



# Packard

Supplying HVACR solutions with your needs in mind.

## 2018-2019

### FULL-LINE CATALOG



**A 100% EMPLOYEE OWNED COMPANY**

**PACKARDONLINE.COM**

# LG COMPRESSORS DROP IN REPLACEMENT FOR OTHER SCROLL BRANDS WITH NO RE-PIPING!

LG Compressors established in 1973

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Proven reliability in leading HVAC OEMs since 2006

---

Unique features include:

- Service friendly all copper stubs
- IPR valve
- Vacuum prevention device
- Bypass valves for easier starts as well as protection against over compression
- Proprietary oil formulation provides optimum lubrication while resisting coagulation

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LG Partner Portal

<http://partner.lge.com/us/index.lge>





## A Note from Susan Kirkland, President

If I had just two words to describe 2017 it would be PERSEVERANCE and PRIDE. We started 2017 with a wish list as long as my arm. We knew what we wanted to accomplish in 2017 and in many cases, we knew what we needed to do to get there, it was just a matter of perseverance. As we began 2017, the management team at Packard had aggressive goals; to protect our employees in this drastically unstable world, to secure our foundation in this industry and to continue to grow our commitment to our customers. It may have taken us almost all of 2017 to get there, but we persevered, and we succeeded in every goal.

In August after a lot of blood, sweat, tears and tons of support we successfully completed the transition to a 100% Employee Owned company. The purpose of this ESOP is to enable eligible employees to: share in the growth and prosperity of the company; and acquire beneficial stock ownership interests in the company. This evolution allows Packard to stabilize ownership while insisting on a continuity of culture that in many cases simply doesn't exist when companies change hands. Completing this transaction accomplished our first "big-picture" goal for 2017...**protect our employees.**

**Securing our foundation...**this proved to be a much more daunting task if you can believe it. In October, we made our presence known in Kennesaw by relocating our corporate offices across town to a brand-new space almost twice the size at 154,000 sq. feet of warehousing and offices! In no time, a core group of managers organized, prioritized and mobilized our employees AND inventory. We were moved in and set-up without any major breaks in shipping or service. This move will make us a force to be reckoned with as we have paired up our team with a well-known shipping powerhouse to raise our efficiency to the next level.

The coming year will not be without change and excitement either. At present, we have plans to add yet another Distribution Center in the 1st Quarter of 2018 bringing the total to three. This addition will serve our West Coast customers with greater shipping proficiency, in some cases cutting transit time in half. This is just one way in which we **continue to grow our commitment to our customers...** greater availability, countless options, and superior service.

This newest catalog affirms our pledge to expand our selection of products that you and your customers need to help you grow your businesses. We have added well over 1,000 items to this catalog in the hopes that you will have more reason to trust all your HVACR replacement parts to Packard.

As of today, all the enhancements we have made in 2017 have positioned us for the next 10 years. When I take time to think about what we have achieved as a team my heart is full. The PRIDE I have in my team, my Packard family, is overwhelming. I sincerely hope that you sense that pride when you move forward with Packard. We invite you to take this journey with us, but remember the words of Margaret Shepard, American heiress and primary philanthropist of the YMCA, "sometimes your only available transportation is a leap of faith".

*Susan A. Kirkland*

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# PACKARD IS NOW 100% EMPLOYEE OWNED

PROUD  
OWNERS OF  
PACKARD!



In 2017, we continued to lead the way by becoming the first master distributor in the HVACR industry to adopt a 100% Employee Stock Ownership Plan. This transfer of ownership will preserve and strengthen our well-known standards, culture and legacy.

TITAN HD®

TITAN ICE®

TITAN MAX®

TITAN PRO®

TOR Q START®

Vulcan 70°C™

ARG SUPPRESSION  
TECHNOLOGIES

Bristol  
Compressors  
International Inc.

Browning®

Century®

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Danfoss

CARLISLE  
HVAC PRODUCTS



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ELCO®

EM  
& S

FASCO

genteq

IGM  
CONTROLS

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Law  
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Littelfuse®

Expertise Applied | Answers Delivered

marathon™  
Motors

morrillmotors™

MORRISON PRODUCTS  
Innovating Air Flow

Nidec

REVCOR  
REVOLUTIONARY AIR FLOW™

Stamford

TERM-LOK

TUTCO®

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Represents energy efficient product.





# MOTORS

Selection is one of the three fundamental pillars to the Packard mission. We ensure quality replacement motors across a wide range of applications to meet your customer's repair needs.



# EC MAX<sup>®</sup>

**Look no further...**

**The NEW Electronically Commutated Motor is here.**



**See page 54  
for full details.**



**Replaces X13  
and PSC motors.**





## Applications

- Supermarket refrigeration, vending machines and other condenser and evaporator fan applications

## Features

- Drop in replacement for shaded pole and PSC motors
- Electronically commutated motors with integrated electronic control
- ECR up to 70% energy savings; UL recognized
- IP55 moisture and dust protection
- Totally enclosed, ball bearings, CCWSE rotation, can be mounted in any position
- Operating temperature of ECR ONE motors: -22°F to +122°F
- Operating temperature of ECR UltraSynch motors: -22°F to +104°F
- Motors are built using 30% less copper and 80% less steel for a greener, more affordable solution
- ECR UltraSynch motor includes Lyall plug
- ECR ONE is a constant torque motor and will replace a shaded pole motor of matching wattage using the same fan blade
- ECR UltraSynch is a constant speed motor operating at 1800 RPM over a wide range of voltage and load conditions. The correct fan blade must be specified to properly balance air flow.

## ECR ONE Constant Torque Motor



Item ID	Watts	Volts	RPM	Amps	Hertz
<b>Wellington - ECR ONE</b>					
ECR01A0241	9	115	1550	0.23	60
ECR01A0102	12	115	1550	0.31	60
ECR01A0243*	16	115	1550	0.41	60

\*7 Drilled and tapped inserts for mounting.

