000:1     |
| Washdown TEFC   | Standard (EPAct exempt) | 10:1  | 10:1 (2)        | 10:1 (2) | 10:1 (2)   | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
|                 | EPAct compliant         | 10:1  | 10:1 (2)        | 10:1 (2) | 10:1 (2)   | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
|                 | NEMA Premium            | 10:1  | 10:1 (2)        | 10:1 (2) | 10:1 (2)   | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
| Washdown TENV   | Standard (EPAct exempt) | 10:1  | 1000:1          | 1000:1   | 1000:1     | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
|                 | EPAct compliant         | 10:1  | 1000:1          | 1000:1   | 1000:1     | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
|                 | NEMA Premium            | 10:1  | 1000:1          | 1000:1   | 1000:1     | N/A                 | N/A        | N/A                 | N/A        | N/A    | N/A        |
| Explosion Proof | All efficiency levels   | Explosion Proof motors must be properly nameplated with inverter duty information prior to use on VFD. See Marathon catalog pages for specific rating capabilities. Motors with automatic overload protectors cannot be used on VFDs. |                 |          |            |                     |            |                     |            |        |            |
| IEC Motors      |                         | All Frames  | 63-90           |          | 100-225    |                     | 250-315    |                     |            |        |            |
| All Enclosures  | All efficiency levels   | 10:1  | 20:1            |          | Up to 20:1 |                     | Up to 2:1  |                     |            |        |            |

Notes: (1) 324-449T, 4 & 6 Pole XRI motors are rated for 20:1 C.T. with fan modification; otherwise rated for 2:1 C.T. continuous duty, or 20:1 C.T. 60 minute duty at lowest RPM.

(2) Washdown TEFC motors are rated for 10:1 C.T. 60 minute duty or 2:1 C.T. continuous duty at lowest RPM. Model numbers beginning with 5K are not suitable for use with Variable Frequency Drives.

### Application Notes

**Bearing currents** Marathon Motors recommends that any motors used with Variable Frequency Drives be equipped with suitable means to protect the motor bearings from shaft currents caused by common mode voltages inherent with operation on a non-sinusoidal power supply. Marathon Motors offers several options for motors in non-classified (non-hazardous) locations, including ground brushes, insulated bearings and non-contact shaft grounding rings. For more information on ground brushes and bearing currents, see the VARIABLE SPEED OPERATION section. For installation cost and available options, see the MOD CENTRAL section.

**Restricted use** DO NOT APPLY THE FOLLOWING MOTORS ON VARIABLE FREQUENCY DRIVES:  
 Single Phase motors, Motors with inherent overload protection, Multi-Speed motors, Motors with 1.0 Service Factor on sine wave power.  
 Fire Pump motors should not be used with variable frequency power supplies, due to the critical nature of these applications.

**Hazardous Locations** Consult with Marathon Motors when applying motors and drives into Hazardous Locations, either Division/Zone 1 or Division/Zone 2 areas.  
 UL and CSA policies prohibit the installation of bearing protection devices, such as shaft grounding brushes, rings or insulated bearings on motors in Hazardous Locations.

### Maximum Cable Lengths from the Motor to Drive

| Product Description  | 3 kHz CARRIER FREQUENCY (PHASE TO PHASE) |           |          |
|--|--|-----------|----------|
|  | 230 Volt                                 | 460 Volt  | 575 Volt |
| 56-326 NEMA, 100-225 IEC Frames                            | 600 ft.                                  | 125 ft.   | 40 ft.   |
| 364-5013 NEMA, 250-315 IEC Frames                          | 1000 ft.                                 | 225 ft.   | 60 ft.   |
| Motors with CR <sup>200</sup> Corona Resistant Magnet Wire | 1500 ft.                                 | 475 ft.   | 140 ft.  |
| Motors with MAX GUARD <sup>®</sup> insulation system       | Unlimited                                | Unlimited | 650 ft.  |
| Form-wound low voltage motors                              | Unlimited                                | Unlimited | 650 ft.  |

\* Higher carrier frequencies require shorter cable length to obtain normal (50Khrs) insulation life.

### Standard Motor Insulation Systems

| CR200 Corona-Resistant Magnet Wire  | Max Guard <sup>®</sup>  |
|---|---|
| microMAX <sup>®</sup> inverter duty<br>*4 - in - 1" Three Phase, C-Face with Removable Base<br>Standard Three Phase stock Brakemotors<br>Blue Chip <sup>®</sup> Severe Duty Explosion Proof,<br>EPAct Efficiency<br>Max + | Black Max <sup>®</sup> Vector Duty - All Product<br>Blue Max <sup>®</sup> Vector Duty - All Products<br>PowerWash <sup>™</sup> XT, SXT, and SXT-Plus Washdown Duty - Three Phase<br>Blue Chip <sup>®</sup> XRI Severe Duty<br>Blue Chip <sup>®</sup> XRI-841 (IEEE841 compliant)<br>Automotive Duty "T" Frame<br>Blue Chip <sup>®</sup> Explosion Proof, XRI <sup>®</sup> Premium Efficiency<br>Globetrotter <sup>®</sup> IEC Metric motors |

## Variable Speed Information

Marathon Motors Vector-Duty and Inverter-Duty motors, unless otherwise stated, are rated for continuous operation in a 40°C ambient and for altitudes up to 3300 feet (1000 meters) above sea level. Special application considerations, such as high or low ambient, intermittent ratings, high altitude, duty cycle rated, extended constant horsepower range, special base speed, voltage or frequency, or any other special requirements, should be reviewed by a factory representative.

It is the responsibility of the startup personnel during commissioning of the VFD/motor system to properly tune the drive to the motor for the specific application. The correct voltage boost and volts/hertz settings are application dependent and unique to each motor design. Procedures for these adjustments should be in your VFD user manual. Many Vector Duty and Inverter Duty motors in this catalog are equipped with thermostats; warranty coverage may be denied if they are not properly utilized.



Power factor correction capacitors should never be installed between the drive and the motor.



## Inverter Duty Or Inverter Rated

“Inverter Duty” (often called “Inverter Rated”) motors are suitable for use with Variable Frequency Drives, as long as operation is within the application guidelines published in this catalog. In general, Marathon Motors’s three phase, general purpose, NEMA Design B motors are considered “Inverter Duty”, and meet or exceed the requirements of NEMA MG1, Part 30. As required under Federal law, these motors comply with EPC efficiencies when operating from utility power.

Many of Marathon’s motor product lines have been enhanced to facilitate reliable operation on today’s variable speed drives, including wider constant torque speed range (up to 20:1) and improved insulation systems that withstand voltage spikes common with variable frequency operation.

Inverter Duty (Rated) motors are most often used in 10:1 speed range, variable torque or constant torque applications. A vector control is usually required for operation beyond 10:1 CT.

Refer to “Guidelines for Application of General Purpose, Single Speed Three Phase Motors on Variable Frequency Drives” in this section of this catalog for the allowable speed range and cable length restrictions (from VFD to motor). Additional detail regarding a specific product’s capabilities is available on its catalog page, or by consulting your application engineer.

**Vector Duty** – “Vector Duty” describes a class of motors that are used in conjunction with Open- (without encoder) or Closed-Loop (with encoder) Vector controls, that provide enhanced performance under low speed operating conditions, or in cases where torque (rather than speed) must be controlled. “Vector Duty” motors can be applied to Volts/Hertz (scalar) drives, as well.

Marathon Motors’s “MAX” family, consisting of Blue Max®, Black Max® and microMAX™ motors, have been specifically designed for optimal operation on vector or volts/hertz controls. These motors feature a wide constant torque (up to 2000:1) and/or constant horsepower (up to 4:1) speed range and are performance-matched to all current technology IGBT drives. Vector Duty motors meet or exceed the requirements of NEMA MG1, Part 31, and are equipped with an enhanced insulation system (MAX GUARD® or CR200) to provide many years of trouble-free service. Consult the catalog page for each product’s capabilities and features. As these motors are specifically designed for operation through an inverter, they are exempt from EPC legislation. Model numbers contain the letter “H” in the “Electrical Type” field.

**Variable Torque Loads** – Applications include fans, blowers and centrifugal pumps. Torque varies as the square of the speed, and horsepower as the cube of the speed. Operation below base speed significantly lightens the load on the motor. While most variable torque applications do not require the motor to operate below half speed, the motor is fully capable of operation to zero speed. Operation above base speed significantly adds to the load on the motor; therefore, a factory representative must review applications requiring variable torque above base speed. Refer to the application chart found on page 14 for use of general purpose three phase motors on variable frequency drives. Marathon’s microMAX™, Black Max® or Blue Max® motors are not necessarily required for operation of variable torque loads. A bypass circuit is often employed in Variable Torque applications. If this device is intended to be used, selection of a NEMA Design B motor is recommended, to withstand the inrush current during across-the-line starting.

**Constant Torque Loads** – Applications include conveyors, elevators, hoists, extruders, positive displacement pumps, mixers and converting equipment. Torque remains constant throughout the range of operation, and extra care should be taken in the proper application of motors, especially at very low speeds. Most constant torque applications don’t require operation below 10:1 (i.e. 6 Hz operation on a 60 Hz motor), but an increasing number of applications historically reserved for servo and/or stepper systems are being served with motors capable of operation beyond 20:1, up to 2000:1 (zero speed, constant torque). Refer to the application chart found on page 17 for use of general purpose three phase motors on variable frequency drives.

Continued on next page.

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



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ME-13

# Variable Speed Operation

## Constant Torque Loads (Cont'd.)

Applications requiring greater than 20:1 C.T. are ideal for microMAX™, Black Max® or Blue Max® motors. These motors provide full rated torque within their listed speed range, without exceeding a Class F temperature rating while under inverter power (many operate at Class B). Ratings in this catalog have been developed, based on extensive testing on IGBT inverters, set at a minimum 3 KHz (or equivalent) carrier frequency.

Vector Duty and Inverter Duty motors from Marathon Motors are designed for operation at 150% of rated load for one minute, up to the base speed of the motor (overload capability declines to 100% as the motor reaches maximum constant HP speed). These motors accommodate constant horsepower operation to 1-1/2 to 2 times base speed, subject to the motor's maximum safe mechanical speed limit. Refer to the Maximum Safe Mechanical Speed Chart, as well as the performance section for each motor's capability.

Motors rated for zero RPM continuous duty (1000:1 or 2000:1) must be powered by vector drives to produce rated torque without overheating. Optimum zero speed and low-speed full torque performance may require a closed loop vector drive (with encoder feedback).

**Constant Horsepower Loads** – Applications include coil winders, band saws, grinders, and turret lathes. Operation requires the motor to deliver the same horsepower rating, regardless of shaft speed. Torque increases at low speed and decreases at higher speed. Most general purpose motors can deliver constant horsepower up to 1 1/2 times base speed (consult a factory representative to verify performance). However, many constant HP applications require operation to twice base speed, and some, such as coil winders, up to 4 times base speed. microMAX™, Black Max® and Blue Max® motors are designed for 1 1/2 to 2 times base speed, and the Wide CHP motors, found in Marathon's SB371 Catalog, deliver up to 4 times constant horsepower performance.

**Bearing Currents** – As stated in NEMA MG1-31.4.4.3, to protect a motor from inverter-sourced shaft voltages, either both bearings must be insulated or the motor shaft must be effectively grounded. Marathon Motors offers several effective means to protect the bearings from inverter sourced EDM (electrical discharge machining). A Shaft Grounding device is standard in Blue Max® motors, in frame sizes 444T and larger. Insulating the motor bearings will not prevent damage to bearings of a connected load, and insulated couplings should be employed to protect the load. Adding a ground brush to a motor with insulated bearings will divert motor shaft currents and help protect the bearings of the connected load. At this time, UL policy prohibits the use of ground brushes or insulated bearings in Hazardous Locations (Div 1 & 2, Zones 1, 2, 21 & 22).

The Marathon Solution to Bearing Currents  
Any motor with a "-P" behind the catalog number  
and a "P" footnote features a current mitigation device.



**Motor Grounding** - Frames and accessories of all motors must be grounded in accordance with the National Electric Code (NEC) Article 430. Refer to NEC Article 250 for general information on grounding. Proper grounding of inverter-driven motors is essential to protect personnel and livestock from inverter-sourced common mode voltages, which may reach hazardous levels on the frame of ungrounded or poorly grounded motors.

**Low Input Voltage** – If, due to lower utility supply voltage, the input voltage from the VFD to the motor is lower than the motor's rated voltage, de-rating of the motor's base frequency, horsepower, full load RPM, and constant HP RPM is required. The revised values can be calculated by multiplying by the ratio of the voltage change. For example, to operate a 460 volt motor from an inverter fed by 50 or 60 HZ, 400 volt utility power, the multiplier is 400/460 or 0.87.

The VFD can be reprogrammed to match the new base point values, allowing the motor to provide rated torque at rated current from the new base speed down to its original minimum Constant torque speed. The motor's CHP range will begin at the new base frequency and will be shortened by the same ratio as described above.

**Overspeed Capability** – Maximum safe mechanical speed capability is a function of bearing size and type, lubrication, rotor balancing technique and specifications, air gap, enclosure, frame construction and connection to the driven load. In addition, consideration must be given to ambient noise levels, as operation above base speed will increase motor noise and vibration, and reduce bearing life. Under no circumstances should bearing hub temperature exceed 100°C. Belted loads should not exceed 60 Hz operating RPM by more than 25% (NEMA "TS" shafts are not suitable for belted loads). Due to external cooling fans, TEFC (and Explosion Proof Fan Cooled) motors are limited to 4000 RPM maximum speed.

Marathon Motors, through extensive testing in our state-of-the-art laboratory and in actual field experience, has developed a number of high speed motors whose maximum safe mechanical speed exceeds the values in the table below. The following table depicts maximum safe speed limits for continuous operation, direct-coupled, non-explosion proof motors, and does not imply constant horsepower capability. Please consult a factory representative for requirements beyond those listed, or for intermittent duty limits.

**Maximum Safe Mechanical Speed Limits  
(ODP, TENV, DPFV OR TEBC ENCLOSURES)  
60 Hz base frequency**

| Frame Size | 2-Pole | 4, 6 or 8-Pole |
|------------|--------|----------------|
| 56-184     | 7200   | 5400           |
| 213-256    | 5400   | 4200           |
| 284-286    | 5400   | 3600           |
| 324-326    | 4000   | 3600           |
| 364-365    | 4000   | 2800           |
| 404-449    | 3600   | 2800           |
| 5000 Fr    | N/A    | CALL           |
| 6800 Fr    | N/A    | CALL           |

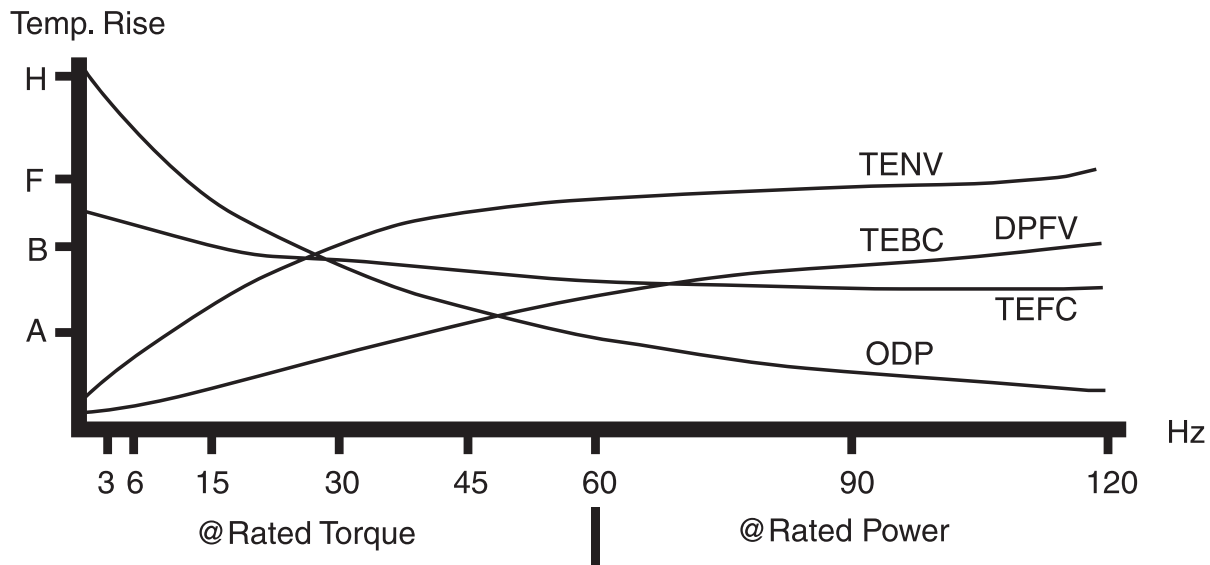
## Other Application Consideration

For proper selection, the following should be considered:

- Horsepower or torque requirements at various speeds.
- Desired speed range of the load and motor.
- Acceleration and deceleration rate requirements of the process being controlled.
- Starting requirements including the frequency of starting and a description of the load (reflected inertia at the motor, load torque during starting).
- Whether the application is a continuous process or duty cycle of starts, stops and speed changes.
- A general description of the type of application including the environment in which the VFD system components must operate (determines motor enclosure and/or explosion proof classification).

- Description of the available electrical power supply and wiring.
- Special performance requirements, if any.
- Whether the drive will be configured with a by-pass circuit. In case of its deployment, the motor will operate like its fixed speed counterpart and may require a NEMA B design which limits in-rush current, or selection of a larger motor starter or other protective circuitry.
- Load sharing
- Mounting and other mechanical considerations

## Typical Temperature Rise Of Various Enclosures



√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.

# Single Phase

## Fan and Blower Duty, Single Phase (NEMA Service Factor), Dripproof

**Features:**

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- Thermal protection, as noted
- Capacitor start design for high starting torque
- Capacitor start/capacitor run design for higher efficiency, as noted
- 48Y and 48YZ have 48/56 Fr mounting holes
- Service Factor, as noted
- UL Recognized and CSA Certified



**Resilient Base**

| HP    | RPM  | VOLTS       | FRAME | OVER LOAD | CAT. NO. | MODEL NO.     | STOCK | F.L. AMPS    | WEIGHT | "C" DIM. | FOOT NOTES |
|-------|------|-------------|-------|-----------|----------|---------------|-------|--------------|--------|----------|------------|
| 1/3   | 1800 | 115/208-230 | 56    | AUTO      | C216     | 5KC36LN1X     | √     | 6.0/3.2-3.0  | 18     | 10.32    | 20,68      |
| 1/2   | 1800 | 115/208-230 | 56    | NONE      | B1316    | 5KC49GN0001   | √     | 8.8/4.2-4.4  | 21     | 10.38    | 19         |
|       | 1800 | 115/208-230 | 56    | AUTO      | B317     | 056C17D2072   | √     | 8.0/4.1-4.0  | 20     | 10.47    | CF,19,31   |
| 3/4   | 1800 | 115/208-230 | 56    | AUTO      | B319     | 056C17D2074   | √     | 10.0/5.2-5.0 | 23     | 11.72    | CF,19,31   |
|       | 1800 | 115/208-230 | 56    | NONE      | B318     | 056C17D2073   | √     | 10.0/5.2-5.0 | 24     | 11.72    | CF,19,31   |
| 1     | 1800 | 115/208-230 | 56    | AUTO      | C1158    | 5KC49PN0164X  | √     | 14.7/7.2-7.4 | 29     | 11.38    | 18         |
|       | 1800 | 115/208-230 | 56    | NONE      | C235     | 5KC49PN0155   | √     | 13.6/6.7-6.8 | 31     | 11.38    | 5,18       |
| 1 1/2 | 1800 | 115/208-230 | 56H   | NONE      | B336     | 056C17D5347   | √     | 18.0/9.3-9.  | 39     | 12.85    | 2,5,18,32  |
|       | 1800 | 115/208-230 | 56H   | AUTO      | C1160    | 5KCR49SN0150X | √     | 16.4/8.4-8.2 | 35     | 11.90    | ES,1,18    |

# General Purpose Three Phase

## General Purpose, Three Phase Dripproof, NEMA Premium® XRI® Efficiency

**Applications:**

General purpose use on compressors, pumps, conveyors, blowers, and other machinery in environments that are relatively clean and dry. Substantial energy savings can be realized when using these high efficiency motors. Guaranteed efficiencies offer an eXtra Return on your Investment when using these premium efficiency motors on high cycle or long run time applications.

**Features:**

- Meets or exceeds NEMA Premium® efficiencies NEMA Premium® models are in compliance with EISA2007
- Motors are suitable for 10:1 VT on all frame sizes and 10:1 CT up to 365T frame (Except where noted)
- 1.15 Service Factor
- Normally closed thermostats, as noted
- Class F Insulation
- Nameplated 60/50 hertz
- UL Recognized, CSA Certified and CE Marked
- Three year warranty



**Rigid Base**

Suitable for use on VFD per guidelines on page ME-12.

| HP    | RPM  | VOLTS       | FRAME | CAT. NO.    | MODEL NO.   | STOCK | NOM. EFF. | F.L. AMPS   | WEIGHT | "C" DIM. | FOOT NOTES | C-FACE KITS |
|-------|------|-------------|-------|-------------|-------------|-------|-----------|-------------|--------|----------|------------|-------------|
| 1 1/2 | 1800 | 208-230/460 | 145T  | <b>U759</b> | 145TTDR6028 | √     | 86.5      | 4.8-5.6/2.4 | 35     | 12.62    | TS         | A600        |
| 2     | 1800 | 208-230/460 | 145T  | <b>U760</b> | 145TTDR6029 | √     | 86.5      | 5.8/2.9     | 37     | 13.62    | TS         | A600        |

Catalog numbers (Cat No.) highlighted in bold blue have efficiency levels that meet EISA requirements



### Condenser Fan/Heat Pump, PSC, Open Air Over Thru-Bolt, Shaft Up or Horizontal

**Applications:**

Direct drive condenser fans mounted vertically, shaft up. Models with open brackets should be mounted where they are shielded from rain. These motors need to be mounted within the airflow of the fan for proper cooling.

**Features:**

- Frame and shaft end bracket enclosed, except X011, X012, and X208 have open frames and X426 has open frame and brackets
- Single and multi-speed models as noted
- Ball bearings
- Weather resistant reversing plug
- 30" long leads
- Shaft with flat, unless otherwise noted
- 60°C ambient (as noted)
- Shaft slinger
- 1-5/8" Extended thru-bolts on shaft end, except where noted
- Automatic reset thermal protector
- Lug mount kits and other accessories available, see Accessories section
- UL Recognized and CSA Certified
- Capacitor not included



| HP  | RPM    | VOLTS       | FRAME | CAT. NO. | MODEL NO.     | STOCK | F.L. AMPS   | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-----|--------|-------------|-------|----------|---------------|-------|-------------|--------|--------------|------------|------------|
| 1/2 | 1075/1 | 460         | 48Y   | X400     | 048A11O2017   | √     | 1.8         | 194    | 5            | 1/2 x 6    | 35         |
| 3/4 | 1075/1 | 460         | 48Y   | X099     | 048A11O2016   | √     | 2.5         | 223    | 5 1/2        | 1/2 x 6    | 34         |
| 1   | 1075/1 | 200-230/460 | 56Z   | P190     | 5KCP49ZN9617T | √     | 6.7-6.8/3.4 | 477    | 9.0          | 5/8 x 4    |            |

### Condenser Fan/Heat Pump, PSC, Open Air Over 48 Frame, Thru-Bolt, All-Angle

**Applications:**

Direct drive condenser fans for all angle mounting. These motors need to be mounted within the airflow of the fan for proper cooling.

**Features:**

- Frame and end brackets enclosed
- Single and multi-speed models, as noted
- Ball bearings (except as noted)
- Weather resistant reversing plug
- 30" long leads
- Shaft slinger
- 1-1/2" Thru-bolts on shaft end, 1" thru-bolts on lead end (except as noted)
- Automatic reset thermal protector
- Weep holes with removable plugs on end brackets. Remove bottom plug after installation.
- Lug mount kits and other accessories available (see Accessories section)
- 60°C ambient, as noted
- UL Recognized and CSA Certified
- Capacitor not included



| HP  | RPM    | VOLTS   | FRAME | CAT. NO. | MODEL NO.  | STOCK | F.L. AMPS | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-----|--------|---------|-------|----------|------------|-------|-----------|--------|--------------|------------|------------|
| 1/4 | 1625/1 | 208-230 | 48Y   | X467     | 048A47T87  | √     | 2.0-2.0   | 12     | 4 1/2        | 1/2 x 6    | 21,36      |
|     | 1075/1 | 208-230 | 48Y   | X412     | 048A11T569 | √     | 1.4-1.4   | 16     | 4 1/4        | 1/2 x 6    | 45         |
| 3/4 | 1075/1 | 460     | 48Y   | X459     | 048A11T581 | √     | 2.1       | 23     | 6            | 1/2 x 6    | 32,45      |

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



**Condenser Fan/Heat Pump, Single Phase, PSC**

56 Frame, Resilient Ring, Thru-Bolt

**Applications:**

Direct drive condenser fans mounted vertically, shaft up or horizontal. These motors need to be mounted within the airflow of the fan for proper cooling.

**Features:**

- Enclosed shaft end bracket with vented frame
- Ball bearings
- 30" long leads
- Shaft slinger
- 60°C ambient, as noted
- Automatic reset thermal protector
- Flat & keyway on shaft
- UL Recognized and CSA Certified
- Capacitor not included



**Open Air Over, Shaft Up**

| HP    | RPM  | VOLTS       | FRAME | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS   | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-------|------|-------------|-------|----------|-------------|-------|-------------|--------|--------------|------------|------------|
| 1 1/2 | 1075 | 208-230/460 | 56Y   | X271     | 056A1105305 | √     | 7.7-7.6/3.8 | 43     | 9 3/4        | 5/8 x 6    | 34,45      |

**Commercial Condenser Fan/Heat Pump, PSC**

Open Air Over, Belly Band, Shaft Up

**Applications:**

Heavy duty design for commercial direct drive condenser fans mounted vertically, shaft up. These motors need to be mounted within the airflow of the fan for proper cooling.

**Features:**

- Open frame and end brackets
- Shaft with flat, unless otherwise noted
- Unique Rain Shield fits over shaft to protect motor in vertical shaft up position
- Shaft slinger
- Automatic reset thermal protector
- Ball bearings
- UL Recognized and CSA Certified
- Capacitor not included



| HP | RPM  | VOLTS       | FRAME | CAT. NO. | MODEL NO.     | STOCK | F.L. AMPS | WEIGHT | FRAME LENGTH | SHAFT DIM.             | FOOT NOTES |
|----|------|-------------|-------|----------|---------------|-------|-----------|--------|--------------|------------------------|------------|
| 1  | 1075 | 200-230/460 | 48Y   | P195     | 5KCP39SNB482S | √     | 5.6/2.8   | 21     | 10 5/8       | 5/8 x 5 1/4 w/key/flat |            |

**Commercial Condenser Fan/Heat Pump, Three Phase**  
**Open Air Over, Rigid Base, Shaft Up or Horizontal**

**Applications:**

Commercial condenser fans may be installed outdoors. These motors need to be mounted within the airflow of the fan for proper cooling. Used on Trane, Carrier, Climtrol and York units, 5 tons and larger.

**Features:**

- 70°C ambient (except as noted)
- Enclosed shaft end bracket, vented frame
- Continuous duty, air over
- Automatic reset thermal protector
- Shaft slinger
- Threaded lead exit
- Nameplated 60/50 hertz 190/380 volts, at next lower HP
- Double sealed ball bearings
- Flat and keyway on shaft
- Patented VCD™ - Voltage Change Device (as noted)
- Ball Bearings
- UL Recognized and CSA Certified



As Noted



| HP    | RPM  | VOLTS       | FRAME | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS    | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-------|------|-------------|-------|----------|-------------|-------|--------------|--------|--------------|------------|------------|
| 1/2   | 850  | 208-230/460 | 56HZ  | X529     | 056T8O5531  | √     | 2.9-3.0/1.5  | 31     | 14.68        | 5/8 x 5    | VC,5       |
| 1 1/2 | 1140 | 208-230/460 | 56HZ  | X523     | 056T11O5306 | √     | 5.45-5.4/2.7 | 36     | 15.68        | 5/8 x 5    | VC,5       |
|       | 850  | 208-230/460 | 56HZ  | X531     | 056T8O15504 | √     | 7.0-7.0/3.5  | 47     | 16.68        | 5/8 x 5    | VC,5       |

**Condenser Fan/Heat Pump, Three Phase**  
**Open Air Over, Belly Band/Resilient Ring**

**Applications:**

Commercial condenser fans may be installed outdoors. These motors need to be mounted within the airflow of the fan for proper cooling. Used on Trane, Carrier, Climtrol and York units, 5 tons and larger.

**Features:**

- 70°C ambient (except as noted)
- Enclosed shaft end bracket, vented frame
- Automatic reset thermal protector
- Nameplate 60/50 hertz 190/380 volts, at next lower HP (except as noted)
- Double sealed ball bearings
- 5/8" Dia. x 5" long shaft with flat and keyway
- Ball bearings
- Threaded lead exit
- Patented VCD™ - Voltage Change Device
- 4 Locating screws 90 degrees apart, 3.33" from outer edge of shaft slinger
- Hubs on both ends will accept resilient base kits
- UL Recognized and CSA Certified
- External shaft slinger on all, internal slinger on 5K models



As Noted



| HP    | RPM  | VOLTS       | FRAME | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS   | WEIGHT | FRAME LENGTH | FOOT NOTES |
|-------|------|-------------|-------|----------|-------------|-------|-------------|--------|--------------|------------|
| 1     | 1140 | 200-230/460 | 56Y   | X502     | 056T11O5302 | √     | 4.0-4.2/2.1 | 28     | 10.00        | VC         |
|       | 850  | 200-230/460 | 56Y   | X507     | 056T8O5302  | √     | 5.3-5.3/2.6 | 46     | 12.00        | VC         |
| 1 1/2 | 1140 | 200-230/460 | 56Y   | X503     | 056T11O5303 | √     | 5.5-5.4/2.7 | 35     | 11.00        | VC         |
|       | 850  | 208-230/460 | 56Y   | X530     | 056T8O5307  | √     | 7.5-6.8/3.4 | 47     | 11.25        | VC         |
| 2     | 1140 | 208-230/460 | 56Y   | X509     | 056T11O5304 | √     | 7.2-6.8/3.4 | 49     | 12.00        | VC         |

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.

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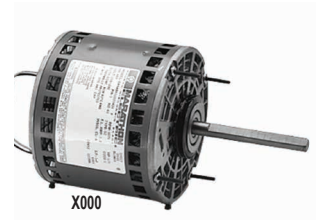
**WARNING:**  
 Cancer and Reproductive Harm  
 www.P65Warnings.ca.gov

ME-19

**Fan and Blower - Direct Drive, PSC**  
**Open Air Over, Resilient Ring, Thru-Bolt Mount**

**Features:**

- Open frames and brackets (except X011 and X012 have enclosed shaft end bracket)
- Single and multi-speed models as noted
- Grommeted lead exit
- Weather resistant reversing plug
- 2-1/4" resilient ring mounting except where noted (base not included, see Accessories section)
- 2 1/2" adapter rings supplied, shipped loose in box
- Extended thru-bolts on shaft end
- 30" long leads
- Automatic reset thermal protector
- Ball bearings
- UL Recognized and CSA Certified
- Capacitor not included



| HP  | RPM    | VOLTS | FRAME | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-----|--------|-------|-------|----------|-------------|-------|-----------|--------|--------------|------------|------------|
| 1/4 | 1075/3 | 115   | 48Y   | X000     | 048A11O1798 | √     | 3.4       | 12     | 4 1/4        | 1/2 x 4    | 32         |
| 1/3 | 1075/3 | 115   | 48Y   | X002     | 048A11O1769 | √     | 4.6       | 14     | 4 3/4        | 1/2 x 4    | 32         |
| 1/2 | 1625/3 | 115   | 48Y   | X016     | 048A17O153  | √     | 5.0       | 16     | 5 1/4        | 1/2 x 4    | 32         |
|     | 1075/3 | 115   | 48Y   | X004     | 048A11O1755 | √     | 6.2       | 17     | 5 1/2        | 1/2 x 4    | 32         |
| 3/4 | 1075/3 | 115   | 48Y   | X009     | 048A11O787  | √     | 10.2      | 20     | 5 3/4        | 1/2 x 4    | 32         |

**Fan and Blower - Direct Drive, PSC**  
**Open Air Over, Extended Thru-Bolt, 460 Volt**

**Applications:**

Residential and commercial furnaces, air conditioners, exhaust fans, and other air handling equipment installed in clean and dry environments.

**Features:**

- Enclosed frame and open end brackets
- Multi-speed capability
- Grommeted lead exit
- Weather resistant reversing plug
- Automatic reset thermal protector
- 7/8" extended thru-bolts on shaft end
- Ball Bearings
- UL Recognized and CSA Certified
- Capacitor not included



| HP  | RPM    | VOLTS | FRAME | CAT. NO. | MODEL NO.  | STOCK | F.L. AMPS | WEIGHT | FRAME LENGTH | SHAFT DIM. | FOOT NOTES |
|-----|--------|-------|-------|----------|------------|-------|-----------|--------|--------------|------------|------------|
| 1/3 | 1075/2 | 460   | 48Y   | X037     | 48A11O1876 | √     | 1.0       | 14     | 4 3/4        | 1/2 X 6    | 51         |
| 1/2 | 1075/2 | 460   | 48Y   | X038     | 48A11O1874 | √     | 1.6       | 17     | 5 1/4        | 1/2 X 6    | 51         |
| 3/4 | 1075/2 | 460   | 48Y   | X039     | 48A11O1875 | √     | 2.1       | 19     | 5 1/2        | 1/2 X 6    | 51         |

**Fan and Blower, Split Phase, Dripproof  
Resilient Base (Single & Two Speed)**

**Features:**

- Ball bearings (except as noted)
- Service factor, as noted
- Thermal protection, as noted
- Variable torque on two speed motors
- Extended thru-bolts, as noted
- Heavy gauge steel frame and base
- 48Y and 48YZ frame have 48/56 frame mounting holes
- UL Recognized and CSA certified



| HP  | RPM      | VOLTS | FRAME | OVER LOAD | CAT. NO.    | MODEL NO.    | STOCK | F.L. AMPS | WEIGHT | "C" DIM. | FOOT NOTES  |
|-----|----------|-------|-------|-----------|-------------|--------------|-------|-----------|--------|----------|-------------|
| 1/4 | 1725     | 115   | 48YZ  | NONE      | B302        | 48S17D2054   | √     | 5         | 14     | 9.57     | 9,20,28     |
|     | 1725     | 115   | 48YZ  | AUTO      | B303        | 48S17D2055   | √     | 5         | 14     | 9.57     | 20,32,53    |
|     | 1725     | 115   | 56Z   | AUTO      | B201        | 56S17D2047   | √     | 5         | 14     | 9.47     | 8,20,26     |
|     | 1725     | 115   | 56Z   | AUTO      | 4363        | 5KH39QN5526X | √     | 5.1       | 14     | 9.19     | 20          |
|     | 1725     | 230   | 48    | AUTO      | 4306        | 5KH39QN5537X | √     | 2.5       | 13     | 9.09     | 20          |
|     | 1725     | 230   | 48    | NONE      | 4360        | 5KH39QN5548  | √     | 2.5       | 13     | 8.93     | 20,31,52    |
|     | 1725     | 277   | 48YZ  | NONE      | B606        | 48S17D2116   | √     | 2.1       | 13     | 9.47     | 20,31       |
|     | 1140/850 | 115   | 56    | NONE      | H300        | 5KH49SN3048  | √     | 5.8/3.6   | 30     | 12.01    | 20          |
|     | 1140     | 115   | 56    | AUTO      | H163        | 5KH46MN6053X | √     | 5.6       | 23     | 10.88    | 20          |
|     | 1140     | 115   | 56    | NONE      | H162        | 5KH46MN6053  | √     | 5.6       | 27     | 10.88    | 19          |
| 850 | 115      | 56    | NONE  | H296      | 5KH49SN3046 | √            | 6.9   | 30        | 12.01  | 20       |             |
| 1/3 | 1725     | 115   | 48YZ  | NONE      | B304        | 048S17D2056  | √     | 5.5       | 15     | 9.32     | CF,20,31,52 |
| 1/2 | 1725     | 115   | 48Y   | AUTO      | D162        | 048S17D2087  | √     | 7.2       | 19     | 10.09    | 19          |
|     | 1725     | 115   | 48YZ  | AUTO      | B208        | 048S17D2109  | √     | 7.5       | 20     | 10.43    | CF,19,53    |
|     | 1725     | 115   | 48YZ  | NONE      | B306        | 048S17D2058  | √     | 7.5       | 18     | 10.32    | CF,19,31,52 |
|     | 1725     | 115   | 48YZ  | AUTO      | B307        | 048S17D2059  | √     | 7.5       | 18     | 10.32    | CF,19,31,52 |

**Fan and Blower - Capacitor Start, Dripproof  
Resilient Base (Single & Two-Speed)**

**Features:**

- Ball bearings
- Heavy gauge steel frame and base
- Service Factor, as noted
- Capacitor start / capacitor run as noted
- Thermal protection, as noted
- 48Y and 48YZ Frame have 48/56 Frame mounting holes
- UL Recognized and CSA Certified



| HP    | RPM  | VOLTS       | FRAME | OVER LOAD | CAT. NO. | MODEL NO.     | STOCK | F.L. AMPS    | WEIGHT | "C" DIM. | FOOT NOTES |
|-------|------|-------------|-------|-----------|----------|---------------|-------|--------------|--------|----------|------------|
| 1/3   | 1725 | 115/208-230 | 48YZ  | AUTO      | B315     | 48C17D2044    | √     | 5.8/3.1-2.9  | 17     | 10.22    | 20,31,52   |
|       | 1725 | 115/208-230 | 56    | AUTO      | C216     | 5KC36LN1X     | √     | 6.0/3.2-3.0  | 18     | 10.32    | 20,50      |
| 1/2   | 1725 | 115/208-230 | 56    | NONE      | B1316    | 5KC49GN0001   | √     | 8.8/4.2-4.4  | 21     | 10.38    | 19         |
|       | 1725 | 115/208-230 | 56    | AUTO      | B317     | 56C17D2072    | √     | 8.0/4.1-4.0  | 20     | 10.32    | CF,19,31   |
| 3/4   | 1725 | 115/208-230 | 56    | AUTO      | C1156    | 5KC46LN0149X  | √     | 13.3/6.5-6.6 | 27     | 10.78    | 19         |
|       | 1725 | 115/208-230 | 56    | AUTO      | B319     | 56C17D2074    | √     | 10.0/5.2-5.0 | 23     | 10.72    | CF,19,31   |
|       | 1725 | 115/208-230 | 56    | NONE      | B318     | 56C17D2073    | √     | 10.0/5.2-5.0 | 24     | 10.72    | CF,19,31   |
| 1     | 1725 | 115/208-230 | 56    | AUTO      | C1158    | 5KC49PN0164X  | √     | 14.7/7.2-7.4 | 29     | 11.38    | 18         |
|       | 1725 | 115/208-230 | 56H   | NONE      | C235     | 5KC49PN0155   | √     | 13.6/6.7-6.8 | 31     | 11.38    | 18         |
| 1 1/2 | 1725 | 115/208-230 | 56H   | NONE      | B336     | 56C17D5347    | √     | 18.0/9.3-9.0 | 39     | 12.85    | 5,18,32    |
|       | 1725 | 115/208-230 | 56H   | AUTO      | C1160    | 5KCR49SN0150X | √     | 16.4/8.4-8.2 | 35     | 11.91    | ES,1,18    |

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



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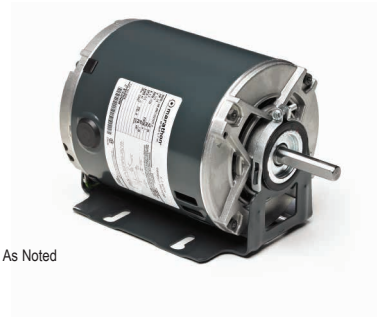
## Fan & Blower - Three Phase, Dripproof Resilient Base (Single and Two-Speed)

### Features:

- Single and two-speed models, as noted
- Variable torque on two speed ratings
- Ball bearings
- Heavy gauge steel frame and base
- Thermal protection, as noted
- Service Factor, as noted
- Nameplated 60/50 Hz at next lower horsepower (except as noted)
- Patented VCD™, Voltage Change Device where footnoted "VC"
- UL Recognized and CSA Certified



As Noted



| HP    | RPM  | VOLTS       | FRAME | OVER LOAD | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS   | WEIGHT | "C" DIM. | FOOT NOTES |
|-------|------|-------------|-------|-----------|----------|-------------|-------|-------------|--------|----------|------------|
| 1/2   | 1800 | 208-230/460 | 56    | AUTO      | K1408    | 5K42HN4089X | √     | 2.3-2.2/1.1 | 20     | 10.05    | 19         |
|       | 1800 | 208-230/460 | 56    | AUTO      | G140     | 056T17D5345 | √     | 2.3-2.4/1.2 | 22     | 10.85    | VC,19      |
| 1     | 1800 | 208-230/460 | 56H   | AUTO      | G100     | 056T17D2101 | √     | 3.4-3.4/1.7 | 24     | 11.47    | 5,18       |
| 1 1/2 | 1800 | 208-230/460 | 56    | NONE      | G122     | 056T17D5329 | √     | 4.8-4.8/2.4 | 28     | 11.35    | 18         |
| 3     | 1800 | 208-230/460 | 56HZ  | AUTO      | G145     | 056T17D5350 | √     | 9.2-8.6/4.3 | 48     | 14.22    | Z,VC,5,18  |

## Furnace Blower, Split Phase

### Open, PDQ Mounting

### Applications:

Designed for replacement of virtually any NEMA 48 and 56 frame belt drive furnace blower motors. PDQ models have 1 1/2" extended splined hub on opposite shaft end for quick and easy positioning of resilient ring to properly fit the pre-existing motor base.

### Features:

- Ball bearings
- Reversible rotation connected for CCW rotation from factory
- NEMA service factors
- UL Recognized and CSA Certified



| HP  | RPM  | VOLTS | FRAME | OVER LOAD | CAT. NO. | MODEL NO.    | STOCK | F.L. AMPS | WEIGHT | "C" DIM. | MIN/MAX BASE DIM'S | FOOT NOTES |
|-----|------|-------|-------|-----------|----------|--------------|-------|-----------|--------|----------|--------------------|------------|
| 1/3 | 1725 | 115   | 48Y   | AUTO      | 4731     | 5KH39QN9696X | √     | 5.8       | 15     | 10.28    | 7.12" & 8.41"      | 30         |

**Oil Burner, Split Phase and Capacitor Start**  
**NEMA 48M and 48N Flange Mount**

**Applications:**

Direct replacement motors for residential and commercial oil burners and hot water pressure/steam cleaners.

**Features:**

- Ball Bearings (except as noted)
- Semi- or totally enclosed steel frame
- 20" Long leads from a 1/2" NPT opening (totally enclosed footnoted with N)
- Split phase and capacitor start designs
- Two-bolt, NEMA N- or M-Flange Direct
- Catalog numbers O010 mounting and O011 have drip-proof enclosures
- 1.0 Service Factor



| HP  | RPM  | VOLTS       | FRAME | OVER LOAD | CAT. NO. | MODEL NO.  | STOCK | F.L. AMPS   | WEIGHT | "C" DIM. | FOOT NOTES |
|-----|------|-------------|-------|-----------|----------|------------|-------|-------------|--------|----------|------------|
| 1/8 | 1725 | 115         | 48N   | MANUAL    | O600     | 48S17T286  | √     | 2.8         | 11     | 7.7      | CF,N,3     |
| 1/7 | 3450 | 115         | 48M   | MANUAL    | O100     | 48S34S361  | √     | 2.8         | 11     | 7.7      | CF,3       |
| 1/6 | 3450 | 115         | 48M   | MANUAL    | O102     | 48S34S2005 | √     | 3.0         | 11     | 7.25     | 3          |
|     | 1725 | 115         | 48N   | MANUAL    | O601     | 48S17T290  | √     | 2.7         | 12     | 7.59     | CF,N,3     |
| 1/4 | 3450 | 115         | 48N   | MANUAL    | O004     | 48S34S2003 | √     | 4.2         | 13     | 8.13     | CF,3       |
|     | 1725 | 115         | 48N   | MANUAL    | O002     | 48S17S25   | √     | 4.2         | 12     | 7.59     | 3          |
| 1/3 | 3450 | 115/208-230 | 48N   | MANUAL    | O010     | 48C34D2024 | √     | 5.6/2.7-2.8 | 14     | 10.34    | 2          |
|     | 1725 | 115         | 48N   | MANUAL    | O003     | 48S17S24   | √     | 5.0         | 17     | 8.34     | 3          |
| 1/2 | 3450 | 115/208-230 | 48N   | MANUAL    | O011     | 48C34D2028 | √     | 7.4/3.5-3.7 | 17     | 10.84    | 2          |

**Oil Burner, PSC**  
**NEMA 48M Flange Mount**

**Applications:**

Replacement motors for mini pumps in residential or light commercial furnaces.

**Features:**

- High efficiency design
- 14" cord for easy connection
- Ultra quiet performance
- UL Recognized and CSA Certified



| HP  | RPM  | VOLTS | FRAME | OVER LOAD | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS | WEIGHT | "C" DIM. | FOOT NOTES |
|-----|------|-------|-------|-----------|----------|-------------|-------|-----------|--------|----------|------------|
| 1/7 | 3450 | 115   | 48M   | AUTO      | O701     | 48A34SU1001 | √     | 1.7       | 8      | 6.61     | 3,61       |

√ Stock model for Marathon and/or MARS. Prices and Specifications are subject to change without notice.



## Oil Burner, Split Phase and Capacitor Start

Drip-proof, NEMA 56C, C-Face Footless

**Features:**

- Ball Bearings
- Automatic reset thermal
- Split Phase and capacitor start designs protector
- NEMA 56C direct mounting
- NEMA Jet Pump Service Factors
- Moderate starting torque
- UL Recognized and CSA Certified



| HP  | RPM  | VOLTS       | FRAME | OVER LOAD | CAT. NO. | MODEL NO.  | STOCK | F.L. AMPS   | WEIGHT | "C" DIM. | FOOT NOTES |
|-----|------|-------------|-------|-----------|----------|------------|-------|-------------|--------|----------|------------|
| 1/3 | 3600 | 115/208-230 | 56C   | AUTO      | O210     | 56C34D2114 | √     | 5.6/2.7-2.8 | 14     | 10.44    | 2,115      |

## Refrigeration Fan Motors, Three Phase

Open Air Over, Shaft Up & Horizontal Rigid Base Mount

**Applications:**

Replacement motor for refrigeration equipment.

**Features:**

- 70°C ambient
- Enclosed shaft end bracket, vented frame
- Continuous duty
- Automatic reset thermal protector
- Shaft slinger
- Threaded lead exit
- Nameplated 60/50 hertz 190/380 volts, at next lower HP
- Double sealed ball bearings
- Flat and keyway on shaft
- Patented VCD, Voltage Change Device
- Ball Bearings
- UL Recognized and CSA Certified



As Noted

X507 (Footless)

| HP    | RPM  | VOLTS       | FRAME | CAT. NO. | MODEL NO.   | STOCK | F.L. AMPS    | WEIGHT | FRAME LENGTH | "C" DIM. | FOOT NOTES |
|-------|------|-------------|-------|----------|-------------|-------|--------------|--------|--------------|----------|------------|
| 1/2   | 850  | 208-230/460 | 56HZ  | X529     | 056T805531  | √     | 2.9-3.0/1.5  | 31     | 9.62         | 5/8 x 5  | VC,5       |
| 1     | 850  | 208-230/460 | 56Y   | X507     | 056T805302  | √     | 5.3-5.3/2.6  | 46     | 12.00        | 5/8 x 5  | VC         |
| 1 1/2 | 1140 | 208-230/460 | 56HZ  | X523     | 056T1105306 | √     | 5.45-5.4/2.7 | 36     | 11.00        | 5/8 x 5  | VC,5       |
|       | 850  | 208-230/460 | 56HZ  | X531     | 056T8015504 | √     | 7.0-7.0/3.5  | 47     | 11.50        | 5/8 x 5  | VC,5       |

### Resilient Ring Kit

Used to mount Resilient Rings onto Hubbed PSC Brackets. Kit includes: 2 rubber resilient rings and 4 split rings.



| CAT. NO. | KIT NO. | WEIGHT | NOTES             |
|----------|---------|--------|-------------------|
| A110     | KIT 110 | 1      | 2-1/4" (48 frame) |
| A114     | KIT 114 | 1      | 2-1/2" (56 frame) |

### Shaft Adapter Sleeve

Used to increase the diameter of a shaft to a larger size. Available sizes include converting from a 1/2" dia. shaft with flat to a 5/8" dia. with key and from a 5/8" dia. with key to a 3/4" dia. with key. Kit includes adapter sleeve and key.



| CAT. NO. | KIT NO. | TO CHANGE SHAFT | WEIGHT |
|----------|---------|-----------------|--------|
| A105     | KIT 105 | 1/2" to 5/8"    | 3      |

### Drip Cover Kits

Mounts with two screws into the end bracket. Kit includes: drip cover, mounting screws, washers, and instructions. Contact Marathon Motors to determine compatibility with motor. For vertical shaft down applications.

| CAT. NO. | FRAME     | KIT NO. | ENCLOSURE     | WEIGHT |
|----------|-----------|---------|---------------|--------|
| A197     | 182T-184T | KIT 197 | TEFC (4-IN-1) | 3      |

All Kits Listed on This Page are Stock

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## Footnotes

|    |   |     |  |
|----|---|-----|--|
| 1  | Capacitor Start/Capacitor Run design for reduced amperage   | 77  | Frame size is drilled with three sets of footholes, 5010, 5011, and 5012 as standard. Foothole drilling for 5009 available upon request, as a build-up |
| 2  | Capacitor Start Induction Run design  | 78  | Frame size is drilled with two sets of footholes, 5012 and 5013 standard   |
| 3  | Split Phase design  | 79  | Ball brgs on both ends suitable for direct connection. For belted applications, refer to Customer Service  |
| 4  | Sleeve bearing  | 80  | Rolled steel fan guard on 143T-145T  |
| 5  | 56H, 143T, and 145T Combination Base with 12 mounting holes   | 81  | 24" long #18 SO 2-conductor cord out shell at 11 o'clock position  |
| 6  | Bolt-on removable base for footless mounting option   | 82  | Welded Rigid Base  |
| 7  | Shaft extension 1-1/2" long by 1/2" diameter  | 83  | Shaft extension 1-7/8" long by 5/8" diameter with 6-3/8" mounting flange   |
| 8  | Shaft extension 1-7/8" long by 1/2" diameter  | 84  | NEMA 145T C-Face mounting with removable 182T rigid base   |
| 9  | Shaft extension 2-1/4" long by 1/2" diameter  | 85  | Not tach adaptable   |
| 10 | Shaft extension 2-1/4" long by 5/8" diameter  | 86  | 2:1 constant torque speed range; RTM for greater torque capability   |
| 11 | Shaft extension 2-1/4" long by 7/8" diameter  | 87  | 10:1 Constant Torque available as build-up, RTM for price and availability   |
| 12 | With rigid base   | 88  | 182T base and shaft height, 145TC mounting face and shaft dimensions   |
| 13 | F1 Mounting only, cannot reassemble to F2   | 89  | Threaded NPT opening in conduit box  |
| 14 | Will accept C-Face kit, see Accessory Section   | 90  | Not UL Recognized  |
| 15 | Fixed CW Rotation, viewing opposite shaft (or lead end) of motor  | 91  | Suitable for use on VFD at 208 volt  |
| 16 | Fixed CCW Rotation, viewing opposite shaft (or lead end) of motor   | 92  | 7/8" Thru-bolts, shaft end   |
| 17 | 1.0 Service Factor  | 93  | Permanent split capacitor-switchless   |
| 18 | 1.15 Service Factor   | 94  | 1/2" Thru-bolts, shaft end   |
| 19 | 1.25 Service Factor   | 95  | Will not accept drip cover kit   |
| 20 | 1.35 Service Factor   | 96  | 3 lead reversible design works with single pole, double throw reversing switch   |
| 21 | Double shaft extension 1-1/2" long by 1/2" diameter with flat each end  | 97  | Addition of D-Flange kit will result in non-NEMA "BA" dimension (1/2" longer than NEMA) and non-NEMA shaft extension (1/2" shorter than NEMA).         |
| 22 | Double shaft extension 1-7/8" long by 5/8" diameter each end  | 98  | Not UL Listed for Fire Pump applications   |
| 23 | Shaft extension 3/8" diameter   | 99  | Suitable for 2:1 CT operation  |
| 24 | Motor will NOT accept a Brake kit   | 100 | 6" shaft extension with 2 flats 90° apart  |
| 25 | Motor will NOT accept C-Face Kits   | 110 | 1.20 Service Factor  |
| 26 | 5/8" shaft adapter included   | 111 | 1.30 Service Factor  |
| 27 | Drip Cover included   | 112 | 1.40 Service Factor  |
| 28 | Steel Endshields  | 113 | 1.50 Service Factor  |
| 29 | Weep holes with removable plugs on end brackets. Remove bottom plug after installation  | 114 | 1.60 Service Factor  |
| 30 | Resilient ring mount, base not included   | 115 | 1.75 Service Factor  |
| 31 | 5/8" Thru-bolts, shaft end  | 116 | 1-3/4" thru-bolt extension on shaft-end  |
| 32 | 3/4" Thru bolts, shaft end  | 2:1 | Suitable for 2:1 CT operation; consult "R164 Rework" table for fan change pricing to upgrade to 10:1 CT  |
| 33 | Shaft extension 6" long by 5/8" diameter with full flat and key 90° apart   | A   | NEMA Design A  |
| 34 | 1" Thru-bolts, shaft end  | B   | NEMA Design B  |
| 35 | 1-1/8" Thru-bolts, shaft end  | C   | NEMA Design C  |
| 36 | 1-1/4" Thru-bolts, shaft end  | D   | Will become build-up item when current stock is gone   |
| 37 | 1-1/2" Thru-bolts, shaft end  | E   | Design incorporates electronic switch  |
| 38 | 2" Thru-bolts, shaft end  | F   | Class F Insulation   |
| 39 | No Thru-bolts, shaft end  | H   | Class H Insulation   |
| 40 | Space heaters and 100 ohm platinum stator RTDs included   | I   | Reduced HP @ 120 HZ  |
| 41 | 1/2" Thru-bolts, opposite shaft end   | N   | Totally Enclosed, Non-Ventilated   |
| 42 | 3/4" Thru-bolts, opposite shaft end   | P   | BCP (Bearing Current Protection)   |
| 43 | 2-1/2" Resilient Rings included   | Q   | Quick Connect™ terminal board  |
| 44 | 1" Thru-bolts, opposite shaft end   | S   | Steel Frame Construction   |
| 45 | 60° C ambient   | V   | Suitable for 10:1 CT 60 minute duty, otherwise 2:1 CT  |
| 46 | 65° C ambient   | X   | XRL Ultra High Efficiency Design   |
| 47 | Connected for CCW rotation (U.S. standard) facing opposite shaft end. Reversible by reconnection of leads                                   | Z   | 56HZ with 7/8" shaft dia., 3-1/2" shaft height, and slotted 56 frame base  |
| 48 | Connected for CW rotation (Canadian standard) facing opposite shaft end. Reversible by reconnection of leads                                | AH  | Conforms to GM 7EH and satisfies Ford EM-1 and GM 7EQ  |
| 49 | Shaft extension 1-13/16" long by 1/2" diameter with 6-3/8" mounting flange  | AL  | Aluminum Frame Construction  |
| 50 | Designed for 50 Hz operation  | AQ  | Conforms to GM 7EQ and satisfies Daimler Chrysler NPem-100, and Ford EM-1  |
| 51 | Does not include resilient rings, see Accessory Section   | BI  | Class B Insulation   |
| 52 | 1/2" x 1-7/8" Shaft with 1-5/8" Flat  | BP  | Separate power supply required for blower motor  |
| 53 | 1/2" Shaft with 5/8" adapter and Key  | CD  | Suitable for Group C   |
| 54 | 30 minute duty cycle, not rated for continuous duty   | CF  | Consult Factory for Accessory Kit and/or Modification Selection  |
| 55 | Shaft extension 3-13/16" long by 5/8" diameter with 3.5" keyway   | CT  | Suitable for 20:1 CT on Vector Drive, continuous duty or 2000:1  |
| 56 | 1-5/8" Thru-bolts, shaft end  | ES  | Energy Saver Design  |
| 57 | Open construction   | FN  | Drive has cooling fan  |
| 58 | Capacitor supplied with motor   | NE  | Exempt from NEMA Premium efficiency requirement  |
| 59 | TEAO construction   | NP  | Does not meet NEMA PremiumR efficiency   |
| 60 | Foot locating Set Screws on frame, 90 apart   | NS  | Single Shielded Ball Bearings  |
| 61 | 10" Leads   | PW  | Part Winding Start Capability  |
| 62 | 43" Leads   | RB  | Roller Bearing on shaft end for belted load only   |
| 63 | 1-1/2" Thru-bolts, opposite shaft end   | SH  | Space heaters  |
| 65 | Mounting accessories and resilient ring for pulley end are not included. Use accessory kit 161L131AB1 for resilient ring mounting           | SL  | Sound level exceeds standard   |
| 67 | Capacitor not included, see Accessory Section   | TS  | Normally Closed Thermostats installed  |
| 68 | Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower   | VB  | Vibration not met  |
| 69 | 50° C Ambient   | VC  | Voltage Change Device feature for quick voltage changes  |
| 70 | Not Nameplated 50 hz  | YD  | 12 Leads for WYE-DELTA, Part Winding on low voltage, or across-the-line starting   |
| 71 | Includes length adapter bracket   |     |  |
| 72 | Usable on 200 Volts at 1.0 service factor   |     |  |
| 73 | No hubs   |     |  |
| 74 | Split phase/capacitor run electrical design   |     |  |
| 75 | Addition of C-Face Kits may result in non-NEMA "BA" dimension. For the resulting "BA" dimension consult chart found in modification section |     |  |
| 76 | Addition of C-Face Kits in non-NEMA "AH" dimension. "AH" is 2.12, Rework "AH" is 2.38   |     |  |

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ME-27



# One-On-One™ Direct Replacement Motors

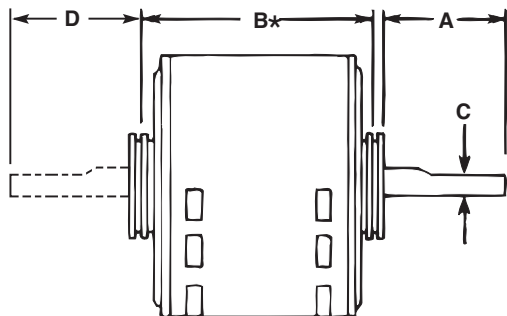


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### DIMENSIONS



- Shaft diameter is 1/2 inch on all motors unless otherwise noted.
- \* "B" dimension is the center to center of resilient ring dimension or the overall length of the shell and end shields if the motor does not have resilient rings.

### Bohn



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|-------|---------|-----|------|------------|------|------|
|          |          |      |       |         |     |      | A          | B    | C    |
| D1124    | -        | 1/20 | 115   | 1550/1  | CW  | 2.1  | 3.00       | 3.00 | 0.31 |

3.3 inch Shaded pole, sleeve bearing, 5/16 inch dia. shaft, shell turbo 68, low temp. oil (-40°F)

Replaces: 5KSM59JSK143S & 5KSM59JS5036S



### Bohn



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|-----|------|------------|------|------|
|          |          |      |         |         |     |      | A          | B    | C    |
| D1126    | -        | 1/15 | 208-230 | 1550/1  | CCW | 1.1  | 3.00       | 3.50 | 0.31 |

3.3 inch Shaded pole, sleeve bearing, shell turbo 68, low temp. oil (-40°F), 5/16 inch dia. Shaft

Replaces: 5KSM59LS2262AS



### Bohn



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|-----|------|------------|------|------|
|          |          |      |         |         |     |      | A          | B    | C    |
| D1125    | -        | 1/12 | 208-230 | 1550/1  | CW  | 0.50 | 2.63       | 3.75 | 0.31 |

3.3 inch PSC, sleeve bearing, 4@370V capacitor included, bolt circle 3.15", 5/16 inch dia. Shaft

Replaces: 7190-0442



### Amana



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A129     | -        | 1/20 | 115   | 3250/1  | CW  | 1.95 | -          | - | - |

3.3 inch, Shaded pole

Replaces: Amana, 7021-9064, 7021-9259



### Amana



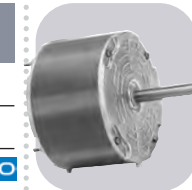
| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |   |
|----------|----------|------|-------|---------|-----|------|------------|------|---|
|          |          |      |       |         |     |      | A          | B    | C |
| A180     | -        | 1/30 | 115   | 3400/1  | CCW | 1.8  | 2.50       | 3.50 | - |

3.3 inch, Shaded pole, ball bearing

Replaces: 7021-9625, 20190601



### Bryant/Payne



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|-----|------|------------|------|------|
|          |          |     |         |         |     |      | A          | B    | C    |
| D847     | -        | 1/8 | 208-230 | 1125/1  | CCW | 0.90 | 3.50       | 3.75 | 0.50 |

5.6 inch, PSC, sleeve bearing

Replaces: K1543HC35VE-230 KA55CGD-9658



### Carrier



| MARS NO. | MFG. NO. | HP                      | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-------------------------|-------|---------|-----|------|------------|------|------|
|          |          |                         |       |         |     |      | A          | B    | C    |
| 20884    | -        | 1/8, 1/6, 1/5, 1/4, 1/3 | 460   | 825/1   | REV | 1.0  | 6.50       | 5.30 | 0.50 |

5.5 inch, Outdoor Condenser Fan, ball bearing, TEAO, 7.5 MFD @370 cap required

Replaces: ORM4688BF



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT      | AMPS | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|----------|------|------------|------|------|
|          |          |      |         |         |          |      | A          | B    | C    |
| 10234    | -        | 1/10 | 208-230 | 1100/1  | CCW/ OSE | 0.77 | 1.80       | 3.80 | 0.50 |

5 1/2 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905), CW OSE

Replaces: Carrier HC33GE233



### Bohn



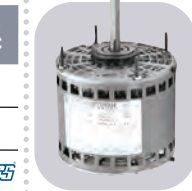
| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT    | AMPS | DIMENSIONS |      |   |
|----------|----------|------|-------|---------|--------|------|------------|------|---|
|          |          |      |       |         |        |      | A          | B    | C |
| 09930    | -        | 1/20 | 115   | 1550/1  | CW/ SE | 2.0  | 3.00       | 3.00 | - |

3.3 inch diameter, open 5/16 inch shaft, shaded pole with lyall lug

Replaces: AO Smith AO1124 Bohn 5KSM59JSK143 5008SS Fasco D1124, Magetek 572



### Carrier



| MARS NO. | MFG. NO.      | HP | VOLTS       | RPM/SPD | ROT | AMPS        | DIMENSIONS |       |       |
|----------|---------------|----|-------------|---------|-----|-------------|------------|-------|-------|
|          |               |    |             |         |     |             | A          | B     | C     |
| P190     | 5KCP49ZN9617T | 1  | 200-230/460 | 1075/1  | REV | 6.7-6.8/3.4 | 4.00       | 11.21 | 0.625 |

5.5 inch diam. open air over, ball bearings, capacitor not included G21-913

Replaces: 5KCP49UG1007S, 5KCP49UG1027S, 5KCP49UG1028S, 5KCP49ZG171S, 5KCP49ZG189S, 5KCP49ZG190S, 5KCP49ZG24S and 5KCP49ZN9622S



### Bohn



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT    | AMPS | DIMENSIONS |      |   |
|----------|----------|------|-------|---------|--------|------|------------|------|---|
|          |          |      |       |         |        |      | A          | B    | C |
| 09931    | -        | 1/15 | 230   | 1550/1  | CW/ SE | 0.57 | 3.00       | 3.50 | - |

3.3 inch diameter, open 5/16 inch shaft, shaded pole with lyall lug

Replaces: AO Smith AO1126 Bohn 5KSM59S262AS 5034MS 5008TS Fasco D1126 Magetek 573



### Carrier



| MARS NO. | MFG. NO.      | HP  | VOLTS       | RPM/SPD | ROT      | AMPS    | DIMENSIONS |      |   |
|----------|---------------|-----|-------------|---------|----------|---------|------------|------|---|
|          |               |     |             |         |          |         | A          | B    | C |
| 03288    | 5KCP39SGU073S | 1/2 | 200-230/460 | 1075/1  | CCW/ OSE | 4.6/2.3 | 2.92       | 7.31 | - |

5.5 inch diam. Open, lug mount, 7.5 MFD @ 370V capacitor required (MARS 12007)

Replaces: 5KCP39SGL288S





# One-On-One™ Direct Replacement Motors

## Carrier



| MARS NO. | MFG. NO.    | HP  | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|-------------|-----|---------|---------|----------|------------|------|------|
|          |             |     |         |         |          | A          | B    | C    |
| X210     | 048A1101068 | 1/4 | 208-230 | 1075/2  | REV      | 2.2        | 4.25 | 4.12 |

48Y frame, three lug mount, open air over, ball bearings, 5 MFD @ 370V capacitor required (MARS No. 12005)  
**Replaces:** Emerson 3303, FASCO D843, Magnetek 514, AOS OCB1026



## Carrier



| MARS NO. | MFG. NO.    | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|-------------|-----|-------|---------|----------|------------|------|------|
|          |             |     |       |         |          | A          | B    | C    |
| X222     | 048A1101109 | 1/3 | 230   | 1075/2  | REV      | 2.6        | 3.00 | 4.75 |

48Y frame, three lug mount, open air over, ball bearings, 7.5 MFD @ 370V capacitor required (MARS No. 12007)  
**Replaces:** Carrier HC41VE700, HC41VE701, Emerson 3225, Magnetek 536, AOS OCB1036



## Coleman



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A088     | -        | 1/25 | 115   | 3200/1  | CW       | 1.3        | - | - |

3.3 inch, Shaded pole, sleeve bearing  
**Replaces:** 7021-5478



## Copeland



| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-----|-------|---------|----------|------------|------|-----------|
|          |          |     |       |         |          | A          | B    | C         |
| 10227    | -        | 1/3 | 230   | 1625    | CW OSE   | 2.2        | 1.75 | 5.87 0.50 |

1/3HP, Condenser Fan, 208-230V, 1625 RPM, TEAO, capacitor included 4 MFD @ 370V, sleeve bearing  
**Replaces:** 050-0108-00, 5KCP32KG2598, 5KCP32KG175, 5KCP32KG221, 6127, K55HXECE2645



## Copeland



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-----|---------|---------|----------|------------|------|-----------|
|          |          |     |         |         |          | A          | B    | C         |
| 10228    | -        | 1/6 | 208-230 | 1550    | CW OSE   | 1.1        | 3.07 | 3.69 0.50 |

1/6HP, Condenser Fan, 208-230V, 1550 RPM, OAO, capacitor included 3 MFD @ 370V, sleeve bearing  
**Replaces:** 050-0251-00, 998-0251-00, 6128, K55HSJNG-2974, 40251



## Copeland



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-----|---------|---------|----------|------------|------|-----------|
|          |          |     |         |         |          | A          | B    | C         |
| 10229    | -        | 1/4 | 208-230 | 1625    | CW OSE   | 1.5        | 3.07 | 4.32 0.50 |

1/4HP, Condenser Fan, 208-230V, 1625 RPM, OAO, capacitor included 5 MFD @ 370V, sleeve bearing  
**Replaces:** 050-0250-00, 950-0250-00, 03242, 5KCP39EG755S, 6129, K55HXJZJ-3126, 40250, OCP0250



## Copeland



| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-----|-------|---------|----------|------------|------|-----------|
|          |          |     |       |         |          | A          | B    | C         |
| 10264    | -        | 1/4 | 230   | 1550    | CW OSE   | 2.1        | 3.00 | 4.20 0.50 |

1/4HP, Condenser Fan, 230V, 1550 RPM, ODP, capacitor included 5 MFD @ 370V, sleeve bearing  
**Replaces:** 050-0238-00, 5KCP-39GG357S, 6124, K55BZY-1439

## Copeland



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-----|---------|---------|----------|------------|------|-----------|
|          |          |     |         |         |          | A          | B    | C         |
| 10265    | -        | 1/6 | 208-230 | 1550    | REV      | 1.1        | 3.00 | 3.73 0.50 |

1/6HP, Condenser Fan, 208-230V, 1550 RPM, OAO, capacitor included 3 MFD @ 370V, sleeve bearing  
**Replaces:** 050-0265-00, K55PGP5104, 40265



## Copeland



| MARS NO. | MFG. NO.   | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|------------|-----|-------|---------|----------|------------|------|------|
|          |            |     |       |         |          | A          | B    | C    |
| 00353    | ESP-L35EM2 | 35W | 230   | 1500/1  | CW OSE   | 0.70       | 0.50 | 3.50 |

3 7/8 inch diam., cast iron unit bearing motor, end or side pad mounting, horizontal operation, 1/4" threaded shaft  
**Replaces:** Copeland 050-0227-02, ESP-L35EMV2, ESP-L35E22, Gem EM-33502



## Copeland

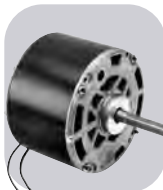


| MARS NO. | MFG. NO.    | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|-------------|-----|-------|---------|----------|------------|------|------|
|          |             |     |       |         |          | A          | B    | C    |
| 00503    | ESP-OL50EM2 | 50W | 230   | 1500/1  | CW OSE   | 0.85       | 1.50 | 4.50 |

3 7/8 inch diam., cast iron unit bearing motor, end or side pad mounting, horizontal operation, 3/8" dia, flattened shaft  
**Replaces:** Copeland 050-0011-00, 050-0237-00, 050-0244-00, use 00513 for 2080 units



## Copeland



| MARS NO. | MFG. NO.      | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|---------------|-----|-------|---------|----------|------------|------|------|
|          |               |     |       |         |          | A          | B    | C    |
| 03047    | 5KCP39GGD320S | 1/4 | 230   | 1625/1  | CW OSE   | 1.5        | 2.50 | 5.10 |

5.5 inch diam., shell enclosed band mount, 5 MFD @ 370V capacitor required (MARS No. 12005)  
**Replaces:** 5KCP39GG3537S, Copeland 050-0107-01 and 050-0238-00



## Cornelius



| MARS NO. | MFG. NO.      | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|---------------|-----|-------|---------|----------|------------|------|------|
|          |               |     |       |         |          | A          | B    | C    |
| 00508    | ESP-OL50EM1B1 | 50W | 115   | 1500/1  | CW OSE   | 1.7        | 2.89 | 4.50 |

3 7/8 inch diam., cast iron unit bearing motor, end or side pad mounting evaporator fan motor .312 shaft dia., 2 female spade terminals at end of each wire  
**Replaces:** Rotom 6206



## Fasco



| MARS NO. | MFG. NO. | HP    | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|-------|-------|---------|----------|------------|------|-----------|
|          |          |       |       |         |          | A          | B    | C         |
| D1160    | -        | 1/110 | 115   | 1480/1  | CW       | 0.58       | 1.50 | 2.13 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. Shaft  
**Replaces:** 7163-2593, 663, 668, 763, 768, 661



## Fedders

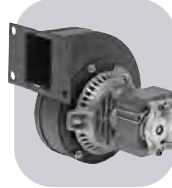


| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |   |
|----------|----------|-----|-------|---------|-----|------|------------|------|---|
|          |          |     |       |         |     |      | A          | B    | C |
| D1016    | -        | 1/4 | 230   | 1100/1  | CW  | 2.0  | 4.13       | 3.88 | - |

5 inch, PSC, sleeve bearing

Replaces: Condenser Fan S196-18-2

## Frymaster



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A110     | -        | 1/70 | 115   | 3200/1  | CW  | 0.76 | -          | - | - |

Shaded pole, ball bearing, 50/60Hz

Replaces: 7021-0898

## General Electric



| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|-------|---------|-----|------|------------|------|------|
|          |          |     |       |         |     |      | A          | B    | C    |
| D1050    | -        | 1/8 | 230   | 1550/1  | CW  | 1.1  | 3.00       | 3.25 | 0.50 |

5 inch, PSC, sleeve bearing, original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing of shaft end to prevent moisture from entering

Replaces: WWW94X236SP, WWW94X936PSC

## Goodman



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT     | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|---------|------|------------|------|------|
|          |          |     |         |         |         |      | A          | B    | C    |
| 10230    | -        | 1/4 | 208-230 | 1100/1  | CCW OSE | 1.26 | 3.00       | 4.10 | 0.50 |

5.5 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905), CCW OSE

Replaces: Goodman 0131M00019P

## Goodman



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT     | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|---------|------|------------|------|------|
|          |          |     |         |         |         |      | A          | B    | C    |
| 10232    | -        | 1/6 | 208-230 | 810/1   | CCW OSE | 1.1  | 3.00       | 4.10 | 0.50 |

5.5 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905), CCW OSE

Replaces: Goodman 0131M00060

## Goodman



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT     | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|---------|------|------------|------|------|
|          |          |     |         |         |         |      | A          | B    | C    |
| 10233    | -        | 1/8 | 208-230 | 1050/1  | CCW OSE | 0.70 | 2.50       | 4.10 | 0.50 |

5.5 inch diam., totally enclosed, ball bearing, capacitor required 5 MFD @ 370V (MARS No. 12005, 12905), CCW OSE

Replaces: Goodman 0131M00294

## Goodman



| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT    | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|-------|---------|--------|------|------------|------|------|
|          |          |     |       |         |        |      | A          | B    | C    |
| 10594    | -        | 1/2 | 115   | 1130/4  | CW OSE | 8.1  | 4.00       | 5.10 | 0.50 |

5.5 inch diam., totally enclosed, ball bearing, capacitor required 20 MFD @ 370V (MARS No. 12014, 12914), CW OSE

Replaces: Goodman 0131F00022

## Goodman



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT     | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|---------|------|------------|------|------|
|          |          |     |         |         |         |      | A          | B    | C    |
| 03242    | -        | 1/6 | 208-230 | 1075/1  | CCW OSE | 1.0  | 2.75       | 3.73 | 0.50 |

5.5 inch diam., condenser, 5 MFD @370V capacitor required (MARS No.12005)

Replaces: G3911

## Goodman

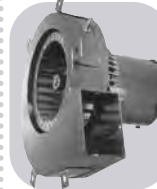


| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A157     | -        | 1/35 | 115   | 3000/1  | CCW | 1.3  | -          | - | - |

Shaded pole, sleeve bearing

Replaces: 7002-2307

## Goodman



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A079     | -        | 1/50 | 115   | 3000/1  | CCW | 1.1  | -          | - | - |

Shaded pole, sleeve bearing

Replaces: 74-70-21504-03-04, 74-70-21496-03-01, JAIM106, JAIM137, 7021-5615

## Goodman



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A182     | -        | 1/35 | 115   | 3125/1  | CCW | 1.3  | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 7002-3036, B4059000

## Goodman

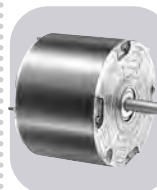


| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A281     | -        | 1/40 | 115   | 3000/1  | CW  | 0.90 | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 7021-8252, D6996405

## Heil-Quaker

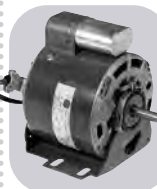


| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |   |      |
|----------|----------|-----|---------|---------|-----|------|------------|---|------|
|          |          |     |         |         |     |      | A          | B | C    |
| D1071    | -        | 1/6 | 208-230 | 1100/1  | REV | 0.99 | 2.13       | - | 0.50 |

5 inch, PSC, sleeve bearing

Replaces: HQ 1052662EM 48HXCLW-1562

## Hill Refrigeration



| MARS NO. | MFG. NO.      | HP  | VOLTS   | RPM/SPD | ROT    | AMPS | DIMENSIONS |      |      |
|----------|---------------|-----|---------|---------|--------|------|------------|------|------|
|          |               |     |         |         |        |      | A          | B    | C    |
| 03001    | 5KCP39KG1369S | 1/3 | 208-230 | 1625/1  | CW OSE | 2.9  | 3.50       | 5.70 | 0.50 |

5.5 inch diam., shell only enclosed, 3 inch resilient base and capacitor included

Replaces: Fasco D801 Hill No. PP3955B Universal 160

# One-On-One™ Direct Replacement Motors

## Hill Refrigeration



| MARS NO. | MFG. NO.      | HP | VOLTS   | RPM/SPD | ROT AMPS   | DIMENSIONS |      |      |
|----------|---------------|----|---------|---------|------------|------------|------|------|
|          |               |    |         |         |            | A          | B    | C    |
| 03067    | 5KCP39PGC910S | 1  | 208-230 | 1075/1  | CCW<br>OSE | 2.9        | 7.10 | 3.30 |

5.5 inch diam., open 3 inch resilient base included, ball bearing, 15 MFD @ 370V capacitor required (MARS No. 12010), shaft length 6 1/2 inch  
**Replaces:** Hill No. PP19162G, 5KCP39PGC030S, A.O. SMITH OHR 1106

## Hill Refrigeration



| MARS NO. | MFG. NO.      | HP | VOLTS | RPM/SPD | ROT AMPS  | DIMENSIONS |      |      |
|----------|---------------|----|-------|---------|-----------|------------|------|------|
|          |               |    |       |         |           | A          | B    | C    |
| 05095    | 5KSM81FFL0036 | 5W | 115   | 1550/1  | CW<br>OSE | 0.45       | 0.50 | 2.50 |

3.5 inch diam., totally enclosed, 3 tapped holes, shaded pole, 1/4 inch threaded shaft  
**Replaces:** 5KSP51AL486H, 5KSM51AG3005, Hill No. PP7577  
 Also Replaces: 5KSP51AL380H used by WARREN

## Hussman



| MARS NO. | MFG. NO.   | HP | VOLTS | RPM/SPD | ROT AMPS  | DIMENSIONS |      |      |
|----------|------------|----|-------|---------|-----------|------------|------|------|
|          |            |    |       |         |           | A          | B    | C    |
| 00091    | RS4BEB9E13 | 9W | 115   | 1660/1  | CW<br>OSE | 0.28       | 0.39 | 2.56 |

3.43 inch diam., enclosed, end or side pad mounting, capacitor mounted inside shell, water resistant  
**Replaces:** RS4BEB9E16, RS4BEB9E12

## Hussman



| MARS NO. | MFG. NO.      | HP  | VOLTS   | RPM/SPD | ROT AMPS  | DIMENSIONS |      |      |
|----------|---------------|-----|---------|---------|-----------|------------|------|------|
|          |               |     |         |         |           | A          | B    | C    |
| 03012    | 5KCP39GG5606S | 1/5 | 208-230 | 1075/1  | CW<br>OSE | 1.7        | 2.50 | 4.80 |

5.5 inch diam., shell enclosed, thru bolt mount, capacitor included  
**Replaces:** 5KCP39GGA967T

## IEC



| MARS NO. | MFG. NO. | HP            | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|---------------|---------|---------|----------|------------|------|-----------|
|          |          |               |         |         |          | A          | B    | C         |
| D1059    | -        | 1/6-1/12-1/50 | 115-127 | 1450/3  | DS       | 2.3        | 8.75 | 3.33 0.50 |

5 inch, PSC, sleeve bearing  
**Replaces:** 5KCP29DK8384S, S89208

## Inter City



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A171     | -        | 1/25 | 115   | 3450/1  | CCW      | 0.70       | - | - |

3.3 inch, PSC, ball bearing  
**Replaces:** 7062-4783, 1011412

## Inter City



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A172     | -        | 1/35 | 115   | 3000/1  | CW       | 1.6        | - | - |

Shaded pole, ball bearing  
**Replaces:** 7002-2792, 1010975P

## Inter City



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A173     | -        | 1/18 | 115   | 3450/1  | CCW      | 0.80       | - | - |

3.3 inch, PSC, ball bearing  
**Replaces:** 7062-4578, 1011350

## Inter City



| MARS NO. | MFG. NO. | HP    | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|-------|-------|---------|----------|------------|---|---|
|          |          |       |       |         |          | A          | B | C |
| A174     | -        | 1/100 | 115   | 2350/1  | CW       | 0.80       | - | - |

3.3 inch, Shaded pole, sleeve bearing  
**Replaces:** 7021-9188, 1010239

## Inter City



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A302     | -        | 1/25 | 115   | 3060/1  | CW       | 1.5        | - | - |

3.3 inch, Shaded pole, sleeve bearing  
**Replaces:** 7021-9499, 1010324P, 7021-7700, 1708-607

## Janitrol



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |      |
|----------|----------|------|-------|---------|----------|------------|---|------|
|          |          |      |       |         |          | A          | B | C    |
| A079     | -        | 1/50 | 115   | 3000/1  | CCW      | 1.1        | - | 0.50 |

3.3 inch, Shaded pole, sleeve bearing  
**Replaces:** 74-70-21504-03-04, 74-70-21496-03-01, JAIM106, JAIM137, 7021-5615, 7021-6804

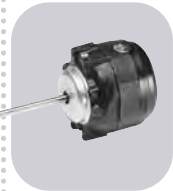
## Keeprite



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|------|---------|---------|----------|------------|------|-----------|
|          |          |      |         |         |          | A          | B    | C         |
| D1121    | -        | 1/20 | 208-230 | 1550/1  | CW       | 1.0        | 2.50 | 3.50 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft  
**Replaces:** 7163-8861, 1043766

## Kelvinator



| MARS NO. | MFG. NO.       | HP  | VOLTS | RPM/SPD | ROT AMPS   | DIMENSIONS |      |      |
|----------|----------------|-----|-------|---------|------------|------------|------|------|
|          |                |     |       |         |            | A          | B    | C    |
| 00152    | ESP-OL15EMJR11 | 15W | 115   | 1500/1  | CCW<br>OSE | 0.60       | 7.00 | 3.17 |

3 7/8 inch diam., enclosed, 3 tapped holes or side pad mount, shaded pole, 5/16 inch diam. flattened shaft  
**Replaces:** Kelvinator No. 24-0366 ESP-L15EMJR11

## Krack Refrigeration



| MARS NO. | MFG. NO. | HP   | VOLTS         | RPM/SPD | ROT AMPS | DIMENSIONS |      |           |
|----------|----------|------|---------------|---------|----------|------------|------|-----------|
|          |          |      |               |         |          | A          | B    | C         |
| D1189    | -        | 1/20 | 115 / 208-230 | 1550/1  | CW       | 1.4-0.76   | 1.63 | 3.13 0.31 |

3.3 inch, Shaded pole, ball bearing, 5/16 inch dia. shaft  
**Replaces:** 11528, 11529, JB2P046N, JA2P216N, JA2P217N, JB2P047N, 8354110940, 8254111030



## Kramer/Trenton



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|-------|---------|-----|------|------------|------|------|
|          |          |      |       |         |     |      | A          | B    | C    |
| D1152    | -        | 1/20 | 115   | 1500/1  | CW  | 1.7  | 2.38       | 2.88 | 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft

Replaces: 5KSM59ES2001

## Kramer/Trenton



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |   |
|----------|----------|------|-------|---------|-----|------|------------|------|---|
|          |          |      |       |         |     |      | A          | B    | C |
| D1154    | -        | 1/20 | 230   | 1550/1  | CW  | 1.0  | 2.37       | 3.13 | - |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft

Replaces: JA2R140N

## Kramer/Trenton



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT        | AMPS | DIMENSIONS |      |      |
|----------|----------|------|-------|---------|------------|------|------------|------|------|
|          |          |      |       |         |            |      | A          | B    | C    |
| 09932    | 253-1194 | 1/20 | 115   | 1550/1  | CCW<br>OSE | 1.9  | 2.25       | 2.75 | 0.31 |

3.3 inch diam., open, 5/16 inch shaft, shaded pole with Lyall plug

Replaces: A.O Smith 1101, Fasco D1101, Larkin 253-1194, Magnetek 574

## Kramer/Trenton



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT        | AMPS | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|------------|------|------------|------|------|
|          |          |      |         |         |            |      | A          | B    | C    |
| 09933    | 253-1195 | 1/20 | 208-230 | 1550/1  | CCW<br>OSE | 1.3  | 2.25       | 5.00 | 0.31 |

3.3 inch diam., open, 5/16 inch shaft, shaded pole with Lyall plug

Replaces: A.O. Smith 1103, Fasco D1103, Larkin 253-1195, Magnetek 575

## Larkin Coil



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|-------|---------|-----|------|------------|------|------|
|          |          |      |       |         |     |      | A          | B    | C    |
| D1101    | -        | 1/20 | 115   | 1500/1  | CCW | 1.9  | 2.25       | 2.75 | 0.31 |

3.3 inch diam., Shaded pole, sleeve bearing, 5/16 inch dia. shaft, Shel-Turbo 68, low temp oil (-40°F)

Replaces: Larkin No. 253-1194, Fasco No. 7163-2113

## Larkin Coil



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|-----|------|------------|------|------|
|          |          |      |         |         |     |      | A          | B    | C    |
| D1103    | -        | 1/20 | 208-230 | 1500/1  | CCW | 1.15 | 2.25       | 3.00 | 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft, Shell Turbo 68, low temp oil (-40°F), not a direct replacement for 253-1194, but is an acceptable substitute

Replaces: Fasco No. 7163-3371, 252-1195

## Lennox



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A135     | -        | 1/60 | 120   | 3000/1  | CCW | 0.70 | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: LENNOX, 7021-8812, 7021-8819

## Lennox



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A163     | -        | 1/20 | 115   | 3400/1  | CCW | 1.8  | -          | - | - |

3.3 inch, Shaded pole, ball bearing

Replaces: LENNOX, 7021-9450

## Lennox



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A200     | -        | 1/30 | 115   | 3000/1  | CCW | 1.95 | -          | - | - |

Shaded pole, sleeve bearing

Replaces: 7002-2975, 31L5501

## Lennox

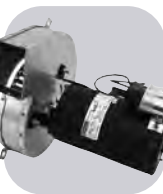


| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A206     | -        | 1/25 | 115   | 3000/1  | CW  | 1.5  | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 7021-8473, 65204100/20J8901

## Lennox



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A324     | -        | 1/12 | 230   | 3200/1  | CW  | 0.50 | -          | - | - |

3.3 inch, PSC, ball bearing

Replaces: 7062-1909, 28G6601, 7062-1794

## Lennox



| MARS NO. | MFG. NO.    | HP  | VOLTS   | RPM/SPD | ROT           | AMPS | DIMENSIONS |   |   |
|----------|-------------|-----|---------|---------|---------------|------|------------|---|---|
|          |             |     |         |         |               |      | A          | B | C |
| X411     | 048A11T2008 | 1/6 | 208-230 | 1075/1  | CCW/CW<br>OSE | 1.95 | -          | - | - |

48Y frame, totally enclosed, ball bearings, 3@370V capacitor required (MARS No. 12003)

Replaces: Lennox 47F9901, Magnetek 9402, Marathon 048A11T300, 048A11T247

## Loren Cook



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD        | ROT | AMPS         | DIMENSIONS |      |      |
|----------|----------|------|-------|----------------|-----|--------------|------------|------|------|
|          |          |      |       |                |     |              | A          | B    | C    |
| D1100    | -        | 1/50 | 115   | 1550/<br>900/2 | CW  | 1.2/<br>0.70 | 2.38       | 2.88 | 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft

Replaces: 7173-1580, GC/GN 142/144

## McQuay



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT       | AMPS    | DIMENSIONS |      |      |
|----------|----------|------|---------|---------|-----------|---------|------------|------|------|
|          |          |      |         |         |           |         | A          | B    | C    |
| 09934    | -        | 1/15 | 155/230 | 1550/1  | CW<br>OSE | 2.2/1.1 | 2.50       | 3.50 | 0.31 |

3.3 inch diam., open, shaded pole, wiring harness and conductor box

Replaces: AO Smith A0142 Fasco D1142 Magnetek 342 McQuay 879-382562B-00, BA2H015

# One-On-One™ Direct Replacement Motors

## Prestcold



| MARS NO. | MFG. NO.          | HP  | VOLTS  | RPM/SPD   | ROT | AMPS | DIMENSIONS |     |   |
|----------|-------------------|-----|--------|-----------|-----|------|------------|-----|---|
|          |                   |     |        |           |     |      | A          | B   | C |
| 05811    | 5KSM81HFL3004T16W | 115 | 1550/1 | CW<br>OSE | 1.1 | 0.50 | 3.50       | 1/4 |   |

3.5 inch diam., enclosed, 3 tapped holes or side pad mount, shaded pole, 1/4 inch threaded shaft

Replaces: Prestcold No. 401-0032-01

## Prestcold



| MARS NO. | MFG. NO.          | HP  | VOLTS  | RPM/SPD   | ROT  | AMPS | DIMENSIONS |   |   |
|----------|-------------------|-----|--------|-----------|------|------|------------|---|---|
|          |                   |     |        |           |      |      | A          | B | C |
| 05821    | 5KSM81HFL3006T16W | 230 | 1550/1 | CW<br>OSE | 0.55 | 0.50 | 3.50       | - |   |

3.5 inch diam., enclosed 3 tapped holes or side pad, shaded pole, 1/4 inch threaded shaft

Replaces: Prestcold No. 401-0033-01

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP   | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|---------|---------|-----|------|------------|---|---|
|          |          |      |         |         |     |      | A          | B | C |
| A241     | -        | 1/25 | 208-230 | 3200/1  | CW  | 0.62 | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 7021-9567, 70-23641-81

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD         | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|-----------------|-----|------|------------|---|---|
|          |          |      |       |                 |     |      | A          | B | C |
| A247     | -        | 1/40 | 115   | 3250/<br>2800/2 | CW  | 0.95 | -          | - | - |

3.3 inch, PSC, sleeve bearing

Replaces: 7062-5519

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP                       | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|--------------------------|-------|---------|-----|------|------------|------|------|
|          |          |                          |       |         |     |      | A          | B    | C    |
| 10463    | -        | 1/2 - 1/3 -<br>1/4 - 1/6 | 115   | 1075/4  | REV | 6.2  | 5.50       | 4.73 | 0.50 |

5.5 inch dia., open endshields, sleeve bearing, capacitor required noted on motor label, direct drive blower motor

Replaces: 51-23012-41

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP  | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|---------|---------|-----|------|------------|------|------|
|          |          |     |         |         |     |      | A          | B    | C    |
| D2840    | -        | 1/5 | 208/230 | 1075/1  | CW  | 1.3  | 4.13       | 3.75 | 0.50 |

5.6 inch, PSC, sleeve bearing, 4 drilled and tapped holes in shell

Replaces: 51-21853-82

## Rheem/Ruud

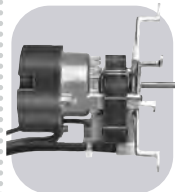


| MARS NO. | MFG. NO. | HP  | VOLTS        | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-----|--------------|---------|-----|------|------------|------|------|
|          |          |     |              |         |     |      | A          | B    | C    |
| D832     | -        | 1/8 | 208 -<br>230 | 825/1   | REV | 1.1  | 4.75       | 4.00 | 0.50 |

3.3 inch, PSC, sleeve bearing, 4 drilled and tapped holes in shell

Replaces: 21276-02, 21276-01, 512076-01

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP    | VOLTS        | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|----------|-------|--------------|---------|-----|------|------------|------|------|
|          |          |       |              |         |     |      | A          | B    | C    |
| K628     | -        | 1/200 | 208 -<br>230 | 3000/1  | CW  | 0.25 | 1.50       | 4.90 | 0.25 |

Shaded pole, sleeve bearing, 1/4 inch dia. shaft

Replaces: 51-21964-01, 7102-0628

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A079     | -        | 1/50 | 115   | 3000/1  | CCW | 1.1  | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 74-70-21504-03-04, 74-70-21496-03-01, JAIM106, JAIM137, 7021-5615

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A136     | -        | 1/20 | 115   | 3450/1  | CW  | 0.75 | -          | - | - |

3.3 inch, PSC, sleeve bearing 4@370V capacitor required (MARS # 12004)

Replaces: RHEEM, 7062-3861

## Rheem/Ruud



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|-----|------|------------|---|---|
|          |          |      |       |         |     |      | A          | B | C |
| A139     | -        | 1/20 | 115   | 3000/1  | CW  | 0.95 | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: RHEEM, 7021-7577

## Rheem/Ruud

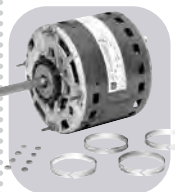


| MARS NO. | MFG. NO.           | HP                         | VOLTS | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|--------------------|----------------------------|-------|---------|-----|------|------------|------|------|
|          |                    |                            |       |         |     |      | A          | B    | C    |
| 03463    | 5KCP39KG<br>V804AS | 1/2, 1/3, 1/4,<br>1/5, 1/6 | 115   | 1075/4  | REV | 6.2  | 5.00       | 4.73 | 0.50 |

5.5 inch dia., open endshields, sleeve bearing, capacitor required noted on motor label, direct drive blower motor

Replaces: Emerson 5460, Rheem 51-23012-41, Global E5460

## Rheem/Ruud



| MARS NO. | MFG. NO.           | HP                         | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|--------------------|----------------------------|---------|---------|-----|------|------------|------|------|
|          |                    |                            |         |         |     |      | A          | B    | C    |
| 03464    | 5KCP39KG<br>V805AS | 1/2, 1/3,<br>1/4, 1/5, 1/6 | 208-230 | 1075/4  | REV | 2.7  | 5.00       | 4.73 | 0.50 |

5.5 inch dia., open endshields, sleeve bearing, capacitor required noted on motor label, direct drive blower motor

Replaces: Emerson 5461, Rheem 51-23022-41, Global E5461

## Rheem/Ruud



| MARS NO. | MFG. NO.           | HP                    | VOLTS   | RPM/SPD | ROT | AMPS | DIMENSIONS |      |      |
|----------|--------------------|-----------------------|---------|---------|-----|------|------------|------|------|
|          |                    |                       |         |         |     |      | A          | B    | C    |
| 03465    | 5KCP39KGU36<br>1AS | 1/3, 1/4,<br>1/5, 1/6 | 208-230 | 1075/2  | REV | 2.6  | 5.00       | 4.73 | 0.50 |

5.5 inch dia., totally enclosed, ball bearing, capacitor required noted on motor label, condenser fan motor

Replaces: Emerson 5462, Rheem 51-23053-21, Global E5462



## Singer



| MARS NO. | MFG. NO. | HP   | VOLTS     | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|----------|------|-----------|---------|----------|------------|------|------|
|          |          |      |           |         |          | A          | B    | C    |
| D1164    | -        | 1/25 | 115 / 230 | 1550/1  | CW 0.65  | 2.50       | 3.13 | 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft

Replaces: JA2P091N, JA2P0901N



## Tecumseh



| MARS NO. | MFG. NO.  | HP  | VOLTS | RPM/SPD | ROT AMPS     | DIMENSIONS |      |     |
|----------|-----------|-----|-------|---------|--------------|------------|------|-----|
|          |           |     |       |         |              | A          | B    | C   |
| 00353    | ESPL35EM2 | 35W | 230   | 1500/1  | CCW OSE 0.70 | 0.50       | 3.50 | 1/4 |

3.875 inch diam., cast iron unit bearing motor, end or side pad mounting, horizontal operation, 1/4" threaded shaft

Replaces: Tecumseh TFM352, 810A10-B, 810M035A21, 810M035A28, 81091-R



## Tecumseh



| MARS NO. | MFG. NO.       | HP  | VOLTS | RPM/SPD | ROT AMPS     | DIMENSIONS |      |      |
|----------|----------------|-----|-------|---------|--------------|------------|------|------|
|          |                |     |       |         |              | A          | B    | C    |
| 00507    | ESP-OL50EMJR21 | 50W | 230   | 1500/1  | CCW OSE 0.85 | -          | 4.30 | 5/16 |

3.875 inch diam., open 3 tapped holes shaft end or side pad mount, shaded pole, 5/16 inch shaft dia. 2" shaft length

Replaces: Tecumseh No. 810M050A62, 810E02674



## Tecumseh



| MARS NO. | MFG. NO.        | HP   | VOLTS | RPM/SPD | ROT AMPS   | DIMENSIONS |      |   |
|----------|-----------------|------|-------|---------|------------|------------|------|---|
|          |                 |      |       |         |            | A          | B    | C |
| 01336    | 5KSM92K FL2008S | 1/20 | 230   | 1550    | CW OSE 1.1 | 2.00       | 4.20 | - |

4 inch diam., open, end mounting, shaded pole, 5/16 inch shaft

Replaces: 5KSP11FG1377, 5KSP11FG1541SEmerison F33HXFRH-2649 Tecumseh 810G037A48 and 810E026A74



## Trane



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A276     | -        | 1/55 | 115   | 3000/1  | CW 1.0   | -          | - | - |

3.3 inch, Shaded pole, sleeve bearing

Replaces: 7021-9011, D330757P01



## Trane



| MARS NO. | MFG. NO. | HP  | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|----------|-----|-------|---------|----------|------------|------|------|
|          |          |     |       |         |          | A          | B    | C    |
| D1050    | -        | 1/8 | 230   | 1550/1  | CW 1.1   | 3.00       | 3.25 | 0.50 |

PSC, sleeve bearing, original motor is SP, D1050 is PSC to provide greater motor efficiency and permit closing of shaft end to prevent moisture from entering motor

Replaces: WW94X236SP, WW94X936PSC



## Trane



| MARS NO. | MFG. NO. | HP  | VOLTS     | RPM/SPD | ROT AMPS | DIMENSIONS |   |      |
|----------|----------|-----|-----------|---------|----------|------------|---|------|
|          |          |     |           |         |          | A          | B | C    |
| D895     | -        | 1/8 | 208 - 230 | 1650/1  | CW 0.80  | 1.50       | - | 0.50 |

5 inch, PSC, sleeve bearing, 4 MFD @370V capacitor required (MARS # 12004)

Replaces: 5KCP39BGR426S, MOT 6363



## Tyler



| MARS NO. | MFG. NO.   | HP | VOLTS | RPM/SPD | ROT AMPS    | DIMENSIONS |      |   |
|----------|------------|----|-------|---------|-------------|------------|------|---|
|          |            |    |       |         |             | A          | B    | C |
| 00091    | RS4BEB9E13 | 9W | 115   | 1660/1  | CW OSE 0.26 | 0.39       | 2.56 | - |

3.43 inch diam., enclosed, end or side pad mounting, capacitor mounted inside shell, water resistant

Replaces: RS4BEB9E16, RS4BEB9E12



## Warren



| MARS NO. | MFG. NO.      | HP  | VOLTS   | RPM/SPD | ROT AMPS   | DIMENSIONS |      |      |
|----------|---------------|-----|---------|---------|------------|------------|------|------|
|          |               |     |         |         |            | A          | B    | C    |
| 03007    | 5KCP39KGC056T | 1/3 | 208-230 | 1075/1  | CW OSE 3.1 | 3.00       | 5.50 | 0.50 |

5.5 inch diam., open resilient base and capacitor included, ball bearing

Replaces: 5KCP39KG884S



## Weil McLain



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |      |      |
|----------|----------|------|-------|---------|----------|------------|------|------|
|          |          |      |       |         |          | A          | B    | C    |
| D1190    | -        | 1/30 | 115   | 3000/1  | CW 1.6   | 1.75       | 4.88 | 0.31 |

3.3 inch, Shaded pole, sleeve bearing, 5/16 inch dia. shaft

Replaces: 7121-5750, JA1N074



## York



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A165     | -        | 1/25 | 115   | 3450/1  | CW 0.70  | -          | - | - |

3.3 inch, PSC, ball bearing

Replaces: 7062-3958



## York



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A224     | -        | 1/18 | 115   | 3450/2  | CW 0.80  | -          | - | - |

3.3 inch, Shaded Pole, Sleeve Bearing

Replaces: 7062-5048, 024-27654-000, 7062-4743



## York



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A225     | -        | 1/15 | 115   | 3200/1  | CW 2.25  | -          | - | - |

3.3 inch, Shaded Pole, Sleeve Bearing

Replaces: 7021-11577, 17503, 7021-11830, 024-34558-000



## York



| MARS NO. | MFG. NO. | HP   | VOLTS | RPM/SPD | ROT AMPS | DIMENSIONS |   |   |
|----------|----------|------|-------|---------|----------|------------|---|---|
|          |          |      |       |         |          | A          | B | C |
| A228     | -        | 1/25 | 115   | 3000/1  | CW 2.0   | -          | - | - |

Shaded Pole, Ball Bearing

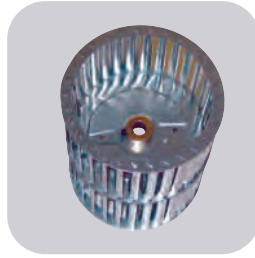
Replaces: 7002-3285, 024-31957-000, 7002-2941





# Air Moving Components

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### 3 Wing Adapter Heavy Duty Condenser Fan Blades

airMARS 3 wing adapter, heavy duty condenser fan blades are designed for rigorous R/HVAC low pressure applications. They will accommodate universal hex/round adapter hubs.

airMARS adapter fan blades are durable, efficient & quiet. They are manufactured using high strength aluminum alloy for the blades & sturdy steel for the blade spiders.

Blade depths and pitches specified for airMARS adapter fan blades allow for the replacement of a broad range of commonly used fan blades.

**Typical applications are:**

- Air Cooled Condensers
- Power Roof Ventilators
- Residential Air Conditioners
- Unit Heaters
- Heat Pumps
- Fan Coil Units
- Roof Top Air Conditioners



### 3 Wing Adapter Heavy Duty Condenser Fan Blades (cont.)

**Universal Hex Adapter Hubs on page AM-10**

| MARS NO.       | MODEL NO.             | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |      | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------------|-----------------------|------------|------------|-------------|----------------------|------|------|----------------------|------|------|-----------|
|                |                       |            |            |             | RPM                  | CFM  | BHP  | RPM                  | CFM  | BHP  |           |
| 40043<br>40044 | 1823-3CW<br>1823-3CCW | 18         | 27         | 4.31        | 825                  | 1711 | 0.08 | 825                  | 637  | 0.12 | 2         |
|                |                       |            |            |             | 1075                 | 2305 | 0.12 | 1075                 | 1312 | 0.17 |           |
| 40065<br>40066 | 1830-3CW<br>1830-3CCW | 18         | 30         | 4.75        | 825                  | 1882 | 0.09 | 825                  | 794  | 0.14 | 2         |
|                |                       |            |            |             | 1075                 | 2502 | 0.14 | 1075                 | 1526 | 0.19 |           |
| 40045<br>40046 | 1833-3CW<br>1833-3CCW | 18         | 33         | 5.17        | 825                  | 1993 | 0.11 | 825                  | 914  | 0.15 | 2         |
|                |                       |            |            |             | 1075                 | 2682 | 0.17 | 1075                 | 1681 | 0.22 |           |
| 40047<br>40048 | 2024-3CW<br>2024-3CCW | 20         | 24         | 3.86        | 825                  | 2306 | 0.12 | 825                  | 1290 | 0.16 | 2         |
|                |                       |            |            |             | 1075                 | 3052 | 0.18 | 1075                 | 2063 | 0.22 |           |
| 40049<br>40050 | 2028-3CW<br>2028-3CCW | 20         | 28         | 4.47        | 825                  | 2639 | 0.14 | 825                  | 1513 | 0.18 | 2         |
|                |                       |            |            |             | 1075                 | 3473 | 0.22 | 1075                 | 2462 | 0.26 |           |
| 40068          | 2031-3CCW             | 20         | 31         | 4.91        | 825                  | 2884 | 0.16 | 825                  | 1707 | 0.21 | 2         |
|                |                       |            |            |             | 1075                 | 3790 | 0.26 | 1075                 | 2727 | 0.30 |           |
| 40051<br>40052 | 2033-3CW<br>2033-3CCW | 20         | 33         | 5.17        | 825                  | 3035 | 0.19 | 825                  | 1851 | 0.23 | 2         |
|                |                       |            |            |             | 1075                 | 3993 | 0.29 | 1075                 | 2854 | 0.34 |           |
| 40053<br>40054 | 2227-3CW<br>2227-3CCW | 22         | 27         | 4.31        | 825                  | 3383 | 0.18 | 825                  | 2111 | 0.26 | 2         |
|                |                       |            |            |             | 1075                 | 4478 | 0.28 | 1075                 | 3323 | 0.34 |           |
| 40069<br>40024 | 2230-3CW<br>2230-3CCW | 22         | 30         | 4.75        | 825                  | 3580 | 0.21 | 825                  | 2376 | 0.31 | 2         |
|                |                       |            |            |             | 1075                 | 4951 | 0.34 | 1075                 | 3807 | 0.39 |           |
| 40055<br>40056 | 2233-3CW<br>2233-3CCW | 22         | 33         | 5.17        | 825                  | 3982 | 0.26 | 825                  | 2639 | 0.35 | 2         |
|                |                       |            |            |             | 1075                 | 5259 | 0.41 | 1075                 | 3978 | 0.48 |           |
| 40057<br>40058 | 2426-3CW<br>2426-3CCW | 24         | 26         | 4.17        | 825                  | 4433 | 0.27 | 825                  | 3028 | 0.33 | 2         |
|                |                       |            |            |             | 1075                 | 5793 | 0.43 | 1075                 | 4792 | 0.46 |           |
| 40059<br>40060 | 2433-3CW<br>2433-3CCW | 24         | 33         | 5.17        | 825                  | 5287 | 0.40 | 825                  | 3772 | 0.46 | 2         |
|                |                       |            |            |             | 1075                 | 6906 | 0.65 | 1075                 | 5782 | 0.68 |           |
|                |                       |            |            |             | 1140                 | 7607 | 0.96 | 1140                 | 6763 | 1.00 |           |

MAX RPM 10"- 18" DIA. 1725 RPM 20"-24" DIA. 1140RPM

**Universal Hex Adapter Hubs on page AM-10**

| MARS NO.       | MODEL NO.             | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |      | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------------|-----------------------|------------|------------|-------------|----------------------|------|------|----------------------|------|------|-----------|
|                |                       |            |            |             | RPM                  | CFM  | BHP  | RPM                  | CFM  | BHP  |           |
| 40030          | 1223-3CCW             | 12         | 23         | 1.88        | 825                  | 209  | 0.01 | 825                  | N.A. | N.A. | 2         |
|                |                       |            |            |             | 1075                 | 385  | 0.02 | 1075                 | N.A. | N.A. |           |
|                |                       |            |            |             | 1725                 | 769  | 0.05 | 1725                 | 580  | 0.07 |           |
| 40031          | 1227-3CW              | 12         | 27         | 2.19        | 825                  | 289  | 0.01 | 825                  | N.A. | N.A. | 2         |
|                |                       |            |            |             | 1075                 | 468  | 0.02 | 1075                 | N.A. | N.A. |           |
|                |                       |            |            |             | 1725                 | 914  | 0.07 | 1725                 | 714  | 0.09 |           |
| 40033<br>40034 | 1423-3CW<br>1423-3CCW | 14         | 23         | 2.67        | 825                  | 568  | 0.02 | 825                  | N.A. | N.A. | 2         |
|                |                       |            |            |             | 1075                 | 892  | 0.04 | 1075                 | N.A. | N.A. |           |
|                |                       |            |            |             | 1725                 | 1573 | 0.16 | 1725                 | 1387 | 0.17 |           |
| 40035<br>40036 | 1427-3CW<br>1427-3CCW | 14         | 27         | 3.06        | 825                  | 664  | 0.03 | 825                  | N.A. | N.A. | 2         |
|                |                       |            |            |             | 1075                 | 1006 | 0.05 | 1075                 | 531  | 0.08 |           |
|                |                       |            |            |             | 1725                 | 1757 | 0.21 | 1725                 | 1568 | 0.23 |           |
| 40038          | 1622-3CCW             | 16         | 22         | 2.94        | 825                  | 748  | 0.03 | 825                  | N.A. | N.A. | 2         |
|                |                       |            |            |             | 1075                 | 1164 | 0.06 | 1075                 | 481  | 0.08 |           |
|                |                       |            |            |             | 1725                 | 2039 | 0.23 | 1725                 | 1815 | 0.25 |           |
| 40039<br>40040 | 1627-3CW<br>1627-3CCW | 16         | 27         | 3.56        | 825                  | 1064 | 0.05 | 825                  | 110  | 0.06 | 2         |
|                |                       |            |            |             | 1075                 | 1525 | 0.10 | 1075                 | 969  | 0.11 |           |
|                |                       |            |            |             | 1725                 | 2601 | 0.39 | 1725                 | 2401 | 0.41 |           |
| 40041<br>40042 | 1823-3CW<br>1823-3CCW | 18         | 23         | 3.70        | 825                  | 1202 | 0.06 | 825                  | 464  | 0.10 | 2         |
|                |                       |            |            |             | 1075                 | 1870 | 0.10 | 1075                 | 972  | 0.13 |           |
|                |                       |            |            |             | 1725                 | 2487 | 0.32 | 1725                 | 2629 | 0.33 |           |

MAX RPM 10"- 18" DIA. 1725 RPM

### 4 Wing Adapter Heavy Duty Condenser Fan Blades

airMARS 4 wing adapter, heavy duty condenser fan blades are designed for rigorous R/HVAC pressure applications. They will accommodate universal hex/round adapter hubs for unlimited versatility. airMARS adapter fan blades are durable, efficient, and quiet. They are manufactured using high strength aluminum alloy for the blades and sturdy steel for the blade spiders.



Blade depths and pitches specified for airMARS adapter fan blades allow for the replacement of a broad range of commonly used fan blades.

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- Residential Air Conditioners Unit Heaters
- Heat Pumps
- Fan Coil Units
- Roof Top Air Conditioners

### 4 Wing Adapter Heavy Duty Condenser Fan Blades (cont.)

**Universal Hex Adapter Hubs on page AM-10**

| MARS NO. | MODEL NO. | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |      | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------|-----------|------------|------------|-------------|----------------------|------|------|----------------------|------|------|-----------|
|          |           |            |            |             | RPM                  | CFM  | BHP  | RPM                  | CFM  | BHP  |           |
| 40082    | 1423-4CW  | 14         | 23         | 2.672       | 825                  | 580  | 0.02 | 825                  | N.A. | N.A. | 2         |
|          |           |            |            |             | 1075                 | 890  | 0.04 | 1075                 | 440  | 0.06 |           |
|          |           |            |            |             | 1625                 | 1470 | 0.14 | 1625                 | 1100 | 0.13 |           |
| 40084    | 1427-4CW  | 14         | 27         | 3.063       | 825                  | 650  | 0.02 | 825                  | N.A. | N.A. | 2         |
| 40085    | 1427-4CCW |            |            |             | 1075                 | 970  | 0.04 | 1075                 | 550  | 0.06 |           |
| 40086    | 1433-4CW  | 14         | 33         | 3.672       | 825                  | 780  | 0.04 | 825                  | 120  | 0.05 | 2         |
|          |           |            |            |             | 1075                 | 1180 | 0.07 | 1075                 | 730  | 0.10 |           |
|          |           |            |            |             | 1625                 | 1940 | 0.18 | 1625                 | 1730 | 0.19 |           |
| 40088    | 1623-4CW  | 16         | 23         | 3.063       | 825                  | 1050 | 0.05 | 825                  | 450  | 0.06 | 2         |
| 40089    | 1623-4CCW |            |            |             | 1075                 | 1520 | 0.08 | 1075                 | 890  | 0.11 |           |
| 40090    | 1627-4CW  | 16         | 27         | 3.563       | 825                  | 1180 | 0.07 | 825                  | 730  | 0.10 | 2         |
| 40091    | 1627-4CCW |            |            |             | 1075                 | 1670 | 0.09 | 1075                 | 1130 | 0.14 |           |
| 40092    | 1633-4CW  | 16         | 33         | 4.281       | 825                  | 1420 | 0.05 | 825                  | 930  | 0.09 | 2         |
|          |           |            |            |             | 1075                 | 2020 | 0.12 | 1075                 | 1250 | 0.16 |           |
|          |           |            |            |             | 1625                 | 3190 | 0.44 | 1625                 | 2490 | 0.46 |           |
| 40132    | 1819-4CW  | 18         | 19         | 3.09        | 825                  | 1318 | 0.06 | 825                  | 646  | 0.09 | 2         |
|          |           |            |            |             | 1075                 | 1815 | 0.08 | 1075                 | 1080 | 0.13 |           |
|          |           |            |            |             | 1140                 | 2802 | 0.50 | 1140                 | 1196 | 0.53 |           |
| 40094    | 1823-4CW  | 18         | 23         | 3.703       | 825                  | 1630 | 0.07 | 825                  | 860  | 0.11 | 2         |
| 40095    | 1823-4CCW |            |            |             | 1075                 | 2160 | 0.12 | 1075                 | 1470 | 0.17 |           |
| 40096    | 1827-4CW  | 18         | 27         | 4.313       | 825                  | 1810 | 0.09 | 825                  | 950  | 0.12 | 2         |
| 40097    | 1827-4CCW |            |            |             | 1075                 | 2430 | 0.15 | 1075                 | 1820 | 0.19 |           |
| 40135    | 1830-4CCW | 18         | 30         | 4.75        | 825                  | 1991 | 0.11 | 825                  | 1132 | 0.14 | 2         |
|          |           |            |            |             | 1075                 | 2700 | 0.16 | 1075                 | 1827 | 0.21 |           |
|          |           |            |            |             | 1140                 | 2990 | 0.78 | 1140                 | 2023 | 0.84 |           |
| 40098    | 1833-4CW  | 18         | 33         | 5.172       | 825                  | 2150 | 0.12 | 825                  | 1300 | 0.16 | 2         |
| 40099    | 1833-4CCW |            |            |             | 1075                 | 2880 | 0.20 | 1075                 | 1970 | 0.25 |           |
| 40100    | 2023-4CW  | 20         | 23         | 3.703       | 825                  | 2120 | 0.13 | 825                  | 1080 | 0.15 | 2         |
| 40101    | 2023-4CCW |            |            |             | 1075                 | 3120 | 0.24 | 1075                 | 2150 | 0.26 |           |
|          |           |            |            |             | 1140                 | 3110 | 0.25 | 1140                 | 2360 | 0.30 |           |

MAX RPM 10"- 16" DIA. 1725 RPM 18"-26" DIA. 1140 RPM

**Universal Hex Adapter Hubs on page AM-10**

| MARS NO. | MODEL NO. | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |       | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------|-----------|------------|------------|-------------|----------------------|------|-------|----------------------|------|------|-----------|
|          |           |            |            |             | RPM                  | CFM  | BHP   | RPM                  | CFM  | BHP  |           |
| 40070    | 1023-4CW  | 10         | 23         | 2.28        | 825                  | 100  | 0.008 | 825                  | N.A. | N.A. | 2         |
| 40071    | 1023-4CCW |            |            |             | 1075                 | 250  | 0.009 | 1075                 | N.A. | N.A. |           |
| 40072    | 1027-4CW  | 10         | 27         | 2.64        | 825                  | 150  | 0.007 | 825                  | N.A. | N.A. | 2         |
| 40073    | 1027-4CCW |            |            |             | 1075                 | 300  | 0.01  | 1075                 | N.A. | N.A. |           |
| 40074    | 1033-4CW  | 10         | 33         | 3.16        | 825                  | 220  | 0.01  | 825                  | N.A. | N.A. | 2         |
| 40075    | 1033-4CCW |            |            |             | 1075                 | 360  | 0.02  | 1075                 | N.A. | N.A. |           |
| 40076    | 1223-4CW  | 12         | 23         | 2.28        | 825                  | 260  | 0.01  | 825                  | N.A. | N.A. | 2         |
| 40077    | 1223-4CCW |            |            |             | 1075                 | 450  | 0.03  | 1075                 | 140  | 0.04 |           |
| 40078    | 1227-4CW  | 12         | 27         | 2.64        | 825                  | 300  | 0.01  | 825                  | N.A. | N.A. | 2         |
|          |           |            |            |             | 1075                 | 570  | 0.03  | 1075                 | N.A. | N.A. |           |
|          |           |            |            |             | 1625                 | 1010 | 0.07  | 1625                 | 790  | 0.09 |           |
| 40080    | 1233-4CW  | 12         | 33         | 3.16        | 825                  | 410  | 0.02  | 825                  | N.A. | N.A. | 2         |
| 40081    | 1233-4CCW |            |            |             | 1075                 | 690  | 0.03  | 1075                 | 380  | 0.06 |           |

MAX RPM 10"- 16" DIA. 1725 RPM

continued on next page



### 4 Wing Adapter Heavy Duty Condenser Fan Blades (cont.)

Universal Hex Adapter Hubs on page AM-10

| MARS NO.       | MODEL NO.             | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |      | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------------|-----------------------|------------|------------|-------------|----------------------|------|------|----------------------|------|------|-----------|
|                |                       |            |            |             | RPM                  | CFM  | BHP  | RPM                  | CFM  | BHP  |           |
| 40102<br>40103 | 2027-4CW<br>2027-4CCW | 20         | 27         | 4.313       | 825                  | 2340 | 0.14 | 825                  | 1250 | 0.17 | 2         |
|                |                       |            |            |             | 1075                 | 3250 | 0.26 | 1075                 | 2550 | 0.32 |           |
|                |                       |            |            |             | 1140                 | 3430 | 0.28 | 1140                 | 2820 | 0.41 |           |
| 40137<br>40138 | 2029-4CW<br>2029-4CCW | 20         | 29         | 4.63        | 825                  | 2975 | 0.02 | 825                  | 2022 | 0.25 | 2         |
|                |                       |            |            |             | 1075                 | 3706 | 0.03 | 1075                 | 2934 | 0.36 |           |
|                |                       |            |            |             | 1140                 | 4286 | 0.13 | 1140                 | 3760 | 0.51 |           |
| 40104<br>40105 | 2033-4CW<br>2033-4CCW | 20         | 33         | 5.172       | 825                  | 3170 | 0.17 | 825                  | 1650 | 0.26 | 2         |
|                |                       |            |            |             | 1075                 | 3880 | 0.39 | 1075                 | 3095 | 0.44 |           |
|                |                       |            |            |             | 1140                 | 4120 | 0.45 | 1140                 | 3210 | 0.49 |           |
| 40106<br>40107 | 2223-4CW<br>2223-4CCW | 22         | 23         | 3.703       | 825                  | 3070 | 0.18 | 825                  | 1990 | 0.23 | 2         |
|                |                       |            |            |             | 1075                 | 4120 | 0.37 | 1075                 | 3580 | 0.46 |           |
|                |                       |            |            |             | 1140                 | 4400 | 0.40 | 1140                 | 3900 | 0.50 |           |
| 40108<br>40109 | 2227-4CW<br>2227-4CCW | 22         | 27         | 4.313       | 825                  | 3560 | 0.21 | 825                  | 2260 | 0.27 | 2         |
|                |                       |            |            |             | 1075                 | 4780 | 0.44 | 1075                 | 4270 | 0.54 |           |
|                |                       |            |            |             | 1140                 | 5210 | 0.44 | 1140                 | 4640 | 0.57 |           |
| 40110<br>40111 | 2233-4CW<br>2233-4CCW | 22         | 33         | 5.172       | 825                  | 4230 | 0.30 | 825                  | 2450 | 0.37 | 2         |
|                |                       |            |            |             | 1075                 | 5210 | 0.60 | 1075                 | 4600 | 0.69 |           |
|                |                       |            |            |             | 1140                 | 5860 | 0.74 | 1140                 | 5220 | 0.80 |           |
| 40139          | 2235-4CW              | 22         | 35         | 5.44        | 825                  | 4431 | 0.32 | 825                  | 3197 | 0.42 | 2         |
|                |                       |            |            |             | 1075                 | 5932 | 0.51 | 1075                 | 4778 | 0.60 |           |
|                |                       |            |            |             | 1140                 | 6385 | 0.75 | 1140                 | 5624 | 0.81 |           |
| 41816          | 2420-4CW              | 24         | 20         | 3.25        | 825                  | 3648 | 0.20 | 825                  | 2857 | 0.28 | 2         |
|                |                       |            |            |             | 1075                 | 1848 | 0.33 | 1075                 | 4296 | 0.40 |           |
|                |                       |            |            |             | 1140                 | 5199 | 0.48 | 1140                 | 4781 | 0.57 |           |
| 40112<br>40113 | 2423-4CW<br>2423-4CCW | 24         | 23         | 3.703       | 825                  | 3700 | 0.22 | 825                  | 2280 | 0.30 | 2         |
|                |                       |            |            |             | 1075                 | 5200 | 0.45 | 1075                 | 4340 | 0.54 |           |
|                |                       |            |            |             | 1140                 | 5400 | 0.53 | 1140                 | 4600 | 0.61 |           |
| 40114<br>40115 | 2427-4CW<br>2427-4CCW | 24         | 27         | 4.313       | 825                  | 4300 | 0.34 | 825                  | 2860 | 0.36 | 2         |
|                |                       |            |            |             | 1075                 | 5900 | 0.55 | 1075                 | 5170 | 0.64 |           |
|                |                       |            |            |             | 1140                 | 6220 | 0.66 | 1140                 | 5500 | 0.75 |           |
| 40116<br>40117 | 2433-4CW<br>2433-4CCW | 24         | 33         | 5.172       | 825                  | 4800 | 0.39 | 825                  | 3000 | 0.50 | 2         |
|                |                       |            |            |             | 1075                 | 6600 | 0.85 | 1075                 | 5820 | 0.92 |           |
|                |                       |            |            |             | 1140                 | 7100 | 1.02 | 1140                 | 6310 | 1.10 |           |
| 40145<br>40146 | 2624-4CW<br>2624-4CCW | 26         | 24         | 3.86        | 825                  | 5383 | 0.39 | 825                  | 4399 | 0.47 | 2         |
|                |                       |            |            |             | 1075                 | 7129 | 0.61 | 1075                 | 6376 | 0.70 |           |
|                |                       |            |            |             | 1140                 | 7629 | 0.89 | 1140                 | 7099 | 1.00 |           |
| 40118<br>40119 | 2627-4CW<br>2627-4CCW | 26         | 27         | 4.313       | 825                  | 5300 | 0.43 | 825                  | 3590 | 0.51 | 2         |
|                |                       |            |            |             | 1075                 | 7110 | 0.92 | 1075                 | 6550 | 1.02 |           |
|                |                       |            |            |             | 1140                 | 7520 | 1.12 | 1140                 | 7180 | 1.20 |           |
| 40120          | 2633-4CW              | 26         | 33         | 5.172       | 825                  | 6050 | 0.52 | 825                  | 4220 | 0.58 | 2         |
|                |                       |            |            |             | 1075                 | 8200 | 1.13 | 1075                 | 7250 | 1.18 |           |
|                |                       |            |            |             | 1140                 | 8810 | 1.30 | 1140                 | 8100 | 1.42 |           |

MAX RPM 10"-16" DIA. 1725 RPM 18"-26" DIA. 1140 RPM

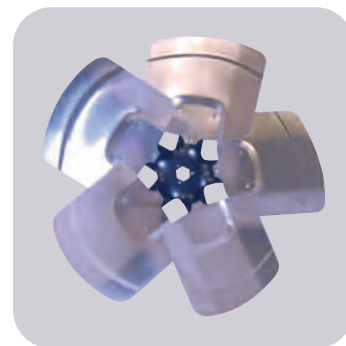
### 5 Wing Adapter Heavy Duty Condenser Fan Blades

airMARS 5 wing adapter, heavy duty condenser fan blades are designed for rigorous R/HVAC pressure applications. They will accommodate universal hex/round adapter hubs for unlimited versatility. airMARS adapter fan blades are durable, efficient, and quiet. They are manufactured using high strength aluminum alloy for the blades and sturdy steel for the blade spiders.