## ECR UltraSynch™ Constant Speed Motor



Item ID	Watts	Volts	RPM	Amps	Hertz
<b>Wellington - ECR UltraSynch™</b>					
ECR92PJA12	9-16	120	1800	0.34	60

## High Efficient Motors - ECM-IP Series

### Features

- Electronically commutated - 115V, 50/60Hz
- Moisture protection: IP65
- Front mount: M4 studs on 3.72" B.C. for shroud/guard
- Drop-in replacement for front mount shaded pole/ECM
- CCW rotation from the shaft end
- All angle mount
- Totally enclosed
- Continuous air over
- Long-life sealed ball bearings



Item ID	Watts	Volts	RPM	Amps	Rotation	Length Less Shaft (In.)	Cord Length (In.)	Terminal / Plug	Replaces
<b>Elco</b>									
ECHE0170	12	115	1450	0.18	CCWSE	3.33	14	3 pin 90°	EDA12153UN0170 34410012 (For Fan 34415010)



Item ID	Watts	Volts	RPM	Amps	Rotation	Length Less Shaft (In.)	Cord Length (In.)	Terminal / Plug	Replaces
<b>Elco</b>									
ECHE0176	15	115	1600	0.22	CCWSE	4.00	16	2 pin 90°	EDA15253UC0176 P078449H
ECHE0182	10	115	1550	0.19	CCWSE	3.61	16	2 pin 90°	EDA10153UC0182 P079441C P066237A



## EC Unit Bearing Motor



### Features

- 60/50 Hz
- IP65 Certified
- 61312 has a straight plug and 61313 has a 90 degree plug



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>Packard</b>										
61312	4-16	115	1550	0.16-0.42	1	CWLE	1/4 X 1/2	3 1/8	Ball	Double Foot Pad



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>Packard</b>										
61313	4-16	115	1550	0.16-0.42	1	CWLE	1/4 X 1/2	3 1/8	Ball	Double Foot Pad

UP TO  

**70%**  
 ENERGY SAVINGS!

## HIGH EFFICIENCY MOTORS





## ECM Replacements for Heatcraft



### Features

- 3.3" Diameter
- Brushless High Efficiency up to 75%
- Constant Speed Design

- Straight Lyall Plug
- Rated IP55
- 6 Drilled Holes with Threaded Inserts on Opposite Shaft End



Item ID	Watts	RPM	Volts	Amps	Rotation	Shaft Dimension (In.)	Hertz	Replaces
<b>Packard</b>								
91635	16-35	1625	120-230	0.76 - 0.48	CWSE	5/16 x 2 1/2	60/50	Heatcraft 25317701 Heatcraft 25317801

### Features

- Will replace 6 to 16 watt shaded pole unit bearing motors with clockwise shaft end rotation



Item ID	Watts	RPM	Volts	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Packard</b>							
91636	6-16	1550	120-230	0.35 - 0.22	CWSE	1/4 x 1/2 Threaded	60/50

## Unitronix Unit Bearing EC Motors

### Features

- Patented EMS electronically commutated motor technology
- Drop in replacements for shaded pole and PSC unit bearing motors
- Utilizes traditional cast iron unit bearing design for proven, trouble free long life
- Up to 70% efficient
- Low heat rise maximizes system efficiency
- Maintains constant speed over a wide range of fan applications
- Special patented water protection package
- 60/50 Hz
- Includes Lyall plug
- Rotation determined viewing lead end
- 13 mounting holes
- UL and cUL recognized



Item ID	Watts	RPM	Volts	Amps	Rotation	Mounting Holes	Replaces
<b>Electric Motor &amp; Specialties</b>							
15621	6-12	1550	115	0.2 - 0.3	CWLE	5 Rear holes	Hussman, Hill, Kysor/Warren
15624	14-16	1550	115	0.47 - 0.58	CWLE	5 Rear holes	Hussman, Hill, Kysor/Warren

### Applications

- Commercial refrigeration walk in coolers and freezers, air moving applications demanding high efficiency

### Features

- Electronically commutated motor
- Drop in replacements for 3.3" Diameter Shaded Pole & PSC Motors
- Includes Lyall plug
- Unit Bearing
- Standard thru bolt configuration
- Totally enclosed, air over
- Rotation determined viewing the shaft end
- Automatic overload
- Efficiencies up to 3 times higher than shaded pole motors and 40% higher than PSC



Item ID	H.P.	RPM	Volts	Amps	Rotation	Mounting	Replaces
<b>Electric Motor &amp; Specialties</b>							
15211	1/15-1/25	1550	115	1.25	CWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15212	1/15-1/25	1550	115	1.25	CCWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15221	1/15-1/25	1550	230	0.77	CWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15222	1/15-1/25	1550	230	0.77	CCWSE	4 STUDS SE	Heatcraft, Bohn, and Krack



Item ID	Watts	RPM	Volts	Amps	Rotation	Mounting	Replaces
<b>Electric Motor &amp; Specialties</b>							
15546	12	1550	115	0.3	CWLE	Double Foot Pad	Hussman 4410546
15547	13	1725	115	0.3	CWLE	Double Foot Pad	Hussman 4410547



## Solid State Commutated Unit Bearing Motors

### Features

- The next generation of ECM unit bearing motor with multi-watt range capability
- Used for commercial refrigeration
- IP65 Certified making it compatible for applications where the use of pressurized water for wash down is a standard procedure
- ATEX Certified allowing its application where flammable refrigerants are used
- 66% Peak Efficiency = 45% higher than a PSC motor
- Ball bearing with low temperature grease
- Operating Temps: -40° C to 55° C ambient
- 5 drilled & tapped mounting holes on rear of the motor



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Mounting
<b>Morrill Motors</b>									
10999	4-25	115	1550	0.60	1	CWLE	1/4 x 1/2		Universal 5-Hole Mount
IP65 Certified									



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Morrill Motors</b>									
10012	6-12	115	1550	0.30	CW	1/4 Threaded	60	Hussmann 4410546	554
10013	6-12	115	1550	0.30	CCW	1/4 Threaded	60	—	554
10020	16-25	115	1575	0.60	CW	1/4 Threaded	60	Hussmann 4410547	554
10022	16-25	115	1575	0.60	CCW	1/4 Threaded	60	—	554
<b>Notes:</b> 554. Includes water shield to protect motor during coil cleaning									



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz	Notes
<b>Morrill Motors</b>								
20020	16-25	208-230	1575	0.30	CW	1/4 Threaded	60	554
20022	16-25	208-230	1575	0.20	CCW	1/4 Threaded	60	554
<b>Notes:</b> 554. Includes water shield to protect motor during coil cleaning								



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Morrill Motors</b>							
10036	35-50	208-230	1550	0.45	CW	1/4 Threaded	50/60
10040	35-50	115	1550	0.90	CCW	1/4 Threaded	50/60



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Morrill Motors</b>							
10042	35-50	208-230	1550	0.45	CCW	1/4 Threaded	50/60



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10112	12	115	1550	0.30	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	12CSHEMA1
10215	12	230	1550	0.15	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	15CSHEMA2



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10312	12	115	1550	0.30	CWLE	90 Degree 2 Prong Plug	50/60	Double	Aluminum	12CSHBV2



## Solid State Commutated Unit Bearing Motors

### Features

- Direct drop-in replacements
- Ultimate commutated technology
- Unit bearing construction
- 100% performance tested
- Includes Lyall plug
- Rotation is determined by viewing opposite shaft end
- Peak efficiencies in excess of 80% means lower operating temperatures and extended motor life
- Constant 1550 RPM operating speed is identical on either 50 or 60 Hertz
- Constant 1550 RPM regardless of fluctuations in voltage