Blade depths and pitches specified for airMARS adapter fan blades allow for the replacement of a broad range of commonly used fan blades.

**Typical applications are:**

- Air Cooled Condensers
- Roof Top Air Conditioners
- Residential Air Conditioners Unit Heaters
- Heat Pumps
- Fan Coil Units
- Power Roof Ventilators



Universal Hex Adapter Hubs on page AM-10

| MARS NO. | MODEL NO. | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |      |      | STATIC PRESSURE .30" |      |      | MARS PACK |
|----------|-----------|------------|------------|-------------|----------------------|------|------|----------------------|------|------|-----------|
|          |           |            |            |             | RPM                  | CFM  | BHP  | RPM                  | CFM  | BHP  |           |
| 40166    | 2427-5CW  | 24         | 27         | 4.31        | 825                  | 4400 | 0.41 | 825                  | 3500 | 0.47 | 2         |
|          |           |            |            |             | 1075                 | 6060 | 0.82 | 1075                 | 5500 | 0.96 |           |
|          |           |            |            |             | 1140                 | 6240 | 0.99 | 1140                 | 5980 | 1.06 |           |
| 40168    | 2433-5CW  | 24         | 33         | 5.15        | 825                  | 5500 | 0.53 | 825                  | 4350 | 0.62 | 2         |
|          |           |            |            |             | 1075                 | 7470 | 1.22 | 1075                 | 6950 | 1.26 |           |
|          |           |            |            |             | 1140                 | 7800 | 1.45 | 1140                 | 7500 | 1.52 |           |

MAX RPM 20"-24" DIA. 1140RPM

### KC & KH Blades

airMARS KC series blades are designed for use in air circulators, cooling towers, air cooled condensing units, and small cooling towers.

Performance figures are based on applicable standards such as ASHRAE 51/AMCA 210.

Suitability for an application is the responsibility of the customer.

See page AM-10 for KC blades with fixed 5/8" hubs. Taper lock bushings for KC and KH blades are also listed on page AM-10.



**Features:**

- 4 wing blades
- High quality steel
- Viewing from air discharge side - CW rotation

| MARS NO. | MODEL NO. | NO. OF BLADES | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |       |      | STATIC PRESSURE .30" |      | MAX RPM |
|----------|-----------|---------------|------------|------------|-------------|----------------------|-------|------|----------------------|------|---------|
|          |           |               |            |            |             | RPM                  | CFM   | BHP  | CFM                  | BHP  |         |
| 40206    | 5-3299    | 4             | 30         | 30         | 2.88        | 850                  | 8985  | 0.73 | 7209                 | 0.79 | 1140    |
|          |           |               |            |            |             | 1140                 | 12482 | 1.70 | 11354                | 1.81 |         |

### KC Blades with 5/8" Hub

| MARS NO. | MODEL NO. | NO. OF BLADES | BLADE DIA. | PITCH DEG. | BLADE DEPTH | STATIC PRESSURE .10" |       |      | STATIC PRESSURE .30" |      | MAX RPM |
|----------|-----------|---------------|------------|------------|-------------|----------------------|-------|------|----------------------|------|---------|
|          |           |               |            |            |             | RPM                  | CFM   | BHP  | CFM                  | BHP  |         |
| 40397    | 5-2223    | 4             | 30         | 30         | 2.88        | 850                  | 8985  | 0.73 | 7209                 | 0.79 | 1140    |
|          |           |               |            |            |             | 1140                 | 12482 | 1.70 | 11354                | 1.81 |         |

### Fixed Hub Blades

airMARS 2 and 3 wing blades are designed for lower static pressure applications. They will fit OEM's such as Carrier, Rheem Rudd, GE, Trane, Singer-climate control, York and others.

Available from 14" to 24" blade diameter with 1/2" assembled hub.

Always note original fan blade hub location (intake or discharge) and match when selecting fixed hub replacement fan blades.



### 2-Wing Blades with 1/2" Hub

| MARS NO. | MODEL NO. | ROTATION | BLADE DIA. | PITCH DEG. | HUB LOCATION | MARS PACK |
|----------|-----------|----------|------------|------------|--------------|-----------|
| 40300    | 6-9871-BP | CW       | 14         | 36°        | Discharge    | 2         |
| 40301    | 6-9788    | CCW      | 14         | 36°        | Intake       | 2         |
| 40302    | 601274    | CCW      | 18         | 19°        | Intake       | 2         |
| 40305    | T1802-24  | CW       | 18         | 24°        | Intake       | 2         |
| 40307    | 6-9250    | CW       | 18         | 29°        | Intake       | 2         |
| 40308    | 6-9205    | CCW      | 18         | 29°        | Intake       | 2         |
| 40408    | T1802-32  | CCW      | 18         | 33°        | Intake       | 2         |
| 40309    | 6-9254    | CCW      | 18         | 36°        | Intake       | 2         |
| 40313    | 6-9252    | CCW      | 20         | 25°        | Intake       | 2         |
| 40314    | 6-9251    | CW       | 20         | 29°        | Intake       | 2         |
| 40315    | 6-9206    | CCW      | 20         | 29°        | Intake       | 2         |
| 40316    | 6-9253    | CCW      | 20         | 34°        | Intake       | 2         |
| 40319    | T2202-22  | CCW      | 22         | 22°        | Intake       | 2         |
| 40320    | 600041    | CCW      | 22         | 27°        | Intake       | 2         |
| 40321    | 600455    | CCW      | 22         | 29°        | Intake       | 2         |
| 40324    | 6-9299    | CCW      | 24         | 24°        | Intake       | 2         |
| 40325    | T2402-26  | CW       | 24         | 26°        | Discharge    | 2         |

### Taper Lock Bushings

#### H Bushing for 24"- 48" Blades

| MARS NO. | BORE | KEYWAY |
|----------|------|--------|
| 40235    | 1"   | Shaft  |



MAX RPM 16"-18" DIA. 1725 RPM 20"-24" DIA. 1140 RPM

### Fixed Hub Blades

airMARS 2 and 3 wing blades are designed for lower static pressure applications. They will fit OEM's such as Carrier, Rheem Rudd, GE, Trane, Singer-climate control, York and others.

Available from 14" to 26" blade diameter with 1/2" assembled hub.

Always note original fan blade hub location (intake or discharge) and match when selecting fixed hub replacement fan blades.



### 3-Wing Blades with 1/2" Hub

| MARS NO. | MODEL NO. | ROTATION | BLADE DIA. | PITCH DEG. | HUB LOCATION | MARS PACK |
|----------|-----------|----------|------------|------------|--------------|-----------|
| 40328    | 6-9255    | CW       | 14         | 32°        | Discharge    | 2         |
| 40331    | T1403-28  | CW       | 16         | 28°        | Intake       | 2         |
| 40333    | 6-9257    | CW       | 16         | 33°        | Discharge    | 2         |
| 40334    | 600893    | CCW      | 16         | 33°        | Intake       | 2         |
| 40338    | T1803-26  | CW       | 18         | 26°        | Discharge    | 2         |
| 40339    | T1803-27  | CCW      | 18         | 26°        | Intake       | 2         |
| 40009    | XW1803    | CW       | 18         | 27°        | Intake       | 2         |
| 40340    | 601276    | CW       | 18         | 27°        | Discharge    | 2         |
| 40343    | 6-9259    | CW       | 18         | 33°        | Discharge    | 2         |
| 40010    | XW1803    | CW       | 18         | 35°        | Intake       | 2         |
| 40347    | 6-0316    | CW       | 20         | 23°        | Discharge    | 2         |
| 40348    | 601278    | CCW      | 20         | 25°        | Intake       | 2         |
| 40349    | 601279    | CW       | 20         | 31°        | Discharge    | 2         |
| 40011    | XW2003    | CCW      | 20         | 34°        | Intake       | 2         |
| 40350    | T2203-20  | CW       | 22         | 20°        | Intake       | 2         |
| 40353    | 600240    | CW       | 22         | 24°        | Intake       | 2         |
| 40352    | UT Series | CW       | 22         | 24°        | Discharge    | 2         |
| 40012    | TNT2203   | CW       | 22         | 24°        | Intake       | 2         |
| 40013    | TNT2203   | CCW      | 22         | 25°        | Intake       | 2         |
| 40355    | T2203-28  | CW       | 22         | 28°        | Intake       | 2         |
| 40357    | 600916    | CCW      | 22         | 33°        | Intake       | 2         |
| 40358    | 602048    | CW       | 24         | 22°        | Intake       | 2         |
| 40323    | 601280    | CCW      | 24         | 22°        | Intake       | 2         |
| 40359    | 601383    | CW       | 24         | 30°        | Intake       | 2         |
| 40360    | 602297    | CW       | 24         | 33°        | Intake       | 2         |
| 40362    | 601291    | CW       | 26         | 26°        | Discharge    | 2         |
| 40407    | T2603-26  | CCW      | 26         | 26°        | Intake       | 2         |
| 40363    | T2603-27  | CW       | 26         | 27°        | Intake       | 2         |
| 40364    | 601282    | CW       | 26         | 37°        | Intake       | 2         |

12" - 18" DIA. MAX. RPM 1725    20" - 28" DIA. MAX. RPM 1140    30" DIA. MAX. RPM 850

### 3-Wing Blades with 5/8" Hub

| MARS NO. | MODEL NO. | ROTATION | BLADE DIA. | PITCH DEG. | HUB LOCATION | MARS PACK |
|----------|-----------|----------|------------|------------|--------------|-----------|
| 40365    | KA3018    | CW       | 30         | 18°        | Discharge    | 2         |

12" - 18" DIA. MAX. RPM 1725    20" - 28" DIA. MAX. RPM 1140    30" DIA. MAX. RPM 850

### Fixed Hub Blades

airMARS fixed hub heavy duty condenser fan blades have been designed to serve as drop-in replacements for many OEM applications.

Hub location is on the intake side unless otherwise noted.

Always note original fan blade hub location (intake or discharge) and match when selecting fixed hub replacement fan blades.



### 4-Wing Blades with Hub

| MARS NO. | MODEL NO. | ROTATION | BLADE DIA. | PITCH DEG. | BORE & LOCATION | MARS PACK |
|----------|-----------|----------|------------|------------|-----------------|-----------|
| 40369    | 6-9256    | CW       | 14         | 33°        | 1/2"            | 2         |
| 40372    | 6-9258    | CW       | 16         | 33°        | 1/2" Discharge  | 2         |
| 40375    | 601375    | CW       | 18         | 30°        | 1/2"            | 2         |
| 40376    | 6-9260    | CW       | 18         | 33°        | 1/2" Discharge  | 2         |
| 40377    | T2004     | CW       | 20         | 20°        | 1/2" Discharge  | 2         |
| 40378    | 6-9992    | CW       | 20         | 33°        | 1/2"            | 2         |
| 40379    | 602689    | CW       | 20         | 36°        | 1/2"            | 2         |
| 40380    | 6-8745    | CW       | 22         | 24°        | 1/2" Discharge  | 2         |
| 40381    | T2204-26  | CW       | 22         | 26°        | 1/2"            | 2         |
| 40382    | 600895    | CCW      | 22         | 33°        | 1/2"            | 2         |
| 40383    | T2404-20  | CW       | 24         | 20°        | 1/2" Discharge  | 2         |
| 40384    | T2404     | CW       | 24         | 22°        | 1/2"            | 2         |
| 40387    | 600794    | CCW      | 24         | 27°        | 1/2"            | 2         |
| 40389    | 601748    | CW       | 26         | 30°        | 5/8" Discharge  | 2         |
| 40391    | 601293    | CW       | 28         | 29°        | 1/2" Discharge  | 2         |
| 40392    | 601296    | CW       | 30         | 22°        | 5/8"            | 2         |
| 40393    | 6-8154    | CW       | 30         | 27°        | 5/8" Discharge  | 2         |

12" - 18" DIA. MAX. RPM 1725    20" - 28" DIA. MAX. RPM 1140    30" DIA. MAX. RPM 850

### 5-Wing Blades with Hub

| MARS NO. | MODEL NO. | ROTATION | BLADE DIA. | PITCH DEG. | BORE & LOCATION | MARS PACK |
|----------|-----------|----------|------------|------------|-----------------|-----------|
| 40402    | 600176    | CW       | 16         | 33°        | 1/2" Discharge  | 2         |
| 40404    | 600178    | CW       | 18         | 33°        | 1/2" Discharge  | 2         |
| 40405    | F1805-33  | CCW      | 18         | 33°        | 1/2" Discharge  | 2         |
| 40406    | 601292    | CW       | 26         | 29°        | 5/8" Discharge  | 2         |

16" - 18" DIA. MAX. RPM 1725    26" DIA. MAX. RPM 1140

**Single Piece Aluminum**

airMARS one piece aluminum fan blades feature a patented hubbing method. airMARS fan blades are designed for low noise and energy efficient operation.

**Applications:**

- Walk-in coolers and freezers
- Icemakers
- Refrigerators
- Condensers
- Vending Machines



**4 Wing Single Piece Aluminum Fan Blades**

| MARS NO. | WINGS | BLADE DIA. | DEG. PITCH | ROT. | BORE  | HUB | APPROX. CFM 3000 RPM | LAU NO. | ACME | FASCO | PACKARD |
|----------|-------|------------|------------|------|-------|-----|----------------------|---------|------|-------|---------|
| 07411    | 4     | 6.00       | 19         | CW   | 3/16" | I   | 85                   | -       | -    | -     | A61469  |
| 07414    | 4     | 6.00       | 19         | CW   | 1/4"  | I   | 85                   | -       | -    | -     | A61470  |

**5 Wing Single Piece Aluminum Fan Blades Hub on Discharge**

| MARS NO. | WINGS | BLADE DIA. | DEG. PITCH | ROT. | BORE  | HUB | APPROX. CFM 3000 RPM | LAU NO.    | ACME | FASCO | PACKARD |
|----------|-------|------------|------------|------|-------|-----|----------------------|------------|------|-------|---------|
| 07993    | 5     | 10.00      | 20         | CW   | 5/16" | D   | 450                  | -          | -    | -     | -       |
| 07997    | 5     | 10.00      | 28         | CW   | 5/16" | D   | 600                  | -          | -    | -     | -       |
| 07995    | 5     | 10.00      | 31         | CW   | 5/16" | D   | 650                  | -          | -    | -     | -       |
| 07996    | 5     | 10.00      | 31         | CCW  | 5/16" | D   | 650                  | 60-8367-01 | -    | -     | -       |
| 07998    | 5     | 10.00      | 40         | CW   | 5/16" | D   | 850                  | -          | -    | -     | -       |
| 07921    | 5     | 12.00      | 23         | CW   | 5/16" | D   | 970                  | -          | -    | -     | -       |
| 07922    | 5     | 12.00      | 23         | CCW  | 5/16" | D   | 970                  | -          | -    | -     | -       |

**Single Piece Aluminum Fan Blades**

airMARS one piece aluminum fan blades feature a patented hubbing method. airMARS fan blades are designed for low noise and energy efficient operation.

**Applications:**

- Walk-in coolers and freezers
- Icemakers
- Refrigerators
- Condensers
- Vending Machines



**5 Wing Hub on Intake**

| MARS NO. | WINGS | BLADE DIA. | DEG. PITCH | ROT. | BORE  | HUB | APPROX. CFM 1550 RPM | LAU NO.    | ACME  | FASCO     | TORIN AIRDEX | PACKARD |
|----------|-------|------------|------------|------|-------|-----|----------------------|------------|-------|-----------|--------------|---------|
| 07451    | 5     | 5.50       | 27         | CW   | 1/4"  | I   | 85                   |            | 35504 |           |              | A65504  |
| 07452    | 5     | 5.50       | 27         | CCW  | 1/4"  | I   | 85                   |            | 35514 |           |              | A65515  |
| 07551    | 5     | 5.50       | 27         | CW   | 5/16" | I   | 85                   |            |       |           |              |         |
| 07471    | 5     | 7.00       | 27         | CW   | 1/4"  | I   | 200                  | 60-8348-01 | 30704 | 5FR727-1  |              | A60704  |
| 07472    | 5     | 7.00       | 27         | CCW  | 1/4"  | I   | 200                  | 60-8349-01 | 30714 | 5FL727-1  |              | A60714  |
| 07572    | 5     | 7.00       | 27         | CCW  | 5/16" | I   | 200                  | 60-8351-01 | 30715 | 5FL727-2  |              |         |
| 07481    | 5     | 8.00       | 24         | CW   | 1/4"  | I   | 300                  | 60-8352-01 |       | 5FR824-1  | 1010352 CW   |         |
| 07482    | 5     | 8.00       | 24         | CCW  | 1/4"  | I   | 300                  | 60-8353-01 |       | 5FL824-1  | 1010632 CCW  |         |
| 07581    | 5     | 8.00       | 24         | CW   | 5/16" | I   | 300                  | 60-8352-01 |       | 5FR824-2  | 1010642 CW   |         |
| 07582    | 5     | 8.00       | 24         | CCW  | 5/16" | I   | 300                  | 60-8353-01 |       | 5FL824-2  | 1010652 CCW  |         |
| 07584    | 5     | 8.00       | 32         | CCW  | 5/16" | I   | 330                  |            |       | 5FL832-2  |              |         |
| 07591    | 5     | 9.00       | 26         | CW   | 5/16" | I   | 345                  | 60-8362-01 |       | 5FR926-2  |              |         |
| 07592    | 5     | 9.00       | 26         | CCW  | 5/16" | I   | 345                  | 60-8363-01 |       | 5FL926-2  |              |         |
| 07493    | 5     | 10.00      | 20         | CW   | 1/4"  | I   | 450                  |            |       | 5FR1020-1 |              |         |
| 07593    | 5     | 10.00      | 20         | CW   | 5/16" | I   | 450                  | 60-8368-01 |       | 5FR1020-2 |              |         |
| 07594    | 5     | 10.00      | 20         | CCW  | 5/16" | I   | 450                  | 60-8369-01 |       | 5FL1020-2 |              |         |
| 07595    | 5     | 10.00      | 31         | CW   | 5/16" | I   | 650                  | 60-8370-01 |       | 5FR1031-2 | 1010362 CW   |         |
| 07596    | 5     | 10.00      | 31         | CCW  | 5/16" | I   | 650                  | 60-8371-01 |       | 5FL1031-2 | 1010692 CCW  |         |
| 07521    | 5     | 12.00      | 23         | CW   | 5/16" | I   | 920                  |            |       |           |              |         |

## Single Piece Aluminum Fan Blades

airMARS one piece aluminum fan blades for unit bearing motors are designed for low noise and energy efficient operation.

### Applications:

- Evaporator Coils
- Refrigerators
- Vending Machines



### 4 & 5 Wing Unit Bearing Mount

| MARS NO. | WINGS | BLADE DIA. | DEG. PITCH | ROT. | BORE | HUB  | APPROX. CFM<br>1550 RPM | LAU NO.    | ACME    | FASCO       | TORIN<br>AIRDEX | PACKARD |
|----------|-------|------------|------------|------|------|------|-------------------------|------------|---------|-------------|-----------------|---------|
| 07004    | 4     | 10.00      | 22         | REV  | UB   | NONE | 414                     |            |         | S-7004      |                 |         |
| 95628    | 5     | 6.00       | 28         | CW   | UB   | NONE | 134                     |            |         |             |                 |         |
| 95629    | 5     | 6.00       | 28         | CCW  | UB   | NONE | 134                     |            |         |             |                 |         |
| 95721    | 5     | 7.00       | 21         | CW   | UB   | NONE | 150                     | 60-8372-01 | 3706    | 5FR721      |                 |         |
| 95722    | 5     | 7.00       | 21         | CCW  | UB   | NONE | 150                     |            | 3716    |             |                 |         |
| 95723    | 5     | 7.00       | 25         | CW   | UB   | NONE | 170                     |            |         |             |                 |         |
| 95731    | 5     | 7.00       | 31         | CW   | UB   | NONE | 199                     | 60-8373-01 | 3706-31 |             | 1010412 CW      |         |
| 95732    | 5     | 7.00       | 31         | CCW  | UB   | NONE | 199                     |            | 3716-31 |             | 1010472 CCW     |         |
| 95741    | 5     | 7.00       | 40         | CW   | UB   | NONE | 300                     |            |         |             |                 |         |
| 95735    | 5     | 7.75       | 23         | CW   | UB   | NONE | 250                     |            |         |             |                 |         |
| 95821    | 5     | 8.00       | 20         | CW   | UB   | NONE | 210                     |            |         |             |                 |         |
| 95822    | 5     | 8.00       | 20         | CCW  | UB   | NONE | 210                     |            |         |             |                 |         |
| 95823    | 5     | 8.00       | 25         | CW   | UB   | NONE | 280                     | 60-8376-01 | 3806    |             |                 | A63816  |
| 07709    | 5     | 8.00       | 31         | CCW  |      | NONE |                         |            |         |             |                 |         |
| 95831    | 5     | 8.00       | 31         | CW   | UB   | NONE | 300                     | 60-8377-01 | 3806-31 | 1010432 CW  |                 |         |
| 95832    | 5     | 8.00       | 31         | CCW  | UB   | NONE | 300                     |            | 3816-31 | 1010492 CCW |                 |         |
| 95841    | 5     | 8.00       | 40         | CW   | UB   | NONE | 400                     |            |         |             |                 |         |
| 95842    | 5     | 8.00       | 40         | CCW  | UB   | NONE | 400                     |            |         |             |                 |         |
| 95865    | 5     | 8.00       | 50         | CW   | UB   | NONE | 500                     |            |         |             |                 |         |
| 95875    | 5     | 8.75       | 25         | CW   | UB   | NONE | 300                     |            |         |             |                 |         |
| 95923    | 5     | 9.00       | 25         | CW   | UB   | NONE | 335                     |            |         |             |                 |         |
| 95931    | 5     | 9.00       | 31         | CW   | UB   | NONE | 370                     | 60-8379-01 |         | 3906-31     | 1010452 CW      |         |
| 95932    | 5     | 9.00       | 31         | CCW  | UB   | NONE | 370                     |            |         | 3916-31     | 1010512 CCW     |         |
| 95941    | 5     | 9.00       | 40         | CW   | UB   | NONE | 425                     |            |         |             |                 |         |
| 95021    | 5     | 10.00      | 20         | CW   | UB   | NONE | 450                     |            |         |             |                 |         |
| 95022    | 5     | 10.00      | 20         | CCW  | UB   | NONE | 450                     |            |         |             |                 |         |
| 95027    | 5     | 10.00      | 28         | CW   | UB   | NONE | 425                     |            |         | 3106        |                 | A63126  |
| 95031    | 5     | 10.00      | 31         | CW   | UB   | NONE | 650                     | 60-8381-01 |         | 3106-31     | 1010442 CW      | A61108  |
| 95032    | 5     | 10.00      | 31         | CCW  | UB   | NONE | 650                     |            |         | 3116-31     | 1010502 CCW     | A63117  |
| 95041    | 5     | 10.00      | 40         | CW   | UB   | NONE | 880                     |            |         |             |                 |         |



**Small Wheels**

**Double Inlet**

airMARS plastic precision blower wheels are molded for reliable, efficient performance.



**Plastic Wheels - Double Inlet**

| MARS NO. | MODEL NO. | WHEEL DIA. | WIDTH | BORE | MATERIAL    |
|----------|-----------|------------|-------|------|-------------|
| 41500    | 2169-A    | 5.75       | 7.8   | 1/2  | Poly-Pro CC |

**OEM Blower Wheels  
Single Inlet Blower Wheels**

Special orders are available. Check with MARS customer service for minimum quantities on non-stock items. Please review special order information request on page AM-24



| MARS NO. | MODEL NO.  | ROTATION | WHEEL DIA. | WHEEL WIDTH | BORE | MAX RPM |
|----------|------------|----------|------------|-------------|------|---------|
| 41204    | 1-6444     | CCW      | 7.12       | 1.87        | 1/2  | 4000    |
| 41213    | 101891     | CCW      | 9.87       | 1.50        | 5/8  | 3475    |
| 41241    | BC987-150S | CCW      | 9.87       | 1.50        | 5/8  | 3000    |

**airMARS Accessories**

**Universal Hex Hubs**

MARS Universal Hex Hubs are designed to provide a firm mechanical fit with hex or round bore adapter fan blades. These hubs are machined steel, designed with tri-point mount for secure spider/hub connections. MARS Universal Hex Hubs include 2 set screws, for shaft fastening, offset at 90 degrees.



| MARS NO. | BORE  | PER PACK |
|----------|-------|----------|
| 40002    | 1/4"  | 1        |
| 40003    | 5/16" | 1        |
| 40004    | 3/8"  | 1        |
| 40005    | 1/2"  | 1        |
| 40006    | 5/8"  | 1        |

**airMARS Tools**

Follow these steps to measure propeller rotation and pitch:

- Step 1: Position the faceplate of the gauge on the blade of the fan.
- Step 2: Place the foot of the wire body of the Pitch Gauge on the center section (spider) of the fan.
- Step 3: The pointer gives a direct reading of the pitch in degrees, and the clockwise/counter-clockwise markings indicate the rotation.



| MARS NO. | DESCRIPTION            |
|----------|------------------------|
| 40851    | Fan Blade Pitch Gauge  |
| 40852    | Fan Blade & Hub Puller |





### Small Wheels

#### Single Inlet

airMARS Single Inlet wheels are used in a variety of commercial and residential applications, for room air conditioners, power burners, draft inducers, other heating and appliance devices. Rotation is determined viewing the closed end of the wheel.



| MARS NO. | MODEL NO. | ROTATION | WHEEL DIA. | WHEEL WIDTH | HUB  |
|----------|-----------|----------|------------|-------------|------|
| 40564    | 1-6696    | CCW      | 4          | 1-1/2       | 5/16 |
| 40565    | 2-2443    | CCW      | 4.25       | 2-7/8       | 1/4  |

4" - 5.25" DIA. MAX. RPM 3600 RPM    5.25" DIA. MAX. RPM 2800 RPM

| MARS NO. | MODEL NO. | ROTATION | WHEEL DIA. | WHEEL WIDTH | HUB | RPM          | .1" S.P.    |                | .3" S.P.    |                |
|----------|-----------|----------|------------|-------------|-----|--------------|-------------|----------------|-------------|----------------|
|          |           |          |            |             |     |              | CFM         | BHP            | CFM         | BHP            |
| 40618    | 1-7890    | CCW      | 6.31       | 2.00        | 1/2 | 3450         | 831         | 1.294          | 818         | 1.274          |
| 40619    | 1-3414    | CW       | 6.31       | 2.50        | 1/2 | 1000<br>3450 | 268<br>1013 | 0.035<br>1.669 | 179<br>996  | 0.022<br>1.633 |
| 40638    | 1-1992    | CCW      | 8.50       | 4.00        | 1/2 | 1000<br>1550 | 902<br>1428 | 0.266<br>1.023 | 825<br>1387 | 0.229<br>0.977 |
| 40641    | 1-5266    | CW       | 9.125      | 4.25        | 1/2 | 1000         | 1005        | 0.122          | 896         | 0.108          |
| 40642    | 1-8189    | CW       | 9.875      | 2.00        | 5/8 | 1000         | 632         | 0.209          | 588         | 0.191          |

### Small Wheels

#### Double Inlet

airMARS Double inlet wheels are used in many popular air handlers. The wheels below are made of galvanized steel unless indicated otherwise. Rotation is determined viewing the hub extension.



| MARS NO. | MODEL NO. | ROTATION | WHEEL DIA. | WHEEL WIDTH | HUB | RPM  | .1" S.P. |       | .3" S.P. |       |
|----------|-----------|----------|------------|-------------|-----|------|----------|-------|----------|-------|
|          |           |          |            |             |     |      | CFM      | BHP   | CFM      | BHP   |
| 41102    | 2-0414    | CW       | 4.75       | 7.00        | 1/2 | 1725 | 555      | 0.115 | 455      | 0.092 |
|          |           | CCW      |            |             |     |      | 1725     | 555   | 0.115    | 455   |
| 41107    | 2-0223    | CW       | 5.25       | 7.00        | 1/2 | 1725 | 710      | 0.090 | 620      | 0.075 |
| 41108    | 2-0891    | CCW      |            |             |     |      | 1725     | 710   | 0.090    | 620   |
| 41111    | 2-2402    | CW       | 5.75       | 5.16        | 1/2 | 1000 | 396      | 0.035 | -        | -     |
|          |           |          |            |             |     |      | 1725     | 725   | 0.217    | 682   |
| 41113    | 2-2406    | CW       | 5.75       | 6.88        | 1/2 | 1000 | 439      | 0.047 | -        | -     |
|          |           |          |            |             |     |      | 1725     | 854   | 0.278    | 755   |
| 41114    | 2-0600    | CW       | 5.75       | 7.625       | 1/2 | 1000 | 439      | 0.047 | -        | -     |
| 41115    | 2-0678    | CCW      |            |             |     |      | 1725     | 854   | 0.278    | 755   |
| 41116    | 2-2408    | CW       | 5.75       | 8.00        | 1/2 | 1000 | 500      | 0.065 | -        | -     |
| 41117    | 2-0304    | CCW      |            |             |     |      | 1725     | 976   | 0.390    | 863   |
| 41118    | 106729    | CW       | 5.75       | 8.50        | 1/2 | 1000 | 710      | 0.078 | -        | -     |
| 41123    | 2-2405    | CW       |            |             |     |      | 6.22     | 7.00  | 1/2      | 1000  |
| 41125    | 2-2407    | CW       | 6.22       | 8.00        | 1/2 | 1000 | 705      | 0.042 | 500      | 1.250 |
| 41126    | 1-0439    | CW       |            |             |     |      | 6.25     | 7.00  | 1/2      | 1000  |
| 41127    | 1-0438    | CCW      | 6.25       | 7.00        | 1/2 | 1000 | 625      | 0.077 | 415      | 0.046 |
| 41132    | 802653    | CW       |            |             |     |      | 7.50     | 9.00  | 1/2      | 1000  |

### Direct Drive Furnace Blower Wheels

44 separate quality checks ensure the production process for airMARS belt drive blower wheels. Rigorous quality standards, high quality raw material and experienced manufacturing all work together to make airMARS blower wheels your best choice.

airMARS Direct Drive Blower Wheels are designed to work as "drop in" replacements for all major HVAC OEM equipment



| MARS NO. | DESCRIPTION          | ROT. | CENTER DISC | DIA.  | WIDTH | BORE | LAU#      | RPM          | .1" S.P.     |            | .3" S.P.     |            |
|----------|----------------------|------|-------------|-------|-------|------|-----------|--------------|--------------|------------|--------------|------------|
|          |                      |      |             |       |       |      |           |              | CFM          | BHP        | CFM          | BHP        |
| 41303    | 9-6 DD Blower Wheel  | CW   | Convex      | 9.50  | 6.06  | 0.50 | 013335-01 | 1000         | 1395         | .40        | 1240         | .36        |
| 41302    | 9-6 DD Blower Wheel  | CCW  | Convex      | 9.50  | 6.06  | 0.50 |           | 1250         | 1744         | .77        | 1650         | .74        |
| 41307    | 9-7 DD Blower Wheel  | CW   | Convex      | 9.50  | 7.12  | 0.50 | 013336-02 | 1000         | 1600         | .50        | 1400         | .42        |
| 41306    | 9-7 DD Blower Wheel  | CCW  | Convex      | 9.50  | 7.12  | 0.50 | 013336-03 | 1250         | 1950         | 1.01       | 1850         | .89        |
| 41305    | 9-7 DD Blower Wheel  | CW   | Concave     | 9.50  | 7.12  | 0.50 |           | 1000         | 1600         | .50        | 1400         | .42        |
| 41311    | 9-8 DD Blower Wheel  | CW   | Convex      | 9.50  | 8.06  | 0.50 | 013337-01 | 1000         | 1720         | .50        | 1460         | .42        |
| 41310    | 9-8 DD Blower Wheel  | CCW  | Convex      | 9.50  | 8.06  | 0.50 | 013337-03 | 1200         | 2000         | .86        | 1850         | .79        |
| 41365    | 9-9 DD Blower Wheel  | CW   | Convex      | 9.50  | 9.50  | 0.50 | 013332-01 |              |              |            |              |            |
| 41312    | 9-9 DD Blower Wheel  | CW   | Concave     | 9.50  | 9.50  | 0.50 |           | 1000         | 1750         | .51        | 1550         | .43        |
| 41361    | 9-9 DD Blower Wheel  | CCW  | Concave     | 9.50  | 9.50  | 0.50 | 013332-03 | 1200         | 2150         | .93        | 2000         | .83        |
| 41314    | 10-4 DD Blower Wheel | CW   | Convex      | 10.62 | 4.50  | 0.50 | 013327-01 | 1000         | 1130         | .36        | 1050         | .33        |
| 41316    | 10-6 DD Blower Wheel | CW   | Concave     | 10.62 | 6.06  | 0.50 |           | 1200<br>1000 | 1395<br>1680 | .63<br>.36 | 1300<br>1550 | .57<br>.31 |
| 41318    | 10-6 DD Blower Wheel | CW   | Convex      | 10.62 | 6.06  | 0.50 | 013326-01 | 1200         | 2010         | .62        | 1910         | .59        |
| 41317    | 10-6 DD Blower Wheel | CCW  | Convex      | 10.62 | 6.06  | 0.50 | 013326-02 | 1200         | 2010         | .62        | 1910         | .59        |
| 41323    | 10-7 DD Blower Wheel | CW   | Convex      | 10.62 | 7.12  | 0.50 | 013325-01 | 1000         | 2150         | .85        | 1990         | .71        |
| 41362    | 10-7 DD Blower Wheel | CCW  | Convex      | 10.62 | 7.12  | 0.50 | 027102-04 | 1200         | 2600         | 1.57       | 2490         | 1.36       |
| 41322    | 10-7 DD Blower Wheel | CW   | Concave     | 10.62 | 7.12  | 0.50 |           |              |              |            |              |            |
| 41327    | 10-8 DD Blower Wheel | CW   | Convex      | 10.62 | 8.06  | 0.50 | 013324-01 | 1000         | 2300         | .83        | 2100         | .71        |
| 41326    | 10-8 DD Blower Wheel | CCW  | Convex      | 10.62 | 8.06  | 0.50 | 013324-02 | 1200         | 2800         | 1.49       | 2620         | 1.34       |
| 41325    | 10-8 DD Blower Wheel | CW   | Concave     | 10.62 | 8.06  | 0.50 |           | 1000         | 2300         | .83        | 2100         | .71        |
| 41324    | 10-8 DD Blower Wheel | CCW  | Concave     | 10.62 | 8.06  | 0.50 |           | 1200         | 2800         | 1.49       | 2620         | 1.34       |

### Direct Drive Furnace Blower Wheels

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airMARS Direct Drive Blower Wheels are designed to work as "drop in" replacements for all major HVAC OEM equipment.



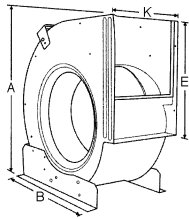
| MARS NO. | DESCRIPTION           | ROT. | CENTER DISC | DIA.  | WIDTH | BORE | LAU#      | RPM  | .1" S.P. |      | .3" S.P. |      |
|----------|-----------------------|------|-------------|-------|-------|------|-----------|------|----------|------|----------|------|
|          |                       |      |             |       |       |      |           |      | CFM      | BHP  | CFM      | BHP  |
| 41331    | 10-9 DD Blower Wheel  | CW   | Convex      | 10.62 | 9.50  | 0.50 | 013323-01 | 1000 | 2520     | .90  | 2350     | .81  |
| 41330    | 10-9 DD Blower Wheel  | CCW  | Convex      | 10.62 | 9.50  | 0.50 |           | 1150 | 2900     | 1.44 | 2780     | 1.29 |
| 41329    | 10-9 DD Blower Wheel  | CW   | Concave     | 10.62 | 9.50  | 0.50 | 013317-01 | 1000 | 2520     | .90  | 2350     | .81  |
| 41328    | 10-9 DD Blower Wheel  | CCW  | Concave     | 10.62 | 9.50  | 0.50 | 013317-04 | 1150 | 2900     | 1.44 | 2780     | 1.29 |
| 41335    | 10-10 DD Blower Wheel | CW   | Convex      | 10.62 | 10.68 | 0.50 | 013322-03 | 1000 | 2700     | 1.07 | 2520     | .95  |
| 41334    | 10-10 DD Blower Wheel | CCW  | Convex      | 10.62 | 10.68 | 0.50 |           | 1150 | 3100     | 1.64 | 2990     | 1.51 |
| 41333    | 10-10 DD Blower Wheel | CW   | Concave     | 10.62 | 10.68 | 0.50 | 013316-02 | 1000 | 2700     | 1.07 | 2520     | .95  |
|          |                       |      |             |       |       |      |           | 1150 | 3100     | 1.64 | 2990     | 1.51 |
| 41336    | 10-10 DD Blower Wheel | CW   | Concave     | 10.62 | 10.68 | 0.62 |           | 1000 | 2700     | 1.07 | 2520     | .95  |
| 41332    | 10-10 DD Blower Wheel | CCW  | Concave     | 10.62 | 10.68 | 0.50 | 013316-06 | 1150 | 3100     | 1.64 | 2990     | 1.51 |
| 41341    | 11-7 DD Blower Wheel  | CW   | Convex      | 11.93 | 7.12  | 0.50 | 026940-05 | 1000 | 2350     | 1.01 | 2250     | .93  |
|          |                       |      |             |       |       |      |           | 1150 | 2720     | 1.51 | 2610     | 1.40 |
| 41344    | 11-8 DD Blower Wheel  | CCW  | Convex      | 11.93 | 8.06  | 0.50 | 026940-08 | 1000 | 2680     | 1.19 | 2500     | 1.05 |
| 41343    | 11-8 DD Blower Wheel  | CW   | Concave     | 11.93 | 8.06  | 0.50 | 026941-07 | 1150 | 3100     | 1.78 | 3000     | 1.64 |
| 41349    | 11-9 DD Blower Wheel  | CW   | Convex      | 11.93 | 9.50  | 0.50 | 026940-09 | 1000 | 2880     | 1.25 | 2660     | 1.08 |
| 41348    | 11-9 DD Blower Wheel  | CCW  | Convex      | 11.93 | 9.50  | 0.50 | 026940-10 | 1150 | 3300     | 1.92 | 3280     | 1.78 |
| 41347    | 11-9 DD lower Wheel   | CW   | Concave     | 11.93 | 9.50  | 0.50 |           | 1000 | 2880     | 1.25 | 2660     | 1.08 |
| 41346    | 11-9 DD Blower Wheel  | CCW  | Concave     | 11.93 | 9.50  | 0.50 |           | 1150 | 3300     | 1.92 | 3280     | 1.78 |
| 41352    | 11-10 DD Blower Wheel | CW   | Convex      | 11.93 | 10.68 | 0.50 |           |      |          |      |          |      |
| 41351    | 11-10 DD Blower Wheel | CW   | Concave     | 11.93 | 10.68 | 0.50 | 026941-11 | 1000 | 3100     | 1.31 | 2910     | 1.21 |
|          |                       |      |             |       |       |      |           | 1150 | 3600     | 2.05 | 3450     | 1.92 |
| 41350    | 11-10 DD Blower Wheel | CCW  | Concave     | 11.93 | 10.68 | 0.50 | 026941-12 |      |          |      |          |      |
| 41370    | 11-11 DD Blower Wheel | CCW  | Concave     | 11.93 | 11.93 | 0.50 |           | 1000 | 3300     | 1.45 | 3090     | 1.29 |
| 41364    | 12-9 DD Blower Wheel  | CW   | Convex      | 12.87 | 9.50  | 0.50 | 013693-25 | 1000 | 3800     | 1.96 | 3620     | 1.79 |
|          |                       |      |             |       |       |      |           | 1150 | 4400     | 2.94 | 4300     | 2.78 |
| 41355    | 12-12 DD Blower Wheel | CW   | Concave     | 12.87 | 12.62 | 0.50 | 015565-07 | 1000 | 4700     | 2.56 | 4500     | 2.38 |
|          |                       |      |             |       |       |      |           | 1150 | 5500     | 3.83 | 5250     | 3.70 |

**Belt Drive Blower Wheel with Housing Assembly**

MARS #41405 is a belt drive blower assembly with a 10 x 10 belt drive blower wheel included. The 41405 features universal mounting.

**Features:**

- Applications: Residential and Light Commercial
- Heavy Gauge Steel
- Includes: Shaft, Steel Bearings, Motor Mounting Bracket, Universal Housing Supports, Vibro Pads and Mounting Hardware
- Four Mounting Options



| MARS NO. | HOUSING DIMENSIONS |         |         |         |      | BLOWER WHEEL |         |      |
|----------|--------------------|---------|---------|---------|------|--------------|---------|------|
|          | K                  | E       | A       | B       | TYPE | DIA.         | WIDTH   | BORE |
| 41405    | 13-1/6"            | 11-3/8" | 17-1/4" | 16-1/2" | BD   | 10-1/2"      | 10-5/8" | 3/4" |

**Belt Drive Blower Wheels**

airMARS belt drive blower wheels with forward curved blades are constructed out of galvanized steel with offset tab-locked blades for superior strength. The unique design allows higher operating speeds and lower noise levels on blower wheels from 9" to 40". All wheels are balanced both statically and dynamically to a factor of Q=6.3.

44 separate quality checks ensure the production process for airMARS belt drive blower wheels. Rigorous quality standards, high quality raw material and experienced manufacturing all work together to make airMARS blower wheels your best choice.



| MARS NO. | DESCRIPTION       | WHEEL DIA. | WHEEL WIDTH | BORE | NOMINAL DIA. X W. | LAU #     | MAX. RPM |
|----------|-------------------|------------|-------------|------|-------------------|-----------|----------|
| 41533    | 15-15 BD 1.00 WHL | 15.12      | 15.00       | 1.00 | 15-15             | 008276-16 | 1600     |

**airMARS Belt Drive Blower Accessories**

**Bearings**

All airMars bearings and bearing assemblies are designed and manufactured to precise tolerance. Dedication to quality assures good fit and long life.



| MARS NO. | TYPE                   | BORE | O.D.     | PHOTO | BAG QTY. |
|----------|------------------------|------|----------|-------|----------|
| 40863    | Cartridge              | 3/4" | 1-13/16" | A     | 2        |
| 40865    | Cartridge w/journal    | 3/4" | 1-13/16" | B     | 2        |
| 40867    | Oil                    | 5/8" | 1-13/16" | H     | 2        |
| 40868    | Oil                    | 3/4" | 1-13/16" | H     | 2        |
| 40871    | Sealed                 | 3/4" | 1-13/16" | I     | 2        |
| 40872    | Sealed H.D.            | 1"   | 2-1/2"   | I     | 2        |
| 40873    | Randall Type           | 3/4" | 1-27/32" | J     | 2        |
| 40874    | Randall Oil            | 1"   | 1-27/32" | J     | 2        |
| 40876    | Pillow Block           | 5/8" | -        | C     | 2        |
| 40877    | Pillow Block           | 3/4" | -        | C     | 2        |
| 40878    | Pillow Block           | 1"   | -        | C     | 2        |
| 40879    | Pillow Block H.D.      | 1"   | -        | C     | 2        |
| 40880    | Pillow Block-Ball Brg. | 3/4" | -        | E     | 2        |
| 40881    | Pillow Block-Ball Brg. | 1"   | -        | E     | 2        |

## airMARS Belt Drive Blower Accessories

### Variable Pitch Pulleys

| MARS NO.  | DIA   | BORE   | MATERIAL  |
|-----------|-------|--------|-----------|
| 40829     | 2.5"  | 1/2"   | Cast Iron |
| 40830 (1) | 2.5"  | 5/8"   | Cast Iron |
| 40831     | 3.25" | 1/2"   | Cast Iron |
| 40832 (1) | 3.25" | 5/8"   | Cast Iron |
| 40833     | 3.25" | 3/4"   | Cast Iron |
| 40834     | 3.75" | 1/2"   | Cast Iron |
| 40835 (1) | 3.75" | 5/8"   | Cast Iron |
| 40837 (1) | 3.75" | 7/8"   | Cast Iron |
| 40838     | 4.15" | 1/2"   | Cast Iron |
| 40839 (1) | 4.15" | 5/8"   | Cast Iron |
| 40840     | 4.15" | 3/4"   | Cast Iron |
| 40841 (1) | 4.15" | 7/8"   | Cast Iron |
| 40842     | 4.15" | 1-1/8" | Cast Iron |
| 40844 (1) | 4.75" | 7/8"   | Cast Iron |
| 40845     | 5.35" | 5/8"   | Cast Iron |

(1) with keyway



### Blower Pulleys

| MARS NO. | DIA | BORE | MATERIAL  |
|----------|-----|------|-----------|
| 40804    | 6"  | 5/8" | Cast Iron |
| 40805    | 6"  | 3/4" | Cast Iron |
| 40806    | 6"  | 1"   | Cast Iron |
| 40808    | 7"  | 3/4" | Cast Iron |
| 40811    | 8"  | 3/4" | Cast Iron |
| 40812    | 8"  | 1"   | Cast Iron |
| 40815    | 10" | 3/4" | Cast Iron |
| 40816    | 10" | 1"   | Cast Iron |

## airMARS Belt Drive Blower Accessories

### Shafts, Miscellaneous Accessories, etc.

All airMars bearings and bearing assemblies are designed and manufactured to precise tolerance. Dedication to quality assures good fit and long life.



Solid Shafts

Thrust Collar Kits

Photo A

### Miscellaneous Accessories

| MARS NO. | TYPE                   | PHOTO | PER PACK | WT. EACH |
|----------|------------------------|-------|----------|----------|
| 40897    | 5/8" Thrust Collar Kit | A     | 1        | .20      |
| 40898    | 3/4" Thrust Collar Kit | A     | 2        | .30      |
| 40899    | 1" Thrust Collar Kit   | A     | 1        | .50      |
| 40901    | 3/4" Thrust Spacer Kit | B     | 1        | .10      |

### Solid Shafts

| MARS NO. | BLADE DIA | LENGTH | FLATTED OR KEYWAY | WT. EACH |
|----------|-----------|--------|-------------------|----------|
| 40906    | 5/8"      | 20"    | Flatted           | 2.10     |
| 40907    | 3/4"      | 20"    | Flatted           | 3.00     |
| 40908    | 1"        | 25"    | Flatted           | 6.40     |
| 40912    | 1-3/16"   | 68"    | Flatted           | 24.30    |
| 40913    | 1-7/16"   | 52"    | Flatted           | 27.30    |
| 40909    | 3/4"      | 35"    | Flatted           | 5.30     |
| 40914    | 3/4"      | 20"    | Keyway            | 3.00     |
| 40915    | 1"        | 25"    | Keyway            | 6.40     |

Note: excess can be cut off

## airMARS Belt Drive Blower Accessories

### Bearings and Brackets

All airMars bearings and bearing assemblies are designed and manufactured to precise tolerance. Dedication to quality assures good fit and long life.

### Bearings

| MARS NO. | TYPE                  | BORE | O.D.     | PHOTO | BAG QTY. |
|----------|-----------------------|------|----------|-------|----------|
| 40885    | Sealed Ball Bearing   | 3/4" | 1-13/16" | D     | 2        |
| 40887    | Sealed Ball Bearing   | 1"   | 2-27/32" | D     | 2        |
| 40886    | Sealed Ball Bearing   | 3/4" | 2-27/32" | D     | 2        |
| 40889    | Sealed Brundage Repl. | 3/4" | 2-1/16"  | B     | 2        |
| 40891    | Oil Brundage Repl.    | 3/4" | 2-1/16"  | B     | 2        |



### 3-Wing Bearing Brackets

- Completely assembled and ready to mount, fits most blowers from 9 to 16 Inch sizes
- Sintered bronze ball assembly assures maximum vibration absorption, quiet operation and constant self-alignment
- Includes shaft and hardware

| MARS NO. | TYPE                      | BORE | O.D.                | PHOTO | BAG QTY. |
|----------|---------------------------|------|---------------------|-------|----------|
| 40918    | 3-Wing Bracket w/Hardware | 3/4" | w/ 3/4" x 20" shaft | -     | 1 Kit    |
| 40919    | 3-Wing Bracket w/Hardware | 1"   | w/ 1" x 20" shaft   | -     | 1 Kit    |



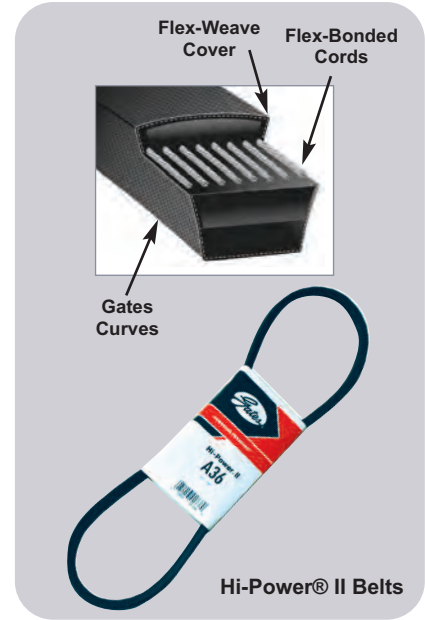
## V-Belts

### Hi-Power® II Belts

Gates Hi-Power II belts are engineered for classical applications. They have patented concave sidewalls to distribute wear evenly while providing proper belt support for improved service life. Flex-bonded cords and flex-weave covers make them the No. 1 choice for heavy-duty conventional V-belt drives. Hi-Power II belts also resist the effects of oil, heat, ozone, weather and aging while meeting RMA standards for static conductivity.

**Features & Benefits:**

- See page AM-40
- MARS Pack 1

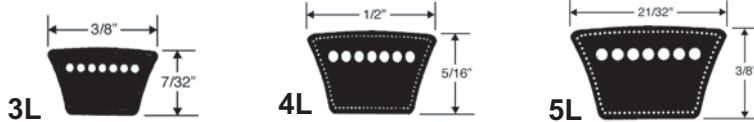


### Truflex® V-Belts

Gates Truflex® belts offer improved performance on light duty, fractional horsepower (FHP) V-belt drives. Their unique patented construction provides smooth, quiet operation with less vibration.

**Features & Benefits:**

- Gates Curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear, and increased belt life.
- Flex-Bonded Cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord reduction.
- Flex-Weave® Cover is a patented fabric construction for longer cover life, providing extended protection to the belt core from oil, dirt and heat.
- Meets RMA static conductivity requirements.
- Meets RMA oil and heat resistant standards.
- MARS Pack 1



### Tri-Power® Belts-AX, BX

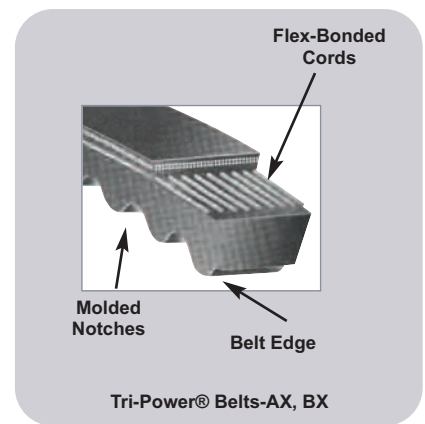
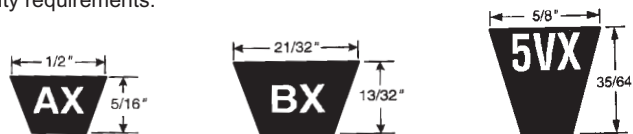
Constructed with Gates proprietary Vextra® construction, this belt has a superior combination of flex and load carrying capacity, as well as less stretch resulting in less maintenance. Suitable for all industrial applications, particularly where small or subminimal sheave diameters are required.

**Super HC® Molded Notch Belts-5VX**

Constructed with Gates proprietary construction, this belt has a superior combination of flex and load carrying capacity, as well as transmitting more horsepower than the classical cross sections in the same amount of drive space. Suitable for all industrial applications, particularly where space, weight and horsepower capacity are critical.

**Features & Benefits:**

- Notches molded in to the belt during manufacturing, make this belt well suited for drives with smaller diameter sheaves.
- Belt edge is machined for even sheave groove contact resulting in less slip and wear.
- Flex bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- Meets RMA oil and heat resistant standards
- Meets RMA static conductivity requirements.
- MARS Pack 1





| MARS NO.       | DESC. | CASE QTY. | MARS NO.             | DESC. | CASE QTY. | MARS NO.             | DESC. | CASE QTY. | MARS NO.             | DESC. | CASE QTY. | MARS NO.              | DESC. | CASE QTY. | MARS NO.              | DESC.  | CASE QTY. |                       |        |    |
|----------------|-------|-----------|----------------------|-------|-----------|----------------------|-------|-----------|----------------------|-------|-----------|-----------------------|-------|-----------|-----------------------|--------|-----------|-----------------------|--------|----|
| <b>A Belts</b> |       |           | <b>A Belts cont.</b> |       |           | <b>B Belts cont.</b> |       |           | <b>B Belts cont.</b> |       |           | <b>4L Belts cont.</b> |       |           | <b>4L Belts cont.</b> |        |           | <b>5L Belts cont.</b> |        |    |
| 74364          | A20   | 1         | 74384                | A78   | 75        | 74441                | B49   | 60        | 74530                | B109  | 25        | 74155                 | 4L170 | 25        | 74214                 | 4L750  | 75        | 74276                 | 5L540  | 25 |
| 74325          | A21   | 1         | 74385                | A79   | 50        | 74442                | B50   | 40        | 74496                | B110  | 25        | 74156                 | 4L180 | 100       | 74215                 | 4L760  | 75        | 74277                 | 5L550  | 50 |
| 74326          | A22   | 1         | 74386                | A80   | 75        | 74443                | B51   | 40        | 74497                | B112  | 15        | 74157                 | 4L190 | 100       | 74216                 | 4L770  | 75        | 74278                 | 5L560  | 25 |
| 74327          | A23   | 1         | 74387                | A81   | 25        | 74444                | B52   | 40        | 74521                | B114  | 30        | 74158                 | 4L200 | 100       | 74217                 | 4L780  | 75        | 74279                 | 5L570  | 15 |
| 74328          | A24   | 185       | 74388                | A82   | 50        | 74445                | B53   | 40        | 74498                | B115  | 30        | 74159                 | 4L210 | 150       | 74218                 | 4L790  | 75        | 74280                 | 5L580  | 25 |
| 74329          | A25   | 185       | 74389                | A83   | 60        | 74446                | B54   | 40        | 74499                | B116  | 30        | 74160                 | 4L220 | 100       | 74219                 | 4L800  | 75        | 74281                 | 5L590  | 15 |
| 74330          | A26   | 150       | 74390                | A84   | 25        | 74447                | B55   | 30        | 74500                | B118  | 30        | 74162                 | 4L230 | 100       | 74220                 | 4L810  | 75        | 74282                 | 5L600  | 35 |
| 74331          | A27   | 150       | 74391                | A85   | 50        | 74448                | B56   | 20        | 74501                | B120  | 30        | 74163                 | 4L240 | 100       | 74221                 | 4L820  | 75        | 74283                 | 5L610  | 35 |
| 74332          | A28   | 150       | 74392                | A86   | 10        | 74449                | B57   | 40        | 74529                | B122  | 5         | 74164                 | 4L250 | 100       | 74222                 | 4L830  | 5         | 74284                 | 5L620  | 20 |
| 74333          | A29   | 150       | 74393                | A87   | 10        | 74450                | B58   | 35        | 74502                | B124  | 30        | 74165                 | 4L260 | 100       | 74223                 | 4L840  | 60        | 74285                 | 5L630  | 60 |
| 74334          | A30   | 150       | 74394                | A88   | 30        | 74451                | B59   | 35        | 74503                | B126  | 35        | 74166                 | 4L270 | 100       | 74224                 | 4L850  | 2         | 74286                 | 5L640  | 60 |
| 74335          | A31   | 150       | 74395                | A89   | 60        | 74452                | B60   | 35        | 74504                | B128  | 30        | 74167                 | 4L280 | 100       | 74225                 | 4L860  | 2         | 74287                 | 5L650  | 60 |
| 74336          | A32   | 150       | 74396                | A90   | 60        | 74453                | B61   | 35        | 74509                | B130  | 1         | 74168                 | 4L290 | 50        | 74226                 | 4L870  | 75        | 74288                 | 5L660  | 25 |
| 74337          | A33   | 150       | 74397                | A91   | 60        | 74454                | B62   | 35        | 74505                | B131  | 20        | 74169                 | 4L300 | 50        | 74227                 | 4L880  | 55        | 74289                 | 5L670  | 15 |
| 74338          | A34   | 150       | 74398                | A92   | 60        | 74455                | B63   | 35        | 74525                | B133  | 20        | 74170                 | 4L310 | 70        | 74228                 | 4L890  | 55        | 74290                 | 5L680  | 27 |
| 74339          | A35   | 130       | 74399                | A93   | 60        | 74456                | B64   | 35        | 74506                | B136  | 20        | 74171                 | 4L320 | 50        | 74229                 | 4L900  | 55        | 74291                 | 5L690  | 60 |
| 74340          | A36   | 130       | 74400                | A94   | 60        | 74457                | B65   | 35        | 74507                | B140  | 20        | 74172                 | 4L330 | 50        | 74230                 | 4L910  | 55        | 74292                 | 5L700  | 10 |
| 74341          | A37   | 110       | 74401                | A95   | 60        | 74458                | B66   | 35        | 74522                | B142  | 20        | 74173                 | 4L340 | 50        | 74231                 | 4L920  | 55        | 74293                 | 5L710  | 50 |
| 74342          | A38   | 110       | 74402                | A96   | 50        | 74459                | B67   | 25        | 74508                | B144  | 20        | 74174                 | 4L350 | 50        | 74232                 | 4L930  | 55        | 74294                 | 5L720  | 25 |
| 74343          | A39   | 110       | 74531                | A97   | 5         | 74460                | B68   | 25        | 74510                | B150  | 15        | 74175                 | 4L360 | 75        | 74233                 | 4L940  | 1         | 74295                 | 5L730  | 25 |
| 74344          | A40   | 110       | 74532                | A98   | 4         | 74461                | B69   | 25        | 74511                | B154  | 2         | 74176                 | 4L370 | 50        | 74234                 | 4L950  | 1         | 74296                 | 5L740  | 50 |
| 74345          | A41   | 90        | 74403                | A100  | 35        | 74462                | B70   | 20        | 74512                | B158  | 10        | 74177                 | 4L380 | 50        | 74235                 | 4L960  | 55        | 74297                 | 5L750  | 50 |
| 74346          | A42   | 90        | 74404                | A103  | 50        | 74463                | B71   | 25        | 74513                | B162  | 20        | 74178                 | 4L390 | 100       | 74236                 | 4L970  | 55        | 74298                 | 5L760  | 50 |
| 74347          | A43   | 90        | 74405                | A105  | 25        | 74464                | B72   | 25        | 74533                | B191  | 1         | 74179                 | 4L400 | 50        | 74237                 | 4L980  | 1         | 74299                 | 5L770  | 50 |
| 74348          | A44   | 90        | 74406                | A110  | 5         | 74465                | B73   | 35        |                      |       |           | 74180                 | 4L410 | 50        | 74238                 | 4L990  | 55        | 74300                 | 5L780  | 15 |
| 74349          | A45   | 90        | 74407                | A112  | 45        | 74466                | B74   | 35        |                      |       |           | 74181                 | 4L420 | 50        | 74239                 | 4L1000 | 55        | 74301                 | 5L790  | 50 |
| 74350          | A46   | 90        | 74408                | A120  | 35        | 74467                | B75   | 35        | <b>3L Belts</b>      |       |           | 74182                 | 4L430 | 110       |                       |        |           | 74302                 | 5L800  | 15 |
| 74351          | A47   | 90        | 74409                | A128  | 35        | 74468                | B76   | 35        | 74103                | 3L170 | 100       | 74183                 | 4L440 | 50        |                       |        |           | 74303                 | 5L810  | 55 |
| 74352          | A48   | 90        | 74410                | A133  | 2         | 74469                | B77   | 35        | 74104                | 3L180 | 100       | 74184                 | 4L450 | 110       |                       |        |           | 74304                 | 5L820  | 55 |
| 74353          | A49   | 90        | 74411                | A136  | 2         | 74470                | B78   | 35        | 74105                | 3L190 | 100       | 74185                 | 4L460 | 50        |                       |        |           | 74305                 | 5L830  | 55 |
| 74354          | A50   | 90        | 74412                | A144  | 15        | 74471                | B79   | 35        | 74106                | 3L200 | 100       | 74186                 | 4L470 | 110       |                       |        |           | 74306                 | 5L840  | 45 |
| 74355          | A51   | 90        | 74413                | A158  | 2         | 74472                | B80   | 35        | 74107                | 3L210 | 100       | 74187                 | 4L480 | 50        |                       |        |           | 74307                 | 5L850  | 40 |
| 74356          | A52   | 50        | 74414                | A173  | 2         | 74473                | B81   | 35        | 74108                | 3L220 | 100       | 74188                 | 4L490 | 50        |                       |        |           | 74308                 | 5L860  | 40 |
| 74357          | A53   | 50        |                      |       |           | 74474                | B82   | 30        | 74109                | 3L230 | 100       | 74189                 | 4L500 | 110       |                       |        |           | 74309                 | 5L870  | 40 |
| 74358          | A54   | 50        |                      |       |           | 74475                | B83   | 30        | 74110                | 3L240 | 100       | 74190                 | 4L510 | 75        |                       |        |           | 74310                 | 5L880  | 40 |
| 74359          | A55   | 50        |                      |       |           | 74476                | B84   | 30        | 74111                | 3L250 | 100       | 74191                 | 4L520 | 75        |                       |        |           | 74311                 | 5L890  | 40 |
| 74360          | A56   | 50        |                      |       |           | 74477                | B85   | 35        | 74112                | 3L260 | 100       | 74192                 | 4L530 | 74        |                       |        |           | 74312                 | 5L900  | 40 |
| 74361          | A57   | 50        |                      |       |           | 74478                | B86   | 30        | 74113                | 3L270 | 100       | 74193                 | 4L540 | 60        |                       |        |           | 74313                 | 5L910  | 40 |
| 74362          | A58   | 50        |                      |       |           | 74479                | B87   | 25        | 74114                | 3L280 | 10        | 74194                 | 4L550 | 60        |                       |        |           | 74314                 | 5L920  | 40 |
| 74363          | A59   | 50        |                      |       |           | 74480                | B88   | 20        | 74115                | 3L290 | 100       | 74195                 | 4L560 | 60        |                       |        |           | 74315                 | 5L930  | 45 |
| 74366          | A60   | 50        |                      |       |           | 74481                | B89   | 30        | 74116                | 3L300 | 10        | 74196                 | 4L570 | 60        |                       |        |           | 74316                 | 5L940  | 45 |
| 74367          | A61   | 50        |                      |       |           | 74482                | B90   | 30        | 74117                | 3L310 | 1         | 74197                 | 4L580 | 60        |                       |        |           | 74317                 | 5L950  | 45 |
| 74368          | A62   | 50        |                      |       |           | 74528                | B91   | 25        | 74118                | 3L320 | 100       | 74198                 | 4L590 | 60        |                       |        |           | 74318                 | 5L960  | 45 |
| 74369          | A63   | 50        |                      |       |           | 74483                | B92   | 30        | 74119                | 3L330 | 150       | 74199                 | 4L600 | 80        |                       |        |           | 74319                 | 5L970  | 45 |
| 74370          | A64   | 50        |                      |       |           | 74484                | B93   | 30        | 74120                | 3L340 | 100       | 74200                 | 4L610 | 40        |                       |        |           | 74320                 | 5L980  | 45 |
| 74371          | A65   | 75        |                      |       |           | 74485                | B94   | 30        | 74121                | 3L350 | 100       | 74201                 | 4L620 | 80        |                       |        |           | 74321                 | 5L990  | 45 |
| 74372          | A66   | 75        |                      |       |           | 74486                | B95   | 30        | 74122                | 3L360 | 100       | 74202                 | 4L630 | 50        |                       |        |           | 74322                 | 5L1000 | 45 |
| 74373          | A67   | 75        |                      |       |           | 74487                | B96   | 30        | 74123                | 3L370 | 1         | 74203                 | 4L640 | 75        |                       |        |           |                       |        |    |
| 74374          | A68   | 50        |                      |       |           | 74488                | B97   | 30        | 74124                | 3L380 | 1         | 74204                 | 4L650 | 50        |                       |        |           |                       |        |    |
| 74375          | A69   | 7         |                      |       |           | 74489                | B98   | 5         | 74125                | 3L390 | 1         | 74205                 | 4L660 | 75        |                       |        |           |                       |        |    |
| 74376          | A70   | 42        |                      |       |           | 74490                | B99   | 15        | 74126                | 3L400 | 1         | 74206                 | 4L670 | 70        |                       |        |           |                       |        |    |
| 74377          | A71   | 75        |                      |       |           | 74491                | B100  | 30        | 74128                | 3L420 | 1         | 74207                 | 4L680 | 74        |                       |        |           |                       |        |    |
| 74378          | A72   | 75        |                      |       |           | 74519                | B101  | 30        | 74129                | 3L430 | 150       | 74208                 | 4L690 | 75        |                       |        |           |                       |        |    |
| 74379          | A73   | 75        |                      |       |           | 74520                | B102  | 30        | 74130                | 3L440 | 50        | 74209                 | 4L700 | 75        |                       |        |           |                       |        |    |
| 74380          | A74   | 42        |                      |       |           | 74492                | B103  | 30        | 74132                | 3L460 | 1         | 74210                 | 4L710 | 75        |                       |        |           |                       |        |    |
| 74381          | A75   | 75        |                      |       |           | 74493                | B105  | 30        |                      |       |           | 74211                 | 4L720 | 75        |                       |        |           |                       |        |    |
| 74382          | A76   | 75        |                      |       |           | 74494                | B106  | 30        | <b>4L Belts</b>      |       |           | 74212                 | 4L730 | 75        |                       |        |           |                       |        |    |
| 74383          | A77   | 75        |                      |       |           | 74495                | B108  | 30        | 74153                | 4L150 | 5         | 74213                 | 4L740 | 75        |                       |        |           |                       |        |    |
|                |       |           |                      |       |           |                      |       |           | 74154                | 4L160 | 124       |                       |       |           |                       |        |           |                       |        |    |



# Gates V-Belts

## Gates V-Belts cont.

| MARS NO.              | DESC. | CASE QTY. | MARS NO.        | DESC. | CASE QTY. | MARS NO.              | DESC. | CASE QTY. | MARS NO.               | DESC.   | CASE QTY. |
|-----------------------|-------|-----------|-----------------|-------|-----------|-----------------------|-------|-----------|------------------------|---------|-----------|
| <b>AX Belts cont.</b> |       |           | <b>BX Belts</b> |       |           | <b>BX Belts cont.</b> |       |           | <b>5VX Belts cont.</b> |         |           |
| 74563                 | AX29  | 20        | 74650           | BX28  | 1         | 74645                 | BX85  | 2         | 74689                  | 5VX750  | 12        |
| 74564                 | AX30  | 10        | 74662           | BX30  | 1         | 74721                 | BX86  | 1         | 74708                  | 5VX780  | 1         |
| 74565                 | AX31  | 10        | 74605           | BX32  | 1         | 74678                 | BX88  | 1         | 74704                  | 5VX800  | 1         |
| 74554                 | AX32  | 50        | 74684           | BX33  | 1         | 74679                 | BX89  | 1         | 74676                  | 5VX850  | 1         |
| 74567                 | AX33  | 14        | 74666           | BX34  | 10        | 74659                 | BX90  | 1         | 74677                  | 5VX880  | 1         |
| 74568                 | AX34  | 15        | 74609           | BX35  | 1         | 74665                 | BX91  | 1         | 74690                  | 5VX900  | 13        |
| 74569                 | AX35  | 15        | 74610           | BX36  | 5         | 74672                 | BX92  | 1         | 74691                  | 5VX930  | 5         |
| 74570                 | AX36  | 15        | 74611           | BX37  | 1         | 74661                 | BX93  | 1         | 74706                  | 5VX950  | 1         |
| 74571                 | AX37  | 15        | 74612           | BX38  | 4         | 74680                 | BX94  | 1         | 74692                  | 5VX960  | 10        |
| 74572                 | AX38  | 10        | 74613           | BX39  | 40        | 74660                 | BX95  | 1         | 74693                  | 5VX1000 | 10        |
| 74562                 | AX39  | 10        | 74614           | BX40  | 15        | 74606                 | BX96  | 1         | 74694                  | 5VX1030 | 10        |
| 74573                 | AX40  | 10        | 74615           | BX41  | 1         | 74681                 | BX97  | 30        | 74718                  | 5VX1050 | 1         |
| 74574                 | AX41  | 10        | 74616           | BX42  | 4         | 74683                 | BX99  | 5         | 74695                  | 5VX1060 | 1         |
| 74575                 | AX42  | 15        | 74617           | BX43  | 5         | 74647                 | BX100 | 1         | 74696                  | 5VX1080 | 10        |
| 74576                 | AX43  | 30        | 74618           | BX44  | 10        | 74649                 | BX103 | 1         | 74697                  | 5VX1120 | 10        |
| 74604                 | AX44  | 10        | 74710           | BX45  | 10        | 74653                 | BX105 | 1         | 74698                  | 5VX1150 | 10        |
| 74608                 | AX45  | 10        | 74619           | BX46  | 15        | 74654                 | BX106 | 1         | 74699                  | 5VX1180 | 1         |
| 74577                 | AX46  | 55        | 74719           | BX47  | 1         | 74685                 | BX108 | 1         | 74673                  | 5VX1230 | 1         |
| 74579                 | AX47  | 10        | 74620           | BX48  | 10        | 74670                 | BX112 | 30        | 74700                  | 5VX1320 | 10        |
| 74578                 | AX48  | 5         | 74663           | BX49  | 1         | 74671                 | BX113 | 1         | 74701                  | 5VX1400 | 20        |
| 74580                 | AX49  | 20        | 74621           | BX50  | 20        | 74686                 | BX116 | 1         |                        |         |           |
| 74598                 | AX50  | 10        | 74607           | BX51  | 50        | 74668                 | BX120 | 1         |                        |         |           |
| 74581                 | AX51  | 10        | 74622           | BX52  | 10        | 74669                 | BX124 | 1         |                        |         |           |
| 74599                 | AX52  | 5         | 74623           | BX53  | 5         | 74687                 | BX128 | 1         |                        |         |           |
| 74551                 | AX53  | 5         | 74624           | BX54  | 20        | 74705                 | BX133 | 10        |                        |         |           |
| 74582                 | AX54  | 15        | 74625           | BX55  | 1         | 74748                 | BX162 | 1         |                        |         |           |
| 74583                 | AX55  | 5         | 74626           | BX56  | 5         | 74759                 | BX173 | 1         |                        |         |           |
| 74600                 | AX56  | 10        | 74664           | BX57  | 1         |                       |       |           |                        |         |           |
| 74601                 | AX57  | 10        | 74629           | BX58  | 10        |                       |       |           |                        |         |           |
| 74584                 | AX58  | 5         | 74630           | BX59  | 25        |                       |       |           |                        |         |           |
| 74552                 | AX59  | 10        | 74631           | BX60  | 25        |                       |       |           |                        |         |           |
| 74585                 | AX60  | 4         | 74627           | BX61  | 15        |                       |       |           |                        |         |           |
| 74586                 | AX61  | 5         | 74632           | BX62  | 20        |                       |       |           |                        |         |           |
| 74587                 | AX62  | 5         | 74628           | BX63  | 20        |                       |       |           |                        |         |           |
| 74588                 | AX63  | 15        | 74633           | BX64  | 10        |                       |       |           |                        |         |           |
| 74589                 | AX64  | 10        | 74634           | BX65  | 15        |                       |       |           |                        |         |           |
| 74602                 | AX65  | 5         | 74635           | BX66  | 10        |                       |       |           |                        |         |           |
| 74603                 | AX66  | 5         | 74636           | BX67  | 10        |                       |       |           |                        |         |           |
| 74559                 | AX67  | 5         | 74637           | BX68  | 5         |                       |       |           |                        |         |           |
| 74590                 | AX68  | 5         | 74707           | BX69  | 10        |                       |       |           |                        |         |           |
| 74592                 | AX69  | 5         | 74638           | BX70  | 10        |                       |       |           |                        |         |           |
| 74749                 | AX70  | 5         | 74639           | BX71  | 10        |                       |       |           |                        |         |           |
| 74757                 | AX71  | 5         | 74641           | BX72  | 15        |                       |       |           |                        |         |           |
| 74514                 | AX72  | 5         | 74640           | BX73  | 5         |                       |       |           |                        |         |           |
| 74591                 | AX75  | 5         | 74657           | BX74  | 1         |                       |       |           |                        |         |           |
| 74593                 | AX80  | 5         | 74646           | BX75  | 10        |                       |       |           |                        |         |           |
| 74750                 | AX82  | 1         | 74648           | BX76  | 5         |                       |       |           |                        |         |           |
| 74594                 | AX85  | 1         | 74651           | BX77  | 5         |                       |       |           |                        |         |           |
| 74595                 | AX87  | 1         | 74655           | BX78  | 5         |                       |       |           |                        |         |           |
| 74596                 | AX90  | 5         | 74656           | BX79  | 5         |                       |       |           |                        |         |           |
| 74549                 | AX92  | 1         | 74642           | BX80  | 5         |                       |       |           |                        |         |           |
| 74597                 | AX96  | 5         | 74643           | BX81  | 10        |                       |       |           |                        |         |           |
|                       |       |           | 74658           | BX82  | 5         |                       |       |           |                        |         |           |
|                       |       |           | 74644           | BX83  | 5         |                       |       |           |                        |         |           |
|                       |       |           | 74652           | BX84  | 5         |                       |       |           |                        |         |           |

## Tension Tester

Pencil type tension tester is for use with all small v-belts and synchronous belts. Maximum deflection force 30 lbs.



| MARS NO. | GATES NO. |
|----------|-----------|
| 74101    | 7401-0076 |

## Gates Merchandiser

Includes 10 – 3 foot long strips with 12 hooks each.



| MARS NO. | GATES NO. |
|----------|-----------|
| 74000    | 7645-0003 |

### AP Belts

|       |       |   |
|-------|-------|---|
| 74725 | 5V630 | 1 |
| 74726 | 5V710 | 1 |
| 74728 | 5V750 | 1 |
| 74729 | 5V800 | 1 |
| 74746 | AP46  | 1 |
| 74751 | AP51  | 1 |
| 74755 | AP55  | 1 |
| 74756 | AP56  | 1 |
| 74758 | AP58  | 1 |
| 74760 | AP59  | 1 |

### Misc. Belts

|       |      |   |
|-------|------|---|
| 74991 | C85  | 1 |
| 74990 | C100 | 5 |
| 74998 | C136 | 1 |
| 74796 | CX96 | 1 |

**An effective preventive maintenance program saves time and money. Inspecting and replacing belts and faulty drive components **before** they fail will reduce costly downtime.**

**A comprehensive, effective program of preventive maintenance consists of several elements:**

- Maintaining a safe work environment
- Regularly scheduled belt drive inspections
- Proper belt installation procedures
- Belt drive performance evaluations
- Belt product knowledge
- Belt storage and handling
- Trouble shooting

**Sources of Drive Problems**

- Rolling or prying on belts
- Misalignment
- Incorrect tension
- Improper handling of belts
- Mis-matched belts and/or pulley used
- Idler not taking tension up correctly
- Guard interference

- Sub-minimal diameters
- Under-designed drive
- Over-designed drive
- Excessive rim speed
- Incorrect belt type

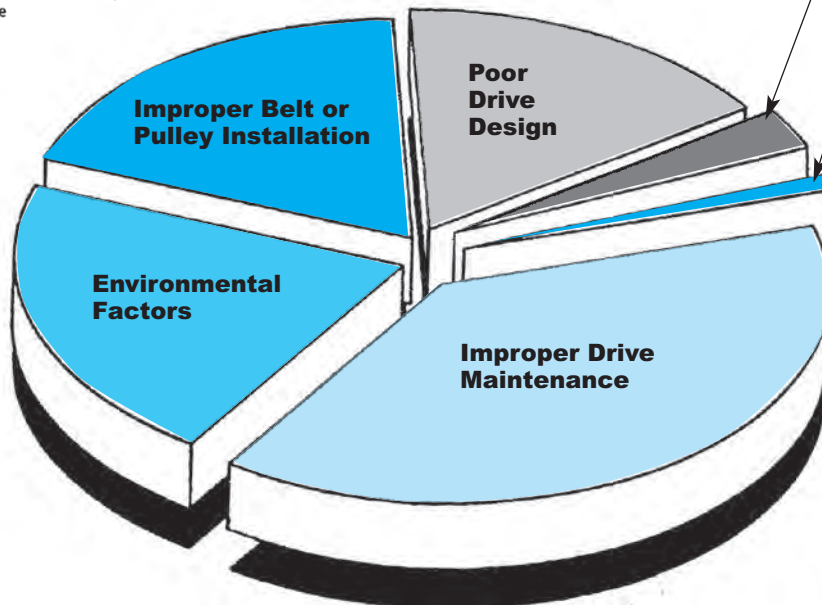
**Improper Belt Storage or Handling**

- Temperature
- High Humidity
- Storing for too long
- Too near ozone generating equipment
- Exposed to sunlight

**Defective Drive Components**

- Check for worn pulleys or sheaves
- Check for cracked or weakened bracketry
- Check for weak mounting brackets
- Check for worn belts
- Check for nonfunctioning idlers
- Check for damaged guards

- Dust
- Debris
- Water/humidity
- Oil/grease
- Heat/cold
- Rust



- No retensioning
- Not replacing worn sheave
- Not cleaning guards
- Not checking for weak bracketry & drive components
- Not checking alignment

*Ask your MARS Sales Representative about how MARS & Gates can help you provide your customers with superior product and superior product application knowledge.*

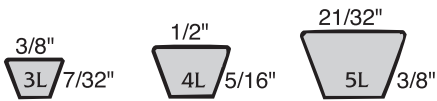
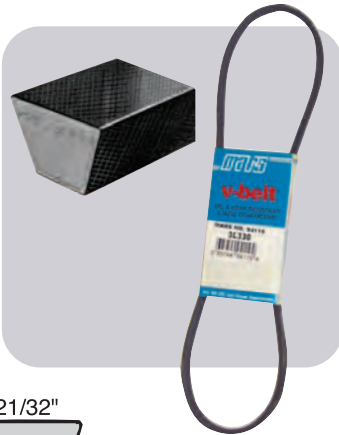


## MARS V-Belts

### MARS FHP V-Belts

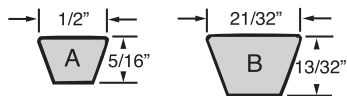
The airMARS FHP V-belt has been designed specifically for solving the problems of minimum space, small pulley diameters, large ratios and fractional horsepower requirements. Excellent for air conditioning, refrigeration and appliance equipment.

This series of airMARS belts uses only top quality material in order to have superior performance. All belts are manufactured under strict quality control standards.



### MARS Dual Rated V-Belts

MARS is pleased to offer our dual rated v-belts. These belts are a combination of the classical multiple belt and the FHP belt, allowing the wholesaler and contractor to consolidate inventory. There is no need to stock both the FHP and multiple belts when you use the MARS dual brand v-belts. These unimatch belts are the same size and type and will measure within the RMA matching limits.



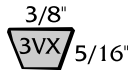
### Cogged Raw Edge V-Belts

airMARS cogged raw edge V-belts are designed to keep drive costs and maintenance costs at a minimum. These belts are more compact and offer greater flexibility. Oil and heat resistant.



### MARS Wedge V-Belts

airMARS Wedge V-belts allow for compact drives and higher (lower cost) RPM motors. These belts are oil and heat resistant and static conducting.



### MARS Accu-Link Adjustable V-belts

airMARS Wedge V-belts allow for compact drives and higher (lower cost) RPM motors. These belts are oil and heat resistant and static conducting.

- Solves HVAC v-belt drive problems, quickly and accurately
- Ideal temporary or permanent replacement for conventional rubber belts
- Easy snap & twist assembly
- No special tools needed
- Ideal for emergency repairs & replacements
- Keep Accu-Link in every contractor truck and you will never be without a belt in any circumstance.
- 5 ft. sleeve



| MARS NO. | DESCRIPTION    | MARS PACK | QTY. |
|----------|----------------|-----------|------|
| 94670    | 3L Accu-Link   | 1         | 25   |
| 94671    | A/4L Accu-Link | 1         | 25   |
| 94672*   | B/5L Accu-Link | 1         | 25   |

\* 6 foot sleeve

| MARS NO. | DESC. | MARS PACK | CASE QTY. |
|----------|-------|-----------|-----------|
|----------|-------|-----------|-----------|

**MARS FHP-2L & 3L V-Belts-3/8" Top Width**

|       |       |   |    |
|-------|-------|---|----|
| 94104 | 3L180 | 1 | 10 |
| 94105 | 3L190 | 1 | 10 |
| 94106 | 3L200 | 1 | 10 |
| 94107 | 3L210 | 1 | 10 |
| 94108 | 3L220 | 1 | 10 |

**MARS FHP-4L V-Belts -1/2" Top Width**

|       |       |   |    |
|-------|-------|---|----|
| 94155 | 4L170 | 1 | 20 |
| 94156 | 4L180 | 1 | 20 |

**MARS FHP-5L V-Belts -21/32" Top Width**

|       |       |   |    |
|-------|-------|---|----|
| 94281 | 5L590 | 1 | 10 |
|-------|-------|---|----|

| MARS NO. | DESC. | MARS PACK | CASE QTY. |
|----------|-------|-----------|-----------|
|----------|-------|-----------|-----------|

**A/4L Dual Rated V-Belts**

|       |            |   |    |
|-------|------------|---|----|
| 94416 | A-18/4L200 | 1 | 10 |
| 94323 | A-19/4L210 | 1 | 10 |
| 94324 | A-20/4L220 | 1 | 10 |
| 94325 | A-21/4L230 | 1 | 10 |
| 94326 | A-22/4L240 | 1 | 10 |
| 94327 | A-23/4L250 | 1 | 10 |
| 94328 | A-24/4L260 | 1 | 10 |
| 94329 | A-25/4L270 | 1 | 10 |
| 94330 | A-26/4L280 | 1 | 10 |
| 94331 | A-27/4L290 | 1 | 10 |
| 94332 | A-28/4L300 | 1 | 10 |
| 94335 | A-31/4L330 | 1 | 10 |
| 94336 | A-32/4L340 | 1 | 10 |
| 94337 | A-33/4L350 | 1 | 10 |
| 94338 | A-34/4L360 | 1 | 10 |
| 94339 | A-35/4L370 | 1 | 10 |
| 94340 | A-36/4L380 | 1 | 10 |
| 94341 | A-37/4L390 | 1 | 10 |
| 94342 | A-38/4L400 | 1 | 10 |
| 94343 | A-39/4L410 | 1 | 10 |
| 94344 | A-40/4L420 | 1 | 10 |
| 94345 | A-41/4L430 | 1 | 10 |
| 94346 | A-42/4L440 | 1 | 10 |
| 94347 | A-43/4L450 | 1 | 10 |
| 94348 | A-44/4L460 | 1 | 10 |
| 94349 | A-45/4L470 | 1 | 10 |
| 94350 | A-46/4L480 | 1 | 10 |
| 94351 | A-47/4L490 | 1 | 10 |
| 94352 | A-48/4L500 | 1 | 10 |
| 94353 | A-49/4L510 | 1 | 10 |
| 94354 | A-50/4L520 | 1 | 10 |
| 94355 | A-51/4L530 | 1 | 10 |
| 94356 | A-52/4L540 | 1 | 10 |
| 94357 | A-53/4L550 | 1 | 10 |
| 94358 | A-54/4L560 | 1 | 10 |
| 94359 | A-55/4L570 | 1 | 10 |
| 94360 | A-56/4L580 | 1 | 10 |
| 94370 | A-64/4L660 | 1 | 10 |



# Cross Reference

Enclosed you will find the airMARS cross reference guide. It is the result of Motors & Armatures' on going commitment to provide the most complete information possible to wholesalers, contractors and service technicians so they may select a desired product quickly and accurately.

In compiling this cross reference, every effort has been made to insure the accuracy of the information, however, Motors & Armatures cannot accept responsibility for errors which may be caused by changes in part numbers, specifications or by typographical or clerical errors in preparation. Manufacturers' and suppliers' part numbers within this cross reference and catalog are shown for identification and reference purposes only.

| AAON                  | MARS  | A001483               | 95941 | LA01EA121         | 40053 | STBP8     | 40241 | 4CL2227         | 40109 | FBT20225L             | 40313 | 013317-04  | 41328 |
|-----------------------|-------|-----------------------|-------|-------------------|-------|-----------|-------|-----------------|-------|-----------------------|-------|------------|-------|
| P47570                | 40053 | <b>Allied MARS</b>    |       | LA01EB025         | 40363 | 1-6002    | 40615 | 4CL2235         | 40164 | FBT20324R             | 40047 | 013322-03  | 41335 |
| <b>Air Drive MARS</b> |       | 10026601              | 40356 | LA01EC019         | 40338 | 1-6052    | 40655 | 4CL2418         | 40144 | FBT20328R             | 40049 | 013323-01  | 41331 |
| A000581               | 07081 | 10026801              | 40362 | LA01EW024         | 40112 | 1-6058    | 40623 | 4CL2423         | 40113 | FBT20331R             | 40067 | 013324-01  | 41327 |
| A000700               | 07411 | 41141001              | 40094 | LA01EW025         | 40110 | 1-6063    | 40630 | 4CL2427         | 40115 | FBT20426L             | 40103 | 013324-02  | 41326 |
| A000290               | 07414 | 41354001              | 40375 | LA01EW041         | 40058 | 1-6064    | 40631 | 4CL2433         | 40117 | FBT20426R             | 40102 | 013325-01  | 41323 |
| A000247               | 07451 | 41355001              | 40132 | LA01EW044         | 40058 | 1-6071    | 40638 | 4CL2627         | 40119 | FBT20429L             | 40138 | 013326-01  | 41318 |
| A000815               | 07452 | 41518001              | 40100 | LA01EW050         | 40328 | 1-6133    | 40563 | 4CL2633         | 40121 | FBT20429R             | 40137 | 013326-02  | 41317 |
| A000898               | 07471 | 42686001              | 40343 | LA01LA019         | 40049 | 1-6141    | 40564 | 4CR1423         | 40082 | FBT20433L             | 40105 | 013326-14  | 41321 |
| A000892               | 07472 | 44931001              | 40096 | LA01LA024         | 40057 | 2-6012    | 41118 | 4CR1433         | 40086 | FBT20433R             | 40104 | 013327-01  | 41314 |
| A000808               | 07481 | 45582001              | 40340 | LA01LA026         | 40362 | 2-6013    | 41109 | 4CR1433-4       | 40369 | FBT22331R             | 40053 | 013332-01  | 41365 |
| A000245               | 07482 | 100060-02             | 40382 | LA01LA016         | 40068 | 2-6014    | 41110 | 4CR1623         | 40088 | FBT22427R             | 40108 | 013332-03  | 41361 |
| A000613               | 07483 | 100060-03             | 40339 | LA01RA015         | 40340 | 2-6018    | 41132 | 4CR1633         | 40092 | FBT22435R             | 40110 | 013334-01  | 41360 |
| A000115               | 07484 | 100060-04             | 40042 | LA01RA025         | 40350 | 2-6019    | 41307 | 4CR1633-4       | 40372 | FBT24326L             | 40058 | 013335-01  | 41303 |
| A000250               | 07491 | 100060-05             | 40099 | LA01RA028B        | 40352 | 2-6020    | 41365 | 4CR1827         | 40096 | FBT24326R             | 40057 | 013336-02  | 41307 |
| A000251               | 07493 | 100060-07             | 40339 | LA01RA038A        | 40053 | 2-6022    | 41335 | 4CR1830         | 40134 | FBT24427L             | 40115 | 013336-03  | 41306 |
| A001358               | 07521 | 100060-08             | 40097 | LA01RA320         | 40049 | 2-6030    | 41105 | 4CR1833         | 40098 | FBT24427R             | 40114 | 013337-01  | 41311 |
| A000816               | 07551 | 100060-09             | 40099 | LA01RA321         | 40049 | 2-6032    | 41114 | 4CR1833-4       | 40376 | FBT24433R             | 40116 | 013337-03  | 41310 |
| A001094               | 07552 | 100060-10             | 40382 | LA01RA323         | 40057 | 2-6033    | 41115 | 4CR2026         | 40102 | FBT26427R             | 40119 | 013693-15  | 41354 |
| A000253               | 07571 | 100060-13             | 40107 | LA01RA324         | 40057 | 2-6034    | 41131 | 4CR2029         | 40137 | <b>Goodman MARS</b>   |       | 013693-25  | 41364 |
| A000817               | 07572 |                       |       | LA01RA329         | 40362 | 2-6037    | 41331 | 4CR2033         | 40104 | 10625715              | 40307 | 015565-04  | 41356 |
| A000254               | 07581 | <b>Armstrong MARS</b> |       | LA01RA331         | 40352 | 2-6081    | 41105 | 4CR2033-4       | 40378 | 10625721              | 40065 | 015565-07  | 41355 |
| A000255               | 07582 | 46238001              | 40151 | LA01RA332         | 40069 | 2-6083    | 41123 | 4CR2223         | 40106 | 10625731              | 40357 | 020487-70  | 40638 |
| A001120               | 07584 | 46239001              | 40042 | LA04LA161         | 40372 | 2-6085    | 41130 | 4CR2227         | 40108 | 10625733              | 40054 | 020553-02  | 40641 |
| A000256               | 07591 | 100060-02             | 40382 | LA04LA200         | 40379 | 2-6089    | 41303 | 4CR2235         | 40110 | 10625739              | 40357 | 024768-01  | 40833 |
| A000645               | 07592 | 100060-03             | 40339 | LA05LA016         | 40331 | 2-6090    | 41311 | 4CR2418         | 40143 | 10650802              | 40363 | 024768-09  | 40831 |
| A000212               | 07593 | 100060-04             | 40042 | LA05LA021         | 40049 | 2-6091    | 41314 | 4CR2423         | 40112 | 11182905              | 40380 | 024768-10  | 40832 |
| A000213               | 07594 | 100060-05             | 40099 | LA580524          | 40347 | 2-6092    | 41318 | 4CR2427         | 40114 | 150M00001P            | 40050 | 026940-03  | 41339 |
| A000260               | 07595 | 100060-07             | 40339 | LA580530          | 40387 | 2-6093    | 41323 | 4CR2433         | 40116 | B1086756              | 40066 | 026940-05  | 41341 |
| A000261               | 07596 | 100060-08             | 40097 | LA680506          | 40051 | 2CL1827   | 40308 | 4CR2627         | 40118 | B1086775              | 40054 | 026940-07  | 41345 |
| A000407               | 07921 | 100060-09             | 40099 | LA680517          | 40135 | 2CL2025   | 40313 | 4CR2633         | 40120 | 150M00001P            | 40050 | 026940-08  | 41344 |
| A000408               | 07922 | 100060-10             | 40382 | LA680518          | 40101 | 2CL2227   | 40320 | 4CR3038         | 40207 | 10625719              | 40352 | 026940-09  | 41349 |
| A000585               | 07993 | 100060-13             | 40107 | LA680522          | 40054 | 3CL1433-4 | 40329 | 4CR4238         | 40213 | 10625732              | 40046 | 026940-10  | 41348 |
| A000482               | 07995 | 390628001             | 40154 | LA680525          | 40100 | 3CL1827   | 40044 | 4CR6038         | 40220 | 10625739              | 40357 | 026941-07  | 41343 |
| A001116               | 07996 |                       |       | LA680527          | 40356 | 3CL1830   | 40066 | 4FL1033         | 40075 | 150M00001P            | 40050 | 026941-11  | 41351 |
| A000490               | 07998 | <b>Bard MARS</b>      |       | LA680528          | 40139 | 3CL1833   | 40046 | 4FL1223         | 40077 | 150M00001P            | 40050 | 026941-12  | 41350 |
| A000464               | 95021 | 5151048               | 40138 | LA680538          | 40166 | 3CL2024   | 40048 | 4FL1233         | 40081 | B1086756              | 40066 | 027102-04  | 41362 |
| A000381               | 95022 | <b>Carrier MARS</b>   |       | LA680562          | 40118 | 3CL2028   | 40050 | 4FR1033         | 40074 | B1086764              | 40107 | 028957-43  | 40619 |
| A000356               | 95027 | LA01RA042             | 40358 | LA01EA038         | 40352 | 3CL2031   | 40068 | 4FR1223         | 40076 | B1086765              | 40109 | 028957-44  | 40620 |
| A000374               | 95031 | LA01AA015             | 40096 | LA01RA027         | 40350 | 3CL2230   | 40024 | 4FR1233         | 40080 | B1086772              | 40058 | 028957-74  | 40563 |
| A000382               | 95032 | LA01AA019             | 40375 | <b>EXCEL MARS</b> |       | 3CL2233-4 | 40357 | <b>GEM MARS</b> |       | B1086772              | 40358 | 028957-75  | 40563 |
| A000125               | 95041 | LA01AA022             | 40164 | 20391101          | 40041 | 3CL2426   | 40058 | FBG10423L       | 40071 | B1086773              | 40054 | 028958-02  | 41104 |
| A001283               | 95131 | LA01AA023             | 40378 | 20391102          | 40343 | 3CL2426   | 40058 | FBG10423R       | 40070 | B1086775              | 40054 | 028958-03  | 41105 |
| A001045               | 95621 | LA01AA026             | 40379 | 20391105          | 40355 | 3CL2433   | 40060 | FBG10427L       | 40073 | <b>Heatcraft MARS</b> |       | 028958-04  | 41112 |
| A001250               | 95628 | LA01AA177             | 40338 | 20391106          | 40352 | 3CR1433-4 | 40328 | FBG10427R       | 40072 | 22901101              | 40168 | 028958-05  | 41113 |
| A001206               | 95629 | LA01AA179             | 40404 | 20391107          | 40047 | 3CR1633-4 | 40333 | FBG10433L       | 40075 | 5106B                 | 40077 | 028958-06  | 41118 |
| A000262               | 95641 | LA01AA198             | 40049 | 20391108          | 40100 | 3CR1827   | 40043 | FBG10433R       | 40074 | 5108C                 | 40083 | 028958-07  | 41114 |
| A001093               | 95721 | LA01AA199             | 40349 | 20391108          | 40100 | 3CR1830   | 40065 | FBG12423L       | 40077 | 5109B                 | 40089 | 028958-22  | 41114 |
| A001103               | 95722 | LA01AA201             | 40049 | 20391109          | 40339 | 3CR1833   | 40045 | FBG12423R       | 40076 | 5110B                 | 40091 | 028958-23  | 41115 |
| A000365               | 95723 | LA01AB017             | 40101 | 20391110          | 40097 | 3CR1833-4 | 40343 | FBG12433L       | 40081 | 5111B                 | 40093 | 028958-24  | 41116 |
| A000109               | 95731 | LA01AB018             | 40135 | 20391111          | 40099 | 3CR2024   | 40047 | FBG12433R       | 40080 | 5113A                 | 40097 | 028958-25  | 41117 |
| A000106               | 95732 | LA01AB019             | 40105 | 20391112          | 40107 | 3CR2028   | 40049 | FBT14423L       | 40083 | <b>HTP Group MARS</b> |       | 029175-01  | 40918 |
| A000939               | 95735 | LA01AB022             | 40105 | 100060-03         | 40339 | 3CR2031   | 40067 | FBT14423R       | 40082 | 8221154               | 40381 | 029176-01  | 40919 |
| A000246               | 95737 | LA01AB026             | 40105 | 100060-19         | 40053 | 3CR2230   | 40069 | FBT14433L       | 40087 | <b>Lau MARS</b>       |       | 050998-01  | 40851 |
| A000110               | 95741 | LA01AB200             | 40105 | <b>Fasco MARS</b> |       | 3CR2233-4 | 40356 | FBT14433R       | 40086 | 008276-16             | 41533 | 052141-01  | 40850 |
| A000107               | 95742 | LA01AB203             | 40378 | H10               | 40006 | 3CR2426   | 40057 | FBT16423L       | 40089 | 008360-10             | 41509 | 270-069-01 | 40831 |
| A000237               | 95821 | LA01AB243             | 40387 | H5                | 40003 | 3CR2433   | 40059 | FBT16423R       | 40088 | 008360-12             | 41510 | 270-072-01 | 40832 |
| A000314               | 95822 | LA01AD021             | 40139 | H6                | 40004 | 3CR2433-4 | 40360 | FBT16433L       | 40093 | 008360-16             | 41511 | 270-089-12 | 40835 |
| A000199               | 95823 | LA01AD022             | 40110 | H8                | 40005 | 4CL1223   | 40082 | FBT16433R       | 40092 | 008360-16             | 41511 | 270-089-17 | 40834 |
| A000104               | 95831 | LA01AD027             | 40381 | STB1              | 40230 | 4CL1423   | 40083 | FBT18227L       | 40308 | 008361-12             | 41507 | 38-2086-01 | 40877 |
| A000178               | 95832 | LA01AD028             | 40389 | STB2              | 40232 | 4CL1433   | 40087 | FBT18227R       | 40044 | 008362-12             | 41508 | 38-2087-01 | 40878 |
| A000111               | 95841 | LA01AD030             | 40389 | STB3              | 40231 | 4CL1623   | 40089 | FBT18327L       | 40043 | 008403-16             | 41520 | 38-2091-01 | 40863 |
| A000108               | 95842 | LA01AD032             | 40120 | STB4              | 40234 | 4CL1633   | 40093 | FBT18327R       | 40043 | 008507-16             | 41514 | 38-2093-01 | 40879 |
| A000277               | 95865 | LA01AH243             | 40113 | STB5              | 40235 | 4CL1827   | 40097 | FBT18333L       | 40046 | 008519-12             | 41502 | 38-2094-01 | 40875 |
| A000603               | 95866 | LA01AT183             | 40095 | STB6              | 40237 | 4CL1830   | 40135 | FBT18333R       | 40045 | 008747-16             | 41525 | 38-2095-01 | 40908 |
| A000412               | 95875 | LA01AU183             | 40155 | STB7              | 40238 | 4CL1833   | 40099 | FBT18427L       | 40097 | 009867-16             | 41517 | 38-2096-01 | 40907 |
| A000811               | 95923 | LA01AX247             | 40145 | STB8              | 40239 | 4CL2026   | 40103 | FBT18427R       | 40096 | 013316-02             | 41333 | 38-2204-01 | 40876 |
| A000309               | 95931 | LA01EA025             | 40053 | STBP5             | 40240 | 4CL2029   | 40138 | FBT18430L       | 40135 | 013316-06             | 41332 | 38-2205-01 | 40906 |
| A001117               | 95932 | LA01EA031B            | 40069 | STBP6             | 40242 | 4CL2033   | 40105 | FBT18430R       | 40134 | 013317-01             | 41329 | 38-2206-01 | 40898 |
|                       |       | LA01EA03              |       |                   |       |           |       |                 |       |                       |       |            |       |

|            |       |            |       |            |       |                      |       |                     |       |                      |       |         |       |
|------------|-------|------------|-------|------------|-------|----------------------|-------|---------------------|-------|----------------------|-------|---------|-------|
| 38-2214-01 | 40805 | 60-2654-01 | 40029 | 60-5615-01 | 40164 | 60-8355-01           | 07484 | 6-4372              | 40045 | 701989704            | 40058 | 20234   | 40046 |
| 38-2215-01 | 40808 | 60-2655-01 | 40030 | 60-5616-01 | 40165 | 60-8362-01           | 07591 | 6-4376              | 40049 | 702185905            | 40308 | 20243   | 40047 |
| 38-2216-01 | 40809 | 60-2658-01 | 40033 | 60-5617-01 | 40166 | 60-8363-01           | 07592 | 6-4378              | 40067 | 702185906            | 40319 | 20264   | 40137 |
| 38-2217-01 | 40811 | 60-2659-01 | 40034 | 60-5619-01 | 40168 | 60-8366-01           | 07595 | 6-4380              | 40069 | 704203501            | 40138 | 20268   | 40103 |
| 38-2218-01 | 40812 | 60-2662-01 | 40037 | 60-5622-01 | 40144 | 60-8367-01           | 07596 | 6-4384              | 40057 | 7010132307           | 40052 | 20283   | 40049 |
| 38-2219-01 | 40813 | 60-2663-01 | 40038 | 60-5624-01 | 40113 | 60-8368-01           | 07593 | 6-4385              | 40058 | 7010132306           | 40320 | 20294   | 40104 |
| 38-2220-01 | 40814 | 60-2670-01 | 40047 | 60-5626-01 | 40115 | 60-8369-01           | 07594 | 6-4388              | 40082 | 7010132309           | 40315 | 20298   | 40138 |
| 38-2221-01 | 40815 | 60-2671-01 | 40048 | 60-6521-01 | 40408 | 60-8370-01           | 07595 | 6-4390              | 40086 |                      |       | 20313   | 40067 |
| 38-2222-01 | 40816 | 60-2693-01 | 40070 | 60-7161-01 | 40061 | 60-8371-01           | 07596 | 6-4391              | 40087 | <b>Springer MARS</b> |       | 20334   | 40105 |
| 38-2234-01 | 74173 | 60-2694-01 | 40071 | 60-7163-01 | 40029 | 60-8372-01           | 95721 | 6-4392              | 40088 | 17601025             | 40338 | 22274   | 40108 |
| 38-2235-01 | 74174 | 60-2853-01 | 40104 | 60-7164-01 | 40030 | 60-8373-01           | 95737 | 6-4393              | 40089 | 17601026             | 40053 | 22313   | 40053 |
| 38-2236-01 | 74175 | 60-2854-01 | 40105 | 60-7165-01 | 40033 | 60-8375-01           | 95737 | 6-4394              | 40092 | 17604220             | 40053 | 22364   | 40110 |
| 38-2237-01 | 74176 | 60-3315-01 | 40237 | 60-7166-01 | 40034 | 60-8376-01           | 95823 | 6-4395              | 40093 | <b>TORIN MARS</b>    |       | 24273   | 40057 |
| 38-2238-01 | 74177 | 60-3315-02 | 40238 | 60-7167-01 | 40035 | 60-8377-01           | 95831 | 6-4396              | 40096 | B-2026-4CCW          | 40102 | 24274   | 40114 |
| 38-2239-01 | 74178 | 60-3315-03 | 40239 | 60-7168-01 | 40036 | 60-8379-01           | 95931 | 6-4397              | 40097 | B-2029-4CCW          | 40138 | 24278   | 40115 |
| 38-2240-01 | 74179 | 60-3315-04 | 40230 | 60-7169-01 | 40063 | 60-8380-01           | 95021 | 6-4398              | 40134 | B-2227-4CW           | 40114 | 24344   | 40116 |
| 38-2241-01 | 74180 | 60-3315-05 | 40232 | 60-7171-01 | 40037 | 60-8381-01           | 95031 | 6-4400              | 40098 | B-2236-4CW           | 40110 | 26284   | 40119 |
| 38-2242-01 | 74181 | 60-3315-06 | 40231 | 60-7172-01 | 40038 | 60-8417-01           | 40384 | 6-4401              | 40099 | B-2427-3CW           | 40057 | 2700602 | 40043 |
| 38-2243-01 | 74182 | 60-3315-07 | 40234 | 60-7175-01 | 40070 | 60-9972-01           | 40395 | 6-4402              | 40102 | B-2427-4CCW          | 40115 | 2700612 | 40044 |
| 38-2244-01 | 74183 | 60-3315-08 | 40235 | 60-7176-01 | 40071 | 725138-08            | 40240 | 6-4403              | 40103 | B-2427-4CW           | 40117 | 2700642 | 40045 |
| 38-2245-01 | 74184 | 60-3315-09 | 40236 | 60-7177-01 | 40072 | 725138-10            | 40241 | 6-4404              | 40137 | B-2434-4CW           | 40116 | 2700652 | 40046 |
| 38-2246-01 | 74185 | 60-3795-01 | 93581 | 60-7178-01 | 40073 | 725138-12            | 40244 | 6-4406              | 40104 | B-2628-4CW           | 40119 | 2700662 | 40047 |
| 38-2247-01 | 74186 | 60-3795-02 | 93582 | 60-7179-01 | 40124 |                      |       | 6-4407              | 40105 | B-2727-3CCW          | 40058 | 2700682 | 40049 |
| 38-2248-01 | 74187 | 60-5553-01 | 40094 | 60-7181-01 | 40076 | <b>LENNOX MARS</b>   |       | 6-4408              | 40108 | N-1024-4CCW          | 40071 | 2700702 | 40067 |
| 38-2249-01 | 74188 | 60-5554-01 | 40095 | 60-7182-01 | 40077 | 65248500             | 40328 | 6-4409              | 40109 | N-1024-4CW           | 40070 | 2700722 | 40053 |
| 38-2250-01 | 74189 | 60-5555-01 | 40096 | 60-7183-01 | 40078 | 65257200             | 40072 | 6-4410              | 40139 | N-1027-4CCW          | 40073 | 2700762 | 40057 |
| 38-2272-01 | 40865 | 60-5556-01 | 40097 | 60-7184-01 | 40079 | 65258600             | 40033 | 6-4412              | 40114 | N-1027-4CW           | 40072 | 2700772 | 40058 |
| 38-2404-01 | 40867 | 60-5561-01 | 40043 | 60-7185-01 | 40128 | 65258700             | 40035 | 6-4413              | 40115 | N-1033-4CCW          | 40075 | 2700802 | 40096 |
| 38-2431-01 | 40897 | 60-5562-01 | 40044 | 60-7187-01 | 40082 | 100060-02            | 40382 | 6-4414              | 40116 | N-1033-4CW           | 40074 | 2700812 | 40097 |
| 38-2442-01 | 40868 | 60-5563-01 | 40065 | 60-7188-01 | 40083 | 100060-03            | 40339 | 6-4415              | 40117 | N-1223-4CCW          | 40077 | 2700822 | 40134 |
| 38-2443-01 | 40870 | 60-5564-01 | 40066 | 60-7189-01 | 40084 | 100060-04            | 40042 | 6-4416              | 40118 | N-1223-4CW           | 40076 | 2700832 | 40135 |
| 38-2443-02 | 40871 | 60-5565-01 | 40045 | 60-7190-01 | 40085 | 100060-05            | 40099 | 6-4418              | 40120 | N-1233-4CCW          | 40081 | 2700842 | 40098 |
| 38-2443-03 | 40872 | 60-5566-01 | 40046 | 60-7191-01 | 40130 | 100060-07            | 40339 | 6-4595              | 07481 | N-1233-4CW           | 40080 | 2700852 | 40099 |
| 38-2446-01 | 40806 | 60-5567-01 | 40049 | 60-7193-01 | 40088 | 100060-08            | 40097 | 6-4597              | 07581 | N-1423-4CCW          | 40083 | 2700862 | 40103 |
| 38-2449-01 | 40874 | 60-5568-01 | 40050 | 60-7194-01 | 40089 | 100060-09            | 40099 | 6-4598              | 07582 | N-1423-4CW           | 40082 | 2700882 | 40137 |
| 38-2450-01 | 40873 | 60-5569-01 | 40067 | 60-7195-01 | 40090 | 100060-10            | 40382 | 6-4601              | 07583 | N-1433-4CCW          | 40087 | 2700892 | 40138 |
| 38-2491-01 | 40900 | 60-5570-01 | 40068 | 60-7196-01 | 40091 | 100060-13            | 40107 | 6-4605              | 07591 | N-1433-4CW           | 40086 | 2700912 | 40138 |
| 38-2491-02 | 40901 | 60-5571-01 | 40051 | 60-7434-01 | 40300 | 16C0001              | 40057 | 6-4606              | 07592 | N-1623-4CCW          | 40089 | 2700922 | 40108 |
| 38-2491-03 | 40902 | 60-5572-01 | 40052 | 60-7599-01 | 40074 | 24L2001              | 40137 | 6-4609              | 07593 | N-1623-4CW           | 40088 | 2700942 | 40110 |
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| 38-2508-01 | 40804 | 60-5574-01 | 40054 | 60-7601-01 | 40080 | 32M9401              | 40382 | 6-4611              | 07595 | N-1633-4CW           | 40092 | 2700972 | 40115 |
| 38-2521-01 | 40904 | 60-5575-01 | 40055 | 60-7602-01 | 40081 | 33G0601              | 40100 | 6-4612              | 07596 | N-1827-3CCW          | 40044 | 2700982 | 40116 |
| 38-2523-01 | 40905 | 60-5576-01 | 40056 | 60-7603-01 | 40086 | 37L4801              | 40334 | 6-4941              | 40308 | N-1827-3CW           | 40043 | 2760212 | 40075 |
| 38-2562-01 | 40888 | 60-5577-01 | 40057 | 60-7604-01 | 40087 | 37L5001              | 40099 | 6-4942              | 40313 | N-1827-4CCW          | 40097 | 2760262 | 40080 |
| 38-2565-01 | 40884 | 60-5578-01 | 40058 | 60-7605-01 | 40092 | 43G3801              | 40108 | 6-4944              | 40320 | N-1827-4CW           | 40096 | 2760462 | 40119 |
| 38-2567-01 | 40880 | 60-5579-01 | 40059 | 60-7606-01 | 40093 | 45C5101              | 40114 | 6-5737              | 40143 | N-1830-4CCW          | 40135 | 2760682 | 40074 |
| 38-2568-01 | 40881 | 60-5580-01 | 40060 | 60-7607-01 | 40145 | 45F5801              | 40380 | <b>Modine MARS</b>  |       | N-1830-4CW           | 40134 | 2760702 | 40076 |
| 38-2569-01 | 40882 | 60-5581-01 | 40096 | 60-7608-01 | 40146 | 54G3001              | 40112 | 5H57845C0104        | 40033 | N-1832-4CCW          | 40099 | 2760712 | 40077 |
| 38-2570-01 | 40883 | 60-5582-01 | 40097 | 60-7609-01 | 40118 | 56L7201              | 40359 | 5H57847C0104        | 40082 | N-1832-4CW           | 40098 | 2760732 | 40081 |
| 38-2588-01 | 40885 | 60-5583-01 | 40134 | 60-7610-01 | 40119 | 65C6801              | 40358 | 5H57847C0104        | 40082 | N-1834-3CW           | 40045 | 2760742 | 40082 |
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| 38-2602-02 | 40809 | 60-5587-01 | 40102 | 60-7615-01 | 40172 | 68J4301              | 40107 | 5H63039B0104        | 40375 | N-2028-3CW           | 40049 | 2760782 | 40088 |
| 38-2603-01 | 40811 | 60-5588-01 | 40103 | 60-7658-01 | 40002 | 72H2901              | 40068 | 5H63980C0104        | 40069 | N-2031-3CW           | 40067 | 2760792 | 40089 |
| 38-2603-02 | 40812 | 60-5589-01 | 40137 | 60-7658-02 | 40003 | 72L9201              | 40352 | 5H73833B0101        | 40061 | N-2033-4CCW          | 40105 | 2760802 | 40092 |
| 38-2604-01 | 40813 | 60-5590-01 | 40138 | 60-7658-03 | 40004 | 93G9001              | 40389 | 5H73834B0104        | 40031 | N-2033-4CW           | 40104 | 2760812 | 40093 |
| 38-2605-01 | 40815 | 60-5591-01 | 40104 | 60-7658-04 | 40005 | 95C5901              | 40375 | 5H73835B0101        | 40033 | N-2231-3CW           | 40053 | 2760822 | 40104 |
| 38-2605-02 | 40816 | 60-5592-01 | 40105 | 60-7658-05 | 40006 | 98G5201              | 40101 | 5H73835B0104        | 40033 |                      | 40074 | 2760832 | 40105 |
| 38-2606-01 | 40817 | 60-5593-01 | 40108 | 60-7658-06 | 40007 | 99K2101              | 40033 | 5H73840B0104        | 40378 |                      | 10334 |         |       |
| 38-2606-02 | 40818 | 60-5594-01 | 40109 | 60-7725-01 | 40308 | 99K4501              | 40057 | <b>NORDYNE MARS</b> |       | 10338                | 40075 |         |       |
| 38-2616-01 | 40818 | 60-5595-01 | 40110 | 60-7726-01 | 40315 | P-8-11098            | 40102 | 667303              | 40057 | 12234                | 40076 |         |       |
| 38-2617-01 | 40820 | 60-5596-01 | 40111 | 60-7727-01 | 40317 | P-8-8038             | 40137 | 667309              | 40375 | 12334                | 40080 |         |       |
| 38-2630-01 | 74169 | 60-5597-01 | 40114 | 60-8002-01 | 40094 | <b>Magnetek MARS</b> |       | 667323              | 40100 | 12338                | 40081 |         |       |
| 38-2631-01 | 74170 | 60-5598-01 | 40115 | 60-8003-01 | 40095 | 1-0315               | 41130 | 667355              | 40049 | 14234                | 40082 |         |       |
| 38-2632-01 | 74171 | 60-5599-01 | 40116 | 60-8004-01 | 40100 | 1-0439               | 41123 | 667356              | 40349 | 14238                | 40083 |         |       |
| 38-2633-01 | 74172 | 60-5600-01 | 40117 | 60-8005-01 | 40101 | 1-14721              | 41116 | 667359              | 40358 | 14334                | 40086 |         |       |
| 38-2693-01 | 40909 | 60-5601-01 | 40150 | 60-8041-01 | 40106 | 1-2640               | 41335 | 6672780             | 40067 | 14338                | 40087 |         |       |
| 38-2694-01 | 40889 | 60-5602-01 | 40151 | 60-8042-01 | 40107 | 1-2657               | 41109 | 6672790             | 40049 | 16234                | 40088 |         |       |
| 38-2695-01 | 40890 | 60-5603-01 | 40152 | 60-8043-01 | 40112 | 1-2873               | 41110 | 6672820             | 40102 | 16238                | 40089 |         |       |
| 38-2696-01 | 40891 | 60-5604-01 | 40153 | 60-8044-01 | 40113 | 2-0223               | 41105 | 6673180             | 40376 | 16334                | 40092 |         |       |
| 38-2697-01 | 40892 | 60-5605-01 | 40154 | 60-8142-01 | 40320 | 2-0600               | 41114 | 667206D             | 40103 | 16338                | 40093 |         |       |
| 60-2622-01 | 40076 | 60-5606-01 | 40155 | 60-8329-01 | 40200 | 2-0678               | 41115 | 667212C             | 40359 | 18273                | 40043 |         |       |
| 60-2623-01 | 40077 | 60-5607-01 | 40156 | 60-8330-01 | 40202 | 6-4328               | 40074 | 667212D             | 40359 | 18274                | 40096 |         |       |
|            |       |            |       |            |       |                      |       |                     |       |                      |       |         |       |

## airMARS Special Orders

Special order requirements can be a way to provide an extra level of service to your customers. Motors & Armatures Inc. encourages our wholesale customers to take advantage of the opportunity to place special orders for airMARS products that are not in this catalog.

Special orders are processed as separate production runs by the factory. A minimum quantity will always be required. In most cases, the minimum will be 25 pieces. Because special orders are non-stock items, once ordered they are non-cancellable. Also, special orders are not returnable.

Quotes normally take 3 to 4 working days to process. Following is check list for various airMARS components.

### Direct Drive Wheels

- Diameter
- Width
- Material (aluminum, steel?)
- Rotation
- Type of hub & bore
- Finish (galvanized, paint?)
- Assembly (housing?)
- Construction (strip or tablock?)

### Small Blower Wheels

- Diameter
- Width
- Bore
- Material (Aluminum Steel, etc.)
- Single or Double Inlet?
- Construction
- Assembly
- Back Plate Configuration

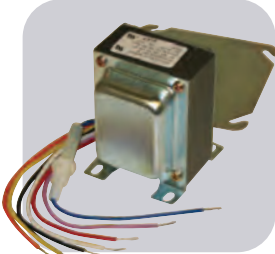
### Fan Blades

- Diameter
- Pitch
- Number of Wings
- Material
- Hub Type (attached, adapter, bushing?)
- Bore
- Construction

### Important Note:

*Because special orders cannot be returned, it is highly recommended that your customer signs off on the check list specifications before the order is entered with the factory.*

# Components



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| Description                               | Page No.          |
|---|-------------------|
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## Electrolytic Capacitors for Motor Starting Applications

Start capacitor case dimensions chart. Capacitor accessories on page C-9.

### Features:

- The largest assortment of replacements in the industry!
- Smallest dimensions for general replacements.
- Hermetically sealed black Bakelite case permanently protects the capacitor from oil, dirt, grease or moisture.
- New and improved terminal construction capable of withstanding increased heat. This terminal will generate less heat when applied under severe hot humid environment.
- 50/60 Hz
- UL/ULc



### 110/125 Dual Voltage AC

| MARS NO. | MICROFARAD MIN - MAX. | CASE SIZE |
|----------|-----------------------|-----------|
| 11002    | 21-25                 | 1         |
| 11003    | 25-30                 | 1         |
| 11004    | 30-36                 | 1         |
| 11005    | 36-43                 | 1         |
| 11006    | 43-56                 | 1         |
| 11007    | 56-72                 | 1         |
| 11008    | 72-88                 | 1         |
| 11009    | 88-108                | 1         |
| 11010    | 108-130               | 1         |
| 11112    | 124-156               | 1         |
| 11011    | 130-156               | 1         |
| 11013    | 145-175               | 1         |
| 11014    | 161-193               | 1         |
| 11015    | 189-227               | 1         |
| 11016    | 200-240               | 1         |
| 11017    | 216-259               | 1         |
| 11018    | 233-292               | 1         |
| 11019    | 270-324               | 1         |
| 11020    | 300-360               | 1         |
| 11021    | 324-388               | 1         |
| 11022    | 340-408               | 2         |
| 11023    | 378-440               | 2         |
| 11024    | 400-480               | 2         |
| 11071    | 430-516               | 2         |
| 11025    | 460-552               | 2         |
| 11026    | 540-648               | 4         |
| 11027    | 590-708               | 4         |
| 11047    | 645-774               | 4         |
| 11028    | 708-850               | 4         |
| 11072    | 815-970               | 4         |
| 11029    | 829-995               | 4         |
| 11073    | 850-1020              | 4         |
| 11030    | 1000-1200             | 7         |
| 11074    | 1290-1548             | 7         |

MARS suggests applying a bleed resistor (MARS PN 93007) on start capacitors used in conjunction with starting relays

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

### 165 Volts AC

| MARS NO. | MICROFARAD MIN - MAX. | CASE SIZE |
|----------|-----------------------|-----------|
| 11075    | 72-88                 | 1         |
| 11076    | 88-108                | 1         |
| 11077    | 108-130               | 1         |
| 11031    | 124-149               | 1         |
| 11032    | 145-175               | 1         |
| 11033    | 161-193               | 1         |
| 11034    | 189-227               | 1         |
| 11078    | 216-259               | 4         |
| 11035    | 233-292               | 4         |
| 11036    | 270-324               | 4         |
| 11079    | 340-408               | 4         |
| 11080    | 378-455               | 4         |
| 11037    | 400-480               | 4         |
| 11081    | 540-648               | 4         |
| 11082    | 710-850               | 7         |
| 11083    | 810-972               | 7         |

### 220/250 Dual Voltage AC

| MARS NO. | MICROFARAD MIN - MAX. | CASE SIZE |
|----------|-----------------------|-----------|
| 11038    | 21-25                 | 1         |
| 11039    | 25-30                 | 1         |
| 11040    | 30-36                 | 1         |
| 11041    | 36-43                 | 1         |
| 11042    | 43-56                 | 1         |
| 11043    | 56-72                 | 1         |
| 11084    | 59-71                 | 1         |
| 11137    | 64-77                 | 4         |
| 11044    | 72-88                 | 4         |
| 11045    | 88-108                | 4         |
| 11046    | 108-130               | 4         |
| 11148    | 124-156               | 4         |
| 11049    | 145-175               | 4         |
| 11050    | 161-193               | 6         |
| 11051    | 189-227               | 6         |
| 11052    | 216-259               | 6         |
| 11053    | 233-292               | 6         |
| 11054    | 270-324               | 6         |
| 11085    | 280-336               | 7         |
| 11086    | 320-384               | 7         |
| 11087    | 340-408               | 7         |
| 11088    | 378-455               | 7         |
| 11089    | 400-480               | 7         |
| 11090    | 430-516               | 7         |
| 11091    | 630-750               | 8         |

### 330 Volts AC

| MARS NO. | MICROFARAD MIN - MAX. | CASE SIZE |
|----------|-----------------------|-----------|
| 11055    | 21-25                 | 2         |
| 11056    | 25-30                 | 2         |
| 11057    | 30-36                 | 2         |
| 11058    | 36-43                 | 2         |
| 11059    | 43-56                 | 4         |
| 11060    | 56-72                 | 4         |
| 11160    | 64-77                 | 4         |
| 11061    | 72-88                 | 4         |
| 11062    | 88-108                | 4         |
| 11063    | 108-130               | 7         |
| 11064    | 130-156               | 7         |
| 11165    | 124-156               | 7         |
| 11092    | 135-162               | 7         |
| 11066    | 145-175               | 7         |
| 11067    | 161-193               | 7         |
| 11068    | 189-227               | 7         |
| 11069    | 216-259               | 7         |
| 11070    | 270-324               | 7         |
| 11093    | 300-360               | 7         |

# Turbo Products

## The Turbo Family of Products

### Turbo Family of Products

- Truly Universal Capacitors
- Made in the USA
- Filled with a thick non-PCB dielectric fluid to reduce heat
- Rust free all brass terminals
- 5 Year warranty (3 year warranty on 12700)

### Turbo 200® & Turbo 200®X with CPT®

- Turbo 200® replaces over 200 single or dual values from 2.5 to 67.5 MFD
- Turbo 200®X replaces any of the higher range single or dual capacitors used in scroll compressors and higher efficiency A/C units, values from 5 to 97.5 MFD
- CPT® acts as a kill switch between the hard-start and compressor in the event of a failed run capacitor, preventing damage and possible compressor failure
- Each Turbo 200® and 200X are individually tested and labeled with exact MFD ratings at completion of manufacturing

### Turbo Easy-Start® Hardstart with CPT® Fuse Wire

- Replaces 4 commonly used hard start kits up to 5 tons
- 12600 has a built-in potential relay
- 12700 has an external potential relay
- CPT® Fuse Wire cuts off the motor-start capacitor from AC compressor within 3 seconds of a relay failure, preventing costly damage

### Turbo 200® Mini & Mini-Oval

- A permanent replacement run capacitor for fan size values 2.5 MFD to 15 MFD

### Turbolytic® 50 & Turbolytic® JR

- Turbolytic® 50 is a motor start capacitor that can replace any of the most popular values up to 324 MFD
- The JR is a more compact version that offers combined values up to 227 MFD

| MARS NO. | DESCRIPTION   | MICROFARAD   | VOLTAGE      |
|----------|---|--|--------------|
| 12100    | Turbo 200® Mini   | 2.5 MFD - 15 MFD   | 370V or 440V |
| 12500    | Turbo 200® Mini - Oval  | 2.5 MFD - 15 MFD   | 370V or 440V |
| 12200    | Turbo 200®  | 2.5 MFD - 67.5 MFD   | 370V or 440V |
| 12300    | Turbo 200®X   | 5.0 MFD - 97.5 MFD   | 370V or 440V |
| 11200    | Turbolytic® 50  | 23 MFD - 302 MFD   | 125V to 330V |
| 11100    | Turbolytic® JR  | 23 MFD - 208 MFD   | 125V to 330V |
| 12600    | Turbo Easy-Start® 5 with CPT® Fuse Wire for protection against relay failure                                  | Up to 1 ton<br>108 - 130 MFD<br>1 to 2 tons<br>189 - 227 MFD<br>2.5 to 3 tons<br>233 - 280 MFD<br>3.5 to 5 tons<br>270 - 324 MFD | Up to 330V   |
| 12700    | Turbo Easy-Start® 5 EXT with External Potential Relay and CPT® Fuse Wire for protection against relay failure | Up to 1 ton<br>108 - 130 MFD<br>1 to 2 tons<br>189 - 227 MFD<br>2.5 to 3 tons<br>233 - 280 MFD<br>3.5 to 5 tons<br>270 - 324 MFD | Up to 330V   |



## MARS Capacitor Tester

### Features:

- Easy to use
- 9V battery and test leads included
- Low battery indicator

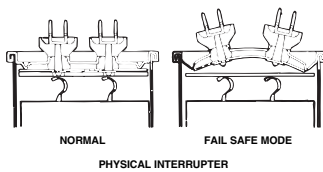
| MARS NO. | RANGE   | RESOLUTION           | ACCURACY                      | TEST FREQUENCY |
|----------|---------|----------------------|-------------------------------|----------------|
| 65746    | 200 pF  | 0, 1pF               | ± (0.5% rdg + 1 dgt + 0.5 pF) | 820Hz          |
|          | 2000 pF | 1 pF                 |                               |                |
|          | 20 nF   | 10 pF                | ± (0.5% rdg + 1 dgt)          |                |
|          | 200 nF  | 100 pF               |                               |                |
|          | 2 nF    | 1 nF                 |                               |                |
|          | 20 μF   | 10 nF                |                               |                |
| 200 μF   | -100 nF | ± (2.0% rdg. + 1dgt) | 82 Hz                         |                |
| 2000 μF  | 1 μF    |                      |                               |                |
|          | 20 mF   | 10 μF                | ± (4.0% rdg. + 1dgt)          | 8.2 Hz         |

## Single Section Run Capacitors

Capacitor accessories on page C-9.

### Features:

- MARS offers the widest selection of ratings in the industry
- Non-PCB capacitors
- Physical interrupter makes our capacitors safe
- Perfect for general replacements—smallest dimensions available
- UL and CSA listings available
- 50/60 Hz



## Single Section 370 Volt Oval

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12002    | 2          | A    | 1.500      |
| 12003    | 3          | A    | 1.500      |
| 12004    | 4          | A    | 1.500      |
| 12005    | 5          | A    | 1.500      |
| 12006    | 6          | A    | 1.500      |
| 12007    | 7.5        | A    | 2.375      |
| 12008    | 10         | A    | 2.625      |
| 12009    | 12.5       | A    | 3.000      |
| 12010    | 15         | A    | 3.750      |
| 12012    | 17.5       | A    | 3.750      |
| 12014    | 20         | C    | 2.375      |
| 12015    | 25         | C    | 2.625      |
| 12017    | 30         | C    | 2.625      |
| 12018    | 35         | C    | 3.000      |
| 12021    | 40         | C    | 3.750      |
| 12023    | 45         | C    | 3.750      |
| 12025    | 50         | C    | 3.750      |
| 12024    | 55         | C    | 4.250      |
| 12087    | 60         | C    | 4.750      |
| 12011    | 65         | C    | 4.750      |
| 12089    | 70         | C    | 4.750      |
| 12090    | 80         | D    | 3.750      |

## Single Section 370 Volt Round

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12092    | 2          | M    | 2.000      |
| 12093    | 3          | M    | 2.000      |
| 12094    | 4          | M    | 2.000      |
| 12095    | 5          | M    | 2.000      |
| 12096    | 6          | M    | 2.000      |
| 12097    | 7.5        | M    | 2.000      |
| 12098    | 10         | M    | 2.000      |
| 12099    | 12.5       | M    | 2.000      |
| 12210    | 15         | M    | 2.375      |
| 12211    | 16         | M    | 2.375      |
| 12212    | 17.5       | M    | 2.375      |
| 12214    | 20         | M    | 2.625      |
| 12215    | 25         | M    | 3.000      |
| 12217    | 30         | M    | 3.000      |
| 12218    | 35         | M    | 3.750      |
| 12221    | 40         | M    | 3.750      |
| 12223    | 45         | N    | 3.375      |
| 12225    | 50         | N    | 3.750      |
| 12226    | 55         | N    | 3.750      |
| 12227    | 60         | N    | 4.750      |
| 12128    | 65         | N    | 4.750      |
| 12229    | 70         | N    | 4.750      |
| 12199    | 80         | N    | 4.750      |
| 12116    | 100        | P    | 4.750      |

## Single Section 440/370 Volt Oval

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12026    | 2          | A    | 1.500      |
| 12019    | 2.5        | A    | 1.500      |
| 12027    | 3          | A    | 2.000      |
| 12028    | 4          | A    | 2.000      |
| 12029    | 5          | A    | 2.375      |
| 12030    | 6          | A    | 2.375      |
| 12031    | 7.5        | A    | 2.625      |
| 12032    | 10         | A    | 3.750      |
| 12033    | 12.5       | A    | 3.750      |
| 12034    | 15         | C    | 2.375      |
| 12036    | 17.5       | C    | 2.375      |
| 12037    | 20         | C    | 2.625      |
| 12040    | 25         | C    | 3.000      |
| 12041    | 30         | C    | 3.750      |
| 12043    | 35         | C    | 3.750      |
| 12045    | 40         | C    | 4.750      |
| 12048    | 45         | C    | 4.750      |
| 12049    | 50         | C    | 4.750      |
| 12050    | 55         | C    | 4.750      |
| 12051    | 60         | D    | 3.750      |
| 12052    | 65         | D    | 3.750      |
| 12130    | 70         | D    | 3.750      |
| 12135    | 75         | D    | 3.750      |
| 12140    | 80         | D    | 4.750      |

## Single Section 440/370 Volt Round

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12102    | 2          | M    | 2.000      |
| 12103    | 3          | M    | 2.000      |
| 12104    | 4          | M    | 2.000      |
| 12105    | 5          | M    | 2.000      |
| 12106    | 6          | M    | 2.000      |
| 12107    | 7.5        | M    | 2.000      |
| 12232    | 10         | M    | 2.375      |
| 12233    | 12.5       | M    | 2.375      |
| 12234    | 15         | M    | 2.625      |
| 12236    | 17.5       | M    | 2.750      |
| 12237    | 20         | M    | 3.000      |
| 12240    | 25         | M    | 3.750      |
| 12241    | 30         | N    | 3.375      |
| 12243    | 35         | N    | 3.750      |
| 12245    | 40         | N    | 3.750      |
| 12248    | 45         | N    | 4.750      |
| 12251    | 50         | P    | 3.375      |
| 12252    | 55         | P    | 3.750      |
| 12254    | 60         | P    | 3.750      |
| 12357    | 65         | P    | 3.750      |
| 12258    | 70         | P    | 4.750      |
| 12259    | 80         | P    | 4.750      |
| 12068    | 90         | P    | 4.750      |

# Motor Run Capacitors

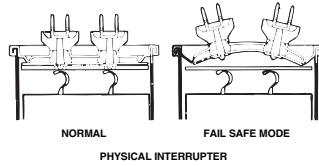
## Dual Section Motor Run Capacitors

Dual section run capacitors are used primarily to serve two microfarad applications. They can, however, by making various combinations of parallel connections, be used to obtain many other microfarad ratings.

Capacitor accessories on page C-9.

**Features:**

- MARS offers the widest selections of ratings in the industry
- Non-PCB capacitors
- Physical interrupter makes our capacitors safe
- Perfect for general replacements—smallest dimensions available
- UL and CSA listings available
- 50/60 Hz



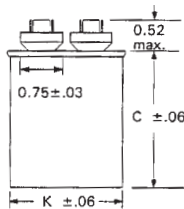
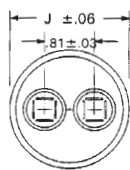
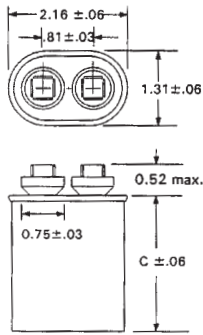
## Dual Section 370 Volt Oval

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12141    | 15/3       | C    | 2.625      |
| 12056    | 15/4       | C    | 2.625      |
| 12057    | 15/5       | C    | 2.625      |
| 12058    | 15/10      | C    | 3.000      |
| 12059    | 17.5/4     | C    | 2.375      |
| 12060    | 17.5/5     | C    | 2.375      |
| 12061    | 20/3       | C    | 2.625      |
| 12062    | 20/4       | C    | 2.625      |
| 12063    | 20/5       | C    | 2.625      |
| 12064    | 20/10      | C    | 2.625      |
| 12164    | 20/15      | C    | 4.750      |
| 12142    | 25/3       | C    | 2.625      |
| 12065    | 25/4       | C    | 2.625      |
| 12066    | 25/5       | C    | 2.625      |
| 12143    | 25/7.5     | C    | 2.625      |
| 12131    | 25/8       | C    | 3.000      |
| 12167    | 25/10      | C    | 3.000      |
| 12133    | 25/15      | C    | 3.000      |
| 12144    | 30/3       | C    | 3.000      |
| 12145    | 30/4       | C    | 3.000      |
| 12069    | 30/5       | C    | 3.000      |
| 12146    | 30/7.5     | C    | 3.000      |
| 12147    | 30/10      | C    | 3.375      |
| 12148    | 35/3       | C    | 3.000      |
| 12071    | 35/4       | C    | 3.750      |
| 12072    | 35/5       | C    | 3.750      |
| 12149    | 35/7.5     | C    | 3.000      |
| 12150    | 35/10      | C    | 3.750      |
| 12151    | 40/3       | C    | 3.750      |
| 12158    | 40/4       | C    | 3.750      |
| 12171    | 40/5       | C    | 3.750      |
| 12152    | 40/7.5     | C    | 3.750      |
| 12134    | 40/10      | C    | 3.750      |
| 12173    | 45/3       | C    | 3.750      |
| 12174    | 45/5       | C    | 3.750      |
| 12153    | 45/7.5     | C    | 3.750      |
| 12136    | 45/10      | C    | 4.750      |
| 12137    | 45/15      | C    | 4.750      |
| 12138    | 50/5       | C    | 4.750      |
| 12154    | 55/5       | C    | 4.750      |
| 12155    | 55/7.5     | C    | 4.750      |
| 12139    | 60/5       | D    | 4.750      |
| 12156    | 60/7.5     | C    | 4.750      |
| 12157    | 60/10      | C    | 4.750      |
| 12159    | 65/5       | D    | 4.750      |
| 12163    | 80/5       | D    | 4.750      |
| 12123    | 80/7.5     | D    | 4.750      |

## Dual Section 370 Volt Round

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12121    | 15/3       | N    | 3.125      |
| 12122    | 15/4       | N    | 3.125      |
| 12203    | 15/5       | N    | 3.125      |
| 12204    | 15/10      | N    | 3.125      |
| 12205    | 17.5/4     | N    | 3.125      |
| 12206    | 17.5/5     | N    | 3.125      |
| 12207    | 20/4       | N    | 3.125      |
| 12260    | 20/5       | N    | 3.125      |
| 12016    | 20/7.5     | N    | 3.125      |
| 12208    | 20/10      | N    | 3.125      |
| 12209    | 20/15      | N    | 3.125      |
| 12242    | 25/3       | N    | 3.125      |
| 12175    | 25/4       | N    | 3.125      |
| 12261    | 25/5       | N    | 3.125      |
| 12262    | 25/7.5     | N    | 3.125      |
| 12213    | 25/10      | N    | 3.125      |
| 12244    | 30/3       | N    | 3.125      |
| 12263    | 30/4       | N    | 3.125      |
| 12264    | 30/5       | N    | 3.125      |
| 12224    | 30/7.5     | N    | 3.125      |
| 12228    | 30/10      | N    | 3.125      |
| 12039    | 30/15      | N    | 3.875      |
| 12082    | 35/3       | N    | 3.875      |
| 12231    | 35/4       | N    | 3.125      |
| 12266    | 35/5       | N    | 3.875      |
| 12235    | 35/7.5     | N    | 3.125      |
| 12238    | 35/10      | N    | 3.875      |
| 12074    | 40/3       | N    | 3.875      |
| 12267    | 40/4       | N    | 3.875      |
| 12178    | 40/5       | N    | 3.875      |
| 12268    | 40/7.5     | N    | 3.875      |
| 12246    | 40/10      | N    | 3.875      |
| 12073    | 45/3       | N    | 3.875      |
| 12247    | 45/4       | N    | 3.875      |
| 12269    | 45/5       | P    | 3.875      |
| 12249    | 45/7.5     | N    | 3.875      |
| 12250    | 45/10      | N    | 3.875      |
| 12075    | 50/3       | P    | 3.125      |
| 12191    | 50/5       | N    | 3.875      |
| 12192    | 50/7.5     | P    | 3.125      |
| 12239    | 50/10      | P    | 3.875      |
| 12193    | 55/5       | N    | 4.75       |
| 12194    | 55/7.5     | N    | 4.75       |
| 12067    | 55/10      | N    | 4.75       |
| 12076    | 60/3       | P    | 3.875      |
| 12195    | 60/5       | P    | 3.875      |
| 12196    | 60/7.5     | N    | 4.75       |
| 12265    | 60/10      | P    | 3.125      |
| 12042    | 65/5       | N    | 4.75       |
| 12053    | 70/5       | P    | 3.875      |
| 12054    | 70/7.5     | P    | 3.875      |
| 12055    | 70/10      | P    | 3.875      |
| 12044    | 75/5       | P    | 3.875      |
| 12046    | 75/7.5     | P    | 3.875      |
| 12084    | 75/10      | P    | 3.875      |
| 12197    | 80/5       | P    | 3.875      |
| 12198    | 80/7.5     | P    | 3.875      |
| 12201    | 80/10      | P    | 3.875      |
| 12202    | 80/12.5    | P    | 4.75       |
| 12129    | 85/5       | P    | 4.75       |
| 12230    | 85/7.5     | P    | 4.75       |
| 12222    | 85/10      | P    | 4.75       |

Dual Section Motor Run Capacitors



Dual Section 440/370 Volt Oval

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12360    | 5/5        | C    | 2.625      |
| 12165    | 10/5       | C    | 3.125      |
| 12170    | 10/10      | C    | 3.125      |
| 12270    | 15/4       | C    | 2.625      |
| 12271    | 15/5       | C    | 2.625      |
| 12177    | 15/10      | C    | 3.750      |
| 12180    | 20/5       | C    | 3.375      |
| 12083    | 20/15      | D    | 3.000      |
| 12184    | 25/5       | D    | 3.000      |
| 12182    | 25/7.5     | C    | 3.750      |
| 12183    | 25/10      | C    | 3.750      |
| 12186    | 25/15      | D    | 3.000      |
| 12181    | 30/4       | C    | 3.750      |
| 12187    | 30/5       | D    | 3.750      |
| 12038    | 30/7.5     | C    | 3.750      |
| 12035    | 30/10      | C    | 3.750      |
| 12085    | 35/3       | C    | 4.750      |
| 12179    | 35/4       | C    | 3.750      |
| 12185    | 35/5       | C    | 4.750      |
| 12188    | 35/7.5     | C    | 3.750      |
| 12176    | 35/8.5     | C    | 3.750      |
| 12272    | 35/10      | C    | 4.750      |
| 12080    | 40/3       | C    | 4.750      |
| 12086    | 40/5       | C    | 4.750      |
| 12189    | 40/7.5     | C    | 4.750      |
| 12273    | 40/10      | C    | 4.750      |
| 12190    | 45/5       | D    | 4.750      |
| 12274    | 45/7.5     | C    | 4.750      |
| 12108    | 50/5       | D    | 4.750      |
| 12013    | 50/7.5     | C    | 4.750      |
| 12275    | 55/5       | D    | 4.750      |
| 12276    | 55/10      | D    | 4.750      |
| 12109    | 60/5       | D    | 4.750      |
| 12110    | 60/7.5     | D    | 4.750      |
| 12101    | 65/10      | D    | 4.750      |
| 12297    | 80/5       | D    | 5.750      |
| 12298    | 80/7.5     | D    | 5.750      |

Dual Section 440/370 Volt Round

| MARS NO. | MICROFARAD | BASE | HEIGHT IN. |
|----------|------------|------|------------|
| 12111    | 10/5       | N    | 3.125      |
| 12118    | 15/5       | N    | 3.125      |
| 12356    | 15/10      | N    | 3.125      |
| 12350    | 17.5/5     | N    | 3.125      |
| 12115    | 20/5       | N    | 3.125      |
| 12354    | 20/7.5     | N    | 3.125      |
| 12351    | 20/10      | N    | 3.875      |
| 12112    | 20/15      | N    | 3.875      |
| 12353    | 25/3       | N    | 3.875      |
| 12355    | 25/4       | N    | 3.875      |
| 12278    | 25/5       | N    | 3.875      |
| 12279    | 25/7.5     | N    | 3.875      |
| 12113    | 25/10      | N    | 3.625      |
| 12114    | 25/15      | N    | 3.875      |
| 12126    | 30/3       | N    | 3.875      |
| 12120    | 30/4       | N    | 3.875      |
| 12281    | 30/5       | N    | 3.875      |
| 12282    | 30/7.5     | N    | 3.875      |
| 12352    | 30/10      | N    | 4.750      |
| 12077    | 35/3       | N    | 3.875      |
| 12070    | 35/4       | N    | 3.875      |
| 12283    | 35/5       | N    | 3.875      |
| 12119    | 35/6       | N    | 4.750      |
| 12284    | 35/7.5     | P    | 3.875      |
| 12091    | 35/10      | N    | 4.750      |
| 12078    | 40/3       | P    | 3.125      |
| 12285    | 40/4       | P    | 3.125      |
| 12286    | 40/5       | P    | 3.125      |
| 12220    | 40/6       | N    | 4.750      |
| 12287    | 40/7.5     | P    | 3.875      |
| 12088    | 40/10      | N    | 4.750      |
| 12079    | 45/3       | P    | 3.875      |
| 12219    | 45/4       | N    | 3.750      |
| 12288    | 45/5       | P    | 3.875      |
| 12127    | 45/6       | N    | 4.750      |
| 12289    | 45/7.5     | N    | 3.875      |
| 12172    | 45/10      | P    | 3.875      |
| 12290    | 50/5       | P    | 3.875      |
| 12291    | 50/7.5     | P    | 3.875      |
| 12124    | 50/10      | P    | 3.875      |
| 12253    | 50/12.5    | P    | 3.875      |
| 12292    | 55/5       | P    | 3.875      |
| 12293    | 55/7.5     | P    | 3.875      |
| 12299    | 55/10      | P    | 3.875      |
| 12160    | 60/3       | P    | 4.750      |
| 12294    | 60/5       | P    | 3.875      |
| 12295    | 60/7.5     | P    | 3.875      |
| 12296    | 60/10      | P    | 3.875      |
| 12161    | 60/12.5    | P    | 4.750      |
| 12358    | 65/5       | P    | 4.750      |
| 12359    | 65/7.5     | P    | 4.750      |
| 12162    | 65/10      | P    | 4.750      |
| 12255    | 70/5       | P    | 4.750      |
| 12166    | 70/7.5     | P    | 4.750      |
| 12169    | 70/10      | P    | 4.750      |
| 12168    | 75/5       | P    | 4.750      |
| 12125    | 75/7.5     | P    | 4.750      |
| 12047    | 75/10      | P    | 4.750      |
| 12257    | 80/5       | P    | 4.875      |
| 12216    | 80/7.5     | P    | 4.750      |
| 12117    | 80/10      | P    | 4.750      |
| 12022    | 85/5       | P    | 4.750      |
| 12020    | 85/7.5     | P    | 4.750      |
| 12001    | 85/10      | P    | 4.750      |

Capacitor Base Dimensions

Base Dimension Key - Oval

| KEY | WIDTH | LENGTH | DESCRIPTION   |
|-----|-------|--------|---------------|
| A   | 1.31  | 2.16   | oval fan size |
| C   | 1.91  | 2.91   | oval          |
| D   | 1.97  | 3.66   | oval          |

Base Dimension Key - Round

| KEY | WIDTH | MOUNTING STRAP |
|-----|-------|----------------|
| M   | 1.75  | 93031          |
| N   | 2.00  | 93032          |
| P   | 2.50  | 93033          |



# USA Motor Run Capacitors

## MARS USA Capacitors

### Features:

- Product of USA
- Tested and approved by every major US motor company and compressor company
- 440/370 Dual Voltage Rated
- Non-PCB capacitors
- Physical interrupter makes our capacitors safe
- Meets EIA-456A Test Standard (simulates 60,000 hours of operation)
- Meets Tecumseh H-115
- OEM Grade
- CSA approved and UL recognized
- 5 year warranty



### Single Section 370 Volt Oval

| MARS USA NO. | DESCRIPTION       | BASE HEIGHT |
|--------------|-------------------|-------------|
| 14002        | 2 MFD 370V OVL    | A 1.50      |
| 14003        | 3 MFD 370V OVL    | A 1.50      |
| 14004        | 4 MFD 370V OVL    | A 1.50      |
| 14005        | 5 MFD 370V OVL    | A 1.50      |
| 14006        | 6 MFD 370V OVL    | A 1.50      |
| 14007        | 7.5 MFD 370V OVL  | A 2.38      |
| 14008        | 10 MFD 370V OVL   | A 2.63      |
| 14009        | 12.5 MFD 370V OVL | A 3.00      |
| 14010        | 15 MFD 370V OVL   | A 3.75      |
| 14012        | 17.5 MFD 370V OVL | A 3.75      |
| 14014        | 20 MFD 370V OVL   | C 2.38      |
| 14015        | 25 MFD 370V OVL   | C 2.63      |
| 14017        | 30 MFD 370V OVL   | C 2.63      |
| 14018        | 35 MFD 370V OVL   | C 3.00      |
| 14021        | 40 MFD 370V OVL   | C 3.75      |
| 14023        | 45 MFD 370V OVL   | C 3.75      |
| 14025        | 50 MFD 370V OVL   | C 3.75      |
| 14024        | 55 MFD 370V OVL   | C 4.25      |
| 14087        | 60 MFD 370V OVL   | C 4.75      |
| 14089        | 70 MFD 370V OVL   | C 4.75      |
| 14090        | 80 MFD 370V OVL   | D 3.75      |

### Single Section 370 Volt Round

| MARS USA NO. | DESCRIPTION       | BASE HEIGHT |
|--------------|-------------------|-------------|
| 14095        | 5 MFD 370V RND    | M 2.00      |
| 14098        | 10 MFD 370V RND   | M 2.00      |
| 14099        | 12.5 MFD 370V RND | M 2.00      |
| 14210        | 15 MFD 370V RND   | M 2.38      |
| 14212        | 17.5 MFD 370V RND | M 2.38      |
| 14214        | 20 MFD 370V RND   | M 2.65      |
| 14215        | 25 MFD 370V RND   | M 3.00      |
| 14217        | 30 MFD 370V RND   | M 3.00      |
| 14218        | 35 MFD 370V RND   | M 3.75      |
| 14821        | 40 MFD 370V RND   | M 3.75      |
| 14823        | 45 MFD 370V RND   | N 3.38      |
| 14225        | 50 MFD 370V RND   | N 3.75      |
| 14226        | 55 MFD 370V RND   | N 3.75      |
| 14227        | 60 MFD 370V RND   | N 4.75      |
| 14128        | 65 MFD 370V RND   | N 4.75      |
| 14229        | 70 MFD 370V RND   | N 4.75      |
| 14199        | 80 MFD 370V RND   | N 4.75      |
| 14116        | 100 MFD 370V RND  | P 4.75      |

### Single Section 440/370 Volt Oval

| MARS USA NO. | DESCRIPTION           | BASE HEIGHT |
|--------------|-----------------------|-------------|
| 14026        | 2 MFD 440/370V OVL    | D 1.50      |
| 14027        | 3 MFD 440/370V OVL    | A 2.00      |
| 14028        | 4 MFD 440/370V OVL    | A 2.00      |
| 14029        | 5 MFD 440/370V OVL    | A 2.38      |
| 14030        | 6 MFD 440/370V OVL    | A 2.38      |
| 14031        | 7.5 MFD 440/370V OVL  | A 2.63      |
| 14032        | 10 MFD 440/370V OVL   | A 3.75      |
| 14033        | 12.5 MFD 440/370V OVL | A 3.75      |
| 14034        | 15 MFD 440/370V OVL   | C 2.38      |
| 14036        | 17.5 MFD 440/370V OVL | C 2.38      |
| 14037        | 20 MFD 440/370V OVL   | C 2.63      |
| 14040        | 25 MFD 440/370V OVL   | C 3.00      |
| 14041        | 30 MFD 440/370V OVL   | C 3.38      |
| 14043        | 35 MFD 440/370V OVL   | C 3.75      |
| 14045        | 40 MFD 440/370V OVL   | C 4.75      |
| 14048        | 45 MFD 440/370V OVL   | C 4.75      |
| 14049        | 50 MFD 440/370V OVL   | C 4.75      |
| 14050        | 55 MFD 440/370V OVL   | C 4.75      |
| 14051        | 60 MFD 440/370V OVL   | D 3.75      |
| 14130        | 70MFD 440/370V OVL    | D 3.75      |
| 14140        | 80 MFD 440/370V OVL   | D 4.75      |

### Single Section 440/370 Volt Round

| MARS USA NO. | DESCRIPTION           | BASE HEIGHT |
|--------------|-----------------------|-------------|
| 14102        | 2 MFD 440/370V RND    | M 2.00      |
| 14103        | 3 MFD 440/370V RND    | M 2.00      |
| 14104        | 4 MFD 440/370V RND    | M 2.00      |
| 14105        | 5 MFD 440/370V RND    | M 2.00      |
| 14106        | 6 MFD 440/370V RND    | M 2.00      |
| 14107        | 7.5 MFD 440/370V RND  | M 2.00      |
| 14232        | 10 MFD 440/370V RND   | M 2.38      |
| 14833        | 12.5 MFD 440/370V RND | M 2.38      |
| 14234        | 15 MFD 440/370V RND   | M 2.63      |
| 14237        | 20 MFD 440/370V RND   | M 3.00      |
| 14240        | 25 MFD 440/370V RND   | M 3.75      |
| 14241        | 30 MFD 440/370V RND   | N 3.38      |
| 14243        | 35 MFD 440/370V RND   | N 3.75      |
| 14245        | 40 MFD 440/370V RND   | N 3.75      |
| 14248        | 45 MFD 440/370V RND   | N 4.75      |
| 14251        | 50 MFD 440/370V RND   | P 3.38      |
| 14252        | 55 MFD 440/370V RND   | P 3.75      |
| 14254        | 60 MFD 440/370V RND   | P 3.75      |
| 14256        | 65 MFD 440/370V RND   | P 3.75      |
| 14258        | 70 MFD 440/370V RND   | P 4.75      |
| 14259        | 80 MFD 440/370V RND   | P 4.75      |

### Dual Section 370 Volt Oval

| MARS USA NO. | DESCRIPTION       | BASE HEIGHT |
|--------------|-------------------|-------------|
| 14063        | 20/5 MFD 370V OVL | C 2.63      |
| 14066        | 25/5 MFD 370V OVL | C 2.63      |
| 14069        | 30/5 MFD 370V OVL | C 3.00      |
| 14072        | 35/5 MFD 370V OVL | C 3.75      |
| 14171        | 40/5 MFD 370V OVL | C 3.75      |
| 14174        | 45/5 MFD 370V OVL | C 3.75      |

### Dual Section 440/370 Volt Oval

| MARS USA NO. | DESCRIPTION             | BASE HEIGHT |
|--------------|-------------------------|-------------|
| 14170        | 10/10 MFD 440/370V OVL  | C 2.63      |
| 14184        | 25/5 MFD 440/370V OVL   | C 3.75      |
| 14187        | 30/5 MFD 440/370V OVL   | D 3.75      |
| 14085        | 35/3 MFD 440/370V OVL   | C 4.75      |
| 14185        | 35/5 MFD 440/370V OVL   | C 4.75      |
| 14188        | 35/7.5 MFD 440/370V OVL | C 3.75      |
| 14086        | 40/5 MFD 440/370V OVL   | C 4.75      |
| 14189        | 40/7.5MFD 440/370V OVL  | C 4.75      |
| 14190        | 45/5 MFD 440/370V OVL   | D 4.75      |
| 14274        | 45/7.5 MFD 440/370V OVL | C 4.75      |
| 14275        | 55/5 MFD 440/370V OVL   | D 4.75      |
| 14297        | 80/5 MFD 440/370V OVL   | D 5.75      |
| 14298        | 80/7.5MFD 440/370V OVL  | D 5.75      |

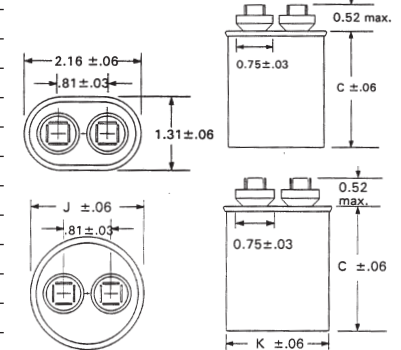
### Dual Section 370 Volt Round

| MARS USA NO. | DESCRIPTION         | BASE HEIGHT |
|--------------|---------------------|-------------|
| 14260        | 20/5 MFD 370V RND   | N 2.63      |
| 14208        | 20/10 MFD 370V RND  | N 3.13      |
| 14261        | 25/5 MFD 370V RND   | N 2.63      |
| 14213        | 25/10 MFD 370V RND  | N 3.13      |
| 14244        | 30/3 MFD 370 RND    | N 3.13      |
| 14263        | 30/4 MFD 370V RND   | N 3.13      |
| 14082        | 35/3 MFD 370V RND   | N 3.88      |
| 14131        | 35/4 MFD 370V RND   | N 3.13      |
| 14264        | 30/5 MFD 370V RND   | N 3.13      |
| 14266        | 35/5 MFD 370V RND   | N 3.88      |
| 14238        | 35/10 MFD 370V RND  | N 3.88      |
| 14178        | 40/5 MFD 370V RND   | N 3.88      |
| 14268        | 40/7.5 MFD 370V RND | N 3.88      |
| 14246        | 40/10 MFD 370V RND  | N 3.88      |
| 14073        | 45/3 MFD 370V RND   | N 3.88      |
| 14269        | 45/5 MFD 370V RND   | P 3.88      |
| 14249        | 45/7.5 MFD 370V RND | N 3.88      |
| 14250        | 45/10 MFD 370V RND  | N 3.88      |
| 14075        | 50/3 MFD 370V RND   | P 3.13      |
| 14191        | 50/5 MFD 370V RND   | N 3.88      |
| 14192        | 50/7.5 MFD 370V RND | P 3.13      |
| 14239        | 50/10 MFD 370V RND  | P 3.88      |
| 14193        | 55/5MFD 370V RND    | N 4.75      |
| 14194        | 55/7.5 MFD 370V RND | N 4.75      |
| 14195        | 60/5 MFD 370V RND   | P 3.88      |
| 14196        | 60/7.5 MFD 370V RND | N 4.75      |
| 14265        | 60/10 MFD 370V RND  | P 3.88      |
| 14042        | 65/5 MFD 370V RND   | N 4.75      |
| 14053        | 70/5 MFD 370V RND   | P 3.88      |
| 14054        | 70/7.5 MFD 370V RND | P 3.88      |
| 14197        | 80/5 MFD 370V RND   | P 3.88      |
| 14198        | 80/7.5 MFD 370V RND | P 3.88      |
| 14201        | 80/10 MFD 370V RND  | P 3.88      |

### Dual Section 440/370 Volt Round

| MARS USA NO. | DESCRIPTION             | BASE HEIGHT |
|--------------|-------------------------|-------------|
| 14115        | 20/5 MFD 440/370V RND   | N 3.13      |
| 14353        | 25/3 MFD 440/370V RND   | N 3.88      |
| 14278        | 25/5 MFD 440/370V RND   | N 3.88      |
| 14279        | 25/7.5 MFD 440/370V RND | N 3.88      |
| 14113        | 25/10 MFD 440/370V RND  | N 3.88      |
| 14126        | 30/3 MFD 440/370V RND   | N 3.88      |
| 14281        | 30/5 MFD 440/370V RND   | N 3.88      |
| 14282        | 30/7.5 MFD 440/370V RND | N 3.88      |
| 14352        | 30/10 MFD 440/370V RND  | N 4.75      |
| 14077        | 35/3 MFD 440/370V RND   | N 3.88      |
| 14070        | 35/4 MFD 440/370V RND   | N 3.88      |
| 14283        | 35/5 MFD 440/370V RND   | N 3.88      |
| 14284        | 35/7.5 MFD 440/370V RND | P 3.88      |
| 14091        | 35/10 MFD 440/370V RND  | N 4.75      |
| 14078        | 40/3 MFD 440/370V RND   | P 3.13      |
| 14286        | 40/5 MFD 440/370V RND   | P 3.13      |
| 14287        | 40/7.5 MFD 440/370V RND | P 3.88      |
| 14088        | 40/10 MFD 440/370V RND  | N 4.75      |
| 14079        | 45/3 MFD 440/370V RND   | P 3.88      |
| 14288        | 45/5 MFD 440/370V RND   | P 3.88      |
| 14289        | 45/7.5 MFD 440/370V RND | N 3.88      |
| 14172        | 45/10 MFD 440/370V RND  | P 3.88      |
| 14290        | 50/5 MFD 440/370V RND   | P 3.88      |
| 14291        | 50/7.5 MFD 440/370V RND | P 3.88      |
| 14124        | 50/10 MFD 440/370V RND  | P 3.88      |
| 14299        | 55/10 MFD 440/370V RND  | P 3.88      |
| 14292        | 55/5 MFD 440/370V RND   | P 3.88      |
| 14293        | 55/7.5 MFD 440/370V RND | P 3.88      |
| 14294        | 60/5 MFD 440/370V RND   | P 3.88      |
| 14295        | 60/7.5 MFD 440/370V RND | P 3.88      |
| 14296        | 60/10 MFD 440/370V RND  | P 3.88      |
| 14358        | 65/5 MFD 440/370V RND   | P 3.875     |
| 14359        | 65/7.5 MFD 440/370V RND | P 3.875     |
| 14162        | 65/10 MFD 440/370V RND  | P 4.75      |
| 14255        | 70/5 MFD 440/370V RND   | P 4.75      |
| 14166        | 70/7.5 MFD 440/370V RND | P 4.75      |
| 14169        | 70/10 MFD 440/370V RND  | P 4.75      |
| 14168        | 75/5 MFD 440/370V RND   | P 4.75      |
| 14125        | 75/7.5 MFD 440/370V RND | P 4.75      |
| 14047        | 75/10 MFD 440/370V RND  | P 4.75      |
| 14257        | 80/5 MFD 440/370V RND   | P 4.88      |
| 14216        | 80/7.5 MFD 440/370V RND | P 4.75      |
| 14117        | 80/10 MFD 440/370V RND  | P 4.75      |

### Capacitor Base Dimensions



Base Dimension on page C-7

## MARS Mini-Split Run Capacitors

MARS mini-split motor run capacitors are epoxy/resin sealed and widely used as the start-up and/or run capacitor for your motor. They feature very small dissipation factor and inherent temperature rise, high insulation resistance, and stable capacitance.

### Specifications:

- Ambient temperature: 70° C
- Rated voltage: 450 VA
- Capacitance tolerance: ±5
- 50/60 Hz
- Standard: IEC252-2001

| MARS NO. | DESCRIPTION    | DIMENSIONS |       |         |
|----------|----------------|------------|-------|---------|
|          |                | H          | D     | W       |
| 12380    | 1 MFD X 450V   | 1-1/2      | X 1/2 | X 1     |
| 12381    | 1.5 MFD X 450V | 1-1/2      | X 1/2 | X 1     |
| 12382    | 2 MFD X 450V   | 1-1/2      | X 1/2 | X 1     |
| 12383    | 2.5 MFD X 450V | 1-1/2      | X 3/4 | X 1-1/4 |
| 12384    | 3 MFD X 450V   | 1-1/2      | X 3/4 | X 1-1/4 |
| 12385    | 3.5 MFD X 450V | 1-7/8      | X 3/4 | X 1-3/8 |
| 12386    | 4 MFD X 450V   | 1-7/8      | X 3/4 | X 1-3/8 |
| 12388    | 5 MFD X 450V   | 1-7/8      | X 7/8 | X 1-3/8 |
| 12390    | 6 MFD X 450V   | 1-7/8      | X 1   | X 1-1/2 |



## Accessories For Relays & Capacitors

### QC-6 Kit

**93001** For conversion of screw-type connections on relays

### Resistor for Start Capacitors

**93007** 2 watt (15,000 ohm) Resistors, 10/Pk

### QC-13 for Start Capacitors

**93106** 10 pc 2 watt (15,000 ohm) resistors with .25-in female spade connectors, 10/Pk

### Snap-on Mounting Brackets for Motor Start Capacitors

**93026** 2.75 in  
**93027** 3.38 in  
**93028** 4.38 in  
 Sold in 10 pack

### Start Capacitor Case Dimensions\*

| CASE SIZE | DIAMETER | LENGTH |
|-----------|----------|--------|
| 1         | 1.44     | 2.75   |
| 2         | 1.44     | 3.38   |
| 4         | 1.81     | 3.38   |
| 5         | 1.81     | 4.38   |
| 6         | 2.06     | 3.38   |
| 7         | 2.06     | 4.38   |
| 8         | 2.56     | 4.38   |

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

### Protector (boots) for Motor Run Capacitors

**93011** 1 Hole Boot, 25/Pk

**93012** 2 Hole Boot, 25/Pk

### Wrap-Around Brackets for Motor Run Capacitors

**93014** Oval 1.94 x 2.78 for base A, 10/Pk

**93015** Oval 1.97 x 2.94 for base C, 10/Pk

**93116** Oval 2.25 x 3.66 for base D, 10/Pk

### Mounting Brackets for Round Capacitors

**93031** For 1.63 in and 1.75 in diam  
**93032** For 2.0 in diam  
**93033** For 2.50 in diam  
 Sold in 5 pack

### Bakelite End Caps for Motor Start Capacitors

**93018** BEC-1 1.44 in  
**93019** BEC-2 1.81 in  
**93020** BEC-3 2.06 in  
**93021** BEC-4 2.56 in  
 Sold in 10 pack

For mounting OFF MOTOR. Leads on top side.

**93023** TEC-2 1.81 in  
**93024** TEC-3 2.06 in  
**93025** TEC-4 2.56 in  
 Sold in 10 pack

# Motor Run Capacitors

## Single Section Run Capacitors

| 370 VOLT |               |                |               |                |
|----------|---------------|----------------|---------------|----------------|
| MFD      | OVAL MARS NO. | ROUND MARS NO. | OVAL JARD NO. | ROUND JARD NO. |
| 2        | 12002         | 12092          | 12902         | 12992          |
| 3        | 12003         | 12093          | 12903         | 12993          |
| 4        | 12004         | 12094          | 12904         | 12994          |
| 5        | 12005         | 12095          | 12905         | 12995          |
| 6        | 12006         | 12096          | 12906         | 12996          |
| 7.5      | 12007         | 12097          | 12907         | 12997          |
| 10       | 12008         | 12098          | 12908         | 12998          |
| 12.5     | 12009         | 12099          | 12909         | 12999          |
| 15       | 12010         | 12210          | 12910         | 12710          |
| 16       |               | 12211          |               | 12911          |
| 17.5     | 12012         | 12212          | 12912         | 12712          |
| 20       | 12014         | 12214          | 12914         | 12714          |
| 25       | 12015         | 12215          | 12915         | 12715          |
| 30       | 12017         | 12217          | 12917         | 12717          |
| 35       | 12018         | 12218          | 12918         | 12718          |
| 40       | 12021         | 12221          | 12921         | 12721          |
| 45       | 12023         | 12223          | 12923         | 12723          |
| 50       | 12025         | 12225          | 12925         | 12725          |
| 55       | 12024         | 12226          | 12924         | 12726          |
| 60       | 12087         | 12227          | 12987         | 12727          |
| 65       | 12011         | 12128          | 12988         | 12828          |
| 70       | 12089         | 12229          | 12989         | 12729          |
| 80       | 12090         | 12199          | 12990         | 12899          |
| 100      |               | 12116          |               | 12916          |

| 440/370 VOLT |               |                |               |                |
|--------------|---------------|----------------|---------------|----------------|
| MFD          | OVAL MARS NO. | ROUND MARS NO. | OVAL JARD NO. | ROUND JARD NO. |
| 2            | 12026         | 12102          | 12926         | 12802          |
| 2.5          | 12019         |                | 12919         |                |
| 3            | 12027         | 12103          | 12927         | 12803          |
| 4            | 12028         | 12104          | 12928         | 12804          |
| 5            | 12029         | 12105          | 12929         | 12805          |
| 6            | 12030         | 12106          | 12930         | 12806          |
| 7.5          | 12031         | 12107          | 12931         | 12807          |
| 10           | 12032         | 12232          | 12932         | 12732          |
| 12.5         | 12033         | 12233          | 12933         | 12733          |
| 15           | 12034         | 12234          | 12934         | 12734          |
| 17.5         | 12036         | 12236          | 12936         | 12736          |
| 20           | 12037         | 12237          | 12937         | 12737          |
| 25           | 12040         | 12240          | 12940         | 12740          |
| 30           | 12041         | 12241          | 12941         | 12741          |
| 35           | 12043         | 12243          | 12943         | 12743          |
| 40           | 12045         | 12245          | 12945         | 12745          |
| 45           | 12048         | 12248          | 12948         | 12748          |
| 50           | 12049         | 12251          | 12949         | 12751          |
| 55           | 12050         | 12252          | 12950         | 12752          |
| 60           | 12051         | 12254          | 12951         | 12754          |
| 65           | 12052         | 12357          | 12952         | 12657          |
| 70           | 12130         | 12258          | 12830         | 12758          |
| 75           | 12135         |                | 12831         |                |
| 80           | 12140         | 12259          | 12840         | 12759          |
| 90           |               | 12068          |               | 12868          |

## Dual Section Run Run Capacitors

| 370 VOLT |               |                |               |                |
|----------|---------------|----------------|---------------|----------------|
| MFD      | OVAL MARS NO. | ROUND MARS NO. | OVAL JARD NO. | ROUND JARD NO. |
| 15/3     | 12141         | 12121          | 12841         | 12701          |
| 15/4     | 12056         | 12122          | 12956         | 12702          |
| 15/5     | 12057         | 12203          | 12957         | 12703          |
| 15/10    | 12058         | 12204          | 12958         | 12704          |
| 17.5/4   | 12059         | 12205          | 12959         | 12705          |
| 17.5/5   | 12060         | 12206          | 12960         | 12706          |
| 20/3     | 12061         |                | 12961         |                |
| 20/4     | 12062         | 12207          | 12962         | 12707          |
| 20/5     | 12063         | 12260          | 12963         | 12760          |
| 20/7.5   |               | 12016          |               | 12716          |
| 20/10    | 12064         | 12208          | 12864         | 12708          |
| 20/15    | 12164         | 12209          | 12964         | 12709          |
| 25/3     | 12142         | 12242          | 12842         | 12711          |
| 25/4     | 12065         | 12175          | 12965         | 12875          |
| 25/5     | 12066         | 12261          | 12966         | 12761          |
| 25/7.5   | 12143         | 12262          | 12843         | 12762          |
| 25/8     | 12131         |                | 12832         |                |
| 25/10    | 12167         | 12213          | 12867         | 12713          |
| 25/15    | 12133         |                | 12833         |                |
| 30/3     | 12144         | 12244          | 12844         | 12720          |
| 30/4     | 12145         | 12263          | 12845         | 12763          |
| 30/5     | 12069         | 12264          | 12969         | 12764          |
| 30/7.5   | 12146         | 12224          | 12846         | 12724          |
| 30/10    | 12147         | 12228          | 12847         | 12728          |
| 30/15    |               | 12039          |               | 12939          |
| 35/3     | 12148         | 12082          | 12848         | 12730          |
| 35/4     | 12071         | 12231          | 12971         | 12731          |
| 35/5     | 12072         | 12266          | 12972         | 12766          |
| 35/7.5   | 12149         | 12235          | 12849         | 12735          |
| 35/10    | 12150         | 12238          | 12850         | 12738          |
| 40/3     | 12151         | 12074          | 12851         | 12739          |
| 40/4     | 12158         | 12267          | 12858         | 12767          |
| 40/5     | 12171         | 12178          | 12871         | 12878          |
| 40/7.5   | 12152         | 12268          | 12852         | 12768          |
| 40/10    | 12134         | 12246          | 12834         | 12746          |
| 45/3     | 12173         | 12073          |               | 12747          |
| 45/4     |               | 12247          |               | 12947          |
| 45/5     | 12174         | 12269          | 12874         | 12769          |
| 45/7.5   | 12153         | 12249          | 12853         | 12749          |
| 45/10    | 12136         | 12250          | 12836         | 12750          |
| 45/15    | 12137         |                | 12837         |                |
| 50/3     |               | 12075          |               | 12753          |
| 50/5     | 12138         | 12191          | 12838         | 12755          |
| 50/7.5   |               | 12192          |               | 12825          |
| 50/10    |               | 12239          |               | 12757          |
| 55/5     | 12154         | 12193          | 12854         | 12893          |
| 55/7.5   | 12155         | 12194          | 12855         | 12894          |
| 55/10    |               | 12067          |               | 12967          |
| 60/3     |               | 12076          |               | 12976          |
| 60/5     | 12139         | 12195          | 12839         | 12895          |
| 60/7.5   | 12156         | 12196          | 12856         | 12896          |
| 60/10    | 12157         | 12265          | 12857         | 12865          |
| 65/5     | 12159         | 12042          | 12859         | 12742          |
| 70/5     |               | 12053          |               | 12953          |
| 70/7.5   |               | 12054          |               | 12954          |
| 70/10    |               | 12055          |               | 12955          |
| 75/5     |               | 12044          |               | 12744          |
| 75/7.5   |               | 12046          |               | 12946          |
| 75/10    |               | 12084          |               | 12984          |
| 80/5     | 12163         | 12197          | 12863         | 12897          |
| 80/7.5   | 12123         | 12198          | 12817         | 12819          |
| 80/10    |               | 12201          |               | 12824          |
| 80/12.5  |               | 12202          |               | 12722          |
| 85/5     |               | 12129          |               | 12829          |
| 85/7.5   |               | 12230          |               | 12756          |
| 85/10    |               | 12222          |               | 12922          |

## Dual Section Run Run Capacitors

| 440/370 VOLT |               |                |               |                |
|--------------|---------------|----------------|---------------|----------------|
| MFD          | OVAL MARS NO. | ROUND MARS NO. | OVAL JARD NO. | ROUND JARD NO. |
| 10/5         | 12165         | 12111          | 12765         | 12811          |
| 15/4         | 12270         |                | 12770         |                |
| 15/5         | 12271         | 12118          | 12771         | 12818          |
| 15/10        | 12177         | 12356          | 12777         | 12656          |
| 17.5/5       |               | 12350          |               | 12650          |
| 20/5         | 12180         | 12115          | 12880         | 12780          |
| 20/7.5       |               | 12354          |               | 12654          |
| 20/10        |               | 12351          |               | 12651          |
| 20/15        | 12083         | 12112          | 12983         | 12812          |
| 25/3         |               | 12353          |               | 12653          |
| 25/4         |               | 12355          |               | 12655          |
| 25/5         | 12184         | 12278          | 12884         | 12778          |
| 25/7.5       | 12182         | 12279          | 12882         | 12779          |
| 25/10        | 12183         | 12113          | 12883         | 12813          |
| 25/15        | 12186         | 12114          | 12886         | 12814          |
| 30/3         |               | 12126          |               | 12826          |
| 30/4         | 12181         | 12120          | 12881         | 12820          |
| 30/5         | 12187         | 12281          | 12887         | 12781          |
| 30/7.5       | 12038         | 12282          | 12982         | 12782          |
| 30/10        | 12035         | 12352          | 12835         | 12652          |
| 35/3         | 12085         | 12077          | 12985         | 12977          |
| 35/4         | 12179         | 12070          | 12879         | 12870          |
| 35/5         | 12185         | 12283          | 12885         | 12783          |
| 35/6         |               | 12119          |               |                |
| 35/7.5       | 12188         | 12284          | 12888         | 12784          |
| 35/8.5       | 12176         |                | 12876         |                |
| 35/10        | 12272         | 12091          | 12772         | 12797          |
| 40/3         | 12080         | 12078          | 12877         | 12978          |
| 40/4         |               | 12285          |               | 12785          |
| 40/5         | 12086         | 12286          | 12986         | 12786          |
| 40/6         |               | 12220          |               | 12920          |
| 40/7.5       | 12189         | 12287          | 12889         | 12787          |
| 40/10        | 12273         | 12088          | 12773         | 12798          |
| 45/3         |               | 12079          |               | 12979          |
| 45/4         |               | 12219          |               | 12891          |
| 45/5         | 12190         | 12288          | 12890         | 12788          |
| 45/6         |               | 12127          |               | 12827          |
| 45/7.5       | 12274         | 12289          | 12774         | 12789          |
| 45/10        |               | 12172          |               | 12872          |
| 50/5         | 12108         | 12290          | 12808         | 12790          |
| 50/7.5       | 12013         | 12291          | 12913         | 12791          |
| 50/10        |               | 12124          |               | 12892          |
| 50/12.5      |               | 12253          |               | 12719          |
| 55/5         | 12275         | 12292          | 12775         | 12792          |
| 55/7.5       |               | 12293          |               | 12793          |
| 55/10        | 12276         | 12299          | 12822         | 12799          |
| 60/3         |               | 12160          |               | 12860          |
| 60/5         | 12109         | 12294          | 12809         | 12794          |
| 60/7.5       | 12110         | 12295          | 12776         | 12795          |
| 60/10        |               | 12296          |               | 12796          |
| 60/12.5      |               | 12161          |               | 12861          |
| 65/5         |               | 12358          |               | 12642          |
| 65/7.5       |               | 12359          |               | 12659          |
| 65/10        | 12101         | 12162          | 12810         | 12862          |
| 70/5         |               | 12255          |               | 12823          |
| 70/7.5       |               | 12166          |               | 12866          |
| 70/10        |               | 12169          |               | 12869          |
| 75/5         |               | 12168          |               | 12968          |
| 75/7.5       |               | 12125          |               | 12901          |
| 75/10        |               | 12047          |               | 12935          |
| 80/5         | 12297         | 12257          | 12815         | 12801          |
| 80/7.5       | 12298         | 12216          | 12898         | 12816          |
| 80/10        |               | 12117          |               | 12821          |
| 85/5         |               | 12022          |               | 12938          |
| 85/7.5       |               | 12020          |               | 12942          |
| 85/10        |               | 12001          |               | 12944          |

## MARS 780 Definite Purpose Contactors

MARS 780 - 1 pole with shunt contactors are designed for demanding applications. The enclosed body design provides quiet operation and improved durability by reducing the intrusion of dust and dirt. Silver-cadmium oxide contacts provide increased contact life when switching inductive loads.



### Features:

- Enclosed body and coil – standard cover
- Push to test button
- Quad quick connects
- Box lugs - large window arch design
- Screw terminals and or box lugs available on 30 amp
- Coils - class F insulation
- UL File E96705

### 1 Pole with Shunt 30 - 40 Amps

| MARS NO. | FURNAS NO.                       | LOCKED ROTOR AMPS |           | NON INDUCTIVE AMPS | COIL VOLTS | TERMINATION |
|----------|----------------------------------|-------------------|-----------|--------------------|------------|-------------|
|          |                                  | FLA               | 240V 277V |                    |            |             |
| 61320    | 45EG10AJA, 45CG10AJA, 45DG10AJA  | 30                | 180       | 180                | 40         | Screw Type  |
| 61321    | 45EG10AFA, 45CG10AFA, 45DG10AFA  |                   |           |                    |            |             |
| 61322    | 45EG10AGA, 45CG10AGA, 45DG10AGA  |                   |           |                    |            |             |
| 61323    | 45EG10ALA, 45CG10ALA, 45DG10ALA  |                   |           |                    |            |             |
| 61720    | 45EG10AJAL                       |                   |           |                    |            |             |
| 61721    | 45EG10AFAL                       | 30                | 180       | 180                | 40         | Box Lug     |
| 61722    | 45EG10AGAL                       |                   |           |                    |            |             |
| 61723    | 45EG10ALAL                       |                   |           |                    |            |             |
| 61724    | 45EG10AHAL                       |                   |           |                    |            |             |
| 61730    | 45GG10AJAL, 45FG10AJA, 45GG10AJA |                   |           |                    |            |             |
| 61731    | 45GG10AFAL, 45FG10AFA, 45GG10AFA | 40                | 240       | 240                | 50         | Box Lug     |
| 61732    | 45GG10AGAL, 45FG10AGA, 45GG10AGA |                   |           |                    |            |             |
| 61733    | 45GG10ALAL, 45FG10ALA, 45GG10ALA |                   |           |                    |            |             |
| 61734    | 45GG10AHAL, 45FG10AHA, 45GG10AHA |                   |           |                    |            |             |

## MARS 780 Definite Purpose Contactors

MARS 780 - 2 pole contactors are designed for demanding applications. The enclosed body design provides quiet operation and improved durability by reducing the intrusion of dust and dirt. Silver-cadmium oxide contacts provide increased contact life when switching inductive loads.



### Features:

- Enclosed body and coil – standard cover
- Push to test button
- Quad quick connects
- Box lugs - large window arch design
- Screw terminals and or box lugs available on 30 amp
- Coils - class F insulation
- UL File E96705

### 2 Pole 30 - 40 Amps

| MARS NO. | FURNAS NO.                    | LOCKED ROTOR AMPS |      |           | NON INDUCTIVE AMPS | COIL VOLTS | TERMINATION |
|----------|-------------------------------|-------------------|------|-----------|--------------------|------------|-------------|
|          |                               | FLA               | 240V | 480V 600V |                    |            |             |
| 61345    | 45EG20AJ, 45CG20AJ, 45DG20AJ  | 30                | 180  | 150       | 120                | 40         | Screw Type  |
| 61346    | 45EG20AF, 45CG20AF, 45DG20AF  |                   |      |           |                    |            |             |
| 61347    | 45EG20AG, 45CG20AG, 45DG20AG  |                   |      |           |                    |            |             |
| 61348    | 45EG20AL, 45CG20AL, 45DG20AL  |                   |      |           |                    |            |             |
| 61349    | 45EG20AH, 45CG20AH, 45DG20AH  |                   |      |           |                    |            |             |
| 61745    | 45EG20AJL                     | 30                | 180  | 150       | 120                | 40         | Box Lug     |
| 61746    | 45EG20AFL                     |                   |      |           |                    |            |             |
| 61747    | 45EG20AGL                     |                   |      |           |                    |            |             |
| 61748    | 45EG20ALL                     |                   |      |           |                    |            |             |
| 61749    | 45EG20AHL                     |                   |      |           |                    |            |             |
| 61755    | 45GG20AJL, 45FG20AJ, 45GG20AJ | 40                | 240  | 200       | 160                | 50         | Box Lug     |
| 61756    | 45GG20AFL, 45FG20AF, 45GG20AF |                   |      |           |                    |            |             |
| 61757    | 45GG20AGL, 45FG20AG, 45GG20AG |                   |      |           |                    |            |             |
| 61758    | 45GG20ALL, 45FG20AL, 45GG20AL |                   |      |           |                    |            |             |
| 61759    | 45GG20AHL, 45FG20AH, 45GG20AH |                   |      |           |                    |            |             |

# MARS 780 Definite Purpose Contactors

## MARS 780 Definite Purpose Contactors

MARS 780 - 2 pole "Large Body" contactors feature a 2 pole configuration in a 3 pole body for increased durability in demanding applications.

**Features:**

- Large arch window box lugs
- Recessed push to test button
- Accepts MARS 780 and Furnas auxiliary switches
- Use standard MARS 780 replacement coils
- Dual QC coil terminals plus screw terminal for easy termination and jumper arrangements
- Coils - class F insulation
- UL File E96705



### 2 Pole - Large Body 30 - 40 Amp

| MARS NO. | FURNAS NO.         | FLA | LOCKED ROTOR AMPS |      |      | NON INDUCTIVE AMPS | COIL VOLTS | HORSEPOWER   |              | TERMINATION |
|----------|--------------------|-----|-------------------|------|------|--------------------|------------|--------------|--------------|-------------|
|          |                    |     | 240V              | 480V | 600V |                    |            | 1 PH<br>240V | 3 PH<br>240V |             |
| 61425    | 42BF15AJ, 42AF15AJ | 30  | 180               | 150  | 120  | 40                 | 24         | 3 HP         | 7.5 HP       | Box Lug     |
| 61426    | 42BF15AF, 42AF15AF |     |                   |      |      |                    | 120        |              |              |             |
| 61427    | 42BF15AG, 42AF15AG |     |                   |      |      |                    | 208-240    |              |              |             |
| 61428    | 42BF15AL, 42AF15AL |     |                   |      |      |                    | 277        |              |              |             |
| 61440    | 42CF15AJ           | 40  | 240               | 200  | 160  | 50                 | 24         | 5 HP         | 10 HP        | Box Lug     |
| 61441    | 42CF15AF           |     |                   |      |      |                    | 120        |              |              |             |
| 61442    | 42CF15AG           |     |                   |      |      |                    | 208-240    |              |              |             |
| 61443    | 42CF15AL           |     |                   |      |      |                    | 277        |              |              |             |

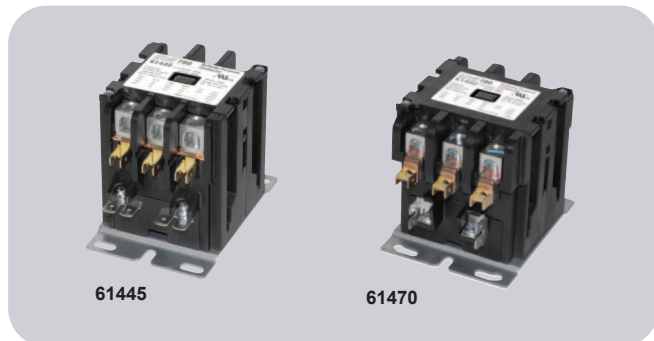


## MARS 780 - 3 Pole Contactors

MARS 780 - 3 pole contactors are designed for demanding applications. The enclosed body design provides quiet operation and improved durability by reducing the intrusion of dust and dirt. Side attachment rails for auxiliary switches (30-60 amp contactors) allow attachment of MARS 780 or Furnas auxiliary switches. Silver-cadmium oxide contacts provide increased contact life when switching inductive loads.

### Features:

- Large arch window box lugs
- SEMS screws or box lugs available on 30 amp contactors
- Recessed push to test button (not on 75 and 90 amp contactors)
- Enclosed body design
- Accepts MARS 780 and Furnas auxiliary switches
- Use standard MARS 780 replacement coils
- Dual QC coil terminals plus screw terminal for easy termination and jumper arrangements
- Coils - class F insulation • 600 volt rating • Foot print compatible
- UL File E96705



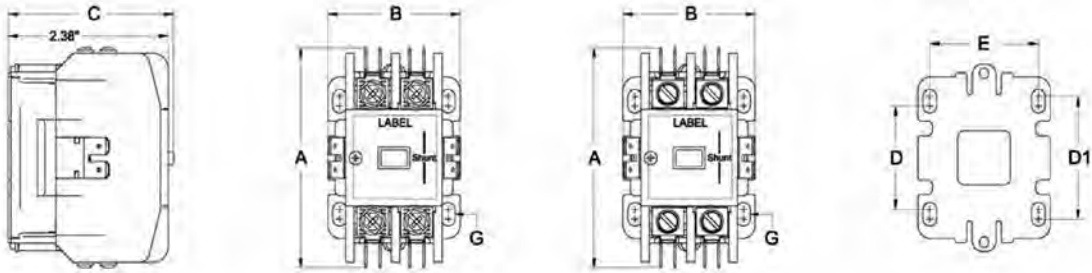
### 3 Pole 30 - 90 Amp

\* For 25 Amp Contactors - Use 30 Amp in Place of 25Amp

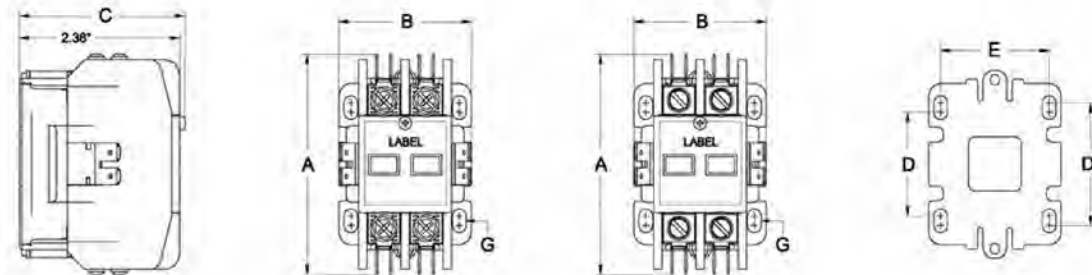
| MARS NO. | FURNAS NO.  | FLA | LOCKED ROTOR AMPS |      |      | NON INDUCTIVE AMPS | COIL VOLTS | HORSEPOWER |        |           | TERMINATION |            |
|----------|-------------|-----|-------------------|------|------|--------------------|------------|------------|--------|-----------|-------------|------------|
|          |             |     | 240V              | 480V | 600V |                    |            | 1 PH 240V  | 240V   | 3 PH 480V |             | 600V       |
| 61430*   | 42BF35AJ    | 30  | 180               | 150  | 120  | 40                 | 24         | 3 HP       | 7.5 HP | 10 HP     | 15 HP       | Screw Type |
| 61431*   | 42BF35AF    |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 61432*   | 42BF35AG    |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 61433*   | 42BF35AL    |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 61434*   | 42BF35AH    |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 61750    | -           | 30  | 180               | 150  | 120  | 40                 | 24         | 3 HP       | 7.5 HP | 10 HP     | 15 HP       | Box Lug    |
| 61751    | -           |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 61752    | -           |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 61753    | -           |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 61754    | -           |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 61445    | 42CF35AJ    | 40  | 240               | 200  | 160  | 50                 | 24         | 5 HP       | 10 HP  | 15 HP     | 20 HP       | Box Lug    |
| 61446    | 42CF35AF    |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 61447    | 42CF35AG    |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 61448    | 42CF35AL    |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 61449    | 42CF35AH    |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 61460    | 42DF35AJ    | 50  | 300               | 250  | 200  | 63                 | 24         | 5 HP       | 15 HP  | 20 HP     | 25 HP       | Box Lug    |
| 61461    | 42DF35AF    |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 61462    | 42DF35AG    |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 61463    | 42DF35AL    |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 61464    | 42DF35AH    |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 61470    | 42EF35AJ    | 60  | 360               | 300  | 240  | 75                 | 24         | 7.5 HP     | 20 HP  | 25 HP     | 30 HP       | Box Lug    |
| 61471    | 42EF35AF    |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 61472    | 42EF35AG    |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 61473    | 42EF35AL    |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 61474    | 42EF35AH    |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 62480    | 42FE35AJ106 | 75  | 450               | 375  | 300  | 94                 | 24         | 15 HP      | 25 HP  | 40 HP     | 40 HP       | Box Lug    |
| 62481    | 42FE35AF106 |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 62482    | 42FE35AG106 |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 62483    | 42FE35AL106 |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 62484    | 42FE35AH106 |     |                   |      |      |                    | 480        |            |        |           |             |            |
| 62490    | 42GE35AJ106 | 90  | 540               | 450  | 360  | 120                | 24         | 15 HP      | 30 HP  | 50 HP     | 50 HP       | Box Lug    |
| 62491    | 42GE35AF106 |     |                   |      |      |                    | 120        |            |        |           |             |            |
| 62492    | 42GE35AG106 |     |                   |      |      |                    | 208-240    |            |        |           |             |            |
| 62493    | 42GE35AL106 |     |                   |      |      |                    | 277        |            |        |           |             |            |
| 62494    | 42GE35AH106 |     |                   |      |      |                    | 480        |            |        |           |             |            |

# MARS 780 Definite Purpose Contactors

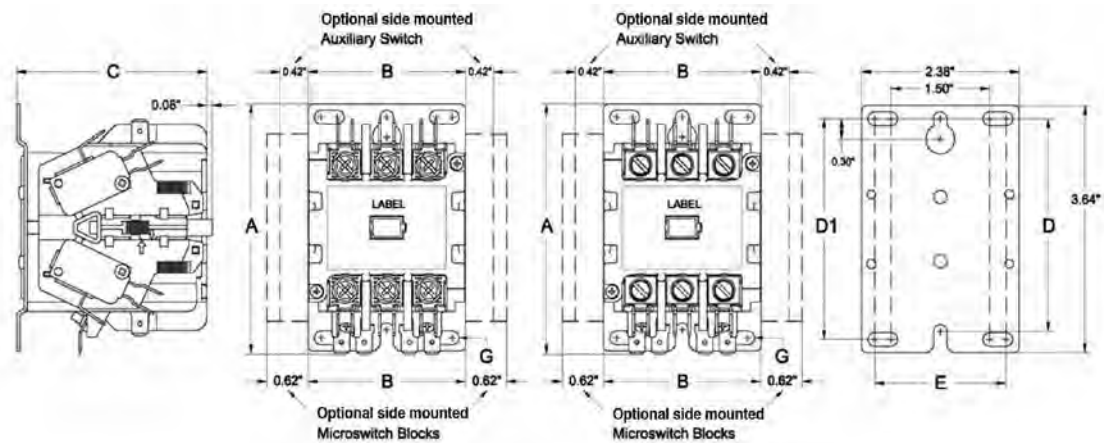
## 30-40A 1 Pole with Shunt



## 30-40A 2 Pole



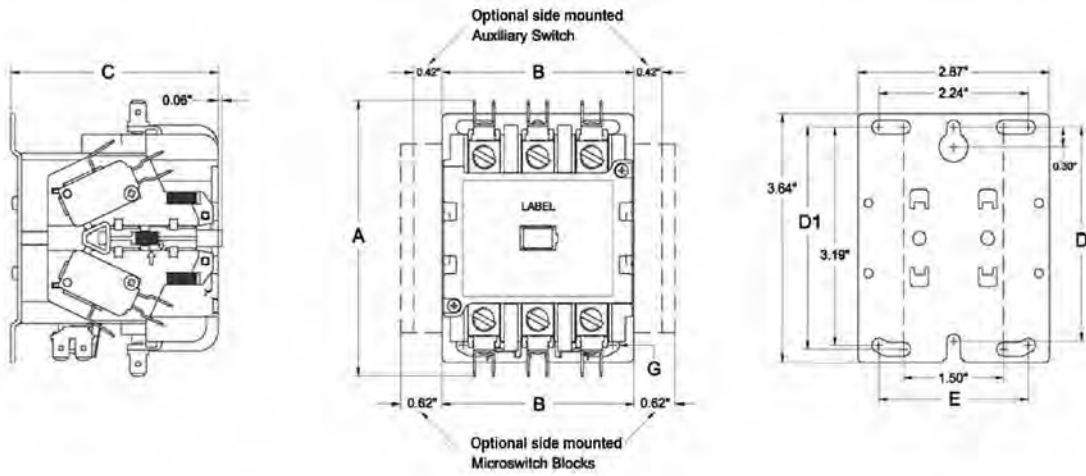
## 30-40A 2\* Pole & 3 Pole



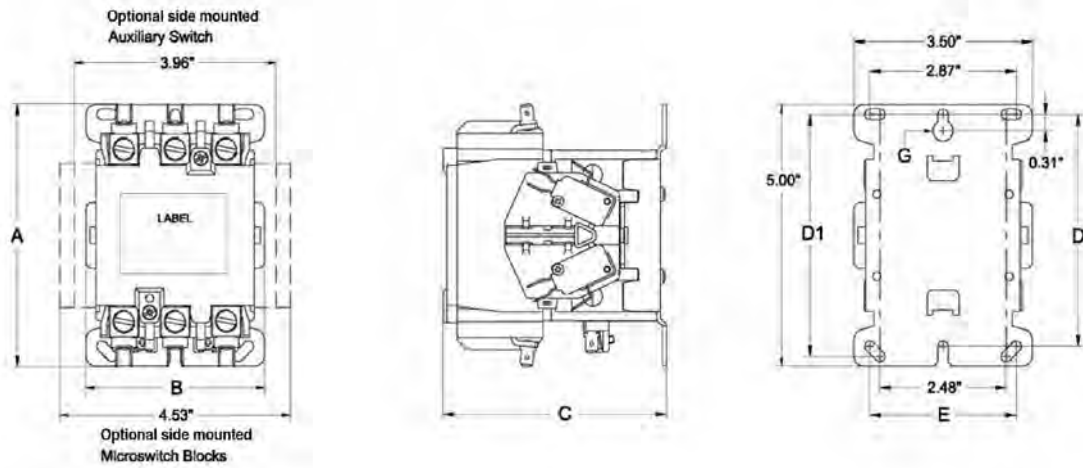
Note - 2\* Pole is a 3 pole body with center contacts removed.

| MARS NO.                | FLA   | POLES     | A    | B    | C    | D    | D1   | E    | MTG SCREW G | MAX WIRE SIZE |
|-------------------------|-------|-----------|------|------|------|------|------|------|-------------|---------------|
| 61320-61323             | 30    | 1         | 3.19 | 1.97 | 2.46 | 1.5  | 1.77 | 1.61 | 10          | 8             |
| 61720-61724 61730-61734 | 30-40 | 1         | 3.19 | 1.97 | 2.46 | 1.5  | 1.77 | 1.61 | 10          | 4             |
| 61345-61349             | 30    | 2         | 3.19 | 1.97 | 2.46 | 1.5  | 1.77 | 1.61 | 10          | 8             |
| 61745-61749 61755-61759 | 30-40 | 2         | 3.19 | 1.97 | 2.46 | 1.5  | 1.77 | 1.61 | 10          | 4             |
| 61430-61434             | 30    | 3         | 3.69 | 2.38 | 2.87 | 3.13 | 3.25 | 1.98 | 10          | 8             |
| 61750-61754 61445-61449 | 30-40 | 3         | 3.69 | 2.38 | 2.87 | 3.13 | 3.25 | 1.98 | 10          | 4             |
| 61425-61428 61440-61443 | 30-40 | 2(at 3P)* | 3.69 | 2.38 | 2.87 | 3.13 | 3.25 | 1.98 | 10          | 4             |

## 50-60A 3 Pole



## 75-90A 3 Pole

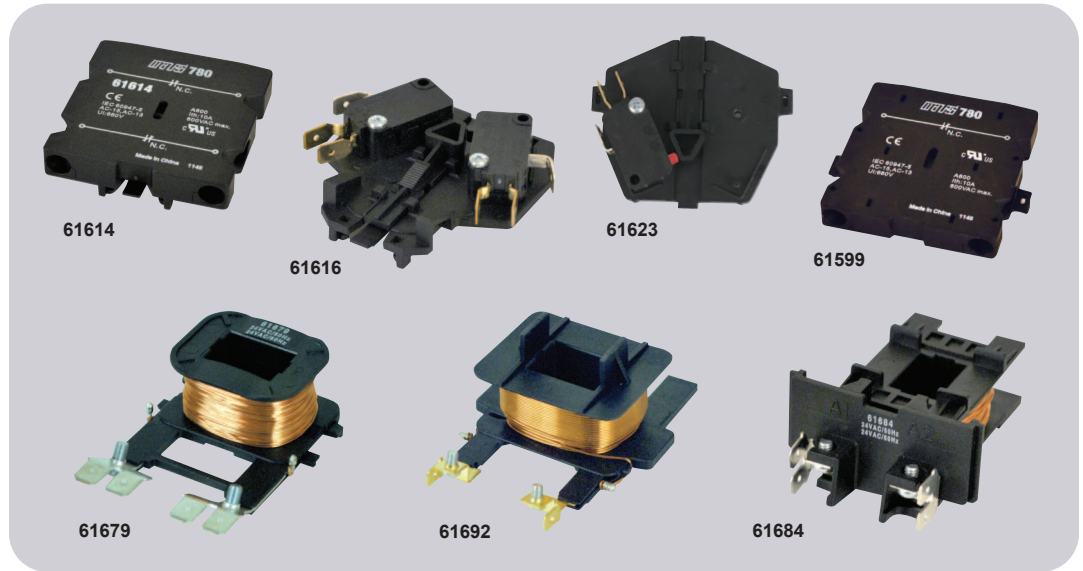


| MARS NO.                   | FLA   | POLES | A    | B    | C    | D    | D1   | E    | MTG SCREW G | MAX WIRE SIZE |
|----------------------------|-------|-------|------|------|------|------|------|------|-------------|---------------|
| 61460-61464<br>61470-61474 | 50-60 | 3     | 4.04 | 2.87 | 3.11 | 3.13 | 3.25 | 2.24 | 10          | 2             |
| 61480-61484<br>61490-61494 | 75-90 | 3     | 5.02 | 3.5  | 4.39 | 4.43 | 4.63 | 2.87 | 10          | 1/10          |

# MARS 780 Definite Purpose Contactors

## Renewal Parts and Accessories

- Snap on side mounted auxiliary switches
- Replacement coils



### Auxiliary Switches

| MARS NO. | FURNAS NO.  | DESCRIPTION | CONTACTOR F.L.A. | USED ON   |       |                            |
|----------|-------------|-------------|------------------|---|-------|----------------------------|
| 61610    | 49ACRO      | 1 NO        | 30 - 60          | 61320-61324<br>61720-61724<br>61730-61734<br>61345-61349<br>61745-61749<br>61755-61759<br>61430-61434<br>61750-61754<br>61445-61449<br>61425-61428<br>61440-61443<br>61460-61464<br>61470-61474 |       |                            |
| 61611    | 49ACRC      | 1 NC        |                  |   |       |                            |
| 61612    | 49ACR6      | 1 NO- 1 NC  |                  |   |       |                            |
| 61613    | 49ACR7      | 2 NO        |                  |   |       |                            |
| 61614    | 49ACR8      | 2 NC        |                  |   |       |                            |
| 61615    | 49D36098001 | SPDT        |                  |   |       |                            |
| 61616    | 49D36098003 | DPDT        |                  |   |       |                            |
| 61603    | -           | SPDT        |                  |   | 75-90 | 61480-61484<br>61490-61494 |
| 61598    | -           | 1 NO        |                  |   |       |                            |
| 61599    | -           | 1 NC        |                  |   |       |                            |

### MARS 780 Replacement Coils

| MARS NO. | FURNAS NO. | CONTACTOR SIZE   | COIL VOLTAGE     |
|----------|------------|------------------|------------------|
| 61679    | -          | 3 Pole 30-40 Amp | 24V              |
| 61680    | -          |                  | 120V             |
| 61681    | -          |                  | 208-240V         |
| 61682    | -          |                  | 277V             |
| 61683    | -          |                  | 480V             |
| 61684    | -          | 3 Pole 50-60 Amp | 24V              |
| 61685    | -          |                  | 120V             |
| 61687    | -          |                  | 208-240V         |
| 61690    | -          |                  | 277V             |
| 61691    | -          |                  | 480V             |
| 61692    | -          |                  | 3 Pole 75-90 Amp |
| 61693    | -          | 120V             |                  |
| 61694    | -          | 208-240V         |                  |
| 61695    | -          | 277V             |                  |
| 61696    | -          | 480V             |                  |

### MARS 780 Contactor Coil Characteristics

| Contactor Series               | Inrush VA | Sealed VA | Sealed Watts |
|--------------------------------|-----------|-----------|--------------|
| 1 Pole with shunt 30 to 40 amp | 40        | 7.5       | 2.5 - 3.5    |
| 2 Pole - Small Body 30- 40 Amp | 45        | 8         | 2.5 - 4.0    |
| 2 Pole Large Body 30- 40 Amp   | 90        | 16        | 3.5 - 5.0    |
| 3 Pole 30 - 40 Amp             | 90        | 16        | 3.5 - 5.0    |
| 3 Pole 50 - 60 Amp             | 145       | 20        | 5.0 - 7.0    |
| 3 Pole 75 - 90 Amp             | 235       | 32        | 10.0 - 12.0  |

## Furnas NEMA Contactors & Starters

### Application:

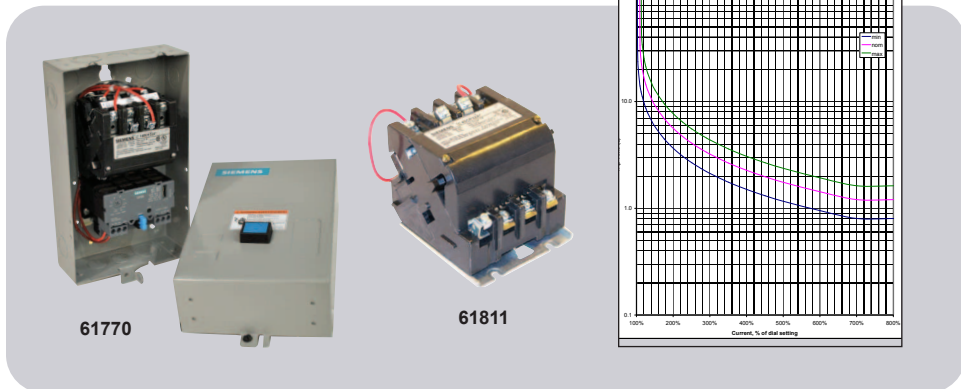
NEMA heavy duty contactors and starters are designed for across the line starting of 3 phase motors. Typical applications include cooling towers, refrigeration equipment, and commercial HVAC. NEMA contactors provide the switching (on/off) function. NEMA starters consist of a NEMA contactor with the addition of motor protection via a solid state overload relay which includes phase loss protection.

### Standard NEMA Contactor Features:

- Rugged industrial design epoxy encapsulated coil seals out moisture, promotes heat transfer, and resists electrical, mechanical, and thermal stresses. The 45 degree wedge action contacts reduce tracking and provide faster arc quenching. The resulting self-cleaning and reduced contact bounce mean cooler operation and longer life for the large silver cadmium oxide contacts
- Dual Voltage Coils  
120/240 VAC is standard  
24 VAC and 240/480 VAC are available as accessories
- Easy coil access. Top mounted coil requires no tools to change

### Standard NEMA Starter Features:

- NEMA Contactor
- True phase loss protection  
Trips within 3 seconds and is self protected from short circuits
- High accuracy +/- 2% repeat trip accuracy
- Self powered requires no hard wiring or separate power source
- Heaterless construction minimizes energy costs. Does not require the use of complicated heater charts. Simply set the dial on the overload relay to the motor F.L.A.
- Overload trip class 20



### NEMA Starters

| MARS NO. | SEIMENS NO. | NEMA SIZE | AMP RATING | 200V  | HORSEPOWER 230V | 460V | OVERLOAD RANGE | COIL VOLTAGE | ENCL.        |
|----------|-------------|-----------|------------|-------|-----------------|------|----------------|--------------|--------------|
| 61770    | 14CUC32BA   | 0         | 18         | 2     | 2               | 5    | 2.5-10A        | 120/240      | NEMA 1       |
| 61771    | 14CUD32BA   | 0         | 18         | 3     | 3               | -    | 9-18A          | 120/240      | NEMA 1       |
| 61772    | 14DUC32BA   | 1         | 27         | 2     | 2               | 5    | 2.5-10A        | 120/240      | NEMA 1       |
| 61774    | 14DUD32BA   | 1         | 27         | 3     | 3               | 10   | 9-18A          | 120/240      | NEMA 1       |
| 61775    | 14DUE32AA   | 1         | 27         | 7-1/2 | 7-1/2           | -    | 13-27A         | 120/240      | Not Included |
| 61776    | 14DUE32BA   | 1         | 27         | 7-1/2 | 7-1/2           | -    | 13-27A         | 120/240      | NEMA 1       |
| 61777    | 14ESG32BA   | 1-3/4     | 27         | 10    | 10              | 15   | 10-40A         | 120/240      | NEMA 1       |
| 61779    | 14FUF32AA   | 2         | 45         | -     | -               | 15   | 13-52 A        | 120/240      | Not Included |
| 61780    | 14FUF32BA   | 2         | 45         | 10    | 15              | 25   | 22-45A         | 120/240      | NEMA 1       |
| 61782    | 14HUG32BA   | 3         | 90         | 25    | 30              | 50   | 45-90A         | 120/240      | NEMA 1       |
| 61783    | 14HUG32AA   | 3         | 90         | 25    | 30              | 50   | 45-90A         | 120/240      | Not Included |

### NEMA Contactors

| MARS NO. | SEIMENS NO. | NEMA SIZE | AMP RATING | 200V  | HORSEPOWER 230V | 460V | COIL VOLTAGE | ENCL.        |
|----------|-------------|-----------|------------|-------|-----------------|------|--------------|--------------|
| 61811    | 40DP32AA    | 1         | 27         | 7-1/2 | 7-1/2           | 10   | 120/240      | Not Included |
| 61813    | 40FP32AA    | 2         | 45         | 10    | 15              | 25   | 120/240      | Not Included |

### Parts & Accessories for Starters & Contactors

| MARS NO. | SEIMENS NO. | DESCRIPTION               | NEMA SIZE |
|----------|-------------|---------------------------|-----------|
| 61652    | 75D73070J   | Coil 24VAC                | 0-2.5     |
| 61650    | 75D73070A   | Coil 120/240V             | 0-2.5     |
| 61653    | 75D73070C   | Coil 240/480V             | 0-2.5     |
| 61654    | 75D73070D   | Coil 208V                 | 0-2.5     |
| 61648    | 75D73251A   | Replacement Coil 120/240V | 3-3.5     |
| 61656    | 75CF14      | Replacement Contact Kits* | 0         |
| 61657    | 75DF14      | Replacement Contact Kits* | 1         |
| 61658    | 75FP14      | Replacement Contact Kits* | 2         |
| 61659    | 49AB10      | N.O. Auxiliary Contact    | 0-3       |
| 61660    | 49AB01      | N.C. Auxiliary Contact    | 0-3       |

\* Replacement contacts are sold in kits that will re-build 1 power pole. For example: Use (3) 75CF14 contact kits to re-build a 3 pole device.



# GE Definite Purpose Contactors

## Model 453 Definite Purpose Contactors

The compact models feature universal mount bases, taped coils, and combination phillips/ slot head screws. The GE compact design features "no burn" coil design. This self-protecting coil meets the Trane specification. 453 GE compact design contactor meets ARI 780. Some other manufacturer's economy model compact contactors do not meet this rigorous spec.

**Features:**

- Compact overall size
- Combo phillips/slothead screws/hexhead on 30 amp
- Universal mount base



**Specifications:**

**CR453C Compact, 30A, 40A, 1-Pole Plus Shunted Pole & 2-Pole**

| FULL LOAD AMPS | RESISTIVE AMPS PER POLE | LOCKED ROTOR AMPS SINGLE PHASE, 50/60 HZ |      |      | POLES     |
|----------------|-------------------------|--|------|------|-----------|
|                |                         | 240/277V                                 | 480V | 600V |           |
| 30             | 40                      | 180                                      | 150  | 120  | 1 + Shunt |

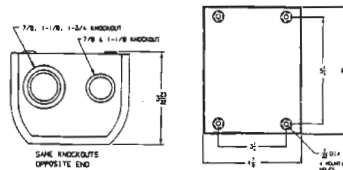
\* Ratings shown are for 1-phase, 2-pole.

| MARS NO. | FLA | RESISTIVE RATING PER POLE | POLES | VOLTAGE | GE MODEL    | HEIGHT | DIM. WIDTH | DEPTH |
|----------|-----|---------------------------|-------|---------|-------------|--------|------------|-------|
| 13101    | 30  | 40                        | 1-1/2 | 24      | 453CC3HAAAM | 2-9/16 | 2          | 3-1/4 |

# Universal Enclosure

## Universal Contactor Enclosure

The MARS 92680 Universal Contactor enclosure will fit contactors from 20 to 40 amp. This enclosure will also fit the new smaller frame ACC533 and ACC633 contactors. Each enclosure comes with all the necessary mounting screws.



| MARS NO. | MFG. PART NO. | DESCRIPTION                   |
|----------|---------------|-------------------------------|
| 92680    | AHK425A       | Universal Contactor Enclosure |

## MARS Definite Purpose Contactors

MARS definite purpose contactors are designed for use on refrigeration, air conditioning, and electric heating systems. They are available in one pole with shunt (one and one half pole) configurations, from 30 thru 40 amps. MARS brand definite purpose contactors are also available in 2 pole models (30 and 40 amp) and 3 pole models (30 through 75 amp). The universal mounting base allows replacement of most contactor brands. Straight-thru wiring and small size speeds installation.

### Features:

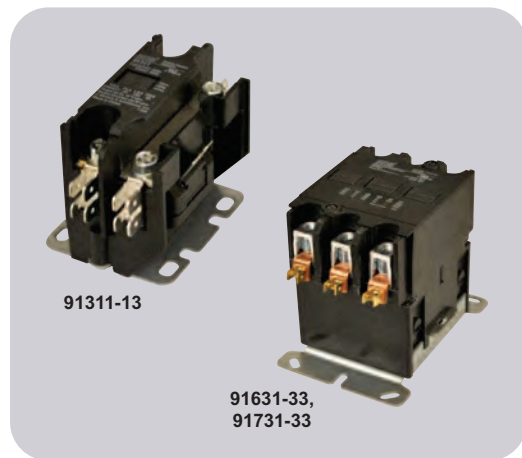
- Used in air conditioning, heating and refrigeration
- Box lug terminations speed installation
- Universal mounting base
- Contact cover and enclosed coils reduce dirt and insect intrusion
- Compact design
- Silver-Cadmium contacts

### Specifications:

- Meets ARI 780/790 requirements
- cULus Approval
- 1,000,000 Cycle mechanical life

### Auxiliary Switches

| MARS NO | DESCRIPTION | USED ON           |
|---------|-------------|-------------------|
| 61623   | SPDT        | All 3 Pole<br>910 |
| 61624   | 1 NO        |                   |
| 61625   | 1 NC        |                   |



| MARS NO. | FLA | POLES          | LOCKED ROTOR AMPS |     |     |     | RES. AMPS | COIL VOLTS | TERMINATION | HORSEPOWER |        |       |       |
|----------|-----|----------------|-------------------|-----|-----|-----|-----------|------------|-------------|------------|--------|-------|-------|
|          |     |                | 240               | 277 | 480 | 600 |           |            |             | 1 PH       | 3 PH   |       |       |
|          |     |                |                   |     |     |     |           |            |             | 240        | 240    | 480   | 600   |
| 91311    | 30  | 1 Pole w/Shunt | 180               | 180 |     |     | 40        | 24         | Screw Type  | -          | -      | -     | -     |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91315    | 30  | 1 Pole w/Shunt | 180               | 180 |     |     | 40        | 24         | Box Lug     | -          | -      | -     | -     |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91321    | 30  | 2              | 180               | -   | 150 | 120 | 40        | 24         | Screw Type  | -          | -      | -     | -     |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91325    | 30  | 2              | 180               | -   | 150 | 120 | 40        | 24         | Box Lug     | -          | -      | -     | -     |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91331    | 30  | 3              | 180               | -   | 150 | 120 | 40        | 24         | Screw Type  | 3 HP       | 7.5 HP | 10 HP | 15 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91335    | 30  | 3              | 180               | -   | 150 | 120 | 40        | 24         | Box Lug     | 3 HP       | 7.5 HP | 10 HP | 15 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91411    | 40  | 1 Pole w/Shunt | 240               | 240 | -   | -   | 50        | 24         | Box Lug     | -          | -      | -     | -     |
| 91421    | 40  | 2              | 240               | -   | 200 | 160 | 50        | 24         | Box Lug     | -          | -      | -     | -     |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91431    | 40  | 3              | 240               | -   | 200 | 160 | 50        | 24         | Box Lug     | 5 HP       | 10HP   | 15 HP | 20 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91531    | 50  | 3              | 300               | -   | 250 | 200 | 63        | 24         | Box Lug     | 5 HP       | 15 HP  | 20 HP | 25 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91631    | 60  | 3              | 360               | -   | 300 | 240 | 75        | 24         | Box Lug     | 7.5 HP     | 20 HP  | 25 HP | 30 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 91731    | 75  | 3              | 450               | -   | 375 | 300 | 94        | 24         | Box Lug     | 15 HP      | 25 HP  | 40 HP | 40 HP |
| 120      |     |                |                   |     |     |     |           |            |             |            |        |       |       |
| 208/230  |     |                |                   |     |     |     |           |            |             |            |        |       |       |

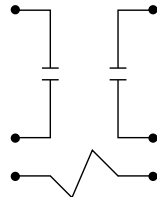
# Magnetic Line Contactors

## 30 Amp Two Pole Contactors

The MARS Series 180 contactors are designed primarily to replace contactors used in air conditioning and electric heating to control blower motors. In addition they are used to switch pumps and computer power supplies. Replace General Electric Contactors and other manufacturers including WR, Essex/RBM and Honeywell.

**Features:**

- Replace all 3ARR8, 9, 27, and 28 General Electric contactors
- Replace WR, Essex/RBM and Honeywell
- Instructions and cross reference chart included
- Non-positional
- UL and CSA listings available



COIL schematic



**Cross Reference**

| Carrier   | GE      | Packard | Supco | Honeywell No. | Mars Replacement |
|-----------|---------|---------|-------|---------------|------------------|
| HN52KC051 | 3ARR8E4 | C18001  | SMC11 | R850B1146     | 18001            |

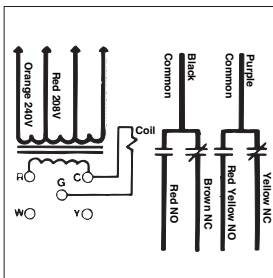
| MARS NO. | DESCRIPTION                            | FULL LOAD AMPS | RESISTIVE AMPS | LOCKED ROTOR AMPS | COIL VOLTAGE | POLES | COIL VOLT | PICK-UP HOT | MAX COLD |
|----------|--|----------------|----------------|-------------------|--------------|-------|-----------|-------------|----------|
| 18001    | 30 Amp 2 Pole Magnetic Line Contactor  | 30             | 30             | 120               | 24           | 2     | 24        | 20.5        | 19.2     |
| 93103    | Push-On Terminals Adapters and Screws. | -              | -              | -                 | -            | -     | -         | -           | -        |

# Fan Centers

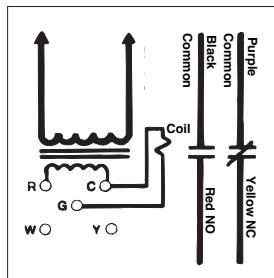
## MARS Relay/Transformer Fan Control Centers

MARS series 240 fan centers provide convenient low voltage control of one and two speed fan motors and auxiliary circuits in heating, cooling, or heating applications. Each MARS fan center is a reliable, compact unit consisting of a

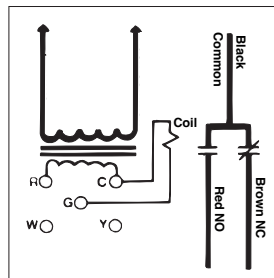
**Schematic:**



24010



24012



24013



24 volt control transformer and a plug-in switching relay mounted on a 4" square electrical junction box cover. All line voltage connections are made inside the box with color coded pre-stripped leads. Low voltage connections are made at a convenient terminal board mounted to the transformer.

**Features:**

- Choice of SPDT, SPNO / SPNC or DPDT relay switching options
- UL 1585 40VA transformer
- Color coded leads
- Low voltage terminal board
- Mounts directly to 4" electrical box
- 50/60 Hertz

**40VA 3/4 HP**

| MARS NO. | TRANSFORMER     |                                 | RELAY     | CONTACT RATINGS |              |                |              |
|----------|-----------------|---------------------------------|-----------|-----------------|--------------|----------------|--------------|
|          | PRIMARY VOLTAGE | SECONDARY CONNECTIONS           |           | 120V AC (AMPS)  |              | 240V AC (AMPS) |              |
|          |                 |                                 |           | FULL LOAD       | LOCKED ROTOR | FULL LOAD      | LOCKED ROTOR |
| 24010    | 120/208/240     | Color coded leads, pre-stripped | DPDT      | 13.8            | 82.8         | 6.9            | 41.4         |
| 24012    | 120             | Color coded leads, pre-stripped | SPNO/SPNC | 13.8            | 82.8         | 6.9            | 41.4         |
| 24013    | 120             | Color coded leads, pre-stripped | SPDT      | 13.8            | 82.8         | 6.9            | 41.4         |

### MARS Control Transformers NEMA Class II Open Construction

MARS compact open construction transformers are less than 2-1/4" in height. This makes them ideal as replacements within existing equipment.

MARS control transformers are available with various outputs and voltages for special applications.

**Application:**

Provide power source for control circuit for air conditioning, heating, or refrigeration systems.

**Features:**

- UL class 2 recognized
- Low heat rise
- Primary color coded leads
- Secondary color coded leads, or 1/4" male quick connects
- Foot-mount



### Foot-Mount Open Construction

| MARS NO.             | VA RATING | HZ    | PRIMARY     |                   | SECONDARY |                   |
|----------------------|-----------|-------|-------------|-------------------|-----------|-------------------|
|                      |           |       | VOLTAGE     | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50351                | 20        | 50/60 | 120         | Color coded leads | 24        | Color coded leads |
| 50352                | 40        | 50/60 | 120         | Color coded leads | 24        | Color coded leads |
| 50353                | 40        | 50/60 | 208/240     | Color coded leads | 24        | Color coded leads |
| 50354                | 40        | 50/60 | 120/208/240 | Color coded leads | 24        | Color coded leads |
| 50355*               | 40        | 60    | 120         | Color coded leads | 12/24     | Color coded leads |
| 50350                | 20        | 50/60 | 120/208/240 | Color coded leads | 24        | Color coded leads |
| 50357                | 40        | 50/60 | 277         | Color coded leads | 24        | Color coded leads |
| 50359 <sup>(1)</sup> | 40        | 50/60 | 120/208/240 | Color coded leads | 24/12/2.5 | Color coded leads |

\* Not UL listed (1) In line fuse protection

### Foot-Mount Open Construction With Primary & Secondary Quick Connects

| MARS NO. | VA RATING | HZ    | PRIMARY     |                          | SECONDARY |                          |
|----------|-----------|-------|-------------|--------------------------|-----------|--------------------------|
|          |           |       | VOLTAGE     | CONNECTIONS              | VOLTAGE   | CONNECTIONS              |
| 50362    | 40        | 50/60 | 120         | 1/4" Male quick connects | 24        | 1/4" Male quick connects |
| 50364    | 40        | 50/60 | 120/208/240 | 1/4" Male quick connects | 24        | 1/4" Male quick connects |
| 50363    | 40        | 50/60 | 208/240     | 1/4" Male quick connects | 24        | 1/4" Male quick connects |

### MARS Control Transformers NEMA Class II End Bell Type

MARS end bell transformers provide enclosures for the primary and secondary windings, MARS multi-mount models offer three mounting options - Foot, Plate, or Conduit mount.

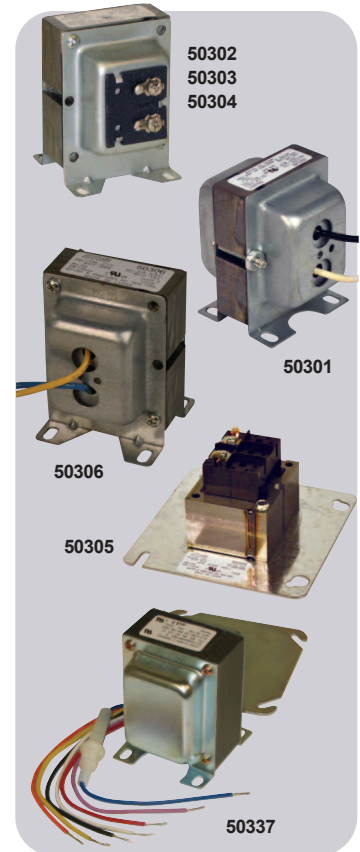
MARS control transformers are available with various outputs and voltages for special applications.

**Application:**

Provide power source for control circuit for air conditioning, heating, or refrigeration systems.

**Features:**

- UL class 2 recognized
- Low heat rise
- Primary color coded leads
- Secondary color coded leads, or screw terminals
- Multi-mount or plate-mount



### Foot-Mount End Bell Type

| MARS NO. | VA RATING | HZ | PRIMARY |                   | SECONDARY |                   |
|----------|-----------|----|---------|-------------------|-----------|-------------------|
|          |           |    | VOLTAGE | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50301    | 20        | 60 | 120     | Color coded leads | 24        | Color coded leads |

### Multi-Mount End Bell Type

| MARS NO. | VA RATING | HZ    | PRIMARY     |                   | SECONDARY |                   |
|----------|-----------|-------|-------------|-------------------|-----------|-------------------|
|          |           |       | VOLTAGE     | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50302    | 40        | 50/60 | 120         | Color coded leads | 24        | Screw terminals   |
| 50303    | 40        | 50/60 | 208/240     | Color coded leads | 24        | Screw terminals   |
| 50304    | 40        | 60    | 120/208/240 | Color coded leads | 24        | Screw terminals   |
| 50306*   | 48        | 60    | 277         | Color coded leads | 24        | Color coded leads |
| 50314    | 50        | 50/60 | 120/208/240 | Color coded leads | 24        | Color coded leads |
| 50333*   | 48        | 50/60 | 120/208/240 | Color coded leads | 24/12/2.5 | Color coded leads |

\* Not UL listed (1) Color coded leads on secondary, (2) Screw terminals on secondary

### Plate-Mount End Bell Type

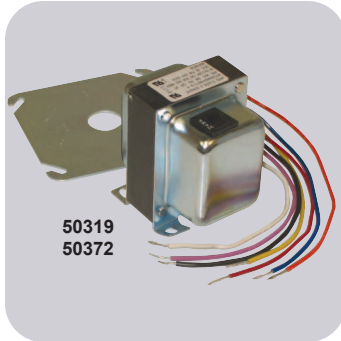
| MARS NO. | VA RATING | HZ    | PRIMARY |                   | SECONDARY |                 |
|----------|-----------|-------|---------|-------------------|-----------|-----------------|
|          |           |       | VOLTAGE | CONNECTIONS       | VOLTAGE   | CONNECTIONS     |
| 50305    | 40        | 50/60 | 120     | Color coded leads | 24        | Screw terminals |

# Transformers

## MARS Control Transformers NEMA Class II

Hub-Mounted Transformers with Circuit Breakers and Multiple Inputs of 120/208/240/480 VAC

Available either in 50VA or 75VA, these 2 versatile transformers replace Honeywell® AT150F and AT175F. All leads pass through the chase nipple.



- MARS 50319, 50VA, MARS 50372, 75VA
- 3 Way mounting
- Four inputs including 120/208/240/480 VAC
- UL Recognized

### Hub Mount End Bell Type

| MARS NO. | VA RATING | HZ    | PRIMARY         |                   | SECONDARY |                   |
|----------|-----------|-------|-----------------|-------------------|-----------|-------------------|
|          |           |       | VOLTAGE         | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50319    | 50        | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50372    | 75        | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |

## MARS Control Transformers NEMA Class II Heavy Duty End Bell Type

MARS control transformers are available with various outputs and voltages for special applications.

### Application:

MARS heavy duty end bell transformers offer a wide variety of higher VA rated models. These models are the choice when extra power is the solution.

### Features:

- UL class 2 recognized
- 50/60 Hz
- Low heat rise
- Color coded leads
- Foot-mount



### Foot-Mount End Bell Type

| MARS NO.             | VA RATING | HZ    | PRIMARY         |                   | SECONDARY |                   |
|----------------------|-----------|-------|-----------------|-------------------|-----------|-------------------|
|                      |           |       | VOLTAGE         | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50316                | 60        | 50/60 | 208/240         | Color coded leads | 24        | Color coded leads |
| 50320 <sup>(1)</sup> | 75        | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50326                | 75        | 50/60 | 480             | Color coded leads | 24        | Color coded leads |
| 50340*               | 100       | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |

\*100 VA does not qualify for NEMA Class II  
(1) Inline fuse

### Foot Mounted Open Construction

| MARS NO.             | VA RATING | HZ    | PRIMARY |                   | SECONDARY |                   |
|----------------------|-----------|-------|---------|-------------------|-----------|-------------------|
|                      |           |       | VOLTAGE | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50339 <sup>(2)</sup> | 75        | 50/60 | 480     | Color coded leads | 120       | Color coded leads |

(2) UL 506



## MARS Control Transformers NEMA Class II Manual Reset Style

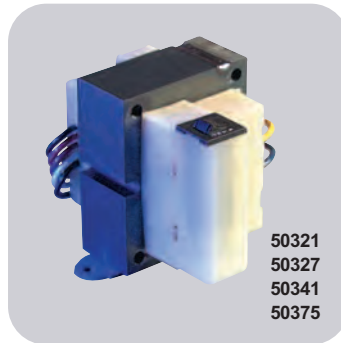
MARS control transformers are available with various outputs and voltages for special applications.

### Application:

Provide power source for control circuit for air conditioning, heating, or refrigeration systems.

### Features:

- UL class 2 recognized
- Low heat rise
- Color coded leads or quick connect terminals
- Foot-mount



## Foot-Mount End Bell Type with Manual Reset

| MARS NO. | VA RATING | HZ    | PRIMARY         |                   | SECONDARY |                   |
|----------|-----------|-------|-----------------|-------------------|-----------|-------------------|
|          |           |       | VOLTAGE         | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50327    | 50        | 60    | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50321    | 75        | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50375    | 75        | 50/60 | 120/208/240/575 | Color coded leads | 24        | Color coded leads |
| 50341*   | 100       | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50312    | 60        | 50/60 | 120/208/240/480 | Color coded leads | 24        | Color coded leads |
| 50370    | 75        | 50/60 | 120/277/380/575 | Color coded leads | 24        | Color coded leads |
| 50371    | 100       | 50/60 | 120/208/277/575 | Color coded leads | 24        | Color coded leads |

\* 100VA and higher does not qualify for NEMA Class II

## MARS Power Transformers

### Application:

Provide 120V power source for air conditioning, heating, or refrigeration systems. MARS power transformers provide dual purpose options — 120V or 24V secondary with 208V/240V/480V primary connections. Three VA selections offer a true powerhouse!

### Features:

- Color coded leads
- Compact size
- Low heat rise



## Power Transformers Foot-Mount Open Construction

| MARS NO.             | VA RATING | HZ | PRIMARY     |                   | SECONDARY |                   |
|----------------------|-----------|----|-------------|-------------------|-----------|-------------------|
|                      |           |    | VOLTAGE     | CONNECTIONS       | VOLTAGE   | CONNECTIONS       |
| 50380 <sup>(1)</sup> | 50        | 60 | 208/240/480 | Color coded leads | 120/24    | Color coded leads |
| 50381 <sup>(2)</sup> | 100       | 60 | 208/240/480 | Color coded leads | 120/24    | Color coded leads |

(1) Not UL listed

(2) UL 506

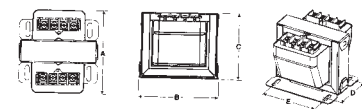
## GE Type Ip Core and Coil Transformers

GE type IP transformers are core and coil units designed for industrial control, panel board, HVAC and general purpose applications. They conform to ANSI C89.2, and are UL listed and CSA certified. These transformers are lightweight, small and designed for minimum mounting dimensions.