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10313	16	115	1550	0.30	CWLE	90 Degree 2 Prong Plug	50/60	Double	Aluminum	12CSHEMV1



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10113	16	115	1550	0.40	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	13CSHEMA1



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10218	38	115	1550	0.90	CCWLE	Straight 2 Prong Plug	50/60	Double	Cast Iron	18AHEMAR1
10219	38	208-230	1550	0.45	CCWLE	Straight 2 Prong Plug	50/60	Double	Cast Iron	19AHMAR2

## Electronically Commutated Refrigeration Motors And Fan Kits



9-16 Watt, 120 Volt, 0.34 Amps  
Assembled in the USA

Item ID	Replaces	Includes
<b>Wellington</b>		
ECR92950	GE FAN PACK 5SME58AAF1430 900 & 950 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 15 Degree Fan Blade</li> </ul>
ECR921200	GE FAN PACK 5SME58AAF1430 1100 & 1200 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 25 Degree Fan Blade</li> </ul>
ECR921400	GE FAN PACK 5SME58AAF1430 1300 & 1400 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 28 Degree Fan Blade</li> </ul>

## 58MM ECM Fan Pack



### Features

- Includes basket w/ 9.8 inch bolt circle mounting and fan blade
- Lyall plug
- 40° to 55°C ambient operating temperature
- Variable torque, constant speed EC motors
- Class B Insulation

Item ID	H.P.	Volts	RPM	Amps	Speeds	Hertz	Rotation	Bearing	Phase	CFM at 0.05" Static Pressure	Replaces
<b>Morrill Motors</b>											
5R026	Replaces up to 12W	115	1550	0.3	1	60	CWLE	Unit Bearing	1	330	3426B, SSC2B12CSHEMA1
5R027	Replaces up to 12W	115	1450	0.4	1	60	CWLE	Unit Bearing	1	370	3427B, SSC2B13CNHEMA1
5R028	Replaces up to 12W	115	1550	0.4	1	60	CWLE	Unit Bearing	1	400	3428B, SSC2B13CSHEMA1





## EBM Energy Saving Motor (ESM) Axial Fan Assembly

### Features

- Can be programmed with Nano programmer
- Program two-speeds between available range
- 50/60 Hertz
- 115 & 230 VAC models available
- Three wiring harness termination options, sold separately



Item ID	Diameter Fan (in.)	Watts	Volts	RPM	Amps	Speeds	Rotation	Bearing
<b>ebmpapst</b>								
<b>EBM9122</b>	7	21	230	1700-2500	0.18	2	CCWSE	Ball
<b>EBM9137</b>	8	31	230	800-2100	0.24	2	CCWSE	Ball
<b>EBM9523</b>	7	22	115	1700-2500	0.3	2	CCWSE	Ball
<b>EBM9538</b>	8	31	115	800-2100	0.46	2	CCWSE	Ball

## EBM Programmer

### Features

- Allows for effortless programming of the two ESM speeds
- Inserts directly into fan's programming port
- Battery operated, no cables required
- Easy to read LCD display



Item ID
<b>ebmpapst</b>
<b>EBM600003</b>



## EBM Unit Cooler Fan Assembly

### Features

- Heatcraft replacement
  - Voltage sensing
  - High efficiency ECM design
  - Plug included
- Two options available:**
- Fixed RPM suitable for use in Heatcraft unit coolers
  - RPM adjustable rotary switch



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Bearings
<b>ebmpapst</b>							
<b>EBM0207</b>	63	100-240	1590	0.55	1	CWSE	Ball
<b>EBM0210</b>	70	100-240	900-1650	0.5	10	CWSE	Ball

## EBM Harness

### Features

- Interchangeable cord sets for 8 in (200mm) EBM fan basket



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
<b>EBM10637</b>	3 wire connection without plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
<b>EBM10901</b>	2 wire connection without plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
<b>EBM10847</b>	Two Pin Right Angle Lyall Plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
<b>EBM10910</b>	Three Pin Straight Lyall Plug	11



## EC 48 Frame Motors

### Features

- Constant speed
- 50/60 Hz
- Efficiency up to 80%



Item ID	H.P.	Volts	RPM	Amps	Speed	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>Morrill</b>										
5R002	1/5	115	1075	4.6	1	CCWSE	1/2 X 3 3/4	5.53	Ball	Belly Band



Item ID	H.P.	Volts	RPM	Amps	Speed	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>genteq</b>										
6301	1/5	208-230	1100/850	2.8	2	Reversible	1/2 X 3	5.45	Ball	Thru Bolt/Belly Band
6303	1/3	208-230	1100	3.5	2	Reversible	1/2 X 3	5.95	Ball	Thru Bolt/Belly Band



Item ID	H.P.	Volts	RPM	Amps	Speed	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>genteq</b>										
6903	1/3	460	1100/850	1.6	2	Reversible	1/2 x 6	6.82	Ball	Thru-bolt/Belly band
6905	1/2	460	1100/850	2.5	2	Reversible	1/2 x 6	7.57	Ball	Thru-bolt/Belly band

**I OWN PACKARD!**

*I Love Packard because...*



...it gives me the ability to meet new people and present our innovative products with the support of our Packard family. 🗨️

JOSE GENAO  
District Sales Manager



## Evergreen EM

### Replace 100s of Different OEM X13 ECM Models.

Evergreen **EM** is Designed to replace direct-drive blower motors in residential and light commercial indoor furnaces, air handlers, and package systems that were designed with a standard EC motor, such as an X13 or equivalent competitor model.

#### Features

- Multi-speed, constant torque, brushless DC motor
- Available in 1/3, 1/2, 3/4 and 1HP ratings
- Automatically determines motor rotation direction
- 5 discrete speeds using 24VAC (3 using 18VDC)
- Operating speed range of 600-1200 rpm
- NEMA 48-frame (5.6 inch diameter) Belly Band Mount with 5-inch long ½ inch diameter shaft
- UL recognized component
- Standard ECM replacement (Does not replace premium ECM constant airflow products such as Eon, 3.0, 2.3, and 2.5)
- Maintains ECM-level efficiency up to 80%
- Soft Start and Off Ramp for quiet operation
- Electronic overload protection



Scan for more info



Item ID	H.P.	Volts	RPM	Amps	Rotation	Dim A (In.)	Dim B (In.)
<b>genteq - Evergreen EM Motors</b>							
6103E	1/3	115	600-1200	4.8	Auto Sensing	10.17	5.25
6203E	1/3	208/230	600-1200	2.8	Auto Sensing	10.17	5.25
6105E	1/2	115	600-1200	6.8	Auto Sensing	10.67	5.75
6205E	1/2	208/230	600-1200	4.1	Auto Sensing	10.67	5.75
6107E	3/4	115	600-1200	8.4	Auto Sensing	11.42	6.5
6207E	3/4	208/230	600-1200	6	Auto Sensing	11.42	6.5
6110E	1	115	600-1200	10.9	Auto Sensing	12.17	7.25
6210E	1	208/230	600-1200	7.6	Auto Sensing	12.17	7.25



**Don't Forget!**  
See page 411  
GA447  
ECM Tester

## Evergreen IM

### Energy Savings. Quiet Operation Comfort. Indoor Air Quality.

Evergreen **IM** is a high-efficiency ECM replacement motor that is designed to replace factory PSC blower motors in HVAC systems including fossil fuels, electric heat, A/C, heat pump, dual fuel and geothermal; does not replace variable speed or X13 EC motors.