### Features:

- 60 Hz
- Encapsulated thru 500VA
- Control power applications
- UL listed, UL-506 File E2739
- CSA certified, C22.2 Number 66, File 3272
- 50 Hz available on special order basis



top view front view  
Encapsulated Style Views

## Encapsulated

| MARS NO. | CONT. KVA | PRIMARY | SECONDARY | DIMENSIONS |      |      |      |      |
|----------|-----------|---------|-----------|------------|------|------|------|------|
|          |           |         |           | A          | B    | C    | D    | E    |
| 50502    | .075      | 240/480 | 120/240   | 4.22       | 3.29 | 2.79 | 2.41 | 2.50 |
| 50504    | .150      | 240/480 | 120/240   | 4.67       | 4.04 | 3.29 | 2.66 | 3.12 |
| 50506    | .250      | 240/480 | 120/240   | 5.17       | 4.04 | 3.29 | 3.16 | 3.12 |
| 50507    | .300      | 240/480 | 120/240   | 5.17       | 4.04 | 3.29 | 3.16 | 3.12 |

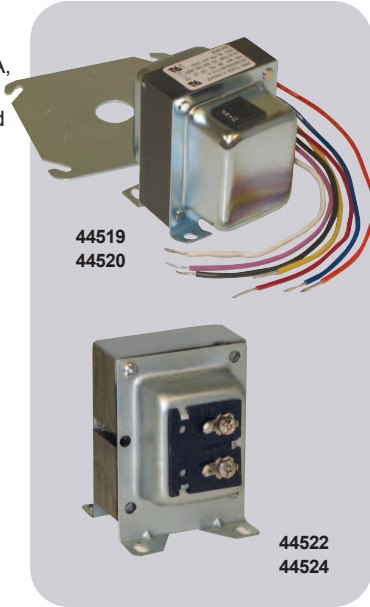
# JARD Transformers

## Hub-Mounted Transformers with Circuit Breakers and Multiple Inputs of 120/208/240/480 VAC



Available either in 50VA or 75 VA, these 2 versatile transformers replace Honeywell® AT150F and AT175F. All leads pass through the chase nipple.

- Model 5041MCB, 50 VA, Model 7541MCB, 75 VA
- Plate mount or foot mount
- Four inputs including 120/208/240/480 VAC
- UL Recognized



| MARS NO. | JARD NO. | VA | PRIMARY VAC     | SECONDARY VAC |
|----------|----------|----|-----------------|---------------|
| 44519    | 5041MCB  | 50 | 120/208/240/480 | 24            |
| 44520    | 7541MCB  | 75 | 120/208/240/480 | 24            |

## Multi-Mount Transformers Closed Construction, 4" x 4" Plate

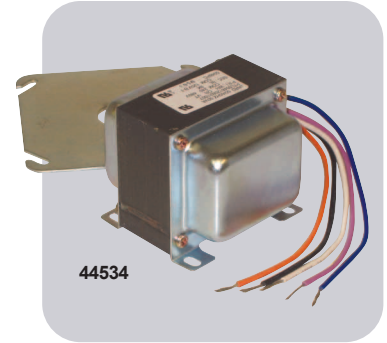
- Optional 3-way mounting for maximum flexibility
- Safety agency approved
- Welded laminations for quiet operation

| MARS NO. | JARD NO. | VA | PRIMARY VAC | SECONDARY VAC |
|----------|----------|----|-------------|---------------|
| 44522    | 4011M    | 40 | 120         | 24            |
| 44524    | 4031M    | 40 | 120/208/240 | 24            |
| 44525    | 5031M    | 50 | 120/208/240 | 24            |
| 44526    | 5032M    | 48 | 120/208/240 | 2.5/12/24     |

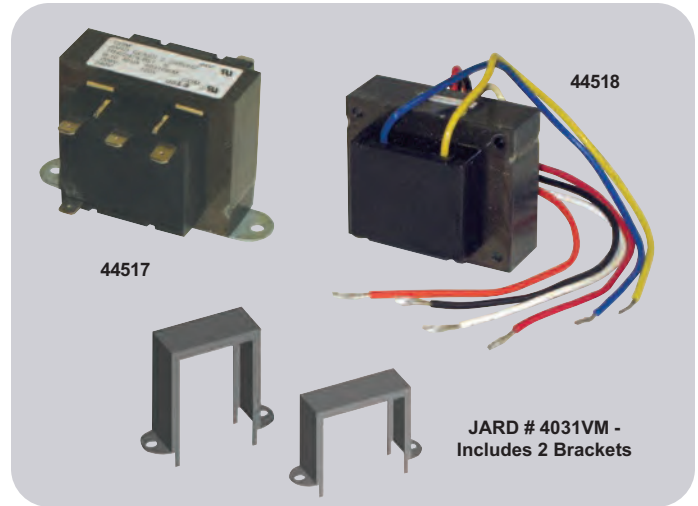
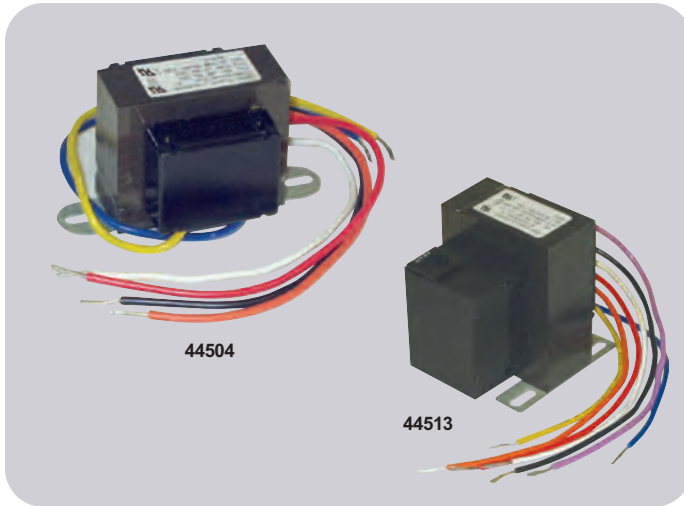
## Fully Enclosed Junction Box Ready



- Several models with dual voltage output
- Welded laminations for quiet operation
- Conservative heat rise characteristics
- UL 506



| MARS NO. | JARD NO.  | VA  | PRIMARY VAC | SECONDARY VAC |
|----------|-----------|-----|-------------|---------------|
| 44533    | 5048STPC  | 50  | 208/277/575 | 120           |
| 44534    | 10048PC   | 100 | 240/480     | 120           |
| 44535    | 10048STPC | 100 | 208/277/575 | 120           |



### Open Construction, Wire Leads

- Safety agency approved

| MARS NO. | JARD NO. | VA | PRIMARY VAC | SECONDARY VAC |
|----------|----------|----|-------------|---------------|
| 44501    | 2031F    | 20 | 120/208/240 | 24            |
| 44502    | 4011F    | 40 | 120         | 24            |
| 44503    | 4021F    | 40 | 208/240     | 24            |
| 44504    | 4031F    | 40 | 120/208/240 | 24            |
| 44505    | 4032F    | 40 | 120/208/240 | 2.5/12/24     |
| 44507    | 40271F   | 40 | 277         | 24            |
| 44508    | 5031F    | 50 | 120/208/240 | 24            |
| 44509    | 5032F    | 50 | 120/208/240 | 2.5/12/24     |
| 44510    | 7531F    | 75 | 120/208/240 | 24            |

### Closed Construction With Circuit Breaker

- All models feature a UL recognized manual reset circuit breaker
- Safety agency approved

| MARS NO.             | JARD NO. | VA  | PRIMARY VAC     | SECONDARY VAC |
|----------------------|----------|-----|-----------------|---------------|
| 44511                | 5041C    | 50  | 120/208/240/480 | 24            |
| 44512                | 6041C    | 60  | 120/208/240/480 | 24            |
| 44513                | 7541C    | 75  | 120/208/240/480 | 24            |
| 44514                | 7541STC  | 75  | 120/277/380/575 | 24            |
| 44515 <sup>(1)</sup> | 10041C   | 100 | 120/208/240/480 | 24            |

(1) Not UL, UL506

### Closed Construction Quick Connect

| MARS NO. | JARD NO. | VA | PRIMARY VAC | SECONDARY VAC |
|----------|----------|----|-------------|---------------|
| 44517    | 4031OEM  | 40 | 120/208/240 | 24            |

### Versatile 3-Way Mounting

| MARS NO. | JARD NO. | VA | PRIMARY VAC | SECONDARY VAC |
|----------|----------|----|-------------|---------------|
| 44518    | 4031VM   | 40 | 120/208/240 | 24            |

## MARS HVAC Surge Protective Device

The **iSPD** (*Intelligent Surge Protection Device*) offers comprehensive protection for your HVAC equipment.

The MARS 83907 Surge Protection Device is designed to provide maximum compressor protection from harmful power surges, transients and over-voltages utilizing the latest Thermally Protected MOV technology.

In addition, the modules microprocessor technology monitors line voltage to protect the compressor from starting or running during "brown outs" and low line voltage. The module also monitors refrigerant temperatures to identify coil freeze-up and low refrigerant issues.

If the module detects a low voltage or refrigerant issue the compressor is shut down. The module will automatically reset when specified operating parameters are restored and determined to be stable.

In the event of diminished surge protection or failure, the compressor will not be allowed to start until the module is replaced.

### Protects the Following Equipment and Components:

- Compressors
- Control & Defrost Boards
- Sensors & Relays
- Transformers
- Heat Pumps
- Reversing Valves
- ECM Motors

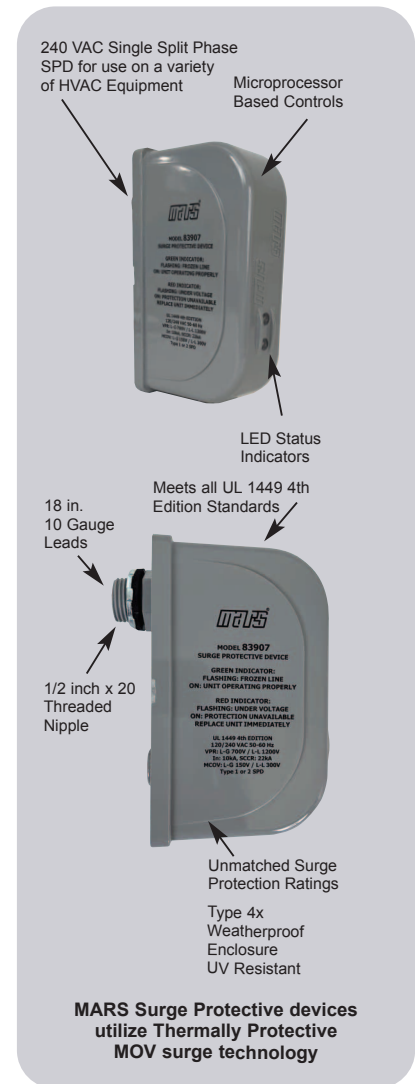
### Plus:

- Low Voltage Protection
- Coil Freeze-up / Low Refrigerant Detection
- Short Cycle Guard

### Features:

- Easy installation to disconnect box
- Weatherproof 4X enclosure
- Fits 1/2" knockouts
- Green & Red LED status indicators
- Thermally protected MOV's
- 240V single phase 50/60Hz
- Max surge current 10,000 A
- Max continuous over voltage
  - L-G 150V / L-L 300V
- Voltage protection rating
  - L-G 700V / L-L 1200V
- 3 Year warranty
- \$7,500 Connected equipment warranty

| MARS NO. | VOLTAGE | WIRE CONFIGURATION | SPD TYPE | MCOV    | ENCLOSURE | UL 1449 4TH EDITION |
|----------|---------|--------------------|----------|---------|-----------|---------------------|
| 83907    | 240     | L-L, L-G           | 1 or 2   | 150/300 | Type 4X   | cULus               |



# MARS Surge Protection Device

## MARS Side Open Disconnect Boxes with Internal Surge

MARS Disconnect with integrated surge protector provides a unitized design for quick and clean installation. The metal weather-resistant enclosure provides additional robustness and security. MARS Surge Protectors provide the performance necessary to protect critical components in high efficiency mini-split and unitary HVAC equipment.

**Features:**

- Side open disconnect
- Integrated internal surge protector
- Thermally Protected MOV's
- Metal-weather resistant enclosure
- External - Green & Red LED Status Indicators
- 3 Year Warranty
- \$7,500 Connected Equipment Warranty

**Specifications Disconnect:**

- Single phase 240V
- 10,000 Amp rating
- NEMA 3R enclosure
- Weather proof enclosure
- Available in fused and non-fused

**No. 83910 Surge Protector:**

- 120/240V Single (Split) Phase 50/60Hz
- Short Circuit Current Rating
  - 22,000 Amps
- MCOV L-G 150V / L-L 300V
- Voltage Protection Rating
  - L-G 700V / L-L 1200V
- UL 1449 4th Edition
- Type 1 or 2 Surge Protection Rating

**Protects:**

- Compressors
- Heat Pumps
- Ideal for Ductless System
- Inverter Boards
- ECM Motors
- Control Boards
- Transformers
- Relays
- Sensors



| MARS NO. | DESCRIPTION                     | ENCLOSURE          | INCLUDES SURGE PROTECTOR |
|----------|---------------------------------|--------------------|--------------------------|
| 83915    | 60 Amp Non-Fused w/Surge Module | NEMA 3R, Rainproof | MARS NO. 83910           |
| 83916    | 30 Amp Fused w/Surge Module     | NEMA 3R, Rainproof | MARS NO. 83910           |
| 83917    | 60 Amp Fused w/Surge Module     | NEMA 3R, Rainproof | MARS NO. 83910           |

| MARS NO. | DESCRIPTION   |
|----------|---|
| 83910    | Replacement Surge Module For 83915, 83916 and 83917 |

## MARS HVAC Surge Protective Device

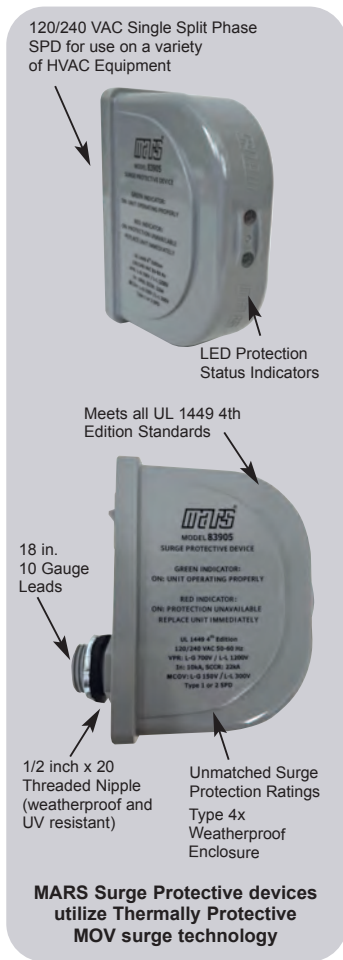
The MARS SPD is designed to protect your HVAC equipment from power spikes, surges and transients. Power spikes and surges can damage compressors, control boards, sensors and ECM motors resulting in costly repairs and down time. The MARS SPD utilizes Thermally Protected MOV technology to provide safe and reliable surge protection.

**Protects:**

- Compressors
- Heat Pumps
- Ideal for Ductless Systems
- Inverter Boards
- ECM Motors
- Control Boards
- Transformers
- Relays
- Sensors

**Features:**

- Easy Installation to Disconnect
- Weatherproof 4X Enclosure
- 18" Pre-stripped Leads
- Green & Red LED Status Indicators
- Thermally Protected MOVs
- 120/240V Single (Split) Phase 50/60Hz
- Short Circuit Current Rating
  - 22,000 Amps
- MCOV L-G 150V / L-L 300V
- Voltage Protection Rating
  - L-G 700V / L-L 1200V
- UL 1449 4th Edition
- Type 1 or 2 Surge Protection Rating
- 3 Year Warranty
- \$7,500 Connected Equipment Warranty



| MARS NO. | VOLTAGE | WIRE CONFIGURATION | SPD TYPE | MCOV    | ENCLOSURE | UL 1449 4TH EDITION |
|----------|---------|--------------------|----------|---------|-----------|---------------------|
| 83905    | 120/240 | L-L, L-G           | 1 or 2   | 150/300 | Type 4X   | cULus               |

## MARS HVAC Surge Protective Device

The MARS 83904 SPD is designed specifically for 120V furnace and air handler applications. The furnace and air handler contain components that must be protected from surges such as, ECM motors, Control Boards, Transformers. The MARS Surge utilizes thermally protected MOV technology for safe and reliable protection of equipment. The 120V Surge Device is easy to install with only 2 wires to connect.

**Protects:**

- Ideal for 120V Ductless Systems
- Furnace & Air Handlers
- Inverter Boards
- ECM Motors
- Control Boards
- Transformers
- Relays
- Sensors

**Features:**

- Easy 2 Wire Installation
- 10" Pre-stripped Leads
- Green LED Status Indicator
- Thermally Protected MOVs
- 120V Single Phase 50/60Hz
- Short Circuit Current Rating
  - 10,000 Amps
- MCOV L-G 150V
- Voltage Protection Rating
  - L-G 700V
- UL 1449 4th Edition
- Type 1 or 2 Surge Protection Rating
- 3 Year Warranty
- \$7,500 Connected Equipment Warranty



| MARS NO. | VOLTAGE | WIRE CONFIGURATION | SPD TYPE | MCOV | ENCLOSURE | UL 1449 4TH EDITION |
|----------|---------|--------------------|----------|------|-----------|---------------------|
| 83904    | 120     | L-G                | 1 or 2   | 150  | Type 2    | cULus               |



# Condensate Pumps

## MARS Condensate Pump - 24' Lift

MARS new line of medium condensate pumps are designed to out-perform the competition while providing quiet operation and reliability.

The MARS pump design couples industry leading performance with the installation flexibility and features you need to get the job done.

The quick release silicone check valve allows for quick and efficient servicing without the need to remove the condensate line.

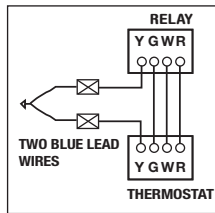
The integrated safety switch can be wired for equipment shut down or directly to a high level alarm.

**Features:**

- 24 foot lift
- 125 gph
- 0.5 gal reservoir
- Patent pending, quick release check valve
- Field serviceable "duck bill" check valve
- Rubber isolation feet
- Drip proof housing design
- Solid float
- Integrated safety switch 250 volt and float switches
- ABS and stainless steel construction



21780



| MARS NO. | DESCRIPTION  |
|----------|--|
| 21780    | 115 V, 60 Hz, 0.91 Amps, 71 Watts<br>6' Cord, 3/8" Check Valve, Safety Switch Medium Reservoir             |
| 21781    | 115 V, 60 Hz, 0.91 Amps, 71 Watts<br>6' Cord, 3/8" Check Valve, Safety Switch 20' Tubing, Medium Reservoir |
| 21782    | 230 V, 60 Hz, 0.6 Amps, 75 Watts<br>6' Cord, 3/8" Check Valve, Safety Switch Medium Reservoir              |
| 21783    | 230 V, 60 Hz, 0.6 Amps, 75 Watts<br>6' Cord, 3/8" Check Valve, Safety Switch 20' Tubing, Medium Reservoir  |

### Gallons Per Hour Pump Performance Comparison Chart

| FOOT LIFT | 1   | 5  | 10 | 15 | 20 | 24 |
|-----------|-----|----|----|----|----|----|
| MARS      | 125 | 98 | 74 | 70 | 43 | 7  |
| Comp. 1   | 84  | 75 | 60 | 42 | 10 | 0  |
| Comp. 2   | 117 | 98 | 70 | 58 | 11 | 0  |
| Comp. 3   | 105 | 95 | 73 | 36 | 0  | 0  |

### Specifications: Performance-Gallons Per Hour @ Height In Feet

| MODEL NO. | 1   | 5   | 10 | 15 | 20 | 24 |
|-----------|-----|-----|----|----|----|----|
| 21780     | 125 | 98  | 74 | 70 | 43 | 7  |
| 21781     | 125 | 98  | 74 | 70 | 43 | 7  |
| 21782     | 139 | 119 | 70 | 50 | 28 | 7  |
| 21783     | 139 | 119 | 70 | 50 | 28 | 7  |

### Check Valve Replacement

| MARS NO. | DESCRIPTION                 |
|----------|-----------------------------|
| 21787    | Check Valve Replacement Kit |



21787

## MARS Low Profile 22' Pump

**Features:**

- Low profile pump
- Compact design
- Integrated safety switch
- Quick service check valve
- Drip proof housing
- Class leading performance



21784

| MARS NO. | DESCRIPTION   |
|----------|---|
| 21784    | 115 V, 60 Hz, 1.07 Amps, 67 Watts, Low Profile, 22' Lift<br>6' Cord, 3/8" Check Valve, Safety Switch Medium Reservoir |
| 21785    | 230 V, 60 Hz, 0.53 Amps, 68 Watts, Low Profile, 22' Lift<br>6' Cord, 3/8" Check Valve, Safety Switch Medium Reservoir |

## MARS 16' Pump

**Features:**

- 16' lift pump
- Whisper quiet
- 1/2 gal reservoir
- Rubber isolation feet
- Quick service check valve
- Class leading performance



21786

| MARS NO. | DESCRIPTION  |
|----------|--|
| 21786    | 115 V, 60 Hz, 0.75 Amps, 49 Watts, 16' Lift<br>6' Cord, 3/8" Check Valve, Safety Switch Medium Reservoir |

| MODEL NO. | DIMENSIONS |       |        |
|-----------|------------|-------|--------|
|           | LENGTH     | WIDTH | HEIGHT |
| 21780     | 10.25      | 5.125 | 6.375  |
| 21781     | 10.25      | 5.125 | 6.375  |
| 21782     | 10.25      | 5.125 | 6.375  |
| 21783     | 10.25      | 5.125 | 6.375  |
| 21784     | 10.25      | 5.04  | 5.28   |
| 21785     | 10.25      | 5.04  | 5.28   |
| 21786     | 10.25      | 5.125 | 6.375  |

### Condensate Pump vs. Competition

| FEATURE                         | MARS | COMP. 1 | COMP. 2 | COMP. 3 |
|---------------------------------|------|---------|---------|---------|
| 24 ft. Lift                     | ●    |         |         |         |
| Motor Corrosion Protection      | ●    |         |         |         |
| Drip Proof Motor Housing        | ●    | ●       |         | ●       |
| Drip Proof Motor & Switches     | ●    |         |         |         |
| Vibration Absorbing Rubber Feet | ●    | ●       | ●       |         |
| Side Mount                      | ●    | ●       | ●       | ●       |
| Quick Release Check Valve       | ●    | ●       |         |         |
| Internal Safety Switch          | ●    |         | ●       |         |
| Solid Float                     | ●    | ●       |         | ●       |

### MARS AllStart™ Hard Start Device

The MARS AllStart™ is a two wire hard start device designed to provide maximum starting torque for single phase PSC and CSIR compressors up through 10HP. The MARS AllStart™ recycles instantly for maximum convenience on troublesome hard start jobs.

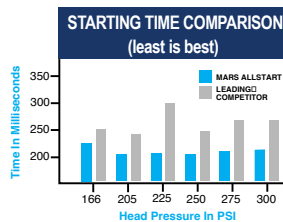
Independent testing has determined that the MARS AllStart™ provides more starting torque than other competitive models, and this results in quicker starts. Test results on a range of head pressures from 166 to 300 PSI indicate that the MARS AllStart™ started the test compressor in an average of 21.7% less time than the leading competitor! More available starting torque means less time to get problem compressors started.

MARS offers the largest assortment of refrigeration and air conditioning compressor starting components. When the proper starting relay and capacitor combination is a must, they are available from MARS. When getting a problem compressor started in the field "NOW" is the job, rely on the new MARS AllStart.™



**Features:**

- Maximum starting torque!
- More than 20% faster starts!
- Easy two wire installation
- Recycles instantly
- Individually packaged with wiring instructions



**Cross Reference**

| KickStart/ RectorSeal | Parts Connect | Ranco  | Supco | MARS Replacement |
|-----------------------|---------------|--------|-------|------------------|
| T05                   | PSA8          | RSPP8E | SPP8E | 32708            |

| MARS NO. | MODEL NO. | H.P.      | VOLT MAX. |
|----------|-----------|-----------|-----------|
| 32708    | AllStart  | 1/2 to 10 | 115-277V  |

### MARS Combination Starters

The MCS is a combination start relay, start capacitor, and motor overload. It is designed to replace those components on a 115 volt single phase refrigeration compressor installed on a capillary tube system.

The MCS is factory wired and comes with a connection diagram on the product label for maximum convenience.

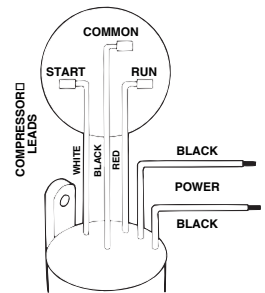


**Features:**

- Maximum starting torque!
- More than 20% faster starts!
- Easy two wire installation
- Recycles instantly
- Individually packaged with wiring instructions

**Cross Reference**

| Parts Connect | Ranco  | Supco  | MARS Replacement |
|---------------|--------|--------|------------------|
| PCS410        | RSO410 | RCO410 | 32741            |
| PCS810        | RSO810 | RCO810 | 32781            |



| MARS NO. | MODEL NO. | H.P.        | VOLT MAX. |
|----------|-----------|-------------|-----------|
| 32741    | MCS 41    | 1/4 TO 1/3  | 115V      |
| 32781    | MCS 81    | 1/12 to 1/5 | 115V      |

### MARS Motor Torque Multiplier

The MARS MTX 100, MTX 200 motor torque multipliers feature a combination PTC solid state device, and start capacitor in one compact unit.

The MTX 100 is designed for use on PSC motors and compressors up to 5HP, 277V maximum; the MTX 200 is designed for use on PSC motors and compressors up to 10HP, 277V. These units are easily installed by connecting the two leads from the MTX unit to the motor run capacitor terminals.

**Features:**

- Totally solid state integrated design
- Fast, easy two wire installation
- Three mounting options; clip, screw, or capacitor bracket
- Individually packaged

**Cross Reference**

| 5-2-1/CPS Products | Diversitech | Parts Connect | Ranco | Supco | MARS Replacement |
|--------------------|-------------|---------------|-------|-------|------------------|
| CSRU1              | DST-5       | PSA5          | RSPP5 | SPP5  | 32701            |
| -                  | DST-6       | PSA6          | RSPP6 | SPP6  | 32702            |



| MARS NO. | MODEL NO. | H.P.      | VOLT MAX. |
|----------|-----------|-----------|-----------|
| 32701    | 100       | 1/2 to 5  | 277V      |
| 32702    | 200       | 1/2 to 10 | 277V      |

# MARS Start Assists

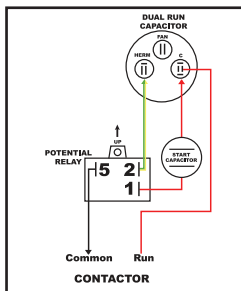
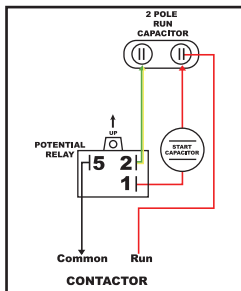
## MARS 3 Wire Hard Start Kits

MARS 3 Wire Hard Start Kits provide the additional starting torque required for quicker compressor starts in systems using higher pressure refrigerants. Improved starting performance extends compressor life and minimizes potential refrigerant contamination due to overheated compressor windings. MARS Hard Start Kits also improve system life and performance by reducing undue overload stress on contactors and run capacitors.

If your system is slow to start, MARS has a Hard Start Kit to fit your application.

### Features:

- Start relay made in the USA and approved by all compressor manufacturers.
- Start capacitor made in Mexico
- 30% faster starts
- 3 wire design ensures proper "drop-out"
- Extends life of compressor
- Kit contains mounting hardware



### Cross Reference

| MARS NO. | 5-2-1 (CPS) | Supco | Packard (2 wire) | Diversitech (2 wire) |
|----------|-------------|-------|------------------|----------------------|
| 32715    | CSR U1      | 3W1   | TQS1             | HSK5                 |
| 32716    | CSR U2      | 3W2   | TQS2             | HSK1                 |
| 32717    | CSR U3      | 3W3   | -                | -                    |

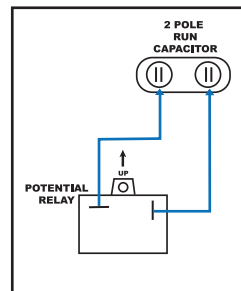
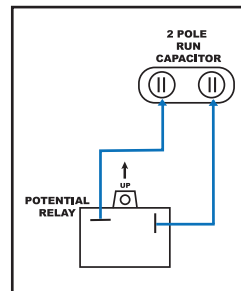
| MARS NO. | VOLTS       | DESCRIPTION                    |
|----------|-------------|--------------------------------|
| 32715    | 208-230/240 | 3 Wire Hard Start 1 to 3 Ton   |
| 32716    | 208-230/240 | 3 Wire Hard Start 3.5 to 5 Ton |
| 32717    | 208-230/240 | 3 Wire Hard Start 4 to 5 Ton   |

## MARS 2 Wire Hard Start Kits

MARS 2 Wire Hard Start Kits provide quick and easy installation on the job-site with only 2 connections. 2 Wire Hard Starts provide the additional starting torque for quicker compressor starts and improves compressor. MARS Hard Start kits also improve system life and performance by reducing undue overload stress on contactors and run capacitors. If your system is slow to start, MARS has a Hard Start Kit to fit your application.

### Features:

- Start relay made in the USA and approved by all compressor manufacturers.
- NGM Start Capacitor is approved by all major HVAC manufacturers
- 30% faster starts
- Extends life of compressor
- 2 wire design speeds installation
- Kit contains mounting hardware



### Cross Reference

| MARS NO. | KickStart | Packard (2 wire) | Diversitech (2 wire) |
|----------|-----------|------------------|----------------------|
| 32713    | TO-5      | TQS1             | HSK5                 |
| 32714    | KS-1      | TQS2             | HSK1                 |

| MARS NO. | VOLTS       | DESCRIPTION                    |
|----------|-------------|--------------------------------|
| 32713    | 208-230/240 | 2 Wire Hard Start 1 to 3 Ton   |
| 32714    | 208-230/240 | 2 Wire Hard Start 3.5 to 5 Ton |

# MARS General Purpose Switching Relays

## For Motor Starting Circuits up to One Horsepower

### Features:

- Replace Potter & Brumfield PR series, Deltrol, Guardian, Magnacraft, etc.
- Plastic enclosed coil minimizes damage, resists dirt and moisture
- 5/16" diameter silver contacts for long life
- Tough phenolic base
- Reinforced screw terminals
- UL and CSA listings available



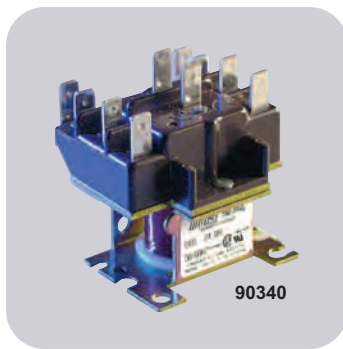
| MARS NO. | P & B SERIES | CONTACTS ARRANGEMENT | AMP | COIL VOLTAGE | COIL RES. IN OHMS | NOM. POWER |
|----------|--------------|----------------------|-----|--------------|-------------------|------------|
| 43008    | PRD7AY0      | DPST-NO              | 25  | 120          | 290               | 9.8VA      |
| 43014    | PRD11AY0     | DPDT                 | 25  | 120          | 290               | 9.8VA      |

### Cross Reference Information

| POTTER & BRUMFIELD | MARS NO. | DETROL NO. | MARS NO. |
|--------------------|----------|------------|----------|
| PR7AY0-120V        | 43008    | 20240-83D  | 43008    |
| PR11AY0-120V       | 43014    | 20241-83D  | 43014    |

## Replacement Relay for Fan Control Centers

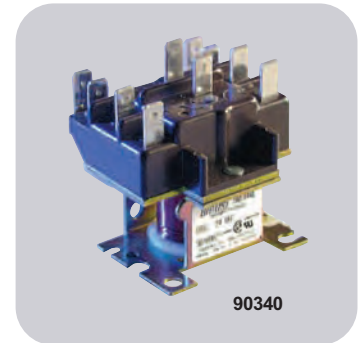
Provides quick and easy plug-in installation to restore like new operation without replacing the entire fan center. The universal relay will cover all MARS fan centers and many competitive brands.



| MARS NO. | USED ON             | DESCRIPTION                              |
|----------|---------------------|--|
| 90340    | 24010, 24012, 24013 | DPDT universal plug-in replacement relay |

## 2-Pole Air Conditioning Relays

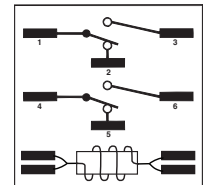
The MARS Series 903 switching relays are intended for many applications in air conditioning, refrigeration, and heating. Other uses include general purpose switching in appliances, fan controls, and vending machines. Our relays are available in 24, 110/120, and 208/240 coil voltages with various combinations of power and pilot duty contacts.



### Features:

- Replaces Honeywell and White-Rodgers/RBM - cross reference on package
- Double quick-connect terminals on coil
- 2.13 x 1.88 x 2.25 in.
- Base is designed for easy replacement of competitive relays
- Molded terminal numbers and circuit diagram on top of relay
- UL and CSA listings available

|                   | POWER |          | PILOT |          |
|-------------------|-------|----------|-------|----------|
|                   | 120V  | 208/240V | 120V  | 208/240V |
| Full Load Amps    | 12    | 6        | -     | -        |
| Resistive Amps*   | 15    | 15       | 3     | 3        |
| Locked Rotor Amps | 60    | 35       | -     | -        |
| Horsepower        | 3/4   | 3/4      | 1/10  | 1/10     |



\*277 VAC

| MARS NO. | COIL VOLTAGE | TERMINALS 1-2-3 | TERMINALS 4-5-6 |
|----------|--------------|-----------------|-----------------|
| 90340    | 24           |                 |                 |
| 90341    | 110/120      | Power           | Power           |
| 90342    | 208/240      |                 |                 |
| 90343    | 24           |                 |                 |
| 90344    | 110/120      | Power           | Pilot           |
| 90345    | 208/240      |                 |                 |
| 90346    | 24           | Pilot           | Pilot           |
| 90348    | 208/240      |                 |                 |

### Cross Reference Information

| WR/RBM NO. | MARS REPLACEMENT | HONEYWELL NO. | MARS REPLACEMENT |
|------------|------------------|---------------|------------------|
| 90-340     | 90340            | R4222B1082    | 90344            |
| 90-341     | 90341            | R4222B1090    | 90345            |
| 90-342     | 90342            | R4222D1013    | 90341            |
| 90-343     | 90343            | R4222D1021    | 90342            |
| 90-344     | 90344            | R4222N1010    | 90348            |
| 90-345     | 90345            | R4222V1002    | 90344            |
| 90-346     | 90346            | R4222V1010    | 90345            |
| 90-348     | 90348            | R8222B1067    | 90343            |
|            |                  | R4222D1014    | 90340            |
|            |                  | R8222N1011    | 90346            |
|            |                  | R8222V1003    | 90343            |



# MARS General Purpose Switching Relays

## SPST and SPDT Fan Relays

The MARS Series 903 relays are among the most popular relays used in air conditioning today. They will replace the WR/Essex/RBM Type 84 (90-290 thru 90-295) quick-connect and screw terminal versions.

**Features:**

- 0.25 inch quick-connect terminals
- Packaged with instructions and cross reference
- Replace 90-290 thru 90-295 and 90-290Q thru 90-295Q
- Dimensions: 2.38 x 1.63 x 1.50 in.
- Tab bracket, Non-positional
- UL and CSA listings available



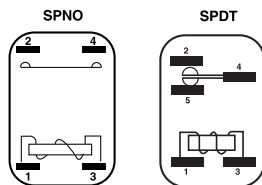
| COIL VOLTAGE | MARS NO. SPST | MARS NO. SPDT |
|--------------|---------------|---------------|
| 24           | 90290         | 90293         |
| 110/120      | 90291         | 90294         |
| 208/240      | 90292         | 90295         |

**Contact Rating—  
All Models/Amps**

| VOLTAGE | FULL LOAD | LOCKED ROTOR | RESISTIVE |
|---------|-----------|--------------|-----------|
| 120     | 12        | 60           | 18        |
| 240     | 8         | 48           | 18        |
| 277     | 7         | 42           | 18        |

**Cross Reference Information**

| WR/RBM NO. | MARS NO. | WR/RBM NO. | MARS NO. |
|------------|----------|------------|----------|
| 90-290     | 90290    | 90-293     | 90293    |
| 90-290Q    | 90290    | 90-293Q    | 90293    |
| 90-291     | 90291    | 90-294     | 90294    |
| 90-291Q    | 90291    | 90-294Q    | 90294    |
| 90-292     | 90292    | 90-295     | 90295    |
| 90-292Q    | 90292    | 90-295Q    | 90295    |



Coil Data:  
24-240 VAC @ 50/60 Hz;  
5 VA Max. Inrush; 3.0 VA Max. Sealed

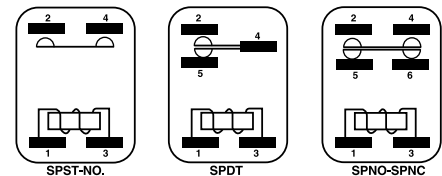
## Heavy Duty Fan Relays

MARS Heavy Duty Fan Relays are used on heating and air conditioning equipment to provide switching of heavier loads with a compact size relay. MARS Heavy Duty Fan Relays replace WR/Essex/RBM type 184.



**Features:**

- 0.25 inch quick-connect terminals
- Packaged with instructions and cross reference
- Replaces WR/Essex/RBM Type 184
- Tab bracket, Non-positional
- UL and CSA listings available



**Contact Rating—  
All Models/Amps**

| VOLTAGE | FULL LOAD | LOCKED ROTOR | RESISTIVE |
|---------|-----------|--------------|-----------|
| 120     | 12        | 60           | 18        |
| 240     | 8         | 48           | 18        |
| 277     | 7         | 42           | 18        |

**Coil Data**

| COIL VOLTAGE | MAX INRUSH | MAX SEALED |
|--------------|------------|------------|
| 24           | 5 VA       | 3 VA       |
| 120          | 5 VA       | 3 VA       |
| 208/240      | 5 VA       | 3 VA       |

**Cross Reference**

| COIL VOLTAGE | MARS NO. SPST | MARS NO. SPDT | MARS NO. SPNO-SPNC | WR/RBM NO. | MARS NO. | WR/RBM NO. | MARS NO. |
|--------------|---------------|---------------|--------------------|------------|----------|------------|----------|
| 24           | 90360         | 90370         | 90380              | 90-360     | 90-360   | 90-374     | 90374    |
| 110/120      | 90362         | 90372         | 90382              | 90-362     | 90-362   | 90-380     | 90380    |
| 208/240      | 90364         | 90374         | 90384              | 90-364     | 90-364   | 90-382     | 90382    |
| 277          |               | 90377         |                    | 90-370     | 90-370   | 90-384     | 90384    |
|              |               |               |                    | 90-372     | 90-372   |            |          |



## MARS Enclosed Switching Relays

MARS enclosed switching relays are heavy duty general purpose relays suitable for a variety of applications. They are commonly used in heating, air conditioning, vending machines, office machines, control panels and other general purpose applications. They are available in single pole, two pole and three pole models for either bracket or plug-in mounting. All MARS enclosed switching relays are protected by a tough polycarbonate cover to keep out dust and dirt. Blade type terminals fit standard plug-in mounts plus allow use with 3/16 inch quick-connect terminals or direct soldering.

### Features:

- Simple connections
- One, two and three pole models
- Plug-in or bracket mount
- See-through protective cover
- Three-way blade terminals, plug-in, quick-connect or solder
- UL and CSA listings available

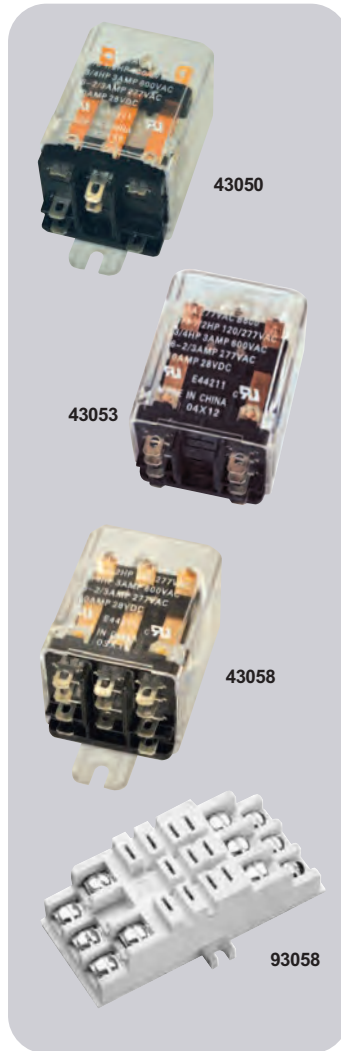
### Specifications:

Dimensions: 2.0 X 1 1/2 X 1 3/8

Terminals: 3/16 blade

Coil Data: 2.0 VA

Contact Material: Silver alloy, gold flashed



## MARS Current Relays - Universal Replacement

MARS current relays manufactured by General Electric can replace almost any current relay found on refrigerators, freezers, water cooler, pumps and vending machines.



### Features:

- Replace plug-on, bracket-type, split-phase, and capacitor-start current relays
- Covers replacement needs of 1/12 H.P. 115V to 1/8 H.P. 115V
- Clearly labeled terminals for fast wiring
- Each relay packaged with installation instructions and wiring diagrams
- UL and CSA listings available

| MARS NO. | GE NO. 3ARR12 PAC | MAX PICK-UP | MIN DROP OUT | APPLICATION SURVEY BY HORSEPOWER1 (AT 115)2 |     |     |     |     |     |     |     |
|----------|-------------------|-------------|--------------|---|-----|-----|-----|-----|-----|-----|-----|
|          |                   |             |              | 1/12  | 1/8 | 1/6 | 1/5 | 1/4 | 1/3 | 1/2 | 3/4 |
| 27001    | 309A              | 3.8         | 3.2          | ■   | □   | □   | □   | □   | □   | □   | □   |
| 27002    | 310A              | 5.2         | 4.4          | □   | ■   | □   | □   | □   | □   | □   | □   |

1. Current relays cannot be replaced by horsepower, amperage, or nameplate data alone. Refer to cross reference information for proper replacement of original equipment current relays by part numbers.
2. These current relays are often used on 230 volt applications, however this horsepower survey refers only to 115 volt applications.

| MARS NO. | COIL VOLTAGE                                     | HZ    | AMP RATING | HORSEPOWER |      | SWITCH ACTION | TYPE MOUNT |
|----------|--|-------|------------|------------|------|---------------|------------|
|          |  |       |            | 120V       | 240V |               |            |
| 43050    | 24   | 50/60 | 13         | 1/3        | 1/2  | SPDT          | bracket    |
| 43053    | 24   | 50/60 | 13         | 1/3        | 1/2  | DPDT          | bracket    |
| 43054    | 120  |       |            |            |      |               |            |
| 43056    | 24   | 50/60 | 13         | 1/3        | 1/2  | 3PDT          | bracket    |
| 43057    | 120  |       |            |            |      |               |            |
| 43058    | 240  |       |            |            |      |               |            |
| 43063    | 24   | 50/60 | 13         | 1/3        | 1/2  | DPDT          | plug-in    |
| 43064    | 120  |       |            |            |      |               |            |
| 43066    | 24   |       |            |            |      |               |            |
| 43067    | 120  | 50/60 | 13         | 1/3        | 1/2  | 3PDT          | plug-in    |
| 43068    | 240  |       |            |            |      |               |            |
| 93058    | Socket Base. Can be surface or DIN rail mounted. |       |            |            |      |               |            |

# MARS Relays & Potential Relays

## For Submersible Pump Applications

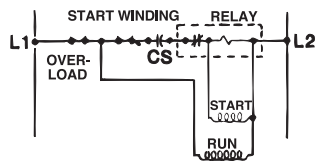
The MARS 550 and 551 relays were specifically developed for submersible pump and other motor starting applications in high moisture environments. Because the control panels for these are often located in areas of high humidity, the components on them must resist the effects of moisture. Chrome plating on the core and armature and the relatively small area of contact eliminates armature sticking due to organic contaminants which was the number one cause of relay failure.



19550

### Features:

- Used on F.E. Meyers, Franklin Electric, Jacuzzi, Red Jacket, Sta-Rite, and Tait
- 2 relays replace over 25 O.E.M. relays
- Universal break-off bracket on each relay. Simply snap off parts not needed
- UL and CSA listings available



| MARS NO. | MARS MODEL NO. | CONTINUOUS COIL VOLTAGE | PICK-UP |      | DROP-OUT |      |
|----------|----------------|-------------------------|---------|------|----------|------|
|          |                |                         | MIN.    | MAX. | MIN.     | MAX. |
| 19550    | MARS 550       | 130                     | 111     | 134  | 15       | 40   |
| 19551    | MARS 551       | 332                     | 244     | 270  | 40       | 90   |

| MARS NO. | G.E. NO.  | USED BY                         |
|----------|-----------|---------------------------------|
| 16104    | 3ARR3J3G3 | Barnes [Burks, Decator] & Myers |

| MANUF.            | OEM NO.    | GE CAT. NO. | MARS NO. | MANUF.     | OEM NO.    | GE CAT. NO. | MARS NO. |
|-------------------|------------|-------------|----------|------------|------------|-------------|----------|
| F.E. Meyers       | 13178-A    | 3ARR3D7J4   | 19550    | Jacuzzi    | 23-1308-26 | 3ARR3EA9V5  | 19551    |
|                   | 13179-A    | 3ARR3D3V4   | 19551    |            | 23-1308-00 | 3ARR3EA7J5  | 19550    |
|                   | 13180-A    | 3ARR3D3A4   | 19551    |            | 23-1308-18 | 3ARR3EA7BB5 | 19550    |
|                   | 17891-A    | 3ARR3EA3A4  | 19551    |            | 23-1308-34 | 3ARR3EA5U5  | 19551    |
|                   | 17890-A    | 3ARR3EA3V4  | 19551    |            | 23-1308-42 | 3ARR3EA7M5  | 19550    |
| Franklin Electric | 17889-A    | 3ARR3EA7J4  | 19550    | Red Jacket | 23-1308-49 | 3ARR3EA5C5  | 19551    |
|                   | 155031-101 | 3ARR3J7J4   | 19550    |            | 71-69      | 3ARR3EA7M5  | 19550    |
|                   | 155031-102 | 3ARR3J9V4   | 19551    |            | 71-70      | 3ARR3EA5B5  | 19551    |
|                   | 155031-104 | 3ARR3J2P3   | 19550    |            | 71-47      | 3ARR3J3V2   | 19551    |
|                   | 155031-103 | 3ARR3J9U4   | 19551    |            | U18-325    | 3ARR3J3V3   | 19551    |
| Sta-Rite          | 155031-105 | 3ARR3J7M1   | 19550    | U18-665    | 3ARR3J3A3  | 19551       |          |
|                   | Tait       |             |          | U18-810    | 3ARR3J2P3  | 19550       |          |
|                   |            |             |          | U18-811    | 3ARR3J5V3  | 19551       |          |
|                   |            |             |          | A124P2     | 3ARR3EA5A5 | 19551       |          |
|                   |            |             |          | A124P1     | 3ARR3EA7K5 | 19550       |          |

## One-On-One™ Direct Replacement Potential Relays

The relays are exact replacements for Bristol & Copeland applications. They conform to specifications and in most cases are the one-on-one™ replacement relay used by the manufacturer

Other relays available on special order. Contact your local wholesaler or MARS Customer Service.



16028

| BRISTOL     | MARS  | COPELAND    | COPELAND    | MARS        |
|-------------|-------|-------------|-------------|-------------|
| 650058      | 16028 | MARS        | 040-0001-64 | 16098       |
| 650855      | 16051 |             | 040-0001-68 | 16099       |
|             |       |             | 040-0001-71 | 16116       |
|             |       | 040-0001-48 | 16093       | 16122       |
| BRISTOL     | MARS  | 040-0001-50 | 16085       | 16121       |
| 650971      | 16083 | 040-0001-53 | 16095       | 16152       |
|             |       | 040-0001-54 | 16089       |             |
| COPELAND    | MARS  | 040-0001-55 | 16023       | COPELAND    |
| 040-0001-00 | 16086 | 040-0001-59 | 16090       | MARS        |
| 040-0001-01 | 16093 | 040-0001-60 | 16091       | 040-0001-88 |
| 040-0001-04 | 16085 | 040-0001-61 | 16086       | 040-0001-89 |
| 040-0001-12 | 16098 | 040-0001-62 | 16035       |             |
| 040-0001-17 | 16095 |             |             |             |
| 040-0001-19 | 16089 |             |             |             |
| 040-0001-20 | 16023 |             |             |             |
| 040-0001-25 | 16035 |             |             |             |
| 040-0001-26 | 16022 |             |             |             |

## Universal Replacement

### Quick Reference Relay Selection Chart For General Electric Relays

1. Determine the General Electric model number of the Relay to be replaced the "FORM" and "GROUP"

| EXAMPLE: | 3ARR3*     | A    | 3B    | 3              |
|----------|------------|------|-------|----------------|
|          | Basic Type | FORM | GROUP | Non-Positional |

One number plus  
1 or 2 Letters    1 or 2 Letters

### Cross Reference Information

| WR/RBM NO. | MARS NO. | WR/RBM NO. | MARS NO. |
|------------|----------|------------|----------|
| 90-1       | 19002    | 90-25      | 19006    |
| 90-2       | 19009    | 90-26      | 19008    |
| 90-3       | 19004    | 90-27      | 19005    |
| 90-4       | 19003    | 90-40      | 19004    |
| 90-5       | 19006    | 90-41      | 19008    |
| 90-6       | 19006    | 90-63      | 19002    |
| 90-7       | 19004    | 90-64      | 19003    |
| 90-8       | 19003    | 90-65      | 19004    |
| 90-9       | 19007    | 90-66      | 19005    |
| 90-10      | 19008    | 90-67      | 19006    |
| 90-11      | 19003    | 90-68      | 19007    |
| 90-12      | 19007    | 90-69      | 19001    |
| 90-13      | 19005    |            |          |
| 90-14      | 19003    |            |          |
| 90-15      | 19006    |            |          |
| 90-16      | 19007    | TECUM. NO. | MARS NO. |
| 90-17      | 19002    | 82777      | 19002    |
| 90-18      | 19008    | 82778      | 19004    |
| 90-19      | 19006    | 82779      | 19008    |
| 90-20      | 19007    | 82781      | 19010    |
| 90-21      | 19002    | 82783      | 19003    |
| 90-22      | 19003    | 82784      | 19009    |
| 90-23      | 19007    | 82785      | 19006    |
| 90-24      | 19008    | 82787      | 19007    |

2. Locate in the following table the Relay GROUP and select the corresponding MARS Replacement Relay from the kit.

|              |  |
|--------------|--|
| <b>19002</b> | MARS 63 replaces Relay GROUPS 2J; 2K; 2L; 2M; 5N; 7J; 7K; 7L; 7M; 7N; 8L; 8M; 8N   |
| <b>19003</b> | MARS 64 replaces Relay GROUPS 3A; 3B; 3AV; 3AU; 4A; 4B; 6A; 6B; 6AV; 10A; 10B; 10AU; 10AV                                  |
| <b>19004</b> | MARS 65 replaces Relay GROUPS 3P; 3R; 3AP; 5P; 5R; 5S; 5T; 22S   |
| <b>19005</b> | MARS 66 replaces Relay GROUPS 3U; 3V; 3AT; 6U; 6V; 6W  |
| <b>19006</b> | MARS 67 replaces Relay GROUPS 3C; 3D; 3AA; 4C; 4D; 4BK; 6C; 6D; 6AA; 10C; 10D; 26A; 26B; 26C; 26D                          |
| <b>19007</b> | MARS 68 replaces Relay GROUPS 3E; 3F; 3AB; 3AC; 4E; 4F; 4G; 6E; 6F; 6G; 10H; 10AB; 10AC; 26E; 26F; 26G; 26H; 27E; 27F; 27G |
| <b>19008</b> | MARS 69 replaces Relay GROUPS 3S; 3T; 10S; 10T; 25S; 25T; 10AS   |
| <b>19009</b> | MARS 70 replaces Relay GROUPS 5B; 5C; 5D; 5AA; 8B; 8C; 8D  |
| <b>19010</b> | MARS 71 replaces Relay GROUPS 6TV; 6TW; 10V  |

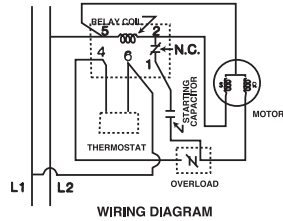
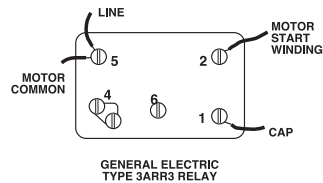
3. Install relay in accordance with instructions in MARS Replacement Kit

### MARS Universal Replacement

The MARS refrigeration potential relay service kit has become an industry standard since its introduction over fifty years ago. Its long-term reliability and easy replacement have been the key to its success. The wide calibration ranges and the universal bracket make the MARS potential relay is a must on every service truck.

**Features:**

- Genuine MARS relays replace thousands of O.E.M. models
- Non-positional
- Wide range of selectivity
- QC-6 Kit included with each relay to convert screw-on to push-on
- Instructions and wiring diagram included in each relay
- Universal break-off bracket on each relay. Simply snap-off parts not needed
- UL and CSA listings available



### Calibration Specifications

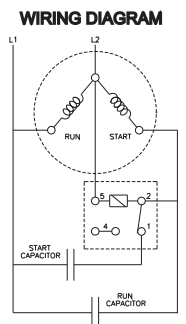
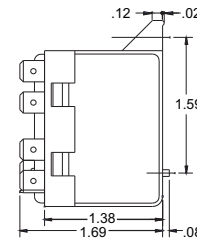
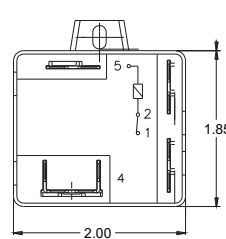
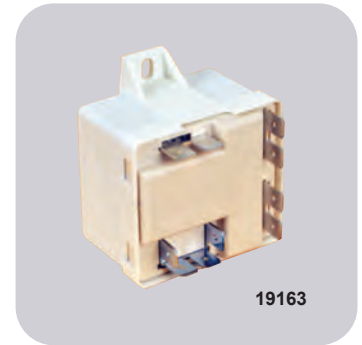
| MARS NO. | MARS MODEL NO. | CONTINUOUS COIL VOLTAGE | PICK-UP |     | DROP-OUT MAX |
|----------|----------------|-------------------------|---------|-----|--------------|
|          |                |                         | MIN.    | MAX |              |
| 19002    | MARS 63        | 170                     | 139     | 153 | 55           |
| 19003    | MARS 64        | 395                     | 260     | 275 | 120          |
| 19004    | MARS 65        | 332                     | 168     | 182 | 90           |
| 19005    | MARS 66        | 395                     | 215     | 225 | 120          |
| 19006    | MARS 67        | 420                     | 295     | 315 | 125          |
| 19007    | MARS 68        | 502                     | 325     | 345 | 135          |
| 19008    | MARS 69        | 336                     | 180     | 195 | 105          |
| 19009    | MARS 70        | 253                     | 285     | 305 | 77           |
| 19010    | MARS 71        | 420                     | 212     | 232 | 121          |
| 93001    | QC-6           | —                       | —       | —   | —            |

### MARS HVAC Potential Relays

MARS series relays are manufactured for the HVAC industry. These relays meet all requirements for original equipment relays.

**Features:**

- 50/60 Hz
- cULus
- Contact rating 35 amp, 400 VAC
- Operating position tab up
- Instructions and wiring diagram included in each relay
- Class "B" insulation



### Calibration Specifications

| MARS NO. | MARS MODEL NO | CONTINUOUS COIL VOLTAGE | PICK-UP VOLTAGE | DROP-OUT VOLTAGE |
|----------|---------------|-------------------------|-----------------|------------------|
| 19163    | MARS 163      | 168                     | 140-153         | 20-45            |
| 19164    | MARS 164      | 420                     | 242-272         | 60-121           |
| 19165    | MARS 165      | 332                     | 171-184         | 40-90            |
| 19166    | MARS 166      | 420                     | 204-233         | 60-121           |
| 19167    | MARS 167      | 420                     | 300-328         | 60-121           |
| 19168    | MARS 168      | 502                     | 314-342         | 60-135           |
| 19169    | MARS 169      | 332                     | 180-193         | 40-90            |
| 19170    | MARS 170      | 253                     | 285-305         | 35-77            |
| 19171    | MARS 171      | 420                     | 204-233         | 60-121           |

Note: If used on 50 Hz, the PU will be about 13% lower

# Leak Detectors

## MARS H-10 Pro Universal Refrigerant Leak Detector

The MARS H-10 Pro combines and enhances all the features of the previous H-10 Series models into one full featured unit. The H-10 Pro Refrigerant Leak Detector continues to be the universal standard for checking halogen-based refrigerant leaks in residential and commercial applications. With automatic auto zero balance control it's unique sensor calibration system will pinpoint small, medium and large leaks. The instrument uses a tried-and-true positive ion emission heated diode with audible and visual leak rate indicators. It is the most sensitive and accurate leak detector to detect all CFC, HFC and HCFC refrigerants as low as 0.006 oz/yr, including R-410A and R-507. The unit is mounted in a durable carry case which houses the 4.5 foot probe with built in filter, carrying strap, wall adapter and operating instructions.



### Features:

- All CFC, HFC and HCFC refrigerants, including but not limited to: R-12, R-22, R-134a, R-404A, R-410A, R-502, R-507, HFO-1233zd, HFO-1234yf and HFO-1234ze
- Improved sensor responsiveness with ultra-sensitive detection
- Dual power sources include rechargeable battery or external DC powered (wall adapter included)
- Selectable sensitivity to pinpoint small, medium or large leaks
- Unique visual sensor calibration system (with included reference leak bottle)
- Rugged enclosure with shoulder strap included
- Manual or automatic zero modes
- Headphone port allows for optional headset use in high-noise environments

### Specifications:

**Nominal Leak Range:** 0.006 oz/yr (stationary) | 0.1 oz/yr (moving probe per SAE J2791)

**Power Supply:** 12 VDC - internal rechargeable sealed lead acid battery; 100-240 VAC wall adapter/universal battery charger to charge or run continuously

**Reference Leak:** Approx. 0.006 oz/yr (stationary) | 0.1 oz/yr (moving probe per SAE J2791), 1 year life (typical)

**Ambient Operating Temp:** 32°F to 104°F (0°C to 40°C)

**Battery Life:** 3 hours (typically)

**Warm Up Time:** Approx. 2 min.

**Response Time:** 1 second

**Gases Detected:** All CFC, HFC and HCFC non-flammable refrigerants

**Detection Principle:** Positive Ion Emission Heated Diode

**Probe Length:** 4.5 feet

**Dimensions:** 10.5" L x 8.3" W x 5.4" H

**NOTE:** sensors are consumed in normal operation. It is good practice to have a spare sensor available at all times.

| MARS NO. | CATALOG NO. | DESCRIPTION  |
|----------|-------------|--|
| 25301    | H-10 Pro    | Universal Refrigerant Leak Detector, Wall adapter or Battery Powered |

## Renewal Parts

MARS stocks genuine renewal parts for MARS, GE, and Bacharach H-10 Series Leak Detectors.



## Renewal Parts For H-10 Professional, H-10N, H-10G, and H-10B

| MARS NO. | CATALOG NO. | DESCRIPTION   | H-10 PRO/PM | H-10N | H-10G | H-10B |
|----------|-------------|---|-------------|-------|-------|-------|
| 25310    | M1101UD     | Maintenance kit (100 filters, 3 rubber probe tips)                                      | ✓           | ✓     | ✓     | ✓     |
| 25315    | H10N04      | Plug-in sensor element  | ✓           | ✓     | ✓     | ✓     |
| 25314    | M1101UU     | Probe tip - clear plastic   | ✓           | ✓     | ✓     | ✓     |
| 25309    | E7076DX     | Rubber tip for probe  | ✓           | ✓     | ✓     |       |
| 25325    | M1101AH     | Battery charger - 120-240 VAC   | ✓           |       |       |       |
| 25323    | M1101UC     | Super tune up kit; sensor, leak vial, 100 filters, 3 flow balls and 3 rubber probe tips | ✓           | ✓     | ✓     | ✓     |
| 25326    | M1101AD     | Battery for H-10 Pro  | ✓           |       |       |       |
| 25321    | K9344AH     | Reference Leak Assembly   | ✓           | ✓     | ✓     | ✓     |



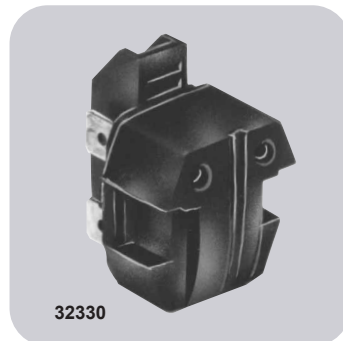
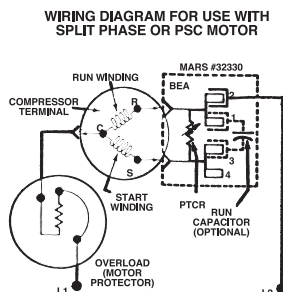
## MARS Solid State Motor Starting Relay for Refrigerators and Freezers

MARS 32330 is a solid state PTC motor starting relay that mounts directly to any 3-pin fuse connector. One model replaces thousands of current relays used on 1/12 HP to 1/3 HP compressors.

### Features:

- Replaces Tecumseh Relays SSR2 and SSR3 for push-on applications.
- Non-positional
- One model for 1/12 HP to 1/3 HP, 120 volt
- UL and CSA listings available

| MARS NO. | HORSEPOWER | VOLTAGE |
|----------|------------|---------|
| 32330    | 1/12 - 1/3 | 120     |



## MARS Solid State Timers Delay On Make

The MARS 32391 is the top-selling timer in the industry. Its reliability has been proven in the field by knowledgeable contractors.

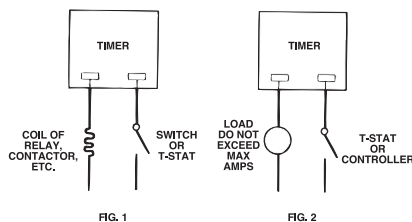
The MARS 32391 will not be fooled by the thermostat anticipator.

Heavy duty MARS timers are offered for higher current applications.



### Features:

- Easy two-wire installation
- Proven reliability, all solid state
- .25 in. quick connect terminals
- Mounts in any position
- Compact size
- High accuracy
- Totally enclosed and encapsulated for proper heat dissipation



### Specifications:

- .040 amps min. latch current

| MARS NO. | TYPE DELAY | TIME DELAY RANGE | TYPE OF ADJUSTMENT | INPUT VOLTAGE | HZ    | MAX AMPS. | VOLTAGE DROP  | CONN. DIA. |
|----------|------------|------------------|--------------------|---------------|-------|-----------|---------------|------------|
| 32391    | on make    | 6 sec...8 min.   | dial               | 19...240VAC   | 50/60 | 1         | 2.5 at 1 amp. | 1          |

## Mars Solid State Timers Delay On Break

MARS solid state delay on break timers are designed to prevent short cycling of air conditioning, refrigeration and heat pump compressors. Upon application of power the load is energized. When the thermostat opens, or if there is a momentary loss of power, the load is de-energized and the delay period begins. The compressor will not start again during the delay period.

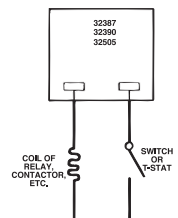
MARS number 32392 is a versatile two wire timer that features adjustable timing and can be used with any voltage from 19 thru 240 VAC, 50 or 60 Hz.

The MARS 32505 are the most simple and economic ways to stop short cycling on 24 VAC controlled systems. Both devices are fixed 5 minute delay on break timers.



### Features:

- 1 to 3 second random re-start
- Dial adjustable
- Compact size
- Mounts in any position
- .25 in. quick connect terminals
- Proven reliability
- MARS delay-on-break timers are not load sensitive



### Adjustable

| MARS NO. | TYPE DELAY | TIME DELAY RANGE | TYPE OF ADJUSTMENT | INPUT VOLTAGE | HZ    | MAX AMPS. | VOLTAGE DROP  |
|----------|------------|------------------|--------------------|---------------|-------|-----------|---------------|
| 32392    | on break   | 6 sec...5 min.   | dial               | 19...240VAC   | 50/60 | 1         | 2.5 at 1 amp. |

### Fixed Delay

|       |          |        |      |           |       |   |             |
|-------|----------|--------|------|-----------|-------|---|-------------|
| 32505 | on break | 5 min. | none | 20-30 VAC | 50/60 | 1 | 3 at 1 amp. |
|-------|----------|--------|------|-----------|-------|---|-------------|



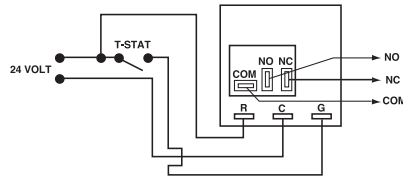
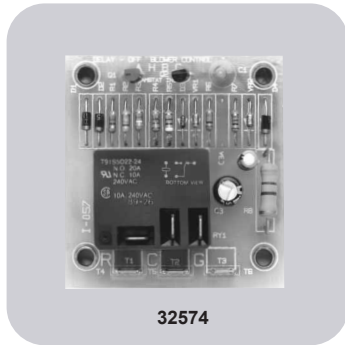
# MARS Solid State Timers & Devices

## Fan Time Delay Module

The MAHBC fan time delay module is a replacement for the direct motor control used by leading OEMs in high efficiency residential central air conditioning systems. The purpose of the control is to keep the blower motor running for 60 seconds after the thermostat has been satisfied. The result is an increase in residual cooling from the indoor coil without running the condensing unit, and thus, higher energy efficiency. The MAHBC is ideal for retrofit where improved efficiency is desirable.

**Features:**

- Wide ambient temperature operating range -40°F to 175°F
- 1/4" male quick connect terminals
- Easy surface mount with four #6 screws
- UL and CSA recognized



**Cross Reference**

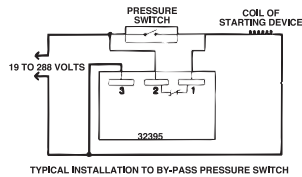
| OEM            | PART NO.    |
|----------------|-------------|
| BARD           | 8201-056    |
| RHEEM          | 42-22515-01 |
| SNYDER GENERAL | 0001395336  |

| MARS NO. | MARS MODEL | VOLTAGE | OUTPUT |      | TIME DELAY | ACTION |
|----------|------------|---------|--------|------|------------|--------|
|          |            |         | 120V   | 240V |            |        |
| 32574    | MAHBC      | 24VAC   | 1 HP   | 2 HP | 60 SEC.    | SPDT   |

## MARS Bypass Timer

MARS 32395 is an adjustable, multi-voltage bypass timer that allows the temporary bypass of a control or device during start-up. At the end of the delay period the control is returned to the circuit.

Eliminate nuisance trips!



Low pressure switch bypass application.

FIGURE 1  
LOAD IS BYPASSED ON RETURNS TO CIRCUIT AFTER DELAY PERIOD.

| MARS NO. | TYPE DELAY | TIME DELAY RANGE | TYPE OF ADJ. | INPUT VOLTAGE | HZ    | MAX AMPS | VOLTAGE DROP | CONN. DIAGRAM |
|----------|------------|------------------|--------------|---------------|-------|----------|--------------|---------------|
| 32395    | by-pass    | 6 sec...8 min.   | dial         | 19...240VAC   | 50/60 | 1        | 2 at 1 amp.  | 1             |

## Compressor Anti-Short Cycle Timer with Low Voltage Brownout Protection

Delay on break.

OEM replacement timers for Lennox, Rheem, Ruud, Trane, Heil Quaker, Keep Rite, Mc Quay, Snyder General and others.

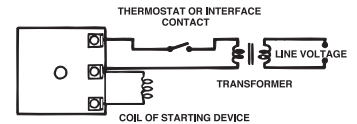
**Features:**

- Lockout delay prevents rapid cycling compensated resistor type wall thermostats
- Single hole mounting (.25 inch diameter)
- Non-positional
- Brownout protection prevents startup when voltage is below normal conditions
- Reduces nuisance service calls due to short cycling
- Delay on Break Lockout delay starts with opening of thermostat or loss of power
- .25 in. quick-connect terminals
- Eliminates relay chatter due to thermostat bounce
- Small size 2.00 x 2.00 x .75 in.
- UL and CSA listings available



**Operation:**

On initial closure of the thermostat, the compressor relay energizes immediately. When the thermostat opens, a lockout condition and a time delay is initiated. During this lockout time delay period, the compressor cannot be energized. Brownout protection prevents energizing of the compressor when the line voltage is below normal conditions.



### With Integral Brownout Protection

| MARS NO. | MODEL NO. | OPERATING VOLTAGE (NOMINAL) | TIME DELAY (MIN.) ± 2% | MARS NO. |
|----------|-----------|-----------------------------|------------------------|----------|
| 32382    | TA24A5    | 24 VAC                      | 5                      | 1.5      |

### MARS Universal Replacements for Refrigeration and Air Conditioning

MARS motor protectors solve the serviceman's most annoying problem—finding suitable replacements for motor overload protectors.

**Features:**

- Used in refrigeration, room air conditioners, heating, appliances, and electric motors
- Each overload has six-inch leads and two wire nuts for simple installation
- UL and CSA listings available



### Application Survey By Horsepower\*

| MARS NO. | HORSEPOWER |      |     |     |     |     |     |     |          |     |     |     |     |     |     |   |   |
|----------|------------|------|-----|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|---|---|
|          | 110/115    |      |     |     |     |     |     |     | 208/240V |     |     |     |     |     |     |   |   |
|          | 1/20       | 1/12 | 1/8 | 1/6 | 1/5 | 1/4 | 1/3 | 1/2 | 1/12     | 1/8 | 1/6 | 1/5 | 1/4 | 1/3 | 1/2 | 1 |   |
| 35010    |            |      | ■   | ■   | ■   | ■   |     |     |          |     |     |     |     |     | ■   | ■ |   |
| 35011    |            |      |     | ■   | ■   | ■   |     |     |          |     |     |     |     |     | ■   | ■ |   |
| 35012    |            |      |     | ■   | ■   | ■   |     |     |          |     |     |     |     |     | ■   | ■ |   |
| 35014    |            |      |     |     | ■   | ■   |     |     |          |     |     |     |     |     | ■   |   |   |
| 35015    |            |      |     |     | ■   | ■   | ■   |     |          |     |     |     |     |     | ■   |   |   |
| 35016    |            |      |     |     | ■   | ■   | ■   |     |          |     |     |     |     |     | ■   |   |   |
| 35017    |            |      |     |     |     | ■   | ■   |     |          |     |     |     |     |     |     |   | ■ |
| 35018    |            |      |     |     |     | ■   | ■   | ■   |          |     |     |     |     |     |     |   | ■ |
| 35019    |            |      |     |     |     |     | ■   | ■   |          |     |     |     |     |     |     |   |   |

### 3/4" A/C Overloads

| MARS NO. | TEMPERATURE CODE |
|----------|------------------|
| 35101    | MRA-3763-529     |
| 35105    | MRP-00-AIU-529   |

\*Motor protectors cannot be replaced by horsepower, amperage, or nameplate data alone. Refer to cross reference information for proper replacement of original equipment motor protectors by part number.

# Klixon 3-Phase Motor Protectors & Commercial Refrigeration Thermostats

## On-Winding Overheat Protection

Klixon SL-11 kits are mounted on the windings of general purpose motors and hermetically sealed compressors. They supplement conventional current overload relays in magnetic starters providing modern total protection for most older motors in use today.



### Features:

- Allow motors to perform at full-load capacity but will protect against dangerous running overloads
- Protect against blocked ventilation, high ambient temperatures, single phasing
- Each kit contains three matched motor-winding thermostats
- When starter overloads operate, the SL-11 will protect against re-starting at unsafe winding temperatures.
- These motor winding thermostats do not replace overloads in the starter
- UL & CSA listed

### Installation:

SL-11 thermostats are tied in place on the end turns of appropriate winding bundles, one to each phase or buried in the windings during motor rewind. They are connected in series between the starter coil and its power supply.

### Selection:

- Pick thermostat temperature to operate at the mid-point between the "maximum normal running" temperature and the "maximum allowed running temperature."
- Subtract the gradient temperature (outlined in the chart below) from the mid-point to obtain the operating temperature of the thermostat.

## Epoxy-Sealed Thermostats For General Purpose Motors - Normally Closed

| MARS NO. | KLIXON KIT NO | KLIXON CAT. NO | OPERATING TEMPERATURE |
|----------|---------------|----------------|-----------------------|
| 37075    | SL-11-75      | 9700K51-146    | 75°C                  |
| 37100    | SL-11-100     | 9700K26-146    | 100°C                 |
| 37110    | SL-11-110     | 9700K36-146    | 110°C                 |
| 37120    | SL-11-120     | 9700K01-146    | 120°C                 |
| 37130    | SL-11-130     | 9700K11-146    | 130°C                 |
| 37135    | SL-11-135     | 9700K06-146    | 135°C                 |
| 37140    | SL-11-140     | 9700K66-146    | 140°C                 |
| 37145    | SL-11-145     | 9700K76-146    | 145°C                 |
| 37150    | SL-11-150     | 9700K46-146    | 150°C                 |

Three thermostats per package

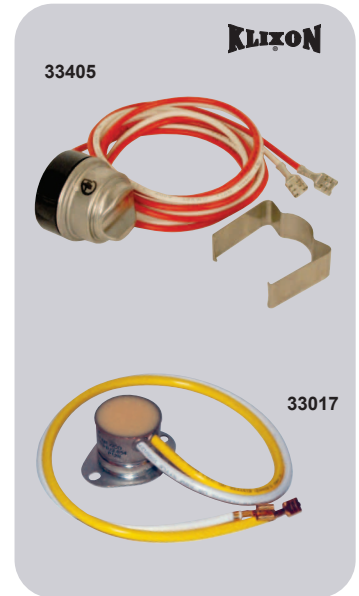
| Typical Gradients               | Thermostat Location |                     | Maximum Contact Rating Amps |     |      |      |
|---------------------------------|---------------------|---------------------|-----------------------------|-----|------|------|
|                                 | Tied On End Turns   | Buried In End Turns | Klixon #                    | 24V | 115V | 230V |
| Open Type                       | 30°C                | 15°C                | 9700K                       | 18  | 18   | 12   |
| Totally Enclosed                |                     |                     |                             |     |      |      |
| Fan Cooled                      | 25°C                | 10°C                |                             |     |      |      |
| Totally Enclosed Non-Ventilated | 20°C                | 5°C                 |                             |     |      |      |

## Refrigeration Cases and Coils

MARS has selected the most popular Klixon disc-type thermostats found in commercial refrigeration. These controls cover a wide assortment of applications including supermarket cases and walk-in, reach-in, and beverage coolers.

### Features:

- Used on refrigeration cases, coils, with many other commercial applications
- Long lead wires supplied to satisfy most requirements
- Used by Hussman, Friedrich, Larkin, Schaefer, etc.
- 1 inch discs fully encapsulated for trouble-free use
- Mounts directly on coil tube or surface for maximum temperature response
- UL and CSA listings available
- 25 resistive amps maximum



|                   | ELECTRICAL RATING |           |      |
|-------------------|-------------------|-----------|------|
|                   | TERM. 1-3         | TERM. 1-2 |      |
| Full load amps    | 120V              | 13        | 5.8  |
|                   | 240V              | 10        | 2.9  |
| Locked rotor amps | 120V              | 60        | 34.8 |
|                   | 240V              | 45        | 17.4 |
| Pilot Duty        | 120/240V          | 125       | 125  |
| Resistive amps    | 120/240V          | 25        | 25   |
|                   | 277V              | 15        | 15   |

## Tube Mounting

| MARS NO. | KLIXON NO.       | O.E.M.     | O.E.M. PART NO. | SWITCH ACTION | OPERATING TEMPERATURES F° |       | TUBE MT. IN | LEADS IN |
|----------|------------------|------------|-----------------|---------------|---------------------------|-------|-------------|----------|
|          |                  |            |                 |               | OPEN                      | CLOSE |             |          |
| 33405    | 20420D24-106-63  | Bally      | —               | D             | 70                        | 20    | 5/8         | 18       |
| 33415    | 20420D24-399-350 |            | —               | D             | 65                        | 20    | 5/8         | 20       |
| 33420    | 20428F1-4-676    | Friedrich  | 606-038-00      | F             | 35                        | 55    | 3/8         | 20       |
| 33425    | 20420L15-913-302 |            | 794-824-00      | L             | 40                        | 25    | 5/8         | 11       |
| 33430    | 20420D1-166-336  |            | —               | D             | 50                        | 35    | 1/2         | 18       |
| 33435    | 20420L28-229-89  | Hussman    | P211-119696     | L             | 20                        | 5     | 3/4         | 40       |
| 33455    | 20420F19-63-294  | Schaefer   | C10872-19       | F             | 20                        | 60    | 5/8         | 36       |
| 33460    | 20420L19-202-274 |            | C10872-6        | L             | 35                        | 5     | 5/8         | 54       |
| 33470    | 20420L15-376-218 |            | 125211          | L             | 50                        | 30    | 5/8         | 36       |
| 33475    | 20420L15-722-218 | Tyler Ref. | 146291          | L             | 40                        | 20    | 5/8         | 36       |
| 33480    | 20420L15-767-257 |            | 146739          | L             | 80                        | 50    | 5/8         | 90       |

## Surface Mounting

| MARS NO. | KLIXON NO.        | O.E.M.    | O.E.M. PART NO. | SWITCH ACTION | OPERATING TEMPERATURES F° |       | LEADS IN             |
|----------|-------------------|-----------|-----------------|---------------|---------------------------|-------|----------------------|
|          |                   |           |                 |               | OPEN                      | CLOSE |                      |
| 33017    | 20425L153-B22-B54 | Heatcraft | 5708L           | L             | 75                        | 40    | 18 w/ quick connects |

1D=SPDT, no. 1 is common (white) - no label, no. 2 either opens or closes temp. rise - red label, no. 3 is opposite of no. 2 - blue label F= close on temperature rise, SPST L= open on temperature rise, SPST 2

## Change-Over Switches for Fan-Coil Systems

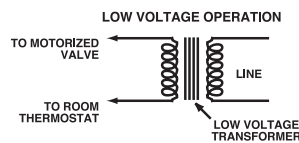
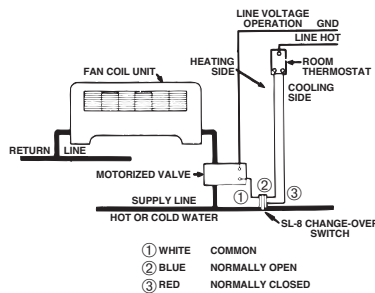
The MARS Series 390 change-over switches are used for summer-winter change-over of electric thermostats in hydronic heating - cooling fan-coil units.

### Features:

- Color coded leads allow easy installation
- SL-8 thermostat is enclosed in sealed case for trouble-free operation
- Snap-acting disc type, insures accurate temperature repeatability
- Can be mounted in any position
- UL and CSA listings available

### Installation:

The SL-8 change-over switch is located on the main run of the supply line where it can quickly sense the maximum temperature of the hot or cold water passing through. If the SL-8 switch is exposed to surrounding temperatures, thermal insulation should be wrapped around the switch case to maintain desired thermal response.



| Honeywell No. | MARS No. | White Rodgers No. | MARS No. |
|---------------|----------|-------------------|----------|
| L6076A        | 39004    | 752-1             | 39004    |
| L6076B        | 39005    | 752-2             | 39005    |

| MARS NO. | KLIXON KIT NO. | KLIXON NO.       | DESCRIPTION                                     |
|----------|----------------|------------------|---|
| 39004    | SL8-5          | 20425D27-160-356 | leads thru side of cup                          |
| 39005    | SL8-5A         | 20425D69-160-287 | leads thru top of cup with 1/2" conduit adapter |

## For Defrost Termination

MARS Series 330 defrost controls are designed to replace many defrost thermostats. The leads are of sufficient length for the connection to be made at the same location as was the control removed. The connection should be insulated in a manner similar to that on the original equipment.

The selection of the proper thermostat can be made by matching the temperature code of the thermostat removed to the code on the MARS Thermostat.



### Features:

- Refrigerators, A/C units, & heat pumps, dehumidifiers, icemakers or any place where a fixed temperature control is required in a wet or dirty environment.
- Thermostats have 32" leads.

| Temp. Code | Use MARS No. | Temp. Code | Use MARS No. | Temp. Code | Use MARS No. |
|------------|--------------|------------|--------------|------------|--------------|
| L40-3.0    | 33008        | L58-4.3    | 33011        | L65-4.0    | 33012        |
| L42-2.0    |              | L60-2.0    |              | L67-4.2    |              |
| L45-3.0    |              | L60-2.5    |              | L70-4.0    |              |
| L45-3.0    |              | L60-3.0    |              | L75-5.0    |              |
| L55-1.5    | 33010        | L60-4.0    | 33020        | L80-3.0    | 33020        |
| L55-2.0    |              | L60-4.5    |              | L80-4.0    |              |
| L55-2.5    |              | L80-4.5    |              | L80-4.5    |              |
| L55-3.0    |              | L80-5.0    |              | L80-5.0    |              |
| L55-3.5    |              |            |              |            |              |
| L55-4.0    |              |            |              |            |              |

| MARS NO. | TEMP. CODE | OPENING TEMP. F° | CLOSING TEMP. F° |
|----------|------------|------------------|------------------|
| 33008    | L45        | 45               | 25               |
| 33010    | L55        | 55               | 35               |
| 33011    | L60        | 60               | 40               |
| 33012    | L70        | 70               | 50               |
| 33020    | L80        | 80               | 60               |

| VOLTS | INDUCTIVE |        |
|-------|-----------|--------|
|       | F.L.A.    | L.R.A. |
| 120   | 5.8       | 25     |
| 240   | 2.9       | 70     |

## MARS Freeze Stat

The MARS 33101 is designed to help stop flood back to compressor crankcases caused by low ambient temperatures.

### Features:

- Simple to install
- Refrigerators, freezers, A/C, food dispensing equipment
- For use with 1" pipe, 1/2" radius
- 24" leads



| MARS NO. | OPENING TEMP. F° | CLOSING TEMP. F° |
|----------|------------------|------------------|
| 33101    | 34               | 45               |

# Pressure Switches & MARS Pressure Switches

## Fixed Setting Pressure Controls

Low pressure controls.

**Specifications:**

- Contacts rated at 6 amps, 24-240 volts
- 18" leads

**Features:**

- Tamper proof construction
- Direct mounting on tubing
- UL & CSA recognized



MARS Pressure Switches deliver the reliability and performance that makes them the most trusted electromechanical sensor. The MARS line of pressure switches cover many new R410A applications along with traditional pressure setting switches.

UL and CUL, Compact size, light weight for direct mounting, Factory Set, Hermetically Sealed Sensor.

5.8 FLA - 34.8 LRA @ 120 VAC, 2.9 FLA - 15.0 LRA @ 240 VAC, 100,000 Cycle Life at Rated Current.

### Low Pressure Cut-Out - Open on Pressure Drop, Automatic Reset Normally Open

| MARS NO. | OPENING PRESSURE | RESET PRESSURE | NOTES                                       |
|----------|------------------|----------------|---|
| 43341    | 5                | 20             | 1/4" Female Flare S.A.E. Mounting           |
| 43342    | 5                | 30             | 1/4" Female Flare S.A.E. Mounting           |
| 43343    | 10               | 25             | 1/4" Female Flare S.A.E. Mounting           |
| 43344    | 15               | 35             | 1/4" Female Flare S.A.E. Mounting           |
| 43345    | 20               | 45             | 1/4" Female Flare S.A.E. Mounting           |
| 43372    | 22               | 50             | 1/4" Copper Clad SS Tube w/38" leads        |
| 43373    | 25               | 40             | Gold Contacts 1/4" Female Flare w/36" leads |
| 43346    | 25               | 50             | 1/4" Female Flare S.A.E. Mounting           |
| 43347    | 25               | 65             | 1/4" Female Flare S.A.E. Mounting           |
| 43348    | 25               | 80             | 1/4" Female Flare S.A.E. Mounting           |
| 43349    | 35               | 60             | 1/4" Female Flare S.A.E. Mounting           |
| 43350    | 40               | 80             | 1/4" Female Flare S.A.E. Mounting           |
| 43351    | 45               | 60             | 1/4" Female Flare S.A.E. Mounting           |
| 43352    | 50               | 90             | 1/4" Female Flare S.A.E. Mounting           |
| 43374    | 50               | 95             | 1/4" Copper Clad SS Tube w/36" leads        |
| 43353    | 75               | 100            | 1/4" Female Flare S.A.E. Mounting           |
| 43375    | 90               | 120            | 1/4" Female Flare, w/18" leads              |
| 43354    | 150              | 225            | 1/4" Female Flare S.A.E. Mounting           |
| 43355    | 170              | 250            | 1/4" Female Flare S.A.E. Mounting           |

## Fixed Setting Pressure Controls High Pressure Cut-Outs

MARS offers the most complete line of high pressure cut-outs available.

**Specifications:**

- Contacts rated at 6 amps, 24-240 volts
- 1/4" female flare S.A.E. mounting
- 18" leads

**Features:**

- Tamper proof construction
- Direct mounting on tubing
- UL & CSA recognized



MARS Pressure Switches deliver the reliability and performance that makes them the most trusted electromechanical sensor. The MARS line of pressure switches cover many new R410A applications along with traditional pressure setting switches.

UL and CUL, Compact size, light weight for direct mounting, Factory Set, Hermetically Sealed Sensor.

5.8 FLA - 34.8 LRA @ 120 VAC, 2.9 FLA - 15.0 LRA @ 240 VAC, 100,000 Cycle Life at Rated Current.

### High Pressure Cut-Out - Open on Pressure Rise, Automatic Reset, Normally Closed

| MARS NO. | OPENING PRESSURE | RESET PRESSURE | NOTES   |
|----------|------------------|----------------|---|
| 43337    | 200              | 150            | 1/4" Female Flare S.A.E. Mounting   |
| 43321    | 225              | 150            | 1/4" Female Flare S.A.E. Mounting   |
| 43322    | 250              | 150            | 1/4" Female Flare S.A.E. Mounting   |
| 43324    | 275              | 195            | 1/4" Female Flare S.A.E. Mounting   |
| 43325    | 300              | 200            | 1/4" Female Flare S.A.E. Mounting   |
| 43326    | 325              | 225            | 1/4" Female Flare S.A.E. Mounting   |
| 43320    | 350              | 245            | 1/4" Female Flare S.A.E. Mounting   |
| 43327    | 350              | 250            | 1/4" Female Flare S.A.E. Mounting   |
| 43328    | 375              | 275            | 1/4" Female Flare S.A.E. Mounting   |
| 43329    | 400              | 200            | 1/4" Female Flare S.A.E. Mounting   |
| 43330    | 400              | 280            | 1/4" Female Flare S.A.E. Mounting   |
| 43331    | 400              | 300            | 1/4" Female Flare S.A.E. Mounting w/24" leads (1 stripped, 1 w/1/4" female flag QC) |
| 43311    | 410              | 290            | 1/4" Female Flare S.A.E. Mounting   |
| 43332    | 425              | 300            | 1/4" Female Flare S.A.E. Mounting   |
| 43333    | 425              | 325            | 1/4" Female Flare S.A.E. Mounting   |
| 43334    | 450              | 250            | 1/4" Female Flare S.A.E. Mounting   |
| 43365    | 590              | 418            | 1/4" Female Flare w/snubber   |
| 43335    | 600              | 475            | 1/4" Female Flare S.A.E. Mounting   |
| 43366    | 610              | 420            | 1/4" Copper Clad SS Tube, 90 degree elbow w/snubber                                 |
| 43339    | 630              | 480            | 1/4" Female Flare S.A.E. Mounting   |
| 43367    | 650              | 450            | 1/4" Copper Clad SS Tube w/snubber  |



## Condenser Fan Cycling Switches

Fan cycling switches provide refrigeration and air conditioning from low ambient conditions.

### Specifications:

- Contacts rated at 6 amps, 24-240 volts
- 1/4" female flare S.A.E. mounting
- 18" leads

### Features:

- Tamper proof construction
- Direct mounting on tubing
- UL & CSA recognized



43301

## Heat Pump Defrost Thermostats

MARS heat pump defrost thermostats are designed for direct replacement of most existing controls of this type. The temperature settings and tubing sizes have been carefully selected from the most popular OEM settings. Each MARS thermostat comes complete with extra long 54 inch leads, mounting clamp, and installation instructions for fast and simple field installation.



33490

### Features:

- Four controls cover most requirements
- Tapered mounting edge for maximum heat transfer
- Extra long 54 inch leads for simple wiring
- Individually boxed with mounting clamp and instructions
- UL & CUL listed

## Fan Cycling - Close on Pressure Rise

| MARS NO. | OPENING PRESSURE | RESET PRESSURE | NOTES                              |
|----------|------------------|----------------|------------------------------------|
| 43301    | 75               | 100            | 1/4" Female Flare S.A.E. Mounting  |
| 43302    | 110              | 170            | 1/4" Female Flare S.A.E. Mounting  |
| 43303    | 125              | 265            | 1/4" Female Flare S.A.E. Mounting  |
| 43304    | 150              | 225            | 1/4" Female Flare S.A.E. Mounting  |
| 43305    | 190              | 275            | 1/4" Female Flare S.A.E. Mounting  |
| 43370    | 180              | 240            | 1/4" Female Flare, S.A.E. Mounting |
| 43306    | 210              | 275            | 1/4" Female Flare S.A.E. Mounting  |
| 43307    | 300              | 400            | 1/4" Female Flare S.A.E. Mounting  |

## Electrical Ratings:

| Cycles X1000 | Volts  | FLA  | LRA  | Resistive Amps | VA  |
|--------------|--------|------|------|----------------|-----|
| 100          | 120VAC | 5.8  | 34.8 | 10             | 125 |
| 100          | 240VAC | 2.9  | 17.4 | 10             | 125 |
| 30           | 120VAC | 10.0 | 40.0 | -              | -   |
| 30           | 240VAC | 10.0 | 40.0 | -              | -   |
| 100          | 30VDC  | -    | -    | 1              | -   |

## Manual Reset - High Pressure Cut Out Open on Pressure Rise



43312

| MARS NO. | OPERATING TEMPERATURES F° |       | TUBE MOUNTING IN | LEADS IN |
|----------|---------------------------|-------|------------------|----------|
|          | OPEN                      | CLOSE |                  |          |
| 33490    | 80                        | 30    | 3/8              | 54       |
| 33492    | 80                        | 30    | 1/2              | 54       |
| 33494    | 65                        | 30    | 3/8              | 54       |
| 33496    | 65                        | 30    | 1/2              | 54       |

| MARS NO. | OPENING PRESSURE | RESET PRESSURE | NOTES                             |
|----------|------------------|----------------|-----------------------------------|
| 43312    | 375              | Manual         | 1/4" Female Flare S.A.E. Mounting |
| 43313    | 410              | Manual         | 1/4" Female Flare S.A.E. Mounting |
| 43314    | 415              | Manual         | Capillary Tube                    |
| 43315    | 440              | Manual         | Capillary Tube                    |
| 43316    | 475              | Manual         | 1/4" Female Flare S.A.E. Mounting |
| 43368    | 590              | Manual         | 1/4" Female Flare w/snubber       |
| 43369    | 610              | Manual         | 1/4" Female Flare w/snubber       |

# Compressor Heaters

## TUTCO™ Compressor Heaters for A/C and Refrigeration

**Features:**

- Corrosion resistant exterior
- High temperature silicone rubber element and insulated leads
- 30" leads
- Wattage for each model matches compressor requirements
- Completely moisture proof
- Installs quickly and easily
- Nominal power consumption
- UL & CSA Listed



### Application Reference Chart for TUTCO™ Compressor Heaters

| Manufacturer        | Model                              | MARS No.    |
|---------------------|------------------------------------|-------------|
| Aspera              | H                                  | 32605-32608 |
| Aspera              | J                                  | 32609-32611 |
| Bendix/Westinghouse | A                                  | 32613       |
| Bendix/Westinghouse | C, D                               | 32601-32604 |
| Bendix/Westinghouse | E                                  | 32605-32608 |
| Bristol/Sundstrand  | H10A, H21A, H2EA, H22A             | 32605-32608 |
| Bristol/Sundstrand  | H10B, H20B, H21B, H22B             | 32613       |
| Bristol/Sundstrand  | H10G, H20G, H21G, H22GN2NG-144     | 32617-32620 |
| Carrier             | 6A25, 26, 28, 29, 6A35, 38, 45, 48 | 32605-32608 |
| Carrier             | 6A88                               | 32617-32620 |
| Carlyisle           | W (70-88)                          | 32601-32604 |
| Copeland            | BR                                 | 32634-32635 |
| Copeland            | CR                                 | 32605-32608 |
| Copeland            | JR                                 | 32629-32630 |
| Copeland            | RR, SR                             | 32613       |
| Copeland            | VR                                 | 32621-32624 |
| Copeland            | Y                                  | 32601-32604 |
| Fedders/Chrysler    | 3009                               | 32617-32620 |
| Fedders/Chrysler    | 2870908                            | 32631       |
| Hitachi             | 1500FH4-H                          | 32617-32620 |
| Hitachi             | 305FH2-HE, 402FH2-HE, 505FH2-HE    | 32613-32616 |
| Hitachi             | 753FH3-H, 1001FH4-H                | 32601-32604 |
| Sanyo               | CR15F, CR20F, CR33F                | 32631       |
| Tecumseh            | AB, AW                             | 32613       |
| Tecumseh            | AH                                 | 32605-32608 |
| Tecumseh            | AJ                                 | 32609-32611 |
| Tecumseh            | AK                                 | 32629-32630 |
| Tecumseh            | B, C, CL, AG, AV                   | 32601-32604 |
| Tecumseh            | FE, FB                             | 32617-32620 |
| Trane               | D4340/7669                         | 32609-32611 |
| Trane               | D4340/7670                         | 32621-32624 |
| Trane               | D4350/689, D4359/690               | 32605-32608 |
| Westinghouse        | CD072, CD090                       | 32605-32608 |
| Westinghouse        | CD072, CD090                       | 32621-32624 |

| MARS NO. | DESCRIPTION | VOLTS | WATTS | INCHES  |         | SHAPE |
|----------|-------------|-------|-------|---------|---------|-------|
|          |             |       |       | MIN.    | MAX.    |       |
| 32601    | CH-100      | 240   |       | 30 3/16 | 37      |       |
| 32602    | CH-100-1    | 208   | 50    | 30 3/16 | 37      | OVL   |
| 32604    | CH-100-3    | 480   |       | 30 3/16 | 37      |       |
| 32605    | CH-101      | 240   |       | 27 7/16 | 34 1/4  |       |
| 32608    | CH-101-3    | 480   | 54    | 27 7/16 | 34 1/4  | OVL   |
| 32609    | CH-102      | 240   |       | 25 3/4  | 32 9/16 |       |
| 32610    | CH-102-1    | 208   | 60    | 25 3/4  | 32 9/16 | OVL   |
| 32611    | CH-102-2    | 120   |       | 25 3/4  | 32 9/16 |       |
| 32613    | CH-103      | 240   | 45    | 24 3/4  | 31 9/16 | OVL   |
| 32617    | CH-104      | 240   |       | 41 1/2  | 48 5/16 |       |
| 32619    | CH-104-2    | 120   | 75    | 41 1/2  | 48 5/16 | RND   |
| 32620    | CH-104-3    | 480   |       | 41 1/2  | 48 5/16 |       |
| 32621    | CH-105      | 240   |       | 32 1/2  | 39 5/16 |       |
| 32624    | CH-105-3    | 480   | 50    | 32 1/2  | 39 5/16 | RND   |
| 32629    | CH-135      | 240   |       | 20 5/16 | 27 1/8  |       |
| 32630    | CH-135-2    | 120   | 45    | 20 5/16 | 27 1/8  | OVL   |
| 32631    | CH-197      | 240   | 25    | 13 3/4  | 20 9/16 | RND   |
| 32634    | CH-202-2    | 120   | 70    | 33 3/4  | 36 3/4  | RND   |
| 32635    | CH-202-3    | 480   |       | 33 3/4  | 36 3/4  |       |

## Direct Replacement Crankcase Heaters for Copeland

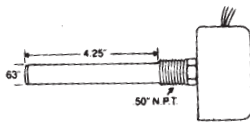


Figure 1



## Crankcase Heaters for Copeland

NOTE: All heaters requiring clips or brackets are packaged with the appropriate clips or brackets required.

| MARS NO. | COPELAND NO. | WATTS | VOLTS | HEATER LENGTH IN. | FIGURE | COMPRESSOR MODEL   | ACCESSORIES |
|----------|--------------|-------|-------|-------------------|--------|--------------------|-------------|
| 32408    | 518-0002-01  | 100   | 480   | 4.25              | 1      | 4R, 6R, 6T, 4D, 6D | -           |

## Self Regulating Crankcase Heaters

MARS self-regulating crankcase heaters are designed for use with refrigeration compressors up to 5HP and 40 inches in circumference. These heating cables provide peak heat during cold periods and reduced heat when the air temperature rises and should be used in non-hazardous areas.

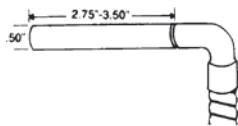
- Cold length: 30"
- Heat cable length: 50"



| MARS NO. | TYPE            | WATTS                  | VOLTS |
|----------|-----------------|------------------------|-------|
| 70970    | Self Regulating | 32W @ 50°F • 60W @ 0°F | 120   |
| 70971    | Self Regulating | 32W @ 50°F • 60W @ 0°F | 240   |

## Direct Replacement Crankcase Heaters for Carrier

Figure 1



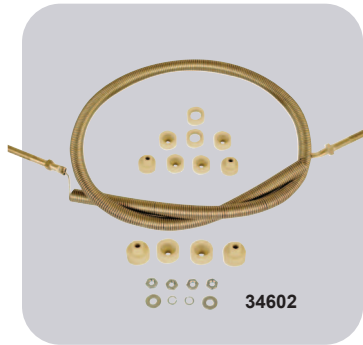
## Crankcase Heaters for Carrier

| MARS NO. | CARRIER NO. | WATTS | VOLTS | HEATER LENGTH IN. | LEAD LENGTH IN. | FIGURE | COMPRESSOR MODEL      |
|----------|-------------|-------|-------|-------------------|-----------------|--------|-----------------------|
| 32472    | HT36FL379   | 125   | 120   | 2.75              | 60              | 1      | EM:06DM:<br>306B:50EQ |
| 32474    | HT36FL479   | 125   | 240   | 2.75              | 68              | 1      | EM:06DM:<br>30HR:30HS |

# Electric Heat

## Replacement Coil Kits and Accessories for Electric Heat

MARS Replacement coil kits for electric heat let you repair strip heaters quickly and economically. Each kit contains one close wound, stretch to length, resistance coil with welded terminal bolts; two each male and female ceramic terminal insulators; two each .375 and .450 inch standard ceramic bushings; two each .375 and .450 inch extra long ceramic bushings; necessary nuts, washers, and installation instructions.



Select the right MARS kit from the chart below and order one kit for each circuit to be repaired. Thermal fuse links are rated 22 amp resistor, 15 amp inducer at 120 and 240 VAC.

**Features:**

- Welded terminal bolts for low resistance and long life
- Close wound coil, stretch to fit many applications
- Complete with bushings, insulators and hardware

| MARS NO.             | WATTAGE AT |      |      |      | STRETCHED LENGTH |        |        |      |
|----------------------|------------|------|------|------|------------------|--------|--------|------|
|                      | 240V       | 208V | 480V | 277V | INCHES           |        | METERS |      |
|                      |            |      |      |      | MIN              | MAX    | MIN    | MAX  |
| 34602                | 5000       | 3750 | —    | —    | 44.62            | 127.48 | 1.13   | 3.24 |
| 34604                | —          | —    | 5000 | —    | 61.78            | 176.53 | 1.57   | 4.48 |
| 34606                | —          | —    | —    | 5000 | 59.44            | 169.82 | 1.51   | 4.31 |
| 34608                | 3500       | 2625 | —    | —    | 50.75            | 145.00 | 1.29   | 3.68 |
| 34610                | —          | —    | 3500 | —    | 42.27            | 120.76 | 1.07   | 3.07 |
| 34614                | 2000       | 1500 | —    | —    | 25.90            | 74.01  | 0.66   | 1.88 |
| 34616                | 2500       | 1875 | —    | —    | 30.89            | 88.26  | 0.78   | 2.24 |
| 34620                | —          | —    | —    | 2500 | 27.61            | 78.87  | 0.70   | 2.00 |
| 34626                | —          | —    | 4500 | —    | 46.05            | 131.98 | 1.17   | 3.35 |
| 34630                | —          | —    | 2000 | —    | 32.00            | 108.00 | 0.81   | 2.74 |
| 34652                | 6600       | 4950 | —    | —    | 70.56            | 201.59 | 1.79   | 5.12 |
| 34656                | 6000       | 4500 | —    | —    | 54.43            | 155.50 | 1.38   | 3.95 |
| 34658                | —          | —    | 6000 | —    | 71.88            | 205.38 | 1.83   | 5.22 |
| 34660 <sup>(1)</sup> | 5000       | 3756 | —    | —    | 25.00            | 70.00  | —      | —    |

(1) Larger diameter coil - 5/8"

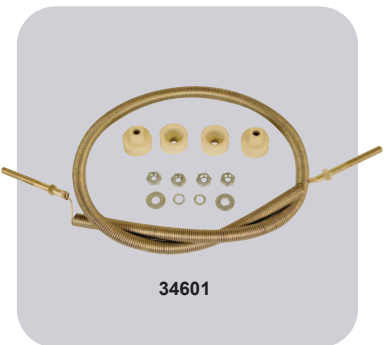
## Thermal Fuse Links\*



| MARS NO. | °F  | °C     | DESCRIPTION                   |
|----------|-----|--------|-------------------------------|
| 34700    | 204 | 95.56  | Fuse Link                     |
| 34702    | 283 | 139.45 | Fuse Link                     |
| 34704    | 333 | 167.22 | Fuse Link                     |
| 34706    | 300 | 148.89 | Fuse Link                     |
| 34708    | 300 | 148.89 | Fuse Link—Round Ceramic Base  |
| 34710    | 227 | 108.33 | Fuse Link—Oblong Ceramic Base |
| 34712    | 300 | 148.89 | Fuse Link—Oblong Ceramic Base |

\*10 per pack

## Replacement Coil Economy Kits



| MARS NO. | DESCRIPTION   |
|----------|---|
| 34600    | 5000 Watt @ 240 V; includes coil, insulators & hardware                 |
| 34601    | 5000 Watt @ 240 V; includes 300° fuse link, coil, insulators & hardware |

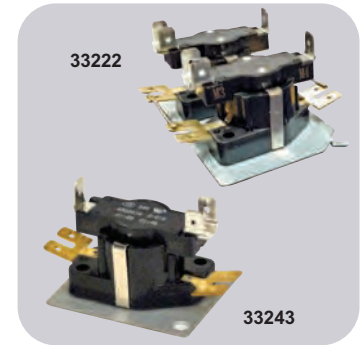
## Electric Heat Sequencers

A new simple method for selecting and replacing electric heat sequencers with only five basic controls. Replace sequencers in almost any existing system.

Sequencer selection:

- A. Determine the number of circuits to be switched. (Electrical rating of auxiliary switch same as main switch.) When more than one (1) sequencer is required the sequencers are to be wired in series with the last switch in each sequencer energizing the control circuit of the next sequencer.
- B. Select from the chart the sequencers needed for the number of circuits to be switched. These sequencers may be wired in series to allow sequencing of virtually any number of heating elements and fans.

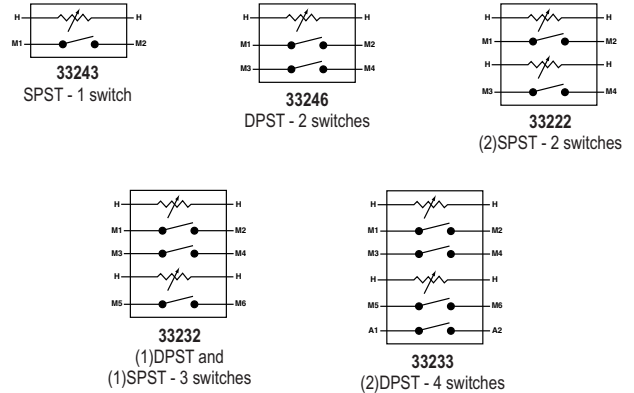
If the sequencers control the fan/blower circuit, the first switch (M1-M2) of each sequencer must always control the fan. This provides a fan interlock to insure that the fan will remain on until all elements are de-energized.



### Features:

- Solid State dependability
- Replaces Honeywell and White-Rodgers
- Ambient rated from 20°F to 160°F
- Used on both separate blower and element and combination blower and element systems
- Total 24 volt control
- Standard double quick-connect terminals for combination fan and element systems
- Full-load-rated auxiliary contacts
- 7.2 KW combination fan and element rated contacts (23A resistive, 7A motor load)
- Non-positional
- Voltage and ambient self compensating positive temperature coefficient (PTC) heater elements
- Individually packaged with wiring diagrams for up to seven element furnaces.
- UL and CSA listing available

### Schematic



### Contact Rating Chart

| VAC | RES AMPS | FLA | LRA | PILOT DUTY VA |
|-----|----------|-----|-----|---------------|
| 120 | 30       | 23  | 84  | 672           |
| 240 | 30       | 23  | 60  | 960           |
| 277 | 23       | 23  | 42  | 775           |
| 480 | 12.5     | 5   | 10  | 400           |

| NO. OF SWITCHES | MARS NO. | REPLACES KLIXON NO. | SWITCH SEQUENCE |              | SWITCH TIMING: MIN-MAX IN SECONDS |       |                               |       |                               |      |                                   |      |     |
|-----------------|----------|---------------------|-----------------|--------------|-----------------------------------|-------|-------------------------------|-------|-------------------------------|------|-----------------------------------|------|-----|
|                 |          |                     | FIRST ON        | LAST ON      | SWITCH NO.1 TERMINALS M1 / M2     |       | SWITCH NO.2 TERMINALS M3 / M4 |       | SWITCH NO.3 TERMINALS M5 / M6 |      | SWITCH NO.4 (2) TERMINALS A1 / A2 |      |     |
|                 |          |                     |                 |              | LAST OFF                          | ON    | OFF                           | ON    | OFF                           | ON   | OFF                               | ON   | OFF |
| 1               | 33243    | 6000AOM             | (1)             |              | 1-60                              | 1-45  |                               |       |                               |      |                                   |      |     |
| 2               | 33246    | 6000EOM             | (1)             |              | 1-60                              | 1-45  | 1-60                          | 1-45  |                               |      |                                   |      |     |
| 2               | 33222    | 51172-22            | No. 1           | No. 2        | 1-24                              | 45-75 | 30-70                         | 1-40  |                               |      |                                   |      |     |
| 3               | 33232    | 51172-32            | No. 1, No. 2    | No. 3        | 1-24                              | 45-75 | 1-24                          | 45-75 | 30-70                         | 1-40 |                                   |      |     |
| 4               | 33233    | 51172-33            | No. 1, No. 2    | No. 3, No. 4 | 1-24                              | 45-75 | 1-24                          | 45-75 | 30-70                         | 1-40 | 30-70                             | 1-40 |     |



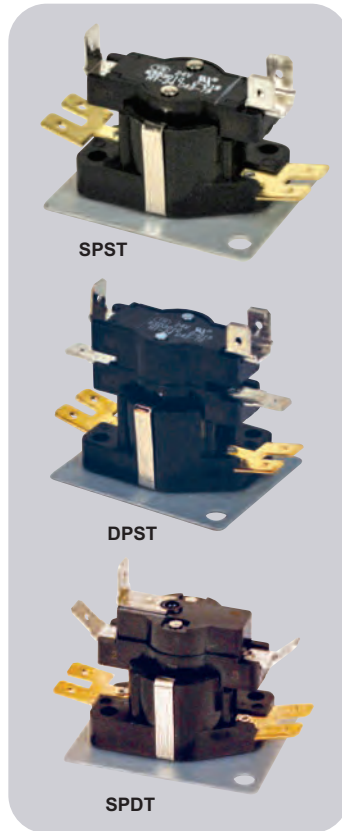
# Relays & Sequencers

## Thermal Time Delay Relays Sequencers

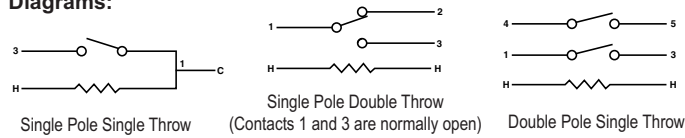
These time delay relays are used for a variety of applications in heating and air conditioning. They operate by means of a solid state PTC (positive temperature coefficient) device which heats up as current passes through it from the control circuit. This heat causes a positive, snap-acting disc to make or break the necessary contacts.

**Features:**

- Shock & vibration resistant internal snap action automatic reset switch mechanism assures positive make/ break action
- Non-positional
- Wide selection for any application
- Voltage and ambient compensated
- UL and CSA listed
- Used for electric heat, air conditioning, heat pumps, gas & oil furnaces, unit heaters and commercial refrigeration



**Diagrams:**



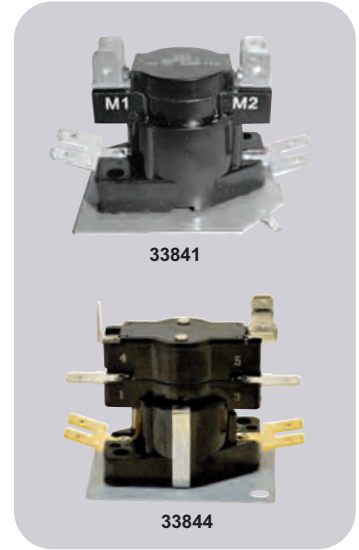
| MARS NO. | REPLACES KLIXON NO. | SWITCH TYPE     | CONTROL VOLTAGE | DELAY (SEC.) |       |
|----------|---------------------|-----------------|-----------------|--------------|-------|
|          |                     |                 |                 | ON           | OFF   |
| 33215    | G0-18               |                 | 24              | 1-60         | 1-45  |
| 33217    | G4-9                |                 | 240             | 20-70        | 20-80 |
| 33241    | AOM                 |                 | 24              | 1-24         | 45-75 |
| 33242    | AOM                 | SPST N.O.       | 24              | 30-75        | 1-40  |
| 33243    | AOM                 |                 | 24              | 1-60         | 1-45  |
| 33244    | EOM                 |                 | 24              | 1-24         | 45-75 |
| 33245    | EOM                 | DPST N.O.       | 24              | 30-75        | 1-40  |
| 33246    | EOM                 |                 | 24              | 1-60         | 1-45  |
| 33247    | COM-21              | SPDT 1 & 3 N.O. | 24              | 1-24         | 15-75 |
| 33256    | E4                  | DPST N.O.       | 120             | 20-70        | 20-80 |
| 33265    | E4                  | DPST N.O.       | 240             | 30-110       | 15-65 |
| 33266    | E4                  |                 | 240             | 20-70        | 20-80 |
| 33267    | C4M-13              | SPDT 1 & 3 N.O. | 240             | 20-70        | 20-80 |

## Electric Heat Sequencers

The MARS heat sequencers are used in a variety of applications, including electric furnaces, baseboard heaters, heat pump blower control and heating element control. The sequencers stage electric heat to prevent circuit overload. These units operate by means of a PTC (positive temperature coefficient). The PTC is self current limiting, ensuring stable switching action over a wide range of voltages.

**Features:**

- Solid state dependability
- Replaces Honeywell, White Rodgers, and Klixon
- 12.5A to 25A contact ratings
- Quick connect terminals
- Various mounting positions
- Shock & vibration resistant
- Ambient rated from -50°F to 165°F
- Full-load rated auxiliary contacts



### Single Load Contact Ratings

| VAC | RESISTIVE (NON-INDUCTIVE) |      |           | MOTOR RATINGS (INDUCTIVE) |            |  |
|-----|---------------------------|------|-----------|---------------------------|------------|--|
|     | WATTS                     | AMPS | FULL LOAD | LOCKED ROTOR              | PILOT DUTY |  |
| 120 | 3000                      | 25   | 10A       | 60A                       | 125VA      |  |
| 240 | 6000                      | 25   | 5A        | 30A                       | 125VA      |  |
| 480 | 6000                      | 12.5 | 3A        | 18A                       | 480VA      |  |

Combined Load Ratings: 30A @ 240VAC - Total: 23A non-inductive + 7FLA / 42LRA inductive  
Life at rated current: 10,000 cycles

| MARS NO.                | TIM. | SW. | M1-M2   | M3-M4 | M5-M6   | M7-M8 | M9-M10 | M1-M2    | M3-M4 | M5-M6   | M7-M8 | M9-M10 |
|-------------------------|------|-----|---------|-------|---------|-------|--------|----------|-------|---------|-------|--------|
| 33841                   | 1    | 1   | 1-20    | -     | -       | -     | -      | 40-110   | -     | -       | -     | -      |
| 33842                   | 1    | 1   | -       | -     | 30-90   | -     | -      | -        | -     | 1-30    | -     | -      |
| 33844 <sup>(1)</sup>    | 1    | 2   | 1-20 ■  | 1-20  | -       | -     | -      | 40-110 ■ | 0-110 | -       | -     | -      |
| 33845                   | 1    | 2   | -       | -     | 30-90 ■ | 30-90 | -      | -        | -     | 1-30 ■  | 1-30  | -      |
| 33832 <sup>(1)</sup>    | 2    | 3   | 1-110 ■ | 1-110 | 1-110   | -     | -      | 1-110 ■  | 1-110 | 1-110   | -     | -      |
| 33833 <sup>(1)</sup>    | 2    | 4   | 1-110 ■ | 1-110 | 1-110 ■ | 1-110 | -      | 1-110 ■  | 1-110 | 1-110 ■ | 1-110 | -      |
| 33848 <sup>(1)(2)</sup> | 4    | 5   | 1-160 ■ | 1-160 | 1-160   | 1-110 | 1-160  | 1-160 ■  | 1-160 | 1-160   | 1-160 | 1-160  |

(1) M1-M2 and M3-M4 are always first switches to turn ON and to turn OFF. All other switches are random ON and random OFF  
(2) #33848 - switch contacts designated F1-F2 instead of M1-M2

■ These contacts switch simultaneously  
ON TIME – Elapsed time to make contacts after heater is energized (Min. to Max.)  
OFF TIME – Elapsed time to make contacts after heater is de-energized (Min. to Max.)  
OFF Timings determined after PTC heater has been electrified for a total of 5 minutes.

## Heating Applications

MARS Series 390 thermostats are designed for quick on-the-job replacements. One thermostat, when used in conjunction with only one listed, can solve almost any mounting problems you encounter.

Our thermostats have been carefully selected to cover the widest temperature ranges with the fewest models.

### Features:

- Widest range of replacements in the industry
- UL and CSA listings available

### Electrical Rating

|            |              | Terminals<br>1-3 | Terminals*<br>1-2 |
|------------|--------------|------------------|-------------------|
| FL Amps    | 120v         | 10               | 5.8               |
|            | 240v         | 5                | 2.9               |
| Res. Amps  | 120v         | 25               | 10                |
|            | 240/277v     | 25               | 5                 |
| Pilot Duty | 120/240/277v | 125va            | 125va             |

\*For Spdt Thermostats



## Fan Switches - Close On Temperature Rise

| MARS NO. | KLIXON TEMP. CODE | TEMPERATURE °F |       |
|----------|-------------------|----------------|-------|
|          |                   | OPEN           | CLOSE |
| 39006    | F110-2            | 90             | 110   |
| 39007    | F120-2            | 100            | 120   |
| 39008    | F130-2            | 110            | 130   |
| 39009    | F140-2            | 120            | 140   |
| 39010    | F150-2            | 130            | 150   |
| 39011    | F160-2            | 140            | 160   |

## Manual Reset Limit Switches - Open On Temperature Rise

| MARS NO. | REPLACES KLIXON TEMP. CODE | TEMPERATURE °F |
|----------|----------------------------|----------------|
|          |                            | OPEN °F        |
| 39099    | MR125                      | 125            |
| 39037    | MR140                      | 140            |
| 39038    | MR150                      | 150            |
| 39039    | MR160                      | 160            |
| 39095    | MR170                      | 170            |
| 39096    | MR180                      | 180            |
| 39097    | MR190                      | 190            |
| 39098    | MR200                      | 200            |
| 39040    | MR210                      | 210            |
| 39042    | MR240                      | 240            |

## Limit Switches - Open On Temperature Rise

| MARS NO. | KLIXON TEMP. CODE | TEMPERATURE °F |      |
|----------|-------------------|----------------|------|
|          |                   | CLOSE          | OPEN |
| 39086    | L125-2            | 105            | 125  |
| 39087    | L130-4            | 90             | 130  |
| 39018    | L140-4            | 100            | 140  |
| 39019    | L150-4            | 110            | 150  |
| 39020    | L160-4            | 120            | 160  |
| 39021    | L170-4            | 130            | 170  |
| 39022    | L180-4            | 140            | 180  |
| 39023    | L190-4            | 150            | 190  |
| 39024    | L200-4            | 160            | 200  |
| 39025    | L210-4            | 170            | 210  |
| 39026    | L220-4            | 180            | 220  |
| 39027    | L230-4            | 190            | 230  |
| 39028    | L240-4            | 200            | 240  |
| 39029    | L250-4            | 210            | 250  |
| 39030    | L270-4            | 230            | 270  |
| 39031    | L300-4            | 260            | 300  |
| 39033    | L350-4            | 310            | 350  |

## Single Pole Double Throw Switches

| MARS NO. | KLIXON TEMP. CODE | TEMPERATURE °F |           |
|----------|-------------------|----------------|-----------|
|          |                   | 1-2 OPEN       | 1-2 CLOSE |
| 39078    | D140-2            | 120            | 140       |
| 39045    | D150-2            | 130            | 150       |
| 39081    | D170-2            | 150            | 170       |

## Adjustable Fan or Limit Thermostats

MARS adjustable fan or limit thermostats let you reduce inventory and still have on hand the most popular thermostat ratings.

MARS adjustable thermostats are easily set for the desired temperature by turning the indicator dial built into the control. Each MARS adjustable thermostat features integral 2 hole oval mounting flanges.



### Features:

- Easy dial adjustment
- Six controls cover most requirements
- Integral oval flange
- UL and CSA listings available

| MARS NO. | TYPE  | RANGE °F | DIFF. °F | SWITCHING ACTION |
|----------|-------|----------|----------|------------------|
| 39205    | Fan   | 90-130   | 20       | Close on rise    |
| 39210    | Fan   | 140-180  | 20       | Close on rise    |
| 39220    | Limit | 135-175  | 40       | Open on rise     |
| 39225    | Limit | 175-215  | 40       | Open on rise     |
| 39230    | Limit | 210-250  | 40       | Open on rise     |
| 39235    | Limit | 250-290  | 40       | Open on rise     |

## Cross Reference Information

| GEM NO. | MARS NO. | WHITE-RODGERS NO. | MARS NO. | MARS 2 | MARS NO. |
|---------|----------|-------------------|----------|--------|----------|
| AT 012  | 39220    | 3F05-1            | 39205    | 35205  | 39205    |
| AT 013  | 39225    | 3F05-2            | 39210    | 35220  | 39220    |
| AT 014  | 39230    | 3L05-1            | 39220    | 35225  | 39225    |
| AT 015  | 39235    | 3L05-2            | 39225    | 35230  | 39230    |
| AT 021  | 39205    | 3L05-3            | 39230    | 35235  | 39235    |
| AT 022  | 39210    |                   |          |        |          |

## Cross Reference Information

| WR NO.   | MARS REPLACEMENT | WR NO.   | MARS REPLACEMENT | WR NO.   | MARS REPLACEMENT |
|----------|------------------|----------|------------------|----------|------------------|
| 3F01-110 | 39006            | 3L01-120 | 39086            | 3L02-160 | 39039            |
| 3F01-120 | 39007            | 3L01-130 | 39087            | 3L02-170 | 39095            |
| 3F01-130 | 39008            | 3L01-140 | 39018            | 3L02-180 | 39096            |
| 3F01-140 | 39009            | 3L01-180 | 39022            | 3L02-190 | 39097            |
| 3F01-150 | 39010            | 3L01-190 | 39023            | 3L02-200 | 39098            |
| 3F01-160 | 39011            | 3L01-200 | 39024            |          |                  |
| 3F01-180 | 39112            | 3L01-230 | 39027            | 3L03-140 | 39078            |
| 3F01-200 | 39113            | 3L01-250 | 39029            | 3L03-190 | 39147            |
| 3F01-350 | 39017            | 3L01-300 | 39031            | 3L03-325 | 39093            |
|          |                  | 3L01-350 | 39033            |          |                  |
|          |                  | 3L01-550 | 39036            |          |                  |

# Fan & Limit Disc Thermostats

## Electric Heat High Limit Thermostats

MARS electric heat high limit thermostats are designed for easy accurate replacement of OEM thermostats on electric furnaces. Temperature ratings and differentials have been carefully selected for safe operation.

MARS electric heat high limit thermostats feature an exposed matte finish disc for fast response. Easy matching of OEM mountings using the intergal round flange or accessory oval flange.

**Features:**

- Exposed matte finish disc for fast response
- Twelve models replace most popular OEM thermostats
- Individually bagged with instructions
- UL and CSA listings available



| MARS NO. | TEMPERATURE °F |       |              |
|----------|----------------|-------|--------------|
|          | OPEN           | CLOSE | DIFFERENTIAL |
| 39310    | 110            | 90    | 20           |
| 39312    | 120            | 100   | 20           |
| 39314    | 130            | 100   | 30           |
| 39316    | 140            | 100   | 40           |
| 39318    | 145            | 105   | 40           |
| 39320    | 150            | 110   | 40           |
| 39324    | 160            | 120   | 40           |
| 39326    | 170            | 130   | 40           |
| 39328    | 180            | 140   | 40           |
| 39330    | 190            | 150   | 40           |

## Pro-Series Heating Service Kit

MARS has selected the most popular fan and limit switches used in heating applications. Each switch has an integral small oval flange to duplicate the most popular mounting. UL and CSA listings available.



| MARS NO. | SWITCH TYPE | KLIXON TEMP. CODE | TEMPERATURE °F |      | TEMPERATURE °C |      |
|----------|-------------|-------------------|----------------|------|----------------|------|
|          |             |                   | CLOSE          | OPEN | CLOSE          | OPEN |
| 39008    | Fan         | F130-2            | 130            | 110  | 54             | 43   |
| 39009    | Fan         | F140-2            | 140            | 120  | 60             | 49   |
| 39010    | Fan         | F150-2            | 150            | 130  | 66             | 54   |
| 39011    | Fan         | F160-2            | 160            | 140  | 71             | 60   |
| 39022    | Limit       | L180-4            | 140            | 180  | 60             | 82   |
| 39023    | Limit       | L190-4            | 150            | 190  | 66             | 88   |
| 39024    | Limit       | L200-4            | 160            | 200  | 71             | 93   |

## Home Laundry Applications

MARS has carefully selected the most popular multi-purpose thermostats for home laundry and drier equipment. MARS Operating Limit Thermostats range from 125°F to 180°F and have narrow differentials (20°F).

**Features:**

- UL and CSA listings available.



## Operating Limit Thermostats — Open On Temperature Rise

| MARS NO. | KLIXON TEMP. CODE | TEMP °F-OPEN | TEMP. °F-CLOSE |
|----------|-------------------|--------------|----------------|
| 39086    | L125-2            | 125          | 105            |
| 39055    | L130-2            | 130          | 110            |
| 39048    | L180-2            | 180          | 160            |

## MARS Thermocouples

MARS universal replacement thermocouples are fully equipped with fittings and necessary hardware for quick and easy installation.

Each kit is packaged on a display card for easy identification.

**Features:**

- High temperature stainless steel element for long life and dependable operation
- Fully equipped with fittings and necessary hardware for quick and easy installation
- Individually display packaged for protection and easy identification



| MARS NO. | MODEL NO. | LENGTH INCHES |
|----------|-----------|---------------|
| 72218    | TC-18P    | 18            |
| 72224    | TC-24P    | 24            |
| 72230    | TC-30P    | 30            |
| 72236    | TC-36P    | 36            |
| 72248    | TC-48P    | 48            |

## MARS Universal Silicon Nitride Igniter

MARS Universal Silicon Nitride Igniter is designed to replace over 100 silicon nitride igniter applications. The universal bracket kit is used in a simple series of combinations for a quick and easy installation. Extremely low iron content makes the MARS Universal Silicon Nitride Igniter very durable and reliable. Low energy consumption makes it perfect for any 120 VAC application.

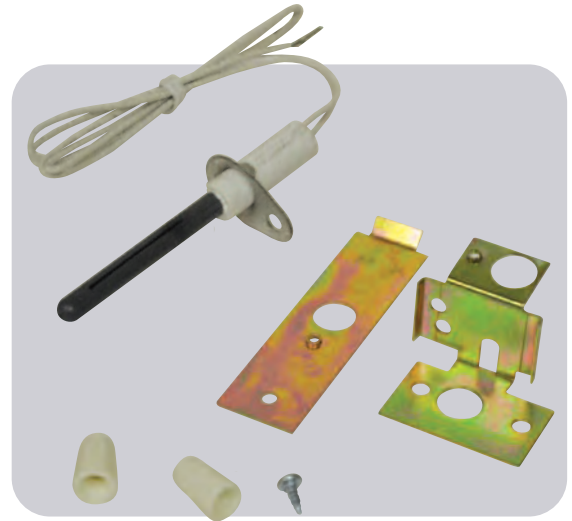
### Features:

- Gas fired forced air furnaces and boilers
- Easy to install
- Universal bracket fits most furnaces
- Fits over 100 applications

### Specifications:

- Input voltage 120vac
- Time to ignition temperature: 16 seconds
- CSA certified
- Steady current 1.3 amps ( $\pm 0.3$  amps @ 120v)

| MARS NO. | DESCRIPTION                                  |
|----------|--|
| 68040    | Universal SiN Round Silicone Nitride Igniter |



## Gas Furnace Igniters

- Compatible with 17, 34, and 45 second warm-up modules
- Full 115/120 volt rated (no step down module required for silicon nitride)
- Wire nuts or OEM plugs and mounting hardware included
- New laminated pictorial cross reference and contractor tri-folds available

**Flat silicon carbide:** The most economical solution.

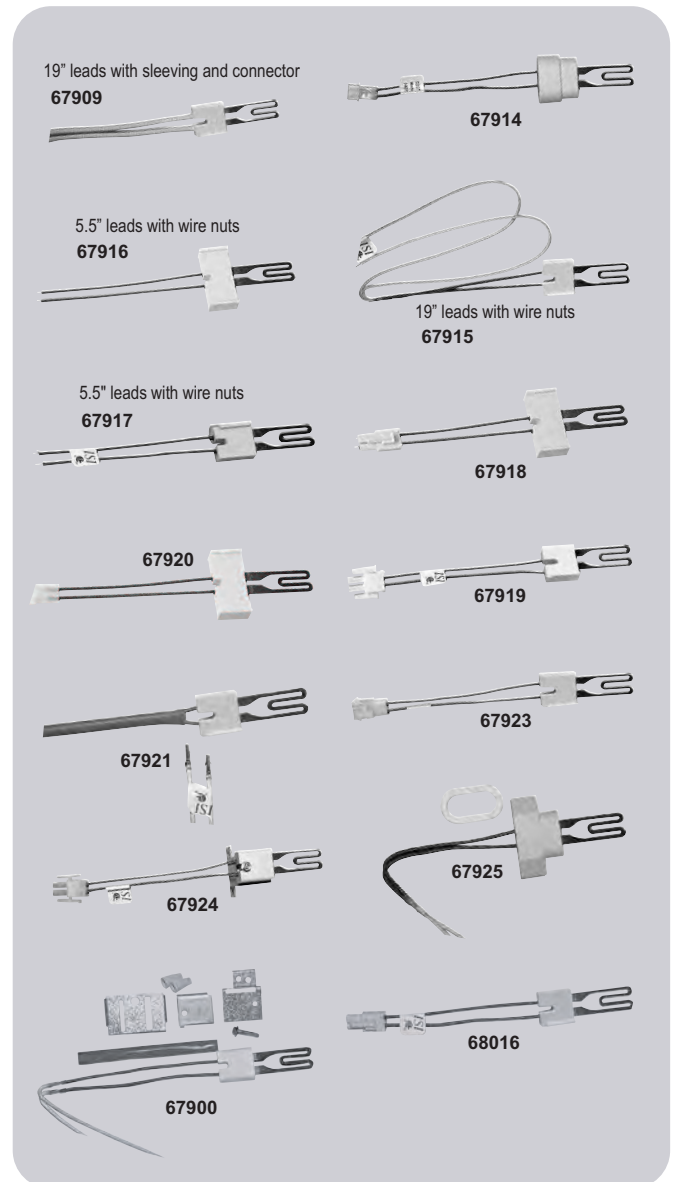
**Silicon nitride:** The newest technology is virtually indestructible.

### Direct Replacements

| FLAT SILICON CARBIDE | INDUSTRY RECOGNIZED REFERENCE |
|----------------------|-------------------------------|
| 67914                | 41-401                        |
| 67915                | 41-402                        |
| 67916                | 41-403                        |
| 68017                | 41-404                        |
| 67917                | 41-405                        |
| 67925                | 41-406                        |
| 67918                | 41-407                        |
| 67919                | 41-408                        |
| 67920                | 41-409                        |
| 68016                | 41-410                        |
| 68013                | 41-411                        |
| 68014                | 41-412/41-414                 |
| 67915                | 41-238/41-242                 |
| 67909                | Coleman 1474-051P / 052P      |
| 67921                | Lennox 33J37                  |
| 67924                | Goodman B1401015 / B1401018S  |
| 67923                | York 025-32625-000            |

### Universal

| FLAT SILICON CARBIDE | SILICON NITRIDE | SUPCO   | WHITE-RODGERS |
|----------------------|-----------------|---------|---------------|
| 67900                | N/A             | SIG1100 | -             |
| N/A                  | 68040           | SSN2000 | 21D64-2       |



# Flame Sensors

## Flame Sensors

MARS flame sensors are direct OEM replacements. False shutdowns can occur in gas furnaces due to a built up carbon on the flame rod. Incorrect cleaning procedures can also damage the flame rod. Replacing a flame sensor that has triggered a false shutdown is the best preventative maintenance and eliminates nuisance service calls.

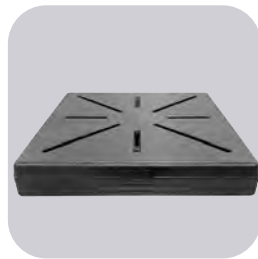
- Direct OEM Replacements
- Improved Service Life
- OEM Mounting Brackets
- Ceramic Insulators

| MARS No. | Replaces OEM | OEM Part Number |
|----------|--------------|-----------------|
| 67680    | Goodman      | 10735201        |
| 67681    | Source 1     | SI-02537499000  |
| 67682    | Source 1     | SI-02530788700  |
| 67683    | Goodman      | 0130F00010      |
| 67684    | Allied       | 44L48           |
| 67685    | Source 1     | SI-02535306000  |
| 67686    | Source 1     | SI-02527773700  |
| 67687    | Source 1     | SI-02535354000  |
| 67688    | Goodman      | B1172601        |
| 67689    | Source 1     | SI-02530802000  |





# Service & Installation



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## Whole Home Air Purifier



Made in USA With Globally Sourced Components

### Comfort-Aire® Whole Home In-Duct Air Purification System

**Reduces 99.9% Of Harmful Airborne Microbials**

The Comfort-Aire in-duct whole home air purifier reduces mold, VOCs, viruses, bacteria, tobacco smoke, and common household odors using photocatalytic oxidation (PCO). Two UV-C sources (gas lamp and LED) react with two proprietary substrates to create a large field of oxidizing agents within the duct. As contaminants in the air pass through the field, the oxidizing agents attack and break down the microbials resulting in cleaner, healthier, and fresher smelling air. This unit is certified zero ozone.

#### Features:

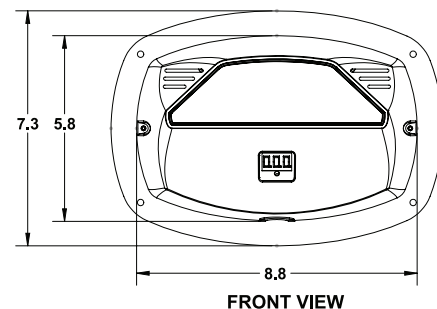
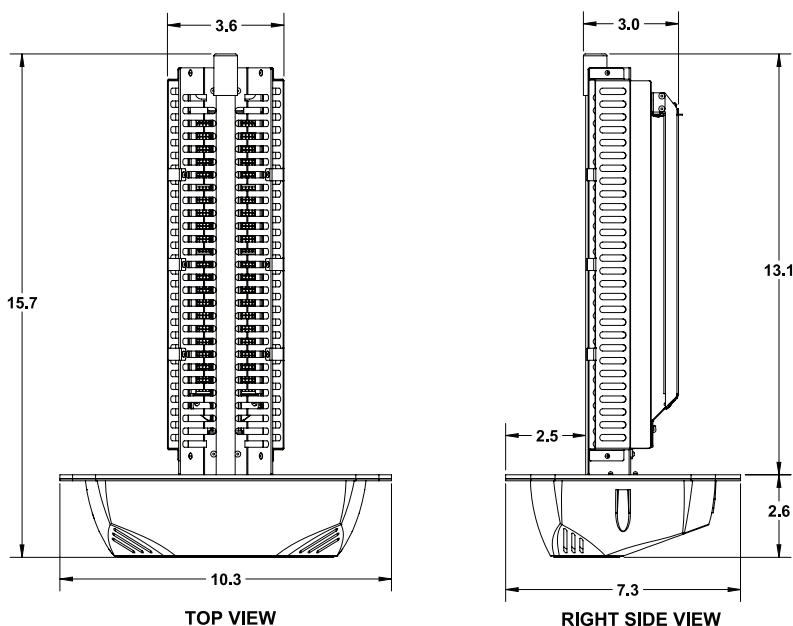
- For Use In Air Handlers Up To 2000 CFM
- All Hardware Included For Simple In-Duct Installation
- Digital Countdown Timer For Visual Indication Of UV-C Lamp Replacement
- Operates Continuously For Extended Lamp Life (3+ Years)
- Limited Warranty:
  - 7 Years Unit
  - 3 Years UV-C Gas Lamp

#### Specifications:

- cETLus Listed : CE Certified
- Conforms To UL 1598:2021 Ed. 5
- Conforms To CSA C22.2#250.0:2021 Ed. 5
- Certified Zero Ozone
- Approved For Sale In California
- Power Consumption:
  - 120VAC .22A 26W
  - 208VAC .13A 26W
  - 240VAC .11A 26W



| MARS NO. | DESCRIPTION               | VOLTAGE      |
|----------|---------------------------|--------------|
| 00700    | Whole Home Air Purifier   | 120, 208-240 |
| 00701    | Replacement UV-C Lamp     | -            |
| 00702    | Replacement UV-C LED Cell | -            |



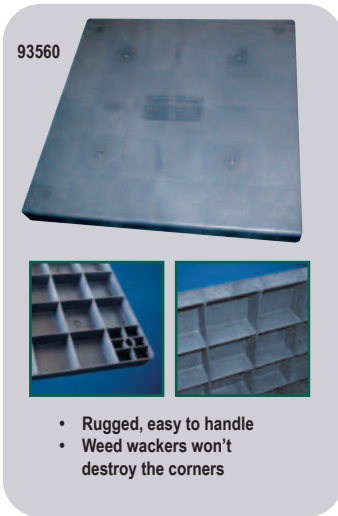
## Accessories

### MARS Condenser Pads

MARS is pleased to offer a full line of Air Conditioning Condenser Pads. These dark gray plastic pads are molded from polypropylene. The lightweight, one piece constructed pads are virtually unbreakable and built to last. Two and three inch thick pads are available.

#### Features & Benefits:

- UV stable – prevents weathering or cracking
- Chemical resistant
- Solid wall construction
- Will not chip or crack
- Lightweight
- Textured surface – prevents unit from sliding
- Unique footpads – prevent unit from sinking into ground
- Size molded in side of pad
- Drillable for attachment of unit



| MARS NO. | DESCRIPTION    | PALLET QTY. |
|----------|----------------|-------------|
| 93560    | 24" x 24" x 2" | 22          |
| 93577    | 24" x 24" x 3" | 16          |
| 93561    | 24" x 36" x 2" | 22          |
| 93562    | 32" x 32" x 2" | 22          |
| 93587    | 32" x 32" x 3" | 16          |
| 93573    | 36" x 36" x 2" | 22          |
| 93592    | 36" x 36" x 3" | 16          |
| 93576    | 36" x 40" x 2" | 22          |
| 93593    | 36" x 40" x 3" | 16          |
| 93594    | 36" x 48" x 3" | 16          |
| 93595    | 40" x 40" x 3" | 16          |

### MARS Stackable Condenser Pads

MARS Stackable A/C condenser pads are high impact 100% recycled composite plastic which makes them lightweight, sturdy and very durable. These pads are a must have for any unit. They are UV Stable and chemical resistant eliminating weathering and cracking over time. The textured surface prevents the unit from sliding and is drillable for attachment of any unit.

You will discover for yourself that these may just be the last equipment pad you will ever choose.

#### Features:

- Nesting design
- High impact 100% recycled composite



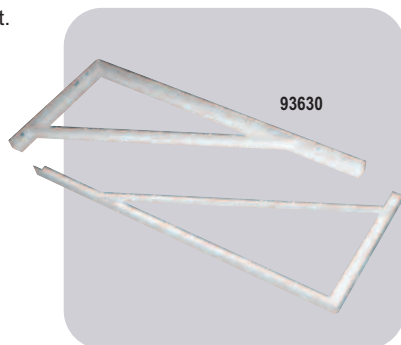
When stacked, three 3" pads are 5.1" tall

| MARS NO. | SIZE (INCHES) | WEIGHT RATING * (MAX.) | PADS PER PALLET |
|----------|---------------|------------------------|-----------------|
| 89540    | 18 x 38 x 3   | 2,200 Lbs              | 38              |
| 89577    | 24 x 24 x 3   | 2,200 Lbs              | 45              |
| 89565    | 30 x 30 x 2   | 2,200 Lbs              | 45              |
| 89584    | 30 x 30 x 3   | 2,200 Lbs              | 38              |
| 89562    | 32 x 32 x 2   | 2,200 Lbs              | 45              |
| 89587    | 32 x 32 x 3   | 1,980 Lbs              | 38              |
| 89573    | 36 x 36 x 2   | 1,650 Lbs              | 45              |
| 89592    | 36 x 36 x 3   | 1,540 Lbs              | 38              |
| 89593    | 36 x 40 x 3   | 1,540 Lbs              | 38              |
| 89595    | 40 x 40 x 3   | 1,320 Lbs              | 38              |

\* Rating based on 5mm deflection with weight applied evenly across surface.

### MARS A/C Mounting Brackets

Heavy duty engineered steel A/C brackets are used for mounting A/C condensers and heat pumps on vertical walls. Brackets include mounting holes and are finished in a durable gray powder coat.



| MARS NO. | DESCRIPTION                     | MARS PACK |
|----------|---------------------------------|-----------|
| 93630    | 30" Powder Coated Steel Bracket | 1 Pair    |
| 93631    | 36" Powder Coated Steel Bracket | 1 Pair    |
| 93632    | 42" Powder Coated Steel Bracket | 1 Pair    |
| 93636    | 48" Powder Coated Steel Bracket | 1 Pair    |

\* Max load Capacity up to 500 lbs. Wall load limitations is restricted by strength of hardware used

### MARS Universal Mini-Split Condenser Wall Mount Brackets

MARS mini-split brackets are available in four sizes to accommodate mounting of popular mini-split compressors.

Bracket kits include mounting hardware and vibration absorbers for a professional installation. Pre-assembled vertical supports speed installation.



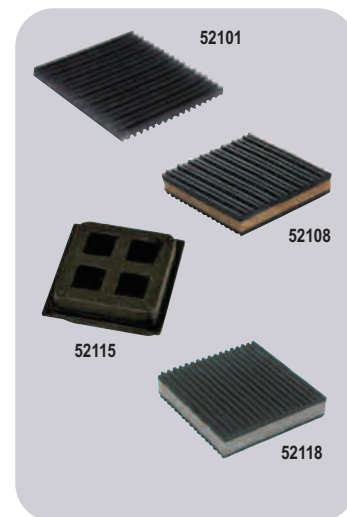
- Powder Coat Finish - resists rust and corrosion
- Mounting and attachment hardware included
- Bracket width and depth adjust to accommodate compressor size
- Vibration pads included for a durable and quiet installation
- Pre-assembled vertical supports reduce installation time

| MARS NO. | SIZE<br>H X L X W   | LOAD CAPACITY<br>(LBS) |
|----------|---------------------|------------------------|
| 93640    | 14.5" x 18" x 33.5" | 260                    |
| 93641    | 18" x 22" x 33.5"   | 330                    |
| 93642    | 18" x 24" x 33.5"   | 400                    |

\* Max load Capacity up to 500 lbs. Wall load limitations is restricted by strength of hardware used

### Anti-Vibration Pads

MARS offers a complete line of anti-vibration pads. These high quality rubber pads provide maximum loading of 60 lbs. per square inch. Anti-vibration pads can be used on any type of mechanical/electrical machines such as pumps, motors, air conditioning units, generators, compressors, etc. The plain rubber pads have grooves on both sides. The cork rubber pads are the same but with the added advantage of reduction in sound level. The natural rubber Iso-Pads can be easily cut for odd sized dimensions under equipment legs and supports. The use of these pads eliminates the need for bolting down equipment to the floor. These Iso-Pads provide superior isolation, attenuation and vibration characteristics.



| MARS NO. | DESCRIPTION                  | MARS PACK |
|----------|------------------------------|-----------|
| 52101    | 2" x 2" x 3/8" Rubber        | 1         |
| 52103    | 4" x 4" x 3/8" Rubber        | 1         |
| 52104    | 6" x 6" x 3/8" Rubber        | 1         |
| 52107    | 18" x 18" x 3/8" Rubber      | 1         |
| 52108    | 2" x 2" x 7/8" Cork/Rubber   | 1         |
| 52109    | 3" x 3" x 7/8" Cork/Rubber   | 1         |
| 52110    | 4" X 4" X 7/8" Cork/Rubber   | 1         |
| 52111    | 6" x 6" x 7/8" Cork/Rubber   | 1         |
| 52114    | 18" x 18" x 7/8" Cork/Rubber | 1         |
| 52115    | 2" x 2" x 3/4" Iso-Pad       | 1         |
| 52116    | 4" x 4" x 3/4" Iso-Pad       | 1         |
| 52117    | 18" x 18" x 3/4" Iso-Pad     | 1         |
| 52119    | 2" x 2" x 7/8" Foam/Rubber   | 1         |
| 52118    | 4" x 4" x 7/8" Foam/Rubber   | 1         |
| 52120    | 6" x 6" x 7/8" Foam/Rubber   | 1         |
| 52122    | 18"x18"x7/8" Foam/Rubber     | 1         |



## Accessories

### MARS Heat Pump Risers

Heavy duty composite heat pump risers are available in 2 popular heights in a cost effective 1 piece design as well as a 2 piece terrain adaptable design. Each riser includes factory installed buyt/mastic patches on the top and bottom to absorb vibration and reduce noise.



| MARS NO. | DESCRIPTION                             | MARS PACK |
|----------|---|-----------|
| 93600    | 3" 1 Piece Heat Pump Riser              | 48        |
| 93602    | 3" 2 Piece Heat Pump Riser              | 32        |
| 93601    | 6" 1 Piece Heat Pump Riser              | 24        |
| 93603    | 6" 2 Piece Heat Pump Riser              | 16        |
| 93604    | 4" Riser Extension                      | 16        |
| 93639    | Adjustable 5-3/4" to 7" Heat Pump Riser | 16        |

### Roof Flashings

Galvanized no calk® roof flashings feature a one-piece construction which insures a positive leak proof installation every time. Specially formulated elastomeric collar allows the vent stack plenty of room for expansion and contraction. The patented double seal no-calk collar "gives" with the pipe, without breaking the water tight seal. The galvanized base is made from 28 gauge deep drawing steel extra high with no seams.

Flex Flash flashings are manufactured from a special formulated elastomer material which is extremely flexible and durable. They permit the vent stack to expand and contract freely without disrupting the seal between pipe and flashing collar. The flashing adjusts to most any angle and adapts to all type of pipe; copper, cast iron, galvanized or plastic. Fits up to 40° angle.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 79360    | 1 1/4" - 1 1/2" no calk galvanized, 9" x 12.5" base      | 12        |
| 79361    | 2" no calk galvanized, 9" x 12.5" base                   | 12        |
| 79362    | 3" no calk galvanized, 11" x 14.5" base                  | 12        |
| 79364    | 1/2", 3/4", 1" no calk galvanized solar, 9" x 12.5" base | 12        |

### MARS Concentric Vent Kits

MARS Concentric Vent Kits provide a single wall or roof penetration solution for high efficiency gas furnaces. Concentric vents save time and money by streamlining installation compared to the traditional 2 pipe system. Concentric vents also improve the aesthetics of the home by reducing the number of wall and roof penetrations. All necessary fittings are included in the kit. (The installing contractor needs to supply pipe and fittings between the furnace and concentric vent)

#### Features

- UL Approved
- Available in 2" and 3"
- Single Wall / Roof penetration
- White PVC



| MARS NO. | DESCRIPTION            | MARS PACK |
|----------|------------------------|-----------|
| 72950    | 2" Concentric Vent Kit | 6         |
| 72951    | 3" Concentric Vent Kit | 4         |
| 72956    | 2" Repl Cap for 72950  | 1         |
| 72957    | 3" Repl Cap for 72951  | 1         |

### MARS Horizontal Vent Termination Kits

MARS Horizontal Vent Termination Kits are designed for use with high efficiency condensing gas furnaces. The kit provides a low profile means of terminating exterior PVC intake and exhaust wall penetrations.

#### Features:

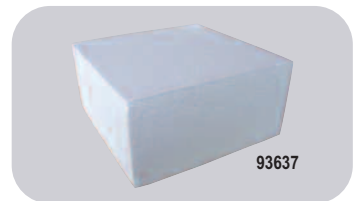
- Low profile design
- Hides vent pipes for a clean and finished look
- Designed for use with high efficiency gas furnaces
- Kit includes mounting hardware



| MARS NO. | DESCRIPTION                        |
|----------|------------------------------------|
| 72952    | 2" Horizontal Vent Termination Kit |
| 72953    | 3" Horizontal Vent Termination Kit |

### MARS Air Handler Blocks

- Lightweight 2 lb styrofoam block
- 8" x 8" x 4"



| MARS NO. | DESCRIPTION   |
|----------|---|
| 93637    | 8" x 8" x 4" Air Handler Block, Pkgd in boxes of 20 (21 boxes per pallet) |

### MARS Easy Leveler™ Furnace Legs

- Includes 4 easy leveler legs & sheet metal screws
- Designed to level a furnace & air conditioning coil for proper drainage.
- Proper leveling helps eliminate standing water, thus reducing bacteria
- Easily adjustable even after installation
- Legs can support up to 400 lbs.
- Adjustable from 2-3/4" to 4" in height



| MARS NO. | DESCRIPTION             | MARS PACK |
|----------|-------------------------|-----------|
| 79095    | Adjustable furnace legs | 12        |

### Economy Furnace Mounting Blocks

- Holds furnace 2" off the floor
- Absorbs vibration, reduces noise
- Composite construction
- Peel & stick installation



| MARS NO. | DESCRIPTION                     | MARS PACK |
|----------|---------------------------------|-----------|
| 79085    | Economy furnace mounting blocks | 12        |

### Rooftop Support Systems

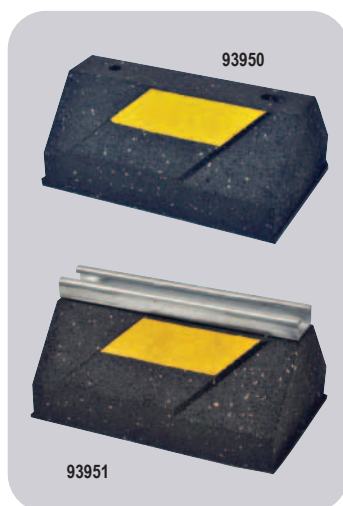
#### Economy CX-Series

- Base only
- Material – 100% recycled rubber, UV resistant

CX Series rooftop support is designed as an economic alternative when a high load bearing is not required. They are perfect for supporting conduit or smaller pipe.

#### C-Series

- Material – 100% recycled rubber, UV resistant
- C Series channel support is designed for superior support of gas and refrigeration piping systems, cable tray, electrical conduit multiple lines, HVAC equipment and many other applications.



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. | MAX. LOAD    |
|----------|-----------------------------------|-----------|-----------|--------------|
| 93950    | CX-Series 4" H x 6" W x 9.6" L    | 1         | 240       | 500 lbs./ft. |
| 93951    | C-Series 4 7/8" H x 6" W x 9.6" L | 1         | 200       | 700 lbs./ft. |

### MARS Front Open Pullout Disconnect Boxes - NEMA 3R

MARS offers both fusible and non-fusible single phase air conditioner disconnects. These units provide a disconnecting means which should be located within sight from and readily accessible from the air conditioning or refrigerating equipment. UL listed. MARS #83315 is also CUL listed



| MARS NO. | DESCRIPTION                            | STD. PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 83315    | 60 amp non-fused, single phase         | 6         | 6         |
| 83316    | 30 amp fused, single phase             | 6         | 6         |
| 83317    | 60 amp fused, single phase             | 6         | 6         |
| 83396    | Compact 30 amp fused, single phase     | 6         | 6         |
| 83335    | Generic brand 60 amp non-fused, single | 6         | 6         |

### MARS Side Open Pullout Disconnect Boxes - NEMA 3R

The MARS Side Open Disconnect Boxes are contractor friendly and feature a unique side opening door, allowing easy access to the work area. The powder coated UV rated finish provides superior esthetics and greater longevity. The patented "finger safe" pullout section prevents accidental contact with electrodes. Easy to remove knockouts and a secure locking mechanism are also featured. This Pullout Disconnect Box is the ideal choice for the busy contractor.

MARS 80328 features an on/off switch so there are no pullout handles to be lost.

#### Specifications:

- Single phase, 240V
- 10,000 amp rated
- NEMA 3R, rainproof
- UL & CUL rated



| MARS NO. | DESCRIPTION                          | STD. PACK | CASE QTY. |
|----------|--------------------------------------|-----------|-----------|
| 80315    | 60 amp non-fused                     | 6         | 6         |
| 80316    | 30 amp fused                         | 6         | 6         |
| 80317    | 60 amp fused                         | 6         | 6         |
| 80328    | 60 amp non-fused – Switch Disconnect | 6         | 6         |

## Accessories

### MARS Low Profile 60A Non-Fused Disconnect

MARS side open low profile disconnect box is compact while providing easy access to the connection points. The finger safe pullout section prevents accidental contact with the live circuit. The lugs are rated for multi-conductors and are approved for use with surge protection devices.

**Specifications:**

- Single phase, 120/240V
- Dimensions: 6.625 x 5 x 2.50
- Tin plated copper pullout
- Lugs rated for multi-conductors
- 10,000 Amp max. rated
- NEMA 3R, rainproof
- cULus rated



| MARS NO. | DESCRIPTION      | STD. PACK | CASE QTY. |
|----------|------------------|-----------|-----------|
| 80301    | 60 amp non-fused | 10        | 10        |

### Midwest A/C Disconnects - NEMA 3R



Midwest Fusible disconnects are available in 30 and 60 Amp models. Pullers are removable or reinstallable in the OFF position for the user safety during equipment maintenance.

**Specifications:**

- 30-100 Amps
- 120/240V AC, Single Phase
- Accepts class H fuses (not included)



| MARS NO. | DESCRIPTION                    | STD. PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 83385    | 60 amp non-fused, single phase | 6         | 6         |
| 83386    | 30 amp fused, single phase     | 6         | 6         |
| 83387    | 60 amp fused, single phase     | 6         | 6         |

### Pullouts For MARS Disconnect Boxes

MARS offers both fusible and non-fusible single phase non-metallic air conditioner disconnects. These horse power rated units are constructed of Noryl® thermoplastic for extended and



| MARS NO. | DESCRIPTION                                | CASE QTY. |
|----------|--|-----------|
| 83313    | 60 amp non-fused pullout for 83315         | 1         |
| 83314    | 30 amp fused pullout for 83316             | 1         |
| 83319    | 30 amp fused pullout for 83396             | 1         |
| 80312    | 60 amp non-fused pullout for 80315 & 80308 | 1         |
| 80313    | 30 amp fused pullout for 80316             | 1         |
| 80314    | 60 amp fused pullout for 80317             | 1         |

### MARS A/C Disconnect/GFCI Receptacle Combination

MARS A/C Disconnect/ GFCI Receptacle Combination disconnects provide a convenient low cost means to satisfy NEC Article 210.63 requirements for HVAC/R Equipment Outlets and Article 406.8(B)(1) for Receptacle – Wet Locations. The NEMA 3R design insures a safe, weather tight installation for residential, light commercial and even some industrial applications.

**Features & Benefits:**

- 60 amp, non-fused, pullout type
- 240 volt A/C, single phase
- UL & CUL listed
- Compact size – 5"x7"x4"
- Meets NEC #210.63 & #406.8(B) (1)
- Removable cover
- Heavy galvanized 'G90' steel with highest quality electro-deposition finish resists corrosion and fading
- NEMA 3R rated



| MARS NO. | DESCRIPTION  | STD. PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 83308    | 60 Amp, Non-Fused, 15 Amp, 125V GFCI Duplex Receptacle | 6         | 6         |
| 83309    | 60 Amp, Non-Fused, 20 Amp, 125V GFCI Duplex Receptacle | 6         | 6         |

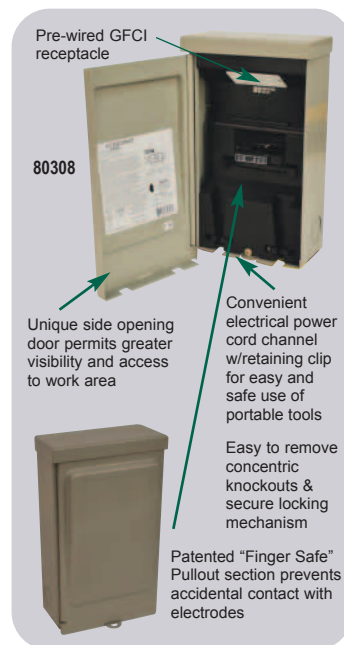
### MARS Side Open Pullout Disconnect w/GFCI Receptacle

The MARS Side Open Disconnect w/GFCI Receptacle provides a convenient low cost means to satisfy NEC 2003 code changes requiring that a GFCI receptacle with a "while in use" cover be within a 25ft line of sight of the condenser unit. The pre-wired receptacle with stripped wire ends makes installation of disconnect and receptacle quick and easy. This unit provides a significantly lower "installed cost" to the contractor when compared to installing a standard disconnect and separate GFCI receptacle with "while in use" cover to comply with the new NEC code change.

Additional features and benefits include: Convenient electrical power cord channel w/retaining clip for easy and safe use of portable tools; Large wiring compartment for both disconnect switch and receptacle; Angled receptacle mounting to eliminate the possibility of crushing portable electrical plugs when closing "while in use" cover; Attractive side opening cover design for ease of installation; Ultra UV powder coating.

**Specifications:**

- 60 amp, non-fused, pullout type
- Pre-wired 15A, 125V GFCI receptacle included
- 240 volt, single phase
- 10,000 amp rated
- NEMA 3R & UL rainproof
- UL & CUL approved
- Rated for 10HP @ 240 volts
- Meets NEC #210.63 & #406.8(B)(1)
- Multiple patents pending



| MARS NO. | DESCRIPTION                           | STD. PACK | CASE QTY. |
|----------|---------------------------------------|-----------|-----------|
| 80308    | Pullout disconnect, W/GFCI receptacle | 6         | 6         |



### Midwest A/C Disconnect/GFCI

Midwest Top Open A/C Disconnect, 120/240 VAC, 60 A, 3 to 10 hp, 1 Phase, 20 Amp GFCI, NEMA 3R



| MARS NO. | DESCRIPTION                       | STD. PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 83345    | 30 Amp Fused, 20A GFCI Receptacle | 6         | 6         |
| 83395    | 60 Amp Fused, 20A GFCI Receptacle | 6         | 6         |

### Midwest Non-Metallic Disconnects - NEMA 3R

Midwest Electric offers both fusible and non-fusible single phase non-metallic air conditioner disconnects. These horse power rated units are constructed of Noryl® thermoplastic for extended and rugged durability. Units are corrosion resistant, weatherproof, and maintenance free. UL listed and CSA certified.



| MARS NO. | DESCRIPTION                    | STD. PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 83312    | 60 amp non-fused, single phase | 6         | 6         |
| 83306    | 30 amp fused, single phase     | 6         | 6         |
| 83307    | 60 amp fused, single phase     | 6         | 6         |

### Midwest Three Phase Pullout Disconnects - 240V - NEMA 3R

Midwest Electric three phase pull out disconnects and single phase non-automatic switches are manufactured of heavy zinc coated steel with highest quality electro-deposition paint finish for maximum corrosion resistance. The three phase disconnects are available with and without fuse protection. Fusible units require three fuses. NEMA 3R.



| MARS NO. | DESCRIPTION                   | CASE QTY. |
|----------|-------------------------------|-----------|
| 83321    | 60 amp non-fused, three phase | 4         |
| 83322    | 30 amp fused, three phase     | 4         |
| 83323    | 60 amp fused, three phase     | 4         |

### Midwest Non-Automatic Disconnects - Nema 3R

Midwest Electric has developed a new NEMA 3R, non-automatic A/C disconnect with a patent pending on/off switch mechanism so there is no pullout to lose. This UL and CSA listed disconnect features: a keyhole mounting slot for easy installation, a removable door for easy wiring access, straight in and out lugs for quick connections and six 1/2" x 3/4" x 1" concentric knockouts.

The single phase non-automatic disconnects do not provide overcurrent protection with manual internal on/off switch



| MARS NO. | DESCRIPTION         | STD. PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 83328    | 60 amp, 240V, 10 HP | 6         | 6         |

### Midwest Heat Pump Disconnects - NEMA 3R

Multiple disconnect devices are offered for heat pump applications that require individual disconnects for the heating and cooling cycles. The dual pull outs accommodate either a 30A/60A or 60A/60A puller combination. Units require four fuses.

**Specifications:**  
• 120/240 AC



| MARS NO. | DESCRIPTION   | CASE QTY. |
|----------|---------------|-----------|
| 83324    | 90 amp fused  | 1         |
| 83325    | 100 amp fused | 1         |

### Midwest Evaporative Cooler Disconnects - NEMA 3R

Evaporative cooler applications not only require fusing but switching or receptacle functions depending on equipment type and local codes. The 40 ampere unit utilizes 3 S plug fuses.



| MARS NO. | DESCRIPTION               | CASE QTY. |
|----------|---------------------------|-----------|
| 83327    | 40 amp fused, receptacles | 1         |

## Accessories

### Midwest Non-Metallic, Non-Auto Switch Residential/Construction A/C Disconnect, NEMA 3R



| MARS NO. | DESCRIPTION                    | STD. PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 83388    | 60 amp non-fused, single phase | 6         | 6         |

### Midwest Metallic Residential/Construction, A/C Disconnects w/ Receptacle, NEMA 3R



| MARS NO. | DESCRIPTION                    | STD. PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 83398    | 60 amp non-fused, single phase | 6         | 6         |

### I-T-E Cartridge Fuse Type - UL Listed

1 Phase/2 wire, 3 Phase/3 wire, solid neutral



| MARS NO. | DESCRIPTION                 | TYPE | CASE QTY. |
|----------|-----------------------------|------|-----------|
| 83330    | 30a - 240V 2 pole, exterior | 3R   | 10        |
| 83331    | 60a - 240V 2 pole, exterior | 3R   | 5         |
| 83336    | 30a - 240V 3 pole, exterior | 3R   | 10        |
| 83337    | 60a - 240V 3 pole, exterior | 3R   | 5         |
| 83339    | 30a - 240V 3 pole, interior | 1    | 1         |
| 83340    | 60a - 240V 3 pole, interior | 1    | 1         |

### I-T-E Plug Fuse Type - UL Listed

1 Phase, solid neutral

| MARS NO. | DESCRIPTION                 | TYPE | STD. PACK | CASE QTY. |
|----------|-----------------------------|------|-----------|-----------|
| 83342    | 30a - 120V 1 pole, interior | 1    | 6         | 6         |

### I-T-E General Duty Enclosed Switches



### Non-Fused

| MARS NO. | DESCRIPTION                               | TYPE | CASE QTY. |
|----------|---|------|-----------|
| 83346    | 30a - 240V 2 or 3 pole, 3 phase exterior  | 3R   | 5         |
| 83347    | 60a - 240V 2 or 3 pole, 3 phase, exterior | 3R   | 1         |
| 83349    | 30a - 240V 2 or 3 pole, 3 phase interior  | 1    | 1         |
| 83350    | 60a - 240V 2 or 3 pole, 3 phase interior  | 1    | 1         |
| 83352    | 60a - 240V 1 or 2 pole, 1 phase exterior  | 3R   | 10        |

### Fused

| MARS NO. | DESCRIPTION                           | TYPE | CASE QTY. |
|----------|---------------------------------------|------|-----------|
| 83636    | 30a - 240V, 3 Pole, 3 Phase, exterior | 3R   | 1         |
| 83637    | 60A - 240V, 3 Pole, 3 Phase, exterior | 3R   | 1         |

### I-T-E Heavy Duty 3PH 600V - Type 1 - Indoor



| MARS NO. | DESCRIPTION      | CASE QTY. |
|----------|------------------|-----------|
| 83353    | 30a - 600V fused | 1         |
| 83354    | 60a - 600V fused | 1         |



### I-T-E Heavy Duty 3PH 600V - Type 3R - Outdoor



| MARS NO. | DESCRIPTION             | CASE QTY |
|----------|-------------------------|----------|
| 83359    | 30a - 600V fused        | 1        |
| 83360    | 60a - 600V fused        | 1        |
| 83361    | 100a - 600V fused       | 1        |
| 83362    | 30a - 600V unfused      | 1        |
| 83363    | 60a - 600V unfused      | 1        |
| 83364    | 100a, 600V-3P non-fused | 1        |

### Midwest HD 3P Disconnects – NEMA 3R - Outdoor



Midwest heavy duty disconnects are designed for commercial and industrial applications where safety, high performance and continuity of service are essential.

**Features:**

- Quick-make, Quick-break mechanism
- Highly visible red handle grip, Designed for hook stick operation
- Meets or exceeds NEMA KS1 standard for enclosed switches – Type HD
- Full cover interlocks



**Specifications:**

- 3 Wire, 3 Pole
- 600 VAC
- 60/75°C conductor rating
- Enclosure type: Nema 3R (outdoor)
- cUL certified and UL listed

| MARS NO. | DESCRIPTION              | CASE QTY. |
|----------|--------------------------|-----------|
| 83383    | 30A, 600V-3P, Fused      | 1         |
| 83384    | 60A, 600V-3P Fused       | 1         |
| 83389    | 100A, 600V-3P, Fused     | 1         |
| 83390    | 200A, 250V-3P, Fused     | 1         |
| 83392    | 200A, 600V-3P, Fused     | 1         |
| 83393    | 200A, 600V-3P, Non-Fused | 1         |

### Midwest Fused Disconnect - NEMA 3R



Midwest Electric offers a general duty switches designed for residential and light commercial applications where duty is not severe.

**Features:**

- Highly visible red handle grip, Designed for hook stick operation
- Quick-make, quick-break mechanism
- 60/75°C conductor rating

**Specifications:**

- General Duty, NEMA 3R, Outdoor
- 240VAC
- cULus



| MARS NO. | DESCRIPTION                      | CASE QTY. |
|----------|----------------------------------|-----------|
| 83329    | 100A, 240V-3P, Fused, 4 Wire     | 1         |
| 83391    | 200A, 250V-3P, Non-Fused, 3 Wire | 1         |

### Top Open A/C Disconnects, NEMA 3R

MARS offers both fusible and non-fusible single phase air conditioner disconnects. These units provide a disconnecting means which should be located within sight and readily accessible from the air conditioning or refrigerating equipment.

- Single phase
- 120/240 Volts
- Fused Disconnects - accepts type H fuse (not included)
- 10kAIC
- Enclosure material: galvanized steel
- NEMA 3R, rainproof, outdoor use
- Dimensions: 9.21" H x 5.45" W x 3.13" D



| MARS NO. | DESCRIPTION       | STD. PACK | CASE QTY. |
|----------|-------------------|-----------|-----------|
| 83615    | 60 Amp, Non-Fused | 6         | 6         |
| 83616    | 30 Amp, Fused     | 6         | 6         |
| 83617    | 60 Amp, Fused     | 6         | 6         |

### Ground Lug Kit

Siemens low voltage VB heavy duty safety switch accessory. Ground lug kit rated 600V, suitable for operating currents 30/60/100/200A.

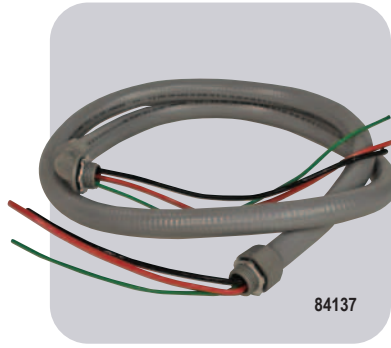


| MARS NO. | DESCRIPTION          |
|----------|----------------------|
| 83303    | HD Safety Switch kit |

## Accessories

### MARS A/C Whips Non-Metallic Fittings

Non-metallic conduit with non-metal fittings. Assembled with UL approved components.



| MARS NO. | DESCRIPTION                            | MARS PACK |
|----------|--|-----------|
| 84131    | 4' x 1/2" #10 ga. non-metallic whip UL | 1         |
| 84133    | 4' x 3/4" #8 ga. non-metallic whip UL  | 1         |
| 84135    | 6' x 1/2" #10 ga. non-metallic whip UL | 1         |
| 84137    | 6' x 3/4" #8 ga. non-metallic whip UL  | 1         |
| 84139    | 8' x 1/2" #10 ga. non-metallic whip    | 1         |
| 84141    | 8' x 3/4" #8 ga. non-metallic whip     | 1         |
| 84143    | 10' x 3/4" #8 ga. non-metallic whip    | 1         |

### MARS Bulk Packaged A/C Whips, Non-Metallic Fittings

Non-metallic conduit with non-metallic fittings. These are individually packaged. Assembled with UL approved components.

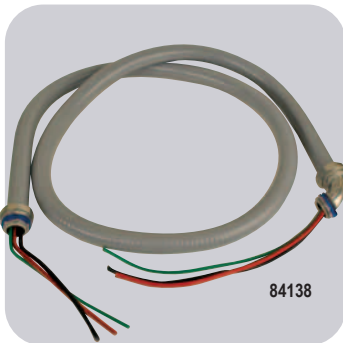
- Packaged gaylord style
- Bulk box for easy access



| MARS NO. | DESCRIPTION                            | MARS PACK |
|----------|--|-----------|
| 84181    | 4' x 1/2" #10 ga. non-metallic whip UL | 90        |
| 84183    | 4' x 3/4" #8 ga. non-metallic whip UL  | 60        |
| 84185    | 6' x 1/2" #10 ga. non-metallic whip UL | 60        |
| 84187    | 6' x 3/4" #8 ga. non-metallic whip UL  | 45        |

### MARS A/C Whips Metallic Fittings

Non-metallic conduit with metal fittings. Assembled with UL approved components.



| MARS NO. | DESCRIPTION                        | MARS PACK |
|----------|------------------------------------|-----------|
| 84132    | 4' x 1/2" #10 ga. metallic whip UL | 1         |
| 84134    | 4' x 3/4" #8 ga. metallic whip UL  | 1         |
| 84136    | 6' x 1/2" #10 ga. metallic whip UL | 1         |
| 84138    | 6' x 3/4" #8 ga. metallic whip UL  | 1         |

### All Whips Bagged

### MARS A/C Whips All Metallic

| MARS NO. | DESCRIPTION                 | MARS PACK |
|----------|-----------------------------|-----------|
| 84125    | 4' x 1/2" all metallic whip | 1         |
| 84126    | 4' x 3/4" all metallic whip | 1         |
| 84127    | 6' x 1/2" all metallic whip | 1         |
| 84128    | 6' x 3/4" all metallic whip | 1         |

### Sealtite® Flexible Metallic Conduit

Sealtite® flexible conduit provides protection for wet or oily locations. UL listed conduit has a continuous copper ground built into the core. All UL listed Sealtite® is UV resistant.



| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 84102    | 1/2", metallic conduit, UL, boxed 100 ft | 1         |
| 84103    | 3/4", metallic conduit, UL, boxed 100 ft | 1         |
| 84110    | 1/2", metallic conduit, boxed 100 ft     | 1         |
| 84111    | 3/4", metallic conduit, boxed 100 ft     | 1         |

### Liquid-Tight Flexible Non-Metallic Conduit

- Flexible PVC construction. Phthalate free.
- Lightweight and lower installed cost
- Oil/water resistant
- Sunlight resistant, direct burial
- Crush resistant
- Temperature rated: -18°C to 75°C
- UL listed, CSA certified



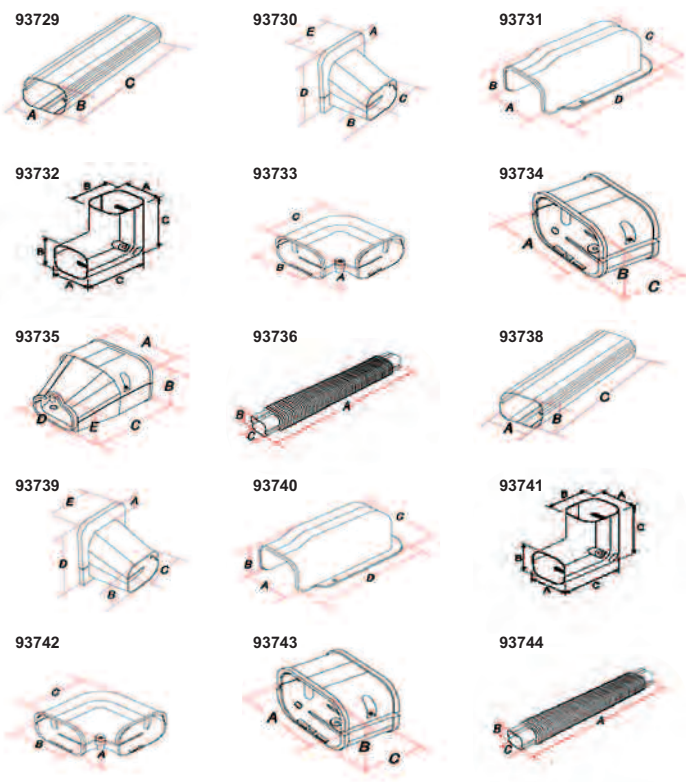
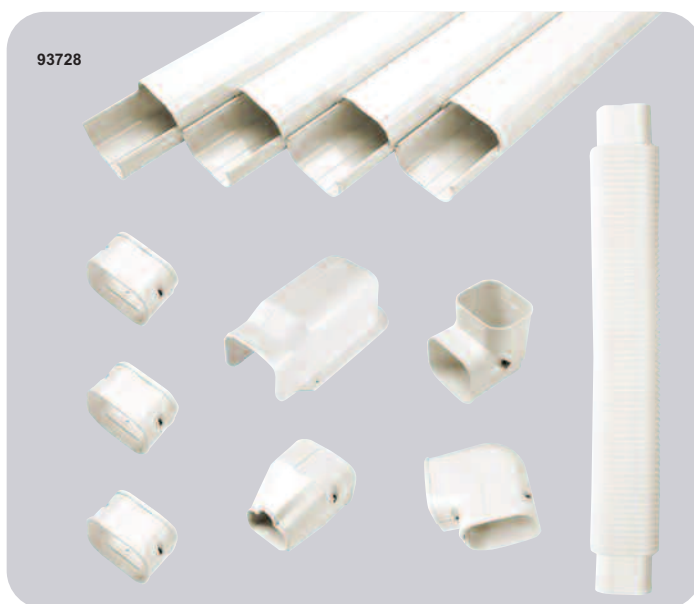
| MARS NO. | DESCRIPTION                                   | MARS PACK |
|----------|---|-----------|
| 84118    | 1/2", non-metallic conduit, UL, boxed 100 ft  | 1         |
| 84119    | 3/4", non-metallic conduit, UL, boxed 100 ft  | 1         |
| 84120    | 1", non-metallic conduit, UL, boxed 100 ft    | 1         |
| 84121    | 1/2", non-metallic conduit, UL, polybag 25 ft | 1         |
| 84122    | 3/4", non-metallic conduit, UL, polybag 25 ft | 1         |

### Line Set Covers

Attractive and durable line set cover for protecting and concealing refrigerant tubing/insulation, control wire, and drains. Ideal for ductless and all other applications requiring exposed refrigeration line sets. All connectors have front and back plates which fasten together with two screws.

- Vulnerable components are protected from solar/environmental exposure
- Aesthetically conceals mechanicals in architectural-grade, paintable plastic duct
- Two (2) separate cover sizes to choose from – 3" and 4" duct widths – provide ample room for multiple line sets and larger tonnage equipment
- Easy, flexible configuration for new or retrofit applications

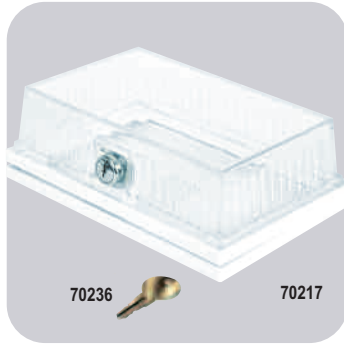
| MARS NO. | DESCRIPTION                    | COLOR | DIMENSIONS (INCHES) |     |      |     |     | CASE QTY. |
|----------|--------------------------------|-------|---------------------|-----|------|-----|-----|-----------|
|          |                                |       | A                   | B   | C    | D   | E   |           |
| 93728    | Line Set Cover Kit, 3 in.      | White | -                   | -   | -    | -   | -   | 1         |
| 93729    | 3.25 Foot Straight Duct, 3in.  | White | 3.1                 | 2.4 | 39.4 | -   | -   | 8         |
| 93730    | Wall Cover, 3 in.              | White | 1.2                 | 2.6 | 3.3  | 5.5 | 4.3 | 5         |
| 93731    | 90 Degree Wall Corner, 3 in.   | White | 3.1                 | 3.3 | 4.3  | 8.3 | -   | 10        |
| 93732    | 90 Degree Corner, 3 in.        | White | 3.3                 | 2.7 | 3.9  | -   | -   | 5         |
| 93733    | Plane Corner, 3 in.            | White | 3.4                 | 2.8 | 4.5  | -   | -   | 10        |
| 93734    | Duct Connector, 3 in.          | White | 3.5                 | 2.7 | 2.0  | -   | -   | 10        |
| 93735    | End Cap, 3 in.                 | White | 3.3                 | 2.7 | 3.8  | 2.3 | 1.9 | 5         |
| 93736    | Flexible Duct, 3 in.           | White | 23.6                | 2.5 | 2.9  | -   | -   | 10        |
| 93737    | Line Set Cover Kit, 4 in.      | White | -                   | -   | -    | -   | -   | 1         |
| 93738    | 3.25 Foot Straight Duct, 4 in. | White | 3.9                 | 2.8 | 39.4 | -   | -   | 6         |
| 93739    | Wall Cover, 4 in.              | White | 1.5                 | 2.7 | 4.3  | 5.1 | 5.7 | 5         |
| 93740    | 90 Degree Wall Corner, 4 in.   | White | 4.1                 | 3.3 | 5.3  | 8.4 | -   | 5         |
| 93741    | 90 Degree Corner, 4 in.        | White | 4.3                 | 2.9 | 4.6  | -   | -   | 5         |
| 93742    | Plane Corner, 4 in.            | White | 4.3                 | 2.9 | 5.4  | -   | -   | 5         |
| 93743    | Duct Connector, 4 in.          | White | 4.3                 | 2.9 | 2.0  | -   | -   | 5         |
| 93744    | Flexible Duct, 4 in.           | White | 28.3                | 2.5 | 3.6  | -   | -   | 5         |



## Accessories

### MARS Designer Series - Plastic Cover And Base

MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| INSIDE DIMENSIONS (INCHES) | BASE  | HEIGHT | WIDTH | DEPTH |
|----------------------------|-------|--------|-------|-------|
|                            | Solid | 8      | 5     | 2 1/8 |
|                            | Ring  | 8      | 5     | 2 1/8 |

| MARS NO. | DESCRIPTION                        | BASE | MARS PACK | CASE QTY. |
|----------|------------------------------------|------|-----------|-----------|
| 70217    | BTG-DK clear plastic               | Dual | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |      | 1         | 1         |

### MARS Universal Series

MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| PLASTIC INSIDE DIMENSIONS (INCHES) | BASE   | HEIGHT | WIDTH  | DEPTH  |
|------------------------------------|--------|--------|--------|--------|
|                                    | Solid  | 9 5/16 | 5 5/8  | 3 9/16 |
| Ring                               | 9 5/16 | 5 5/8  | 3 9/16 |        |
| METAL                              | BASE   | HEIGHT | WIDTH  | DEPTH  |
|                                    | Solid  | 8      | 5 9/16 | 3 5/8  |
|                                    | Ring   | 8      | 5 9/16 | 3 5/8  |

| MARS NO. | DESCRIPTION                        | BASE  | MARS PACK | CASE QTY. |
|----------|------------------------------------|-------|-----------|-----------|
| 70220    | BTG-UK2 clear plastic              | Dual  | 1         | 12        |
| 70223    | BTG-UM metal                       | Solid | 1         | 12        |
| 70224    | BTG-UWM metal                      | Ring  | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |       | 1         | 1         |

### MARS Elite Series - Plastic Base

MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| INSIDE DIMENSIONS (INCHES) | BASE  | HEIGHT | WIDTH | DEPTH |
|----------------------------|-------|--------|-------|-------|
|                            | Solid | 4 3/4  | 4 1/2 | 2 3/4 |

| MARS NO. | DESCRIPTION                        | BASE  | MARS PACK | CASE QTY. |
|----------|------------------------------------|-------|-----------|-----------|
| 70201    | BTG-EK clear plastic cover         | Solid | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |       | 1         | 1         |

### MARS Classic Series - Plastic Base

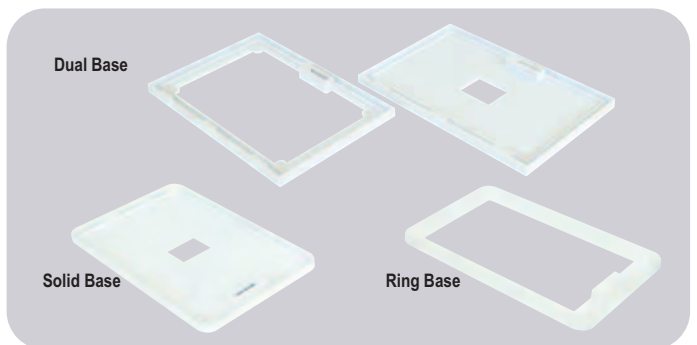
MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| INSIDE DIMENSIONS (INCHES) | BASE  | HEIGHT | WIDTH | DEPTH  |
|----------------------------|-------|--------|-------|--------|
|                            | Solid | 6 1/4  | 5 5/8 | 3 3/16 |
|                            | Ring  | 6 1/4  | 5 5/8 | 3 3/16 |

| MARS NO. | DESCRIPTION                        | BASE | MARS PACK | CASE QTY. |
|----------|------------------------------------|------|-----------|-----------|
| 70205    | BTG-K clear plastic cover          | Dual | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |      | 1         | 1         |

### Thermostat Guard Bases





### MARS Regal Series - Plastic Base

MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| INSIDE DIMENSIONS (INCHES) | BASE  | HEIGHT | WIDTH | DEPTH |
|----------------------------|-------|--------|-------|-------|
|                            | Solid | 7 3/8  | 4 1/8 | 3 1/8 |
|                            | Ring  | 7 3/8  | 4 1/8 | 3 1/8 |

| MARS NO. | DESCRIPTION                        | BASE | MARS PACK | CASE QTY. |
|----------|------------------------------------|------|-----------|-----------|
| 70210    | BTG-RK clear plastic cover         | Dual | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |      | 1         | 1         |

### MARS Sentinel Series - Metal Cover And Base

MARS offers a broad selection of thermostat guards. Popular models available include metal, clear plastic and opaque plastic designs. MARS thermostat guards are ideal for protecting thermostats in schools, industrial plants institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available. Order part #70236 for the BTG thermostat guard key.



| INSIDE DIMENSIONS (INCHES) | BASE  | HEIGHT | WIDTH | DEPTH  |
|----------------------------|-------|--------|-------|--------|
|                            | Solid | 6 1/2  | 5     | 3 1/16 |
|                            | Ring  | 6 1/2  | 5     | 3 1/16 |

| MARS NO. | DESCRIPTION                        | BASE  | MARS PACK | CASE QTY. |
|----------|------------------------------------|-------|-----------|-----------|
| 70215    | BTG-54VL metal hinged              | Solid | 1         | 12        |
| 70216    | BTG-54VLW metal hinged             | Ring  | 1         | 12        |
| 70236    | F336, extra key for all BTG guards |       | 1         | 1         |

### Thermostat Guards Cross Reference

| MARS NO. | BEKO                   | D Teck  | SUPCO     |
|----------|------------------------|---------|-----------|
| 70201    | BTG EK                 | 585-TG5 | BTG EK    |
| 70205    | BTG K clear plst       | 585-TG2 | BTG K     |
| 70210    | BTG RK clear plastic   | 585-TG1 | BTG-RK    |
| 70215    | BTG 54VL metal         | 585-TG7 | BTG-54 VL |
| 70216    | BTG 54VLW hinged metal | 585-TG8 | BTG-54VLW |
| 70217    | BTG DK clear plastic   | 585-TG6 | BTG-DK    |
| 70220    | BTG UK2 clear plastic  | 585-TG  | BTG-UK2   |
| 70223    | BTG UM metal           | 585-TG3 | BTG-UM    |
| 70224    | BTG UWM hinged metal   | 585-TG4 | BTG-UWM   |
| 70236    | F336 key               |         |           |

### Universal Cover/Guard

Helps prevent tampering and unauthorized adjustments to your thermostat, helping to control your energy usage.



- Fits Thermostats up to 7.25"W x 4.75"H x 2.25"D
- Back plate Dimensions:
  - Exterior 9.25" x 6"
  - Interior 4.75" x 7"
- Easy Installation
- Tape included to seal off thermostat wire to prevent air penetration
- Wall cover included to create a clean look
- Mounting Screws and Anchors included



| MARS NO. | DESCRIPTION                      | PACK QTY | CASE QTY |
|----------|----------------------------------|----------|----------|
| 70256    | Universal Thermostat Cover/Guard | 1        | 24       |



## Accessories

### I-T-E Circuit Breakers Plug-In Interchangeable Type-Bulk

- For applications that require plug in
- Space saving design allows to fit a 1" panel space
- UL listed



**SIEMENS**  
I-T-E® Electrical Products

#### 10,000 KA interrupting rating

| MARS NO. | DESCRIPTION               | MARS PACK | CASE QTY. |
|----------|---------------------------|-----------|-----------|
| 83200    | 15a- 120/240 VAC, 1 pole  | 1         | 6         |
| 83201    | 20a- 120/240 VAC, 1 pole  | 1         | 6         |
| 83220    | 15a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83221    | 20a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83222    | 25a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83223    | 30a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83224    | 35a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83225    | 40a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83226    | 45a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83227    | 50a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83228    | 60a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83229    | 70a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83230    | 80a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83231    | 90a- 120/240 VAC, 2 pole  | 1         | 3         |
| 83232    | 100a- 120/240 VAC, 2 pole | 1         | 3         |

### I-T-E Circuit Breakers Plug-In Interchangeable Type-Carded

- For applications that require plug in
- 10K AIC
- Space saving design allows to fit a 1" panel space
- UL listed



**SIEMENS**  
I-T-E® Electrical Products

#### 10,000 KA interrupting rating

| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 83537    | 20a- 120/240 VAC, 2 pole | 1         | 3         |
| 83538    | 30a- 120/240 VAC, 2 pole | 1         | 3         |
| 83539    | 40a- 120/240 VAC, 2 pole | 1         | 3         |
| 83540    | 50a- 120/240 VAC, 2 pole | 1         | 3         |
| 83541    | 60a- 120/240 VAC, 2 pole | 1         | 3         |

### General Electric Circuit Breakers-Bulk



- Compact size, 1/2" THQP or 1" THQL
- Box type terminals
- Copper to copper connections with corrosion resisting tin plated stabs
- Exceeds UL, NEMA, ANSI, CSA requirements



| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 83527    | 30a- 120/240 VAC, THQP 2 pole  | 1         | 5         |
| 83431    | 20a- 120/240 VAC, THQL 1 pole  | 1         | 10        |
| 83436    | 30a- 120/240 VAC, THQL 2 pole  | 1         | 5         |
| 83438    | 40a- 120/240 VAC, THQL 2 pole  | 1         | 5         |
| 83439    | 50a- 120/240 VAC, THQL 2 pole  | 1         | 5         |
| 83440    | 60a- 120/240 VAC, THQL 2 pole  | 1         | 5         |
| 83444    | 100a- 120/240 VAC, THQL 2 pole | 1         | 5         |

### GE Replacement Breakers For Square D



MARS offers GE replacement circuit breakers for Square D QO® load centers. These Q line series circuit breakers lower your inventory costs by providing a single source for new construction & Square D QO® retrofit. These UL classified GE breakers are for use in place of Square D type QO circuit breakers.



Square D QO® load centers for which GE/MARS offers UL classified replacement circuit breakers:

|  |  |                        |   |                          |   |  |  |                        |   |
|--|--|------------------------|---|--------------------------|---|--|--|------------------------|---|
| 570A<br>Q02-4L50TTS<br>Q02-4L70F/S<br>Q02-4L70RB<br>Q02-4L70TS<br>Q02L30S<br>Q02L30TTS<br>Q02L40RB<br>Q02TR<br>Q04-7M/0TTS | 100A<br>Q06-12L100F/S<br>Q06-12L100F/US<br>Q06-12L100F/S<br>Q06-12L100RB | 150A<br>Q08-16M150FTRB | Q06-12L100RBCU<br>Q06-12L100TFF/S<br>Q06-12M125FTRB<br>Q08-16L100DF/S<br>Q08-16L100F/US<br>Q08-16L100F/S<br>Q08-16L100RB<br>Q08-16L100RBCU<br>Q08-16L100TFF/S<br>Q012M100RB<br>Q016M100RB<br>Q016L125<br>Q020M100RB | Q02100BNFS<br>Q024M100RB | 125A<br>Q06-12M125FTRB<br>Q012-24L125<br>Q012-24L125RB<br>Q012L125<br>Q012L125RB<br>Q016-24L125<br>Q016-24L125RB<br>Q016L125<br>Q020-24L125 | Q002L125<br>Q02125BNFS<br>Q024L125<br>Q012L125RB<br>Q024M125RB | 225A<br>Q040M225<br>Q042L225<br>Q042L225RB | 200A<br>Q08-16M200FTRB | Q012L200<br>Q012L200RB<br>Q020-30M200RB<br>Q020-40M200<br>Q020-40M200F/S<br>Q024M200<br>Q030-40L200<br>Q030-40L200RB<br>Q030-40M200<br>Q030L200<br>Q030L200RB<br>Q040M200RB |
|--|--|------------------------|---|--------------------------|---|--|--|------------------------|---|

| MARS NO. | DESCRIPTION | GENO.    | SQUARE D NO. |
|----------|-------------|----------|--------------|
| 83574    | 20A-2P      | THQO2120 | QO220        |
| 83575    | 30A-2P      | THQO2130 | QO230        |
| 83576    | 40A-2P      | THQO2140 | QO240        |
| 83577    | 50A-2P      | THQO2150 | QO250        |
| 83578    | 60A-2P      | THQO2160 | QO260        |



### Circuit Breakers

Zbreaker is the same circuit breaker now found on many high-end transformers and systems. It protects from damage caused by shorts, overheating, or wiring problems. A sticker is included so that, if the Tech desires, he can inform his customer where to press the "reset" button and possibly save a midnight service call. Kit includes wires and pre-installed terminals that allow you to easily plug it in to the connectors where a plastic-type fuse existed.

- Crystal-Clear Clamshell Package with Hanging Hole
- Full-Color Insert with Instructions



| MARS NO. | DESCRIPTION           | MARS PACK |
|----------|-----------------------|-----------|
| 08574    | 3 Amp Circuit Breaker | 1         |
| 08575    | 5 Amp Circuit Breaker | 1         |

### I-T-E® EQ® Load Center Enclosures



I-T-E EQ® load centers with main lugs feature a combination trim boxed in one package.

- The trim fits both surface and flush mounting applications saving money and space
- Interiors offer removal in seconds
- Single phase, 3-wire design, 120/240 VAC
- One piece Albus bar construction. Designed for use only with I-T-E circuit breakers. UL listed
- Rated for 100,000 A IR
- Exclusive split neutral
- Main lugs and neutral on same plane, same drive
- Simple upper pan adjustment after trim is installed
- UL listed for 60/75 °C conductors
- 100% circuit breaker twistouts
- Indoor and outdoor enclosures available



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 83271    | 60a-2 pole 4 circuit, surface branch panel - type 1  | 1         |
| 83273    | 125a-4 pole 8 circuit, surface branch panel - type 1 | 1         |

### Outdoor Enclosures - Type 3R

- Single phase, 3 wire SN
- 120/240V
- Uses HA type hub



| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 83277    | 60a-2 pole 4 circuit, outdoor enclosure  | 1         |
| 83278    | 125a-4 pole 8 circuit, outdoor enclosure | 1         |

### Cartridge Fuses, Type TRS



#### SmartSpot blown-fuse indicator

With SmartSpot you'll find the open fuse FAST. When a fuse opens, the SmartSpot indicator on the label of the fuse senses it and turns from SILVER to eye-catching RED.

And it stays RED so you can spot the open fuse quickly and safely.

Just open a panel and scan. Wherever you see any red in a SmartSpot indicator, you know the fuse is open.

This is a big advantage to contractors/service personnel because it helps them to identify very quickly what fuse needs to be changed thereby avoiding costly downtime.

You'll find SmartSpot on all of the most widely used industry standard fuses such as Class RK5, RK1, and Class J.

### Time delay (class RK5, 600 volt)

| MARS NO. | DESCRIPTION            | MARS PACK | CASE QTY. |
|----------|------------------------|-----------|-----------|
| 82103*   | 2/10a - 600V, TRS fuse | 10        | 100       |
| 82106*   | 1/2a - 600V, TRS fuse  | 10        | 100       |
| 82109*   | 1a - 600V, TRS fuse    | 10        | 100       |
| 82110*   | 1.6a - 600V, TRS fuse  | 10        | 100       |
| 82111*   | 2a - 600V, TRS fuse    | 10        | 100       |
| 82112*   | 2.25a - 600V, TRS fuse | 10        | 100       |
| 82124*   | 5a - 600V, TRS fuse    | 10        | 200       |
| 82125*   | 6a - 600V, TRS fuse    | 10        | 200       |
| 82132    | 10a - 600V, TRS fuse   | 10        | 200       |
| 82133    | 12a - 600V, TRS fuse   | 10        | 200       |
| 82134    | 15a - 600V, TRS fuse   | 10        | 200       |
| 82136    | 20a - 600V, TRS fuse   | 10        | 200       |
| 82137    | 25a - 600V, TRS fuse   | 10        | 200       |
| 82138    | 30a - 600V, TRS fuse   | 10        | 200       |
| 82139    | 35a - 600V, TRS fuse   | 10        | 100       |
| 82140    | 40a - 600V, TRS fuse   | 10        | 100       |
| 82147    | 45a - 600V, TRS fuse   | 10        | 100       |
| 82141    | 50a - 600V, TRS fuse   | 10        | 100       |
| 82142    | 60a - 600V, TRS fuse   | 10        | 100       |
| 82143    | 70a - 600V, TRS fuse   | 5         | 5         |
| 82144    | 80a - 600V, TRS fuse   | 5         | 5         |
| 82145    | 90a - 600V, TRS fuse   | 5         | 5         |
| 82146    | 100a - 600V, TRS fuse  | 5         | 5         |
| 82154    | 110a - 600V, TRS fuse  | 1         | 1         |
| 82148    | 125a - 600V, TRS fuse  | 1         | 1         |
| 82149    | 150a - 600V, TRS fuse  | 1         | 1         |
| 82150    | 175a - 600V, TRS fuse  | 1         | 1         |
| 82151    | 200a - 600V, TRS fuse  | 1         | 1         |
| 82152    | 250a - 600V, TRS fuse  | 1         | 1         |
| 82153    | 300a - 600V, TRS fuse  | 1         | 1         |

\* NOTE: SmartSpot indicating fuse not available below 8 amps. 60a and up are blade type.

## Accessories

### Cartridge Fuses, Type TR



#### SmartSpot blown-fuse indicator

With SmartSpot you'll find the open fuse FAST. When a fuse opens, the SmartSpot indicator on the label of the fuse senses it and turns from SILVER to eye-catching RED.

And it stays RED so you can spot the open fuse quickly and safely.

Just open a panel and scan. Wherever you see any red in a SmartSpot indicator, you know the fuse is open.

This is a big advantage to contractors/service personnel because it helps them to identify very quickly what fuse needs to be changed thereby avoiding costly downtime.

You'll find SmartSpot on all of the most widely used industry standard fuses such as Class RK5, RK1, and Class J.

### Time delay (class RK5, 250 volt)

| MARS NO. | DESCRIPTION             | MARS PACK | CASE QTY. |
|----------|-------------------------|-----------|-----------|
| 82006*   | 1/2a - 250V, TR fuse    | 10        | 100       |
| 82009*   | 1a - 250V, TR fuse      | 10        | 100       |
| 82016*   | 2a - 250V, TR fuse      | 10        | 100       |
| 82017*   | 2 1/2a - 250V, TR fuse  | 10        | 100       |
| 82019*   | 3a - 250V, TR fuse      | 10        | 100       |
| 82020*   | 3 2/10a - 250V, TR fuse | 10        | 100       |
| 82021*   | 4a - 250V, TR fuse      | 10        | 100       |
| 82024*   | 5a - 250V, TR fuse      | 10        | 100       |
| 82025*   | 5 6/10a - 250V, TR fuse | 10        | 100       |
| 82026*   | 6a - 250V, TR fuse      | 10        | 100       |
| 82027*   | 6 1/4a - 250V, TR fuse  | 10        | 100       |
| 82029*   | 7a - 250V, TR fuse      | 10        | 100       |
| 82030    | 8a - 250V, TR fuse      | 10        | 100       |
| 82032    | 10a - 250V, TR fuse     | 10        | 100       |
| 82033    | 12a - 250V, TR fuse     | 10        | 100       |
| 82034    | 15a - 250V, TR fuse     | 10        | 100       |
| 82035    | 17 1/2a - 250V, TR fuse | 10        | 100       |
| 82036    | 20a - 250V, TR fuse     | 10        | 100       |
| 82037    | 25a - 250V, TR fuse     | 10        | 100       |
| 82038    | 30a - 250V, TR fuse     | 10        | 100       |
| 82039    | 35a - 250V, TR fuse     | 10        | 100       |
| 82040    | 40a - 250V, TR fuse     | 10        | 100       |
| 82041    | 45a - 250V, TR fuse     | 10        | 100       |
| 82042    | 50a - 250V, TR fuse     | 10        | 100       |
| 82043    | 60a - 250V, TR fuse     | 10        | 100       |
| 82044    | 70a - 250V, TR fuse     | 5         | 100       |
| 82045    | 80a - 250V, TR fuse     | 5         | 100       |
| 82046    | 90a - 250V, TR fuse     | 5         | 100       |
| 82047    | 100a - 250V, TR fuse    | 5         | 100       |
| 82048    | 110a - 250V, TR fuse    | 1         | 1         |
| 82049    | 125a - 250V, TR fuse    | 1         | 1         |
| 82050    | 150a - 250V, TR fuse    | 1         | 1         |
| 82051    | 175a - 250V, TR fuse    | 1         | 1         |
| 82052    | 200a - 250V, TR fuse    | 1         | 1         |
| 82053    | 225a - 250V, TR fuse    | 1         | 1         |
| 82054    | 350a - 250V, TR fuse    | 1         | 1         |
| 82056    | 400a - 250V, TR fuse    | 1         | 1         |
| 82055    | 600a - 250V, TR fuse    | 1         | 1         |

\* NOTE: SmartSpot indicating fuse not available below 8 amps. 60a and up are blade type.

### Midget Fast Acting Fuses, Type ATM



Fast acting

#### Applications:

- For supplemental protection of wide variety of circuits up to 600VAC with 100kA I.R.



| MARS NO. | DESCRIPTION             | MARS PACK | CASE QTY. |
|----------|-------------------------|-----------|-----------|
| 82907    | 1/2a - 600V, ATM fuse   | 10        | 100       |
| 82909    | 1a - 600V, ATM fuse     | 10        | 100       |
| 82910    | 1 1/2a - 600V, ATM fuse | 10        | 100       |
| 82911    | 2a - 600V, ATM fuse     | 10        | 100       |
| 82916    | 3a - 600V, ATM fuse     | 10        | 100       |
| 82912    | 4a - 600V, ATM fuse     | 10        | 100       |
| 82913    | 5a - 600V, ATM fuse     | 10        | 100       |
| 82914    | 6a - 600V, ATM fuse     | 10        | 100       |
| 82918    | 7a - 600V, ATM fuse     | 10        | 100       |
| 82915    | 8a - 600V, ATM fuse     | 10        | 100       |
| 82917    | 10a - 600V, ATM fuse    | 10        | 100       |
| 82919    | 15a - 600V, ATM fuse    | 10        | 100       |
| 82920    | 20a - 600V, ATM fuse    | 10        | 100       |
| 82922    | 30a - 600V, ATM fuse    | 10        | 100       |

### Specialty Fuses



| MARS NO.  | DESCRIPTION         | MARS PACK | CASE QTY. |
|---|---------------------|-----------|-----------|
| <b>Small Dimension (Electronic) Fuses, 5 x 20mm — N. American Standards, Fast Acting</b>  |                     |           |           |
| 82881   | GGM 2 250V fuse     | 5         | 5         |
| 82879   | GGM .5 250V fuse    | 5         | 5         |
| 82882   | GGM 10 250V fuse    | 10        | 10        |
| <b>Small Time Delay Fuses, Rejection Style (PC Boards and small Dimension Fuses)</b>      |                     |           |           |
| 82880   | GMQ 3.2a, 300V fuse | 5         | 100       |
| 82884   | GMQ4a, 300V fuse    | 5         | 100       |
| <b>Fast Acting Size Rejection Special Type Fuse (PC Boards and small Dimension Fuses)</b> |                     |           |           |
| 82980   | GLQ 3.0a, 300V fuse | 5         | 100       |
| <b>Fast Acting Non Rejecting Special Type Fuse (Low voltage supplementary fuses)</b>      |                     |           |           |
| 82886   | GLR 1.5a, 300V fuse | 5         | 100       |
| 82887   | GLR 1.6a, 300V fuse | 5         | 100       |
| 82891   | GLR 10a, 300V fuse  | 5         | 100       |
| 82890   | GLR 15a, 300V fuse  | 5         | 100       |
| 82883   | GSC 1a, 300V fuse   | 5         | 100       |

Specialty Fuses (Cont.)



Specialty Fuses (Cont.)



| MARS NO.             | DESCRIPTION            | MARS PACK | CASE QTY. |
|----------------------|------------------------|-----------|-----------|
| <b>Slo Blo Fuses</b> |                        |           |           |
| 82439                | 3AB-326 1a, 250V fuse  | 5         | 100       |
| 82442                | 3AB-326 5a, 250V fuse  | 5         | 100       |
| 82445                | 3AB-326 15a, 250V fuse | 5         | 100       |
| 82444                | 3AB-326 20a, 250V fuse | 5         | 100       |

| MARS NO.  | DESCRIPTION      | MARS PACK | CASE QTY. |
|---|------------------|-----------|-----------|
| <b>Time Delay, 1/4 x 1 1/4", Glass Type Fuses (PC Boards and small Dimension Fuses)</b> |                  |           |           |
| 82978   | WVR heat limiter | 10        | 10        |
| 82979   | WUR heat limiter | 10        | 10        |

| MARS NO.   | DESCRIPTION         | MARS PACK | CASE QTY. |
|--|---------------------|-----------|-----------|
| <b>Small Dimension Time Delay Non Rejecting Special Fuse (PC Boards and small Dimension Fuses)</b> |                     |           |           |
| 82888  | SMF 3.2a, (LMF 3.2) | 5         | 5         |

| MARS NO.  | DESCRIPTION        | MARS PACK | CASE QTY. |
|---|--------------------|-----------|-----------|
| <b>Low Voltage Supplementary Time Delay Fuse, 10X38 or 13/32 X 1-1/2 Size</b> |                    |           |           |
| 82956   | TRM .2a, 250V fuse | 10        | 100       |
| 82953   | TRM .8a, 250V fuse | 10        | 100       |
| 82958   | TRM 1a, 250V fuse  | 10        | 100       |
| 82959   | TRM 2a, 250V fuse  | 10        | 100       |
| 82960   | TRM 3a, 250V fuse  | 10        | 100       |
| 82963   | TRM 4a, 250V fuse  | 10        | 100       |
| 82965   | TRM 5a, 250V fuse  | 10        | 100       |
| 82946   | TRM 6a, 250V fuse  | 10        | 100       |
| 82954   | TRM 8a, 250V fuse  | 10        | 100       |
| 82969   | TRM 10a, 250V fuse | 10        | 100       |
| 82970   | TRM 15a, 250V fuse | 10        | 100       |
| 82972   | TRM 20a, 250V fuse | 10        | 100       |
| 82973   | TRM 25a, 250V fuse | 10        | 100       |
| 82974   | TRM 30a, 250V fuse | 10        | 100       |

| MARS NO.  | DESCRIPTION          | MARS PACK | CASE QTY. |
|---|----------------------|-----------|-----------|
| <b>Low Voltage Branch Circuit Rated Fuses, R Class CC</b> |                      |           |           |
| 82977   | ATMR -2a, 600V fuse  | 10        | 100       |
| 82966   | ATMR -3a, 600V fuse  | 10        | 100       |
| 82967   | ATMR -4a, 600V fuse  | 10        | 100       |
| 82971   | ATMR -10a, 600V fuse | 10        | 100       |
| 82976   | ATMR -12a, 600V fuse | 10        | 100       |
| 82968   | ATMR -15a, 600V fuse | 10        | 100       |
| 82981   | ATMR 20a, 600V fuse  | 10        | 100       |

| MARS NO.   | DESCRIPTION           | MARS PACK | CASE QTY. |
|--|-----------------------|-----------|-----------|
| <b>Low Voltage Supplementary Fast Acting Fuses</b> |                       |           |           |
| 82608  | BLS/BBS 1a, 250V fuse | 10        | 100       |
| 82609  | BLS/BBS 2a, 250V fuse | 10        | 100       |
| 82610  | BLS/BBS 3a, 250V fuse | 10        | 100       |
| 82611  | BLS/BBS 4a, 600V fuse | 10        | 100       |
| 82612  | BLS/BBS 5a, 600V fuse | 10        | 100       |

| MARS NO.  | DESCRIPTION          | MARS PACK | CASE QTY. |
|---|----------------------|-----------|-----------|
| <b>Medium Voltage Fuses Class J Fast Acting</b> |                      |           |           |
| 82158   | A4J - 6a, 600V fuse  | 10        | 100       |
| 82160   | A4J - 15a, 600V fuse | 10        | 100       |
| 82161   | A4J - 20a, 600V fuse | 10        | 100       |
| 82163   | A4J - 30a, 600V fuse | 10        | 100       |
| 82169   | A3T - 40a, 600V fuse | 10        | 100       |
| 82170   | A6T - 25a, 600V fuse | 10        | 100       |
| 82179   | A6T - 30a, 600V fuse | 10        | 100       |
| 82181   | A6T - 35a, 600V fuse | 10        | 100       |

| MARS NO.            | DESCRIPTION                     | MARS PACK | CASE QTY. |
|---------------------|---------------------------------|-----------|-----------|
| <b>Fuse Reducer</b> |                                 |           |           |
| 82975               | 263M/H632 fuse reducer (1 pair) | 1         | 10        |

| MARS NO.  | DESCRIPTION                      | MARS PACK | CASE QTY. |
|---|----------------------------------|-----------|-----------|
| <b>Automotive Blade Type Fuse Acting 32V DC</b> |                                  |           |           |
| 82230   | ATC - 3a, auto blade fuse(5 pk)  | 1         | 5         |
| 82232   | ATC - 4a, auto blade fuse        | 5         | 5         |
| 82231   | ATC - 5a, auto blade fuse (5 pk) | 1         | 5         |
| 82233   | ATC - 7.5a, auto blade fuse      | 1         | 5         |
| 82234   | ATC - 10a, auto blade fuse       | 5         | 5         |
| 82235   | ATC - 15a, auto blade fuse       | 5         | 5         |
| 82236   | ATC - 20a, auto blade fuse       | 5         | 5         |
| 82237   | ATC - 25a, auto blade fuse       | 5         | 5         |
| 82238   | ATC - 30a, auto blade fuse       | 5         | 5         |

| MARS NO.  | DESCRIPTION                       | MARS PACK | CASE QTY. |
|---|-----------------------------------|-----------|-----------|
| <b>ATDR Time Delay Class CC (Small motors, Contactors, Branch Circuit Protection)</b> |                                   |           |           |
| 82226   | ATDR - 6.25a, 600V fuse, class CC | 10        | 10        |
| 82228   | ATDR - 10a, 600V fuse             | 10        | 10        |

| MARS NO.   | DESCRIPTION           | MARS PACK | CASE QTY. |
|--|-----------------------|-----------|-----------|
| <b>ATQR Time Delay Class CC (Control Transformers, Solenoids, Inductive Loads)</b> |                       |           |           |
| 82227  | ATQR - 15a, 600V fuse | 10        | 10        |



## Accessories

### Gen. Purpose Cartridge Fuses, Type OT



One time non-renewable,  
Class K-5

| MARS NO. | DESCRIPTION             | MARS PACK | CASE QTY. |
|----------|-------------------------|-----------|-----------|
| 82210    | 10a - 250V, OT10 Fuse   | 10        | 100       |
| 82212    | 15a - 250V, OT15 Fuse   | 10        | 100       |
| 82213    | 20a - 250V, OT20 Fuse   | 10        | 100       |
| 82214    | 25a - 250V, OT25 Fuse   | 10        | 100       |
| 82215    | 30a - 250V, OT30 Fuse   | 10        | 100       |
| 82216    | 35a - 250V, OT35 Fuse   | 10        | 100       |
| 82217    | 40a - 250V, OT40 Fuse   | 10        | 100       |
| 82218    | 45a - 250V, OT45 Fuse   | 10        | 100       |
| 82219    | 50a - 250V, OT50 Fuse   | 10        | 100       |
| 82220    | 60a - 250V, OT60 Fuse   | 10        | 100       |
| 82221    | 70a - 250V, OT70 Fuse   | 5         | 100       |
| 82224    | 100a - 250V, OT100 Fuse | 5         | 100       |

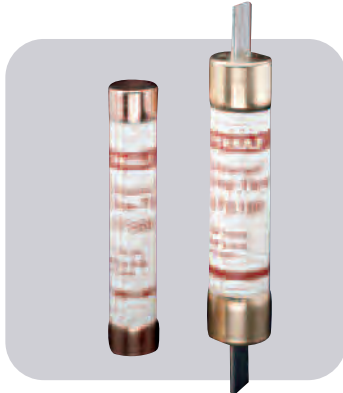
### Gen. Purpose Cartridge Fuses, Type OTS



One time non-renewable,  
Class K-5

#### Applications:

- Feeders
- Branch circuits
- Resistive heating
- Residential and small commercial installations



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 82249    | 10a - 600V, OTS fuse  | 10        | 100       |
| 82251    | 15a - 600V, OTS fuse  | 10        | 100       |
| 82252    | 20a - 600V, OTS fuse  | 10        | 100       |
| 82253    | 25a - 600V, OTS fuse  | 10        | 100       |
| 82254    | 30a - 600V, OTS fuse  | 10        | 100       |
| 82255    | 35a - 600V, OTS fuse  | 10        | 100       |
| 82256    | 40a - 600V, OTS fuse  | 10        | 100       |
| 82259    | 60a - 600V, OTS fuse  | 10        | 100       |
| 82264    | 100a - 600V, OTS fuse | 5         | 100       |

### Midget Fuses, Type OTM



Fast acting

#### Applications:

- Supplemental protection of circuits up to 250VAC and 10kA



| MARS NO. | DESCRIPTION          | MARS PACK | CASE QTY. |
|----------|----------------------|-----------|-----------|
| 82702    | 2a - 250V, OTM fuse  | 10        | 100       |
| 82705    | 5a - 250V, OTM fuse  | 10        | 100       |
| 82710    | 15a - 250V, OTM fuse | 10        | 100       |
| 82711    | 20a - 250V, OTM fuse | 10        | 100       |

### Midget Time Delay Fuses, Type ATQ



Time delay  
(12 seconds @ 200% rating) for  
circuits with high inrush current

#### Applications:

- Supplemental protection if lighting, solenoid, motor and transformer circuits



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 82932    | 1/4a - 500V, ATQ fuse | 10        | 100       |
| 82933    | 1/2a - 500V, ATQ fuse | 10        | 100       |
| 82936    | 1a - 500V, ATQ fuse   | 10        | 100       |
| 82941    | 2a - 500V, ATQ fuse   | 10        | 100       |
| 82942    | 3a - 500V, ATQ fuse   | 10        | 100       |
| 82943    | 4a - 500V, ATQ fuse   | 10        | 100       |
| 82944    | 5a - 500V, ATQ fuse   | 10        | 100       |
| 82945    | 6a - 500V, ATQ fuse   | 10        | 100       |
| 82714    | 7a - 500V, ATQ fuse   | 10        | 100       |
| 82947    | 10a - 500V, ATQ fuse  | 10        | 100       |
| 82940    | 12a - 500V, ATQ fuse  | 10        | 100       |
| 82952    | 15a - 500V, ATQ fuse  | 10        | 100       |
| 82948    | 20a - 500V, ATQ fuse  | 10        | 100       |
| 82949    | 25a - 500V, ATQ fuse  | 10        | 100       |
| 82951    | 30a - 500V, ATQ fuse  | 10        | 100       |



### Ceramic Body Fast Acting Fuses, Type GAB



- Ceramic body
- Fast acting
- 1/4" x 1-1/4"



82403

| MARS NO. | DESCRIPTION                     | MARS PACK | CASE QTY. |
|----------|---------------------------------|-----------|-----------|
| 82403    | 1/2a - 250V, GAB ceramic fuse   | 5         | 5         |
| 82404    | 1a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82402    | 1 1/2a - 250V, GAB ceramic fuse | 5         | 5         |
| 82405    | 2a - 250V, GAB ceramic fuse     | 5         | 100       |
| 82406    | 2 1/2a - 250V, GAB ceramic fuse | 5         | 5         |
| 82407    | 3a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82408    | 4a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82409    | 5a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82410    | 6a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82411    | 7a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82412    | 8a - 250V, GAB ceramic fuse     | 5         | 5         |
| 82413    | 10a - 250V, GAB ceramic fuse    | 5         | 5         |
| 82414    | 12a - 250V, GAB ceramic fuse    | 5         | 5         |
| 82415    | 15a - 250V, GAB ceramic fuse    | 5         | 5         |
| 82416    | 20a - 250V, GAB ceramic fuse    | 5         | 5         |
| 82417    | 25a - 250V, GAB ceramic fuse    | 5         | 5         |
| 82418    | 30a - 250V, GAB ceramic fuse    | 5         | 5         |

### Electronic/Glass Fuses, Type GGX



- Glass body
- Fast acting
- 1/4" x 1"



82878

| MARS NO. | DESCRIPTION                 | MARS PACK | CASE QTY. |
|----------|-----------------------------|-----------|-----------|
| 82484    | 1/2a - 250V, GGX glass fuse | 5         | 100       |
| 82486    | 1a - 250V, GGX glass fuse   | 5         | 100       |
| 82488    | 2a - 250V, GGX glass fuse   | 5         | 5         |
| 82491    | 5a - 125V, GGX glass fuse   | 5         | 5         |
| 82877    | 3a - 125V, GGX glass fuse   | 5         | 5         |

### Glass Body Non-Time Delay Fuses, Type GGC



- Glass body
- Fast acting
- 1/4" x 1-1/4"



82448

| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 82448    | 1/10a - 250V, GGC glass fuse   | 5         | 5         |
| 82450    | 1/4a - 250V, GGC glass fuse    | 5         | 100       |
| 82451    | 3/10a - 250V, GGC glass fuse   | 5         | 5         |
| 82453    | 1/2a - 250V, GGC glass fuse    | 5         | 100       |
| 82455    | 3/4a - 250V, GGC glass fuse    | 5         | 5         |
| 82456    | 1a - 250V, GGC glass fuse      | 5         | 100       |
| 82457    | 1 1/4a - 250V, GGC glass fuse  | 5         | 5         |
| 82458    | 1 1/2a - 250V, GGC glass fuse  | 5         | 100       |
| 82460    | 2a - 250V, GGC glass fuse      | 5         | 100       |
| 82461    | 2 1/2a - 250V, GGC glass fuse  | 5         | 100       |
| 82462    | 3a - 250V, GGC glass fuse      | 5         | 100       |
| 82459    | 3 2/10a - 250V, GGC glass fuse | 5         | 100       |
| 82463    | 4a - 250V, GGC glass fuse      | 5         | 100       |
| 82464    | 5a - 250V, GGC glass fuse      | 5         | 5         |
| 82465    | 6a - 250V, GGC glass fuse      | 5         | 100       |
| 82466    | 7 1/2a - 250V, GGC glass fuse  | 5         | 5         |
| 82467    | 8a - 250V, GGC glass fuse      | 5         | 100       |
| 82468    | 10a - 250V, GGC glass fuse     | 5         | 100       |
| 82474    | 12a - 125V, GGC glass fuse     | 5         | 100       |
| 82469    | 15a - 125V, GGC glass fuse     | 5         | 100       |
| 82471    | 20a - 32V, GGC glass fuse      | 5         | 100       |
| 82472    | 25a - 32V, GGC glass fuse      | 5         | 5         |
| 82473    | 30a - 32V, GGC glass fuse      | 5         | 5         |

### Electronic/Glass Fuses, Type GDG



- Glass body
- Time Delay
- 13/16" X 3/16"

| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 82476    | 3-15/100A-250V, GDG glass fuse | 5         | 5         |

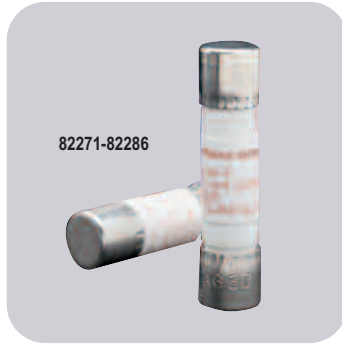
## Accessories

### Class G Fuses 480 Volt, 600 Volt Type AG = Type SC

Time delay (above 5A)  
current limiting

**Applications:**

- Lighting
- Heating
- Appliances
- Branch circuits



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 82271    | 1a - 600V, AG fuse  | 4         | 100       |
| 82290    | 2a - 600V, AG fuse  | 4         | 100       |
| 82272    | 3a - 600V, AG fuse  | 4         | 100       |
| 82291    | 4a - 600V, AG fuse  | 4         | 100       |
| 82273    | 5a - 600V, AG fuse  | 4         | 100       |
| 82274    | 6a - 600V, AG fuse  | 4         | 100       |
| 82275    | 8a - 600V, AG fuse  | 4         | 100       |
| 82276    | 10a - 600V, AG fuse | 4         | 100       |
| 82278    | 15a - 600V, AG fuse | 4         | 100       |
| 82279    | 20a - 600V, AG fuse | 4         | 100       |
| 82280    | 25a - 480V, AG fuse | 4         | 100       |
| 82281    | 30a - 480V, AG fuse | 4         | 100       |
| 82282    | 35a - 480V, AG fuse | 2         | 100       |
| 82283    | 40a - 480V, AG fuse | 2         | 100       |
| 82285    | 50a - 480V, AG fuse | 2         | 100       |
| 82286    | 60a - 480V, AG fuse | 2         | 100       |

### Glass Body Time Delay Fuses, Type GDL



- Glass body
- Time delay
- 1/4" x 1 1/4"



| MARS NO. | DESCRIPTION                 | MARS PACK | CASE QTY. |
|----------|-----------------------------|-----------|-----------|
| 82502    | 1a - 250V, GDL glass fuse   | 5         | 100       |
| 82505    | 1.5a - 250V, GDL glass fuse | 5         | 100       |
| 82507    | 2a - 250V, GDL glass fuse   | 5         | 100       |
| 82508    | 2.5a - 250V, GDL glass fuse | 5         | 100       |
| 82510    | 3a - 250V, GDL glass fuse   | 5         | 100       |
| 82512    | 4a - 250V, GDL glass fuse   | 5         | 100       |
| 82513    | 5a - 250V, GDL glass fuse   | 5         | 100       |
| 82514    | 7a - 250V, GDL glass fuse   | 5         | 100       |
| 82517    | 8a - 250V, GDL glass fuse   | 5         | 100       |
| 82518    | 10a - 125V, GDL glass fuse  | 5         | 100       |
| 82519    | 15a - 125V, GDL glass fuse  | 5         | 100       |

### Dual Element, Time Delay (Type S) UL 125V



Plug fuses all UL listed;  
CSA models also listed

Rejection Time delay,  
tamper resistant



| MARS NO. | DESCRIPTION          | MARS PACK | CASE QTY. |
|----------|----------------------|-----------|-----------|
| 82307    | 1 1/4a, S plug fuse  | 4         | 100       |
| 82308    | 1 6/10a, S plug fuse | 4         | 100       |
| 82311    | 2a, S plug fuse      | 4         | 100       |
| 82313    | 2 1/2a, S plug fuse  | 4         | 100       |
| 82315    | 3a, S plug fuse      | 4         | 100       |
| 82316    | 3 2/10a, S plug fuse | 4         | 100       |
| 82318    | 4a, S plug fuse      | 4         | 100       |
| 82320    | 5a, S plug fuse      | 4         | 100       |
| 82323    | 6 1/4a, S plug fuse  | 4         | 100       |
| 82325    | 8a, S plug fuse      | 4         | 100       |
| 82326    | 9a, S plug fuse      | 4         | 100       |
| 82327    | 10a, S plug fuse     | 4         | 100       |
| 82328    | 12a, S plug fuse     | 4         | 100       |
| 82330    | 15a, S plug fuse     | 4         | 100       |
| 82331    | 20a, S plug fuse     | 4         | 100       |
| 82332    | 25a, S plug fuse     | 4         | 100       |
| 82333    | 30a, S plug fuse     | 4         | 100       |

### Dual Element Time Delay Type S Clamshell Packaging For Merchandisers



Rejection Time delay,  
tamper resistant



| MARS NO. | DESCRIPTION                   | MARS PACK |
|----------|-------------------------------|-----------|
| 82745    | 15a, S plug fuse 125V, (6 pk) | 1         |
| 82746    | 20a, S plug fuse 125V, (6 pk) | 1         |
| 82747    | 25a, S plug fuse 125V, (6 pk) | 1         |
| 82748    | 30a, S plug fuse 125V, (6 pk) | 1         |

### Dual Element, Time Delay (Type T) UL 125V



- Low melting point temperatures
- Electronic heating and cycling load circuits



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 82334    | 1 1/4a, T plug fuse | 4         | 100       |
| 82337    | 2a, T plug fuse     | 4         | 100       |
| 82344    | 2.5a, T plug fuse   | 4         | 100       |
| 82338    | 3.2a, T plug fuse   | 4         | 100       |
| 82339    | 4a, T plug fuse     | 4         | 100       |
| 82340    | 5a, T plug fuse     | 4         | 100       |
| 82341    | 6 1/4a, T plug fuse | 4         | 100       |
| 82342    | 8a, T plug fuse     | 4         | 100       |
| 82343    | 10a, T plug fuse    | 4         | 100       |
| 82660    | 15a, T plug fuse    | 4         | 100       |
| 82661    | 20a, T plug fuse    | 4         | 100       |
| 82662    | 30a, T plug fuse    | 4         | 100       |

### Dual Element, Time Delay (Type TL) UL 125V



| MARS NO. | DESCRIPTION       | MARS PACK | CASE QTY. |
|----------|-------------------|-----------|-----------|
| 82346    | 15a, TL plug fuse | 4         | 100       |
| 82348    | 25a, TL plug fuse | 4         | 100       |
| 82349    | 30a, TL plug fuse | 4         | 100       |

### Dual Element, Time Delay (Type TD) UL 125V



- Low melting temperature element
- Electronic heating and cycling load circuits



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 82350    | 15a, TD plug fuse-CSA | 4         | 100       |
| 82351    | 20a, TD plug fuse-CSA | 4         | 100       |
| 82352    | 25a, TD plug fuse-CSA | 4         | 100       |
| 82353    | 30a, TD plug fuse-CSA | 4         | 100       |

### Dual Element Time Delay Type TL Clamshell Packaging For Merchandisers



| MARS NO. | DESCRIPTION                    | MARS PACK |
|----------|--------------------------------|-----------|
| 82736    | 20a, 125V, TL plug fuse (6 pk) | 1         |
| 82737    | 25a, 125V, TL plug fuse (6 pk) | 1         |
| 82738    | 30a, 125V, TL plug fuse (6 pk) | 1         |

### S Plug Fuse Adapters, UL 125



Type S adapters screw into the base and allow Type S fuses to be installed. Type S adapters prevent the wrong size fuse from being used.



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 82375    | 2 1/2a, S plug fuse | 4         | 100       |
| 82379    | 6 1/4a, S plug fuse | 4         | 100       |
| 82382    | 15a, S plug fuse    | 4         | 100       |
| 82383    | 20a, S plug fuse    | 4         | 100       |
| 82384    | 30a, S plug fuse    | 4         | 100       |

Accessories

Fast Acting,  
(Type W) UL 125V



"W" Fuse

| MARS NO. | DESCRIPTION      | MARS PACK | CASE QTY. |
|----------|------------------|-----------|-----------|
| 82360    | 10a, W plug fuse | 4         | 100       |
| 82363    | 15a, W plug fuse | 4         | 100       |
| 82364    | 20a, W plug fuse | 4         | 100       |
| 82365    | 25a, W plug fuse | 4         | 100       |
| 82366    | 30a, W plug fuse | 4         | 100       |

Dual Element,  
Time Delay Fuse -  
Type W Clamshell  
Packaging For  
Merchandisers



| MARS NO. | DESCRIPTION                   | MARS PACK |
|----------|-------------------------------|-----------|
| 82756    | 20a, 125V, W plug fuse (6 pk) | 1         |
| 82757    | 25a, 125V, W plug fuse (6 pk) | 1         |
| 82758    | 30a, 125V, W plug fuse (6 pk) | 1         |

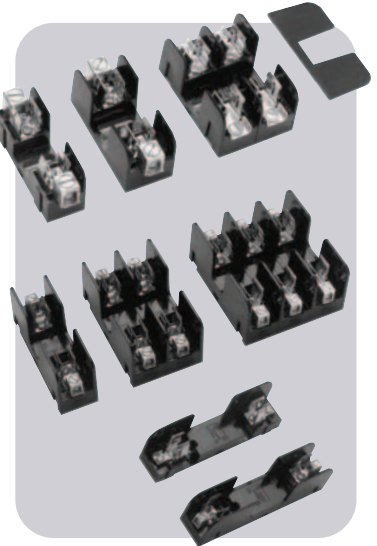
Fuse Blocks -  
Class H & K 250 Volts



Mersen manufactures the highest quality 250 to 600 volt fuse blocks handling current capacities of 30 to 600 amperes. These durable fuse blocks are designed for class H, J, K, R, CC and Midget fuses. All blocks are UL listed and CSA certified.

Mersen fuse blocks feature a unique adder block which can be snapped on to form multi-pole segmented blocks of as many poles as desired. Multiple pole blocks thus formed save valuable space, are permanent, and can be added to in the future.

Fuse block insulators are constructed of either phenolic or molded polycarbonate. Three types of wire connectors are used. Screw type is for copper wire with terminals. Pressure plate type is for bare copper wire where vibration may be a factor. Box type connectors are the most durable and versatile for stranded or solid wire. All fuse clips are one piece high-conductivity tin-plated copper for low resistance connections and cool operation.

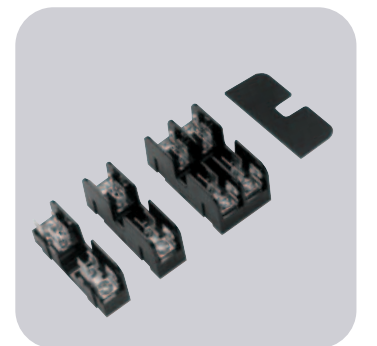


| MARS NO. | DESCRIPTION            | MARS PACK | CASE QTY. |
|----------|------------------------|-----------|-----------|
| 83010    | Adder 30 amp - Al box  | 1         | 50        |
| 83011    | 1 pole 30 amp - Al box | 1         | 50        |
| 83012    | 1 pole 30 amp - screw  | 1         | 50        |
| 83013    | 2 pole 30 amp - screw  | 1         | 50        |
| 83017    | 2 pole 60 amp - Al box | 5         | 25        |
| 83018    | 3 pole 60 amp - Al box | 5         | 25        |

Fuse Blocks -  
Midget Fuses 600 Volts



Mersen power distribution blocks (pdb), afford a safe, convenient way of splicing cables, splitting primary power into a variety of secondary circuits or providing a fixed junction tap - off point. Insulators are virtually unbreakable polycarbonate. Standard aluminum box connectors accommodate aluminum and copper wire. Connector bars are all one piece and tin plated. The pdbs are UL listed and CSA certified.



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 83061    | 1 pole 30 amp - screw | 1         | 50        |
| 83062    | 2 pole 30 amp - screw | 1         | 25        |
| 83063    | 3 pole 30 amp - screw | 1         | 25        |
| 83065    | 1 pole 30 amp - plate | 1         | 50        |
| 83066    | 2 pole 30 amp - plate | 1         | 25        |
| 83067    | 3 pole 30 amp - plate | 1         | 25        |



**Power Distribution Blocks - 600 Volts**



| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 83090    | 1 pole pdb 1 to 4 #4-#14ga | 1         | 50        |
| 83091    | 2 pole pdb 1 to 4 #4-#14ga | 1         | 25        |
| 83092    | 3 pole pdb 1 to 4 #4-#14ga | 1         | 25        |

**Fuse Holders**



| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 82994    | panel mount glass holder<br>1/4" x 1 1/4" screw type knob | 1         | 100       |
| 82995    | panel mount midget holder<br>13/32" x 1 1/2" bayonet knob | 1         | 100       |
| 82996    | base mount glass fuse block<br>1/4" x 1 1/4"              | 10        | 100       |
| 82997    | in-line midget holder-screw cap                           | 1         | 100       |
| 83001    | in-line glass holder-screw cap (5 pk)                     | 1         | 100       |
| 83002    | in-line glass holder-snap cap (5 pk)                      | 1         | 100       |
| 82989    | HPF-SC fuse holder-panel mount                            | 10        | 100       |
| 82990    | HHB fuse holder   | 10        | 100       |
| 82991    | HKP-HH fuse holder  | 1         | 10        |
| 82993    | HRK fuse holder   | 10        | 100       |

**JARD Fuses**



**Applications:**

- Recommended for AC power distribution system mains, feeders, and branch circuits.
- Protection of motors and motor branch circuits.
- Protection of transformers and other inductive loads.
- All general-purpose applications including lighting, heating and other non-inductive loads.

**Benefits:**

- Superior overload and cycling capabilities.
- Current limiting provides component short-circuit protection.