Evergreen uses up to 25% fewer watts in operating mode and up to 74% fewer Watts than a PSC motor in constant fan.

#### Features

- Two Motors cover most applications
- Multi-volt 115/230VAC, 50/60 Hertz
- Integrated with HVAC system controls/operation
- Four speed selections for heating and cooling
- Optimized constant fan speed
- 1/2 inch diameter flat shaft
- Auto Sensing rotation
- 5.5 inch diameter
- Automatic overload protection
- Ball bearing
- Open enclosure
- Band mounting
- Continuous duty



Item ID	H.P.	Volts	RPM	Amps	Replaces
<b>genteq - Evergreen IM Motors</b>					
6005	1/5, 1/4, 1/3, 1/2	115/230	1070	6.70/4.00	GE 5SME39HXL110
6010	1	115/230	1070	11.00/6.70	GE 5SME39SXL111

Evergreen™ IM



Scan for more info



Item ID	Mounting I.D. (In.)
<b>genteq - Evergreen Belly Band Mounting Kit</b>	
5K003	10
5K004	11
5K005	13



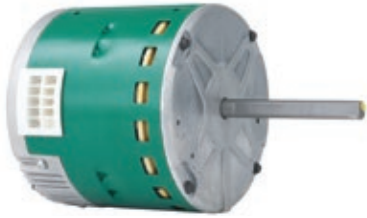
## Evergreen CM

### ECM Replacement for Commercial VAV Boxes.

Evergreen CM replaces standard 48 frame motors in VAV systems enhancing the ability of energy efficient systems to qualify for government rebate programs. With slow ramp up and ramp down there is less system noise and greater occupant comfort.

#### Features

- Variable speed, constant torque, brushless DC motor
- 277V AC single-phase input, 50/60Hz
- Designed for direct-drive blower replacement applications in commercial building systems
- Standard CCW Rotation (CW Rotation option available)
- 5 discrete speeds using 24VAC (3 using 18VDC); 600-1200 RPM
- Efficiency up to 80%
- Ready for Building Automation System Control interface using a PWM speed controller
- Constant torque with better External Static Pressure Control than standard PSC motors
- Soft Start and Off Ramp for quieter operation



Item ID	H.P.	Volts	RPM	Amps	Rotation	Dim A (In.)	Dim B (In.)
<b>genteq - Evergreen CM Motors</b>							
6703	1/3	208-230/277	600-1200	2.8	Auto Sensing	9.17	5.25
6705	1/2	208-230/277	600-1200	4.1	Auto Sensing	9.67	5.75
6707	3/4	208-230/277	600-1200	6	Auto Sensing	10.42	6.5
6710	1	208-230/277	600-1200	7.6	Auto Sensing	11.17	7.25

## ARKTIC™ 142 Motor

#### Applications

- Designed primarily for use in the evaporator of commercial refrigeration and walk-in coolers and freezers as well as outdoor condensers can also be used in many applications demanding high efficiency and dependability with output ratings between 1/5 - 1 H.P. including parallel rack fan motors.

#### Features

- Shaft water slinger
- 26 inch cord set attached to motor
- Horizontal - vertical down orientation desired
- Totally enclosed, Non-vented (air-over ECM required)
- Designed for 50 or 60 Hertz operation
- RoHS compliant NEMA 48 Frame electronically commutated motor



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings
<b>Morrill Motors</b>									
5R007	1/3	230	1075	2.60-3.50	1	CCW	1/2 x 4	10	Ball
5R002	1/5	115	1075	4.6	1	CCWSE	1/2 X 3 3/4	5.53	Ball

5R002 has a Belly Band mounting

## TechTip >>>>

from Packard Academy

### MOTOR EFFICIENCY STATISTICS:





# Drop In Replacements For Commercial Refrigeration Evaporator Fan Motors



### Features

- Energy savings ECM design
- Ball bearings
- 60 Hertz
- Replaces Heatcraft, Bohn, Chandler, Climate Control and Larkin
- 42 Frame
- Class B insulation
- Four mounting studs on each end
- Includes Lyall plug
- Replaces 1/15, 1/20, 1/25 HP PSC and lower efficient shaded pole designs

Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces
<b>Packard</b>											
97801	1/15, 1/20, 1/25	120	1625	1.20	1	CWSE	5/16 x 2.95	2.85	Ball	Stud	Heatcraft 22617801 Heatcraft 22618001 Heatcraft 25307801 Heatcraft 25308001 Interlink 25317801S
97701	1/15, 1/20, 1/25	230	1625	0.70	1	CWSE	5/16 x 2.95	2.85	Ball	Stud	Heatcraft 22617701 Heatcraft 22617901 Heatcraft 25307701 Heatcraft 25307901 Interlink 25317701S

## 3.3 Inch Diameter Electronically Commutated Motors

### Applications

Commercial refrigeration walk-in coolers and freezers, air-moving applications demanding high efficiency and dependability



### Features

- Commercial refrigeration walk-in coolers and freezers, air-moving applications demanding high efficiency and dependability
- Efficiencies up to three times higher than shaded pole motors and 40% higher than PSC
- Ball bearing with low temperature grease
- Standard thru-bolt configuration
- All angle mount
- Totally enclosed, air over
- Rotation viewed opposite shaft end (OSE)
- Water Slinger
- Automatic overload
- 50/60 Hertz
- Single phase
- Single speed

Item ID	H.P.	Volts	RPM	Amps	OSE Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Mounting	Replaces
<b>Morrill Motors - Arctic 59 Model</b>										
35100	1/15	115	1550	1.30	CW	5/16 x 2-5/8	4 1/8	Totally Enclosed	Front or Rear Thru-Bolt	Larkin 253-1194
35101	1/15	115	1550	1.30	CCW	5/16 x 2-5/8	4 1/8	Totally Enclosed	Front or Rear Thru-Bolt	Bohn 5008S
35201	1/15	208-230	1550	0.80	CCW	5/16 x 2-5/8	4 1/8	Totally Enclosed	Front or Rear Thru-Bolt	Bohn 5008T