**Specifications:**

Dual-Element Time-Delay

**Voltage Rating:** RK5 - 250Vac, RK5 - 600Vac

**Amp Rating:** 1/10 - 600A

Interrupting Rating: 200,000 RMS Symmetrical Amps

**Current Limiting:** RK5 Fuse

**Agency Approvals:**

UL Listed, Class RK5, CSA Certified, DC listed to UL standard 248 TRS only

**Voltage Rating:** RK5 250V

Volts: 250VAC

: 250VDC (.1-2.8A; 35-400A)

: 160VDC (3-30A; 450-600A)

RK5 600V

Volts: 600VAC

: 600VDC (.1-12A; 70-600A)

: 160VDC (15-60A)



**RK5 Time Delay Fuse 250V**

Replaces: TR, ECNR, FRNR, FLNR

**RK5 Time Delay Fuse 600V**

Replaces: TRS, ECSR, FRSR, FLRS

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 81006    | .5A - 250V   | 10        |
| 81009    | 1A - 250V    | 10        |
| 81016    | 2A - 250V    | 10        |
| 81017    | 2.5A - 250V  | 10        |
| 81019    | 3A - 250V    | 10        |
| 81020    | 3.2A - 250V  | 10        |
| 81021    | 4A - 250V    | 10        |
| 81024    | 5A - 250V    | 10        |
| 81025    | 5.6A - 250V  | 10        |
| 81026    | 6A - 250V    | 10        |
| 81027    | 6.25A - 250V | 10        |
| 81029    | 7A - 250V    | 10        |
| 81030    | 8A - 250V    | 10        |
| 81032    | 10A - 250V   | 10        |
| 81033    | 12A - 250V   | 10        |
| 81034    | 15A - 250V   | 10        |
| 81035    | 17.5A - 250V | 10        |
| 81036    | 20A - 250V   | 10        |
| 81037    | 25A - 250V   | 10        |
| 81038    | 30A - 250V   | 10        |
| 81039    | 35A - 250V   | 10        |
| 81040    | 40A - 250V   | 10        |
| 81041    | 45A - 250V   | 10        |
| 81042    | 50A - 250V   | 10        |
| 81043    | 60A - 250V   | 10        |
| 81044    | 70A - 250V   | 5         |
| 81045    | 80A - 250V   | 5         |
| 81046    | 90A - 250V   | 5         |
| 81047    | 100A - 250V  | 5         |
| 81048    | 110A - 250V  | 1         |
| 81049    | 125A - 250V  | 1         |
| 81050    | 150A - 250V  | 1         |
| 81051    | 175A - 250V  | 1         |
| 81052    | 200A - 250V  | 1         |
| 81053    | 225A - 250V  | 1         |
| 81054    | 350A - 250V  | 1         |
| 81056    | 400A - 250V  | 1         |
| 81055    | 600A - 250V  | 1         |

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 81103    | .2A - 600V   | 10        |
| 81106    | .5A - 600V   | 10        |
| 81109    | 1A - 600V    | 10        |
| 81110    | 1.6A - 600V  | 10        |
| 81111    | 2A - 600V    | 10        |
| 81112    | 2.25A - 600V | 10        |
| 81124    | 5A - 600V    | 10        |
| 81125    | 6A - 600V    | 10        |
| 81132    | 10A - 600V   | 10        |
| 81133    | 12A - 600V   | 10        |
| 81134    | 15A - 600V   | 10        |
| 81136    | 20A - 600V   | 10        |
| 81137    | 25A - 600V   | 10        |
| 81138    | 30A - 600V   | 10        |
| 81139    | 35A - 600V   | 10        |
| 81140    | 40A - 600V   | 10        |
| 81147    | 45A - 600V   | 10        |
| 81141    | 50A - 600V   | 10        |
| 81142    | 60A - 600V   | 10        |
| 81143    | 70A - 600V   | 5         |
| 81144    | 80A - 600V   | 5         |
| 81145    | 90A - 600V   | 5         |
| 81146    | 100A - 600V  | 5         |
| 81154    | 110A - 600V  | 1         |
| 81148    | 125A - 600V  | 1         |
| 81149    | 150A - 600V  | 1         |
| 81150    | 175A - 600V  | 1         |
| 81151    | 200A - 600V  | 1         |
| 81152    | 250A - 600V  | 1         |
| 81153    | 300A - 600V  | 1         |



## Accessories

### Fuses With A Resealable Plastic Pouch



| MARS NO. | DESCRIPTION                        | MARS PACK |
|----------|------------------------------------|-----------|
| 08569    | 3 Amp Standard Size Plastic, 25/pk | 1         |
| 08570    | 5 Amp Standard Size Plastic, 25/pk | 1         |
| 08571    | Assorted Fuses, 25/pk              | 1         |

### Fuses & Fuse Holders

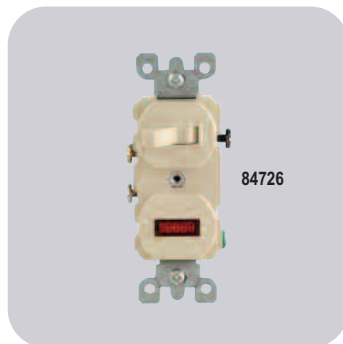
Zebra Instruments offers a 4 pack Medium Duty (15A) standard size plastic fuses and fuse holder. This allows you to replace (or install) fuse protection for transformer outputs (and other devices) in HVAC systems.



| MARS NO. | DESCRIPTION                                   | MARS PACK |
|----------|---|-----------|
| 08568    | Medium duty 15Amp Standard Size Plastic, 4/pk | 1         |

### Toggle Switches Without Ground

- Quick wire push in and side wire
- Constructed of impact resistant thermo-plastic

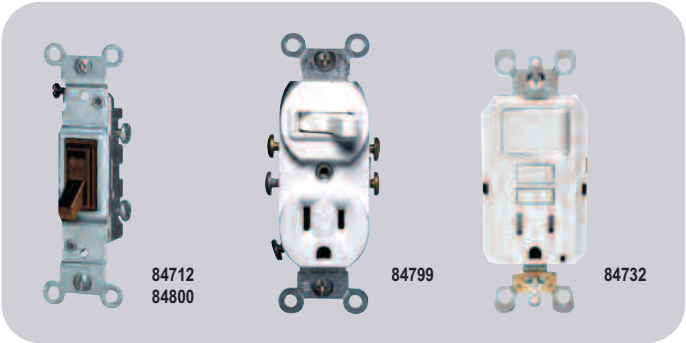


| MARS NO. | DESCRIPTION                                    | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 84798    | 15a -120V, 1P, silent, ivory (bulk)            | 10        | 100       |
| 84726    | 15a -120/277V, 1P, switch w/pilot light (card) | 1         | 100       |

### Toggle Switches With Ground

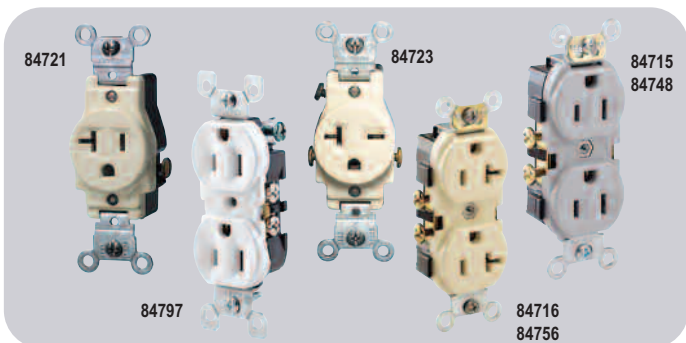


- Quick wire push in and side wire
- Constructed of impact resistant thermo-plastic



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 84712    | 15a -120V, 1P, silent, brown (bulk)  | 10        | 100       |
| 84800    | 15a -120V, 1P, silent, ivory (bulk)  | 10        | 100       |
| 84706    | 15a -120/277V, 1P, silent, ivory (bulk)  | 10        | 100       |
| 84727    | 20a -120/277V, 1P, silent, brown (bulk)  | 10        | 100       |
| 84707    | 20a -120/277V, 1P, silent, ivory (bulk)  | 10        | 100       |
| 84709    | 20a -120/277V, 2P, silent, ivory (bulk)  | 10        | 100       |
| 84799    | Combo switch/receptacle ivory (bulk)<br>switch 15a-120/277V, 1P<br>receptacle 15a-125V, 2P, 3W | 10        | 100       |
| 84732    | Tamper resistant smartlock pro combo<br>switch/receptacle, white, 15a - 125V, 2P, 3W           | 10        | 100       |

### Straight Blade Receptacles With Ground

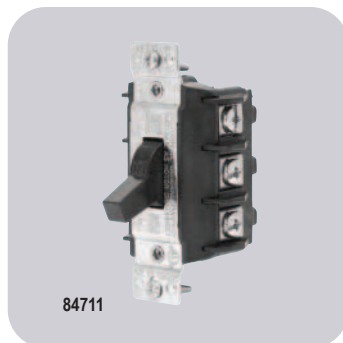


| MARS NO. | DESCRIPTION                                  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 84721    | Single, ivory, 20a, 125V, 2P, 3W (bulk)      | 10        | 100       |
| 84723    | Single, ivory, 20a, 250V, 2P, 3W (bulk)      | 10        | 100       |
| 84715    | Duplex, ivory, 15a, 125V, 2P, 3W (bulk)      | 10        | 100       |
| 84748    | Duplex, brn, 15a, 125V, 2P, 3W (bulk)        | 10        | 100       |
| 84797    | Dup, ivory, EZ wire/screw, 15a, 125V, (bulk) | 10        | 100       |
| 84716    | Dup, ivory, 20a, 125V, 2P, 3W (bulk)         | 10        | 100       |

### 3 Pole Mini-Split Disconnect Switch

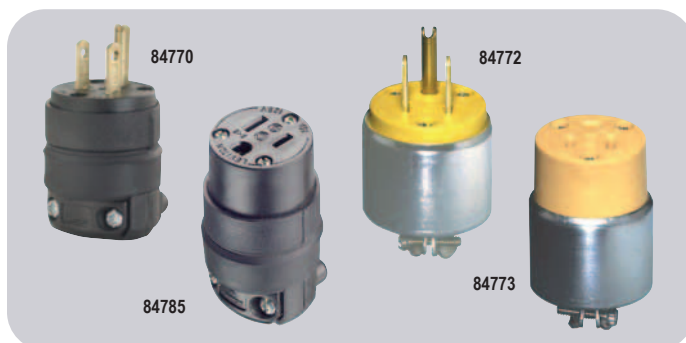
Local codes require a disconnect switch to safely shut off power for indoor mini-split AC and Heat Pumps. The disconnect switch will break both power lines L1 and L2 along with the high voltage communicating line to meet local code requirements.

- UL 30 amp rated motor disconnect
- 3 pole
- 600V max



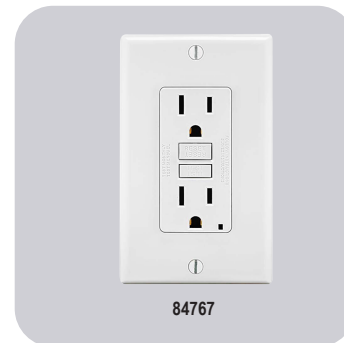
| MARS NO. | DESCRIPTION                               | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 84711    | 30A-600V 3 Pole 3Ph AC Motor Switch(Bulk) | 1         | 100       |

### Plugs, Connectors And Adapters



| MARS NO. | DESCRIPTION                                    | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 84770    | Grnd rubr hndtl plug, 2P, 3W, 15a, 125V, black | 10        | 100       |
| 84772    | Armrd plug, 2P, 3W, 15a, 125V,                 | 10        | 100       |
| 84785    | Blk rubr md conn, 2P, 3W, 15a, 125V            | 10        | 100       |
| 84773    | Blk armored conn, 2P, 3W, 15a, 125V            | 10        | 100       |

### GFCI Duplex Receptacles



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 84767    | 15a, 125V, ivory, EZ wire & screw | 1         | 10        |

### Wall Plates - Plastic



| MARS NO. | DESCRIPTION             | MARS PACK | CASE QTY. |
|----------|-------------------------|-----------|-----------|
| 84751    | Single toggle ivory     | 25        | 250       |
| 84809    | Duplex receptacle ivory | 25        | 100       |

### Pullchain Lampholders - White

Medium base one-piece glazed porcelain outlet box mount incandescent lampholder, single circuit, 2 screws top wired, 15A 125V outlet grounding - white



| MARS NO. | DESCRIPTION                        | MARS PACK | CASE QTY. |
|----------|------------------------------------|-----------|-----------|
| 84719    | Porcelain lampholder w/ receptacle | 1         | 50        |

## Accessories

### Ideal Wire Nut® Wire Connectors



IDEAL's Wire Nut® wire connectors are second to none and preferred by electricians industry wide. There are five color coded models covering every wiring combination. Some features include: positive grip design, flame retardant thermoplastic shell, longest fully seated square wire spring, threaded entry, deep skirt and wide throat entry. All Wire Nut® wire connectors are UL listed and CSA certified

Twister® wire connectors have become widely accepted due to their unsurpassed features: ribbed cap, fluted surface, compact, swept wings, hexagonal shape, tough thermoplastic shell, live action square wire spring and deep threaded skirt entry. Nutmaster™ nutdrivers can be used to install Twister® wire connectors quickly and securely. Twister® wires are UL and CSA approved.

Exceptional wire range capacity for their size, just two Twister® wire connectors handle all wire combinations. This means reduced inventories and lower costs!

Wing Nut® wire connectors were first introduced by IDEAL in 1958 and remain the most comfortable, easy to use connector on the market. The wings act as a built in wrench to provide extra leverage for secure connections...every time. Wing Nut® wire connectors handle a wide range of branch circuit and fixture wiring requirements. Just three color coded models handle UL listed wire combinations from (2) No. 18's to (1) No. 6 with (2) No. 8's, solid or stranded wire.



| MARS NO. | DESCRIPTION                  | BOX QTY. | MFG. NO. | MARS PACK | CASE QTY. |
|----------|------------------------------|----------|----------|-----------|-----------|
| 25930    | Gray wire nut, 22-14 AWG     | 100      | 30-071   | 1         | 10        |
| 25931    | Blue wire nut, 22-14 AWG     | 100      | 30-072   | 1         | 10        |
| 25932    | Orange wire nut, 22-14 AWG   | 100      | 30-073   | 1         | 10        |
| 25933    | Yellow wire nut, 18-10 AWG   | 100      | 30-074   | 1         | 10        |
| 25934    | Red wire nut, 18-8 AWG       | 100      | 30-076   | 1         | 10        |
| 25936    | Tan twister conn., 22-10 AWG | 100      | 30-341   | 1         | 10        |
| 25937    | Gray twister conn., 16-8 AWG | 50       | 30-342   | 1         | 20        |
| 25938    | Yellow wing nut, 18-10 AWG   | 100      | 30-451   | 1         | 10        |
| 25939    | Red wing nut, 18-10 AWG      | 100      | 30-452   | 1         | 10        |
| 25940    | Blue wing nut, 14-6 AWG      | 25       | 30-454   | 1         | 10        |

### MARS Wire Connectors

MARS wire connectors are available in five color coded models: gray, blue, orange, yellow and red. Some features include a positive grip design and flame retardant thermoplastic shell. The large throat provides easy wire entrance and the deep skirt prevents shorts and grounds.



| MARS NO. | DESCRIPTION                           | MARS PACK |
|----------|---------------------------------------|-----------|
| 25860    | Gray wire connector, 300V (25/bag)    | 1         |
| 25880    | Gray wire connector, 300V (100/bag)   | 1         |
| 25861    | Blue wire connector, 300V (25/bag)    | 1         |
| 25881    | Blue wire connector, 300V (100/bag)   | 1         |
| 25862    | Orange wire connector, 600V (25/bag)  | 1         |
| 25882    | Orange wire connector, 600V (100/bag) | 1         |
| 25863    | Yellow wire connector, 600V (25/bag)  | 1         |
| 25883    | Yellow wire connector, 600V (100/bag) | 1         |
| 25864    | Red wire connector, 600V (25/bag)     | 1         |
| 25884    | Red wire connector, 600V (100/bag)    | 1         |
| 25868    | Yellow wing connector, 600V (25/bag)  | 1         |
| 25888    | Yellow wing connector, 600V (100/bag) | 1         |
| 25869    | Red wing connector, 600V (25/bag)     | 1         |
| 25889    | Red wing connector, 600V (100/bag)    | 1         |
| 25870    | Blue wing connector, 600V (10/bag)    | 1         |
| 25800    | Blue wing connector, 600V (50/bag)    | 1         |

### Wiregard Color-Coded Screw-On Wire Connectors



MARS now offers Gardner Bender wire connectors. The industry's standard screw-on connector, with high quality, performance and durability.

- UL listed, CSA approved.
- Color-coded for easy size selection.
- Makes quick, secure connections for positive continuity. Tightens without ratcheting, removable for re-use. Fluted shell surface allows for easy fingertight connections.
- Thermoplastic shell shields against environmental extremes. Flame retardant up to 221 degrees F.
- Superior flash-over protection. High-dielectric shell features deep skirt design to prevent exposure of bare wire.
- Versatile size selection covers building wire combinations from #22 to #10 AWG.
- Complies with Federal Specification W-5-610d.



| MARSNO. | MFG. NO. | MODEL/SIZE | COLOR  | BOX QTY. | CASE QTY. |
|---------|----------|------------|--------|----------|-----------|
| 25950   | 10-001   | GB-1       | Gray   | 100 Box  | 10        |
| 25941   | 10-002   | GB-2       | Blue   | 100 Box  | 10        |
| 25942   | 10-003   | GB-3       | Orange | 100 Box  | 10        |
| 25943   | 10-004   | GB-4       | Yellow | 100 Box  | 10        |
| 25944   | 10-006   | GB-6       | Red    | 100 Box  | 10        |

### Solid Copper Wire



| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 84250    | #6 Bare Solid Copper Gmrdg Wire, 25 Feet | 5         |

### Stranded Copper Building Wire, 19 Strands 10-14 Ga. THHN, 16-18 Ga. TFFN, 600V, 90°C



| MARS NO. | DESCRIPTION               | MARS PACK |
|----------|---------------------------|-----------|
| 84341    | 10 gauge black 500' spool | 1         |

### SJ Wire - 250 Foot Rolls



| MARS NO. | DESCRIPTION       | MARS PACK |
|----------|-------------------|-----------|
| 84380    | 12/3 250 ft. reel | 1         |
| 84381    | 14/3 250 ft. reel | 1         |
| 84382    | 16/3 250 ft. reel | 1         |

### Mini-Split Installation Wire

Corra/Clad MC Cable consists of UL listed THHN soft drawn annealed solid copper conductors, cabled with fillers and wrapped with an overall solid Flexi-Rib aluminum sheath. The continuous sheath provides watertight protection and it is covered with a PVC outer jacket for outdoor use or direct burial. Cost effective, easy to strip and install. Meets all national codes and is suitable for outdoor use, under concrete, underground, and through interior walls and ceilings.

Compact 600 and Shielded Low Voltage Cables offer additional options to provide power and control to mini-split installations. Compact 600 uses a TPE jacket and is flexible, easy to strip, and is burial rated.

EZ-IN™ cable is an all-purpose cable that meets code for both interior and exterior use, increasing the speed of installation and making sure the job will pass inspection. EZ-IN™ Mini-Split Cable can be installed without the use of conduit and may be installed indoors and outdoors in wet locations.



| MARS NO. | DESCRIPTION | DIA (IN.) | MARS PACK |
|----------|-------------|-----------|-----------|
|----------|-------------|-----------|-----------|

#### Compact 600 Cable: 600V, UL, UV Rated, Direct Burial

|       |   |       |   |
|-------|---|-------|---|
| 84473 | 14/4 Solid THHN Compact 600V - 50' Roll     | 0.336 | 1 |
| 84474 | 14/4 Solid THHN Compact 600V - 250' Reel    | 0.336 | 1 |
| 84479 | 14/4 Stranded THHN Compact 600V - 50' Roll  | 0.352 | 1 |
| 84480 | 14/4 Stranded THHN Compact 600V - 250' Reel | 0.352 | 1 |

#### Shielded Low Voltage Cable: 300V, NEC 725/800, ETL, CMR/CL3R

|       |   |       |   |
|-------|---|-------|---|
| 84485 | 16/2 Stranded Shielded - 50' Roll                   | 0.191 | 1 |
| 84484 | 16/2 Stranded Shielded - 250' Reel                  | 0.191 | 1 |
| 84491 | 16/4 Stranded Shielded 300V - 50' Roll              | 0.212 | 1 |
| 84482 | 18/2 OAS CMR/CL3R Gy - 500'                         | -     | 1 |
| 84483 | 18/4 OAS CMR/CL3R Gy - 500' Reel For LG Mini-Splits | 0.180 | 1 |

#### EZ-IN™ Cable: 600V, UL, All Purpose, UV Rated, Direct Burial

|       |                                       |       |   |
|-------|---------------------------------------|-------|---|
| 84486 | 14/4 Stranded EZ-IN,™ 600V, 50' Roll  | 0.553 | 1 |
| 84487 | 14/4 Stranded EZ-IN,™ 600V, 250' Reel | 0.553 | 1 |
| 84494 | 14-4 Shielded EZ-IN,™ 600V, 250' Reel | 0.553 | 1 |



## Accessories

### MARS 18 Gauge Thermostat Cable - ETL Listed

MARS 18 gauge thermostat wire is a class 2 power-limited circuit cable for use in thermostat control applications.

Specifications: ETL Listed type CL2. UV rated. Temp rating -20°C to +60°C. Meets UL 1581 Vertical Tray Flame Test (FT-1). Soft drawn bare copper, semi-rigid pvc insulation and PVC overall jacket.



| MARS NO. | DESCRIPTION                          | LBS. MFT | MARS PACK |
|----------|--------------------------------------|----------|-----------|
| 84201    | 18 AWG, 2 conductors, 500 ft. spool  | 15       | 4         |
| 84202    | 18 AWG, 3 conductors, 500 ft. spool  | 21       | 4         |
| 84203    | 18 AWG, 4 conductors, 250 ft. spool  | 27       | 4         |
| 84204    | 18 AWG, 5 conductors, 250 ft. spool  | 34       | 4         |
| 84205    | 18 AWG, 6 conductors, 250 ft. spool  | 40       | 4         |
| 84206    | 18 AWG, 7 conductors, 250 ft. spool  | 45       | 4         |
| 84207    | 18 AWG, 8 conductors, 250 ft. spool  | 51       | 4         |
| 84209    | 18 AWG, 10 conductors, 250 ft. spool | 63       | 4         |

### MARS 20 Gauge Thermostat Cable - UL Listed

MARS 20 gauge thermostat wire is a class 2 power-limited circuit cable for use in thermostat control applications.

Specifications: UL type CL2. UV rated. Temp rating -20°C to +60°C. Soft drawn bare copper, semi-rigid pvc insulation and PVC overall jacket.



| MARS NO. | DESCRIPTION                         | LBS. MFT | MARS PACK |
|----------|-------------------------------------|----------|-----------|
| 84211    | 20 AWG, 2 conductors, 500 ft. spool | 11       | 4         |
| 84213    | 20 AWG, 4 conductors, 250 ft. spool | 18       | 4         |
| 84214    | 20 AWG, 5 conductors, 250 ft. spool | 22       | 4         |
| 84215    | 20 AWG, 6 conductors, 250 ft. spool | 26       | 4         |
| 84217    | 20 AWG, 8 conductors, 250 ft. spool | 33       | 4         |

### Shielded Plenum T-Stat Wire - UL Listed - Type CL2P-Stranded



| MARS NO. | DESCRIPTION                        | LBS. MFT | MARS PACK |
|----------|------------------------------------|----------|-----------|
| 84461    | 18 AWG, 2 conductors, 500 ft spool | 17       | 4         |

### 18 Ga ETL Listed Thermostat Wire - Self Dispensing Coils

MARS thermostat wire is now available in self dispensing coil packs. These shrink wrapped coils are easier to use and more convenient to store than the traditional thermostat wire sold on spools/reels.



#### Features & benefits:

- Heavy duty shrink wrapped coils for durability
- No reels to bend, break, or rust
- Compact coils are easier to store – takes up less space
- Easier to handle
- Stacks better
- Easy and convenient to use

#### How to use:

- Simply punch hole in center of wrap (Do not remove wrap)
- Pull loose end of wire from center (Wire will pull out easily)
- Snip off the required amount of wire
- Tuck loose end back into the coil for storage

| MARS NO. | DESCRIPTION        | MARS PACK |
|----------|--------------------|-----------|
| 84401    | 18/2 500 ft. Coils | 4         |
| 84402    | 18/3 500 ft. Coils | 4         |
| 84403    | 18/4 250 ft. Coils | 4         |
| 84404    | 18/5 250 ft. Coils | 4         |
| 84405    | 18/6 250 ft. Coils | 4         |
| 84406    | 18/7 250 ft. Coils | 4         |
| 84407    | 18/8 250 ft. Coils | 4         |

### Plenum T-Stat Wire - Solid ETL Listed

- Temp rating (-20°C to 75°C)
- ETL Listed, CL2P
- Thermoplastic jacket (2500 PSI min)
- Thermoplastic insulation (2000 PSI min)
- Can be used in overhead plenum area without conduit



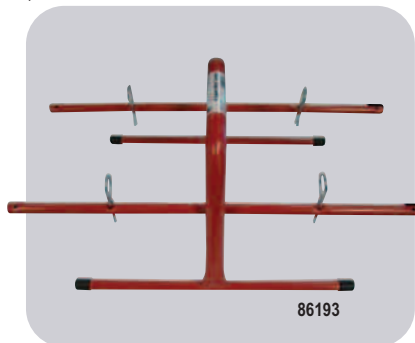
| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 84241    | 18 AWG, 2 conductors, 500 ft. spool | 4         |
| 84242    | 18 AWG, 3 conductors, 500 ft. spool | 4         |
| 84243    | 18 AWG, 4 conductors, 250 ft. spool | 4         |
| 84244    | 18 AWG, 5 conductors, 250 ft. spool | 4         |
| 84245    | 18 AWG, 6 conductors, 250 ft. spool | 4         |



### Hand Wire Caddy

Rugged Construction, epoxy coated to reduce chipping & peeling

Holds up to 8 reels, 7" D x 5" W, or 4 reels 7" D x 6" to 10" W



| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 86193    | Wire Hand Caddy, 22-1/2" L x 13-1/2" W x 9-1/2" H | 1         |

### Adhesive Wire Markers

Wire marker dispenser measures 3" x 6" and holds 10 tape rolls at once. Rugged, sturdy case fits in your pocket. Durable long lasting tapes are excellent for wire, pipe and conduit identification.

Wire marker booklets contain 10 pages each. Plastic impregnated cloth marker resists abrasion, moisture, dirt and oil. Markers are 1-1/2" in length and can be separated into half-length sizes.



| MARS NO. | DESCRIPTION                        | MFG. NO | MARS PACK | CASE QTY. |
|----------|------------------------------------|---------|-----------|-----------|
| 25920    | Wire marker dispenser, 0-9 legends | 42-301  | 1         | 5         |
| 25921    | Wire marker book, 0-9 legends      | 44-101  | 5         | 5         |
| 25922    | Wire marker book, A-Z legends      | 44-102  | 5         | 5         |
| 25923    | Wire marker book, 1-45 legends     | 44-103  | 5         | 5         |

### LED Omnidirectional Shatterproof Bulbs

These LED bulbs are ideal for both residential and commercial settings. Dimmable down to 10% for additional energy savings and ambiance control.

**Features:**

- 85% energy savings compared to incandescent lamps
- RoHS compliant and mercury free

**Specifications:**

- Input Voltage: 120V
- Average Rated Life: 25,000 Hours
- CRI: 80
- Beam Angle: 220°
- Ambient temp: -4°F to 104°F



| MARS NO. | DESCRIPTION           | WATTS | EQUIVALENT WATTS | BASE              | INITIAL LUMENS | PACK QTY |
|----------|-----------------------|-------|------------------|-------------------|----------------|----------|
| 79243    | LED Shatterproof Bulb | 11    | 75               | E26 - Medium Base | 1100           | 6        |
| 79244    | LED Shatterproof Bulb | 15    | 100              | E26 - Medium Base | 1600           | 6        |

### Square Steel Boxes



| MARS NO. | DESCRIPTION                         | MARS PACK | CASE QTY. |
|----------|-------------------------------------|-----------|-----------|
| 84936    | 4", 2-1/2" D 1/2" & 3/4" K.O.       | 1         | 25        |
| 84937    | 4", 1-1/2" D 1/2" K.O.              | 1         | 25        |
| 84938    | 4", 1-1/2" D 1/2" & 3/4" K.O.       | 1         | 25        |
| 84943    | 4-11/16", 2-1/8" D 1/2" & 3/4" K.O. | 1         | 25        |

## Accessories

### MARS 18 Gauge Thermostat Cable - ETL Listed

MARS 18 gauge thermostat wire is a class 2 power-limited circuit cable for use in thermostat control applications.

Specifications: ETL Listed type CL2. UV rated. Temp rating -20°C to +60°C. Meets UL 1581 Vertical Tray Flame Test (FT-1). Soft drawn bare copper, semi-rigid pvc insulation and PVC overall jacket.



| MARS NO. | DESCRIPTION                          | LBS. MFT | MARS PACK |
|----------|--------------------------------------|----------|-----------|
| 84201    | 18 AWG, 2 conductors, 500 ft. spool  | 15       | 4         |
| 84202    | 18 AWG, 3 conductors, 500 ft. spool  | 21       | 4         |
| 84203    | 18 AWG, 4 conductors, 250 ft. spool  | 27       | 4         |
| 84204    | 18 AWG, 5 conductors, 250 ft. spool  | 34       | 4         |
| 84205    | 18 AWG, 6 conductors, 250 ft. spool  | 40       | 4         |
| 84206    | 18 AWG, 7 conductors, 250 ft. spool  | 45       | 4         |
| 84207    | 18 AWG, 8 conductors, 250 ft. spool  | 51       | 4         |
| 84209    | 18 AWG, 10 conductors, 250 ft. spool | 63       | 4         |

### MARS 20 Gauge Thermostat Cable - UL Listed

MARS 20 gauge thermostat wire is a class 2 power-limited circuit cable for use in thermostat control applications.

Specifications: UL type CL2. UV rated. Temp rating -20°C to +60°C. Soft drawn bare copper, semi-rigid pvc insulation and PVC overall jacket.



| MARS NO. | DESCRIPTION                         | LBS. MFT | MARS PACK |
|----------|-------------------------------------|----------|-----------|
| 84211    | 20 AWG, 2 conductors, 500 ft. spool | 11       | 4         |
| 84213    | 20 AWG, 4 conductors, 250 ft. spool | 18       | 4         |
| 84214    | 20 AWG, 5 conductors, 250 ft. spool | 22       | 4         |
| 84215    | 20 AWG, 6 conductors, 250 ft. spool | 26       | 4         |
| 84217    | 20 AWG, 8 conductors, 250 ft. spool | 33       | 4         |

### Shielded Plenum T-Stat Wire - UL Listed - Type CL2P-Stranded



| MARS NO. | DESCRIPTION                        | LBS. MFT | MARS PACK |
|----------|------------------------------------|----------|-----------|
| 84461    | 18 AWG, 2 conductors, 500 ft spool | 17       | 4         |

### 18 Ga ETL Listed Thermostat Wire - Self Dispensing Coils

MARS thermostat wire is now available in self dispensing coil packs. These shrink wrapped coils are easier to use and more convenient to store than the traditional thermostat wire sold on spools/reels.



#### Features & benefits:

- Heavy duty shrink wrapped coils for durability
- No reels to bend, break, or rust
- Compact coils are easier to store – takes up less space
- Easier to handle
- Stacks better
- Easy and convenient to use

#### How to use:

- Simply punch hole in center of wrap (Do not remove wrap)
- Pull loose end of wire from center (Wire will pull out easily)
- Snip off the required amount of wire
- Tuck loose end back into the coil for storage

| MARS NO. | DESCRIPTION        | MARS PACK |
|----------|--------------------|-----------|
| 84401    | 18/2 500 ft. Coils | 4         |
| 84402    | 18/3 500 ft. Coils | 4         |
| 84403    | 18/4 250 ft. Coils | 4         |
| 84404    | 18/5 250 ft. Coils | 4         |
| 84405    | 18/6 250 ft. Coils | 4         |
| 84406    | 18/7 250 ft. Coils | 4         |
| 84407    | 18/8 250 ft. Coils | 4         |

### Plenum T-Stat Wire - Solid ETL Listed

- Temp rating (-20°C to 75°C)
- ETL Listed, CL2P
- Thermoplastic jacket (2500 PSI min)
- Thermoplastic insulation (2000 PSI min)
- Can be used in overhead plenum area without conduit



| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 84241    | 18 AWG, 2 conductors, 500 ft. spool | 4         |
| 84242    | 18 AWG, 3 conductors, 500 ft. spool | 4         |
| 84243    | 18 AWG, 4 conductors, 250 ft. spool | 4         |
| 84244    | 18 AWG, 5 conductors, 250 ft. spool | 4         |
| 84245    | 18 AWG, 6 conductors, 250 ft. spool | 4         |

## Accessories

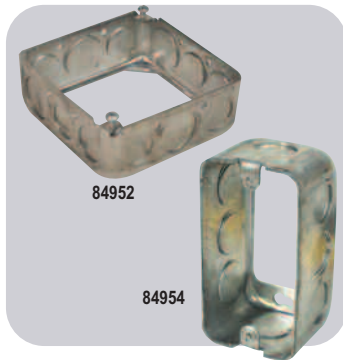
### 2-1/8" x 4" Steel Utility Boxes



84947  
84948  
84949  
84950

| MARS NO. | DESCRIPTION        | MARS PACK | CASE QTY. |
|----------|--------------------|-----------|-----------|
| 84947    | 1-1/2" D 1/2" K.O. | 1         | 25        |
| 84948    | 1-7/8" D 1/2" K.O. | 1         | 25        |
| 84949    | 2-1/8" D 1/2" K.O. | 1         | 25        |

### Steel Extension Rings

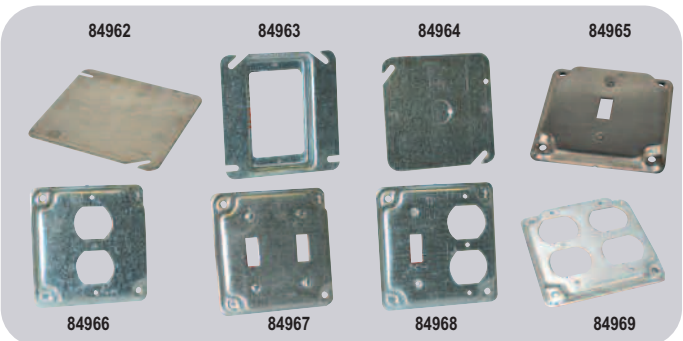


84952

84954

| MARS NO. | DESCRIPTION                        | MARS PACK | CASE QTY. |
|----------|------------------------------------|-----------|-----------|
| 84952    | 1-1/2" D 1/2" & 3/4" K.O. (4" sq.) | 1         | 25        |

### Square Steel Covers



84962

84963

84964

84965

84966

84967

84968

84969

| MARS NO. | DESCRIPTION                                    | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 84962    | 4", flat blank                                 | 1         | 25        |
| 84963    | 4", 1/2" depth, single flush                   | 1         | 25        |
| 84964    | 4", flat, 1/2" K.O. in center                  | 1         | 25        |
| 84965    | 4", 1/2" raised, single toggle switch          | 1         | 25        |
| 84966    | 4", 1/2" raised, 1 duplex receptacle           | 1         | 25        |
| 84968    | 4", 1/2" raised, 1 toggle sw. & 1 dup. recept. | 1         | 25        |
| 84969    | 4", 1/2" raised, 2 duplex receptacle           | 1         | 25        |

### 2-1/8" x 4" Steel Utility Box Covers



84987

84988

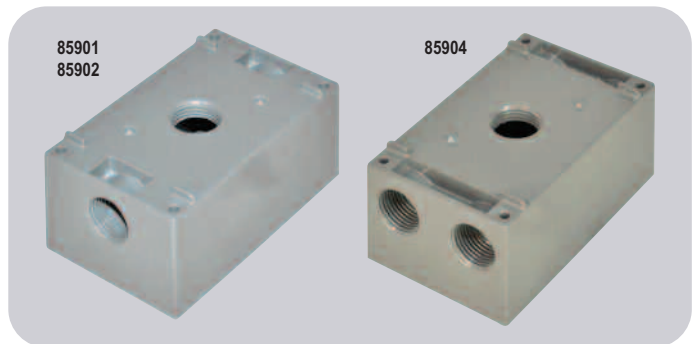
84989

84990

84991

| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 84987    | Duplex receptacle              | 1         | 25        |
| 84988    | Toggle switch                  | 1         | 25        |
| 84989    | Blank                          | 1         | 25        |
| 84990    | Blank with 1/2" K.O. in center | 1         | 25        |
| 84991    | Single receptacle              | 1         | 25        |

### One Gang - Weatherproof Outlet Boxes

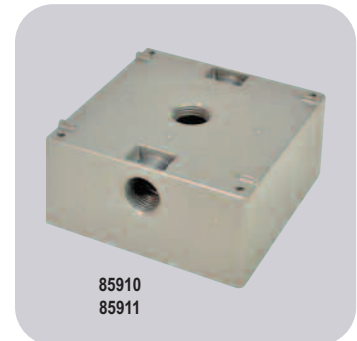


85901  
85902

85904

| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 85901    | Three 1/2" holes with lugs | 1         | 50        |
| 85902    | Three 3/4" holes with lugs | 1         | 50        |
| 85904    | Five 1/2" holes with lugs  | 1         | 50        |

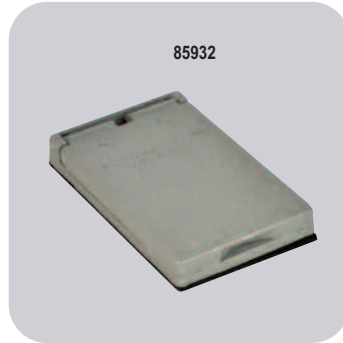
### Two Gang - Weatherproof Outlet Boxes



85910  
85911

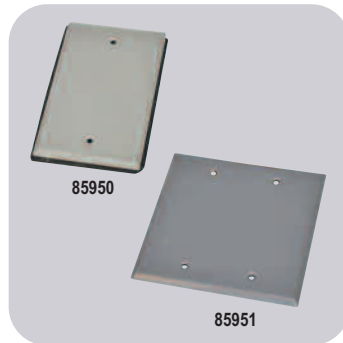
| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 85910    | Three 1/2" holes with lugs | 1         | 10        |
| 85911    | Three 3/4" holes with lugs | 1         | 10        |

**Self Closing GFCI Weatherproof Covers**



| MARS NO. | DESCRIPTION                   | MARS PACK | CASE QTY. |
|----------|-------------------------------|-----------|-----------|
| 85932    | One gang for vertical devices | 1         | 10        |

**Weatherproof Blank Covers**



| MARS NO. | DESCRIPTION                     | MARS PACK | CASE QTY. |
|----------|---------------------------------|-----------|-----------|
| 85950    | One gang for vertical devices   | 1         | 25        |
| 85951    | Two gang with gasket and screws | 1         | 10        |

**4" Octagon Steel Covers**



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 84980    | Flat blank  | 1         | 25        |

**Electrical Fittings-EMT Type-Carded**

• Zinc die cast construction



| MARS NO. | DESCRIPTION                          | CASE QTY. |
|----------|--------------------------------------|-----------|
| 85115    | 1/2" EMT set screw connector, bulk   | 50        |
| 85326    | 3/4" EMT set screw connector, bulk   | 25        |
| 85327    | 1/2" EMT set screw coupling, bulk    | 50        |
| 85329    | 1/2" EMT compression connector, bulk | 50        |
| 85330    | 3/4" EMT compression connector, bulk | 25        |
| 85332    | 1/2" EMT compression coupling, bulk  | 50        |
| 85335    | 1/2" EMT one-hole strap, 5/bag       | -         |
| 85336    | 3/4" EMT one-hole strap, 4/bag       | -         |
| 85302    | 3/4" EMT one-hole strap, bulk        | 100       |
| 85337    | 1" EMT one-hole strap, 2/bag         | -         |
| 85338    | 1 1/4" EMT one hole strap, 4/bag     | -         |
| 85306    | 1/2" rigid IMC strap, bulk           | 50        |
| 85307    | 3/4" rigid IMC strap, bulk           | 50        |
| 85308    | 1" rigid IMC strap, bulk             | 25        |

**Electrical Fittings-Rigid Conduit-Carded**



| MARS NO. | DESCRIPTION                         | CASE QTY. |
|----------|-------------------------------------|-----------|
| 85364    | 3/4" x 1/2" reducing washer, 4/cd   | 10        |
| 85279    | 1 1/4" x 3/4" reducing washer, bulk | 50        |
| 85280    | 1 1/4" x 1" reducing washer, bulk   | 50        |
| 85281    | 1 1/2" x 1/2" reducing washer, bulk | 50        |
| 85282    | 1 1/2" x 3/4" reducing washer, bulk | 50        |
| 85374    | 1/2" - 1" ground clamps, 1/cd       | 10        |



## Accessories

### Electrical Fittings- BX/Romex/Armored-Carded

- Zinc die cast construction



| MARS NO. | DESCRIPTION                            | CASE QTY. |
|----------|--|-----------|
| 85402    | 3/8" arm./flex. 90° squeeze conn, bulk | 50        |
| 85155    | 1/2" arm./flex. 90° squeeze conn, bulk | 25        |
| 85156    | 3/4" arm./flex. 90° squeeze conn, bulk | 10        |
| 85175    | 3/8" arm./flex. duplex connector, bulk | 25        |
| 85396    | 3/8" BX/MC/Romex connector, 3/cd       | 10        |
| 85403    | 3/8" BX/MC/Romex connector, bulk       | 100       |
| 85397    | 3/8" Romex squeeze connector, 4/cd     | 10        |
| 85185    | 3/8" Romex squeeze connector, bulk     | 100       |
| 85398    | 3/4" Romex squeeze connector, 2/cd     | 10        |
| 85186    | 3/4" Romex squeeze connector, bulk     | 25        |
| 85399    | 1" Romex squeeze connector, 2/bag      | 20        |
| 85187    | 1 1/2" Romex squeeze connector, bulk   | 50        |

### Liquid-Tight Metallic Fittings

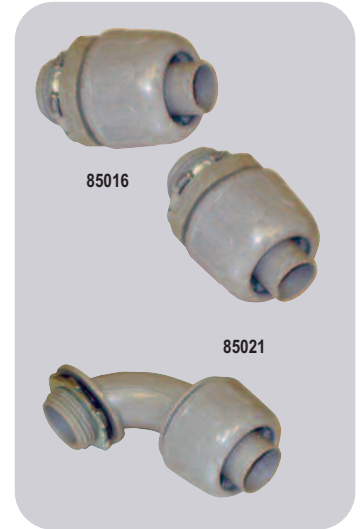
- Zinc die cast construction
- Complete conduit/connector system is reusable
- Suitable for indoor/outdoor use



| MARS NO. | DESCRIPTION                      | MARS PACK | CASE QTY. |
|----------|----------------------------------|-----------|-----------|
| 85001    | 1/2" straight metallic connector | 20        | 250       |
| 85002    | 3/4" straight metallic connector | 10        | 100       |
| 85005    | 1/2" 90° metallic connector      | 10        | 100       |
| 85006    | 3/4" 90° metallic connector      | 10        | 100       |

### Liquid-Tight PVC Non-Metallic Fittings

- Molded of type nylon 6, resists salt water, weak acids, gasoline, alcohol, oil, grease, and common solvents
- Complete conduit/connector system is reusable
- Suitable for indoor/outdoor use



| MARS NO. | DESCRIPTION                          | MARS PACK | CASE QTY. |
|----------|--------------------------------------|-----------|-----------|
| 85015    | 3/8" straight non-metallic connector | 25        | 250       |
| 85016    | 1/2" straight non-metallic connector | 25        | 250       |
| 85017    | 3/4" straight non-metallic connector | 10        | 100       |
| 85018    | 1" straight non-metallic connector   | 5         | 50        |
| 85019    | 3/8" 90° non-metallic connector      | 10        | 100       |
| 85020    | 1/2" 90° non-metallic connector      | 10        | 100       |
| 85021    | 3/4" 90° non-metallic connector      | 10        | 100       |
| 85022    | 1" 90° non-metallic connector        | 5         | 50        |

### Liquid-Tight Screw On Connectors

This attractive one pc design allows superior liquid-tight seal & Optimum pull strength without compression nut. PVC construction produced from UV rated material for long outdoor life. Ideal for conduit assemblies & installers. "O" ring & steel locknut included.



| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 84992    | 1/2" Straight Screw On     | 25        | 100       |
| 84993    | 3/4" Straight Screw On     | 25        | 100       |
| 84994    | 1/2" 90 Deg Sweep Screw On | 10        | 100       |
| 84995    | 3/4" 90 Deg Sweep Screw On | 10        | 100       |



### Liquid-Tight Metal Screw on Connectors

- Suitable for indoor/outdoor use



| MARS NO. | DESCRIPTION                      | MARS PACK |
|----------|----------------------------------|-----------|
| 85026    | Liquid Tight Connector Straight  | 25        |
| 85027    | Liquid Tight Connector 90° Angle | 15        |

### MARS Range And Dryer Receptacles

- 3 Pole, 3W & 4W surface mounting receptacles



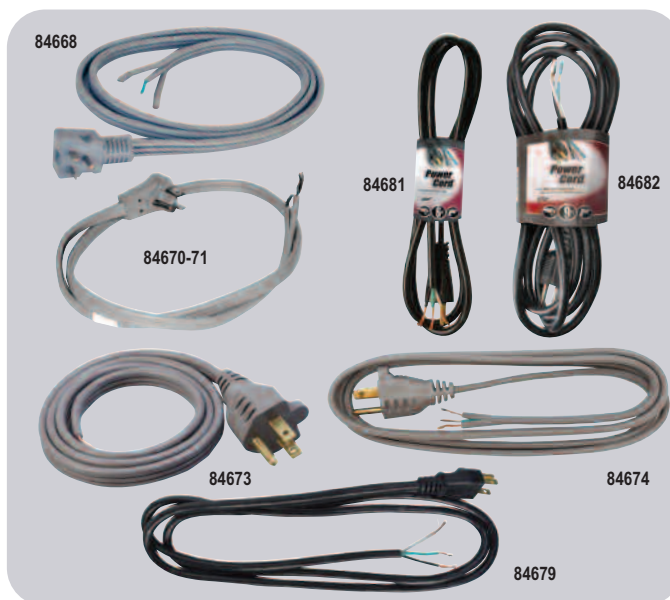
| MARS NO. | DESCRIPTION                                      | CASE QTY. |
|----------|--|-----------|
| 84700    | 30a-250V, surface mount dryer receptacle         | 10        |
| 84701    | 30a-250V, flush mount dryer receptacle           | 25        |
| 84702    | 50a-250V, surface mount range receptacle         | 10        |
| 84699    | 30a-250V, srfc. mnt. dryer recept., 3P4W, ground | 10        |
| 84705    | 50a-250V, srfc. mnt. range recept., 3P4W, ground | 10        |

### MARS Major Appliance Extension Cords, UL Listed



| MARS NO. | DESCRIPTION                                     | CASE QTY. |
|----------|---|-----------|
| 84625    | 15a-125V, 14/3 spt, 3 foot appliance ext.       | 30        |
| 84627    | 15a-125V, 14/3 spt, 9 foot appliance ext.       | 15        |
| 84633    | 20a-250V, 12/3 spt, 6 foot appliance ext., gray | 25        |

### MARS Pigtails/Replacement Cords - 13 Amp, 125V & 250V



| MARS NO. | DESCRIPTION                        | CASE QTY. |
|----------|------------------------------------|-----------|
| 84668    | 12/3 pigtail 6 ft. SPT-3 RT 250V   | 50        |
| 84670    | 16/3 pigtail 6 ft. SPT-3 RT 125V   | 50        |
| 84671    | 16/3 pigtail 8 ft. SPT-3 RT 125V   | 50        |
| 84673    | 16/3 pigtail 3 ft. SPT-3 STR 125V  | 50        |
| 84674    | 16/3 pigtail 6 ft. SPT-3 STR 125V  | 50        |
| 84679    | 16/3 pigtail 6 ft. SJT-BL STR 125V | 50        |
| 84681    | 14/3 pigtail 6 ft. SJT-BL STR 125V | 50        |
| 84682    | 14/3 pigtail 9 ft. SJT-BL STR 125V | 50        |

## Accessories

### Power Block Type Extension Cords, 15a-125V - UL listed



| MARS NO. | DESCRIPTION                         | CASE QTY. |
|----------|-------------------------------------|-----------|
| 84649    | Power block ext. 12/3 sjtwa, 2 foot | 4         |

### Outdoor Heavy Duty Ext. Cords, UL Listed - SJTWA



| MARS NO. | DESCRIPTION                                   | CASE QTY. |
|----------|---|-----------|
| 84652    | Outdoor ext. 16/3, 13a-125V, 25 foot, orange  | 24        |
| 84653    | Outdoor ext. 14/3, 15a-125V, 25 foot, red     | 14        |
| 84655    | Outdoor ext. 16/3, 13a-125V, 50 foot, orange  | 12        |
| 84656    | Outdoor ext. 14/3, 15a-125V, 50 foot, red     | 10        |
| 84657    | Outdoor ext. 12/3, 15a-125V, 50 foot, yellow  | 6         |
| 84658    | Outdoor ext. 16/3, 10a-125V, 100 foot, orange | 6         |
| 84659    | Outdoor ext. 14/3, 13a-125V, 100 foot, red    | 6         |

### Trouble Lights, One Grounded Outlet - UL Listed



| MARS NO. | DESCRIPTION                                   | CASE QTY. |
|----------|---|-----------|
| 84696    | Metal cage trouble light, 16/3, SJT, 13a, 25' | 8         |
| 84697    | Metal cage trouble light, 16/3, SJT, 13a, 50' | 6         |

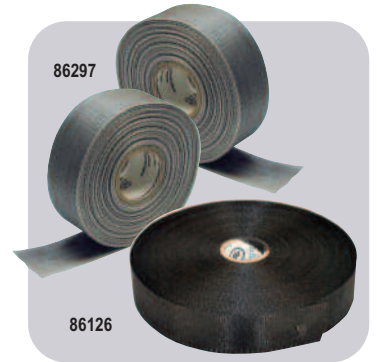
### Portable Lighting



| MARS NO. | DESCRIPTION                    | CASE QTY. |
|----------|--------------------------------|-----------|
| 84689    | 8-1/2" clamp light - 6 ft cord | 6         |

### Polypropylene Web Duct Strap

- Designed for hanging of flexible duct
- Made of high tensile strength - 400 lbs. min up to 460 lbs. max
- Abrasion and chemical resistant
- Easy to cut and staple to joists
- UL 723 Flame and Smoke

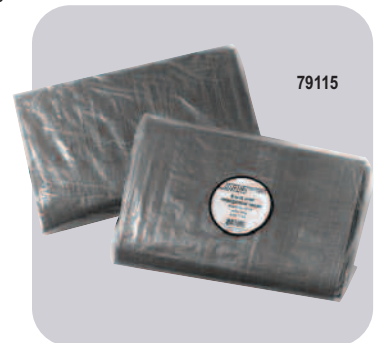


| MARS NO. | DESCRIPTION             | MARS PACK |
|----------|-------------------------|-----------|
| 86126    | Black 1 3/4" x 100 yds. | 24        |
| 86296    | Black 3" x 100 yds      | 8         |
| 86297    | Silver 1-3/4" x 100 yds | 24        |
| 86298    | Silver 3" x 100 yds     | 8         |

### Truck And Equipment Tarps

MARS equipment tarps provide a durable blue protective covering for truck beds, construction material and contractors tools.

- Rust-proof aluminum grommets
- All edges heat-sealed and reinforced with woven polyethylene yarn for durability
- Waterproof and UV resistant



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 79115    | 8' x 10' blue tarp  | 1         | 20        |
| 79116    | 12' x 12' blue tarp | 1         | 12        |

### Molded Rubber Straps

Molded rubber straps are made of high quality black rubber. Sturdy hooks will not loosen.



| MARS NO. | DESCRIPTION       | MARS PACK |
|----------|-------------------|-----------|
| 79592    | 24" length - bulk | 24        |
| 79593    | 35" length - bulk | 24        |

### Truck Rope-Polypropylene - USA

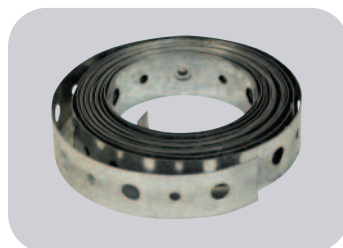
MARS truck rope is made of a polypropylene construction. All ropes are made in the USA. Applications range from hoisting, truck bed material tie down, job site tie off and a wide variety of other uses. MARS #79059 and #79060 include handy safety hook.



| MARS NO. | DESCRIPTION                            | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 79053    | 3/8" x 50' yellow                      | 1         | 12        |
| 79055    | 3/8" x 50' blk/orange                  | 1         | 12        |
| 79056    | 3/8" x 100' blk/orange                 | 1         | 12        |
| 79057    | 1/2" x 50' blk/orange                  | 1         | 12        |
| 79059    | 3/8" x 50' blk/orange with safety hook | 1         | 12        |
| 79060    | 1/2" x 50' blk/orange with safety hook | 1         | 12        |

### Galvanized Duct Straps

The perforated, galvanized duct strap has 1/4" and 9/64" holes for nails & bolts.



| MARS NO. | DESCRIPTION                   | MARS PACK | CASE QTY. |
|----------|-------------------------------|-----------|-----------|
| 86025    | 28 gauge 3/4" x 10' RL bulk   | 100       | 100       |
| 86026    | 28 gauge 3/4" x 50' RL boxed  | 1         | 1         |
| 86027    | 28 gauge 3/4" x 100' RL boxed | 1         | 1         |
| 86032    | 20 gauge 3/4" x 25' RL boxed  | 6         | 6         |
| 86033    | 20 gauge 3/4" x 50' RL boxed  | 1         | 1         |

### Pipe Hangers

The DWV pipe hangers are designed for rapid installation of both ABS and PVC plastic DWV piping with standard flat head galvanized nails. Galvanized steel construction. The pipe hanger is the fastest way to install round 5", 6" or 7" heating pipes below the joist. No nails needed.



| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 86040    | DWV pipe hanger 2" x 12" | 50        | 50        |
| 86041    | DWV pipe hanger 3" x 12" | 50        | 50        |

### Mechanics Hanging Wire

MARS hanging wire conveniently unwinds and hangs over post or peg on truck bed, from a 2 x 4 or nail. Prevents tangling. Either Galvanized or Black annealed wire can be tied/bent with ease. The wire is packaged in spools, easy to work with.

- Metal Reel
- 825 ft. per roll
- 5 lbs., 18 Gauge



| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 84418    | 18 gauge Black Ann 5 lbs.  | 50        | 500       |
| 84419    | 18 gauge Galvanized 5 lbs. | 50        | 500       |

## Accessories

### MARS Wire Ties, 100 Packs

MARS nylon wire ties and duct straps are available in a wide variety of styles, color and tensile strengths. They range in sizes from 4" to 36" with tensile strengths from 18 lbs. to 175 lbs. All MARS wire ties and duct straps feature the bent tip design for ease and insertion.



| MARS NO. | DESCRIPTION |         |             |                       | MARS PACK |
|----------|-------------|---------|-------------|-----------------------|-----------|
| 86100    | 4"          | natural | standard    | 3/4" dia. x 18 lbs.   | 1         |
| 86101    | 4"          | black   | standard    | 3/4" dia. x 18 lbs.   | 1         |
| 86104    | 5.5"        | natural | standard    | 1 1/4" dia. x 40 lbs. | 1         |
| 86105    | 5.5"        | black   | standard    | 1 1/4" dia. x 40 lbs. | 1         |
| 86106    | 8"          | natural | standard    | 1 3/4" dia. x 40 lbs. | 1         |
| 86107    | 8"          | black   | standard    | 1 3/4" dia. x 40 lbs. | 1         |
| 86108    | 11"         | natural | standard    | 3" dia. x 50 lbs.     | 1         |
| 86109    | 11"         | black   | standard    | 3" dia. x 50 lbs.     | 1         |
| 86153    | 14"         | black   | standard    | 4" dia. x 120 lbs.    | 1         |
| 86110    | 14.5"       | natural | standard    | 4" dia. x 50 lbs.     | 1         |
| 86111    | 14.5"       | black   | standard    | 4" dia. x 50 lbs.     | 1         |
| 86112    | 6"          | natural | screw mount | 1 1/4" dia. x 30 lbs. | 1         |
| 86113    | 6"          | black   | screw mount | 1 1/4" dia. x 30 lbs. | 1         |
| 86114    | 7.5"        | natural | screw mount | 1 3/4" dia. x 50 lbs. | 1         |
| 86115    | 7.5"        | black   | screw mount | 1 3/4" dia. x 50 lbs. | 1         |
| 86155    | 11"         | black   | screw mount | 3" dia. x 50 lbs.     | 1         |
| 86156    | 14"         | black   | screw mount | 4" dia. x 50 lbs.     | 1         |
| 86157    | 14"         | natural | screw mount | 4" dia. x 50 lbs.     | 1         |

### MARS Wire Ties, Bulk Packs

| MARS NO. | DESCRIPTION |         |          |                       | MARS PACK   |
|----------|-------------|---------|----------|-----------------------|-------------|
| 86116    | 8"          | natural | standard | 1 3/4" dia. x 40 lbs. | (1000 pk) 1 |
| 86117    | 8"          | black   | standard | 1 3/4" dia. x 40 lbs. | (1000 pk) 1 |
| 86118    | 11"         | natural | standard | 3" dia. x 50 lbs.     | (500 pk) 1  |
| 86119    | 11"         | black   | standard | 3" dia. x 50 lbs.     | (500 pk) 1  |

### MARS Duct Straps, 175 lbs., 50 Packs

| MARS NO. | DESCRIPTION              |          |         |  | MARS PACK |
|----------|--------------------------|----------|---------|--|-----------|
| 86127    | 24" duct strap for up to | 6" duct  | natural |  | 1         |
| 86128    | 36" duct strap for up to | 10" duct | natural |  | 1         |
| 86129    | 48" duct strap for up to | 14" duct | natural |  | 1         |
| 86102    | 24" duct strap for up to | 6" duct  | black   |  | 1         |
| 86103    | 36" duct strap for up to | 10" duct | black   |  | 1         |

### Ready Utility Knife

Ready

- Featuring the QUICKEST blade change in the industry.
  - Rugged all steel construction
  - Folds to a very compact size
  - Easily and quickly change blades with the push of a button
  - Set includes knife, nylon carrying case, and 5 standard blades.
- Standard Blade Dimensions: 2.4" L x 1.25" W x 0.75" H, 0.6mm thickness



| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---------------|-----------|-----------|
| 25784    | Utility knife | 1         | 48        |

### MARS Knife Sharpener

Finally, a Knife Sharpener anyone can use! No more messy oils or stones. Sharpen knives in about 10 seconds (even serrated knives), cleavers, axes, machetes, and many other cutting tools. The full length finger guard protects your fingers. Sharpening blades are Diamond Honed Tungsten Carbide for years of reliable use. AccuSharp Knife Sharpeners will not rust and can be cleaned with soap and water or in the dishwasher.



| MARS NO. | DESCRIPTION          | CASE QTY. |
|----------|----------------------|-----------|
| 27520    | MARS Knife Sharpener | 12        |

### Cable Tie Tool

Cable Tie Tools are economical, lightweight and easy to use. Ideal for heavy duty ties and duct straps. Constructed from high grade steel.

- Heavy duty construction
- Installer controls tensioning
- Squeeze to cut excess
- Cuts up to 60" 175 lbs. cable ties



| MARS NO. | DESCRIPTION    | COLOR | BAG | CASE QTY. |
|----------|----------------|-------|-----|-----------|
| 25683    | Cable tie tool | Red   | 1   | 100       |



### Braze-On Service Valves - Saddle Valves

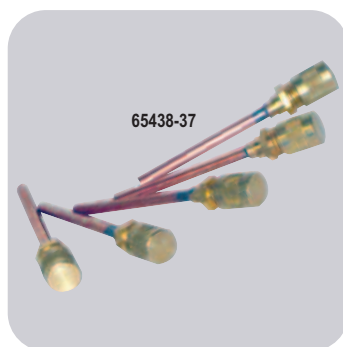
Braze-on self-piercing copper service valves are widely used and easily installed on a charged line. After brazing the saddle portion onto the line, the steel pin with valve core penetrates the line and is locked into place simply by tightening the cap. Available in sizes from 1/4" to 1-1/8".



| MARS NO. | DESCRIPTION         | MARS PACK |
|----------|---------------------|-----------|
| 65425    | 1/4" qty 6 per bag  | 1         |
| 65426    | 5/16" qty 6 per bag | 1         |
| 65427    | 3/8" qty 6 per bag  | 1         |
| 65428    | 1/2" qty 4 per bag  | 1         |
| 65430    | 3/4" qty 2 per bag  | 1         |
| 65431    | 7/8" qty 2 per bag  | 1         |

### Economy Line Service Valves - Extended Copper Tubes

- With valve core & flat cap (#65408)
- 1/4" male flare access fitting



| MARS NO. | DESCRIPTION                               | MARS PACK |
|----------|---|-----------|
| 65438    | 3/16" copper tube extension, qty. 6 / bag | 1         |
| 65439    | 1/4" copper tube extension, qty. 6 / bag  | 1         |
| 65440    | 5/16" copper tube extension, qty. 6 / bag | 1         |
| 65441    | 3/8" copper tube extension, qty. 6 / bag  | 1         |
| 65442    | 1/8" copper tube extension, qty. 6 / bag  | 1         |
| 65435    | 3/8" copper tube extension, bulk          | 100       |
| 65436    | 3/16" copper tube extension, bulk         | 50        |
| 65437    | 1/4" copper tube extension, bulk          | 50        |

### Copper Tees - 1/4" Male Flare

Copper tees have bodies brazed on. Using copper for the tee portion allows tubing to be attached to each end and allows using a solderless than silver solder, such as 95-5. They are to be used where two line ends have not yet been attached or where it is desirable to cut a line rather than drive a hole on an uncharged system. Copper tees save time and money.

- Includes valve core and flat cap (#65408).



| MARS NO. | DESCRIPTION                     | MARS PACK |
|----------|---------------------------------|-----------|
| 65447    | Tee for 1/4" O.D. tube (2 bag)  | 1         |
| 65448    | Tee for 5/16" O.D. tube (2 bag) | 1         |
| 65449    | Tee for 3/8" O.D. tube (2 bag)  | 1         |
| 65450    | Tee for 1/2" O.D. tube (2 bag)  | 1         |
| 65451    | Tee for 5/8" O.D. tube (2 bag)  | 1         |
| 65452    | Tee for 3/4" O.D. tube (2 bag)  | 1         |
| 65453    | Tee for 7/8" O.D. tube (2 bag)  | 1         |

### Tees Connectors

Tee connectors are used to connect controls to check oil pressure on larger compressors having positive pressure oil pumps and to check the accuracy of oil pressure gauges installed on the equipment by the manufacturer against your gauge with known accuracy.



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 65459    | 1/4" m. flare x 1/4" f. flare nut w/ depressor tip x 1/4" m. flare on the branch w/one valve core (qty. 2 per bag)                            | 1         |
| 65460    | 1/4" m. flare with valve core x 1/4" m. flare x 1/4" f. flare nut w/ depressor tip on the branch (qty. 2 per bag)                             | 1         |
| 65461    | All brass tee connector 1/4" m. flare with valve core & cap x 1/4" m. flare x 1/4" f. flare nut with depressor tip on branch (qty. 1 per bag) | 1         |



## Accessories

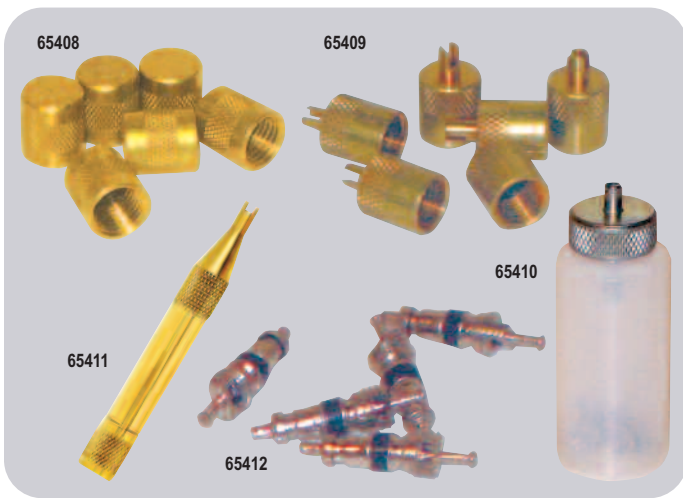
### Brass Bodies - Half Unions

MARS brass bodies have a 1/4" standard male flare above the hex. Below the hex are various threads, outside diameters and inside diameters for accepting different sizes of tubing and connections. A flat top brass cap and valve core are included.



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 65401    | 1/4" MPT dry seal x 1/4" male flare 5/16" I.D. hole accommodates 5/16" O.D. tube. Qty. 2 per bag                | 1         |
| 65402    | 1/8" MPT dry seal x 1/4" male flare 1/4" I.D. hole accommodates 1/4" O.D. tube. Qty. 6 per bag                  | 1         |
| 65403    | 1/4" male flare for 1/8" I.D. hole - accommodates 1/8" O.D. tube. (3/16", 1/4", 5/16" O.D. steps) Qty 6 per bag | 1         |

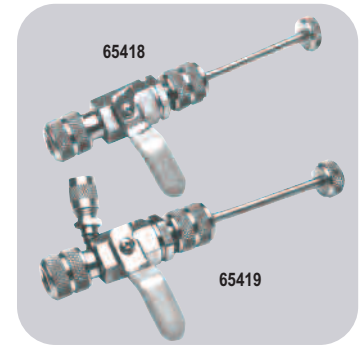
### Brass Caps & Valve Cores



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 65408    | Round brass flat cap w/neoprene O-ring seal for 1/4" flare, qty 6 per bag                 | 1         |
| 65409    | Round brass cap w/ core wrench top and neoprene O-ring seal for 1/4" flare, qty 6 per bag | 1         |
| 65410    | Plastic core container - includes six valve cores and a core wrench and thread chaser     | 1         |
| 65411    | Brass core remover container with wrench tip - includes three valve cores                 | 1         |
| 65412    | Valve core w/seal, qty. 6 per bag   | 1         |

### Core Removal Tools With Ball Valve

MARS core removal tools are used to remove and replace valve cores in a 1/4" flare without losing refrigerant. Because it has a ball valve inside rather than a stem-type valve, the tool can be closed with just a quarter turn. This convenient compact size tool is ideal for working in close quarters.



| MARS NO. | DESCRIPTION                                    | MARS PACK |
|----------|--|-----------|
| 65418    | Core removal tool                              | 1         |
| 65419    | Core removal tool w/ 1/4" male flare side port | 1         |

### MARS Universal Refrigerant Locking Caps

Made in USA



MARS Universal Refrigerant Locking Caps meet or exceed local and national code requirements to prevent unauthorized refrigerant theft. Effective February 2009, the **International Mechanical Code 1101.10** and the **International Residential Code M1411.6** now require that all outdoor access ports on A/C Refrigerant circuits be made tamper resistant.

#### Features:

- Heavy duty brass construction
- Corrosion resistant
- Water/dust proof sleeve
- Exceeds local and national code requirements
- Protects against: refrigerant theft

#### Kit Includes:

- Locking cap key
- 10 Locking caps (1/4")
- 10 Waterproof sleeves
- 5 Warning labels



| MARS NO. | DESCRIPTION                          | MARS PACK |
|----------|--------------------------------------|-----------|
| 65420    | Universal Locking Caps, Blk, Qty. 10 | 1         |



**Chemicals**

Thawzone liquid dehydrant chemically "dries" all refrigerants (R12, R22, R134, etc.), methyl chloride, and methylene chloride. Thawzone frees frozen systems due to moisture in five minutes. It prevents refreezing, does not leave any residue, does not contain any dissolved solids or methanol, and works with or without solid dryers. Available in 1 oz., 4 oz. and 16 oz. plastic bottles.

Leak Lock joint sealer is a soft setting pipe joint compound for sealing threaded joints, flanged joints, gasket surfaces and mating surfaces. This resin based brushable paste remains permanently flexible, adheres to internal surfaces and fills voids. It is ideal for use on metal and plastic materials subject to extreme vibrations, temperatures from -100°F (-73°C) to 400°F (204°C) full vacuums to 10,000 PSI. Leak Lock seals all refrigerants (R12, R22, R502, R134A, etc.) petroleum products, natural and manufactured gases, steam, water, air, etc. Available in 1 1/3 oz. plastic tube and 4 oz. and 1 pint brush top plastic jars.

Red Epoxy aluminum sealer is a high performance heat cured, two part epoxy kit for patching or sealing on all metals and some plastics. Red Epoxy is cured within minutes and equipment is serviceable immediately. It is excellent for sealing threaded or unthreaded pipes and is great as a field repair kit for aluminum evaporators, coils, radiators, pipes, tanks, etc. Temperature range: -100°F (-73°C) to 300°F (149°C). Tensile strength: 600 PSI. working pressure tested in excess of 3000 PSI. Kit includes resin & hardener. (.5 oz. tube each)

Low-Temp Gas Leak Detector is non-toxic and non-hazardous and does not contain ethylene glycol. This non-freezing, viscous florescent, bubble type gas leak detector is rated to -30°F (-34°C). The leaks appear as large strong bubbles which cling to the applied surface and are florescent under a black light. For use on hot and cold piping and equipment containing most gases such as air, natural gas, all refrigerants (R12, R134A, R22, R502, etc.) ammonia, SO<sub>2</sub> etc.

The mid-temp gas leak detector is non-toxic and non-hazardous. It is a viscous, florescent, bubble-type gas leak detector rated to 27°F (-3°C). Leaks appear as large strong bubbles which cling to the applied surface and are florescent under a black light. For use on hot and cold piping equipment containing most gases such as air, natural gas, all refrigerants (R12, R134A, R22, R502A, etc.), ammonia, SO<sub>2</sub> etc.

Solderlene is a high quality, paste type, non-acid soldering flux with industrial strength wetting agents to promote solder flow. For use with all low and mid temperature soft solders, both lead bearing and lead-free, on all metals except aluminum and magnesium.

Trace is a red dye trace type internal leak detector for use with mineral oil base refrigerant lubricants and hydraulic systems. Leaks show as intense red stains Trace is non-volatile, will not sludge oil or deposit gum. Trace is soluble in the lubricant and liquid refrigerant but not the gas and travels with the lubricant. Oil separators will remove trace and should be bypassed. Trace passes through solid core dryers but the color intensity may be reduced.



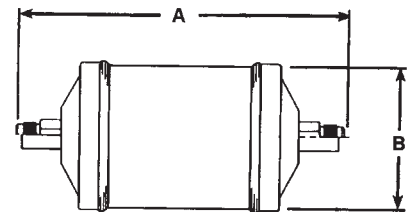
| MARS NO. | DESCRIPTION                                | MARS PACK |
|----------|--|-----------|
| 93801    | Thawzone 1 oz. bottle                      | 24        |
| 93802    | Thawzone 4 oz. bottle                      | 12        |
| 93803    | Leak Lock 1 1/3 oz. tube                   | 24        |
| 93804    | Leak Lock 4 oz. brush top jar              | 12        |
| 93805    | Leak Lock 1 pint brush top jar             | 12        |
| 93806    | Red Epoxy kit .5 oz. tube                  | 24        |
| 93807    | Low Temp Gas Detector 8 oz. dauber bottle  | 24        |
| 93809    | Mid-temp gas detector 8 oz. dauber bottle  | 24        |
| 93810    | Mid-temp gas detector 32 oz. trigger spray | 12        |
| 93811    | Screwloose® Solderlene 4 oz. brush top jar | 24        |
| 93812    | Solderlene 1 pint brush top jar            | 12        |
| 93813    | Trace® 4 oz. bottle                        | 12        |
| 93814    | Trace® 16 oz. bottle                       | 6         |

**MARS Liquid Line Filter Driers**

The MARS Liquid Line Filter Driers are designed to offer complete protection of your refrigerant system. The desiccant block is a carefully selected blend of molecular sieve and activated alumina, providing for maximum removal of moisture, acid, and foreign materials. This molded desiccant block allows for efficient filtration and retention of solid contaminants, while insuring minimum pressure drop. The solid molded block exposes maximum surface area and provides even distribution of filtered material as the refrigerant flows through the drier. These driers are intended for use on R-134A, R-404A, R-410A, R-507, R-12, R-500, R-502

**Features & Benefits:**

- High moisture removal
- High organic & inorganic acid removal
- Solid block desiccant core
- For use with HCFCs, CFCs, and the lubricants that go with them
- Nickel plated SAE flare and solid copper ODF fittings
- Corrosion resistant
- Maximum working pressure 600 PSIG
- Minimum burst pressure 2500 PSIG
- UL & CSA listed



| MARS NO. | MODEL NO | CONNECTIONS SIZE & TYPE | DIMENSIONS |      | FLOW CAPACITY <sup>1</sup> TONS @ 1 PSI |            |            | CASE QTY. |
|----------|----------|-------------------------|------------|------|---|------------|------------|-----------|
|          |          |                         | A          | B    | R-134A                                  | R-22/R410A | R404A/R507 |           |
| 20114    | MLD-083  | 3/8 SAE                 | 6.10       | 2.50 | 4.9                                     | 4.7        | 3.0        | 12        |
| 20115    | MLD-083S | 3/8 ODF                 | 5.43       | 2.50 | 6.2                                     | 5.9        | 3.9        | 12        |

<sup>1</sup> All ratings in accordance with ARI standard 710-04, 86°F Liquid Refrigerant Temperature, 5°F Saturated Temperature 4.0 lbs./min./ton for R-134a, 2.9 lbs./min./ton for R-22, 4.0 lbs./min./ton for R-404A/R-507

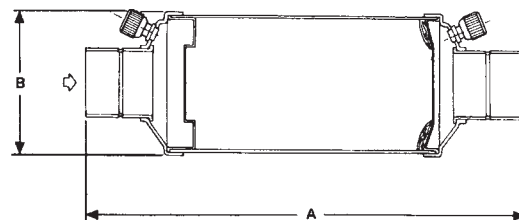
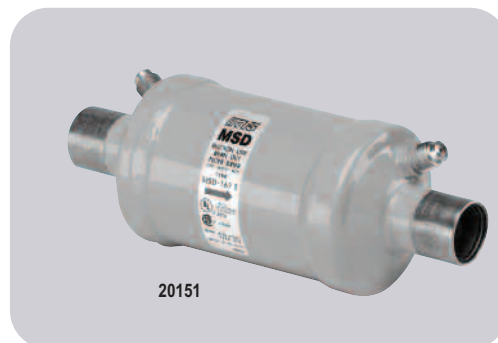
### MARS suction line driers - flow capacities<sup>1</sup> in refrigerant tons at selected evaporator temps

The MARS Suction Line Filter Driers are designed to effectively clean up the refrigerant system by removing solid contaminants and harmful acids that were created during a motor burnout. As well as motor burnout applications, the MARS Suction Line Drier should be installed in remote systems with long refrigerant lines. The filter drier will collect and hold any dirt that is in the evaporator or suction line at start up. Any field built-up system requires the protection that the MARS Suction Line Drier offers.

The desiccant block core effectively removes and holds a maximum amount of contaminants with minimum pressure drop. The binding material in the core protects the core from acid decomposition and allows it to collect and hold organic and inorganic acids from motor burnout. An inlet deflector spreads the refrigerant flow evenly across the molded core to provide full filtration capacity and to prevent erosion of the core.

**Features & Benefits:**

- For use on R134A, R12, R22, R500, R404A, R410A, R507
- Dual access valve for accurate pressure drop readings
- Solid block desiccant core
- High organic & inorganic acid removal
- For use with HCFCs, CFCs and the lubricants that go with them
- Nickel plated SAE flare and solid copper ODF fittings
- Corrosion resistant paint
- Maximum working pressure 600 PSIG
- Minimum burst pressure 2500 PSIG
- UL & CSA listed



| MARS NO. | +40°F                          | +20°F | 0°F | -20°F | +40°F                        | +20°F | 0°F | -20°F | -40°F | +40°F                         | +20°F | 0°F | -20°F | -40°F | +40°F   | +20°F | 0°F | -20°F | -40°F |
|----------|--------------------------------|-------|-----|-------|------------------------------|-------|-----|-------|-------|-------------------------------|-------|-----|-------|-------|---|-------|-----|-------|-------|
|          | R-134A PRESSURE DROP IN P.S.I. |       |     |       | R-22 PRESSURE DROP IN P.S.I. |       |     |       |       | R-502 PRESSURE DROP IN P.S.I. |       |     |       |       | R410A FLOW CAPACITY EVAPORATOR TEMPERATURE (F°) |       |     |       |       |
|          | 2                              | 1.5   | 1   | 0.5   | 3                            | 2     | 1.5 | 1     | 0.5   | 3                             | 2     | 1.5 | 1     | 0.5   | 3   | 2     | 1.5 | 1     | 0.5   |
| 20151    | 2.7                            | 1.8   | 1.1 | 0.6   | 4.6                          | 2.8   | 1.9 | 1.1   | 0.6   | 4.3                           | 2.6   | 1.7 | 1.0   | 0.6   | 4.2   | 2.8   | 1.8 | 1.2   | 0.6   |
| 20155    | 3.8                            | 2.5   | 1.6 | 0.8   | 5.9                          | 3.9   | 2.6 | 1.7   | 0.9   | 4.9                           | 3.1   | 2.1 | 1.3   | 0.7   | 6.0   | 4.0   | 2.6 | 1.7   | 0.9   |

Flow Capacity In Tons Refrigerant<sup>1</sup> (For kW, Multiply Tons By 3.5)

<sup>1</sup> All ratings in accordance with ARI standard 730-04

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 KW

| MARS NO. | MODEL NO. | SIZE & TYPE | DIMENSION |     |
|----------|-----------|-------------|-----------|-----|
|          |           |             | A         | B   |
| 20151    | MSD-167S  | 7/8 ODF     | 7.13      | 2.5 |

## Accessories

### MARS Sight Glass - Moisture Indicators

The MARS Moisture Indicators are constructed of forged brass bodies with brass fittings. The large viewing area of the sight glass allows for quick and easy inspection of the refrigerant as it flows through the system. Bubbles passing through the sight glass may be an indication of a low system charge or a restriction in the refrigerant system.

The moisture Indicators are designed to provide an accurate method of determining when the moisture content is dangerously wet in a refrigerant system and when the liquid line drier is no longer effective. An indicator element is highly sensitive to moisture and will gradually change color in reaction to the moisture content of the refrigerant system. Maximum working pressure is 680 PSIG. Minimum Burst pressure is 2500PSIG. UL and CSA listed.

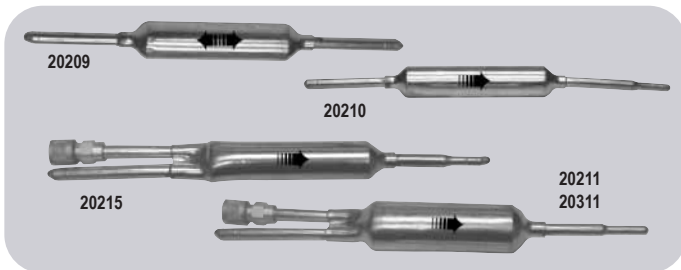


| MARS NO. | MARS MODEL NO. | DESCRIPTION         | LENGTH X HEIGHT INCHES | CASE QTY. |
|----------|----------------|---------------------|------------------------|-----------|
| 65639    | MSG-3SS        | 3/8 Solder x Solder | 4.69 x 1.11            | 12        |
| 65640    | MSG-4SS        | 1/2 Solder x Solder | 4.88 x 1.29            | 12        |
| 65641    | MSG-5SS        | 5/8 Solder x Solder | 4.88 x 1.38            | 12        |
| 65642    | MSG-7SS        | 7/8 Solder x Solder | 5.90 x 1.66            | 12        |

### MARS Spun Copper Driers

#### Features:

- Recommended for use on original equipment, residential and commercial refrigerators, freezers and air conditioners
- XH-9 beaded molecular sieve for maximum water capacity in HFC refrigerants
- High quality – high capacity
- Hermetically sealed
- Easy break off grooved ends
- Copper shells and end tubes
- Compatible with R134



### MARS Spun Drier Capacity Table

| MARS NO. | DESCRIPTION     | DROPS OF WATER REMOVED |      |      |      | RECOMMENDED TONNAGE |      |
|----------|-----------------|------------------------|------|------|------|---------------------|------|
|          |                 | R-12                   |      | R-22 |      | R-12                | R-22 |
| 20209    | Non-Directional | 75"                    | 125" | 75"  | 125" | 1/3                 | 1/2  |
| 20210    | Fused Ends      | 75"                    | 125" | 75"  | 125" | 1/3                 | 1/2  |
| 20211    | Charging Drier  | 74                     | 38   | 68   | 64   | 3/4                 | 1    |
| 20311    | Charging Drier  | 74                     | 38   | 68   | 64   | 3/4                 | 1    |
| 20215    | Charging Drier  | 37.5                   | 34   | 34   | 32   | 1/3                 | 1    |

| MARS  | DESCRIPTION     | INLET                    | OUTLET          | LENGTH | DIA. | MARS |
|-------|-----------------|--------------------------|-----------------|--------|------|------|
| 20209 | Non-Directional | 1/4" OD                  | 1/4" OD         | 8-1/2" | 3/4" | 1    |
| 20210 | Fused Ends      | 1/4" OD                  | 1/4" OD         | 8-3/4" | 3/4" | 1    |
| 20211 | Charging Drier  | 1/4" OD 1/4" Flare       | 1/4" OD or Cap. | 8-3/4" | 1"   | 1    |
| 20311 | Charging Drier  | 1/4" OD 1/4" Flare       | 1/4" OD or Cap. | 8-3/4" | 1"   | 50   |
| 20215 | Charging Drier  | 1/4" ID 1/4"OD 1/4"Flare | 1/4" OD or Cap. | 9"     | 3/4" | 1    |

### Tubing Cutters And Accessories

MARS offers a quality line of tube working tools, well recognized as standards of excellence in the HVACR industry.

MARS tube cutters can be used on hard or soft copper, aluminum, brass, thin wall steel, stainless steel, monel, titanium and other metal tubing. MARS #65001 and #65002 feature rollers with flare cut-off groove, fold away reamer and a spare cutting wheel.

MARS #65004, tube cutter, requires only 1 1/4" swing radius and a 1 3/8" swing radius with 5/8" tube. This tube cutter features rollers on the bottom of the tool which allows for easier cutter engagement on tubing.

The enclosed feed design minimizes contamination, assuring continued free operation. MARS #65005 requires only 1 11/16" swing radius.

MARS #65006, requires only 1 15/16" swing radius and a 2 1/4" swing radius with 1 1/8" tube.



| MARS NO. | DESCRIPTION  | CASE QTY. |
|----------|--|-----------|
| 65001    | 1/8" to 1 1/8" OD  | 20        |
| 65002    | 1/4" to 1 5/8" OD  | 10        |
| 65004    | 1/8" to 5/8" OD  | 20        |
| 65005    | 3/16" to 7/8" OD   | 10        |
| 65006    | 3/8" to 1 1/8" OD  | 10        |
| 65008    | Standard cutter wheel (10 pk) for use on #65001, 65002, 65003, 65006 | 20        |

### MARS Tube Benders



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 25660    | External spring type tube benders, 1/4", 3/8", 1/2" & 5/8", set of 4 | 1         | 24        |
| 65024    | Triple header; 1/4", 5/16", 3/8" OD 15/16" radius to center          | 10        |           |



### Tubing Tool Kits

MARS #65059, 45° flaring and swaging tool kit is for use on 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" and 3/4" OD tubing. Flares or swages. Converts quickly. Features screw-type feed. Ideal close quarters tool. Swivel type swaging adapters and spreader cone are hard-chrome finished for easy operation. Self centering, slip-on forged steel yoke. Includes five swage adapters for 3/16", 1/4", 5/16", 3/8", 1/2" and 3/4" OD tubing. Packaged in a plastic kit.



| MARS NO. | DESCRIPTION                  | CASE QTY. |
|----------|------------------------------|-----------|
| 65059    | 45° flaring and swaging tool | 1         |

### Flaring Tools

MARS #65038, 45° flaring tool is used for flaring and burnishing 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" OD tubing. The flares are rolled out above die bar by a super-smooth faceted cone. Automatically burnishes flare face. The slip-on yoke permits use in tight quarters. Heat treated dies grip tubing without scoring. For use on soft copper, aluminum and brass tubing.



| MARS NO. | DESCRIPTION              | CASE QTY. |
|----------|--------------------------|-----------|
| 65038    | 45° for 3/16" to 5/8" OD | 10        |

### Reversible Ratchet

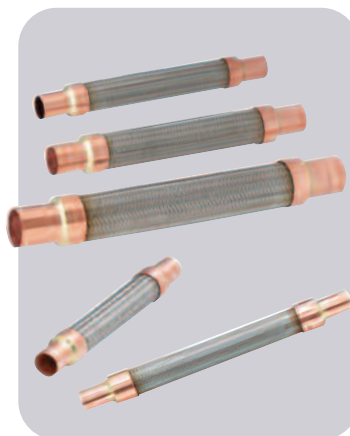
MARS #65083 is for use on compressors with access valves in hard to reach places. This reversible ratchet is chrome plated.



| MARS NO. | DESCRIPTION                             | CASE QTY. |
|----------|---|-----------|
| 65083    | 1/4", 3/8", 3/16", 5/16" square ratchet | 1         |

### Stainless Steel Vibration Absorbers

- 100% Copper connections
- Hose and copper braze welded
- Each unit dehydrated and vacuum tested
- Units individually packaged in poly bags and corrugate boxes
- UL, cUL, and CE



| MARS NO. | DESCRIPTION               | MARS PACK |
|----------|---------------------------|-----------|
| 52329    | 1/4" Vibration Absorber   | 1         |
| 52330    | 3/8" Vibration Absorber   | 1         |
| 52331    | 1/2" Vibration Absorber   | 1         |
| 52332    | 5/8" Vibration Absorber   | 1         |
| 52333    | 3/4" Vibration Absorber   | 1         |
| 52334    | 7/8" Vibration Absorber   | 1         |
| 52335    | 1-1/8" Vibration Absorber | 1         |
| 52336    | 1-3/8" Vibration Absorber | 1         |
| 52337    | 1-5/8" Vibration Absorber | 1         |
| 52338    | 2-1/8" Vibration Absorber | 1         |
| 52339    | 2-5/8" Vibration Absorber | 1         |
| 52340    | 3-1/8" Vibration Absorber | 1         |

### MARS Flexible Mini-Split Line Set Connectors

MARS flexible line set connectors provide ease of installation for mini-split indoor evaporator units. Flexible line sets allow for line set connection prior to mounting the unit on the wall. Flexible line sets eliminate copper line kinking during the installation process and provide for future ease of service of the AC unit. All flex line sets are 36in. in length to facilitate installation of wall mount evaporators.



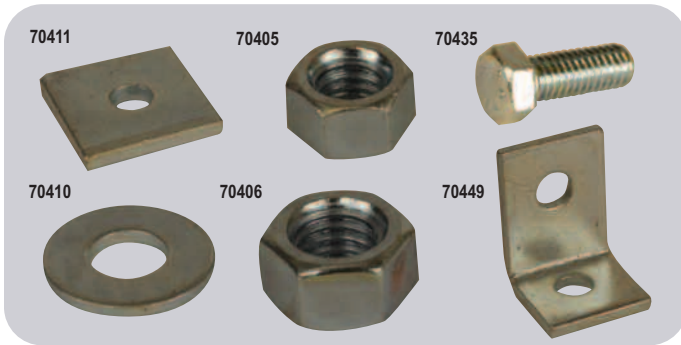
#### Features

- High pressure stainless steel braided line rated to 800 PSI
- R410a compatible
- 3 inch copper stubs
- 36 inch overall length

| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 52345    | 1/4" X 36" Mini-Split Flex Line Set | 1         |
| 52346    | 3/8" X 36" Mini-Split Flex Line Set | 1         |
| 52347    | 1/2" X 36" Mini-Split Flex Line Set | 1         |
| 52348    | 5/8" X 36" Mini-Split Flex Line Set | 1         |

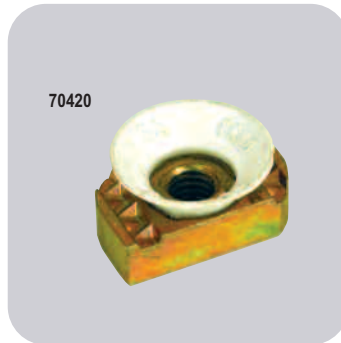
## Accessories

### For Channels & Channel Fittings Hardware



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 70401    | Insulated Plastic Staple                            | 50        |
| 70411    | 3/8" Steel Square Washer                            | 100       |
| 70410    | 3/8" Steel Flat Washer                              | 100       |
| 70405    | 3/8" Steel Standard Hex Nut                         | 100       |
| 70406    | 1/2" Steel Standard Hex Nut                         | 100       |
| 70435    | 3/8" x 1" Steel Hex Head Cap Screw                  | 100       |
| 70449    | 90 Deg, 2 Hole, Steel Angle Fitting (1-5/8 x 2-1/4) | 50        |

### Top Spring Nuts For All Channels



| MARS NO. | DESCRIPTION         | MARS PACK |
|----------|---------------------|-----------|
| 70420    | 3/8" Nylon Cone Nut | 100       |

### Beam Clamp

MARS C-Clamp's are used to replace various other clamps as top beam or bottom beam structural steel attachments. Made of malleable/ductile iron, set screw with hardened cup point, lock nut

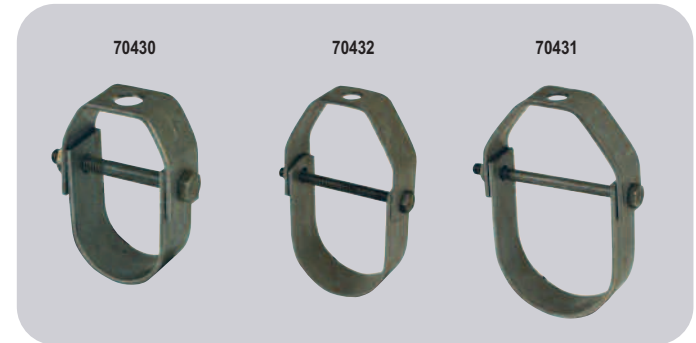


| MARS NO. | DESCRIPTION               | MARS PACK |
|----------|---------------------------|-----------|
| 70416    | 3/8" C-Clamp with Locknut | 100       |
| 70415    | 3/8" Top Beam C-Clamp     | 100       |

### Rod Coupling

| MARS NO. | DESCRIPTION             | MARS PACK |
|----------|-------------------------|-----------|
| 70425    | 3/8" Steel Rod Coupling | 50        |

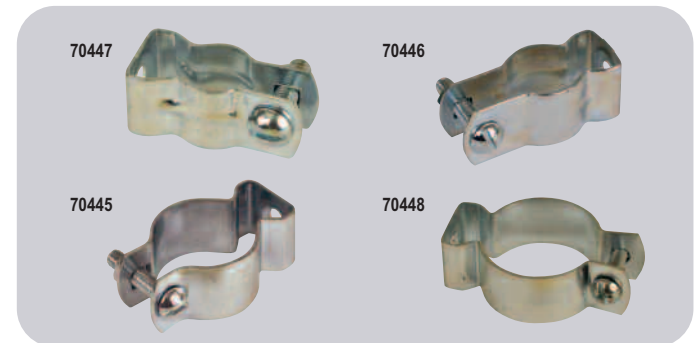
### Supports non-insulated, stationary lines, Rigid/IMC Conduit and pipe



| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 70430    | 1" IPS Clevis Steel Pipe Hanger     | 100       |
| 70432    | 1-1/2" IPS Clevis Steel Pipe Hanger | 50        |
| 70431    | 2" IPS Clevis Steel Pipe Hanger     | 100       |

### Conduit & Pipe Hangers

Supports EMT and Rigid conduit or pipe.

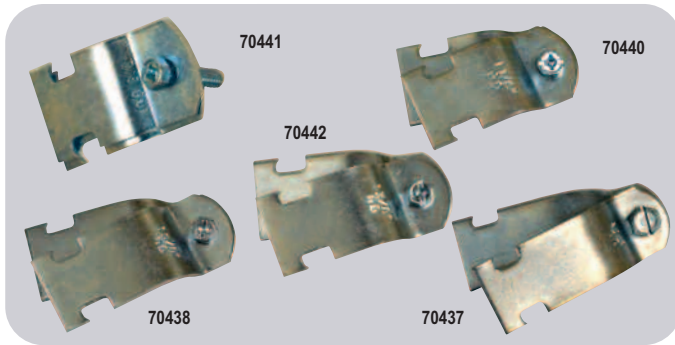


| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 70447    | 3/8 to 1/2" Conduit & Pipe Hanger w/bolt | 100       |
| 70446    | 3/4" Conduit & Pipe Hanger w/bolt        | 100       |
| 70445    | 1" Conduit & Pipe Hanger w/bolt          | 100       |
| 70448    | 1-1/4" Conduit & Pipe Hanger w/bolt      | 100       |



### Pipe Cushion Clamps

Pipe Straps are designed to be twist inserted anywhere along the slot side of the channel



| MARS NO. | DESCRIPTION                                    | MARS PACK |
|----------|--|-----------|
| 70441    | 7/8" to 2" Adjustable Clevis Pipe Hanger       | 100       |
| 70440    | 1-1/8" to 2" Adjustable Clevis Pipe Hanger     | 100       |
| 70442    | 1-3/8" to 2 1/2" Adjustable Clevis Pipe Hanger | 100       |
| 70438    | 1-5/8" to 2-1/2" Adjustable Clevis Pipe Hanger | 100       |
| 70437    | 2-1/8" to 3" Adjustable Clevis Pipe Hanger     | 50        |
| 70439    | 2-3/8" to 3" Adjustable Clevis Pipe Hanger     | 25        |

### Cushion Clamps



| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 70436    | 1-5/8" Steel Pipe Clamp w/Copper Plated OD Tubing | 10        |

### Sil-Fos Brazing Alloys - 1/8" X .05" X .20"- 1 Lb. Spool

Sil-Fos® alloys allow the joining of copper to copper without a flux and copper based alloys (brass and bronze) with a flux. Sil-Fos® is the workhorse filler metal used in the a/c and refrigeration industry. A key factor is the ductility of Sil-Fos® 15. It can be readily bent (without heating), thus permitting easier access to the backsides of joints.

The Sil-Fos® 15 is the best alloy for general copper-copper brazing in the Sil-Fos® family. The phosphorus in the Sil-Fos® product serves as the fluxing agent and no separate flux is necessary. For brass applications

however, flux is recommended. For use where close fit-ups cannot be maintained Sil-Fos® 15 works well to "bridge" gaps. Sil-Fos® 15 is the most ductile of the entire Sil-Fos® family to best withstand the stresses inherent in refrigeration applications. Slow Flow.

The Sil-Fos® 6M is recommended for use where close fit-ups cannot be maintained. It has the ability to fill gaps and form fillets without affecting joint strength. Slow Flow.

The Sil-Fos® 5 is designed primarily for those applications where close fit-ups cannot be maintained. It has the ability to fill gaps and form fillets without adversely affecting joint strength. Slow Flow.

Fos-Flo® 7 is an economical, very fluid medium temperature filler metal for use with copper, brass and bronze. Withstands moderate vibration. Fast Flow.



| MARS NO. | AWS SPEC    | COMPOSITION % |    |      | TEMPERATURE |         | MARS CASE PACK  | QTY. |    |
|----------|-------------|---------------|----|------|-------------|---------|-----------------|------|----|
|          |             | AG            | CU | P    | MELT        | FLOW    |                 |      |    |
| 78301    | Sil-Fos® 15 | BCuP-5        | 15 | 80   | 5           | 1190° F | 1475° F (1300°) | 1    | 25 |
| 78302    | Sil-Fos® 6M | BCuP-4        | 6  | 88   | 6           | 1190° F | 1460° F (1300°) | 1    | 25 |
| 78303    | Sil-Fos® 5  | BCuP-3        | 5  | 89   | 6           | 1125° F | 1495° F (1300°) | 1    | 25 |
| 78304    | Fos-Flo® 7  | BCuP-2        |    | 92.8 | 7.2         | 1310° F | 1460° F (1350°) | 1    | 25 |

## Accessories

### High Silver Brazing Alloys - 1/16" Dia. Coils



In refrigeration applications, much of the brazing involves joining copper tubing. However, there are numerous applications where other materials need to be joined (steel, brass, stainless, etc.). These high silver brazing alloys facilitate the joining of these metals. The one alloy in particular which is highly recommended for virtually all above mentioned base metals is Braze® 505. It's advantages over 56% and 45% include:



- It contains 2% Nickel which enhances wetting and strength and facilitates the joining of steels, stainless steel, carbide, etc.
- It doesn't contain tin. This prevents the formation of brittle intermetallics which can cause joint failures when stresses accumulate.
- The flow characteristics can be easily manipulated by either fast or slow heating techniques - this allows bridging of gaps.
- It's available in flux-coated rod for added convenience and ease-of-use: No separate fluxing operation.

Braze® 505 is the best general purpose filler metal available. It is the only alloy recommended for stainless steel (as it retards/eliminates interface corrosion) and carbide applications. Nickel content provides superior adhesion ("wetting") to base metal surfaces. Available, and especially convenient, as flux coated rod. Cadmium-free.

| MARS NO. | AWS SPEC   | COMPOSITION % |    |    |    |       | TEMPERATURE |         | MARS CASE PACK | MARS CASE QTY. |
|----------|--|---------------|----|----|----|-------|-------------|---------|----------------|----------------|
|          |  | AG            | CU | ZN | SN | OTHER | MELT        | FLOW    |                |                |
| 78308    | Braze® 505 1oz   | BAg-24        | 50 | 20 | 28 | 2 Ni  | 1220° F     | 1305° F | 1              | 24             |
| 78314    | Braze® 505 F/C, Flux coated rod, 18" stick x 1/4 lb tube | BAg-24        | 50 | 20 | 28 | 2 Ni  | 1220° F     | 1305° F | 1              | 15             |

### Brazing & Solder Fluxes



Where fluxing is required as part of the brazing operation, Handy Flux is recommended. Handy Flux is an all-purpose flux for use in brazing both ferrous and non-ferrous metals and alloys. Handy Flux conforms to: AWS Brazing Flux Type #3A, Federal Spec. O-F-499d (216185) Type B, Society of Automotive Engineers AMS-3410G. For soldering applications we offer two different flux products depending on the materials to be joined. They include Clean-n-Brite Flux for general purpose applications and TEC Liquid Flux where more aggressive fluxing is required for the more difficult-to-solder materials (e.g. steel, stainless steel, etc.).



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 78315    | Handy Flux - 7oz. jar w/brush cap | 1         | 24        |

### Silver Bearing Soft Solders - 1/8" X 1 Lb. Spool



Clean-n-Brite solders are a high strength general purpose solder. They offer a higher strength than Tin/Lead solders and are safe for potable water systems. These alloys are widely used in low stress, low pressure copper-copper and copper-steel applications (e.g. sight glasses where temperature must be kept low, etc.).



Clean-n-Brite is a Lead-free, silver-bearing high-strength solder used for applications requiring close joint clearances.

Clean-n-Brite 6 is a Lead-free, silver-bearing high-strength solder used for applications requiring large joint clearances. It is the easiest Silver-bearing soft solder to work with as temperature range permits "bridging" loose fit-ups if necessary.

Clean-n-Brite No Lead is a Silver-bearing solder with good strength used in potable water system applications requiring no lead.

| MARS NO. |                       | COMPOSITION % |      |      | TEMPERATURE |        | MARS CASE PACK | MARS CASE QTY. |
|----------|-----------------------|---------------|------|------|-------------|--------|----------------|----------------|
|          |                       | AG            | CU   | P    | MELT        | FLOW   |                |                |
| 78316    | Clean-n-Brite         | 3.6           | 96.4 |      | 431° F      | 431° F | 1              | 24             |
| 78317    | Clean-n-Brite 6       | 6             | 94   |      | 431° F      | 535° F | 1              | 24             |
| 78318    | Clean-n-Brite No Lead | 0.5           | 4    | 95.5 | 428° F      | 446° F | 1              | 24             |

**MARS Cross Reference Guide**

| MARS NO. | HANDY HARMON            | LUCAS MILHAUPT | J.W. HARRIS            | ENGELHARD      |
|----------|-------------------------|----------------|------------------------|----------------|
| 78302    | Sil-Fos 6M              | 95120          | 66000 (Dynaflow)       | Silvaloy 6     |
| 78303    | Sil-Fos 5               | 95060          | 41035 (Stay-Silv 5)    | Silvaloy 5     |
| 78304    | Fos-Flo 7               | 95000          | 21035 (Stay-Silv 0)    | Silvaloy 0     |
| 78308    | Braze 505 (1oz.)        | 98070          |                        |                |
| 78314    | Braze 505 F/C           | 98110          |                        |                |
| 78315    | Handy Flux              | 97030          | 40022 (Stay-Silv Flux) | Ultra Flux     |
| 78316    | Clean-n-Brite           | 96000          | 10001 (Stay-Brite)     | Silvabrite     |
| 78317    | Clean-n-Brite 6         | 96010          | 10009 (Stay-Brite 8)   | Silvabrite S   |
| 78318    | Clean-n-Brite (no lead) | 96150          | 15000 (Stay-Safe 50)*  | Silvabrite 100 |

\* While this material does not have a chemistry exactly equivalent, it is similar in composition to Clean-n-Brite no lead and typically used in similar applications.

**Specialty Tools**

The MARS telescoping pilot match holder with magnet collapses to fit in shirt pocket. Extends to 25". Attractively packaged and barcoded for merchandising



| MARS NO. | DESCRIPTION        | MARS PACK |
|----------|--------------------|-----------|
| 79130    | Pilot match holder | 1         |

**Inspection Mirrors**

MARS offers inspection mirrors for virtually any application! Telescoping types available, along with round glass, oval glass, rectangular glass, round metal and rectangular metal. Attractively carded and barcoded.



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 79350    | 1 1/4" round dia.glass mirror with 6" arm, adjustable angle             | 1         |
| 79351    | 2 1/4" round dia.glass mirror with 10 1/2" arm, adjustable angle        | 1         |
| 79352    | 1" x 2" oval glass mirror with 6" arm, adjustable angle                 | 1         |
| 79353    | 2 1/8" x 3-1/2" rectangle glass mirror with 11-12" extendible arm       | 1         |
| 79358    | 2 1/4" dia.round magnifying glass mirror with vinyl grip handle 14 1/2" | 1         |

**Filter Reach Tool 2**

The Filter Reach Tool 2 is the first tool to correctly pull filters from large tonnage Air Conditioning units and Air Handlers. A must have tool for all HVAC mechanics. The telescoping stainless steel shaft extends up to 8' to grab and remove the hardest to reach filters. The powder coated safety orange Hook pivots down so the tool doubles as a magnetic pickup to retrieve dropped parts and tools. The high strength magnet will save you time and money by retrieving dropped tools and hardware.



Made in the USA Domestic & Foreign Materials

- Hook pivots down for 5lb. magnetic pickup
- Fits in any bag
- 304 Stainless steel
- Anodized aluminum

| MARS NO. | DESCRIPTION                    | MARS PACK |
|----------|--------------------------------|-----------|
| 79348    | Filter Reach & Magnetic Tool 2 | 6         |



## Accessories

### Compressor Terminal Repair Kit

Zebra Instruments offers a compressor terminal repair kit. The terminals are high-temp soldered to the 10ga. fine strand, color coded wires for the best connection. These special terminals allow clearance for compressor post, and lay flat under the safety cover. Twist on wire nuts also provided.

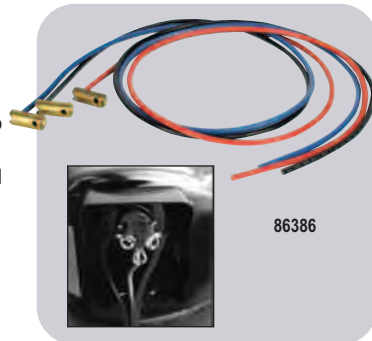


| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 08565    | Compressor Terminal Repair Kit 1 set of 3, terminals/wires/connectors | 1         | 24        |

### MARS Compressor Stake On Repair Kits



MARS Term-Lok compressor stake on repair kits are designed with the technician in mind! During servicing of the air conditioning system or refrigeration system, it is not unusual for a technician to remove the compressor cover to find the electrical connector or spade terminal broken or melted away from the compressor. In reconnecting the electrical power, the metal plate is often found to have deteriorated to such an extent that the conventional female connector will no longer attach to the spade type male connector. Technology for reattaching a metal plate to the metal pin without damaging the encapsulated block is not normally available thus requiring the technician to attempt various types of crimping arrangements to avoid replacing the compressor assembly (which normally does not work).



The MARS Term-Lok is a brass cylindrical tube with a diameter large enough to slip over the pins and has a stainless set screw to lock onto the terminal. Term-Lok comes in packages of one or three terminal locks with color coded 65 strands, 600 volt permanently attached wire, with wrench provided for easy application. Once installed the compressor cover may be placed back over the terminals without any obstructions.

It takes approximately 15 minutes to install on most systems, thus saving the technician time and the customer money, with virtually no call backs.

| MARS NO. | DESCRIPTION                                | MFG. NO. | CASE QTY. |
|----------|--|----------|-----------|
| 86386    | Brass stake on 12 gauge - 3 wire, 3' leads | TLC-3-12 | 1         |
| 86388    | Brass stake on 10 gauge - 3 wire, 3' leads | TLC-3-10 | 1         |
| 86390    | Brass stake on 8 gauge - 3 wire, 3' leads  | TLC-3-8  | 1         |

### Quick Disconnects - Insulated (105°C)

MARS solderless terminals are competitively priced, yet manufactured of superior quality materials to rigid quality control standards. Seams are brazed to ensure perfect crimps EVERY TIME!

MARS solderless terminals are UL listed and CSA certified. Terminals are all manufactured in the USA. They are provided in clear, reclosable plastic display boxes. These attractive boxes, with clear and easy-to-read labels provide for visual inspection of the product and encourage impulse buying.

All packages display a MARS bar code for your convenience. MARS solderless terminals are available in two different package sizes. Both sizes enhance contractor self service. The MARS mini-pak display boxes contain very reasonable quantities with all types and sizes sold at one price. Perfect for the handyman, do-it-yourselfer and your sales and counter people. The MARS mini-

pak is excellent for that small, unique HVACR odd job. The MARS super-pak contains much larger quantities of the more common solderless terminals at a super value. The contractor and tradesman will make great use of this size reclosable package. Ask your MARS sales representative about our solderless terminal merchandiser program!



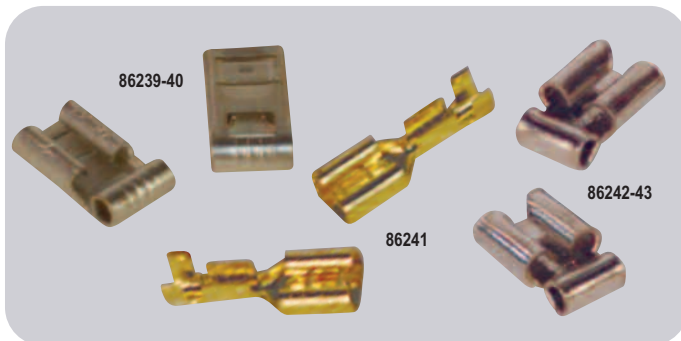
| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION                         | MARS NO. | SUPER PAK QTY. |
|----------|---------------|-------|-------------------------------------|----------|----------------|
| 86200    | 20            | 22-18 | .250 (1/4) female tab               | 86500    | 100            |
| 86201    | 20            | 16-14 | .187 (3/16) female tab              | 86501    | 100            |
| 86202    | 20            | 16-14 | .250 (1/4) female tab               | 86502    | 100            |
| 86203    | 15            | 12-10 | .250 (1/4) female tab               | 86503    | 50             |
| 86219    | 20            | 22-18 | .187 (3/16) female tab              |          |                |
| 86205    | 20            | 16-14 | .250 (1/4) male tab                 | 86505    | 100            |
| 86207    | 12            | 22-18 | .250 (1/4) female full insul.       | 86507    | 100            |
| 86208    | 12            | 16-14 | .250 (1/4) female full insul.       | 86508    | 100            |
| 86209    | 8             | 12-10 | .250 (1/4) female full insul.       | 86509    | 50             |
| 86220    | 7             | 16-14 | .250 (1/4) female flag fully insul. | 86520    | 25             |
| 86221    | 6 pair        |       | combo of #86208, 09                 |          |                |
| 86211    | 12            | 16-14 | .250 (1/4) male fully insul.        |          |                |
| 86216    | 12            | 22-18 | .250 (1/4) male/female p/back       |          |                |
| 86217    | 12            | 16-14 | .250 (1/4) male/female p/back       | 86517    | 100            |
| 86218    | 8             | 12-10 | .250 (1/4) male/female p/back       | 86518    | 50             |

**Quick Disconnects -  
Non-Insulated (149°C)**



| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION            | MARS NO. | SUPER PAK QTY. |
|----------|---------------|-------|------------------------|----------|----------------|
| 86226    | 25            | 16-14 | .250 (1/4) female tab  | 86526    | 100            |
| 86229    | 25            | 16-14 | .250 (1/4) female flag | 86529    | 100            |
| 86236    | 13            | 12-10 | .250 (1/4) female flag |          |                |

**Quick Disconnects -  
Hi Temp To 900°F**



| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION            |
|----------|---------------|-------|------------------------|
| 86239    | 15            | 16-14 | .250 (1/4) female tab  |
| 86240    | 12            | 12-10 | .250 (1/4) female tab  |
| 86242    | 15            | 16-14 | .250 (1/4) female flag |
| 86243    | 10            | 12-10 | .250 (1/4) female flag |

**Rings - Insulated (105°C)**



| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION         | MARS NO. | SUPER PAK QTY. |
|----------|---------------|-------|---------------------|----------|----------------|
| 86251    | 20            | 22-18 | #8 stud 11/64 i.d.  | 86551    | 100            |
| 86252    | 20            | 22-18 | #10 stud 13/64 i.d. |          |                |
| 86253    | 20            | 16-14 | #6 stud 9/64 i.d.   |          |                |
| 86254    | 20            | 16-14 | #8 stud 11/64 i.d.  | 86554    | 100            |
| 86255    | 20            | 16-14 | #10 stud 13/64 i.d. | 86555    | 100            |
| 86258    | 12            | 12-10 | #8 stud 11/64 i.d.  |          |                |
| 86259    | 12            | 12-10 | #10 stud 13/64 i.d. | 86559    | 50             |
| 86260    | 12            | 12-10 | 1/4 stud 17/64 i.d. |          |                |
| 86262    | 5             | 8     | 1/4 stud 17/64 i.d. | 86562    | 25             |

**Rings - Non-Insulated  
(149°C)**



| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION         | MARS NO. | SUPER PAK QTY. |
|----------|---------------|-------|---------------------|----------|----------------|
| 86275    | 15            | 12-10 | #10 stud 13/64 i.d. |          |                |

**Rings - High Temp  
To 900°F**



| MARS NO. | MINI-PAK QTY. | SIZE  | DESCRIPTION         |
|----------|---------------|-------|---------------------|
| 86283    | 20            | 16-14 | #10 stud 13/64 i.d. |
| 86285    | 15            | 12-10 | #10 stud 13/64 i.d. |

## Accessories

### Spade Flanged - Insulated (105°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION         |
|----------|--------------|-------|---------------------|
| 86294    | 15           | 16-14 | #10 stud 13/64 i.d. |
| 86295    | 12           | 12-10 | #10 stud 13/64 i.d. |

### Spade - Insulated (105°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION         | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|---------------------|----------|----------------|
| 86300    | 20           | 22-18 | #8 stud 11/64 i.d.  | 86600    | 100            |
| 86303    | 20           | 16-14 | #8 stud 11/64 i.d.  | 86603    | 100            |
| 86304    | 20           | 16-14 | #6 stud 9/64 i.d.   |          |                |
| 86301    | 15           | 16-14 | #10 stud 13/64 i.d. | 86601    | 100            |
| 86302    | 12           | 12-10 | #10 stud 13/64 i.d. | 86602    | 50             |

### Spade - Non- Insulated (149°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION         |
|----------|--------------|-------|---------------------|
| 86315    | 25           | 22-18 | #10 stud 13/64 i.d. |
| 86317    | 15           | 12-10 | #10 stud 13/64 i.d. |

### Spade Hi Temp To 900°F



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION         | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|---------------------|----------|----------------|
| 86323    | 20           | 16-14 | #10 stud 13/64 i.d. | 86623    | 100            |

### Butt Connectors And Plugs And Receptacles



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION                             | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|---|----------|----------------|
| 86329    | 20           | 22-18 | Insulated                               | 86629    | 100            |
| 86330    | 20           | 16-14 | Insulated                               | 86630    | 100            |
| 86331    | 15           | 12-10 | Insulated                               | 86631    | 50             |
|          |              | 8     | Non-insulated                           | 86635    | 25             |
|          |              | 16-14 | Plug insulated Recept - fully insulated | 86638    | 50 pairs       |

### Closed End Connectors (105°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION          | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|----------------------|----------|----------------|
| 86341    | 25           | 22-18 | Insulated crimp type |          |                |
| 86342    | 20           | 16-14 | Insulated crimp type | 86642    | 100            |
| 86343    | 15           | 12-10 | Insulated crimp type | 86643    | 50             |

### Tab Adapters - Non Insulated (149°C)



| MARS NO. | MINI-PAK QTY | SIZE | DESCRIPTION  | MARS NO. | SUPER PAK QTY. |
|----------|--------------|------|--|----------|----------------|
| 86350    | 20           | -    | .250 (1/4) 2 male x 1 female                                     | 86650    | 100            |
| 86351    | 15           | -    | .250 (1/4) 2 male x 1 female<br>8 stud, male tab, straight, .250 | 86651    | 50             |
| 86353    | 12           | -    | .250 (1/4) 2 male x 1 female                                     |          |                |

### Compressor Terminals - Non Insulated (149°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION                        | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|------------------------------------|----------|----------------|
| 86358    | 13           | 12-10 | .250 (1/4) tab notched for bending | 86658    | 50             |
| 86359    | 8            | 12-8  | .250 (1/4) tab                     | 86659    | 50             |

### Spade Spring - Insulated (105°C)



| MARS NO. | MINI-PAK QTY | SIZE  | DESCRIPTION | MARS NO. | SUPER PAK QTY. |
|----------|--------------|-------|-------------|----------|----------------|
| 86366    | 20           | 16-14 | #8 stud     | 86666    | 100            |
| 86367    | 20           | 16-14 | #6 stud     |          |                |

### Compressor Terminal W/Wire Kit



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 86379    | Includes 3 color coded #10AWG type AWM extra flexible lead wires in 10" lengths. One end with .250" x .032" female tab 12-10 quick disconnect. Other end stripped 5/16". Supplied with three 12-10 shrink tube butt connectors. | 1         |

### Push-On Terminal Kit

The MARS push on terminal kit includes; four push on terminal adapters and four screws. Converts screw type terminals to push on. Use with the MARS 18000 series contactors.



| MARS NO. | DESCRIPTION                                 | MARS PACK |
|----------|---|-----------|
| 93103    | (4) push on terminal adapters<br>(4) screws | 1         |

### MARS Pilot Burner Gas Lines

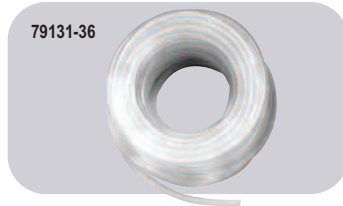
MARS pilot burner gas line is 6.5 ft of clean aluminum tubing with compression nuts and sleeves. Coiled and individually polybagged.



| MARS NO. | DESCRIPTION                    | MARS PACK |
|----------|--------------------------------|-----------|
| 79126    | 1/4" OD x 6.5' aluminum tubing | 1         |

## Accessories

### MARS Clear Vinyl Tubing, - Boxed



| MARS NO. | DESCRIPTION                              | CASE QTY. |
|----------|--|-----------|
| 79131    | 1/4" ID clear tubing 32 PSI - .375 O.D.  | 100 feet  |
| 79132    | 3/8" ID clear tubing 27 PSI - .500 O.D.  | 100 feet  |
| 79133    | 1/2" ID clear tubing 24 PSI - .625 O.D.  | 100 feet  |
| 79134    | 5/8" ID clear tubing 21 PSI - .750 O.D.  | 100 feet  |
| 79135    | 3/4" ID clear tubing 19 PSI - .890 O.D.  | 100 feet  |
| 79136    | 7/8" ID clear tubing 16 PSI - 1.015 O.D. | 50 feet   |

### MARS Heavy Duty PVC Braided Line Tubing

- 41°F (5°C) to 140°F (60°C)



| MARS NO. | DESCRIPTION       | WORKING PRESSURE | BURST PRESSURE | CASE QTY. |
|----------|-------------------|------------------|----------------|-----------|
| 79045    | 1/4" ID - .407 OD | 120 PSI          | 360 PSI        | 50 Feet   |
| 79046    | 3/8" ID - .532 OD | 120 PSI          | 360 PSI        | 50 Feet   |
| 79047    | 1/2" ID - .673 OD | 90 PSI           | 270 PSI        | 50 Feet   |
| 79048    | 5/8" ID - .822 OD | 90 PSI           | 270 PSI        | 50 Feet   |
| 79049    | 3/4" ID - .986 OD | 90 PSI           | 270 PSI        | 50 Feet   |

### MARS Saddle Valve

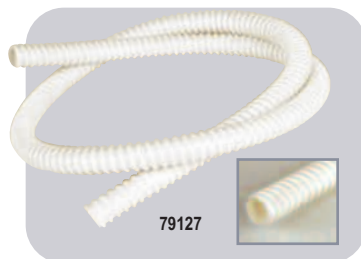
- Self-tapping
- Provides low volume water supply for a variety of appliances using 1/4" inlet tubes, with out the necessity of soldering, cutting pipe or drilling



| MARS NO. | DESCRIPTION       | CASE QTY. |
|----------|-------------------|-----------|
| 79139    | MARS saddle valve | 1         |

### MARS Corrugated Condensate Drain Line

- Ideal for Ductless Mini-Split
- 5/8" Diameter, 20 Ft. Long
- Flexible Ivory
- Corrugated non-kink



| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 79127    | 5/8" Diameter x 20 ft long, Condensate Drain Line | 1         |

### MARS Condensate Overflow Switches

The MARS Condensate Overflow Switches are designed to prevent condensate overflow and damage due to clogged drain lines. Overflow switches can be installed in primary or auxiliary condensate drain lines and pans. The overflow switch will interrupt the thermostat circuit and shut down the AC unit preventing an overflow of condensate. The overflow switch prevents condensate overflow damage to walls, floors and ceilings. All switches comply with all applicable NEC Codes and conform to UL 508 requirements.

#### MARS 21792 Designed for Auxiliary Drain Pans

- Switch is Height Adjustable
- Easy Clip - Stainless Steel Bracket
- Switch Components are Sealed for Reliability
- 6' 18 AWG Lead Wires for Ease of Installation
- Replaces SS3

#### MARS 21793 T - Fitting Designed for Primary or Auxiliary Drain Lines

- Kit Includes Standard Tee and Elbow
- Also Includes 3/4" Adapter and Plug Fitting
- Float Cap is Easily Removed for Service / Clean-out
- 6' 18 AWG Lead Wires for Ease of Installation
- Sealed Switch for Reliability
- O-ring on float switch port provides leak-proof seal
- Replaces SS1

#### MARS 21794 L - Fitting Designed for Primary Pan - Auxiliary Outlet

- Kit Includes Elbow or L Fitting
- Float Cap is Easily Removed for Service / Clean-out
- 6' 18 AWG Lead Wires for Ease of Installation
- Sealed Switch for Reliability
- O-ring on float switch port provides leak-proof seal
- Replaces SS2

- \* All overflow switches are UL rated;
- 1.5A 24VAC (switching current)
- 2.5A 24VAC (carry current)

### Cross Reference

| MARS NO. | Rectorseal | Diversitech |
|----------|------------|-------------|
| 21792    | SS3        | CS-3        |
| 21793    | SS1        | CS-1        |
| 21794    | SS2        | CS-2        |

| MARS NO. | DESCRIPTION                     |
|----------|---------------------------------|
| 21792    | Bracket Flood Prevention Switch |
| 21793    | Tee Flood Prevention Switch     |
| 21794    | Elbow Flood Prevention Switch   |





### A/C Condensate Drip Pan Shut Off Control

The ACDP-C, A/C Condensate Leak Shutoff Control is a simple, reliable, device that provides years of trouble-free operation and water leak protection for HVAC systems while saving you hours of leak damage maintenance time and cost.

When a water leak is detected the controller interrupts the Air Conditioner thermostat control signal and shuts off the A/C unit, stopping further condensation, property leak damage, and potential for mold. A red LED illuminates upon leak detection. 24 VAC air conditioner control circuit.