# MOTORS | C-FRAME

## Applications

Evaporators, refrigerators, range hoods, ventilators, exhaust fans and unit heaters

## Features

- Shaded pole
- Sleeve bearings
- Stud mounting
- Rotation is determined by viewing the shaft end
- Direct Replacements for Delfield, Bohn, Gemline and Nutone



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65100	1/2	120	3000	0.60	1	CCW	7/32 x 1 5/8	60	Gemline EM550 Nutone C65878 Robertshaw VFM100	105, 485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65100M	1/2	120	3000	0.60	1	CCW	7/32 x 1 5/8	60	Nutone C65878 Motor Only	464, 485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
82423K	1/2	120	2650	0.60	1	CW	7/32 x 1 1/2	60	Nutone 89423-000	106, 485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65249	1/2	120	3000	0.45	1	CW	1/8 x 2 1/2	60	Gemline EM241 Gemline EM242 Gemline EM244 Gemline EM245 Gemline EM247 Gemline EM248 Gemline EM249	



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65106	5/8	115	3000	0.70	1	CCW	7/32 x 2 3/8	60	Gemline EM555 Nutone C68627	485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65112	5/8	120	3000	0.76	1	CCW	7/32 x 1 3/4	60	Broan-Nutone 99080245 Broan-Nutone 97012041	104, 105, 485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65514	5/8	120	3000	0.44	1	CW	3/16 x 3/4	60	Delfield 1175-10-4439	

Note: 5" fan blade included



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65691	5/8	120	3000	0.64	1	CW	0.181 x 1 5/16	60	BOHN 5007S Bohn 5018S Bohn 5036F Gemline EM691 UPPCO 85	354 472 474
65692	5/8	240	3000	0.32	1	CW	0.181 x 1 5/16	60	BOHN 5007T Bohn 5018T Bohn 5036G Gemline EM692 UPPCO 86	354 472 474



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65709	5/8	120	3000	0.80	1	CCW	7/32 x 2 1/4	60	Nutone C53709	108, 485

### Notes:

- 104. Same as 65100 except mounting screws are on the shaft end
- 105. Includes A65100FB impeller
- 106. Assembled with bracket as illustrated
- 108. Has a one shot overload
- 354. Impedance protected
- 464. Same as 65100 except motor only
- 472. Includes stand offs for other Bohn applications
- 474. Used in Bohn commercial evaporators
- 485. Includes two prong plug



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
67154	3/4	120	3000	0.55	1	CCW	1/4 x 5/8	60	Russell Coil 102249-005	



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65104	3/4	120	3000	0.74	1	CCW	7/32 x 1 3/4	60	Gemline EM553 Nutone C66582	107



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65894K	3/4	120	3000	0.90	1	CCW	7/32 x 2 3/8	60	Nutone 82229 Nutone K5894	106, 555



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65101	7/8	120	3000	0.86	2	CW	7/32 x 1 5/16	60	Gemline EM551 Nutone C52367 Robertshaw VFM101	110



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65105	7/8	120	3000	0.88	2	CCW	7/32 x 1 7/16	60	Gemline EM554 Nutone C27987	110



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65103	7/8	120	3000	0.71	1	CCW	7/32 x 1 3/16	60	Gemline EM552 Nutone C63675	485
65272	1	120	3000	1.00	1	CCW	7/32 x 1 1/2	60	Nutone C23272	485

**Notes:**  
 106. Assembled with bracket as illustrated  
 107. Has eyelet terminals on leads  
 110. Includes Two Speed Plug  
 485. Includes two prong plug  
 555. Includes two prong plug and blower wheel

## Direct Replacements For Broan

### Features

- Shaded Pole
- Sleeve Bearing
- Automatic Overload
- Rotation is determined by viewing the shaft end



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65216	5/8	120	3000	0.51	1	CCW	0.181 x 1 1/2	60	Broan 99080090 Broan 99080216	485, 491



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65366	5/8	120	3000	0.50	2	CCW	0.185 splined x 1 1/4	60	Broan 99080365	110, 491



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Packard</b>										
65094	7/8	120	3000	0.75	1	CCW	7/32 x 1 1/4	60	Broan 99080094 Broan 99080099 Broan 99080166	485, 491
65159	7/8	120	3000	0.71	1	CCW	1/4 x 2 3/4	60	Broan 99080159	485, 491
65176	1 1/8	120	3000	1.00	1	CW	7/32 x 1 1/2	60	Broan 99080176	485, 491

**Notes:**  
 110. Includes Two Speed Plug  
 485. Includes two prong plug  
 491. Has a flattened shaft

## Utility Fan Motors And Kits

### Applications

Evaporators, refrigerators, range hoods, ventilators, exhaust fans and unit heaters

### Features

- Shaded pole
- 60 Hertz
- Mechanically reversible
- Rotation is determined by viewing the shaft end



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Sleeve Bearings</b>										
65670	5/8	115	3000	0.50	1	CW	3/16 x 1 5/16	SP	Sleeve	Acme 600 Acme 702 Acme 710 Gemline EM670 Robertshaw 14001



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Sleeve Bearings</b>										
65690	5/8	120	3000	0.50	1	CW	3/16 x 1 3/8	SP	Sleeve	Gemline EM690

Same as 65670 except studs exit on the shaft end.



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Sleeve Bearings</b>										
65672	5/8	240	3000	0.18	1	CCW	3/16 x 1 5/16	SP	Sleeve	Acme 602 Acme 702 Gemline EM672 Robertshaw 14005
65673	5/8	115	3000/1550	0.60/0.40	2	CW	3/16 x 1 3/8	SP	Sleeve	Gemline EM673 Robertshaw 14007



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Sleeve Bearings</b>										
65675	1	120/240	3000	0.80/0.40	1	CW	3/16 x 2 3/16	SP	Sleeve	Acme 7502 Gemline EM675



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Ball Bearings</b>										
65686	5/8	120	3000	0.41	1	CW	3/16 x 1 1/4	SP	Ball	Acme BB700 Gemline EM686



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Ball Bearings</b>										
65687	1 1/8	120/240	3000	0.66/0.32	1	CW	3/16 x 2 3/8	SP	Ball	Acme BB7502 Gemline EM687
65688	1 1/8	120	3000	0.43	1	CW	3/16 x 1 5/8	SP	Ball	Acme BB750 Gemline EM688



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Replaces
<b>Packard - Ball Bearings</b>										
65345	1 3/8	120	3000	1.30	1	CCW	5/16 x 2 3/8	SP	Ball	Nutone 62345