You can easily mount the sensor externally as a leak monitor or in the pan as a condensate pan level monitor. The control module can be stand alone or wall mounted.

**Features:**

- Easy to install
- More reliable than a float switch
- Can be used as a level or external leak control
- Wall or stand-alone mount

**Specifications:**

- 110 dB audible alarm with integrated A/C cut-off switch
- 30" x 1" flat flexible patented ribbon sensor
- 24 VAC power from AC control board
- Red LED when activated
- 24" sensor leads, 36" power & thermostat leads



21910

| MARS NO. | DESCRIPTION                         | PK QTY | CASE QTY |
|----------|-------------------------------------|--------|----------|
| 21910    | A/C Condensate Leak Shutoff Control | 1      | 6        |

### Condensate & Hot Water Heater Leak Alarm

The ACDP-A, A/C Condensate and Hot Water Heater Leak Alarm is a simple, reliable, device that provides you years of trouble-free operation and protection for dual or single systems while saving you hours of water leak damage maintenance time and cost.

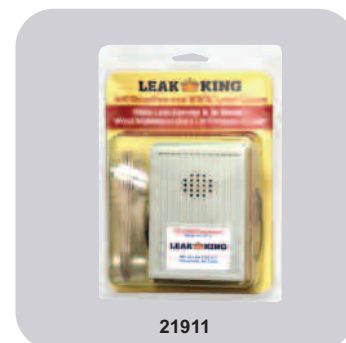
No floats to corrode or hang up. Utilizes two of our patented 30-inch flat flexible ribbon sensors that offer superior wide area water leak coverage. One sensor mounts at the A/C unit and the second one mounts at the HWH drain. When it senses a water leak it activates the 110 decibel alarm. The 24" and 40" sensor leads allow for easy location. Sensors can be mounted externally as a leak monitor or in the drip pan as a level monitor. The housing can be stand alone or wall mounted

**Features:**

- Easy to install
- Ideal for mechanical rooms requiring more than a single point of protection
- Sensor leads of 24 and 40 inches for easy mounting
- Affordable, Saves expense, maintenance time, frustration
- Wall or stand-alone mount

**Specifications:**

- 110 dB audible alarm
- (2) 30" x 1" flat flexible ribbon sensors
- Can be uses as dual or single sensor systems for A-Coil and/or HWH
- Very loud 110 dB alarm,
- 9V dc battery power



21911

| MARS NO. | DESCRIPTION                                | PK QTY | CASE QTY |
|----------|--|--------|----------|
| 21911    | Condensate and Hot Water Heater Leak Alarm | 1      | 6        |

### Wide Area Water Leak Alarm

The WALA, Wide Area Leak Alarm provides a proven warning system for water leaks that can cause you water damage in out of sight or remote places in your home. Most leak detectors are 'point sensors', only detecting a leak if it puddles right where the alarm housing is located and with enough depth to come into contact with both conductors.

The innovative design of Leak King's Wide Area Leak Alarm allows the 30" long flat, flexible, ribbon sensor to detect leaks across a long 30" ribbon. The 110 dB alarm alerts you before expensive property damage occurs. It is particularly useful for water leaks under kitchen sinks, bathroom vanities, washing machines, water heaters, dishwashers, HVAC drains, and sumps and it provides simple, reliable, inexpensive, prevention against potential water damage and offers great peace of mind.

**Features:**

- Provides large area coverage
- Easy installation
- Does not interfere with under cabinet storage
- Works anywhere susceptible to leaks
- Smart, reliable, inexpensive leak protection

**Specifications:**

- 30" x 1" patented flat flexible ribbon sensor
- 110 dB alarm
- 9 vdc battery (not included) operated
- 24" sensor lead wire for easy placement



21912

| MARS NO. | DESCRIPTION                | PK QTY | CASE QTY |
|----------|----------------------------|--------|----------|
| 21912    | Wide Area Water Leak Alarm | 1      | 6        |

## Accessories

### Slic-Tite® Paste - Thread Sealants

**LA-CO**

- Use on metal, PVC, CPVC, and ABS plastic pipe threads
- For sealing water, air, steam, natural gas, LP gas, refrigerants, ammonia, gasoline, and oil
- Do not use on Oxygen service, use thread seal tape or Oxytite® Paste
- Washes off hands and clothing easily
- Non-toxic, non-drying
- Sealing temperature range: -50° F to 500° F (-46° C to 260° C)
- Working pressures: 3,000 PSI (204 BAR) for Gas, 10,000 PSI (680 BAR) for liquids
- USDA approved for use in federally inspected meat and poultry plants.
- Made in USA



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 95401    | 1/4 pt. w/ brushcap | 24        | 24        |
| 95402    | 1/2 pt. w/ brushcap | 24        | 24        |

### Low Density Thread Seal Tape

**LA-CO**

- Thickness 3 mils.
- Standard grade, low density
- Provides a highly resistant seal on pipe threads for all types of service
- Suitable for use with solvents, chemicals, oxygen, and on food lines
- Non-toxic
- Permits easy disassembly, even after years of service
- Meets Mil. Spec. T-27730A
- Sealing temperature range: -450° F to 550° F (-268° C to 288° C)
- Working pressures: 2,000 PSI (136 BAR)
- Sold in case quantities only.



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95409    | 1/2" x 260" | 144       | 144       |
| 95410    | 1/2" x 520" | 144       | 144       |
| 95412    | 3/4" x 520" | 144       | 144       |

### High Density Slic-Tite® Thread Seal Tape

**LA-CO**

- Thickness 3 mils.
- High density
- Provides a highly resistant seal on pipe threads for all types of service
- Made in USA
- Suitable for use with solvents, chemicals, oxygen, and on food lines
- Non-toxic
- Permits easy disassembly, even after many years
- Meets Mil. Spec. T-27730A
- Sealing temperature range: -450° F to 550° F, (-268° C to 288° C)
- Working pressures: 2,000 PSI (136 BAR)



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95527    | 1/2" x 300" | 12        | 12        |
| 95528    | 1/2" x 600" | 12        | 12        |
| 95530    | 3/4" x 300" | 12        | 12        |

### T.O.T.® Pipe Joint Compound

**LA-CO**

- No-drip, siliconized for fast application on metal threads
- For water, steam, air, and natural gas service
- Lead free, non-toxic
- Certified by NSF to meet ANSI/NSF Std. 61 for use on potable water
- Do not use on Oxygen service, use thread seal tape or Oxytite®
- Sealing temperature: up to 350° F (177° C)
- Working pressures: to 500 PSI (34 BAR) for liquids to 350 PSI (24 BAR) for gases
- Made in USA



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 95415    | 1/2 pt. w/ brushcap | 48        | 48        |

### Pipetite® Paste - Pipe Thread Compound



- Soft set pipe thread compound
- For refrigerants, butane, gasoline, oil, as well as water, steam, air, natural and lp gas
- Use on metal threads
- Classified by Underwriters Laboratories in USA and Canada
- Do not use on oxygen service, use thread seal tape or Oxytite®
- Sealing temperature: up to 400° F (204° C)
- Pressures: to 5,000 PSI (340 BAR) for liquids to 2,600 PSI (177 BAR) for gases



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 95419    | 1/4 pt. w/brush cap | 24        | 24        |
| 95420    | 1/2 pt. w/brush cap | 24        | 24        |

### Anaerobic Pipe Thread Sealant



- Anaerobic adhesive provides locking power
- Contains no solvents, won't shrink and weaken seal
- Seals and locks in the absence of air
- Ideal for threads in heavy vibration areas such as compressors and reciprocating equipment
- Classified by Underwriters Laboratories in USA and Canada
- Do not use on Oxygen service, use thread seal tape or Oxytite®
- Sealing temperature range: - 65° F to 400° F (-54° C to 204° C)
- Working pressures: to 10,000 PSI (680 BAR) for liquids to 3,000 PSI (204 BAR) for gases
- Made in USA

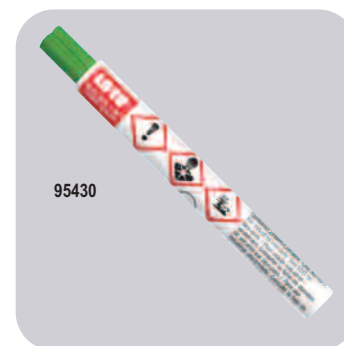


| MARS NO. | DESCRIPTION      | MARS PACK | CASE QTY. |
|----------|------------------|-----------|-----------|
| 95421    | 50 ml (1.69 oz.) | 12        | 12        |

### Heat-Seal Stik®



- Fast repairs completed in 90 seconds
- One part epoxy, no mixing or measuring needed
- Stick melts, seals and cures in one operation
- Use on aluminum, copper and other metals, glass and ceramics
- Ideal for use on high and low side of refrigeration systems
- Sealing temperature : up to 350° F (177° C )
- Pressures: to 600 PSI (41 Bar)
- Made in USA



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 95430    | 3/8 oz. stick, carded | 12        | 12        |

### Bloc-it® Heat Absorbing Paste



- Effectively absorbs surface heat
- Protects adjoining surfaces that may be damaged by excessive heat
- Safe to use: non-toxic, no asbestos, harmless to skin, and odorless
- Easy to use: apply directly to surface from tube
- Easy to clean: wipe off with cloth or wash with water. Leaves no stains
- Typical uses: protects rubber and plastic components in ball, dielectric, and solenoid valves during soldering; protects painted or finished surfaces from adjacent soldering, brazing or welding; prevents distortion to light gauge metals during brazing or welding
- Made in USA



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95455    | 10 oz. tube | 24        | 24        |

## Accessories

### Cool Gel - Heat Dissipating Spray

**LA-CO.**

- Helps prevent heat damage to components and surrounding materials during soldering, brazing, and welding
- Unique gelled formula sticks to surfaces without dripping or running off
- Clear, non-staining gel leaves no residue, eliminating cleanup
- Safe, non-toxic, harmless to skin and odorless
- Saves time - by eliminating the costly disassembly of valves and other components before soldering, brazing or welding
- Protects the seals and seats in ball, dielectric, and solenoid valves
- Protects painted and finished surfaces from discoloration due to adjacent torch operations
- Protects soldered joints from loosening when soldering adjacent joints
- Made in USA



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95536    | 1 quart     | 12        | 12        |

### Regular Flux Paste

- Super detergent action cleans as it solders
- Non-acid, non-toxic, lead free
- Contains no zinc chloride
- Use with all common soft solders including: tin-silver, 96/4, 94/6, 95/5, 50/50, 40/60 and 60/40
- For use on copper, brass, galvanized iron, lead, zinc, tin, silver, nickel, mild steel, terne plate, and malleable iron
- Meets Mil. Spec. Mil-F4995 Type II, Meets ASTM B813
- Water soluble for faster flushing from pipe lines
- Made in USA



| MARS NO. | DESCRIPTION      | MARS PACK | CASE QTY. |
|----------|------------------|-----------|-----------|
| 95441    | 2 oz             | 48        | 48        |
| 95443    | 4 oz. w/brushcap | 48        | 48        |
| 95444    | 1 lb             | 24        | 24        |

### Visu-Glow® Leak Detector

**LA-CO.**

- High visibility, fluorescent color shows brightly, even in dimly lit places
- High viscosity, stays on vertical surfaces
- Makes it easy to find leaks
- Temperature range: 15° F to 200° F (-9° C to 93° C)
- Safe for oxygen
- Non-corrosive, non-toxic
- Made in USA



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95462    | 8 oz.       | 24        | 24        |

### Residential Self Regulating Pipe Tracing Cable



- Cut to length (3 watts/ft @ 120VAC) up to 75 ft.
- Braided metal jacket for dry location application
- Connection kit provides end seal and plugs into standard 120 VAC outlet
- Automatically varies heat output with changes in surrounding temperature
- For use on plastic or metal
- Recommended for use on PVC condensate lines
- A connection kit (70704) is required on each application
- 70705 is optional for each installation



| MARS NO. | DESCRIPTION                     | MARS PACK | CASE QTY. |
|----------|---------------------------------|-----------|-----------|
| 70701    | 100' Reel                       | 1         | 1         |
| 70704    | Connection Kit                  | 1         | 10        |
| 70705    | Pre-set Thermostat (38 degrees) | 1         | 10        |

### Commercial Pipe Freeze Protection Cable



- No thermostat, no plug
- 2 foot orange 14/3 cold lead
- Jacketed for wet or dry applications
- 120 VAC unless noted
- For use on metal pipes only



| MARS NO. | DESCRIPTION                     | MARS PACK | CASE QTY. |
|----------|---------------------------------|-----------|-----------|
| 70720    | 3.28' length, 23 watts          | 1         | 20        |
| 70721    | 6.56' length, 46 watts          | 1         | 20        |
| 70722    | 6.56' length, 46 watts (240V)   | 1         | 20        |
| 70723    | 9.84' length, 69 watts          | 1         | 20        |
| 70724    | 13.12' length, 92 watts         | 1         | 20        |
| 70725    | 13.12' length, 92 watts (240V)  | 1         | 20        |
| 70726    | 16.41' length, 115 watts        | 1         | 20        |
| 70727    | 19.69' length, 138 watts        | 1         | 20        |
| 70728    | 19.69' length, 138 watts (240V) | 1         | 20        |
| 70729    | 22.97' length, 161 watts        | 1         | 10        |
| 70730    | 26.25' length, 184 watts (240V) | 1         | 10        |
| 70731    | 29.53' length, 207 watts        | 1         | 10        |
| 70732    | 32.81' length, 230 watts (240V) | 1         | 10        |

### Residential Pipe Freeze Protection Cable



- For use on Plastic or Metal Water-supply pipes at least 3 feet in length
- Do NOT use on condensate lines
- The circuit supplying cable must have a ground fault circuit interrupter (GFCI)
- Jacketed for wet or dry applications
- Preassembled ready to install
- Plugs into standard 120 VAC outlet

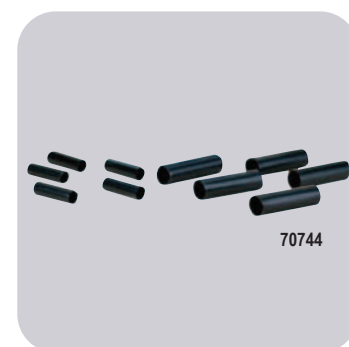


| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 70710    | 3' length, 21 watts   | 1         | 10        |
| 70711    | 6' length, 42 watts   | 1         | 10        |
| 70712    | 9' length, 63 watts   | 1         | 10        |
| 70713    | 12' length, 84 watts  | 1         | 10        |
| 70714    | 15' length, 105 watts | 1         | 10        |
| 70715    | 18' length, 126 watts | 1         | 5         |
| 70716    | 24' length, 168 watts | 1         | 5         |
| 70717    | 30' length, 210 watts | 1         | 5         |
| 70718    | 40' length, 280 watts | 1         | 5         |

### Commercial Sr Trace Self Regulating Pipe Tracing Cable



- Cut to length, up to 458' (120VAC)
- Wet (J jacket) or dry (copper braid) applications
- Automatically varies heat output with changes in surrounding temperature



| MARS NO. | DESCRIPTION                               | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 70744    | Heat shrink end seal kit                  | 1         | 5         |
| 70745    | Heat shrink power/end connection kit      | 1         | 1         |
| 70746    | Heat shrink splice and "T" connection kit | 1         | 2         |



## Accessories

### Ideal 52 Series - 1/2" Clamps

Ideal manufactures a broad line of standard worm drive and specialty hose clamps designed to satisfy a wide range of applications. The completely mechanical design locks the one piece housing directly to the band using the full strength of the material to provide maximum anti-shear protection. No spot welds to rupture under stress or corrosion, and a one piece housing can not come apart under high loading.

Ideal's 52 series clamps are comprised of a 1/2" stainless steel band with carbon steel housing and a 5/16" plated hex head screw.



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 79310    | Size 06 3/8"-7/8" clamp dia.      | 10        | 100       |
| 79311    | Size 08 7/16"-1" clamp dia.       | 10        | 100       |
| 79312    | Size 10 1/2"-1 1/8" clamp dia.    | 10        | 100       |
| 79313    | Size 12 1/2"-1 1/4" clamp dia.    | 10        | 100       |
| 79314    | Size 16 3/4"-1 1/2" clamp dia.    | 10        | 100       |
| 79315    | Size 20 3/4"-1 3/4" clamp dia.    | 10        | 100       |
| 79317    | Size 24 1"-2" clamp dia.          | 10        | 100       |
| 79318    | Size 28 1 5/16"-2 1/4" clamp dia. | 10        | 100       |
| 79316    | Size 32 1 9/16"-2 1/2" clamp dia. | 10        | 100       |
| 79319    | Size 36 7/8"-2 3/4" clamp dia.    | 10        | 100       |
| 79345    | Size 40 1-1/8"-3" clamp dia.      | 10        | 100       |
| 79309    | Size 72 3-1/8"-5" clamp dia.      | 10        | 100       |

### Ideal 67-5 Series 1/2" Clamps

Ideal's 67-5 series clamps are all stainless steel. They are comprised of a 1/2" 300 series stainless steel band, housing and a 5/16 hex head screw.



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 79320    | Size 06 3/8"-7/8" clamp dia.      | 10        | 100       |
| 79321    | Size 08 7/16"-1" clamp dia.       | 10        | 100       |
| 79322    | Size 10 1/2"-1 1/8" clamp dia.    | 10        | 100       |
| 79323    | Size 12 1/2"-1 1/4" clamp dia.    | 10        | 100       |
| 79324    | Size 16 3/4"-1 1/2" clamp dia.    | 10        | 100       |
| 79325    | Size 20 3/4"-1 3/4" clamp dia.    | 10        | 100       |
| 79328    | Size 24 1"-2" clamp dia.          | 10        | 100       |
| 79307    | Size 28 1 5/16"-2 1/4" clamp dia. | 10        | 100       |
| 79326    | Size 32 1 9/16"-2 1/2" clamp dia. | 10        | 100       |
| 79327    | Size 36 7/8"-2 3/4" clamp dia.    | 10        | 100       |
| 79308    | Size 72 3"-5" clamp dia.          | 10        | 100       |
| 79304    | Size 128 6 1/2"-8 1/2" clamp dia. | 50        | 100       |

### Ideal 50 All Stainless 1/2" Clamp For Ducts



| MARS NO. | DESCRIPTION                 | MARS PACK | CASE QTY. |
|----------|-----------------------------|-----------|-----------|
| 79329    | Size 248 14"-16" clamp dia. | 50        | 100       |

### Ideal 52 Series Micro Gear Clamps



Ideal's 52 series micro-gear clamps consist of a 5/16" stainless steel band with carbon steel housing and 1/4" plate hex-head screw.



| MARS NO. | DESCRIPTION                      | MARS PACK | CASE QTY. |
|----------|----------------------------------|-----------|-----------|
| 79330    | Size 04 7/32"-5/8" clamp dia.    | 10        | 100       |
| 79331    | Size 06 5/16"-7/8" clamp dia.    | 10        | 100       |
| 79332*   | Size 12 9/16"-1 1/4" clamp dia.  | 10        | 100       |
| 79333*   | Size 16 11/16"-1 1/2" clamp dia. | 10        | 100       |
| 79334*   | Size 20 7/8"-1 3/4" clamp dia.   | 10        | 100       |

\* size 12 and larger have a stainless steel housing

### Ideal 62M Series Micro Gear Clamps



Ideal's 62M series micro gear clamps are all stainless. They are comprised of a 5/16" stainless steel band, housing and 1/4" hex-head screw.

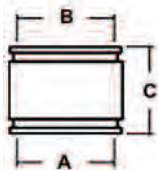


| MARS NO. | DESCRIPTION                      | MARS PACK | CASE QTY. |
|----------|----------------------------------|-----------|-----------|
| 79340    | Size 04 7/32"-5/8" clamp dia.    | 10        | 100       |
| 79341    | Size 06 5/16"-7/8" clamp dia.    | 10        | 100       |
| 79342    | Size 12 9/16"-1 1/4" clamp dia.  | 10        | 100       |
| 79343    | Size 16 11/16"-1 1/2" clamp dia. | 10        | 100       |
| 79344    | Size 20 7/8"-1 3/4" clamp dia.   | 10        | 100       |

### Flexible Couplings

Flexible rubber couplings are used to connect cast iron, plastic, steel or lead pipe to cast iron, plastic, steel or lead pipe.

- All models are listed with I.A.P.M.O. (U.P.C.) 5/16" driver required to tighten bolts.
- All models are listed to the National Plumbing Code of Canada and relevant Canadian Standard(s) and bear the cUPC mark of conformity®
- Non constant temperature rating is 140°F.
- Stainless Steel Clamps and 5/16" hex head bolts are made from Type 300 Stainless Steel.



**Note:** Tighten bolts to 60 inch lbs. min. / max torque. Tested to maintain 4.3 p.s.i. maximum line pressure (10' head pressure) Tested and Certified to ASTM Standard 1173-2010.

| MARS NO. | DESCRIPTION                                   | A    |      | B    |      | C      | MARS PACK | CASE QTY. |
|----------|---|------|------|------|------|--------|-----------|-----------|
|          |   | MIN  | MAX  | MIN  | MAX  | HEIGHT |           |           |
| 85093    | 2" CI/PL/ST/LD x 2" CI/PL/ST/LD Flex coupling | 2.20 | 2.50 | 2.20 | 2.50 | 3.50   | 1         | 100       |
| 85095    | 3" CI/PL/ST/LD x 3" CI/PL/ST/LD Flex coupling | 2.60 | 3.18 | 2.20 | 3.18 | 2.75   | 1         | 100       |
| 85096    | 3" CI/PL/ST/LD x 2" CI/PL/ST/LD Flex coupling | 2.60 | 3.18 | 2.20 | 2.50 | 2.75   | 1         | 100       |

### Flexible Stainless Steel Gas Range Connectors 1/2" I.D. (5/8" O.D.) With Fittings

Brass Craft coated stainless steel gas connectors are known for superior quality and reliable performance. The ProCoat polymer based yellow coating resists corrosion from sea, salt, UV rays and the harsh chemical vapors from common household cleaning, plumbing repair and building products such as: ammonia, chlorine, solder flux, muratic acid, and bleach. These ProCoat gas connectors provide great strength and flexibility making installation easier.



| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 73402    | 18"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73403    | 24"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73404    | 36"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73405    | 48"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73418    | 36"L-1/2" FIP x 1/2" MIP | 1         | 25        |
| 73419    | 48"L-1/2" FIP x 1/2" MIP | 1         | 25        |
| 73431    | 24"L-1/2" FIP x 1/2" MIP | 1         | 25        |
| 73432    | 36"L-1/2" FIP x 1/2" MIP | 1         | 25        |
| 73433    | 48"L-1/2" FIP x 1/2" MIP | 1         | 25        |

### Flexible Stainless Steel Gas Dryer Connectors 3/8" I.D. (1/2" O.D.) With Fittings



| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 73439    | 36"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73440    | 48"L-1/2" MIP x 1/2" MIP | 1         | 25        |
| 73445    | 24"L-1/2" FIP x 1/2" MIP | 1         | 25        |
| 73446    | 36"L-1/2" FIP x 1/2" MIP | 1         | 25        |

### Steel Gas Fittings For 7/8" O.D. Connectors

With MARS male gas fittings, wholesalers need fewer items on the shelf and contractors need fewer parts on the job. Tapped gas fittings hook up gas connectors to male or female iron pipe and female in-line gas valves. One fitting does many jobs.



| MARS NO. | DESCRIPTION                                   | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 73480    | straight-5/8" OD x 1/2" MIP (tapped 3/8" FIP) | 25        | 25        |
| 73481    | straight-5/8" OD x 3/4" MIP (tapped 1/2" FIP) | 25        | 25        |

### MARS Gas Ball Valves

MARS gas ball valves are for use with natural, manufactured and mixed gases, as well as liquified petroleum and LP gas/air mixtures. Corrosion fighting chrome plated brass ball and aluminum, quarter turn handle. MARS gas ball valves feature threads that conform to all appropriate standards.



| MARS NO. | DESCRIPTION                  | MARS PACK | CASE QTY. |
|----------|------------------------------|-----------|-----------|
| 73494    | straight-5/8" OD x 3/4" FIP  | 10        | 10        |
| 73495    | straight-1/2" FIP x 1/2" FIP | 10        | 10        |
| 73496    | straight-3/4" FIP x 3/4" FIP | 10        | 10        |

## Accessories

### Oatey All Purpose Cement - ABS, PVC, CPVC

Oatey all purpose cement is a heavy bodied, clear cement recommended for use on ABS, PVC or CPVC pipe and fittings. For all pipe schedules, potable water pressure pipe, gas, conduit, drain waste and vent pipe. Flows freely and provides a thick layer of cement on the pipe. Helps to fill gaps in larger diameter pipe and loose fitting joints. Apply at temperature 40°F to 100°F.

Exceeds performance requirements of ASTM D-2564, D-2864, D-2235, F-493. Special applicator brush cap for fast and easy installation.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73161    | 4 oz. clear  | 24        |
| 73162    | 8 oz. clear  | 24        |
| 73163    | 16 oz. clear | 24        |

### Oatey Heavy Duty Cement - PVC

Oatey heavy duty cement is recommended for use on pvc pipe and fittings up to 12" in diameter for schedule 40 and schedule 80 potable water pressure pipe, gas, conduit, drain waste and vent pipe. This heavy bodied cement flows freely and provides a thick layer of cement on the pipe. A special brush cap applicator is provided. Apply at temperatures 40°F to 100°F. This clear cement helps to fill gaps in larger diameter pipe and loose fitting joints. Exceeds ASTM D-2564.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73165    | 4 oz. clear  | 24        |
| 73166    | 8 oz. clear  | 24        |
| 73167    | 16 oz. clear | 24        |

### Oatey Regular Cement - PVC

Oatey regular cement is recommended for use on PVC pipe and fittings up to 4" for DWV or schedule 40 and up to 2" for schedule 80 potable water pressure pipe, gas, conduit, drain waste and vent pipe. It flows freely and sets up quickly. Apply at temperatures 40°F to 100°F. Exceeds ASTM D-2564. Special brush top applicator.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73174    | 4 oz. clear  | 24        |
| 73175    | 8 oz. clear  | 24        |
| 73176    | 16 oz. clear | 24        |
| 73177    | 32 oz. clear | 12        |

### Oatey Rain-R-Shine™ Cement - PVC

Oatey Rain-R-Shine™ is a blue colored cement recommended for PVC pipe and fittings up to 6" in diameter. A very fast setting cement formulated for wet conditions and/or when quick pressurization and fast installation is needed. For schedule 40 and schedule 80 potable water pressure pipe, irrigation, gas, conduit, drain waste and vent pipe. This medium bodied cement flows freely and covers with a thicker layer than regular PVC. Apply at temperatures 40°F to 100°F.



| MARS NO. | DESCRIPTION | MARS PACK |
|----------|-------------|-----------|
| 73150    | 4 oz. blue  | 24        |
| 73151    | 8 oz. blue  | 24        |

### Oatey Clear Primer - NSF Listed - PVC, CPVC

Oatey clear primer is a clear aggressive primer for use on PVC and CPVC pipe and fittings for all schedules and diameters. This NSF listed formula removes all surface dirt, grease and grime as well as softens pipe in preparation for solvent cement. Meets ASTM F-656.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73186    | 16 oz. clear | 24        |

### Oatey All Weather Cement-PVC

Oatey all weather cement is recommended for use on PVC pipe and fittings up to 6" in diameter. Formulated for fast initial set up at temperatures down to 10°F, for schedule 40 and schedule 80 potable water pressure pipe, gas, conduit, drain waste and vent pipe. This medium bodied, clear cement flows freely and maintains good gap filling properties. Apply at temperatures 10°F to 100°F. Exceeds ASTM D-2564.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73156    | 16 oz. clear | 24        |

### Oatey Purple Primer - PVC, CPVC

Oatey purple primer is recommended for use on PVC and CPVC pipe and fittings, all schedules and diameters. This purple tinted aggressive primer is formulated to remove surface dirt, grease and grime, as well as, soften the pipe surface to allow for a fast, secure and permanent solvent weld. For use in area where code calls for verification that a primer has been used. Exceeds ASTM F-656.



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---------------|-----------|
| 73178    | 4 oz. purple  | 24        |
| 73179    | 8 oz. purple  | 24        |
| 73180    | 16 oz. purple | 24        |

### Oatey All Purpose Cleaner - PVC, CPVC, ABS

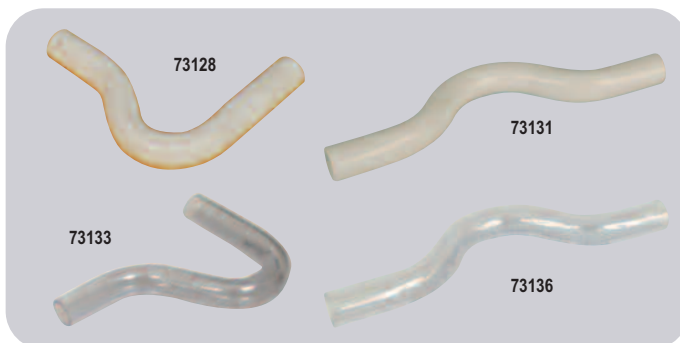
Oatey all purpose cleaner is recommended for use on ABS, PVC and CPVC pipe and fittings, all schedules and diameters. This fast acting cleaner removes surface dirt, grease and grime. Flows freely and evaporates quickly. Does not penetrate pipe surface. Apply at temperatures 40°F to 100°F.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 73170    | 8 oz. clear  | 24        |
| 73171    | 16 oz. clear | 24        |
| 73172    | 32 oz. clear | 12        |

### Schedule 40 - PVC Traps

- Lightweight, durable and cost effective
- Maximum service temperature 140°F
- High corrosion and chemical resistant, will not rust, scale, pit or corrode



| MARS NO. | DESCRIPTION           | MARS PACK |
|----------|-----------------------|-----------|
| 73126    | 3/4" P-trap           | 1         |
| 73128    | 3/4" mini P-trap      | 1         |
| 73129    | 3/4" super P-trap     | 1         |
| 73131    | 3/4" R trap           | 1         |
| 73133    | 3/4" PVC P-trap Clear | 1         |
| 73136    | 3/4" PVC R-trap Clear | 1         |

### Adapter Nylon Fitting

- Nylon - white

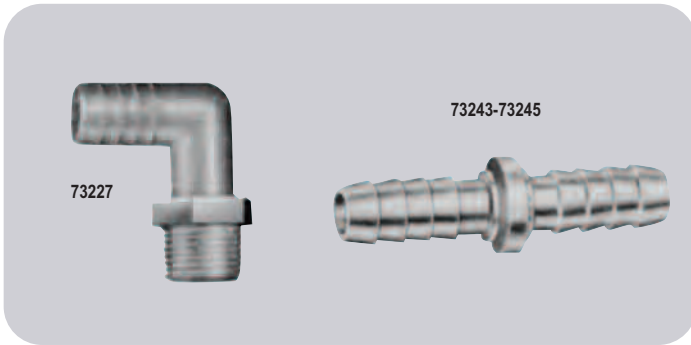


| MARS NO. | DESCRIPTION                          | CASE QTY. |
|----------|--------------------------------------|-----------|
| 73201    | Adapter 1/4 barb x 1/4 MPT - 10/pack | 1         |
| 73203    | Adapter 3/8 barb x 3/8 MPT - 10/pack | 1         |
| 73204    | Adapter 3/8 barb x 1/2 MPT - 8/pack  | 1         |
| 73206    | Adapter 1/2 barb x 1/2 MPT - 6/pack  | 1         |
| 73207    | Adapter 1/2 barb x 3/4 MPT - 4/pack  | 1         |
| 73208    | Adapter 5/8 barb x 3/4 MPT - 4/pack  | 1         |



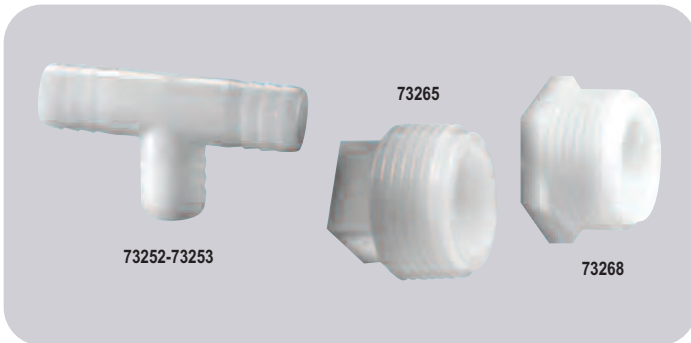
## Accessories

### Elbow Nylon Fitting



| MARS NO. | DESCRIPTION                       | CASE QTY. |
|----------|-----------------------------------|-----------|
| 73230    | Elbow 1/2 barb x 3/4 MPT - 4/pack | 1         |
| 73232    | Elbow 5/8 barb x 3/4 MPT - 4/pack | 1         |
| 73234    | Elbow 3/4 barb x 3/4 MPT - 4/pack | 1         |
| 73243    | Hose mender 3/8 barb - 5/pack     | 1         |
| 73244    | Hose mender 1/2 barb - 4/pack     | 1         |
| 73245    | Hose mender 5/8 barb - 4/pack     | 1         |

### Tee Nylon Fitting



| MARS NO. | DESCRIPTION                         | CASE QTY. |
|----------|-------------------------------------|-----------|
| 73252    | Tee 3/8 x 3/8 x 3/8 barb - 5/pack   | 1         |
| 73253    | Tee 1/2 x 1/2 x 1/2 barb - 4/pack   | 1         |
| 73265    | Drain plug 3/4 square head - 5/pack | 1         |
| 73268    | Drain plug 3/4 hex head - 5/pack    | 1         |

### MARS Condensate Clean-Out Tablets

MARS TAB™ condensate and drip pan clean-out tablets, prevent plugging of air conditioning condensate drip pans and drain lines.

MARS TAB™ does not release any chlorine or other noxious fumes. This economical, simple positive protection can be used on steel, copper, galvanized, painted surfaces and other materials without damage. It is one of the few treatments that will not stain exterior wall when line drains outside



| MARS NO. | DESCRIPTION                        | MARS PACK |
|----------|------------------------------------|-----------|
| 93202    | MARS TAB™ (100 tablets per bottle) | 18        |

### MARS One-Shot® Kits - 12 Applications Per Can

MARS One-Shot® is all it takes to instantly clear clogs. MARS One-Shot® drain opener kit instantly clears blockages in all types of fixtures and drains while simultaneously delivering a specially designed enzyme ingredient. This enzyme continues to dissolve grease buildup in the drain long after the initial blockage was cleared. The kit includes: One-Shot drain opener can 7 oz., three foot extension hose and twist fit adapter for ice markers and condensate drain pans.



#### Benefits & Features:

- Enzyme activated
- No ozone depleting chemicals
- Safe for sewers & septic systems
- Works instantly
- Sanitary and easy to use
- Universal adapter for all types of fixtures
- Seamless aluminum container will not rust
- For drains from 3/8" i.d. to 7/8 i.d.
- Made in the USA
- 12 applications per can

#### For Use On:

- Condensate pans
- Ice machines
- Bar sinks
- Toilets
- Bathtubs
- Kitchen sinks
- Shower drains
- Floor drains.
- Lavatories

| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 93220    | MARS One-Shot® drain opener (7 oz.) | 25        |
| 93221    | MARS One-Shot® refill can (7 oz.)   | 36        |



## Panseal

### Seals and Restores Leaking and Rusted Drain Pans

Panseal is a unique multi-component 2 part epoxy designed to quickly and permanently seal, repair, and restore leaking and corroded drain pans. The product is available in caulk gun cartridges for easy application, gallon size containers for larger surfaces such as cooling towers, patch kits for vertical surfaces and single use 250 gram burst-seal bags. All contain pre-measured amounts of resin and hardener.

- Works in standing water
- Seals leaks immediately
- No surface preparation
- No system down time
- Works on both metal and plastic pans
- 100% solids and entirely free of solvents and volatile organic compounds



| MARS NO. | DESCRIPTION                 | MARS PACK |
|----------|-----------------------------|-----------|
| 93526    | Panseal Cartridge           | 1         |
| 93527    | Panseal Gallon              | 1         |
| 93528    | Panseal Patch               | 1         |
| 93579    | Panseal Bag, covers 2 sq ft | 1         |
| 93500    | Cartridge Nozzle            | 12        |

## Circuit Protection

The ZBreaker set from Zebra Instruments protects systems that you install or service from damage caused by shorts, overheating, or wiring problems. A sticker is included so that, if the Tech desires, he can inform his customer where to press the "reset" button and possibly save a midnight service call.

The same circuit breakers now found on many high-end transformers and systems, but at a great price! Kit includes wires and pre-installed terminals that allow you to easily plug it in to the connectors where a plastic-type fuse existed. 3 Amp Size.

The Short-Pro Tool is a 24 volt system "short-finder". This helps the tech locate a control voltage short. A built-in automatically resetting circuit breaker turns on a bright red LED when tripped. As the tech removes the short, the breaker automatically resets, the LED goes out, and the circuit is restored. Lightweight and compact, with two 18" leads.



| MARS NO. | DESCRIPTION           | MARS PACK | CASE QTY. |
|----------|-----------------------|-----------|-----------|
| 08574    | ZBreaker Set – 3A     | 1         | 24        |
| 08577    | Short Finder Pro Tool | 1         | 24        |

## Accessories

### MARS Digital Clamp On Meter

**Features:**

- AC Current
- DC/AC Voltage
- Resistance
- Continuity Check
- Continuity check buzzer sounds at approx. / 50 ohm max
- Peak Hold & Data Hold
- 1.3" (33mm) Clamp Jaw Opening
- Large 0.68", 3-1/2 digit LCD with low battery indicator
- Includes test leads, manual and carry case
- Overload protection provided for all ranges
- Meets IEC 1010 Safety Standard
- 9 volt battery included

**Range:** 0-600 A

**Resolution:** 1 A

**Frequency:** 50/60 Hz (+/- 1.5% rdg +/- 4 dgt)  
40-400 Hz (+/- 2.5% rdg +/- 4 dgt)



| MARS NO. | DESCRIPTION            | MARS PACK |
|----------|------------------------|-----------|
| 65749    | Digital clamp-on meter | 1         |

### MARS Capacitor Tester

The MARS capacitor tester is a reliable precise 3-1/2-digit capacitance meter, which has 10 ranges. It is easy to use and is a very useful measurement tool.

**Features:**

- LCD display
- High accuracy
- Zeroing method: Adjust the "0 ADJ" knob
- Dual-slop integration A/D converter
- Over range indication: "1" shown on the display
- Operation condition: Temperature: 0°C~40°C (32°F~104°F)  
Relative humidity: <75%
- 9V battery and test leads included
- Low battery indicator



| Range   | Resolution | Accuracy     | Test Frequency |
|---------|------------|--------------|----------------|
| 200pF   | 0.1pF      | ± (0.8% + 7) | 800Hz          |
| 2000pF  | 1pF        | ± (0.8% + 5) |                |
| 20nF    | 10 pF      | ± (0.5% + 5) |                |
| 200nF   | 100pF      | ± (0.5% + 5) |                |
| 2 μF    | 1000pF     | ± (0.8% + 5) | 80Hz           |
| 20 μF   | 0.01 μF    | ± (2.0% + 5) |                |
| 200 μF  | 0.1 μF     | ± (2.0% + 5) | 8Hz            |
| 2000 μF | 1 μF       | ± (2.0% + 5) |                |
| 20mF    | 10 μF      | ± (5.0% + 5) |                |

| MARS NO. | DESCRIPTION           | MARS PACK |
|----------|-----------------------|-----------|
| 65746    | MARS capacitor tester | 1         |

### MARS Universal Remote Control for Mini-Split Units

MARS Universal Remote will operate with virtually any mini-split produced in any region of the world. Programming is accomplished by imputing your mini-split brand code or use the easy and intuitive self learn mode to set-up the remote to operate your mini-split. Operates with 2 AAA batteries.

- One touch function with LCD display
- Celsius or fahrenheit display
- Clock display
- 24 Hr. on/off timer for energy savings
- Displays room temperature
- Energy saver feature
- Automatically determines heat or cool mode



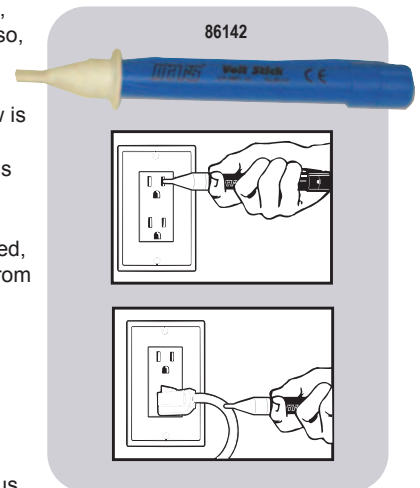
| MARS NO. | DESCRIPTION                 | MARS PACK |
|----------|-----------------------------|-----------|
| 65775    | Mini-Split Universal Remote | 1         |

### MARS Volt Stick

The Volt Stick is an instrument for safely checking the presence of an AC voltage in cables, wall outlets, fuses, circuit breakers, junction boxes, power tools and appliances. Also, distinguishes between live and neutral wire in single or three phase supplies. No current flow is needed for correct operation of the Volt Stick. When a voltage is detected, a red indicator in the plastic tip of the Volt Stick illuminates. No contact is needed, unit operates at 1/8" distance from device.

**Specifications**

- Voltage range: 110 to 480 volts AC
- Not sensitive to stray electromagnetic static
- Response time: instantaneous
- Case breakdown: 4000 volts
- Operation temp: 0° to 120°F
- Batteries: two AAA, 1.5 volt alkalines included



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 86142    | Volt Stick  | 1         | 12        |

### Safety Power Adapters

Zebra'Dapter's provide visual indication of voltage levels before damage can occur. One is a fused power tap cordset & the other is a cheater cord used for a safer way to obtain and use 120V power. They are lighted to show the voltage level available, and if the indicator light is ignored, the fused circuit provides a last line of defense to protect you and your customer's equipment. These adapters are significantly a safer way to obtain 120V power.

MARS No. 08566 (Male end) has an in-Line fuse. (Two fuses included). Safer Power from Outlet to test Motors, Components & Systems

MARS No. 08567 (Female end) shows the voltage level at the plug. Used to check 120V power to run vacuum pumps, charging scales, drop lights, etc. lighting



#### Lighted Plug confirms Power

- No light means no power
- Normal light means 120VAC
- A brilliant light means you accidentally hooked it up to 240VAC

| MARS NO. | DESCRIPTION                          | MARS PACK | CASE QTY. |
|----------|--------------------------------------|-----------|-----------|
| 08566    | Fused Cheater Power Cord (male end)  | 1         | 12        |
| 08567    | Fused Power Tap Cordset (female end) | 1         | 12        |

### MARS Test Leads - Pkg'd In Poly Bags



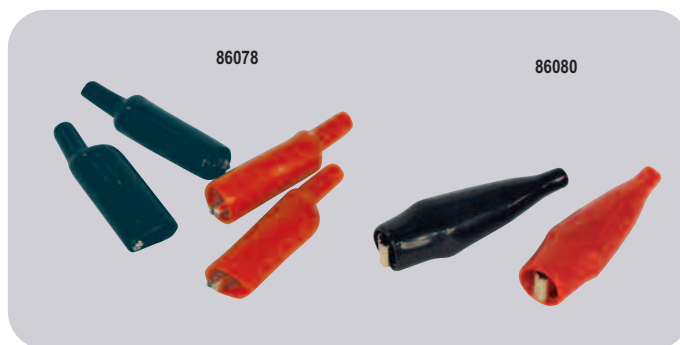
| MARS NO. | CLIP SIZE | TYPE      | CASE COLORS                | WIRE SIZE | L   | BAG QTY. |
|----------|-----------|-----------|----------------------------|-----------|-----|----------|
| 86070    | Sm        | Alligator | Wht, red, blk, yellow, grn | 18        | 18" | 10       |
| 86071    | Med       | Alligator | Red/blk w/boots            | 18        | 24" | 2        |
| 86073    | Lg        | Alligator | Red/blk w/boots            | 14        | 24" | 2        |
| 86074    | Lg        | Battery   | Red/blk w/boots            | 16        | 36" | 2        |

### MARS Special Leads - Pkg'd In Poly Bags



| MARS NO. | CLIP SIZE | DESCRIPTION  | WIRE SIZE |
|----------|-----------|--|-----------|
| 86075    | Med       | 6'-2 wire test cord w/red & blk insul. clips       | 16        |
| 86076    | Med       | 24" - 3 wire test cord w/fem plug & 3 insul. clips | 16        |

### MARS Alligator & Battery Clips - Pkg'd in Zip Lock Bag



| MARS NO. | CLIP SIZE | TYPE      | DESCRIPTION                          | BAG QTY. |
|----------|-----------|-----------|--------------------------------------|----------|
| 86078    | Med       | Alligator | Red/blk (1 ea. color boot - 2 clips) | 1 pr.    |
| 86080    | Med       | Battery   | Red/blk (1 ea. color boot - 2 clips) | 1 pr.    |

### Zebra Alligator Leads - Clamshell



| MARS NO. | CLIP SIZE | TYPE      | DESCRIPTION                    | BAG QTY. |
|----------|-----------|-----------|--------------------------------|----------|
| 08572    | Sm        | Alligator | 5 different colors (up to 6A)  | 5        |
| 08573    | Med       | Alligator | 8 different colors (up to 15A) | 8        |

## Accessories

### Energizer Industrial Alkaline - Bulk

MARS and the Energizer Battery Company offer a complete line of alkaline, general purpose and lantern batteries. These high quality batteries are made in the U.S.A. and are competitively priced.

The Energizer Industrial Alkaline batteries are environmentally safe and are mercury-free, designed for long-lasting power in high drain, frequent use applications. Batteries are sealed and have excellent leakage resistance and a long storage life. This provides a better discharge rate, lower impedance and better low temperature performance than carbon zinc. These ZMA alkaline batteries are also less sensitive to changes in the discharge rate or duty cycle.



| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---------------|-----------|-----------|
| 79401    | D cell - 1.5V | 12        | 72        |
| 79402    | C cell - 1.5V | 12        | 72        |
| 79403    | AA - 1.5V     | 24        | 144       |
| 79404    | AAA - 1.5V    | 24        | 144       |
| 79405    | 9V            | 12        | 72        |

### Energizer Batteries - Blister Pack



| MARS NO. | DESCRIPTION     | MARS PACK | CASE QTY. |
|----------|-----------------|-----------|-----------|
| 79441    | D cell - 2 pack | 12        | 48        |
| 79442    | C cell - 2 pack | 12        | 48        |
| 79443    | AA - 4 pack     | 12        | 48        |
| 79444    | AAA - 4 pack    | 12        | 48        |
| 79445    | 9V - 2 pack     | 12        | 48        |



### Energizer Specialty Batteries

- Long lasting, reliable, miniature batteries
- Type: Silver Oxide
- Volt: 1.5



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 79469    | #357 1.5V, repl. 280-03, 280-08, 303/357, D303/357, SB-A9, SR 1154 SW, SR 44 SW, SR 44SW, SR44SW, WS14 | 6         | 480       |

### Energizer Lithium Batteries

- Holds power for 8 years in storage
- Type: Lithium Coin
- Volt: 3



| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 79458    | ECR2032BP 3V, repl. 5004LC, BR2032, DL2032, ECR2032, ST-T15                 | 6         | 480       |
| 79454    | CR1632, 3V, repl. BR1632, DL1632, ECR1632, KCR1632, KECR1632, KL1632, L1632 | 5         | 100       |

### MARS Accessories

| MARS NO. | DESCRIPTION                     | MARS PACK |
|----------|---------------------------------|-----------|
| 79460    | LR44, Batteries for 79479, 4 pk | 1         |



### MAGLITE® Flashlights



MARS and Maglite® are committed to providing a full selection of flashlight products designed for use by professionals. Features include anodized aircraft aluminum with knurled grip, o-ring sealed for minimum water resistance and adjustable beams from pinpoint spot to flood. All Maglite flashlights are designed and tested for high impact, precise illumination and longer use. All units have a limited lifetime warranty for repair and replacement of all internal and external components.



| MARS NO. | DESCRIPTION                  | MAG. NO. | CASE QTY. |
|----------|------------------------------|----------|-----------|
| 79205    | Mini-mag AAA (black)         | M3A016   | 12        |
| 79230    | Mini-mag AA (blue)           | M2A116   | 12        |
| 79202    | AA combo pack (black)        | M2A01C   | 12        |
| 79215    | AA mag holster combo (black) | M2A01H   | 12        |

### MAGLITE® Led Flashlights



| MARS NO. | DESCRIPTION                 | MAG. NO. | CASE QTY. |
|----------|-----------------------------|----------|-----------|
| 79240    | Maglite Pro 2AA LED (black) | SP2P01H  | 6         |

### MAGLITE® Accessories



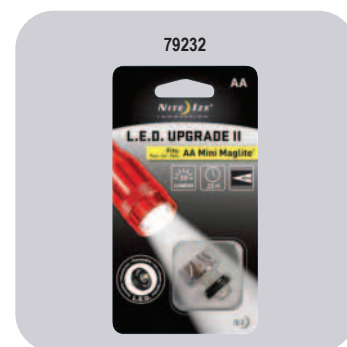
| MARS NO. | DESCRIPTION                | MAG. NO. | CASE QTY. |
|----------|----------------------------|----------|-----------|
| 79222    | AA nylon holster (black)   | AM2A056  | 12        |
| 79226    | AA leather holster (black) | AM2A026  | 12        |

### MAGLITE® Replacement Lamps & Accessories



| MARS NO. | DESCRIPTION        | MAG. NO. | CASE QTY. |
|----------|--------------------|----------|-----------|
| 79223    | AA/AAA bulb 2 pack | LM2A001  | 12        |

### Upgrade LED Kits for MAGLITE®



| MARS NO. | DESCRIPTION             | MAG. NO. | CASE QTY. |
|----------|-------------------------|----------|-----------|
| 79232    | AA LED Upgrade II-White | LRB2-07  | 6         |



## Accessories

### MARS Infra-Red Laser Thermometer

- Built-in laser pointer
- Data hold & Auto power off
- Temperature Range: -50°C to 350°C (-58°F to 662°F)
- Accuracy: ±2% of reading or ±2°C/±4°F • D:S=8:1
- Complete with 9V battery
- Quickly and easily take the surface temperature of any object. Just point, pull the trigger, and read the temperature on the display.
- °C / °F switchable button
- Backlit LCD display



| MARS NO. | DESCRIPTION          | MARS PACK | CASE QTY. |
|----------|----------------------|-----------|-----------|
| 25580    | Infrared thermometer | 1         | 500       |

### MARS Hand Held Scale

- Ideal for weighing and checking most gas and refrigerant cylinders
- Easy to use
- Push button for accuracy
- Auto shut off
- Max scale up to 55 lbs
- 9V battery included
- Accuracy up to +/- 2%
- LBS/KGS switch



| MARS NO. | DESCRIPTION             | MARS PACK |
|----------|-------------------------|-----------|
| 79039    | Digital hand held scale | 1         |

### MARS Pocket Bi-Metal Dial Thermometers

MARS pocket dial thermometers consist of stainless steel cases with 5" stem. Thermometers are completely waterproof. Units are protected by flexible plastic case with clip. They can be recalibrated for accuracy.



| MARS NO. | DESCRIPTION                        | MARS PACK | CASE QTY. |
|----------|------------------------------------|-----------|-----------|
| 25510    | 1" dial-40° F to 160°F thermometer | 1         | 12        |
| 25520    | 1" dial 0° F to 220°F thermometer  | 1         | 12        |

### MARS Pocket Digital Thermometers

MARS #25531 deluxe digital pocket thermometer features an on/off switch and a data hold button. The easy to read LCD digits can be displayed in both fahrenheit and centigrade. The new slim design fits nicely in your pocket. Pocket clip and battery are included.  $\pm 2^\circ$  accuracy. Uses MARS #79460 replacement battery. Water and drop resistant. Auto power off is also a new feature.



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 25531    | Deluxe digital pocket, -40°F to 300°F, -50°C to +150°C | 1         | 12        |

### MARS Refrigerator/Oven Thermometers

Horizontal refrigerator/freezer thermometer is most often specified for commercial applications. Hang, stand, or permanent mount. Stainless steel refrigerator or oven models utilize 2" easy to read dial. Hang or stand.



| MARS NO. | DESCRIPTION  |
|----------|--|
| 25540    | Horizontal glass tube refrig. -40°F to 80°F, -40°C + 0° to +26°C |
| 25542    | Stainless steel refrigerator -20°F to 80°F, -29°C to +26°C       |

### MARS Refrigerant I.D. Labels

MARS refrigerant I.D. labels are color coded to conform to each particular refrigerant. Each label specifies the type of refrigerant, the chemical name, the UN # and a space for the name and address of the cylinder owner. These self-adhering labels are 4 1/2" x 3 1/2", except for MARS #79528, Refrigerant Evacuation Certificate, which is 7 1/2" x 4 1/2".



| MARS NO. | DESCRIPTION                                   | MARS PACK |
|----------|---|-----------|
| 79522    | R-22 Refrigerant I.D. Labels (10 pk)          | 1         |
| 79523    | R-134A Refrigerant I.D. Labels (10 pk)        | 1         |
| 79516    | R-404A SUVA® HP62 Refrig. Labels (10 pk)      | 1         |
| 79511    | R-407A Refrigerant I.D. Labels (10 pk)        | 1         |
| 79512    | R-407C Refrigerant I.D. Labels (10 pk)        | 1         |
| 79536    | R-410A GENETRON® AZ-20 Refrig. Labels (10 pk) | 1         |
| 79526    | R-421A Refrigerant I.D. Labels (10 pk)        | 1         |
| 79525    | R-422B Refrigerant I.D. Labels (10 pk)        | 1         |
| 79527    | R-422D Refrigerant I.D. Labels (10 pk)        | 1         |
| 79506    | R-438A Refrigerant I.D. Labels (10 pk)        | 1         |
| 79513    | R-507 Refrigerant I.D. Labels (10 pk)         | 1         |
| 79528    | Refrigerant evacuation certification (5 pk)   | 1         |
| 79609    | R-427A Refrigerant I.D. Labels (10 pk)        | 1         |
| 79610    | R-422C Refrigerant I.D. Labels (10 pk)        | 1         |
| 78996    | R-449A Refrigerant I.D. Labels (10/pk)        | 1         |
| 78998    | R-448A Refrigerant I.D. Labels (10/pk)        | 1         |

## Accessories

### MARS Plastic Anchor Kits

Plastic anchors are designed to be used with either woodscrews or sheet metal screws. They are recommended for quick, easy fastening of fixtures such as thermostats, thermostat guards, shelf brackets, cabinets, mirrors, pictures, etc. All plastic anchor kits include plastic anchor, screws and carbide masonry drill bit. All kits are packaged in a durable, see-through reclosable plastic storage case.



| MARS NO. | DESCRIPTION   | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 79974    | Plastic conical anchor with pan head combo kit contents: (100) 1/4 plastic anchors, (100) #10 x 1 pan combo hd screw zinc, (1) 1/4 x4 masonry drill         | 1         | 200       |
| 79975    | Plastic conical anchor with hex washer head kit contents: (100) 1/4 plastic anchors, (100) #10 x 1 hex washer hd slot screws zinc, (1) 1/4 x4 masonry drill | 1         | 200       |
| 79976    | Plastic screw-in anchor with pan head combo kit contents: (50) plastic screw-in anchors, (50) #8 1 1/2 pan combo hd screw zinc                              | 1         | 100       |
| 79977    | Metal screw-in anchor with pan head combo kit contents: (50) metal screw-in anchors, (50) #8 1 1/2 pan combo hd screws zinc                                 | 1         | 100       |

### Plastic Anchor Kits

Plastic anchors are designed to be used with either woodscrews or sheet metal screws. They are recommended for quick, easy fastening of fixtures such as thermostats, thermostat guards, shelf brackets, cabinets, mirrors, pictures, etc. All plastic anchor kits include plastic anchor, screws and carbide masonry drill bit. All kits are packaged in a durable, see-through reclosable plastic storage case.



| MARS NO. | DESCRIPTION  | CASE QTY. |
|----------|--|-----------|
| 80168    | 8-10 x 7/8" plastic anchor kit with slotted pan screw, contains: (100) 8-10 conical anchors, (100) 8 x 1" slotted pan screw, (1) 3/16" x 4" carbide masonry drill bit                  | 1         |
| 80169    | 8-10 x 7/8" plastic anchor kit with pan combo screw, contains: (100) conical anchors, (100) 8 x 1" phillips/slotted pan screw, (1) 3/16" x 4"  | 1         |
| 80171    | 10-12 x 1" plastic anchor kit with slotted pan screw, contains: (100) 1/4" conical anchors, (100) 10 x 1 1/4" phillips, slotted pan screw, (1) 1/4" x 4" carbide masonry drill bit     | 1         |
| 80172    | 10-12 x 1" plastic anchor kit with hex washer slotted screw, contains: (100) 1/4" conical anchors, (100) 10 x 1 1/4" hex washer slotted screw, (1) 1/4" x 4" carbide masonry drill bit | 1         |
| 80174    | 14-16 x 1 3/8" plastic anchor kit with slotted pan screw, contains: (50) conical anchors, (50) 14 x 1" slotted pan screw, (1) 5/16" x 4" carbide masonry drill bit                     | 1         |

### Hollow Wall Anchor Kits

Plastic anchors are designed to be used with either woodscrews or sheet metal screws. They are recommended for quick, easy fastening of fixtures such as thermostats, thermostat guards, shelf brackets, cabinets, mirrors, pictures, etc. All plastic anchor kits include plastic anchor, screws and carbide masonry drill bit. All kits are packaged in a durable, see-through reclosable plastic storage case.



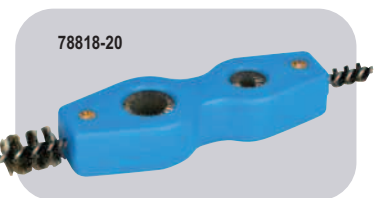
| MARS NO. | DESCRIPTION  | CASE QTY. |
|----------|--|-----------|
| 80179    | #6 hollow wall anchor kit, contains: (50) #6 hollow wall plastic anchors (50) 6 x 1" slotted phillips pan screw                | 1         |
| 80180    | #8 hollow wall anchor kit, contains: (50) #8 self drill hollow wall plastic anchors (50) 8 x 1 1/4" slotted phillips pan screw | 1         |

### Tube Fitting Brushes - Heavy Duty Stainless Steel



| MARS NO. | DESCRIPTION                               | MARS PACK |
|----------|---|-----------|
| 78801    | 1/4" OD 1/8" ID fitting brush (2 bag)     | 6         |
| 78802    | 3/8" OD 1/4" ID fitting brush (2 bag)     | 6         |
| 78803    | 1/2" OD 3/8" ID fitting brush (2 bag)     | 6         |
| 78804    | 5/8" OD 1/2" ID fitting brush (2 bag)     | 6         |
| 78805    | 3/4" OD 5/8" ID fitting brush (2 bag)     | 6         |
| 78806    | 7/8" OD 3/4" ID fitting brush (2 bag)     | 6         |
| 78808    | 1 1/8" OD 1" ID fitting brush (2 bag)     | 6         |
| 78809    | 1 3/8" OD 1 1/4" ID fitting brush (2 bag) | 3         |

### Tube Cleaning Brushes



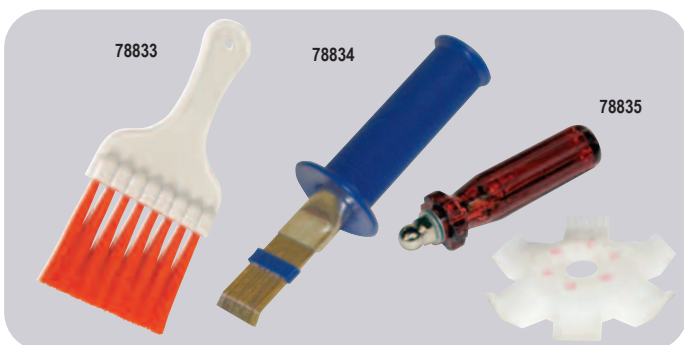
| MARS NO. | DESCRIPTION                           | MARS PACK |
|----------|---------------------------------------|-----------|
| 78818    | 3/8" x 3/4" OD refrig. 4-1 brush tool | 6         |
| 78819    | 1/2" x 3/4" OD refrig. 4-1 brush tool | 6         |
| 78820    | 5/8" x 7/8" OD refrig. 4-1 brush tool | 12        |

### Refrigeration Coil Brush



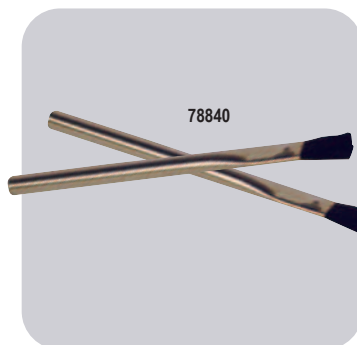
| MARS NO. | DESCRIPTION                                   | MARS PACK |
|----------|---|-----------|
| 78828    | 5/8" to 1 5/8" fiber condenser cleaner 32"    | 12        |
| 78829    | 5/8" to 1 5/8" tapered condenser cleaner 29"  | 12        |
| 78830    | 3/4" to 1 5/8" tapered refrig. coil brush 28" | 12        |

### Fin And Coil Brushes



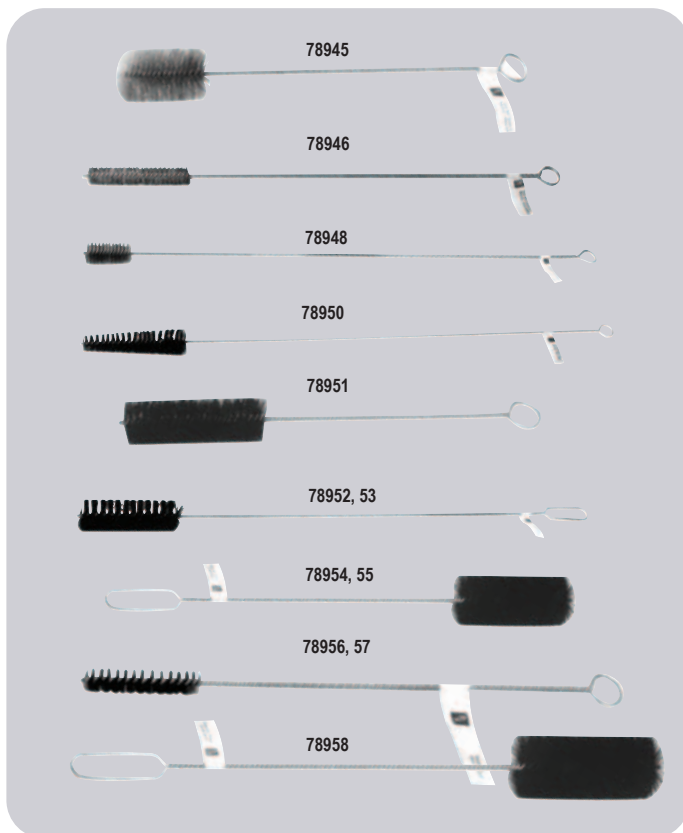
| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 78833    | Fin and coil whiskbrush, 6 3/4"                        | 12        |
| 78834    | Fin and comb scraping tool, adjustable                 | 1         |
| 78835    | 6-in-one fin comb (8, 9, 10, 12, 14, 15 fins per inch) | 1         |

### Acid And Flux Brushes



| MARS NO. | DESCRIPTION                 | MARS PACK |
|----------|-----------------------------|-----------|
| 78839    | #1 acid brush 1/4" - 48 box | 1         |
| 78840    | #2 acid brush 3/8" - 48 box | 1         |
| 78841    | #1 acid brush 1/4" - 10 bag | 10        |
| 78842    | #2 acid brush 3/8" - 6 bag  | 10        |

### Flue And Boiler Brushes



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 78945    | 1-1/2" x 1-1/8", 30" OAL, Specialty Boiler Brushes - WEIL MCLAIN                                      | 6         |
| 78946    | 1/2" x 1", 27" OAL, Flat, Specialty Boiler Brushes - COLUMBIA   | 6         |
| 78947    | 2-1/4", 20" OAL, Tapered, Specialty Boiler Brushes - SLANT FIN  | 6         |
| 78948    | 1-1/2" x 1-1/8" x 36" OAL, HD, Gold Series Original, Specialty Boiler Brushes - WEIL MCLAIN           | 6         |
| 78949    | 1/2" - 1" Taper, 30" OAL, Horsehair, Specialty Boiler Brushes - TAPERED                               | 6         |
| 78950    | 1-7/8" - 1-1/8" Taper, 42" OAL, Horsehair, Specialty Boiler Brushes - TAPERED                         | 6         |
| 78951    | 1" Dia., 16" OAL, Horsehair Brushes for Boilers Burners, Radiators, Flues, Vents and Nozzles          | 6         |
| 78952    | 2" Dia., 27" OAL, Horsehair Brushes for Boilers Burners, Radiators, Flues, Vents and Nozzles          | 6         |
| 78953    | 3" Dia., 27" OAL, Tampico/Fiber Tube Brushes for Boilers Burners, Radiators, Flues, Vents and Nozzles | 6         |
| 78954    | 2" Dia., 42" OAL, Horsehair Brushes for Boilers Burners, Radiators, Flues, Vents and Nozzles          | 6         |
| 78955    | 3" Dia., 42" OAL, Tampico/Fiber Tube Brushes for Boilers Burners, Radiators, Flues, Vents and Nozzles | 6         |

These brushes have 3" brush lengths and 1/2" or 3/4" loop handles for easy hanging.

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 78956    | 1/2" Dia., 18" OAL, Stainless Steel Fine-Wire Single Spiral Brushes for Small Boilers, Burners, Nozzles & Fans | 12        |
| 78957    | 3/4" Dia., 24" OAL, Stainless Steel Fine-Wire Single Spiral Brushes for Small Boilers, Burners, Nozzles & Fans | 12        |
| 78958    | 1-1/2" Dia., 42" OAL, Carbon Steel Fine-Wire Single Spiral Brushes for Small Boilers, Burners, Nozzles & Fans  | 6         |

## Accessories

### Applicator Brushes, Natural Bristle



| MARS NO. | DESCRIPTION                            | MARS PACK |
|----------|--|-----------|
| 78902    | 1 1/2" economy paint brush-wood handle | 36        |
| 78903    | 2" economy paint brush-wood handle     | 24        |
| 78904    | 2 1/2" economy paint brush-wood handle | 12        |
| 78905    | 3" economy paint brush-wood handle     | 12        |

### Utility And Appliance Brushes



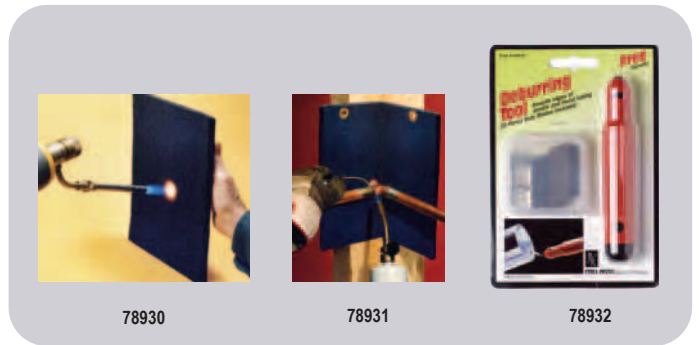
| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 78910    | Plastic handle stainless brush, 3 x 7 rows, 3 pk. | 12        |
| 78911    | Wood handle stainless brush, 2 x 9 rows, 3 pk.    | 12        |
| 78912    | 1 1/16" dia. parts cleaning brush                 | 6         |
| 78913    | Bent handle carbon scratch brush, 4 x 18 rows     | 12        |
| 78915    | Shoe handle carbon scratch brush, 4 x 16 rows     | 12        |

### Abrasive Cloth And Pads



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 78920    | 1 1/2" x 5 yds. open coat white cloth              | 24        |
| 78921    | 1 1/2" x 10 yds. open coat white cloth             | 24        |
| 78922    | 1 1/2" x 25 yds. open coat white cloth             | 20        |
| 78923    | 1 1/2" x 5 yds. open nylon mesh cloth              | 24        |
| 78924    | 1 1/2" x 10 yds open nylon mesh cloth              | 24        |
| 78925    | 1 1/2" x 25 yds. open nylon mesh cloth             | 20        |
| 78926    | 4" x 6" med. nylon abrasive pad, maroon, 10 pk     | 1         |
| 78928    | 1 1/2" x 10 yds competitive abrasive cloth, Brown  | 1         |
| 78918    | 1 1/2" x 25 yds. competitive abrasive cloth, Brown | 1         |

### Accessories



| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 78930    | Solder/braze heat shield, 9" x 12" x 1/2" temperatures exceeding 2500°F | 10        |
| 78931    | Solder heat shield, 9" x 12" temperatures up to 2500°F                  | 10        |
| 78932    | Heavy duty deburring tool, 3 blades                                     | 10        |
| 78933    | Deburring tool replacement blades, 5 pack                               | 10        |



### PowerCrown Outward Clinch Tackers



#### Model PC4000-OC1 & PC4000-OC2 Features:

- Easy squeeze design
- Compact, lightweight
- Convenient bottom load
- Unique design turns staple legs outward
- For pipe wrap, duct board and corrugated



| MARS NO. | DESCRIPTION            | MFG. NO.       | CASE QTY |
|----------|------------------------|----------------|----------|
| 73349    | Outward Clinch Tacker  | T6-80C2        | 12       |
| 73347    | 3/8" Staples / 5M Box  | STCR5019 3/8"  | 20       |
| 73350    | 1/2" Staples / 4M Box  | STCR5019 1/2"  | 20       |
| 73351    | 9/16" Staples / 4M Box | STCR5019 9/16" | 20       |

### PowerCrown Outward Clinch Tacker - Model PC3000-OC2



#### Model PC3000-OC2 Features:

- Professional quality
- Drives 1/2" light wire Bostitch PowerCrown staples
- Powerful direct drive
- Unique design turns staple legs outward
- Convenient bottom load
- For pipe wrap, duct board and corrugated



| MARS NO. | DESCRIPTION             | MFG. NO.      | CASE QTY |
|----------|-------------------------|---------------|----------|
| 73343    | Outward Clinch Tacker   | T6-60C2       | 12       |
| 73348    | 1/2" Staples / 5.8M Box | STCR2619 1/2" | 20       |

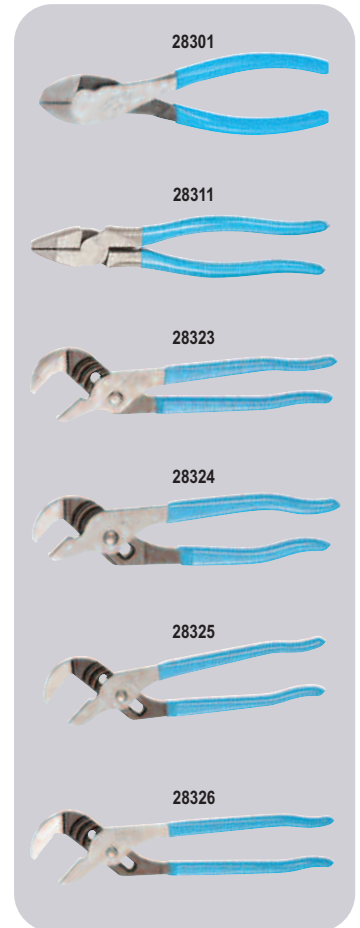
### Channellock Pliers



For over a century Channellock has been the leader in manufacturing professional quality tools for all trades. All tools are made in the U.S.A. The MARS line of Channellock tools are housed in attractive merchandiser hang type style packaging to generate impulse sales and increase your profits.

Channellock pliers are hand honed perfectly matched cutters which are heat treated to hold their edge. These pliers are precision made of fine polished, high carbon drop forged steel and features blue plastic comfort grips.

The popular Tongue and Groove Pliers provide right angle teeth that grip in all directions for maximum bite and minimum wear. The undercut tongue and groove design assures the strongest non-slip jaw action and the patented PermaLock® fastener provides safer and smoother working than the old-time bolt and nut.



| MARS NO. | DESCRIPTION  | MFG. NO. | CASE QTY |
|----------|--|----------|----------|
| 28301    | 7" cutting plier - lap joint diagonal                        | 337      | 20       |
| 28311    | 9" high leverage linemans plier                              | 369      | 20       |
| 28323    | 9 1/2" Tongue & Groove Plier 5 Adjustments - 1 1/2" capacity | 420      | 20       |
| 28324    | 6 1/2" Tongue & Groove Plier 5 adjustments - 7/8" capacity   | 426      | 20       |
| 28325    | 10" Tongue & Groove Plier 7 adjustments - 2" capacity        | 430      | 20       |
| 28326    | 12" Tongue & Groove Plier 7 adjustments - 2 1/2" capacity    | 440      | 20       |

## Accessories

### Fuse Pullers



MARS #25915, medium fuse puller is molded of tough, high impact nylon for greater strength. Handles with no-slip gripping surface, protective finger stops and yellow color are provided for extra safety.



| MARS NO. | DESCRIPTION                           | MFG. NO. | MARS PACK | CASE QTY. |
|----------|---------------------------------------|----------|-----------|-----------|
| 25915    | 7-1/4" medium puller for 0-100A fuses | 34-016   | 1         | 10        |

### Terminal Strips, 600V, 30a, UL & CSA



- Heavy duty corrosion resistant screws
- Rugged polyester thermo-plastic base
- Accepts wire sizes from 10 - 22AWG
- Operating temperature rated from 130°C to -40°C
- Recommended torque: 16 in. - lb.
- UL Recognized, CSA Certified



| MARS NO. | DESCRIPTION               | MFG. NO. | MARS PACK | CASE QTY. |
|----------|---------------------------|----------|-----------|-----------|
| 25952    | 3 circuit terminal strip  | 89-203   | 1         | 10        |
| 25953    | 4 circuit terminal strip  | 89-204   | 1         | 10        |
| 25954    | 6 circuit terminal strip  | 89-206   | 1         | 10        |
| 25955    | 8 circuit terminal strip  | 89-208   | 1         | 10        |
| 25956    | 10 circuit terminal strip | 89-210   | 1         | 10        |
| 25957    | 12 circuit terminal strip | 89-212   | 1         | 10        |

### Tap-Pak® Fish Tape



IDEAL Tape-Pak® fish tape reels and winders provide maximum strength and flexibility for fishing long runs of conduit. The case is built of high impact plastic that never dents or rusts. Use as a handle for pulling on fish tape to eliminate the dangers of bare-handed pulling as well as handy tape storage system. High grade tempered steel tape is fully protected and locked in reel when not in use so tape cannot kink spring free. Excellent for snaking long runs of thermostat wire.



| MARS NO. | DESCRIPTION                 | MFG. NO. | MARS PACK | CASE QTY. |
|----------|-----------------------------|----------|-----------|-----------|
| 25849    | 50' fish tape - 8 1/2" dia. | 31-033   | 1         | 1         |

### Safe-T-Grip® Fuse Pullers



IDEAL's Safe-T-Grip® Fuse Pullers provide maximum efficiency and convenience when removing or replacing cartridge fuses. Constructed of fully insulated, reinforced, high-dielectric engineering plastic. Notched handles for a no-slip safe grip. Clearly marked amperage ranges. Moisture resistant...will not warp. Bright yellow in color.



| MARS NO. | DESCRIPTION                       | MFG. NO. | MARS PACK | CASE QTY. |
|----------|-----------------------------------|----------|-----------|-----------|
| 25911    | 5" midget for fuses 9/32-1/2 dia. | 34-001   | 1         | 1         |
| 25912    | 7 1/2" pocket for 0-100A fuses    | 34-002   | 1         | 10        |
| 25913    | 11 3/4" giant for 31-600A fuses   | 34-003   | 1         | 1         |

### Wire Strippers And Crimpers



Preferred by professionals for over three decades and originated by IDEAL, these quality built T®-strippers feature built in wire cutters, looping holes, cushioned plastic grips and precision knife-type blades that give an accurate, easy strip every time. The multi-crimp tool provides excellent leverage for sure, easy crimping and cutting...even in close quarters. Crimps bare or insulated terminals and splices on wire sizes 10-22 AWG



| MARS NO. | DESCRIPTION                    | MFG. NO. | MARS PACK | CASE QTY. |
|----------|--------------------------------|----------|-----------|-----------|
| 25701    | T®-5 Stripper 10-18 AWG solid  | 45-120   | 1         | 10        |
| 25702    | T®-6 Stripper 16-26 AWG strand | 45-121   | 1         | 10        |
| 25703    | T®-8 Stripper 8-16 AWG strand  | 45-124   | 1         | 10        |
| 25711    | Multi-crimp Tool               | 30-429   | 1         | 5         |

### Red Devil Putty Knives And Wall Scrapers

Red Devil offers professional high quality putty knives and wall scrapers. The black polypropylene comfort grip handles are shatterproof and solvent resistant for safety. Durable, high carbon, steel precision-ground blades extend through handles for maximum dependability. The blade has a mirror lacquered finish to prevent rust. Made in the U.S.A.



| MARS NO. | DESCRIPTION                      | MARS PACK | CASE QTY. |
|----------|----------------------------------|-----------|-----------|
| 93402    | 1 1/4" wide stiff putty knife    | 12        | 72        |
| 93403    | 1 1/4" wide flexible putty knife | 12        | 72        |
| 93404    | 3" wide flexible putty knife     | 6         | 72        |

### MARS 6-in-1 Super Driver

The MARS Super driver features a comfort grip handle. The soft easy grip promotes excellent torque. This six-in-one driver includes 3/16" & 1/4" slotted bits, #1 & #2 phillips bits and 1/4" & 5/16" nutdriver. These screwdrivers are packaged twelve per counter display box.



| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 25984    | MARS 6-in-1 super driver | 12        | 12        |

### Magnetic Nut Setters

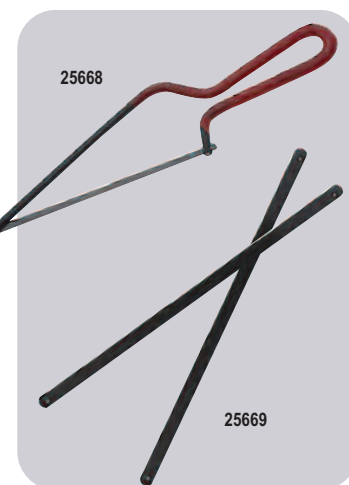
- Features a magnet with enhanced holding to help improve fastening



| MARS NO. | DESCRIPTION                          | CASE QTY. |
|----------|--------------------------------------|-----------|
| 21620    | 1/4" mag nut setter 2 9/16"L (1/cd)  | 96        |
| 21621    | 5/16" mag nut setter 2 9/16"L (1/cd) | 60        |
| 21627    | 1/4" mag nut setter 6"L (1/cd)       | 72        |
| 21628    | 5/16" mag nut setter 6"L (1/cd)      | 72        |

### Superior Tool Mini Hacksaw And Blades

- Cuts wood, plaster, steel, brass, etc...
- Cushioned handle



| MARS NO. | DESCRIPTION                                 | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 25668    | 10" mini hacksaw,                           | 1         | 6         |
| 25669    | 6" high carbon steel repl. blades (10/card) | 1         | 6         |

**MARS Smoke Candles**

- Quickly and efficiently produce dense white smoke
- Classic smoke provides the best results, allowing you to locate difficult leaks at greater distance
- Disposable and easy to use



| MARS NO. | DESCRIPTION                    | CASE QTY- |
|----------|--------------------------------|-----------|
| 79534    | 4000 cu. ft. smoke, 30 seconds | 12        |
| 79535    | 8000 cu. ft. smoke, 1 minute   | 12        |

**Cotton/Jersey Gloves**



| MARS NO. | DESCRIPTION                                | MARS PACK | CASE QTY- |
|----------|--|-----------|-----------|
| 79151    | 9 oz. brown jersey glove/individual pack   | 1         | 12        |
| 79153    | Fleece lined cotton jersey/individual pack | 1         | 12        |

**Leather Gloves**



| MARS NO. | DESCRIPTION                              | MARS PACK | CASE QTY- |
|----------|--|-----------|-----------|
| 79157    | Leather palm safety cuff/individual pack | 1         | 12        |
| 79166    | Grain cowhide leather                    | 1         | 12        |

**PVC/Nitrile/Neoprene Gloves**



| MARS NO. | DESCRIPTION                   | MARS PACK | CASE QTY- |
|----------|-------------------------------|-----------|-----------|
| 79145    | PVC long gauntlet cuff gloves | 1         | 12        |

**Black Mamba Gloves**

- Made with a patented NITREX® polymer
- Super strong (6.0 mils) powder free nitrile glove
- 3 times the chemical and puncture resistance of a comparable thickness latex or vinyl glove
- Grip rite finish for secure handling.



| MARS NO. | DESCRIPTION                       | MARS PACK | CASE QTY. |
|----------|-----------------------------------|-----------|-----------|
| 79200    | Black Nitrile Gloves – L 100/box  | 1         | 10        |
| 79138    | Black Nitrile Gloves – XL 100/box | 1         | 10        |

### Goop Hand Cleaners

For nearly 50 years, Goop has been the only name you need to know in hand cleaners. It's a name that wholesalers and contractors alike know and trust. Goop is non-toxic and biodegradable. Goop will remove almost anything...from almost everything. Use Goop to clean the dirtiest, greasiest hands. Use it for other tough cleaning jobs as well, such as removing stains from washable clothing, cleaning vinyl, plastic, canvas, floor tile - or whatever else gets dirty.



| MARS NO. | DESCRIPTION | MARS PACK |
|----------|-------------|-----------|
| 93150    | 14 oz. can  | 12        |

### Orange Goop Hand Cleaners

For customers who want a fresh orange scent in a tough, natural liquid hand cleaner, get the Orange Goop. There are no harsh solvents - just natural citrus. Available in regular or pumice formula. Biodegradable, too. Orange Goop...just another example of how we're giving today's contractors what they want.



| MARS NO. | DESCRIPTION                            | MARS PACK |
|----------|--|-----------|
| 93157    | 14 oz. can                             | 12        |
| 93160    | 16 oz. liquid squeeze bottle           | 12        |
| 93163    | 16 oz. liquid squeeze bottle w/ pumice | 12        |

### Scrubs in-a-Bucket™

Scrubs in-a-Bucket™ provide fast, easy and effective hand cleaning with portability. Can be used anywhere, anyplace, anytime on the toughest soils, greases, tar, graphite...even printers ink. Each dispensing canister contains 10 1/2" x 12 1/4" perforated high-strength absorbent cleaning towels, treated with a gentle-to-the-skin but effective heavy duty grease cutting and soil lifting formulation. Pumice performance, without the messy, gritty pumice! Leaves skin lotion-soft, with a natural citrus fragrance. Contains germ fighting Triclosan. No rinsing, no drying, no residue. Also ideal for cleaning tools, work in process and for spills.



| MARS NO. | DESCRIPTION                     | MARS PACK | CASE QTY. |
|----------|---------------------------------|-----------|-----------|
| 93201    | Scrubs in-a-Bucket™ (72 towels) | 6         | 42        |
| 93203    | Scrubs in-a-Bucket™ (30 towels) | 6         | 72        |

### MARS Maintenance Products

- Stops squeaks
- Removes and protects
- Loosens rusted parts
- Frees sticky mechanisms
- Smart straw helps to get into hard to reach areas
- Drives out moisture



| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 79036    | WD-40 8 oz. spray smart straw  | 12        | 24        |
| 79037    | WD-40 11 oz. spray smart straw | 12        | 12        |



Accessories

**Kimberly-Clark Disposable Wiper/Towels**

Kimberly-Clark is durable for demanding jobs. Strong, even when wet. This 4-ply tissue wiper traps dirt and absorbs liquids quickly. Made with 100% recycled paper.



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 79105    | WYPALL X60 Cloths, White, 126 pop up™ box, 9.1 in. x 16.8 in | 1         | 10        |

**MARS Shop Towels**

MARS shop towel rags are 100% cotton material. This 15" x 15" red cloth towel is extra absorbent and ideal for cleaning up grease on tools or machinery. Long lasting and machine washable. Hemmed edges.

The MARS 100% cotton terry towel is an all purpose, white terry cloth towel that can be used for drying, polishing, dusting and waxing.



| MARS NO. | DESCRIPTION                    | MARS PACK | CASE QTY. |
|----------|--------------------------------|-----------|-----------|
| 79025    | White terry towel (12 pack)    | 1         | 12        |
| 79026    | Red cloth shop towel (12 pack) | 1         | 18        |
| 79027    | Red cloth shop towel (50 pack) | 1         | 6         |

**32 oz. Spray Bottle**

- Polypropylene sprayer
- Nitrile O-ring and seating cup
- 3 finger trigger for comfort



| MARS NO. | DESCRIPTION         | MARS PACK |
|----------|---------------------|-----------|
| 79009    | 32 oz. Spray Bottle | 12        |

**Blue Huck Towels**

- Excellent absorbency!
- 5 lb. box
- Lint free
- Prewashed
- Approx. 22" x 13"
- 30-35 towels in box



| MARS NO. | DESCRIPTION      | MARS PACK |
|----------|------------------|-----------|
| 79024    | Blue Huck Towels | 1         |

**MARS Micro Fiber Cloth Towels**

- Quick drying, super soft and non-abrasive
- Lint free
- Super absorbent
- Very economical
- Use wet or dry
- Machine washable
- Wash separately in cool water; dry low heat or air dry
- Size: 12" x 16"



| MARS NO. | DESCRIPTION                              | MARS PACK |
|----------|--|-----------|
| 79196    | Micro Fiber Cloths All Purpose, Assorted | 12        |

### HVAC RTV Silicone Sealant

HVAC RTV Silicone Sealant is a superior quality silicone which remains flexible from -40°F to 350°F. Never dries out. Has excellent adhesion to metals and can be used for virtually every HVAC need.

- Cures to 100% silicone rubber
- Resistant to sunlight and weather extremes
- Fast cure, high strength
- Meets the requirements of FDA Regulation No. 21 CFR 177.2600
- Meets the requirements of NSF Standard 51
- Listed by Underwriters Laboratories (UL Listed)



| MARS NO. | DESCRIPTION            | MARS PACK | CASE QTY. |
|----------|------------------------|-----------|-----------|
| 93249    | Silicone sealant clear | 10.1 oz.  | 12        |
| 93251    | Silicone sealant white | 10.1 oz.  | 12        |
| 93252    | Silicone sealant gray  | 10.1 oz.  | 12        |
| 93253    | Silicone sealant clear | 2.8 oz.   | 12        |
| 93254    | Silicone sealant white | 2.8 oz.   | 12        |

### Heat Resistant Silicone

HVAC/R RTV Hi-Temp Silicone Sealant Red is a superior quality silicone which was formulated to perform at temperatures ranging from -40°F to 500°F (-40°C to 260°C) for continuous operation and 550°F (288°C) for intermittent exposure. These features make HVAC/R RTV Hi-Temp Silicone Sealant Red ideal for use around furnace vent pipes, restaurant hoods and heat exchangers. Used where critical bonding and sealing parts must perform at high temperatures.

- Cures to 100% silicone rubber
- Resists the effects of sunlight and weather extremes
- Fast cure, high strength



| MARS NO. | DESCRIPTION                 | MARS PACK | CASE QTY. |
|----------|-----------------------------|-----------|-----------|
| 93255    | Hi-Temp. silicone red       | 10.1 oz.  | 12        |
| 93247    | Heat resistant silicone red | 2.8 oz.   | 12        |

### 12-1 Seam Sealer

Ruscoe's 12-1 seam sealer is recommended for sealing openings less than 1/8 inch. It can be used as an effective sealant against water, chemicals, air and dirt for sealing seams in gutters, downspouts, roof and chimney flashings, animal feeders and troughs, wood, concrete, ceramic, brick, metal, stone, masonry, marble and glass. Ruscoe's 12-1 seam sealer is recommended for sealing horizontal seams only.

- Aluminum fortified adhesive formula
- Excellent adhesive properties
- Excellent exterior durability and flexibility
- Can be applied at low temperatures
- Requires no primer
- Good adhesion to either porous or non-porous substrates—including glass
- Weatherproof—skins over to form a protective seal



| MARS NO. | DESCRIPTION                  | MARS PACK | CASE QTY. |
|----------|------------------------------|-----------|-----------|
| 93504    | 12-1 Seam Sealer, 10.3 Fl Oz | 1         | 24        |

### Fire Stop Caulk

Red Devil Fire Stop Caulk effectively seals penetration openings against the spread of fire, smoke, toxic gases and water when applied properly.

- A Latex-based, high-solids Fire Stop compound
- No Shrinkage
- Withstands temperatures up to 2000° F and is up to 4 hour fire rated
- Sandable and Paintable
- Meets Fed. Specs ASTM E-814 (UL 1479) and ASTM E-84 (UL 723) and many UL Classifications



| MARS NO. | DESCRIPTION                      | CASE QTY. |
|----------|----------------------------------|-----------|
| 93293    | Firestop Caulk, 10.5 FL Oz.- Red | 12        |

### Red Devil Celulon And Acrylic Caulk

Celulon™ plumbing and HVAC adhesive sealant is sometimes preferred over silicone. This easy to apply adhesive sealant adheres to all substances, is paintable, cleans up with water and has no offensive odor. Used to seal A/C ducts and lines. Application temp: 40 ° to 90°F. Service temp: -25° to 200°F.



| MARS NO. | DESCRIPTION                | MARS PACK | CASE QTY. |
|----------|----------------------------|-----------|-----------|
| 93256    | Celulon HVAC sealant clear | 10.1 oz.  | 12        |
| 93257    | Celulon HVAC sealant white | 10.1 oz.  | 12        |

### Red Devil Butyl Sealants

Red Devil's butyl sealant is a high performance rubber-like sealant that is ideal for tough outdoor jobs and below grade applications. (marine usage above waterline) It can be used wherever watertight seal is required. This paintable sealant provides excellent adhesion to most building surfaces including aluminum, stone, wood, brick, fiberglass, plastic, metal, etc. This sealant is ideal for use on window/door frames, aluminum gutters, chimney roofs, concrete foundations etc. Sealant remains rubbery and flexible from 0° F to 225° F after full cure.



| MARS NO. | DESCRIPTION                 | MARS PACK | CASE QTY. |
|----------|-----------------------------|-----------|-----------|
| 93290    | Butyl sealant white         | 10.1 oz.  | 12        |
| 93291    | Butyl sealant aluminum gray | 10.1 oz.  | 12        |

## Accessories

### Red Devil Specialty Products

Red Devil's blacktop & roof repair is water resistant and stays flexible. This butyl rubber asphalt sealant adheres to cinder block, wood asphalt, concrete, brick and metal. Use on blacktop driveway cracks, chimney flashings, shingles & skylights. Apply at temperatures between 10°F & 100°F. Full cure in 72 hours

Red Devil speed demon latex caulk is a general purpose caulk that applies easily, dries quickly is paintable and won't stain or bleed.



| MARS NO. | DESCRIPTION                            | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 93244    | Blacktop & roof repair black 10.1 oz.  | 12        | 12        |
| 93265    | Speed demon latex caulk white 10.1 oz. | 12        | 12        |

### Insulating Foam Sealant

Insulating Foam Sealant is a polyurethane-based sealant that fills, air-seals and insulates small gaps (less than 1 inch). Easy to use with the straw applicator and expands to take the shape of cracks and voids to form a durable, airtight, water-resistant bond that eliminates unwanted airflow and helps reduce condensation.

- Exceptional adhesion to building materials
- Interior or exterior use
- Tack free in 6 minutes; Trims in 30 minutes
- Foam elasticity allows for movement/shifting within a structure
- Paintable, stainable and sandable
- Cream colored foam
- Cures rigid
- All-direction dispensing
- UL Classified



| MARS NO. | DESCRIPTION         | MARS PACK | CASE QTY. |
|----------|---------------------|-----------|-----------|
| 93268    | Foam sealant 12 oz. | 12        | 12        |
| 93267    | Foam sealant 24 oz. | 12        | 12        |

### Fireblock Foam Sealant

Fireblock Foam Sealant inhibits the spread of fire and smoke. The long-lasting, airtight, weather-resistant foam adheres to wood, metal, masonry, glass, and most common building materials. The code orange foam is easily identifiable for inspections and seals service penetrations between floors and electrical runs through wall studs.

| MARS NO. | DESCRIPTION                            | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 93195    | Fireblock Foam Sealant Orange 12 FL Oz | 12        | 12        |

### MARS Duct Seal Putty

MARS Duct Sealing Putty is a non-hardening, non-toxic, gray putty compound used for countless applications in the refrigeration, heating and cooling, electrical trade, and plumbing fields. It can be shaped by hand to any form, and reused if necessary, for plugging openings through foundations, sealing around electrical boxes, refrigeration tube entry and so much more. Temperature range: 25°F to +120° F.



| MARS NO. | DESCRIPTION        | MARS PACK | CASE QTY. |
|----------|--------------------|-----------|-----------|
| 93520    | 1 lb. slug - boxed | 1         | 10        |
| 93521    | 5 lb. slug - boxed | 1         | 10        |
| 93522    | 2 lb. slug - boxed | 1         | 10        |

### Caulking Guns

For your convenience, MARS also offers easy to load and operate caulking guns. Guns hold the standard 10.3 oz. cartridges. MARS #93269 skeleton gun is ideal for large jobs. This heavy duty but light weight unit saves time in loading for the busy contractor. The professional skeleton gun, MARS #93278, offers three times more thrusting power with a smooth rod parallel frame. The professional ratchet type caulking gun, MARS #93279, is a professional conventional type gun recommended for sealants from light to heavy consistencies.



| MARS NO. | DESCRIPTION                        | MARS PACK | CASE QTY. |
|----------|------------------------------------|-----------|-----------|
| 93269    | Skeleton caulking gun              | 1         | 24        |
| 93278    | Professional skeleton caulking gun | 1         | 12        |
| 93270    | Econo conventional caulking gun    | 1         | 24        |
| 93279    | Professional ratchet caulking gun  | 1         | 24        |

- B2 Fire Rating
- Long-lasting, airtight, weather-resistant seal
- Adheres to wood, metal, masonry, glass, and most common building materials
- UL classified
- No CFCs or HCFCs



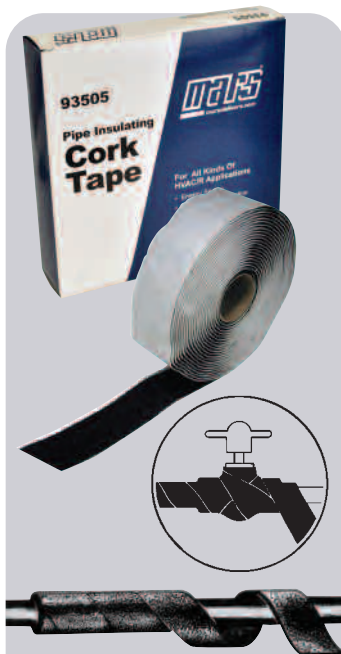


### MARS Cork Tape - 1/8"x 2"x 30' Roll

MARS Cork Tape is ozone resistant and specially designed for all types of climate. It insulates cold pipes for all kinds of air conditioners, freezers, and refrigerators. Cork Tape helps stop condensation problems. It is ideal for retarding heat gain in cold pipes and prevents heat loss in hot pipes. Can also be used for gasketing purposes. MARS Cork Tape sticks to all kinds of dry metals. This flexible tape seals tightly without drying. Temperature range: -20°F to 200°F / -29°C to 93°C.

Corktape is made from virgin cork specially imported from Portugal & Spain and has the following characteristics:

1. Compared to other cork tapes - our cork tape features rubber/asphalt & 100% virgin cork instead of asbestos / saw dust as used by other manufacturers.
2. The width is always 2" wide unlike other brands where size varies from 1-3/4" - 2".
3. Very good adhesion property. It sticks on the metal pipe tightly and does not come out in one piece if unwrapped.
4. A wide service temperature range -29° F - +200°F
5. Once installed the outer surface dries creating a shield against unwanted dust and dirt while the inner side remains wet. So even after a year or two, the user can remove the cork tape and reapply elsewhere without any change in the properties of the tape. Other brands such as Prestite/Virgin are mostly wet outside and inside making it vulnerable to dust and dirt which eventually deteriorates its insulation properties.



**Physical properties:**

**Composition:**  
Polymer based material containing synthetic rubbers, asphalt and approximately 50% cork by volume. It has a grainy rubber-like consistency and contains no asbestos.

**Solid Contents:**  
99.8%

**Color:**  
Black

**Thermal Conductivity:**  
0.60 BTU/hr /ft<sup>2</sup>/F/in at 75°F

**Moisture / Vapor Transmission:**  
0.02 perms.  
(ASTM E-90 Procedure C)

**Water Absorption:**  
0.01% by volume  
(ASTM D-1056)

**Ozone Resistance:**  
Good

#### Thickness To Prevent Pipe Condensation

| Ambient Temperature & %RH | Pipe Temperature  |                   |
|---------------------------|-------------------|-------------------|
|                           | 50°F (10°C)       | 32°F (0°C)        |
| 77°F (25°C) & 50% RH      | Double Layer      | Triple Layer      |
| 85°F (29°C) & 70% RH      | Double Layer      | Triple Layer      |
|                           | plus Double Layer | Plus Triple Layer |

| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 93505    | Cork Tape   | 1         | 10        |

### MARS Foam Tape - 1/8"X 2"X 30' Roll

MARS Foam Tape is a self-adhering closed cell thermal insulation tape. This flexible tape is ideal for wrapping hot or cold pipings and fittings. The energy saving and very easy to use Foam Tape is excellent for preventing condensation problems. MARS Foam Tape is designed for retarding heat loss in hot pipings and preventing heat gain or frost formation on cold, chilled water pipings or refrigerant lines. Adheres firmly to all metals. Temperature range: -20°F to 200°F / -29°C to 93°C.



1. Good weather and UV resistant - reason being EPDM (Ethylene Propylene Diene Monomer) is the main compound in the manufacturing of Foamtape. In practice EPDM is also used in the manufacturing of glass window strips of cars, which lasts for more than 10 years outdoors without any replacement (inspite of being exposed to rain, heat & cold).
2. The specially coated acrylic adhesive provides extra adhering strength compared to other tapes. Once installed, the special adhesive will act as the bonding agent and won't let the tape delaminate.
3. Low thermal conductivity (0.26 BTU. in/sq. ft. hr. deg. F at 75°F) to prevent heat loss/heat gain and save energy.
4. An ozone friendly product manufactured under strict supervision of trained personnels with quality check at every production point.
5. Low halogen contents. Tests have proved that MARS Foam Tape (or FOAMTAPE excluding the adhesive) has chlorine and bromine content of 4.36% and 1.35% compared to NBR/PVC (Armstrong, Rubatex) based brand insulation which has 12.45% and 6.14% respectively.
6. Our vulcanization system uses negligible amount of Sulphur (chemical which corrodes copper tubings) and this special vulcanization process decomposes chemicals almost completely.

**Physical properties:**

**Composition:**  
Closed cell, elastomeric thermal insulation.

**Color:**  
Black

**Density:**  
6±1 pounds per cubic feet.  
(0.09-0.12 g/cm<sup>3</sup>)  
(ASTM D-1667)

**Thermal Conductivity:**  
0.26 BTU in./ft<sup>2</sup> hr. °F at 75°F  
(0.04 W/mK at 24°C)  
(ASTM C-177)

**Water Absorption:**  
Max 5% by weight  
(ASTM D-1056)

**Water Vapor Permeability:**  
0.15 Perm-inch (ASTM C-355)

**Temperature Range:**  
-20°F (-29°C) to +200°F (+93°C)

#### Thickness To Prevent Pipe Condensation

| Ambient Temperature & %RH | Pipe Temperature  |                  |
|---------------------------|-------------------|------------------|
|                           | 50°F (10°C)       | 35°F (0°C)       |
| 80°F (27°C) & 50% RH      | Single Layer      | 50% Overlap      |
| 85°F (30°C) & 70% RH      | 50% Overlap       | 50% Overlap      |
|                           | plus Single Layer | Plus 50% Overlap |

| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 93506    | Foam Tape   | 1         | 12        |

## Accessories

### Mortite Pipe Wraps

Mortite's no-drip® tape stops cold water pipe sweating permanently. Won't dry out, crack or shrink. This self-adhering tape insulates hot water pipes up to 160°F. No-drip® tape molds around valves, joints, tees and irregular fittings. The 2"W x 30'L roll covers 30 lineal feet of 1/2" O.D. pipe. Provides clean, neat appearance.



| MARS NO. | DESCRIPTION                   | CASE QTY. |
|----------|-------------------------------|-----------|
| 93516    | No-drip® tape - 2" x 30' roll | 10        |

### Mortite Weather Stripping Products

MARS #93507, air conditioner window seal, seals the gap between window sill and air conditioner. This permanent, all season foam strip prevents heat loss in winter, cooling loss in summer. Attractively packaged in a colorful poly bag for pegboard merchandising.

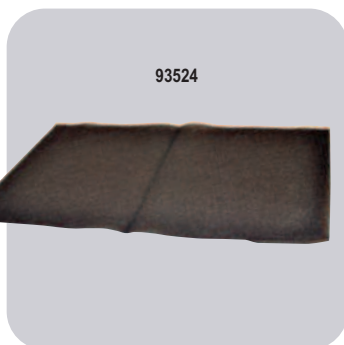
Mortite's closed-cell foam tape, MARS #93509 seals better in hot and cold climates. This durable vinyl tape stands up to extreme cold temperatures and will not freeze. Closed-cell means the cells prevent air from passing through the weatherstrip tape and won't absorb moisture. Self adhering, seals out drafts, dust and insects better than open-cell tape. MARS #93509 cushions and eliminates noisy vibrations around storm windows, A/C's and small appliances.



| MARS NO. | DESCRIPTION                       | CASE QTY. |
|----------|-----------------------------------|-----------|
| 93507    | Foam strip - 1/4" x 1-1/4" x 42"L | 12        |

### Mortite A/C Foam Filter

Mortite's air conditioner filter helps to keep the room free from outside dust and dirt while increasing efficiency. This polyurethane foam filter is easy to install. And the 15" x 24" size can be cut to fit all window and through-wall air conditioners. Easy to clean - requires only regular detergent and water. Reusable.



| MARS NO. | DESCRIPTION             | CASE QTY. |
|----------|-------------------------|-----------|
| 93524    | Foam filter - 15" x 24" | 24        |

### Cloth Duct Tapes

Heavy duty cloth duct tape for use in high performance applications

- Excellent holding power
- Withstands extreme temperature fluctuations
- Waterproof backing
- Applicable Standards: FSI 15/SDI 40; UL 723

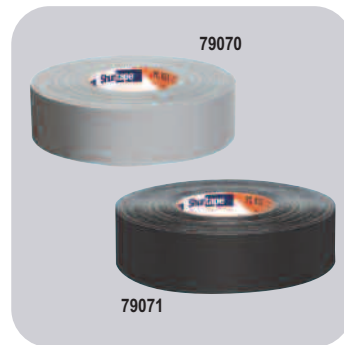
Premium grade cloth duct tape combines high tensile strength, excellent holding power and conformability to deliver a tape solution that can withstand the rigors of the job.

- Excellent holding power
- High tensile strength
- Conformable
- Waterproof backing
- Applicable Standards: FSI 10/SDI 10; UL 723

Performance grade cloth duct tape for use in the HVAC industry offering extremely aggressive adhesion, good conformability to a variety of surfaces, and performs well in warm or cold climates.

- Cold temperature adhesion
- Excellent holding power with good conformability
- Waterproof backing
- Applicable Standards: FSI 0/SDI 0; UL 723

All-purpose grade cloth duct tape conforms well to a variety of surfaces, tears easily by hand and will not twist or curl during application for ease of use.



| MARS NO. | DESCRIPTION                   | SIZE         | MARS PACK |
|----------|-------------------------------|--------------|-----------|
| 79070    | Heavy Duty cloth tape, silver | 2" x 60 yds. | 24        |
| 79071    | Heavy Duty cloth Tape, black  | 2" x 60 yds. | 24        |
| 79072    | Premium grade, silver         | 2" x 60 yds. | 24        |
| 79074    | Performance grade, silver     | 2" x 60 yds. | 24        |
| 79075    | Performance grade, black      | 2" x 60 yds. | 24        |
| 79077    | Performance grade, silver     | 2" x 60 yds. | 24        |
| 79088    | All Purpose, black            | 2" x 60 yds. | 24        |

### MARS Foil Duct Tapes

Mars #79081 and 79082 are dead-soft aluminum foils with aggressive adhesive properties.

UL 723 tested Foil/Scrim/Kraft (FSK) tape for sealing seams in scrim-reinforced duct insulation. Ideal for applications that demand a maximum-strength tape, AF 984CT is lined, offers an acrylic adhesive and can be used in temperatures ranging from -20 F to 260 F.

- Superior stability during extreme fluctuations in temperatures
- Wrinkle-free backing resists tearing
- Resists water vapor and smoke transmission
- Applicable Standards: FSI 5/SDI 0; UL 723



| MARS NO. | DESCRIPTION           | SIZE         | MARS PACK |
|----------|-----------------------|--------------|-----------|
| 79081    | Aluminum foil tape    | 2" x 50 yds. | 24        |
| 79082    | Aluminum foil tape    | 3" x 50 yds. | 16        |
| 79083    | Foil scrim kraft tape | 2" x 50 yds. | 24        |
| 79084    | Foil scrim kraft tape | 3" x 50 yds. | 16        |



### U.L. Listed Tapes

UL 181A-P/B-FX Listed aluminum foil HVAC tape for joining and sealing joints. A tape that "does it all," AF 100 is engineered to form airtight bonds on joints and seams in application temperatures ranging from -20 F to 260 F and in humid conditions.

- Printed aluminum foil tape
- Excellent adhesion to rigid fiberglass duct board and flexible air duct
- Flexible and easy to use to create airtight bonds
- Superior stability during extreme fluctuations in temperature
- Applicable Standards: Tested in accordance with UL 723; FSI 25/SDI 50; UL 181A-P/B-FX Listed; US Green Building Council – LEED® Point contributor product



| MARS NO. | DESCRIPTION        | SIZE             | MARS PACK |
|----------|--------------------|------------------|-----------|
| 79087    | U.L. 181 foil tape | 2 1/2" x 60 yds. | 16        |

### Spray Adhesive

MARS #79094 is especially designed to bond polyethylene to itself, concrete block, wood and other hard to bind surfaces. Does not contain methylene chloride. Very quick, aggressive tack. Excellent for HVAC insulation applications.



| MARS NO. | DESCRIPTION                | MARS PACK |
|----------|----------------------------|-----------|
| 79094    | Spray adhesive, 17 fl. oz. | 12        |

### Liquid Electrical Tape

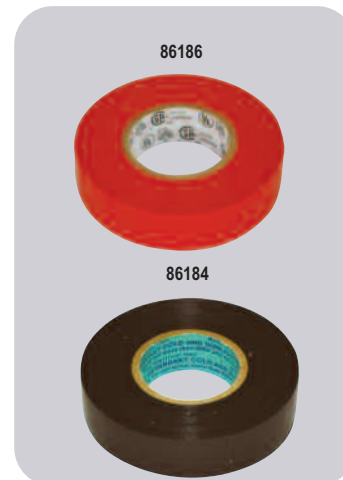
- Forms an airtight, protective, waterproof, UV resistant, dielectric coating
- Will not peel or unravel
- Patented, UL-tested, fast drying formula



| MARS NO. | DESCRIPTION                          | MARS PACK |
|----------|--------------------------------------|-----------|
| 86135    | Liquid electrical tape (black), 4oz. | 1         |

### PVC Electrical Tape

PVC electrical tape provides excellent adhesion to aluminum and copper conductors and plastic and rubber insulations where quick identification is most needed. Due to its primary use in low temperatures, it can be stretched to conform to any shape without breaking. UL listed and CSA approved. PVC electrical tape is designed for general splicing and as a protective outer jacket. Flame retardant and cold and weather resistant. UL listed and CSA approved.



| MARS NO. | DESCRIPTION        | MARS PACK | CASE QTY. |
|----------|--------------------|-----------|-----------|
| 86186    | 3/4" x 66' - red   | 1         | 100       |
| 86187    | 3/4" x 66' - white | 1         | 100       |
| 86188    | 3/4" x 66' - green | 1         | 100       |
| 86189    | 3/4" x 66' - blue  | 1         | 100       |
| 86184    | 3/4" x 66' - black | 1         | 100       |
| 86133*   | 3/4" x 60' - black | 10        | 100       |

\* Non-UL

### Low Density Thread Seal Tape



- Thickness 3 mills.
- Standard grade, low density
- Provides a highly resistant seal on pipe threads for all types of service
- Suitable for use with solvents, chemicals, oxygen, and on food lines
- Non-toxic
- Permits easy disassembly, even after years of service
- Meets Mil. Spec. T-27730A
- Sealing temperature range: -450°F to 550°F (-268°C to 288°C)
- Working pressures: 2,000 PSI (136 BAR)
- Sold in case quantities only



| MARS NO. | DESCRIPTION | CASE QTY. |
|----------|-------------|-----------|
| 95409    | 1/2" x 260" | 144       |
| 95410    | 1/2" x 520" | 144       |
| 95412    | 3/4" x 520" | 144       |

## Accessories

### High Density Slick-Tite® Thread Seal Tape



- Thickness 3 mils.
- High density
- Provides a highly resistant seal on pipe threads for all types of service
- Made in USA
- Suitable for use with solvents, chemicals, oxygen, and on food lines
- Non-toxic
- Permits easy disassembly, even after many years
- Meets Mil. Spec. T-27730A
- Sealing temperature range: -450°F to 550°F (-268°C to 288°C)
- Working pressures: 2,000 PSI (136 BAR)



| MARS NO. | DESCRIPTION | MARS PACK |
|----------|-------------|-----------|
| 95527    | 1/2" x 300" | 12        |
| 95528    | 1/2" x 600" | 12        |
| 95530    | 3/4" x 300" | 12        |

### MARS Standard Grease Fitting

Standard grease fittings are precision engineered to withstand rugged use in most automotive and industrial applications. The feature steel fittings with corrosion resistant plated finish and built-in ball check.

The small grease fitting assortments contain the three most popular 1/4"-28 threaded fittings used when making a "change-over" from plugs to fittings. Ideal for the contractor.



#### 93383 Standard fitting assortment includes:

| Qty. | Description    | Thread  |
|------|----------------|---------|
| 4    | short-straight | 1/4"-28 |
| 2    | short 45°      | 1/4"-28 |
| 2    | short 90°      | 1/4"-28 |

| MARS NO. | DESCRIPTION                               | MARS PACK | CASE QTY. |
|----------|---|-----------|-----------|
| 93376    | 1/8" npt, short-straight fitting, 10/card | 11-151    | 1         |
| 93378    | 1/8" npt, short 45° fitting, 5/card       | 11-159    | 1         |
| 93383    | 8 assorted grease fitting kit             | 11-955    | 1         |

### MARS PTFE Thread Sealant Tapes

- PTFE Standard grade white thread seal
- 3000 PSI rating
- Temperature range: -450°F to +500°F
- Combustion: does not support combustion

MARS No. 78944 - yellow gas PTFE thread sealing tape is designed specifically for natural gas, propane and butane lines. Just 3 wraps for leak-proof joints.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 78940    | 1/2" x 260" - STD grade white PTFE thread sealant tape | 12        |
| 78941    | 1/2" x 520" - STD grade white PTFE thread sealant tape | 12        |
| 78942    | 1/2" x 260" - hi-density red PTFE thread sealant tape  | 10        |
| 78944    | 1/2" x 260" - hi-density yellow (UL) gas tape          | 10        |

### Hercules Megatape

- Provides a clean, positive seal on threaded connections
- More PTFE to seal better with fewer wraps
- For threads up to 1-1/2 in. diameter
- High density 3.5 mil thickness
- Use on - Plastic, brass, copper, aluminum, stainless steel, galvanized steel or black iron piping
- Seals on a huge variety of threaded systems
- Perfect choice for Plumbing Professionals
- NOT FOR USE WITH LINES CARRYING OXYGEN



| MARS NO. | DESCRIPTION        | MARS PACK |
|----------|--------------------|-----------|
| 73149    | 1/2in x 1000, Gray | 1         |

### MARS Funnels

MARS No. 93396 Plastic Utility funnel is durable, oil and gas resistant. Safe for all petroleum products, complete with handy storage hanging tab. 16 oz capacity, 5-1/2" H x 6" Dia., 3/4" OD tip.

MARS No. 93397 Polyethylene All Purpose Utility funnel is rugged, corrosion-resistant with fine mesh straining screen and handy hanging tab. 2 quart capacity, 9" total height, 7" diameter, 1" OD tip.

MARS No. 93398 Utility Funnel with Screen is the most popular all-purpose fluid dispenser. Galvanized steel. Includes screen and 12" flexible extension with tapered tip. Tip 4/16" OD / 9/16" ID.



| MARS NO. | DESCRIPTION  | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 93396    | 5 1/2" utility funnel, 1 pint                              | 75-062    | 1         |
| 93397    | 7" heavy duty funnel, 2 quart                              | 75-070    | 1         |
| 93398    | 5 3/4" utility funnel w/screen includes 13" flex extension | 75-007    | 1         |

### MARS Grease Guns

Plews grease guns allow one hand operation and are perfect for hard to reach jobs. Precision pump develops up to 7000 p.s.i. Easy three-way loading by standard 14 oz. cartridge or suction filled. There is a head cap port for adding air bleeder or bulk loader fitting. Available in two different styles. Both feature tough all-steel construction with rugged baked enamel finish and tough zinc plated handles. New non-slip knurl on barrel allows for positive grip.

The mini grease gun kit is a compact "tool box" size grease gun that goes where other grease guns can't.

**Features include:**

- Zinc die cast head cap
- Pistol grip for easy one hand operation combined with heavy duty performance
- Uses standard 3 oz. cartridge
- Kit includes gun with rigid pipe and coupler and one 3 oz. multi purpose grease cartridge

MARS #93353 is a general purpose grease gun with professional features. This grease gun offers 2 way loading: 14 oz. cartridge or suction. The lever action gun includes 5-3/8" pipe and coupler. Develops up to 6,000 PSI. Durable baked enamel finish.

MARS #93355, professional grease gun features variable/short stroke for easy use in confined areas. This lever action gun provides an air bleeder and bulk loader fitting for 3-way loading (14 oz. cartridge, bulk or suction). Grease gun includes 5-3/8" pipe and coupler. Plated lever with comfortable oversized grip is also featured. Develops up to 10,000 PSI.



| MARS NO. | DESCRIPTION                        | MARS PACK | CASE QTY. |
|----------|------------------------------------|-----------|-----------|
| 93350    | Pistol grease gun, 12" hose        | 30-416    | 1 5       |
| 93351    | Pistol grease gun, with pipe ass'y | 30-300    | 1 5       |
| 93352    | Mini grease gun kit, 3 oz.         | 30-132    | 1 10      |
| 93353    | Lever action grease gun, 14 oz.    | 30-200    | 1 10      |
| 93355    | Professional grease gun, 14 oz.    | 30-475    | 1 10      |

### MARS Multi Purpose Grease

Plews multi-purpose lithium grease is a long lasting, hard working formula which delivers high performance in a wide range of heavy duty applications. NLG1 #1-1/2, drop point 350° F.



| MARS NO. | DESCRIPTION                         | MARS PACK | CASE QTY. |
|----------|-------------------------------------|-----------|-----------|
| 93361    | Multi purpose cartridge, 14 oz.     | 11-310    | 1 40      |
| 93360    | Multi purpose cartridge, 3 oz./3 pk | 11-312    | 1 12      |

### MARS Lubrication Accessories

**Standard Coupler**

Standard jaw-type coupler features spring-loaded ball check valve. Fits all 1/8" NPT threads. For hand operated lube equipment only. Recommended working pressure is 4,500 PSI. Length 1-7/16", width 5/8".

**Heavy Duty Coupler**

For hand operated grease guns only. Recommended working pressure is 6,000 PSI. All steel construction. Fits all 1/8" NPT threads. Four jaws. Length 1-1/2", width 3/4".