## Utility Fan Motors

### Applications

Evaporators, refrigerators, range hoods, ventilators, exhaust fans and unit heaters

### Features

- Shaded Pole, 60 Hertz
- Mechanically reversible
- Rotation is determined by viewing the shaft end



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Replaces	Notes
<b>Packard</b>											
65210	3/8	120	3000	0.31	1	CW	0.181 x 1	SP	Sleeve		
65426	3/8	240	3000	0.17	1	CW	0.181 x 1	SP	Sleeve		
65533	1/2	120	3000	0.22	1	CW	Splined (3/16 Diameter)	SP	Sleeve	Choice Vending 863243	
65693	1/2	120	3000	0.32	1	CW	0.181 x 1	SP	Sleeve		
65280	1/2	240	3000	0.32	1	CW	3/16 x 1	SP	Sleeve		
65671	5/8	115	3000	0.50	1	CW	3/16 x 1 5/16	SP	Sleeve	Gemline EM671 Robertshaw 14003	
65681	5/8	120	3000/1550	0.55/0.34	2	CW	3/16 x 1 3/8	SP	Sleeve	Gemline EM681 Robertshaw 14021	
65102	5/8	120	3000	0.40	1	CW	7/32 x 2 1/4	SP	Sleeve		
65694	5/8	120	3000	0.45	1	CW	0.181 x 1 1/8	SP	Sleeve		
65467	7/8	120	3000/1550	1.00/0.60	2	CW	7/32 x 2 3/8	SP	Sleeve		103
65427	7/8	220-240	3000	0.28	1	CW	3/16 x 1	SP	Sleeve		
65283	7/8	120	3000/1550	0.76	2	CW	3/16 x 1	SP	Sleeve		
65685	1	120	3000/1550	0.90	2	CW	3/16 x 1 5/8	SP	Sleeve	GE WB26X45 Gemline EM685	
65683	1	240	3000	0.25	1	CW	3/16 x 1 1/4	SP	Sleeve	Gemline EM683	
65680	1 1/8	120	3000	0.90	1	CW	3/16 x 1 1/2	SP	Sleeve	Acme 750 Gemline EM680 Robertshaw 14019	
65468	1 3/8	120	3000/1550	1.25	2	CW	7/32 x 2 3/8	SP	Sleeve		
65428	1 1/2	220-240	3000	0.55	1	CW	1/4 x 1	SP	Sleeve		

Notes:  
103. 2 speed plug for Nutone applications

## C-Frame Utility Ventilator Fan Motor

### Features

- 60 Hertz
- Rotation is determined by viewing the shaft end
- Has extended studs at 1 7/8" center, two 5/32" mounting holes on each side of stack on 1 7/8" center and includes two prong plug
- Mechanically reversible



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces
<b>Packard</b>											
60100	5/8	115	2750	0.71	1	CW	3/16 x 1 1/8	SP	Sleeve	Open	Fasco 0648-0027

## Plastic Fan Blades

### Applications

For use with unit bearing and C-Frame Motors



Item ID	Diameter (In.)	Number of Blades	Rotation	Bore (In.)
<b>Packard</b>				
A61299	2 1/2	4	CW	3/16
A61300	3	4	CW	1/8
A61301	3	4	CW	3/16
A61302	3 1/2	4	CCW	3/16
A61353	4	4	CCW	Hub
A61406	4	4	CW	1/8
A61408	4	4	CW	3/16
A61550	5 1/2	4	CCW	3/16
A61551	5 1/2	4	CW	3/16
A61602	6	4	CW	1/4
A61603	6	4	CW	5/16
A61604	6	4	CCW	3/16
A61605	6	4	CCW	1/4
A61606	6	4	CCW	5/16



Item ID	Diameter (In.)	Number of Blades	Rotation	Bore (In.)	Replaces/ Notes
<b>Packard</b>					
A61401	4	5	CW	1/8	
A61402	4	5	CW	3/16	
A61403	4	5	CCW	1/8	
A61404	4	5	CCW	3/16	
A61501	5	5	CW	3/16	
A61502	5	5	CW	1/4	
A61503	5	5	CW	5/16	
A61504	5	5	CCW	3/16	
A61505	5	5	CCW	1/4	
A61506	5	5	CCW	5/16	
A61455	5 9/16	5	CCW	3/16	
A61650	6 1/2	5	CW	3/16	
A61651	6 1/2	5	CW	1/4	
A61652	6 1/2	5	CW	5/16	
A61660	6 5/8	5	CW	7/32	D-STYLE BORE
A61665	6 5/8	5	CW	7/32	D-STYLE BORE
A61701	7	5	CW	1/4	
A61703	7	5	CCW	1/4	
A61718	7	5	CW	Hub	Gemline FB718
A61801	8	5	CW	1/4	
A61802	8	5	CW	5/16	
A61601	6	6	CW	3/16	

## Plastic Blower Wheels And Impellers



Item ID	Bore (In.)	Diameter (In.)	Width (In.)	Bore	Replaces
<b>Packard</b>					
A65900	1/4	5 3/4	2	D Shape	Nutone 59000A000



Item ID	Bore (In.)	Diameter (In.)	Bore	Replaces
<b>Packard</b>				
A65100FB	7/32	4 9/16	D Shape	Nutone 68920
A65216FB	3/16	4 1/2	D Shape	
A64031FB	0.181	4 1/2	Round	

## Packard Cast Iron 2-16 Watts - Single Foot and No Pad

Rotation is determined by viewing the lead (opposite shaft) end



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Mounting	Replaces
<b>Packard</b>											
61021	2	115	1550	0.22	CW	1/4 x 1/2	2 1/4	Totally Enclosed	50/60	No Foot Pad	GE 5109
65111	2.5	115	1000	0.26	CW	1/4 x 1/2	2 1/4	Totally Enclosed	50/60	Single Foot Pad	GE 5111
65211	4	115	1550	0.29	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Single Foot Pad	GE 5211
65212	4	115	1550	0.29	CCW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Single Foot Pad	GE 5212
65311	6	115	1550	0.40	CW	1/4 x 1/2	2 7/8	Totally Enclosed	50/60	Single Foot Pad	GE 5311
65312	6	115	1550	0.40	CCW	1/4 x 1/2	2 7/8	Totally Enclosed	50/60	Single Foot Pad	GE 5312
65411	9	115	1550	0.55	CW	1/4 x 1/2	2 7/8	Totally Enclosed	50/60	Single Foot Pad	GE 5411
65412	9	115	1550	0.55	CCW	1/4 x 1/2	2 7/8	Totally Enclosed	50/60	Single Foot Pad	GE 5412
65421	9	230	1550	0.27	CW	1/4 x 1/2	2 7/8	Totally Enclosed	50/60	Single Foot Pad	GE 5421
65422	9	230	1550	0.27	CCW	1/4 x 1/2	2 3/4	Totally Enclosed	50/60	Single Foot Pad	GE 5422
65811	16	115	1550	1.00	CW	1/4 x 1/2	3 1/4	Totally Enclosed	50/60	Single Foot Pad	GE 5811
65812	16	115	1550	1.00	CCW	1/4 x 1/2	3 1/4	Totally Enclosed	50/60	Single Foot Pad	GE 5812
65821	16	230	1550	0.50	CW	1/4 x 1/2	3 1/4	Totally Enclosed	50/60	Single Foot Pad	GE 5821
65822	16	230	1550	0.50	CCW	1/4 x 1/2	3 1/4	Totally Enclosed	50/60	Single Foot Pad	GE 5822

## Packard Cast Iron 2-16 Watts - Double Foot Pads

Rotation is determined by viewing the lead (opposite shaft) end



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Mounting	Notes
<b>Packard</b>											
61002	2	115	1550	0.22	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	
61004	4	115	1550	0.29	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	
65119	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	87, 551
61006	6	115	1550	0.40	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	
61029	9	230	1550	0.27	CW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads	
61009	9	115	1550	0.55	CW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads	
61099	9	115	1550	0.55	CCW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads	
61059	9	230	1550	0.29	CCW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads	
61015	16	115	1550	1.00	CW	1/4 x 1/2	3 1/32	Totally Enclosed	50/60	Double Foot Pads	
61016	16	115	1550	1.00	CCW	1/4 x 1/2	3 1/32	Totally Enclosed	50/60	Double Foot Pads	
61017	16	230	1550	0.50	CW	1/4 x 1/2	3 1/32	Totally Enclosed	50/60	Double Foot Pads	
61018	16	230	1550	0.50	CCW	1/4 x 1/2	3 1/32	Totally Enclosed	50/60	Double Foot Pads	

## Packard Aluminum 2-16 Watts - Single and No Foot Pad

Features

- Rotation is determined by viewing the lead (opposite shaft) end
- Totally enclosed



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Hertz	Mounting	Replaces	Notes
<b>Packard</b>											
65109	2	115	1550	0.22	CW	1/4 x 1/2	2 3/8	50/60	No Foot Pad	GE 5109	530
65213	4	115	1550	0.29	CW	1/4 x 1/2	2 3/8	50/60	Single Foot Pad	GE 5213	
65214	4	115	1550	0.29	CCW	1/4 x 1/2	2 3/8	50/60	Single Foot Pad	GE 5214	
64022	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8	50/60	No Foot Pad	Emerson 119	87, 530
65313	6	115	1550	0.40	CW	1/4 x 1/2	2 7/8	50/60	Single Foot Pad	GE 5313	
65413	9	115	1550	0.50	CW	1/4 x 1/2	2 7/8	50/60	Single Foot Pad	GE 5413	
65813	16	115	1550	1.0	CW	1/4 x 1/2	3 3/16	50/60	Single Foot Pad		

Notes:

87. Includes straight Lyall plug

530. No foot pad

551. Low temp. oil

## Packard Aluminum 2-9 Watts - Double Foot Pads

### Features

- Rotation is determined by viewing the lead (opposite shaft) end



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
64102	2	115	1550	0.25	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	Emerson 102	557
64115	4	115	1450	0.29	CW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads		557
64117	6	115	1550	0.40	CW	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	Emerson 117	557
64277	6	277	1550	0.17	CW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads		557
64108	9	115	1550	0.50	CW	1/4 x 1/2	2 1/2	Totally Enclosed	50/60	Double Foot Pads	Emerson 108	557

#### Notes:

557. 5 mounting holes opposite the shaft end

## Direct Replacement Unit Bearing Motors

### Features

- Rotation is determined by viewing the lead (opposite shaft) end
- Totally enclosed



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
65740	2.3	115	1300	0.15	CW	1/4 x 1/2	2.48	Aluminum	60/50	Double Foot Pads	Sub Zero 4200740	Pin Term.



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
65119	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8	Cast Iron	50/60	Double Foot Pads	Hill PP7577M	87, 551



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
65018	5	115	1550	0.34	CW	1/4 x 1/2	2 1/2	Cast Iron	50/60	Single Foot Pad	GE 5KSM81FFL18	550, 551



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
65017	9	115	1550	0.55	CW	1/4 x 1/2	2 3/4	Cast Iron	50/60	Single Foot Pad	GE 5KSM81FFL17	550, 551



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Packard</b>												
65133	9	115	1550	0.50	CW	1/4 x 1/2	2 1/2	Cast Iron	50/60	Single Foot Pad	GE 5KSM51ECG5133 Hussmann 58698	87 551



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
<b>Morrill Motors</b>												
10101	9	115	1550	0.53	CW	1/4 x 1/2	2 1/2	Aluminum	60	No Foot Pad	Hussmann SPB9HUBGV101	530
10019	9	115	1550	0.53	CW	1/4 x 1/2	2 3/8	Aluminum	60	No Foot Pad	Kysor Warren 5991	

#### Notes:

87. Includes straight Lyall plug

530. No foot pad

550. Includes 90 degree Lyall plug

551. Low temp. oil

## Unit Bearing Motor Mounting Brackets



Item ID	Brand
A68004	Packard



Item ID	Shaft Height (In.)
<b>A11601</b>	4 1/8
A11602	4 9/16
A11603	5 3/8
A11605	6 1/4

## Morrill Motors - Cast Iron 2-16 Watts - Double Foot Pads

### Features

- Rotation is determined by viewing the lead (opposite shaft) end
- Totally enclosed
- 60 Hertz



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		Type	Mounting	Replaces	Notes
							Shaft (In.)					
<b>Morrill Motors</b>												
10002	2	115	1550	0.22	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB2EM1	
10004	4	115	1550	0.29	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB4EM1 GE 5211	
10005	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB5EM1	
10287	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill PB5SEV11 Hill PP7577M	551
10006	6	115	1550	0.36	CW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB6EM1 GE 5311	
10066	6	115	1550	0.36	CCW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB6EMR1	
10009	9	115	1550	0.53	CW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB9EM1 GE 5411	
10099	9	115	1550	0.53	CCW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB9EMR1	
10029	9	230	1550	0.27	CW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB9EM2 GE 5421	
10059	9	230	1550	0.27	CCW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB9EMR2 GE 5422	
10015	16	115	1550	0.80	CW	1/4 x 1/2	3 1/32		SP	Double Foot Pads	Morrill SPBEP16EM1 GE 5811	
10017	16	115	1550	0.80	CCW	1/4 x 1/2	3 1/32		SP	Double Foot Pads	Morrill SPBEP16EMR1 GE 5812	
10016	16	230	1550	0.40	CW	1/4 x 1/2	3 1/32		SP	Double Foot Pads	Morrill SPBEP16EM2 GE 5821	
10018	16	230	1550	0.40	CCW	1/4 x 1/2	3 1/32		SP	Double Foot Pads	Morrill SPBEP16EMR2 GE 5822	