**Standard Duty Flexible Grease Hoses**

For use on hand operated grease guns only. Steel 1/8" NPT male fittings on each end. Recommended working pressure is 5,000 PSI.



| MARS NO. | DESCRIPTION                   | MARS PACK | CASE QTY. |
|----------|-------------------------------|-----------|-----------|
| 93365    | Standard grease gun coupler   | 05-031    | 1 10      |
| 93366    | Heavy duty grease gun coupler | 05-035    | 1 10      |
| 93367    | Heavy duty grease hose, 12"   | 10-212    | 1 10      |
| 93369    | Heavy duty grease hose, 18"   | 10-219    | 1 10      |

## Accessories

### Epoxy-Stik™

- Cures rock hard with no shrinkage
- Safe on portable water systems
- Withstands temperatures up to 250° F
- Hardens in 5-10 minutes, full cure in 24 hours
- Can be applied under water
- After 1 hour can be drilled, tapped, filed, sawed, sanded and painted
- Made in USA



**LA-CO**

| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95522*   | 4 oz. stick | 24        | 24        |

\* Packaged in one dozen per display box

### Sharpie® #15 Fiber Tip Marker (Dura-Ink #15)

- Fine tip
- Ideal for fine line marking
- Extra tough tip, won't spread
- Smear resistant, water resistant
- Marks on metal, wood, cardboard, paper, plastic, glass, etc.
- For identification of parts, layout work, marking cartons and crates
- Meets U.S. Fed. Spec. TT-1-544

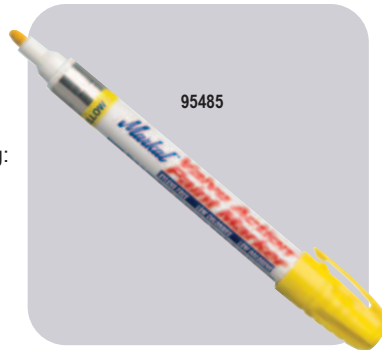


**LA-CO**

| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95488    | Black       | 12        | 72        |

### Valve Action™ Paintmarker

- Marking range: -50° to 150° F / -46° to 66° C
- Marks w/ real paint, dries in minutes
- Valve action nib releases paint as needed for continuous marking
- Marks on all surfaces including: metal, wood, glass, plastic, rubber, cardboard and paper
- Lead - free, low halogens
- The fiber nib is replaceable to assure complete use of each marker
- Durable metal barrel
- Meets California VOC regulations



**LA-CO**

| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 95480    | Black       | 12        | 48        |
| 95481    | Red         | 12        | 48        |
| 95485    | Yellow      | 12        | 48        |

### Dura-Ink® Fiber Tip Markers

- Larger ink supply, heavy duty metal barrel
- Water - resistant, fade - resistant
- Chisel tip makes fine lines or broad marks
- Meets Fed. Spec. TT-1- 544
- Use on cardboard, wood, metal, paper, ceramics, glass, etc.
- For identification of equipment, marking shipping cartons, sign making, etc.
- #20 is medium size, #25 is king size



**LA-CO**

| MARS NO. | DESCRIPTION                              | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 95500    | Dura -Ink® #25 - Black                   | 12        | 48        |
| 95516    | Markal Dura-Ink® #25 Black Marker (2-pk) | 1         | 24        |
| 95519    | Dura-Ink® #15 - Black                    | 1         | 36        |

### Pipetite-Stik®

- Efficient way to seal pipe
- Pressure: 350 PSI (24 BAR) for gas 2,000 PSI (136 BAR) for liquid
- Safe, non-toxic, non-drying
- Made in USA



**LA-CO**

| MARS NO. | DESCRIPTION              | MARS PACK | CASE QTY. |
|----------|--------------------------|-----------|-----------|
| 95433    | Pipetite Stick 1-1/4 oz. | 12        | 144       |

### E-Z Break® Anti-Seize Compound

- Copper-based anti-seize and lubricating compound
- Resists rust and corrosion
- Recommended for coating nuts, bolts, valves, flanges, splines, for easy break out after years of service
- Meets Mil. Spec. Mil-A-907E
- Authorized by USDA for use in federally inspected meat and poultry plants
- Temperature: to 1800° F (982° C)
- Made in USA



**LA-CO**

| MARS NO. | DESCRIPTION       | MARS PACK | CASE QTY. |
|----------|-------------------|-----------|-----------|
| 95472    | 10 oz. w/brushcap | 24        | 24        |



### Permatex® Adhesives & Sealants

Permatex® PermaPoxy™ 5 Minute General Purpose Epoxy and 30 Minute High Strength General Purpose Epoxy

- Versatile easy to use, clear appearance, 2 part adhesive and filler system. No need to weld or braze
- Fills gaps and will not shrink
- Temperature range -60°F to 180°F (-51°C to 82°C).
- 5 min. general purpose epoxy - permanent strength up to 3400 PSI
- 30 min high strength - permanent strength up to 3500 PSI

Permatex® Super Glue. This formulation was specially designed for a faster, long-lasting bond. It is easily applied and works on non-porous materials including metal, plastics, rubber, vinyl, paper, wood, textiles, and cork gaskets. Permanent transparent bond fills gaps to .004".



| MARS NO. | DESCRIPTION                          | MARS PACK | CASE QTY. |
|----------|--------------------------------------|-----------|-----------|
| 95555    | 5 Min Epoxy, .84 fl oz               | 12        | 12        |
| 95556    | 30 Min Epoxy, .84 fl oz dual syringe | 12        | 12        |
| 95557    | Super Glue Gel tube, 2 grams         | 12        | 12        |
| 95558    | Super Glue tube, 2 grams             | 12        | 12        |

### Permatex® High Performance Thread Sealant

Permatex® Thread Sealants seal and secure metal pipes and fittings by filling the space between threaded metal parts. Cures rapidly to with stand up to 10,000 PSI. By filling the space between threaded metal parts, Thread Sealants cure to a pliable seal to prevent leakage caused by vibration loosening, tape shredding, solvent evaporation, damaged threads, and temperature cycling. Designed for low and high pressure applications, thread Sealants seal instantly for on-line low pressure testing. When fully cured, they seal to the burst strength of most piping systems. Temperature Range:-65°to 300°F



| MARS NO. | DESCRIPTION                         | MARS PACK |
|----------|-------------------------------------|-----------|
| 95559    | High Strength Thread Sealant, white | 6         |

### Permatex® Medium Strength Threadlocker BLUE

All-purpose, medium strength threadlocker. Ideal for all nut and bolt applications 1/4" to 3/4" (6mm to 20mm). Eliminates need for stocking expensive lock nuts and lock washers. Locks and seals while preventing parts loosening due to vibration. Protects threads from corrosion. Removable with hand tools for easy disassembly. Conforms to ASTM D 5363 AN0321 (Mil-S-46163A, Type II, Grade N). Threadlockers remain the most reliable way to lock and seal threaded fasteners of all shapes and sizes, before or after assembly.



| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 95560    | Med Strength Threadlocker Blue, 6 ml tube, carded | 12        |

### Permatex® Form-A-Gasket® No. 2 Sealant

Slow-drying, non-hardening sealant designed for sealing cut gaskets and stamped parts. Allows for easy disassembly if required. Temperature range -65°F to 400°F (-54°C to 204°C); resists common shop fluids and fuels. Use where sealing is more important than adhesion.

**Suggested Applications:** Valve cover gaskets, oil pan gaskets



| MARS NO. | DESCRIPTION                          | MARS PACK |
|----------|--------------------------------------|-----------|
| 95563    | Form-A-Gasket®, 3 oz., tube, carded  | 12        |
| 95564    | Form-A-Gasket®, 11 oz., tube, carded | 12        |



## Accessories

### Permatex® Ultra Blue RTV Silicone Gasket Maker

Permatex® Ultra Blue RTV Silicone Gasket Maker. Tested to OEM Specifications Sensor-safe and non-corrosive. Will not contaminate oxygen sensors or corrode other electronic components. Superior adhesion to oily surfaces with long term durability. Makes reliable formed-in-place gaskets that resist cracking, shrinking and migrating. Coats pre-cut gaskets to increase reliability. Temperature range -65°F to 500°F (-54°C to 260°C) intermittent; resists auto and shop fluids and vibration.



95565

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 95565    | Ultra Blue RTV Silicone Gasket Maker, 3 oz. tube, carded | 12        |

### Permatex® Fast Orange® Fine Pumice Lotion Hand Cleaner

The #1 selling, biodegradable, waterless, petroleum solvent-free hand cleaner that contains no harsh chemicals, petroleum solvents or ammonia that can sting cuts or abrasions. Pure, fresh-smelling natural citrus power does the cleaning. Fortified with aloe, lanolin, glycerin, and other skin conditioners to soothe raw, rough hands. Fine Pumice deep cleans the toughest dirt. Works great on laundry stains (smooth lotion only), scuff marks, tile floors, pet odors and many other household cleaning needs. Readily Biodegradable according to OECD Method 301E



95561

95562

| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 95561    | Fast Orange Fine Pumice Lotion Hand Cleaner, 15 Fl. oz., squeeze bottle         | 12        |
| 95562    | Fast Orange Fine Pumice Lotion Hand Cleaner, Low Profile 1 gallon bottle w/pump | 4         |

## CRC Lubricants



CRC products incorporate the SDS(L)<sup>TM</sup>, a removable safety data sheet printed on the reverse side of the label. With this new labeling system, an SDS is always where you need it the most, right on the product you are using!

CRC 3-36 is a multi purpose lubricant and penetrant that forms a clear film that lubricates and stops corrosion. Its high affinity for metal allows it to penetrate and displace moisture leaving a long lasting rust preventing film. Available in aerosol with a nonflammable CO2 propellant and 360° valve.

CRC Screwloose® Penetrating Oil is a no compromise penetrant that attacks rust and corrosion, penetrating through oxides and soil to free corroded fasteners and mechanical components.

CRC Power Lube® is a unique new lubricant that incorporates a sophisticated additives package with PTFE to provide long lasting protection against friction and wear. It is able to work longer and better than other lubricants under the extremes of pressure and the environment. Unlike most lubricants with PTFE, it contains no chlorinated solvents.

CRC White Lithium grease is a high purity, high quality grade 2 white lithium based grease for superior lubrication. It is truly white, smooth and buttery in consistency for optimum surface coverage. It has both rust and oxidation inhibitors to provide durable lubrication and protection in any application.



93211

93208

93212

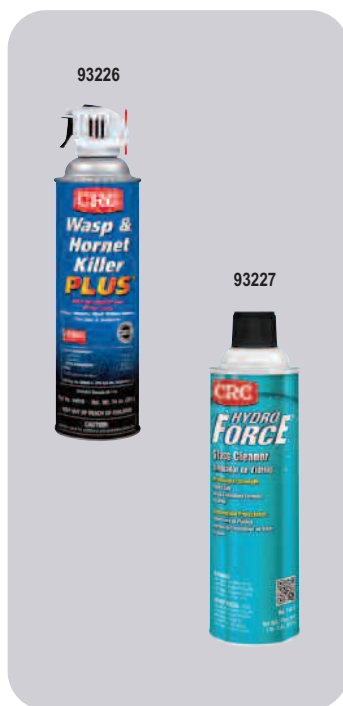
93214

| MARS NO. | DESCRIPTION                                       | MARS PACK |
|----------|---|-----------|
| 93208    | 3-36 Multi Purpose Lubricant, 11 oz.              | 12        |
| 93211    | Screwloose® Penetrating Oil, 11 oz.               | 12        |
| 93212    | Power Lube® High performance lubricant w/PTFE, 11 | 12        |
| 93214    | White Lithium Grease, 10 oz.                      | 12        |

## CRC Specialty Products

The Wasp and Hornet Killer Plus™ is a fast acting, high strength insecticide that kills wasps, hornets, black widow spiders, fire ants and scorpions. Will not damage plastic connectors and other insulating materials. Provides a dense accurate spray that will reach over 20 feet. Excellent for the A/C contractor.

HydroForce™ Glass Cleaner Professional Strength is formulated to clean streak-free – the first time and every time. The ammonia-fortified formula quickly cleans the toughest dirt, dust, fingerprint and haze deposits without leaving unsightly streaks due to residue. HydroForce™ is versatile and safe to use on all glass surfaces. The foaming, ready-to-use formula allows for greater coverage and less run-off when cleaning vertical surfaces. HydroForce™ is biodegradable, non-corrosive, non-flammable and non-abrasive. Let us prove it to you.



| MARS NO. | DESCRIPTION                          | MARS PACK |
|----------|--------------------------------------|-----------|
| 93226    | Wasp and Hornet Killer Plus™, 14 oz. | 12        |
| 93227    | HydroForce Glass Cleaner, 18 oz.     | 12        |

## CRC Cleaners/Degreasers



CRC Heavy Duty Degreaser is a chlorinated solvent based cleaner/degreaser that is chemically stable and extremely effective in most heavy duty applications. It has no fire or flash point, evaporates quickly with no residue and is non-conductive. New formula contains no ozone depleting compounds. Effectively removes grease, tar, oil, adhesives, etc. to increase operating efficiency.

CRC Industrial Contact Cleaner is designed to quickly and effectively clean sensitive electrical and electronic components. It has no flash point and evaporates quickly, leaving no residue. Contains no CFC's or VOC's

CRC QD Contact Cleaner is an alcohol based precision cleaner that is **100% free of CFC's**. For use on non-energized equipment, it evaporates rapidly and is harmless to most plastics. For use on electrical and electronic components where precision cleaning is necessary.

The CRC Contact Cleaner 2000™ is a revolutionary precision cleaning solvent designed to meet today's environmental challenges. This high purity solvent is a new generation HCFC and does not exhibit the same ozone depleting properties as conventional CFC solvents. It evaporates rapidly, has no flash point and leaves no residue (may affect some plastics).

CRC Gasket Remover is a solvent based high strength cleaner that effectively loosens and helps remove fiber gaskets, adhesives and sealants. It helps protect equipment surfaces by eliminating damage caused by scraping. Also removes paint and graffiti.



| MARS NO. | DESCRIPTION                        | MARS PACK |
|----------|------------------------------------|-----------|
| 93215    | Heavy Duty Degreaser, 19 oz.       | 12        |
| 93217    | Industrial Contact Cleaner, 14 oz. | 12        |
| 93218    | QD Contact Cleaner, 11 oz.         | 12        |
| 93219    | Contact Cleaner 2000™, 14 oz.      | 12        |
| 93222    | Gasket Remover, 12 oz.             | 12        |

## Accessories

### CRC Food Grade Silicone

CRC Food Grade Silicone forms a colorless, tasteless, non-toxic and non-staining film that is authorized by the USDA for use in federally inspected meat and poultry plants. Its silicone lubrication film meets FDA specifications for incidental food contact.



| MARS NO. | DESCRIPTION                 | MARS PACK |
|----------|-----------------------------|-----------|
| 93210    | Food Grade Silicone, 10 oz. | 12        |

### CRC RTV Silicone

CRC RTV Silicone Adhesive/Sealants are the perfect way to seal, bond and protect. With the press of the nozzle, a precise bead of high purity silicone is easily applied. No lumps, gaps, bubbles or waste. The package keeps the silicone fresh with the product in the nozzle forming a self sealing plug. Convenient and easy to use.



| MARS NO. | DESCRIPTION | MARS PACK |
|----------|-------------|-----------|
| 93236    | 8 oz. clear | 12        |

### CRC Corrosion Inhibitors

CRC Zinc-It® Instant Cold Galvanize is a high performance 95% zinc-rich coating that restores hot dipped galvanized properties to ferrous metals. Its sacrificial coating helps fight rust and corrosion creepage with a durable, flexible film.

CRC Belt Dressing extends the life of drive belts by improving traction and allowing runs under



| MARS NO. | DESCRIPTION           | MARS PACK |
|----------|-----------------------|-----------|
| 93223    | Zinc-It®, 13 oz.      | 12        |
| 93224    | Belt Dressing, 10 oz. | 12        |

### Spray-X Foaming Glass Cleaner



“Safe on Finished or Non-Porous Surface’s”

- The Most Versatile Glass Cleaner Available
- Sprays in Any Position
- Dissolves Dirt, Grease, Grit and Grime
- Heavy-Duty Foam Clings to Vertical Surfaces
- Guaranteed to Leave No Film - "Streak Free"
- Industrial Strength
- Pleasant Scent
- Premium Formula



| MARS NO. | DESCRIPTION                   | CASE QTY |
|----------|-------------------------------|----------|
| 93298    | SPRAY-X Glass Cleaner, 19 oz. | 12       |

### Industrial All Purpose Spray Enamel



Krylon TOUGH COAT® acrylic alkyd enamels feature a high-solids formula that ensures maximum coverage and performance. Tough Coat delivers the ultimate in protection, durability, high gloss, color retention and applies with a smooth even coverage. Fast-drying to the touch in 15 minutes. Ideal for light to heavy duty painting projects both indoors & outdoors.



| MARS NO. | DESCRIPTION          | REFRIG. ID # | CASE QTY. |
|----------|----------------------|--------------|-----------|
| 78976    | Machinery light gray | R-23         | 6         |
| 78987    | Machinery dark gray  | R-123        | 6         |
| 78981    | OSHA white (gloss)   | R-12, R-406A | 6         |
| 78982    | White (flat)         |              | 6         |
| 78983    | OSHA black (gloss)   |              | 6         |
| 78984    | Black (flat)         |              | 6         |
| 78985    | Aluminum             |              | 6         |

## Pipeseal

Pipeseal is a unique multi-component epoxy designed to quickly and permanently patch, seal and repair cracks, holes and leaks in all types of pipe.

### Seals Holes in Pipe to Full Pressure in Under Five Minutes!

- Works on all types of pipes including copper, steel, lead, cast iron and aluminum.
- Heat activated - Hardens fully in less than 1 minute.
- Withstands pressures up to 1200 PSI.
- No wrap/plug required.
- Suitable for refrigerant lines.
- Extreme chemical resistance
- 100% solids - No VOCs
- Permanently seals holes of up to 1/4 in. in diameter.

### INSTRUCTIONS:

- 1 Prepare Surface around pipe hole/crack with sand paper or file.
- 2 Remove clip and cut-off the end with the clear material and apply entire content to mixing surface; ensure mixing surface is not porous.
- 3 Thoroughly mix entire contents.
- 4 Apply to pipe with a wooden stick or trowel.
- 5 Cover a 2-inch-wide area around pipe hole/crack.
- 6 Apply heat with a heat gun/hair dryer (approx. 140°) until Pipe seal cures and hardens (usually within 1minute).



| MARS NO. | DESCRIPTION | MARS PACK | CASE QTY. |
|----------|-------------|-----------|-----------|
| 93629    | Pipeseal    | 1         | 12        |

## Chapin Sprayers & Accessories



MARS #79067, 2 gallon (1.5 gallon usable) polyethylene sprayer is a high density sprayer that resists breaking, leaking and chemical corrosion. This sprayer has a polymer shut off with lock on feature and a polymer nozzle that adjusts from fine spray to 30' stream, with a poly/brass extension that rotates 360°. Reinforced 36" hose resists crimping, cracking and leaking.

The Chapin acid sprayer is the ideal sprayer for cleaning and degreasing air conditioning coils, engines and many other uses. This 2 gallon (1.5 gallon usable) heavy-duty polyethylene tank features a new built-in relief valve/pressure gauge for added safety and polymer shut offs with lock off features to prevent accidental spraying. A 12" extension tube with adjustable poly cone nozzle ensures for better control when spraying chemically active liquids. Sprays coarse stream to fine mist. 42" hose included

MARS #79069, hand held pressure sprayer is a 48 oz. multi purpose sprayer for small areas. Heavy duty, chemical resistant poly tank features adjustable nozzle control for fine mist or straight stream spraying.



| MARS NO. | DESCRIPTION                   | MARS PACK | CASE QTY. |
|----------|-------------------------------|-----------|-----------|
| 79067    | 2 gallon polyethylene sprayer | 1         | 1         |
| 79068    | 2 gallon acid sprayer         | 1         | 1         |
| 79069    | 48 oz. hand held sprayer      | 1         | 1         |



## Accessories

### Swan Garden Hoses



MARS #79540, premium rubber hose, provide superior flexibility and pressure capacity. Maximum kink resistance and burst strength make this hose very durable. Handles hot water up to 160°F. Seal-tite™ washerless leakproof coupling.

The professional hot water hose is designed for a wide range of applications requiring hot water use up to 200°F. The heavy duty rubber construction offers maximum wear and abrasion resistance. Industrial style reinforcing for high burst pressure and kink resistant. Seal-tite™ washerless leakproof coupling. All hoses are made in the U.S.A.

WeatherFlex® Hose is an all-weather reinforced garden hose with its popular mint green Clear Tough™ jacket. Its medium duty construction makes it perfect in all seasons by staying pliable in cold weather. Comes with Eco couplings and patented Hose Armour™ to prevent kinking at the spigot.



| MARS NO. | DESCRIPTION                            | MARS PACK | CASE QTY. |
|----------|--|-----------|-----------|
| 79540    | Premium rubber - 5/8" x 50'            | 1         | 4         |
| 79542    | Hot water rubber - 5/8" x 50'          | 1         | 4         |
| 79641    | Weatherflex®, All weather - 5/8" x 50' | 1         | 5         |
| 79642    | Weatherflex®, All weather - 5/8" x 75' | 1         | 5         |

### Gilmour Full Size Pistol Grip Nozzles



#### Features of Gilmour® Pistol Grip Nozzles

|  | 79582                                | 79583                     | 79584               |
|--|--------------------------------------|---------------------------|---------------------|
| <b>Nozzle features</b>                                   | chrome                               | metal plated, full-size   | metalized full-size |
| All brass valve stem with permanent adjusting nut on all |                                      |                           |                     |
| Hold-open clip on all                                    |                                      |                           |                     |
| Patented, insul. grip & industrial strength lever        | yes                                  | no                        | no                  |
| Unique features  | rubber head guard, brass head insert | vinyl molded comfort grip |                     |
| Stainless steel spring on all                            |                                      |                           |                     |
| Lifetime duck packing seal on all                        |                                      |                           |                     |
| Male hose threaded for attaching accessories             | yes                                  | yes                       | yes                 |
| Pack carded on all                                       |                                      |                           |                     |



| MARS NO. | DESCRIPTION                          | MARS PACK | CASE QTY. |
|----------|--------------------------------------|-----------|-----------|
| 79582    | Insulated threaded front             | 1         | 24        |
| 79583    | Vinyl cushioned grip                 | 1         | 24        |
| 79584    | Metalized threaded front             | 1         | 48        |
| 79560    | Hose washers, fits 5/8" hoses, 20/pk | 1         | 1         |

### Custom Leather Craft Products

Professional contractors require professional tools and accessories. Carrying a CLC Softside Tool Carrier is like owning a workshop to go. Loads of pockets, rugged polyester fabric, reinforced bottom panels, heavy duty stitching and bar tacking at critical stress points are features that make CLC a requested brand.



| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 79279    | <b>25 Pocket Tool Pouch</b><br>• 7" x 5-1/2" multi compartment tray slides into bottom of pouch<br>• Box shaped design prevents tipping<br>• Padded carrying handle and adjustable shoulder strap<br>• 8"L x 8"W x 17"H  | 1         |
| 79280    | <b>15 Pocket, 16" Center Tray Tool Bag</b><br>• 13-1/2" x 9" multi compartment tray stores in middle of bag<br>• 8 pockets outside and 7 pockets inside<br>• Padded carrying handle and adjustable shoulder strap<br>• 16"L x 9"W x 9"H                                    | 1         |
| 79281    | <b>4 Pocket Tool Holder</b><br>• Hang, strap, or clip on workbelts, suspenders, or pants<br>• Securely holds small tools or accessories  | 1         |
| 79284    | <b>5 pocket tool Holder</b><br>• Hang, strap, or clip on workbelts, suspenders, or pants<br>• Securely holds small tools or accessories  | 1         |
| 79282    | <b>23 Pocket Large Tool Carrier</b><br>• 11" x 6" multi compartment plastic tray that slides into the bottom of the carrier<br>• 16 multi use outside pockets and 7 inside to organize tools & accessories<br>• Box shaped design prevents tipping<br>• 11"L x 10"W x 19"H | 1         |
| 79287    | <b>Plastic Cap Swivel Kneepads</b><br>• One size fits all<br>• Exclusive grooved cap design prevents thread abrasion<br>• Foam padded with easy on/off hook and loop fasteners   | 1         |
| 79288    | <b>Work Crew Gloves-L</b>  | 1         |
| 79289    | <b>Work Crew Gloves-XL</b><br>• Synthetic leather palm is tough, soft, and comfortable<br>• Lycra side panels provide flexibility<br>• Spandex back ensures snug fit   | 1         |
| 79277    | <b>75 Pocket-Tool Backpack</b><br>• 7"x 5" multi compartment plastic tray included<br>• Adjustable padded shoulder straps and carry handles<br>• 13"W x 17-1/2"H x 9"D   | 1         |



### Tool Boxes

All Plano tool boxes and stowaway boxes are constructed of premium quality impact resistant plastics. Solid brass hardware and sturdy ABS drawbolt type latches, withstands rugged wear. All boxes are made in the U.S.A. and have a lifetime warranty!

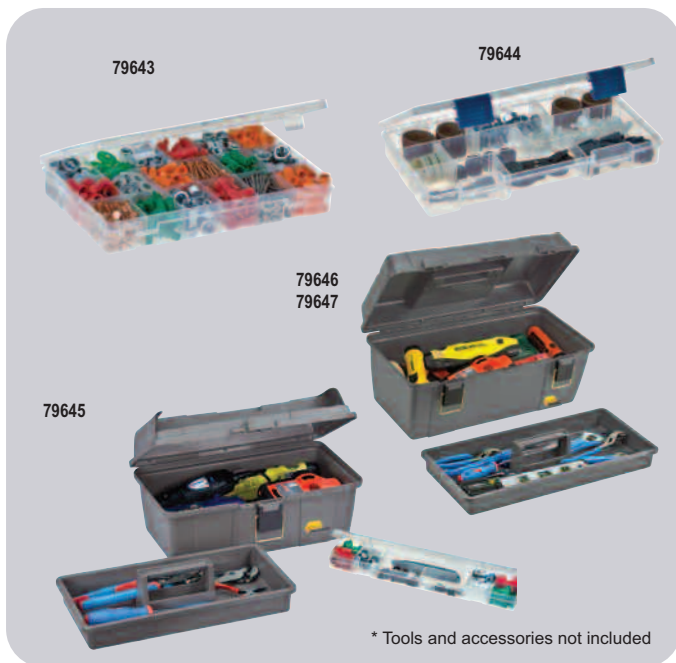
The Plano Tote-More®, MARS #79368, features a multi compartment drawer and convenient handle for portability. Open top for easy access. Unit measures 14 3/4" L x 9 1/8" W x 6 7/8" H.



\* Tools and accessories not included

| MARS NO. | DESCRIPTION                    | MARS PACK |
|----------|--------------------------------|-----------|
| 79368    | Tote More® w/draw - gray/black | 4         |

### Plano Tool Boxes

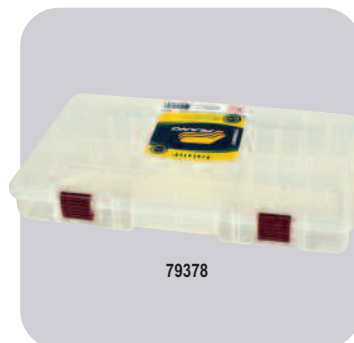


\* Tools and accessories not included

| MARS NO. | DESCRIPTION   | MARS PACK |
|----------|---|-----------|
| 79643    | Clear StowAway 18 Fixed Compartments, 10.75" x 7.25" x 1.75"  | 6         |
| 79644    | Clear StowAway - 5 to 9 Adj. Compt. Pro-Latch, 1' Deep Storage, 9.13" x 5.00" x 1.25"   | 6         |
| 79645    | Graphite Gray & Black 16" Tool Box with bulk storage space and tray, Removable StowAway Organizer built into the top, 16" x 9.5" x 7.5" | 4         |
| 79646    | Graphite Gray & Black 20" tool box with bulk storage space and tray, Heavy Duty handle, 20.25" x 10.88" x 9.125"                        | 4         |
| 79647    | Graphite Gray & Iron Yellow 22" tool box with extra deep storage space and tray, 21.31" x 12.5" x 13.5"                                 | 1         |

### Stowaways - Plastic

MARS stowaway boxes are ideal for the professionals or do-it-yourselfers. These utility boxes hold bolts, screws, washers, bits, solderless terminals and many other small items. MARS #79378 has 6-18 adjustable compartments and measures 11" L x 7 1/4"W x 1 3/4"H.



79378

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 79378    | 6-18 adj. stowaway box - translucent gray, 11.0" x 7.25" x 1.75" | 6         |

### Storage Bins

- Heavy duty bins securely stack on top of each other, sit on shelving and hang from racks, panels, rails and carts
- Anti slide stop prevents stacked bins from shifting forward
- Guaranteed not to crack or break under normal load conditions
- Sturdy one piece construction is water, rust and corrosion proof.
- Large front label are for easy coding and scanning
- Curved bottom hopper makes it easy to retrieve small parts

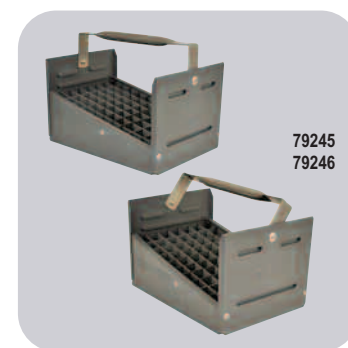


79764

| MARS NO. | DESCRIPTION                                    | MARS PACK |
|----------|--|-----------|
| 79764    | 12" Blue Shelf Bin 11 5/8" L x 4 1/8" W x 4" H | 24        |
| 79765    | 12" Blue Shelf Bin 11 5/8" L x 6 5/8" W x 4" H | 12        |
| 79766    | 12" Blue Shelf Bin 11 5/8" L x 8 3/8" W x 4" H | 12        |

### Nipple Caddies

- Nipple caddies are designed to help keep you organized
- Durable caddies are constructed of corrosion- and rust-resistant polyethylene
- Designed to hold nipples and keeps them out of water and other liquids
- Drain holes in bottom allows caddy to drain
- Strong enough to take the abuse yet half the weight of metal
- Tall (with handle in up position)



79245  
79246

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--|-----------|
| 79245    | 1/2" Nipple Caddy, Holds up to 77 nipples. Outside Dimensions: 11-1/4" x 7-3/4" x 8-3/4" | 4         |
| 79246    | 3/4" Nipple Caddy, Holds up to 66 nipples. Outside Dimensions: 13-3/4" x 8" x 8-3/4"     | 4         |

Accessories

**MARS Clipboards  
And Formholders**



MARS aluminum Style A Formholder is versatile, efficient and easy to use. It can be used by both left and right handed people and will accommodate forms ruled either lengthwise or across the width. The storage compartment below keeps completed forms dry and protected.

The MARS Snapaks are very popular aluminum formholders that accommodate loose forms or sales books. Unit opens like a book. Clipboard is included on inside front cover. A hinged aluminum strap on inside back cover holds copies or sales books securely in place. The entire holder folds into a compact protective box to keep forms safe and dry.

The MARS #79558 Redi-Rite is a clipboard on a box. This is the holder to have when you need to carry many forms. Extra storage capacity. All aluminum construction.



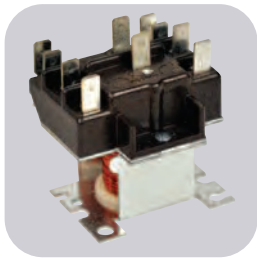
- Made from durable RECYCLED aluminum with at least 30% post-consumer waste
- Made in the USA

| MARS NO. | DESCRIPTION    |              | CASE QTY. |
|----------|----------------|--------------|-----------|
| 79552    | "A" formholder | 8-1/2" x 12" | 12        |
| 79555    | Snapak         | 8-1/2" x 12" | 12        |
| 79558    | Redi-Rite      | 8-1/2" x 12" | 6         |



# JARD by MARS

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**Single Section Run Capacitors**

**Features:**

- JARD provides a low cost alternative to popular models and the widest selection of ratings in the industry
- Non-PCB capacitors
- Physical interrupter makes our capacitors safe
- Perfect for general replacements
- Capacitor accessories – see page J-7
- UL and CSA listings available



| SINGLE SECTION 370 VOLT OVAL |            |                    |              |              |
|------------------------------|------------|--------------------|--------------|--------------|
| JARD NO.                     | MICROFARAD | CASE HEIGHT INCHES | WIDTH INCHES | DEPTH INCHES |
| 12902                        | 2          | 1.63               | 2.06         | 1.21         |
| 12903                        | 3          | 1.50               | 2.06         | 1.21         |
| 12904                        | 4          | 1.50               | 2.06         | 1.21         |
| 12905                        | 5          | 1.50               | 2.06         | 1.21         |
| 12906                        | 6          | 1.50               | 2.06         | 1.21         |
| 12907                        | 7.5        | 1.50               | 2.06         | 1.21         |
| 12908                        | 10         | 1.50               | 2.06         | 1.21         |
| 12909                        | 12.5       | 1.50               | 2.06         | 1.21         |
| 12910                        | 15         | 1.63               | 2.06         | 1.21         |
| 12912                        | 17.5       | 1.63               | 2.06         | 1.21         |
| 12914                        | 20         | 2.38               | 2.06         | 1.21         |
| 12915                        | 25         | 2.63               | 2.06         | 1.21         |
| 12917                        | 30         | 3.00               | 2.06         | 1.21         |
| 12918                        | 35         | 3.38               | 2.06         | 1.21         |
| 12921                        | 40         | 3.75               | 2.06         | 1.21         |
| 12923                        | 45         | 3.75               | 2.06         | 1.21         |
| 12925                        | 50         | 4.75               | 2.06         | 1.21         |
| 12924                        | 55         | 4.75               | 2.06         | 1.21         |
| 12987                        | 60         | 2.38               | 2.81         | 1.81         |
| 12988                        | 65         | 3.75               | 2.81         | 1.81         |
| 12989                        | 70         | 2.63               | 2.81         | 1.81         |
| 12990                        | 80         | 4.00               | 2.81         | 1.81         |

| SINGLE SECTION 370 VOLT ROUND |            |                    |              |
|-------------------------------|------------|--------------------|--------------|
| JARD NO.                      | MICROFARAD | CASE HEIGHT INCHES | DEPTH INCHES |
| 12992                         | 2          | 2.00               | 1.75         |
| 12993                         | 3          | 2.00               | 1.75         |
| 12994                         | 4          | 2.00               | 1.75         |
| 12995                         | 5          | 2.00               | 1.75         |
| 12996                         | 6          | 2.00               | 1.75         |
| 12997                         | 7.5        | 2.00               | 1.75         |
| 12998                         | 10         | 2.00               | 1.75         |
| 12999                         | 12.5       | 2.00               | 1.75         |
| 12710                         | 15         | 2.00               | 1.75         |
| 12911                         | 16         | 2.00               | 1.75         |
| 12712                         | 17.5       | 2.00               | 1.75         |
| 12714                         | 20         | 2.00               | 1.75         |
| 12715                         | 25         | 2.00               | 1.75         |
| 12717                         | 30         | 2.00               | 1.75         |
| 12718                         | 35         | 2.38               | 1.75         |
| 12721                         | 40         | 2.38               | 1.75         |
| 12723                         | 45         | 2.38               | 1.75         |
| 12725                         | 50         | 2.63               | 1.75         |
| 12726                         | 55         | 2.63               | 1.75         |
| 12727                         | 60         | 3.00               | 1.75         |
| 12828                         | 65         | 3.00               | 1.75         |
| 12729                         | 70         | 3.38               | 1.75         |
| 12899                         | 80         | 3.38               | 1.75         |
| 12916                         | 100        | 4.00               | 1.75         |

| SINGLE SECTION 440/370 VOLT OVAL |            |                    |              |              |
|----------------------------------|------------|--------------------|--------------|--------------|
| JARD NO.                         | MICROFARAD | CASE HEIGHT INCHES | WIDTH INCHES | DEPTH INCHES |
| 12926                            | 2          | 1.50               | 2.06         | 1.21         |
| 12919                            | 2.5        | 1.50               | 2.06         | 1.21         |
| 12927                            | 3          | 1.50               | 2.06         | 1.21         |
| 12928                            | 4          | 1.50               | 2.06         | 1.21         |
| 12929                            | 5          | 1.50               | 2.06         | 1.21         |
| 12930                            | 6          | 1.50               | 2.06         | 1.21         |
| 12931                            | 7.5        | 1.50               | 2.06         | 1.21         |
| 12932                            | 10         | 1.50               | 2.06         | 1.21         |
| 12933                            | 12.5       | 1.63               | 2.06         | 1.21         |
| 12934                            | 15         | 2.38               | 2.06         | 1.21         |
| 12936                            | 17.5       | 2.38               | 2.06         | 1.21         |
| 12937                            | 20         | 2.63               | 2.06         | 1.21         |
| 12940                            | 25         | 3.00               | 2.06         | 1.21         |
| 12941                            | 30         | 3.38               | 2.06         | 1.21         |
| 12943                            | 35         | 3.75               | 2.06         | 1.21         |
| 12945                            | 40         | 4.75               | 2.06         | 1.21         |
| 12948                            | 45         | 4.75               | 2.06         | 1.21         |
| 12949                            | 50         | 2.38               | 2.81         | 1.81         |
| 12950                            | 55         | 2.63               | 2.81         | 1.81         |
| 12951                            | 60         | 2.75               | 2.81         | 1.81         |
| 12952                            | 65         | 3.00               | 2.81         | 1.81         |
| 12830                            | 70         | 3.00               | 2.81         | 1.81         |
| 12831                            | 75         | 3.38               | 2.81         | 1.81         |
| 12840                            | 80         | 3.38               | 2.81         | 1.81         |

| SINGLE SECTION 440/370 VOLT ROUND |            |                    |              |
|-----------------------------------|------------|--------------------|--------------|
| JARD NO.                          | MICROFARAD | CASE HEIGHT INCHES | DEPTH INCHES |
| 12802                             | 2          | 2.00               | 1.75         |
| 12803                             | 3          | 2.00               | 1.75         |
| 12804                             | 4          | 2.00               | 1.75         |
| 12805                             | 5          | 2.00               | 1.75         |
| 12806                             | 6          | 2.00               | 1.75         |
| 12807                             | 7.5        | 2.00               | 1.75         |
| 12732                             | 10         | 2.00               | 1.75         |
| 12733                             | 12.5       | 2.00               | 1.75         |
| 12734                             | 15         | 2.00               | 1.75         |
| 12736                             | 17.5       | 2.00               | 1.75         |
| 12737                             | 20         | 2.00               | 1.75         |
| 12740                             | 25         | 2.00               | 1.75         |
| 12741                             | 30         | 2.38               | 1.75         |
| 12743                             | 35         | 2.38               | 1.75         |
| 12745                             | 40         | 2.63               | 1.75         |
| 12748                             | 45         | 3.00               | 1.75         |
| 12751                             | 50         | 3.00               | 1.75         |
| 12752                             | 55         | 3.38               | 1.75         |
| 12754                             | 60         | 3.38               | 1.75         |
| 12657                             | 65         | 4.00               | 2.50         |
| 12758                             | 70         | 3.75               | 1.75         |
| 12759                             | 80         | 4.00               | 1.75         |
| 12868                             | 90         | 3.75               | 2.00         |

# Motor Run Capacitors

## Dual Section Motor Run Capacitors

Dual section run capacitors are used primarily to serve two microfarad applications. They can, however, by making various combinations of parallel connections, be used to obtain many other microfarad ratings.



**Features:**

- Non-PCB capacitors  
Physical interrupter makes our capacitors safe
- Perfect for general replacements
- Capacitor accessories – see page J-7
- UL and CSA listings available

| DUAL SECTION 370 VOLT OVAL |            |                    |              |              |
|----------------------------|------------|--------------------|--------------|--------------|
| JARD NO.                   | MICROFARAD | CASE HEIGHT INCHES | WIDTH INCHES | DEPTH INCHES |
| 12841                      | 15/3       | 2.38               | 2.81         | 1.81         |
| 12956                      | 15/4       | 2.38               | 2.81         | 1.81         |
| 12957                      | 15/5       | 2.38               | 2.81         | 1.81         |
| 12958                      | 15/10      | 2.38               | 2.81         | 1.81         |
| 12959                      | 17.5/4     | 2.63               | 2.81         | 1.81         |
| 12960                      | 17.5/5     | 2.63               | 2.81         | 1.81         |
| 12961                      | 20/3       | 2.38               | 2.81         | 1.81         |
| 12962                      | 20/4       | 2.38               | 2.81         | 1.81         |
| 12963                      | 20/5       | 2.38               | 2.81         | 1.81         |
| 12864                      | 20/10      | 2.38               | 2.81         | 1.81         |
| 12964                      | 20/15      | 2.38               | 2.81         | 1.81         |
| 12842                      | 25/3       | 2.38               | 2.81         | 1.81         |
| 12965                      | 25/4       | 2.38               | 2.81         | 1.81         |
| 12966                      | 25/5       | 2.38               | 2.81         | 1.81         |
| 12843                      | 25/7.5     | 2.63               | 2.81         | 1.81         |
| 12832                      | 25/8       | 2.63               | 2.81         | 1.81         |
| 12867                      | 25/10      | 2.38               | 2.81         | 1.81         |
| 12833                      | 25/15      | 2.38               | 2.81         | 1.81         |
| 12844                      | 30/3       | 2.38               | 2.81         | 1.81         |
| 12845                      | 30/4       | 2.38               | 2.81         | 1.81         |
| 12969                      | 30/5       | 2.38               | 2.81         | 1.81         |
| 12846                      | 30/7.5     | 2.38               | 2.81         | 1.81         |
| 12847                      | 30/10      | 2.38               | 2.81         | 1.81         |
| 12848                      | 35/3       | 2.63               | 2.81         | 1.81         |
| 12971                      | 35/4       | 2.38               | 2.81         | 1.81         |
| 12972                      | 35/5       | 2.38               | 2.81         | 1.81         |
| 12849                      | 35/7.5     | 2.38               | 2.81         | 1.81         |
| 12850                      | 35/10      | 2.38               | 2.81         | 1.81         |
| 12851                      | 40/3       | 3.00               | 2.81         | 1.81         |
| 12858                      | 40/4       | 2.63               | 2.81         | 1.81         |
| 12871                      | 40/5       | 2.38               | 2.81         | 1.81         |
| 12852                      | 40/7.5     | 2.63               | 2.81         | 1.81         |
| 12834                      | 40/10      | 3.00               | 2.81         | 1.81         |
| 12874                      | 45/5       | 2.63               | 2.81         | 1.81         |
| 12853                      | 45/7.5     | 2.63               | 2.81         | 1.81         |
| 12836                      | 45/10      | 2.63               | 2.81         | 1.81         |
| 12837                      | 45/15      | 2.63               | 2.81         | 1.81         |
| 12838                      | 50/5       | 2.63               | 2.81         | 1.81         |
| 12854                      | 55/5       | 3.75               | 2.81         | 1.81         |
| 12855                      | 55/7.5     | 2.63               | 2.81         | 1.81         |
| 12839                      | 60/5       | 2.63               | 2.81         | 1.81         |
| 12856                      | 60/7.5     | 2.63               | 2.81         | 1.81         |
| 12857                      | 60/10      | 3.75               | 2.81         | 1.81         |
| 12859                      | 65/5       | 3.00               | 2.81         | 1.81         |
| 12863                      | 80/5       | 3.38               | 2.81         | 1.81         |
| 12817                      | 80/7.5     | 3.38               | 2.81         | 1.81         |

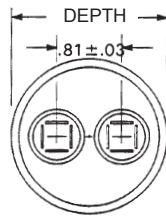
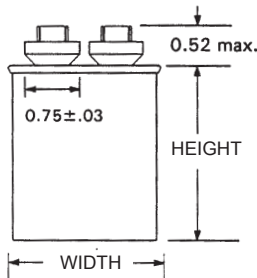
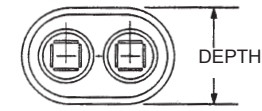
| DUAL SECTION 370 VOLT ROUND |            |                    |              |
|-----------------------------|------------|--------------------|--------------|
| JARD NO.                    | MICROFARAD | CASE HEIGHT INCHES | DEPTH INCHES |
| 12701                       | 15/3       | 3.13               | 2.00         |
| 12702                       | 15/4       | 2.13               | 2.00         |
| 12703                       | 15/5       | 2.13               | 2.00         |
| 12704                       | 15/10      | 2.13               | 2.00         |
| 12705                       | 17.5/4     | 2.13               | 2.00         |
| 12706                       | 17.5/5     | 3.13               | 2.00         |
| 12707                       | 20/4       | 2.13               | 2.00         |
| 12760                       | 20/5       | 2.13               | 2.00         |
| 12716                       | 20/7.5     | 2.63               | 2.00         |
| 12708                       | 20/10      | 2.13               | 2.00         |
| 12709                       | 20/15      | 3.13               | 2.00         |
| 12711                       | 25/3       | 2.13               | 2.00         |
| 12875                       | 25/4       | 2.13               | 2.00         |
| 12761                       | 25/5       | 2.13               | 2.00         |
| 12762                       | 25/7.5     | 2.13               | 2.00         |
| 12713                       | 25/10      | 2.13               | 2.00         |
| 12720                       | 30/3       | 2.13               | 2.00         |
| 12763                       | 30/4       | 2.13               | 2.00         |
| 12764                       | 30/5       | 2.13               | 2.00         |
| 12724                       | 30/7.5     | 2.13               | 2.00         |
| 12728                       | 30/10      | 3.13               | 2.00         |
| 12939                       | 30/15      | 3.63               | 2.00         |
| 12730                       | 35/3       | 2.13               | 2.00         |
| 12731                       | 35/4       | 2.13               | 2.00         |
| 12766                       | 35/5       | 2.13               | 2.00         |
| 12735                       | 35/7.5     | 2.13               | 2.00         |
| 12738                       | 35/10      | 2.13               | 2.00         |
| 12739                       | 40/3       | 2.75               | 2.00         |
| 12767                       | 40/4       | 2.75               | 2.00         |
| 12878                       | 40/5       | 2.75               | 2.00         |
| 12768                       | 40/7.5     | 2.75               | 2.00         |
| 12746                       | 40/10      | 2.75               | 2.00         |
| 12747                       | 45/3       | 2.75               | 2.00         |
| 12947                       | 45/4       | 2.75               | 2.00         |
| 12769                       | 45/5       | 2.75               | 2.00         |
| 12749                       | 45/7.5     | 2.75               | 2.00         |
| 12750                       | 45/10      | 2.75               | 2.00         |
| 12753                       | 50/3       | 2.75               | 2.00         |
| 12755                       | 50/5       | 2.75               | 2.00         |
| 12825                       | 50/7.5     | 2.75               | 2.00         |
| 12757                       | 50/10      | 2.75               | 2.00         |
| 12893                       | 55/5       | 2.75               | 2.00         |
| 12894                       | 55/7.5     | 2.75               | 2.00         |
| 12967                       | 55/10      | 2.75               | 2.00         |
| 12976                       | 60/3       | 2.75               | 2.00         |
| 12895                       | 60/5       | 3.13               | 2.00         |
| 12896                       | 60/7.5     | 2.75               | 2.00         |
| 12865                       | 60/10      | 2.75               | 2.00         |
| 12742                       | 65/5       | 3.13               | 2.00         |
| 12953                       | 70/5       | 3.13               | 2.00         |
| 12954                       | 70/7.5     | 3.13               | 2.00         |
| 12955                       | 70/10      | 3.13               | 2.00         |
| 12744                       | 75/5       | 3.13               | 2.00         |
| 12946                       | 75/7.5     | 3.13               | 2.00         |
| 12984                       | 75/10      | 3.13               | 2.00         |
| 12897                       | 80/5       | 3.88               | 2.00         |
| 12819                       | 80/7.5     | 3.88               | 2.00         |
| 12824                       | 80/10      | 3.88               | 2.00         |
| 12722                       | 80/12.5    | 3.88               | 2.00         |
| 12829                       | 85/5       | 3.88               | 2.00         |
| 12756                       | 85/7.5     | 4.75               | 2.00         |
| 12922                       | 85/10      | 3.88               | 2.00         |

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

Base Dimensions on page J-5

Capacitor Base Dimensions

Capacitor accessories – see page J-7



| DUAL SECTION 440/370 VOLT ROUND |            |                    |              |
|---------------------------------|------------|--------------------|--------------|
| JARD NO.                        | MICROFARAD | CASE HEIGHT INCHES | DEPTH INCHES |
| 12811                           | 10/5       | 3.13               | 2.00         |
| 12818                           | 15/5       | 2.13               | 2.00         |
| 12656                           | 15/10      | 3.63               | 2.00         |
| 12650                           | 17.5/5     | 3.63               | 2.00         |
| 12780                           | 20/5       | 2.13               | 2.00         |
| 12654                           | 20/7.5     | 2.13               | 2.00         |
| 12651                           | 20/10      | 2.13               | 2.00         |
| 12812                           | 20/15      | 2.13               | 2.00         |
| 12653                           | 25/3       | 2.13               | 2.00         |
| 12655                           | 25/4       | 2.13               | 2.00         |
| 12778                           | 25/5       | 2.13               | 2.00         |
| 12779                           | 25/7.5     | 2.13               | 2.00         |
| 12813                           | 25/10      | 2.13               | 2.00         |
| 12814                           | 25/15      | 3.13               | 2.00         |
| 12826                           | 30/3       | 2.13               | 2.00         |
| 12820                           | 30/4       | 2.13               | 2.00         |
| 12781                           | 30/5       | 2.13               | 2.00         |
| 12782                           | 30/7.5     | 2.75               | 2.00         |
| 12652                           | 30/10      | 2.75               | 2.00         |
| 12977                           | 35/3       | 2.75               | 2.00         |
| 12870                           | 35/4       | 2.75               | 2.00         |
| 12783                           | 35/5       | 2.75               | 2.00         |
| 12719                           | 35/6       | 2.75               | 2.00         |
| 12784                           | 35/7.5     | 2.75               | 2.00         |
| 12797                           | 35/10      | 2.75               | 2.00         |
| 12978                           | 40/3       | 2.75               | 2.00         |
| 12785                           | 40/4       | 2.75               | 2.00         |
| 12786                           | 40/5       | 2.75               | 2.00         |
| 12920                           | 40/6       | 2.75               | 2.00         |
| 12787                           | 40/7.5     | 2.75               | 2.00         |
| 12798                           | 40/10      | 2.75               | 2.00         |
| 12979                           | 45/3       | 2.75               | 2.00         |
| 12891                           | 45/4       | 2.75               | 2.00         |
| 12788                           | 45/5       | 2.75               | 2.00         |
| 12827                           | 45/6       | 2.75               | 2.00         |
| 12789                           | 45/7.5     | 2.75               | 2.00         |
| 12872                           | 45/10      | 2.75               | 2.00         |
| 12790                           | 50/5       | 3.13               | 2.00         |
| 12791                           | 50/7.5     | 2.75               | 2.00         |
| 12892                           | 50/10      | 3.13               | 2.00         |
| 12792                           | 55/5       | 3.13               | 2.00         |
| 12793                           | 55/7.5     | 3.13               | 2.00         |
| 12799                           | 55/10      | 3.13               | 2.00         |
| 12860                           | 60/3       | 3.13               | 2.00         |
| 12794                           | 60/5       | 3.13               | 2.00         |
| 12795                           | 60/7.5     | 3.13               | 2.00         |
| 12796                           | 60/10      | 3.13               | 2.00         |
| 12861                           | 60/12.5    | 3.13               | 2.00         |
| 12642                           | 65/5       | 3.88               | 2.00         |
| 12659                           | 65/7.5     | 4.75               | 2.50         |
| 12862                           | 65/10      | 3.88               | 2.00         |
| 12823                           | 70/5       | 3.88               | 2.00         |
| 12866                           | 70/7.5     | 3.88               | 2.00         |
| 12869                           | 70/10      | 3.88               | 2.00         |
| 12968                           | 75/5       | 3.88               | 2.00         |
| 12901                           | 75/7.5     | 3.88               | 2.00         |
| 12935                           | 75/10      | 3.88               | 2.00         |
| 12801                           | 80/5       | 3.88               | 2.00         |
| 12816                           | 80/7.5     | 3.88               | 2.00         |
| 12821                           | 80/10      | 3.88               | 2.00         |
| 12938                           | 85/5       | 3.88               | 2.00         |
| 12942                           | 85/7.5     | 3.88               | 2.00         |
| 12944                           | 85/10      | 3.88               | 2.00         |

| DUAL SECTION 440/370 VOLT OVAL |            |                    |              |              |
|--------------------------------|------------|--------------------|--------------|--------------|
| JARD NO.                       | MICROFARAD | CASE HEIGHT INCHES | WIDTH INCHES | DEPTH INCHES |
| 12660                          | 5/5        | 2.38               | 2.81         | 1.81         |
| 12765                          | 10/5       | 3.13               | 2.81         | 1.81         |
| 12970                          | 10/10      | 2.38               | 2.81         | 1.81         |
| 12770                          | 15/4       | 2.38               | 2.81         | 1.81         |
| 12771                          | 15/5       | 2.38               | 2.81         | 1.81         |
| 12777                          | 15/10      | 2.63               | 2.81         | 1.81         |
| 12880                          | 20/5       | 2.38               | 2.81         | 1.81         |
| 12983                          | 20/15      | 2.38               | 2.81         | 1.81         |
| 12884                          | 25/5       | 2.38               | 2.81         | 1.81         |
| 12882                          | 25/7.5     | 3.00               | 2.81         | 1.81         |
| 12883                          | 25/10      | 2.38               | 2.81         | 1.81         |
| 12886                          | 25/15      | 3.75               | 2.81         | 1.81         |
| 12881                          | 30/4       | 2.63               | 2.81         | 1.81         |
| 12887                          | 30/5       | 2.63               | 2.81         | 1.81         |
| 12982                          | 30/7.5     | 2.63               | 2.81         | 1.81         |
| 12835                          | 30/10      | 2.63               | 2.81         | 1.81         |
| 12985                          | 35/3       | 2.63               | 2.81         | 1.81         |
| 12879                          | 35/4       | 2.63               | 2.81         | 1.81         |
| 12885                          | 35/5       | 2.63               | 2.81         | 1.81         |
| 12888                          | 35/7.5     | 2.63               | 2.81         | 1.81         |
| 12876                          | 35/8.5     | 3.00               | 2.81         | 1.81         |
| 12772                          | 35/10      | 2.63               | 2.81         | 1.81         |
| 12877                          | 40/3       | 3.00               | 2.81         | 1.81         |
| 12986                          | 40/5       | 3.00               | 2.81         | 1.81         |
| 12889                          | 40/7.5     | 3.00               | 2.81         | 1.81         |
| 12773                          | 40/10      | 2.63               | 2.81         | 1.81         |
| 12890                          | 45/5       | 3.00               | 2.81         | 1.81         |
| 12774                          | 45/7.5     | 3.00               | 2.81         | 1.81         |
| 12808                          | 50/5       | 3.00               | 2.81         | 1.81         |
| 12913                          | 50/7.5     | 3.00               | 2.81         | 1.81         |
| 12775                          | 55/5       | 3.00               | 2.81         | 1.81         |
| 12822                          | 55/10      | 3.00               | 2.81         | 1.81         |
| 12809                          | 60/5       | 3.75               | 2.81         | 1.81         |
| 12776                          | 60/7.5     | 3.75               | 2.81         | 1.81         |
| 12810                          | 65/10      | 4.75               | 3.56         | 1.88         |
| 12815                          | 80/5       | 3.75               | 2.81         | 1.81         |
| 12898                          | 80/7.5     | 3.75               | 2.81         | 1.81         |

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

# Motor Start Capacitors

## Motor Start Capacitors

JARD Motor Start Capacitors provide a low cost alternative to popular models available. MARS offers the largest assortment of capacitor ratings in the industry.

These electrolytic capacitors feature a hermetically sealed black bakelite case which permanently protects the capacitor from oil, dirt, grease or moisture.

Capacitor accessories – see page J-7



| 110/125 DUAL VOLTAGE AC |            |           |
|-------------------------|------------|-----------|
| JARD NO.                | MICROFARAD | CASE SIZE |
| 11902                   | 21-25      | 1         |
| 11903                   | 25-30      | 1         |
| 11904                   | 30-36      | 1         |
| 11905                   | 36-43      | 1         |
| 11906                   | 43-56      | 1         |
| 11907                   | 56-67      | 1         |
| 11908                   | 72-88      | 1         |
| 11909                   | 88-107     | 1         |
| 11910                   | 108-130    | 1         |
| 11912                   | 124-155    | 1         |
| 11911                   | 130-156    | 1         |
| 11913                   | 145-174    | 1         |
| 11914                   | 161-193    | 1         |
| 11915                   | 189-227    | 1         |
| 11916                   | 200-240    | 1         |
| 11917                   | 216-259    | 1         |
| 11918                   | 233-291    | 1         |
| 11919                   | 270-324    | 1         |
| 11920                   | 300-360    | 1         |
| 11921                   | 324-388    | 1         |
| 11922                   | 340-408    | 1         |
| 11923                   | 378-438    | 1         |
| 11924                   | 400-480    | 1         |
| 11971                   | 430-516    | 1         |
| 11925                   | 460-552    | 1         |
| 11926                   | 540-648    | 2         |
| 11927                   | 590-708    | 4         |
| 11947                   | 645-774    | 4         |
| 11928                   | 708-850    | 4         |
| 11972                   | 815-970    | 4         |
| 11929                   | 829-995    | 4         |
| 11973                   | 850-1020   | 4         |
| 11930                   | 1000-1200  | 4         |
| 11974                   | 1290-1548  | 5         |

| 165 VOLTAGE AC |            |           |
|----------------|------------|-----------|
| JARD NO.       | MICROFARAD | CASE SIZE |
| 11975          | 72-88      | 1         |
| 11976          | 88-107     | 1         |
| 11977          | 108-130    | 1         |
| 11931          | 124-149    | 1         |
| 11932          | 145-174    | 1         |
| 11933          | 161-193    | 1         |
| 11934          | 189-227    | 1         |
| 11978          | 216-259    | 2         |
| 11935          | 233-292    | 2         |
| 11936          | 270-324    | 2         |
| 11979          | 340-408    | 4         |
| 11980          | 378-455    | 4         |
| 11994          | 400-480    | 4         |
| 11981          | 540-648    | 4         |
| 11982          | 710-852    | 5         |
| 11983          | 810-972    | 5         |

| 220/250 DUAL VOLTAGE AC |            |           |
|-------------------------|------------|-----------|
| JARD NO.                | MICROFARAD | CASE SIZE |
| 11938                   | 21-25      | 1         |
| 11939                   | 25-30      | 1         |
| 11940                   | 30-36      | 1         |
| 11941                   | 36-43      | 1         |
| 11942                   | 43-56      | 1         |
| 11943                   | 56-70      | 1         |
| 11984                   | 59-71      | 1         |
| 11937                   | 64-77      | 1         |
| 11944                   | 72-88      | 1         |
| 11945                   | 88-107     | 1         |
| 11946                   | 108-130    | 4         |
| 11948                   | 124-155    | 4         |
| 11949                   | 145-175    | 4         |
| 11950                   | 161-193    | 4         |
| 11951                   | 189-227    | 4         |
| 11952                   | 216-259    | 4         |
| 11953                   | 233-292    | 4         |
| 11954                   | 270-324    | 4         |
| 11985                   | 280-336    | 4         |
| 11986                   | 320-384    | 4         |
| 11987                   | 340-408    | 4         |
| 11988                   | 378-454    | 5         |
| 11989                   | 400-480    | 5         |
| 11990                   | 430-516    | 5         |
| 11991                   | 630-756    | 8         |

| 330 VOLTAGE AC |            |           |
|----------------|------------|-----------|
| JARD NO.       | MICROFARAD | CASE SIZE |
| 11955          | 21-25      | 1         |
| 11956          | 25-30      | 1         |
| 11957          | 30-36      | 1         |
| 11958          | 36-43      | 1         |
| 11959          | 43-56      | 2         |
| 11995          | 56-67      | 2         |
| 11960          | 64-77      | 2         |
| 11961          | 72-88      | 2         |
| 11962          | 88-108     | 2         |
| 11963          | 108-130    | 5         |
| 11964          | 130-156    | 5         |
| 11965          | 124-156    | 5         |
| 11992          | 135-162    | 5         |
| 11966          | 145-174    | 5         |
| 11967          | 161-193    | 5         |
| 11968          | 189-227    | 5         |
| 11969          | 216-259    | 7         |
| 11970          | 270-324    | 7         |
| 11993          | 300-360    | 8         |

| CASE DIMENSIONS |                    |               |
|-----------------|--------------------|---------------|
| CASE SIZE       | DIAMETER IN INCHES | LENGTH INCHES |
| 1               | 1.44               | 2.75          |
| 2               | 1.44               | 3.38          |
| 4               | 1.81               | 3.38          |
| 5               | 1.81               | 4.38          |
| 6               | 2.06               | 3.38          |
| 7               | 2.06               | 4.38          |
| 8               | 2.56               | 4.38          |

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

## QC-6 Kit

93001

For conversion of screw-type connections on relays



## Resistor for Start Capacitors

93007

2 watt (15,000 ohm) Resistors



## Snap-on Mounting Brackets for Motor Start Capacitors

93026 2.75 in

93027 3.38 in

93028 4.38 in



## Protector (boots) for Motor Run Capacitors

93011 1 Hole Boot

93012 2 Hole Boot



## Wrap-Around Brackets for Oval Motor Run Capacitors

93014 1.94 x 2.78 for base A

93015 1.97 x 2.94 for base C

93116 2.25 x 3.66 for base D



## Mounting Brackets for Round Capacitors

93031 For 1.63 in and 1.75 in dia.

93032 For 2.0 in dia.

93033 For 2.50 in dia.



## Bakelite End Caps for Motor Start Capacitors

93018 BEC-1 1.44 in

93019 BEC-2 1.81 in

93020 BEC-3 2.06 in

93021 BEC-4 2.56 in

For mounting OFF MOTOR. Leads on top side.

93022 BEC-1 1.44 in

93023 BEC-2 1.81 in

93024 BEC-3 2.06 in

93025 BEC-4 2.56 in





# Definite Purpose Contactors

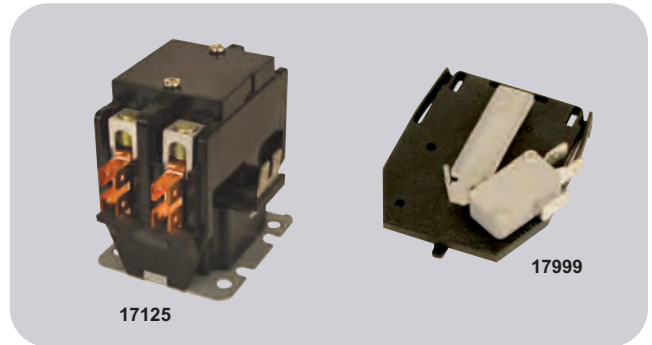
## Definite Purpose Contactors

**“A Low Cost Alternative By The Name You Trust”**

JARD Definite Purpose Contactors are designed for use on refrigeration, air conditioning, and electric heating systems. The universal mounting base allows replacement of most contactor brands. Power connections can be made with either screws & quick connects or lugs & quick connects depending on the style.

**Features:**

- 2 styles: screw terminals with quick connects or lug terminals with quick connects
- UL (both styles)
- CSA (screw terminal style)
- CUL (lug terminal style)



| JARD W/LUGS | JARD W/SCREWS | FULL LOAD AMPS | RESISTIVE AMPS | COIL VOLTAGE | POLES |
|-------------|---------------|----------------|----------------|--------------|-------|
| 17125       | 17121         | 20             | 30             | 24           | 2     |
| 17126       | 17122         | 20             | 30             | 120          | 2     |
| 17127       | 17123         | 20             | 30             | 240          | 2     |
| 17215       | -             | 25             | 35             | 24           | 1-1/2 |
| 17216       | -             | 25             | 35             | 120          | 1-1/2 |
| 17217       | -             | 25             | 35             | 240          | 1-1/2 |
| 17225       | 17221         | 25             | 35             | 24           | 2     |
| 17226       | 17222         | 25             | 35             | 120          | 2     |
| 17227       | 17223         | 25             | 35             | 240          | 2     |
| 17315       | 17311         | 30             | 40             | 24           | 1-1/2 |
| 17316       | 17312         | 30             | 40             | 120          | 1-1/2 |
| 17317       | 17313         | 30             | 40             | 240          | 1-1/2 |
| 17325       | 17321         | 30             | 40             | 24           | 2     |
| 17326       | 17322         | 30             | 40             | 120          | 2     |
| 17327       | 17323         | 30             | 40             | 240          | 2     |
| 17335       | 17331         | 30             | 40             | 24           | 3     |
| 17336       | 17332         | 30             | 40             | 120          | 3     |
| 17337       | 17333         | 30             | 40             | 240          | 3     |
| 17415       | -             | 40             | 50             | 24           | 1-1/2 |
| 17416       | -             | 40             | 50             | 120          | 1-1/2 |
| 17417       | -             | 40             | 50             | 240          | 1-1/2 |

| JARD W/LUGS | JARD W/SCREWS | FULL LOAD AMPS                             | RESISTIVE AMPS | COIL VOLTAGE | POLES |
|-------------|---------------|--|----------------|--------------|-------|
| 17425       | -             | 40   | 50             | 24           | 2     |
| 17426       | -             | 40   | 50             | 120          | 2     |
| 17427       | -             | 40   | 50             | 240          | 2     |
| 17435       | -             | 40   | 50             | 24           | 3     |
| 17436       | -             | 40   | 50             | 120          | 3     |
| 17437       | -             | 40   | 50             | 240          | 3     |
| 17535       | -             | 50   | 65             | 24           | 3     |
| 17536       | -             | 50   | 65             | 120          | 3     |
| 17537       | -             | 50   | 65             | 240          | 3     |
| 17635       | -             | 60   | 75             | 24           | 3     |
| 17636       | -             | 60   | 75             | 120          | 3     |
| 17637       | -             | 60   | 75             | 240          | 3     |
| 17735       | -             | 75   | 90             | 24           | 3     |
| 17736       | -             | 75   | 90             | 120          | 3     |
| 17737       | -             | 75   | 90             | 240          | 3     |
| 17935       | -             | 90   | 120            | 24           | 3     |
| 17936       | -             | 90   | 120            | 120          | 3     |
| 17937       | -             | 90   | 120            | 240          | 3     |
| 17997       |               | Auxiliary Contact- Fits 75 & 90A 3P models |                |              |       |
| 17998       |               | Auxiliary Contact- Fits 50 & 60A 3P models |                |              |       |
| 17999       |               | Auxiliary Contact- Fits 40A 3P models      |                |              |       |

### General Purpose Switching Relays

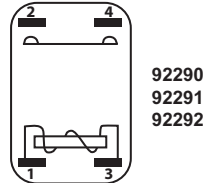
JARD SPST and SPDT Fan Relays are among the most popular electromechanical relays used in air conditioning, heating and refrigeration today.

**Features:**

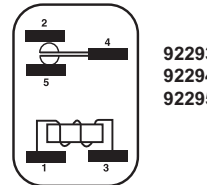
- 16 Amp switching
- 55 Amp inrush current
- Quick-connect terminals
- Tab bracket, Non-positional
- UL and CUR

| JARD NO.    | NORMALLY OPEN COIL VOLTAGE | CONTACT RATING 125/250 VAC |           | REPLACES ESSEX/RBM NO. |
|-------------|----------------------------|----------------------------|-----------|------------------------|
|             |                            | INDUCTIVE                  | RESISTIVE |                        |
| <b>SPST</b> |                            |                            |           |                        |
| 92290       | 24                         | 8 amps                     | 16 amps   | 90-290, 90-290Q        |
| 92291       | 110-120                    | continuous                 | 16 amps   | 90-291, 90-291Q        |
| 92292       | 208/240                    | 25 amps inrush             | 16 amps   | 90-292, 90-292Q        |
| <b>SPDT</b> |                            |                            |           |                        |
| 92293       | 24                         | 8 amps                     | 16 amps   | 90-293, 90-293Q        |
| 92294       | 110-120                    | continuous                 | 16 amps   | 90-294, 90-294Q        |
| 92295       | 208/240                    | 25 amps inrush             | 16 amps   | 90-295, 90-295Q        |

**Switch Diagrams**



92290  
92291  
92292



92293  
92294  
92295



### Heavy Duty Fan Switching Relays

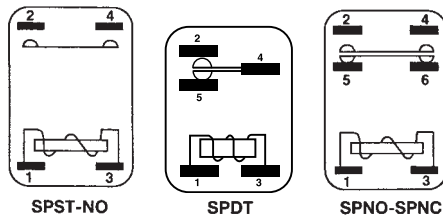
JARD Heavy Duty Fan Relays are used on heating and air conditioning equipment to provide switching of heavier loads with a compact size relay.

**Features:**

- 25 Amp switching
- Compact and totally enclosed
- Quick-connect terminals
- Tab bracket, Non-positional
- UL and CUR



**Terminal Identification**



SPST-NO

SPDT

SPNO-SPNC

**Model Identification**

| COIL VOLTAGE | JARD NO. SPST-NO. | JARD NO. NO. SPDT | JARD NO. SPNO-SPNC |
|--------------|-------------------|-------------------|--------------------|
| 24           | 92360             | 92370             | 92380              |
| 110/120      | 92362             | 92372             | 92382              |
| 208/240      | 92364             | 92374             | 92384              |

**Contact Rating**

| VOLTAGE | FULL LOAD | LOCKED ROTOR | RESISTIVE |
|---------|-----------|--------------|-----------|
| 120     | 12        | 60           | 18        |
| 240     | 8         | 48           | 18        |
| 277     | 7         | 42           | 18        |

**Cross Reference:**

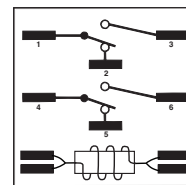
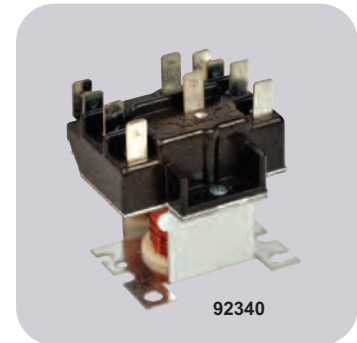
| ESSEX/RBM | JARD NO. | ESSEX/RBM | JARD NO. |
|-----------|----------|-----------|----------|
| 90-360Q   | 92360    | 90-374Q   | 92374    |
| 90-362Q   | 92362    | 90-380Q   | 92380    |
| 90-364Q   | 92364    | 90-382Q   | 92382    |
| 90-370Q   | 92370    | 90-384Q   | 92384    |
| 90-372Q   | 92372    |           |          |

### 2PDT HVAC Relays

JARD Heavy Duty Fan Relays are used on heating and air conditioning equipment to provide switching of heavier loads with a compact size relay.

**Features:**

- 25 Amp switching
- Universal mounting bracket
- Quick-connect terminals
- UL and CUR



**COIL**  
Terminals 1 & 2, 4 & 5 are normally closed  
Terminals 1 & 3, 4 & 6 are normally open

**Contact Rating**

|                   | POWER 208/240V |      | PILOT 208/240V |      |
|-------------------|----------------|------|----------------|------|
|                   | 120V           | 277V | 120V           | 277V |
| Full load Amps    | 12             | 6    | -              | -    |
| Resistive         | 15             | 15   | 3              | 3    |
| Locked Rotor Amps | 60             | 35   | -              | -    |
| Horsepower        | 3/4            | 3/4  | 1/10           | 1/10 |

| JARD NO. | COIL VOLTAGE | TERMINALS 1-2-3 | TERMINALS 4-5-6 | CROSS REFERENCE ESSEX / RBM | HONEYWELL  |
|----------|--------------|-----------------|-----------------|-----------------------------|------------|
| 92340    | 24           |                 |                 | 90-340                      | R8222D1014 |
| 92341    | 110/120      | Power           | Power           | 90-341                      | R4222D1013 |
| 92342    | 208/240      |                 |                 | 90-342                      | R4222N1021 |

# Pressure Switches

## Fixed Setting Pressure Controls

### High Pressure Cut-Outs

JARD offers the most complete line of high pressure cut-outs available.

#### Features:

- Tamper proof construction
- Direct mounting on tubing

#### Specifications:

- Contacts rated at 6 amps, 24-240 volts
- 1/4" female flare S.A.E. mounting
- 18" leads
- UL & CSA recognized



## Low Pressure Controls

### Features:

- Tamper proof construction
- Direct mounting on tubing

### Specifications:

- Contacts rated at 6 amps, 24-240 volts
- 1/4" female flare S.A.E. mounting
- 18" leads
- UL & CSA recognized



## Low Pressure Controls, Open on Pressure Fall, Automatic Reset, Normally Open

| JARD NO. | DESCRIPTION                | OPENING PRESSURE | RESET PRESSURE | MOUNTING                                  |
|----------|----------------------------|------------------|----------------|---|
| 43941    | 5/20 LP<br>Open on fall    | 5                | 20             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43942    | 5/30 LP<br>Open on fall    | 5                | 30             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43943    | 10/25 LP<br>Open on fall   | 10               | 25             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43944    | 15/35 LP<br>Open on fall   | 15               | 35             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43945    | 20/45 LP<br>Open on fall   | 20               | 45             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43946    | 25/50 LP<br>Open on fall   | 25               | 50             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43947    | 25/65 LP<br>Open on fall   | 25               | 65             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43948    | 25/80 LP<br>Open on fall   | 25               | 80             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43949    | 35/60 LP<br>Open on fall   | 35               | 60             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43950    | 40/80 LP<br>Open on fall   | 40               | 80             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43951    | 45/60 LP<br>Open on fall   | 45               | 60             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43952    | 50/90 LP<br>Open on fall   | 50               | 90             | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43953    | 75/100 LP<br>Open on fall  | 75               | 100            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43975    | 90/120 LP<br>Open on fall  | 90               | 120            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43954    | 150/225 LP<br>Open on fall | 150              | 225            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43955    | 170/225 LP<br>Open on fall | 170              | 225            | 1/4" Female Flare Fitting S.A.E. Mounting |

## High Pressure Cut-Outs, Open on Pressure Rise, Automatic Reset, Normally Closed

| JARD NO. | DESCRIPTION                | OPENING PRESSURE | RESET PRESSURE | MOUNTING                                  |
|----------|----------------------------|------------------|----------------|---|
| 43922    | 250/150 HP<br>Open on rise | 250              | 150            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43924    | 275/195 HP<br>Open on rise | 275              | 195            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43925    | 300/200 HP<br>Open on rise | 300              | 200            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43926    | 325/225 HP<br>Open on rise | 325              | 225            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43920    | 350/245 HP<br>Open on rise | 350              | 245            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43927    | 350/250 HP<br>Open on rise | 350              | 250            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43928    | 375/275 HP<br>Open on rise | 375              | 275            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43929    | 400/200 HP<br>Open on rise | 400              | 200            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43930    | 400/280 HP<br>Open on rise | 400              | 280            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43931    | 400/300 HP<br>Open on rise | 400              | 300            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43911    | 410/290 HP<br>Open on rise | 410              | 290            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43932    | 425/300 HP<br>Open on rise | 425              | 300            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43933    | 425/325 HP<br>Open on rise | 425              | 325            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43934    | 450/250 HP<br>Open on rise | 450              | 250            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43965    | 590/418 HP<br>Open on rise | 590              | 418            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43935    | 600/475 HP<br>Open on rise | 600              | 475            | 1/4" Female Flare Fitting S.A.E. Mounting |
| 43939    | 630/480 HP<br>Open on rise | 630              | 480            | 1/4" Female Flare Fitting S.A.E. Mounting |

### Condenser Fan Cycling Switch

Manual Reset high pressure controls

**Specifications:**

- UL & CSA recognized



| JARD NO. | DESCR.                      | OPENING PRESSURE | RESET PRESSURE | MOUNTING                                     | SWITCH ACTION (OPEN ON PRESSURE) |
|----------|-----------------------------|------------------|----------------|--|----------------------------------|
| 43901    | 75/100 FC<br>Close on rise  | 75               | 100            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43902    | 110/170 FC<br>Close on rise | 110              | 170            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43903    | 125/265 FC<br>Close on rise | 125              | 265            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43904    | 150/225 FC<br>Close on rise | 150              | 225            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43970    | 180/240 FC<br>Close on rise | 180              | 240            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43905    | 19/275 FC<br>Close on rise  | 190              | 275            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43906    | 210/275 FC<br>Close on rise | 210              | 275            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43907    | 300/400 FC<br>Close on rise | 300              | 400            | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Fall                             |
| 43912    | 375/Man. Open<br>on rise    | 375              | Manual         | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Rise                             |
| 43913    | 410/Man. Open<br>on rise    | 410              | Manual         | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Rise                             |
| 43916    | 475/Man. Open<br>on rise    | 475              | Manual         | 1/4" Female Flare Fitting<br>S.A.E. Mounting | Rise                             |

### JARD Fuses

**Applications:**

- Recommended for AC power distribution system mains, feeders, and branch circuits.
- Protection of motors and motor branch circuits.
- Protection of transformers and other inductive loads.
- All general-purpose applications including lighting, heating and other non-inductive loads.

**Benefits:**

- Superior overload and cycling capabilities.
- Current limiting provides component short-circuit protection.

**Specifications:**

Dual-Element Time-Delay

**Voltage Rating:** RK5 - 250Vac,  
RK5 - 600Vac

**Amp Rating:** 1/10 - 600A

Interrupting Rating: 200,000 RMS Symmetrical Amps

**Current Limiting:** RK5 Fuse

**Agency Approvals:**

UL Listed, Class RK5, CSA Certified, DC listed to UL standard 248 TRS only

**Voltage Rating:** RK5 250V

Volts: 250VAC

: 250VDC (.1-2.8A; 35-400A)

: 160VDC (3-30A; 450-600A)

RK5 600V

Volts: 600VAC

: 600VDC (.1-12A; 70-600A)

: 160VDC (15-60A)



#### RK5 Time Delay Fuse 250V

Replaces: TR, ECNR, FRNR, FLNR

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 81006    | .5A - 250V   | 10        |
| 81009    | 1A - 250V    | 10        |
| 81016    | 2A - 250V    | 10        |
| 81017    | 2.5A - 250V  | 10        |
| 81019    | 3A - 250V    | 10        |
| 81020    | 3.2A - 250V  | 10        |
| 81021    | 4A - 250V    | 10        |
| 81024    | 5A - 250V    | 10        |
| 81025    | 5.6A - 250V  | 10        |
| 81026    | 6A - 250V    | 10        |
| 81027    | 6.25A - 250V | 10        |
| 81029    | 7A - 250V    | 10        |
| 81030    | 8A - 250V    | 10        |
| 81032    | 10A - 250V   | 10        |
| 81033    | 12A - 250V   | 10        |
| 81034    | 15A - 250V   | 10        |
| 81035    | 17.5A - 250V | 10        |
| 81036    | 20A - 250V   | 10        |
| 81037    | 25A - 250V   | 10        |
| 81038    | 30A - 250V   | 10        |
| 81039    | 35A - 250V   | 10        |
| 81040    | 40A - 250V   | 10        |
| 81041    | 45A - 250V   | 10        |
| 81042    | 50A - 250V   | 10        |
| 81043    | 60A - 250V   | 10        |
| 81044    | 70A - 250V   | 5         |
| 81045    | 80A - 250V   | 5         |
| 81046    | 90A - 250V   | 5         |
| 81047    | 100A - 250V  | 5         |
| 81048    | 110A - 250V  | 1         |
| 81049    | 125A - 250V  | 1         |
| 81050    | 150A - 250V  | 1         |
| 81051    | 175A - 250V  | 1         |
| 81052    | 200A - 250V  | 1         |
| 81053    | 225A - 250V  | 1         |
| 81054    | 350A - 250V  | 1         |
| 81056    | 400A - 250V  | 1         |
| 81055    | 600A - 250V  | 1         |

#### RK5 Time Delay Fuse 600V

Replaces: TRS, ECSR, FRSR, FLNR

| MARS NO. | DESCRIPTION  | MARS PACK |
|----------|--------------|-----------|
| 81103    | .2A - 600V   | 10        |
| 81106    | .5A - 600V   | 10        |
| 81109    | 1A - 600V    | 10        |
| 81110    | 1.6A - 600V  | 10        |
| 81111    | 2A - 600V    | 10        |
| 81112    | 2.25A - 600V | 10        |
| 81124    | 5A - 600V    | 10        |
| 81125    | 6A - 600V    | 10        |
| 81132    | 10A - 600V   | 10        |
| 81133    | 12A - 600V   | 10        |
| 81134    | 15A - 600V   | 10        |
| 81136    | 20A - 600V   | 10        |
| 81137    | 25A - 600V   | 10        |
| 81138    | 30A - 600V   | 10        |
| 81139    | 35A - 600V   | 10        |
| 81140    | 40A - 600V   | 10        |
| 81147    | 45A - 600V   | 10        |
| 81141    | 50A - 600V   | 10        |
| 81142    | 60A - 600V   | 10        |
| 81143    | 70A - 600V   | 5         |
| 81144    | 80A - 600V   | 5         |
| 81145    | 90A - 600V   | 5         |
| 81146    | 100A - 600V  | 5         |
| 81154    | 110A - 600V  | 1         |
| 81148    | 125A - 600V  | 1         |
| 81149    | 150A - 600V  | 1         |
| 81150    | 175A - 600V  | 1         |
| 81151    | 200A - 600V  | 1         |
| 81152    | 250A - 600V  | 1         |
| 81153    | 300A - 600V  | 1         |

# Unit Bearing Motors / Condenser Fan Motors

## Unit Bearing Motors

JARD Unit Bearing Cast Iron Motors are used on refrigerators, freezers, food & beverage coolers, vending machines, display cases, and many other fan duty applications.

### Features:

- Cast iron construction
- Universal mount
- Mounting screws included
- Individually boxed

### Specifications:

- Class "A" insulation
- UL Recognized



| JARD NO. | WATTS | VOLTAGE | ROTATION | AMPS | LEAD LENGTH |
|----------|-------|---------|----------|------|-------------|
| 15109    | 2     | 115     | CW       | 0.28 | 24"         |
| 15211    | 4     | 115     | CW       | 0.33 | 24"         |
| 15212    | 4     | 115     | CCW      | 0.33 | 24"         |
| 15221    | 4     | 230     | CW       | 0.19 | 24"         |
| 15222    | 4     | 230     | CCW      | 0.19 | 24"         |
| 15311    | 6     | 115     | CW       | 0.46 | 24"         |
| 15312    | 6     | 115     | CCW      | 0.46 | 24"         |
| 15119*   | 9     | 115     | CW       | 0.62 | 13"         |
| 15411    | 9     | 115     | CW       | 0.62 | 24"         |
| 15412    | 9     | 115     | CCW      | 0.62 | 24"         |
| 15421    | 9     | 230     | CW       | 0.33 | 24"         |
| 15422    | 9     | 230     | CCW      | 0.33 | 24"         |
| 15811    | 16    | 115     | CW       | 0.95 | 24"         |
| 15812    | 16    | 115     | CCW      | 0.95 | 24"         |
| 15821    | 16    | 230     | CW       | 0.48 | 24"         |
| 15822    | 16    | 230     | CCW      | 0.48 | 24"         |

\* Note: 13" lead with lyall plug

## Condenser Fan Motors

### Ball Bearing

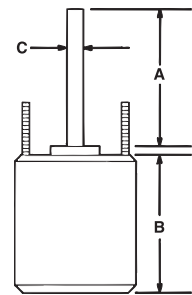
JARD replacement condenser fan motors are designed for residential and light commercial HVAC/R applications suitable for either vertical shaft-up or shaft-down mounting. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain.

### Features:

- All angle, sleeve or ball bearing
- Rheem mounting holes w/screws
- Reversible rotation
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Up/Down design

### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- Fan duty, continuous air over
- 26 & 36 inch leads
- UL Recognized



### Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22403    | EM3403      | -              | -                  | 60825   | 1873              |
| 22404    | EM3404      | SE3338         | WG840204           | 40825   | 1874              |
| 22405    | EM3405      | SE3339         | WG840205           | 30825   | 1875              |
| 22746    | EM3746      | -              | -                  | -       | 1870              |
| 22727    | EM3727      | SE3727         | WG840727           | 43727   | 1859              |
| 22728    | EM3728      | SE3728         | WG840728           | 43728   | 1860              |
| 22729    | EM3729      | SE3729         | WG840729           | 43729   | 1861              |
| 22730    | EM3730      | SE3730         | WG840730           | 43730   | 1862              |
| 22731    | EM3731      | SE3731         | WG840731           | 43731   | 1868              |

### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|                 |     |         |      |          |       |      | A          | B    | C   |              |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |              |
| 22727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 26"          |
| 22728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 26"          |
| 22729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 | 26"          |
| 22730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | Ball | 6.50       | 5.73 | 1/2 | 26"          |
| 22731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | Ball | 6.50       | 6.23 | 1/2 | 30.5"        |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------------|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|                |     |         |      |          |       |      | A          | B    | C   |              |
| <b>825 RPM</b> |     |         |      |          |       |      |            |      |     |              |
| 22403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 | 36"          |
| 22404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | Ball | 6.50       | 4.48 | 1/2 | 36"          |
| 22405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 | 36"          |
| 22746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | Ball | 6.50       | 5.70 | 1/2 | 36"          |



## Direct Drive Blower Motors

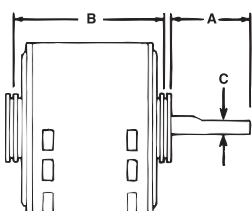
JARD direct drive blower motors are ideal for use in commercial and residential furnaces and air-conditioners. All models are three speed standard efficiency and are electrically reversible.

### Features:

- All angle sleeve bearing
- Rheem mounting holes
- 3 speeds
- 1/2 inch extended thru bolts
- 2-1/4 inch resilient rings
- 4 inch long, 1/2 inch diameter shaft

### Specifications:

- Class "B" insulation
- Single phase, 60 Hertz
- Thermal overload protected
- Fan duty, continuous, air over
- Open construction
- 26 & 30 inch leads
- UL Recognized



## Multi-Horsepower Direct Drive Motors

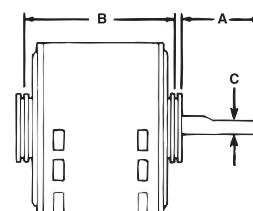
JARD multi-horsepower direct drive blower motors are used in residential and commercial furnaces, air conditioners, exhaust fans, and other air handling equipment installed in clean and dry environments. Four models cover both 115 and 208-230 volt applications from 1/6 through 3/4 HP. All models feature Rheem shell mounting holes.

### Features:

- Rheem mounting holes
- Reversible rotation
- 2-1/4 inch resilient rings

### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- 41 inch leads
- UL Recognized



### Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22583    | EM3583      | SE3583         | WG840583           | 43583   | 1863              |
| 22584    | EM3584      | SE3584         | WG840584           | 43584   | 1971              |
| 22585    | EM3585      | SE3585         | WG840585           | 43585   | 1864              |
| 22586    | EM3586      | SE3586         | WG840586           | 43586   | 1972              |
| 22587    | EM3587      | SE3587         | WG840587           | 43587   | 1865              |
| 22588    | EM3588      | SE3588         | WG840588           | 43588   | 1973              |
| 22589    | EM3589      | SE3589         | WG840589           | 43589   | 8904              |
| 22590    | EM3590      | SE3590         | WG840590           | 43590   | 8905              |

### Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22463    | EM3463      | SE3463         | WG840463           | 45460   | 5460              |
| 22464    | EM3464      | SE3464         | WG840464           | 45461   | 5461              |
| 22466    | EM3466      | SE3466         | WG840466           | 45470   | 5470              |
| 22467    | EM3467      | SE3467         | WG840467           | 45471   | 5471              |

### 1075 RPM – Three Speed – Reversible Rotation

| MARS NO. | HP  | ROT | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----|-----|---------|------|----------|-------|------|------------|------|-----|--------------|
|          |     |     |         |      |          |       |      | A          | B    | C   |              |
| 22583    | 1/4 | Rev | 115     | 4.2  | 5/370    | OAO   | Ball | 4.50       | 4.89 | 1/2 | 26"          |
| 22584    | 1/4 | Rev | 208-230 | 1.8  | 5/370    | OAO   | Ball | 4.50       | 4.89 | 1/2 | 26"          |
| 22585    | 1/3 | Rev | 115     | 6.1  | 5/370    | OAO   | Ball | 4.50       | 5.14 | 1/2 | 30"          |
| 22586    | 1/3 | Rev | 208-230 | 2.7  | 5/370    | OAO   | Ball | 4.50       | 5.14 | 1/2 | 26"          |
| 22587    | 1/2 | Rev | 115     | 7.5  | 10/370   | OAO   | Ball | 4.50       | 5.89 | 1/2 | 30"          |
| 22588    | 1/2 | Rev | 208-230 | 3.2  | 7.5/370  | OAO   | Ball | 4.50       | 5.64 | 1/2 | 30"          |
| 22589    | 3/4 | Rev | 115     | 11.2 | 15/370   | OAO   | Ball | 4.50       | 6.14 | 1/2 | 30"          |
| 22590    | 3/4 | Rev | 208-230 | 4.5  | 10/370   | OAO   | Ball | 4.50       | 6.14 | 1/2 | 30"          |

### 1075 RPM - Four Speed - Reversible Rotation

| MARS NO. | HP        | ROT | VOLTS | ENCL. | BRG.   | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|-------|-------|--------|------------|------|-----|--------------|
|          |           |     |       |       |        | A          | B    | C   |              |
| 22463    | 1/6 - 1/2 | Rev | 115   | OAO   | Sleeve | 5.50       | 4.73 | 1/2 | 42"          |
| 22464    | 1/6 - 1/2 | Rev | 230   | OAO   | Sleeve | 5.50       | 4.73 | 1/2 | 41"          |
| 22466    | 1/5 - 3/4 | Rev | 115   | OAO   | Ball   | 5.80       | 5.73 | 1/2 | 41"          |
| 22467    | 1/5 - 3/4 | Rev | 230   | OAO   | Ball   | 4.60       | 5.23 | 1/2 | 41"          |

# Multi-Horsepower Motors / Condenser Fan Motors

## Multi-Horsepower Condenser Fan Motors

### Ball Bearing

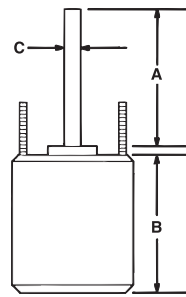
JARD multi-horsepower condenser fan motors are designed for either shaft up or shaft down applications. All motors are suitable for air conditioning or heat pump applications. These motors need to be mounted within the airflow of the fan for proper cooling.

#### Features:

- Rheem mounting holes w/screws installed
- Thru bolt or band mounting
- Water slinger on shaft
- Air conditioning or heat pump duty

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- Thermal overload protected
- UL Recognized



#### Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22458    | EM3458      | -              | -                  | 45458BF | 5458              |
| 22459    | EM3459      | -              | -                  | 45488BF | 5464              |
| 22465    | EM3465      | SE3465         | WG840465           | 45458B  | 5462              |
| 22468    | EM3468      | SE3468         | WG840468           | -       | 5465              |
| 22469    | EM3469      | SE3469         | WG840469           | -       | 5464              |

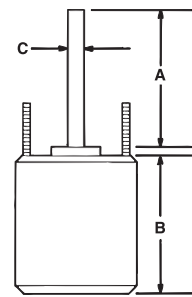
### Reversible Rotation – Single Speed

| MARS NO. | HP        | ROT | RPM/SPEED | VOLTS   | ENCL. | BRG. | DIMENSIONS |      |     | LEAD LENGTHS |
|----------|-----------|-----|-----------|---------|-------|------|------------|------|-----|--------------|
|          |           |     |           |         |       |      | A          | B    | C   |              |
| 22458    | 1/6 - 1/3 | Rev | 1075      | 208-230 | TEAO  | Ball | 6.50       | 3.82 | 1/2 | 36"          |
| 22459    | 1/8 - 1/3 | Rev | 825       | 208-230 | TEAO  | Ball | 6.50       | 5.48 | 1/2 | 36"          |
| 22465    | 1/6 - 1/3 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 4.73 | 1/2 | 38"          |
| 22468    | 1/8 - 1/2 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 38"          |
| 22469    | 1/6 - 1/3 | Rev | 825/2     | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 | 42"          |

## Condenser Fan Motors

### Ball Bearing

JARD replacement condenser fan motors are designed for residential and light commercial HVAC/R applications suitable for either vertical shaft-up or shaft-down mounting. Shell and end shields are enclosed for weather protection. A weep hole is provided in each end shield to allow condensate to drain.



#### Features:

- All angle, ball bearing
- Rheem mounting holes w/screws
- Reversible rotation
- Thru bolt or band mounting
- Capacitor requirement noted on motor label
- Up/Down design
- 48" Leads

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- 70°C, 158°F
- Thermal overload protected
- Fan duty, continuous air over
- UL Recognized

### Reversible Rotation – Single Speed

| MARS NO.        | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|-----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                 |     |         |      |          |       |      | A          | B    | C   |
| <b>1075 RPM</b> |     |         |      |          |       |      |            |      |     |
| 26726           | 1/5 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26727           | 1/6 | 208-230 | 0.90 | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26728           | 1/4 | 208-230 | 1.8  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26729           | 1/3 | 208-230 | 2.4  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 26730           | 1/2 | 208-230 | 3.5  | 10/370   | TEAO  | Ball | 6.50       | 5.73 | 1/2 |
| 26731           | 3/4 | 208-230 | 5.2  | 10/370   | TEAO  | Ball | 6.50       | 6.23 | 1/2 |

| MARS NO.       | HP  | VOLTS   | AMPS | CAP REQ. | ENCL. | BRG. | DIMENSIONS |      |     |
|----------------|-----|---------|------|----------|-------|------|------------|------|-----|
|                |     |         |      |          |       |      | A          | B    | C   |
| <b>825 RPM</b> |     |         |      |          |       |      |            |      |     |
| 26403          | 1/6 | 208-230 | 1.0  | 5/370    | TEAO  | Ball | 6.50       | 4.23 | 1/2 |
| 26404          | 1/4 | 208-230 | 1.6  | 5/370    | TEAO  | Ball | 6.50       | 4.48 | 1/2 |
| 26405          | 1/3 | 208-230 | 1.9  | 7.5/370  | TEAO  | Ball | 6.50       | 5.23 | 1/2 |
| 26746          | 1/2 | 208-230 | 2.8  | 12.5/370 | TEAO  | Ball | 6.50       | 5.70 | 1/2 |

## Multi-Horsepower Condenser Fan Motors

### Ball Bearing

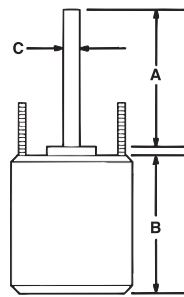
JARD multi-horsepower condenser fan motors are designed for either shaft up or shaft down applications. All motors are suitable for air conditioning or heat pump applications. These motors need to be mounted within the airflow of the fan for proper cooling.

#### Features:

- Rheem mounting holes w/screws installed
- Thru bolt or band mounting
- Water slinger on shaft
- Air conditioning or heat pump duty
- 48" Leads

#### Specifications:

- Class "B" insulation
- Single phase, 60 Hz
- 70°C, 158°F
- Thermal overload protected
- UL Recognized



| MARS NO. | HP        | ROT | RPM/SPEED | VOLTS   | ENCL. | BRG. | DIMENSIONS |      |     |
|----------|-----------|-----|-----------|---------|-------|------|------------|------|-----|
|          |           |     |           |         |       |      | A          | B    | C   |
| 26458    | 1/6 - 1/3 | Rev | 1075      | 208-230 | TEAO  | Ball | 6.50       | 3.82 | 1/2 |
| 26459    | 1/8 - 1/3 | Rev | 825       | 208-230 | TEAO  | Ball | 6.50       | 5.48 | 1/2 |
| 26465    | 1/6 - 1/3 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 4.73 | 1/2 |
| 26468    | 1/8 - 1/2 | Rev | 1075/2    | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 |
| 26469    | 1/6 - 1/3 | Rev | 825/2     | 208-230 | TEAO  | Ball | 5.00       | 5.48 | 1/2 |

### JARD Cross Reference:

| JARD NO. | ECONOMASTER | SMART ELECTRIC | WAGNER/DIVERSITECH | PACKARD | US MOTORS/EMERSON |
|----------|-------------|----------------|--------------------|---------|-------------------|
| 22403    | EM3403      | -              | -                  | 60825   | 1873              |
| 22404    | EM3404      | SE3338         | WG840204           | 40825   | 1874              |
| 22405    | EM3405      | SE3339         | WG840205           | 30825   | 1875              |
| 22746    | EM3746      | -              | -                  | -       | 1870              |
| 22727    | EM3727      | SE3727         | WG840727           | 43727   | 1859              |
| 22728    | EM3728      | SE3728         | WG840728           | 43728   | 1860              |
| 22729    | EM3729      | SE3729         | WG840729           | 43729   | 1861              |
| 22730    | EM3730      | SE3730         | WG840730           | 43730   | 1862              |
| 22731    | EM3731      | SE3731         | WG840731           | 43731   | 1868              |
| 22583    | EM3583      | SE3583         | WG840583           | 43583   | 1863              |
| 22584    | EM3584      | SE3584         | WG840584           | 43584   | 1971              |
| 22585    | EM3585      | SE3585         | WG840585           | 43585   | 1864              |
| 22586    | EM3586      | SE3586         | WG840586           | 43586   | 1972              |
| 22587    | EM3587      | SE3587         | WG840587           | 43587   | 1865              |
| 22588    | EM3588      | SE3588         | WG840588           | 43588   | 1973              |
| 22589    | EM3589      | SE3589         | WG840589           | 43589   | 8904              |
| 22590    | EM3590      | SE3590         | WG840590           | 43590   | 8905              |
| 22463    | EM3463      | SE3463         | WG840463           | 45460   | 5460              |
| 22464    | EM3464      | SE3464         | WG840464           | 45461   | 5461              |
| 22466    | EM3466      | SE3466         | WG840466           | 45470   | 5470              |
| 22467    | EM3467      | SE3467         | WG840467           | 45471   | 5471              |
| 22458    | EM3458      | -              | -                  | 45458BF | 5458              |
| 22459    | EM3459      | -              | -                  | 45488BF | 5464              |
| 22465    | EM3465      | SE3465         | WG840465           | 45458B  | 5462              |
| 22468    | EM3468      | SE3468         | WG840468           | -       | 5465              |
| 22469    | EM3469      | SE3469         | WG840469           | -       | 5464              |
| 26726    | -           | -              | -                  | -       | -                 |
| 26727    | EM3727      | -              | WG840727           | 43727   | 1859              |
| 26728    | EM3728      | -              | WG840728           | 43728   | 1860              |
| 26729    | EM3729      | -              | WG840729           | 43729   | 1861              |
| 26730    | EM3730      | -              | WG840730           | 43730   | 1862              |
| 26731    | EM3731      | -              | WG840731           | 43731   | 1868              |
| 26403    | EM3403      | -              | -                  | 60825   | 1873              |
| 26404    | EM3404      | -              | WG840204           | 40825   | 1874              |
| 26405    | EM3405      | -              | WG840205           | 30825   | 1875              |
| 26746    | EM3746      | -              | -                  | -       | 1870              |
| 26458    | EM3458      | -              | -                  | -       | 5458              |
| 26459    | EM3459      | -              | -                  | -       | 5464              |
| 26465    | EM3465      | -              | WG840465           | -       | 5462              |
| 26468    | EM3468      | -              | WG840468           | -       | 5465              |
| 26469    | EM3469      | -              | WG840469           | -       | 5464              |

## JARD to MARS Cross Reference Guide

### Start Capacitors

| JARD  | MARS  |
|-------|-------|
| 11903 | 11003 |
| 11904 | 11004 |
| 11905 | 11005 |
| 11906 | 11006 |
| 11907 | 11007 |
| 11908 | 11008 |
| 11909 | 11009 |
| 11910 | 11010 |
| 11913 | 11013 |
| 11914 | 11014 |
| 11915 | 11015 |
| 11916 | 11016 |
| 11917 | 11017 |
| 11918 | 11018 |
| 11919 | 11019 |
| 11920 | 11020 |
| 11921 | 11021 |
| 11922 | 11022 |
| 11923 | 11023 |
| 11924 | 11024 |
| 11925 | 11025 |
| 11926 | 11026 |
| 11927 | 11027 |
| 11928 | 11028 |
| 11929 | 11029 |
| 11930 | 11030 |
| 11931 | 11031 |
| 11932 | 11032 |
| 11933 | 11033 |
| 11934 | 11034 |
| 11935 | 11035 |
| 11936 | 11036 |
| 11994 | 11037 |
| 11938 | 11038 |
| 11939 | 11039 |
| 11940 | 11040 |
| 11941 | 11041 |
| 11942 | 11042 |
| 11943 | 11043 |
| 11944 | 11044 |
| 11945 | 11045 |
| 11946 | 11046 |
| 11949 | 11049 |
| 11950 | 11050 |
| 11951 | 11051 |
| 11952 | 11052 |
| 11953 | 11053 |
| 11954 | 11054 |
| 11955 | 11055 |
| 11956 | 11056 |
| 11957 | 11057 |
| 11958 | 11058 |
| 11959 | 11059 |
| 11995 | 11060 |
| 11961 | 11061 |
| 11962 | 11062 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12902 | 12002 |
| 12903 | 12003 |
| 12904 | 12004 |
| 12905 | 12005 |
| 12906 | 12006 |
| 12907 | 12007 |
| 12908 | 12008 |
| 12909 | 12009 |
| 12910 | 12010 |
| 12912 | 12012 |
| 12914 | 12014 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12915 | 12015 |
| 12917 | 12017 |
| 12918 | 12018 |
| 12921 | 12021 |
| 12923 | 12023 |
| 12925 | 12025 |
| 12924 | 12024 |
| 12987 | 12087 |
| 12988 | 12011 |
| 12989 | 12089 |
| 12990 | 12090 |
| 12841 | 12141 |
| 12956 | 12056 |
| 12957 | 12057 |
| 12958 | 12058 |
| 12959 | 12059 |
| 12960 | 12060 |
| 12961 | 12061 |
| 12962 | 12062 |
| 12963 | 12063 |
| 12864 | 12064 |
| 12964 | 12164 |
| 12842 | 12142 |
| 12965 | 12065 |
| 12966 | 12066 |
| 12843 | 12143 |
| 12832 | 12131 |
| 12867 | 12167 |
| 12833 | 12133 |
| 12844 | 12144 |
| 12845 | 12145 |
| 12969 | 12069 |
| 12846 | 12146 |
| 12847 | 12147 |
| 12848 | 12148 |
| 12971 | 12071 |
| 12972 | 12072 |
| 12849 | 12149 |
| 12850 | 12150 |
| 12851 | 12151 |
| 12858 | 12158 |
| 12871 | 12171 |
| 12852 | 12152 |
| 12834 | 12134 |
| 12874 | 12174 |
| 12853 | 12153 |
| 12836 | 12136 |
| 12837 | 12137 |
| 12838 | 12138 |
| 12854 | 12154 |
| 12855 | 12155 |
| 12839 | 12139 |
| 12856 | 12156 |
| 12857 | 12157 |
| 12859 | 12159 |
| 12863 | 12163 |
| 12817 | 12123 |
| 12926 | 12026 |
| 12919 | 12019 |
| 12927 | 12027 |
| 12928 | 12028 |
| 12929 | 12029 |
| 12930 | 12030 |
| 12931 | 12031 |
| 12932 | 12032 |
| 12933 | 12033 |
| 12934 | 12034 |
| 12936 | 12036 |
| 12937 | 12037 |
| 12940 | 12040 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12941 | 12041 |
| 12943 | 12043 |
| 12945 | 12045 |
| 12948 | 12048 |
| 12949 | 12049 |
| 12950 | 12050 |
| 12951 | 12051 |
| 12952 | 12052 |
| 12830 | 12130 |
| 12831 | 12135 |
| 12840 | 12140 |
| 12765 | 12165 |
| 12970 | 12170 |
| 12770 | 12270 |
| 12771 | 12271 |
| 12777 | 12177 |
| 12880 | 12180 |
| 12983 | 12083 |
| 12884 | 12184 |
| 12882 | 12182 |
| 12883 | 12183 |
| 12886 | 12186 |
| 12881 | 12181 |
| 12887 | 12187 |
| 12982 | 12038 |
| 12835 | 12035 |
| 12985 | 12085 |
| 12879 | 12179 |
| 12885 | 12185 |
| 12888 | 12188 |
| 12876 | 12176 |
| 12772 | 12272 |
| 12877 | 12080 |
| 12986 | 12086 |
| 12889 | 12189 |
| 12773 | 12273 |
| 12890 | 12190 |
| 12774 | 12274 |
| 12808 | 12108 |
| 12913 | 12013 |
| 12775 | 12275 |
| 12822 | 12276 |
| 12809 | 12109 |
| 12776 | 12110 |
| 12810 | 12101 |
| 12815 | 12297 |
| 12898 | 12298 |
| 12992 | 12092 |
| 12993 | 12093 |
| 12994 | 12094 |
| 12995 | 12095 |
| 12996 | 12096 |
| 12997 | 12097 |
| 12998 | 12098 |
| 12999 | 12099 |
| 12710 | 12210 |
| 12911 | 12211 |
| 12712 | 12212 |
| 12714 | 12214 |
| 12715 | 12215 |
| 12717 | 12217 |
| 12718 | 12218 |
| 12721 | 12221 |
| 12723 | 12223 |
| 12725 | 12225 |
| 12726 | 12226 |
| 12727 | 12227 |
| 12828 | 12128 |
| 12729 | 12229 |
| 12899 | 12199 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12916 | 12116 |
| 12701 | 12121 |
| 12702 | 12122 |
| 12703 | 12203 |
| 12704 | 12204 |
| 12705 | 12205 |
| 12706 | 12206 |
| 12707 | 12207 |
| 12760 | 12260 |
| 12716 | 12016 |
| 12708 | 12208 |
| 12709 | 12209 |
| 12711 | 12242 |
| 12875 | 12175 |
| 12761 | 12261 |
| 12762 | 12262 |
| 12713 | 12213 |
| 12720 | 12244 |
| 12763 | 12263 |
| 12764 | 12264 |
| 12724 | 12224 |
| 12728 | 12228 |
| 12939 | 12039 |
| 12730 | 12082 |
| 12731 | 12231 |
| 12766 | 12266 |
| 12735 | 12235 |
| 12738 | 12238 |
| 12739 | 12074 |
| 12767 | 12267 |
| 12878 | 12178 |
| 12768 | 12268 |
| 12746 | 12246 |
| 12747 | 12073 |
| 12947 | 12247 |
| 12769 | 12269 |
| 12749 | 12249 |
| 12750 | 12250 |
| 12753 | 12075 |
| 12755 | 12191 |
| 12825 | 12192 |
| 12757 | 12239 |
| 12893 | 12193 |
| 12894 | 12194 |
| 12967 | 12067 |
| 12976 | 12076 |
| 12895 | 12195 |
| 12896 | 12196 |
| 12865 | 12265 |
| 12742 | 12042 |
| 12953 | 12053 |
| 12954 | 12054 |
| 12955 | 12055 |
| 12744 | 12044 |
| 12946 | 12046 |
| 12984 | 12084 |
| 12897 | 12197 |
| 12819 | 12198 |
| 12824 | 12201 |
| 12722 | 12202 |
| 12829 | 12129 |
| 12756 | 12230 |
| 12922 | 12222 |
| 12802 | 12102 |
| 12803 | 12103 |
| 12804 | 12104 |
| 12805 | 12105 |
| 12806 | 12106 |
| 12807 | 12107 |
| 12732 | 12232 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12733 | 12233 |
| 12734 | 12234 |
| 12736 | 12236 |
| 12737 | 12237 |
| 12740 | 12240 |
| 12741 | 12241 |
| 12743 | 12243 |
| 12745 | 12245 |
| 12748 | 12248 |
| 12751 | 12251 |
| 12752 | 12252 |
| 12754 | 12254 |
| 12758 | 12258 |
| 12759 | 12259 |
| 12868 | 12068 |
| 12811 | 12111 |
| 12818 | 12118 |
| 12656 | 12356 |
| 12650 | 12350 |
| 12780 | 12115 |
| 12654 | 12354 |
| 12651 | 12351 |
| 12812 | 12112 |
| 12653 | 12353 |
| 12655 | 12355 |
| 12778 | 12278 |
| 12779 | 12279 |
| 12813 | 12113 |
| 12814 | 12114 |
| 12826 | 12126 |
| 12820 | 12120 |
| 12781 | 12281 |
| 12782 | 12282 |
| 12652 | 12352 |
| 12977 | 12077 |
| 12870 | 12070 |
| 12783 | 12283 |
| 12719 | 12119 |
| 12784 | 12284 |
| 12797 | 12091 |
| 12978 | 12078 |
| 12785 | 12285 |
| 12786 | 12286 |
| 12920 | 12220 |
| 12787 | 12287 |
| 12798 | 12088 |
| 12979 | 12079 |
| 12891 | 12219 |
| 12788 | 12288 |
| 12827 | 12127 |
| 12789 | 12289 |
| 12872 | 12172 |
| 12790 | 12290 |
| 12791 | 12291 |
| 12892 | 12124 |
| 12792 | 12292 |
| 12793 | 12293 |
| 12799 | 12299 |
| 12860 | 12160 |
| 12794 | 12294 |
| 12795 | 12295 |
| 12796 | 12296 |
| 12861 | 12161 |
| 12862 | 12162 |
| 12823 | 12255 |
| 12866 | 12166 |
| 12869 | 12169 |
| 12968 | 12168 |
| 12901 | 12125 |
| 12935 | 12047 |

### Run Capacitors

| JARD  | MARS  |
|-------|-------|
| 12801 | 43320 |
| 12816 | 43322 |
| 12821 | 43324 |
| 12938 | 43325 |
| 12942 | 43326 |
| 12944 | 43327 |
| 12801 | 43328 |
| 12801 | 43329 |
| 12801 | 43330 |
| 12801 | 43331 |
| 12801 | 43332 |
| 12801 | 43333 |
| 12801 | 43334 |
| 12801 | 43335 |
| 12801 | 43336 |
| 12801 | 43337 |
| 12801 | 43338 |
| 12801 | 43339 |
| 12801 | 43340 |
| 12801 | 43341 |
| 12801 | 43342 |
| 12801 | 43343 |
| 12801 | 43344 |
| 12801 | 43345 |
| 12801 | 43346 |
| 12801 | 43347 |
| 12801 | 43348 |
| 12801 | 43349 |
| 12801 | 43350 |
| 12801 | 43351 |
| 12801 | 43352 |
| 12801 | 43353 |
| 12801 | 43354 |
| 12801 | 43355 |
| 12801 | 43356 |
| 12801 | 43370 |
| 12801 | 43375 |

### Contactors

| JARD  | MARS  |
|-------|-------|
| 17121 | -     |
| 17122 | -     |
| 17123 | -     |
| 17125 | -     |
| 17126 | -     |
| 17127 | -     |
| 17311 | 91311 |
| 17312 | 91312 |
| 17313 | 91313 |
| 17315 | 91315 |
| 17316 | 91316 |
| 17317 | 91317 |
| 17321 | 91321 |
| 17322 | 91322 |
| 17323 | 91323 |
| 17325 | 91325 |
| 17326 | 91326 |
| 17327 | 91327 |
| 17331 | 91331 |
| 17332 | 91332 |
| 17333 | 91333 |
| 17335 | 91335 |
| 17336 | 91336 |
| 17337 | 91337 |
| 17415 | 91411 |
| 17416 | -     |
| 17417 | -     |
| 17425 | 91421 |
| 17426 | 91422 |
| 17427 | 91423 |
| 17435 | 91431 |
| 17436 | 91432 |
| 17437 | 91433 |
| 17535 | 91531 |
| 17536 | 91532 |
| 17537 | 91533 |
| 17635 | 91631 |
| 17636 | 91632 |
| 17637 | 91633 |
| 17735 | 91731 |
| 17736 | 91732 |
| 17737 | 91733 |
| 17935 | -     |
| 17936 | -     |
| 17937 | -     |
| 17997 | 91999 |
| 17998 | 91998 |
| 17999 | 91997 |

### Pressure Switches

| JARD  | MARS  |
|-------|-------|
| 43920 | 43320 |
| 43922 | 43322 |
| 43924 | 43324 |
| 43925 | 43325 |
| 43926 | 43326 |
| 43927 | 43327 |
| 43928 | 43328 |
| 43929 | 43329 |
| 43930 | 43330 |
| 43931 | 43331 |
| 43932 | 43332 |
| 43933 | 43333 |
| 43934 | 43334 |
| 43935 | 43335 |
| 43936 | 43336 |
| 43937 | 43337 |
| 43938 | 43338 |
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| 00091     | O-9    | 03389   | M-42   | 07551  | AM-8   | 10228  | M-21   | 10585  | M-12   |
| 00114     | M-36   | 03458   | M-40   | 07572  | AM-8   | 10228  | O-4    | 10586  | M-12   |
| 00117     | M-36   | 03458HS | M-40   | 07581  | AM-8   | 10229  | M-21   | 10587  | M-12   |
| 00152     | M-32   | 03459   | M-40   | 07582  | AM-8   | 10229  | O-4    | 10588  | M-12   |
| 00152     | O-6    | 03463   | M-39   | 07584  | AM-8   | 10230  | M-21   | 10589  | M-12   |
| 00211     | M-33   | 03463   | O-8    | 07591  | AM-8   | 10230  | O-5    | 10590  | M-12   |
| 00212     | M-33   | 03464   | M-39   | 07592  | AM-8   | 10232  | M-21   | 10591  | M-12   |
| 00221     | M-33   | 03465   | M-40   | 07593  | AM-8   | 10232  | O-5    | 10592  | M-12   |
| 00222     | M-33   | 03466   | M-39   | 07594  | AM-8   | 10233  | M-21   | 10594  | M-21   |
| 00251     | M-32   | 03583   | M-42   | 07595  | AM-8   | 10233  | O-5    | 10594  | O-5    |
| 00253     | M-32   | 03584   | M-42   | 07596  | AM-8   | 10234  | M-21   | 10683  | M-13   |
| 00351     | M-32   | 03585   | M-42   | 07709  | AM-9   | 10234  | O-3    | 10684  | M-13   |
| 00352     | M-32   | 03586   | M-42   | 07801  | M-45   | 10264  | M-21   | 10685  | M-13   |
| 00353     | M-32   | 03587   | M-42   | 07802  | M-45   | 10264  | O-4    | 10686  | M-13   |
| 00353     | O-4    | 03588   | M-42   | 07804  | M-45   | 10265  | M-21   | 10687  | M-13   |
| 00353     | O-9    | 03589   | M-42   | 07805  | M-45   | 10265  | O-4    | 10688  | M-13   |
| 00354     | M-32   | 03590   | M-42   | 07807  | M-45   | 10302  | M-14   | 10689  | M-13   |
| 00501     | M-32   | 03595   | M-42   | 07921  | AM-8   | 10303  | M-14   | 10690  | M-13   |
| 00502     | M-32   | 03596   | M-42   | 07922  | AM-8   | 10304  | M-14   | 10701  | M-20   |
| 00503     | M-32   | 03696   | M-43   | 07993  | AM-8   | 10305  | M-14   | 10704  | M-20   |
| 00503     | O-4    | 03727   | M-41   | 07995  | AM-8   | 10306  | M-14   | 10707  | M-20   |
| 00504     | M-32   | 03728   | M-41   | 07996  | AM-8   | 10307  | M-14   | 10709  | M-20   |
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| D1126  | O-3    | D923   | F-9    |        |        |        |        |        |        |
| D1127  | F-4    | D934   | F-3    |        |        |        |        |        |        |
| D1152  | F-3    | D934   | F-8    |        |        |        |        |        |        |
| D1152  | F-5    | FM50   | F-21   |        |        |        |        |        |        |
| D1152  | F-17   | FM554  | F-21   |        |        |        |        |        |        |
| D1152  | O-7    | G100   | ME-22  |        |        |        |        |        |        |
| D1154  | F-3    | G122   | ME-22  |        |        |        |        |        |        |
| D1154  | F-5    | G140   | ME-22  |        |        |        |        |        |        |
| D1154  | F-17   | G145   | ME-22  |        |        |        |        |        |        |
| D1154  | O-7    | H162   | ME-21  |        |        |        |        |        |        |
| D116   | F-3    | H163   | ME-21  |        |        |        |        |        |        |
| D116   | F-6    | H296   | ME-21  |        |        |        |        |        |        |
| D1160  | F-14   | H300   | ME-21  |        |        |        |        |        |        |
| D1160  | O-4    | K1408  | ME-22  |        |        |        |        |        |        |
| D1164  | F-3    | K628   | F-19   |        |        |        |        |        |        |
| D1164  | F-4    | K628   | O-8    |        |        |        |        |        |        |
| D1164  | F-5    | KIT200 | F-21   |        |        |        |        |        |        |
| D1164  | F-19   | O002   | ME-23  |        |        |        |        |        |        |
| D1164  | O-9    | O003   | ME-23  |        |        |        |        |        |        |
| D1189  | F-3    | O004   | ME-23  |        |        |        |        |        |        |
| D1189  | O-6    | O010   | ME-23  |        |        |        |        |        |        |
| D1190  | F-3    | O011   | ME-23  |        |        |        |        |        |        |
| D1190  | F-6    | O100   | ME-23  |        |        |        |        |        |        |
| D1190  | F-20   | O102   | ME-23  |        |        |        |        |        |        |
| D1190  | O-9    | O210   | ME-24  |        |        |        |        |        |        |
| D121   | F-3    | O600   | ME-23  |        |        |        |        |        |        |



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