Notes:  
551. Low temp. oil

## Morrill Motors - Aluminum 2-14 Watts

### Features

- Rotation is determined by viewing the lead (opposite shaft) end
- Totally enclosed
- 60 Hertz



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		Type	Mounting	Replaces	Notes
							Shaft (In.)					
<b>Morrill Motors</b>												
13002	2	115	1550	0.22	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB2HUEM1	
UB554	4	115	1550	.34	CW	1/4 x 20	2.42		SP	Double Foot Pads	D554	
13005	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB5HUEM1	
13055	5	115	1550	0.34	CCW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB5HUEMR1	
13006	6	115	1550	0.50	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB6HUEM1	



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft		Type	Mounting	Replaces	Notes
							Shaft (In.)					
<b>Morrill Motors</b>												
10101	9	115	1550	0.53	CW	1/4 x 1/2	2 1/2		SP	No Foot Pad	Hussmann SPB9HUBGV101	87, 530, 531



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft		Type	Mounting	Replaces	Notes
							Shaft (In.)					
<b>Morrill Motors</b>												
10019	9	115	1550	0.53	CW	1/4 x 1/2	2 3/8		SP	No Foot Pad	Kysor Warren 5991	530, 531
13029	9	230	1550	0.29	CW	1/4 x 1/2	2 1/2		SP	Double Foot Pads	Morrill SPB9HUEM2	
13014	14	115	1550	0.66	CW	1/4 x 1/2	2 3/8		SP	Double Foot Pads	Morrill SPB14HUEM1	

Notes:  
87. Includes LYALL Plug  
530. No Foot Pad

531. Rear hole mounting only

## Direct Replacements For Oasis and Hussman

### Features

- Totally enclosed
- Rotation is determined by viewing the lead (opposite shaft) end



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Hertz	Mounting	Replaces
<b>Morrill</b>											
10037	5	115	1550	0.34	CW	1/4 x 1/2	2 3/8	SP	60	Double Foot Pads	Oasis 027354-026 Oasis 027354-037
10038	9	115	1550	0.53	CW	1/4 x 1/2	2 1/2	SP	60	Double Foot Pads	Oasis 027354-038



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Hertz	Mounting	Replaces
<b>Packard</b>											
61103	12	115	1550	0.62	CW	1/4 x 1/2	2 11/16	SP	50/60	No Foot Pad	Hussmann 0047000 Hussmann 441-103 Hussman 4410311 Hussmann 0440421 Hussmann 125-01-0615A LRC Coil 1602

## Packard Unit Bearing Motors - Cast Iron 25-50 Watts

### Features

- Double foot pad
- 50/60 Hertz
- Rotation is determined by viewing the lead (opposite shaft) end
- Horizontal or shaft up mounting



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Replaces
<b>Packard</b>									
65001	25	115	1500	1.10	CW	1/4 x 1/2	3 3/8	Totally Enclosed	Manitowac 002412283
65003	25	115	1500	1.10	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	GE 3252
65002	25	230	1500	0.55	CW	1/4 x 1/2	3 3/8	Totally Enclosed	GE 3253
65020	35	115	1500	1.40	CW	1/4 x 1/2	3 3/8	Totally Enclosed	Tecumseh 810M035A29
65022	35	115	1500	1.40	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	GE 3352
65021	35	230	1500	0.70	CW	1/4 x 1/2	3 3/8	Totally Enclosed	Tecumseh 810M035A21
65023	35	230	1500	0.70	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	GE 3354



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Replaces
<b>Packard</b>									
65040	50	115	1500	1.70	CW	3/8 x 1 1/2	3 5/8	Semi Enclosed	Copeland 050-0244-00
65042	50	115	1500	1.70	CCW	3/8 x 1 1/2	3 5/8	Semi Enclosed	GE 3502
65041	50	230	1500	0.85	CW	3/8 x 1 1/2	3 5/8	Semi Enclosed	Copeland 050-0244-00
65043	50	230	1500	0.85	CCW	3/8 x 1 1/2	3 5/8	Semi Enclosed	GE 3504



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Replaces
<b>Packard</b>									
65045	50	230	1500	0.85	CCW	5/16 x 2 1/2	3 3/4	Open	Tecumseh 810M050A62

## Packard Unit Bearing Motor Plugs



### 90 Degree Plug And Cord

Item ID	Length (In.)
<b>PLUG018</b>	25

UL recognized



### Straight Plug And Cord

Item ID	Length (In.)
<b>PLUG119</b>	25

UL recognized

## Electric Motors And Specialties Unit Bearing Motors - 15-75 Watts

### Features

- Double foot pad mounting
- Mounting hardware included
- UL recognized
- Rotation is determined by viewing the lead (opposite shaft) end
- Cast iron
- Shaded pole



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>Electric Motor and Specialties</b>										
<b>15009</b>	15	115	1500	0.6	CCW	5/16 x 7 1/2	3 1/8	Totally Enclosed	60	ESPL15EMJR11

Lead end and shaft end are the same.



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>Electric Motor and Specialties</b>										
<b>15005</b>	16	115	1500	1.1	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	ESPL16EM1
<b>15006</b>	16	230	1500	0.6	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	ESPL16EM2
<b>15007</b>	16	115	1500	1.1	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	ESPL16EMR1
<b>15008</b>	16	230	1500	0.6	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	ESPL16EMR2
<b>15001</b>	25	115	1500	1.1	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	Manitowoc 002412283
<b>15002</b>	25	230	1500	0.6	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	GE 3253 ESPL25EM2
<b>15003</b>	25	115	1500	1.1	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	GE 3352 ESPL25EMR1
<b>15004</b>	25	230	1500	0.6	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	ESPL25EMR2



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>Electric Motor and Specialties</b>										
<b>15010</b>	25	115	1500	1.1	CCW	5/16 x 3 1/2	3 1/16	Totally Enclosed	60	ESPL25ERD1

Lead end and shaft end are the same.



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>Electric Motor and Specialties</b>										
<b>15020</b>	35	115	1500	1.40	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	Tecumseh 810M035A29 EMS ESPL35EM1
<b>15022</b>	35	115	1500	1.40	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	EMS ESPL35EMR1
<b>15021</b>	35	230	1500	0.70	CW	1/4 x 1/2	3 3/8	Totally Enclosed	60	Tecumseh 810M035A21
<b>15023</b>	35	230	1500	0.70	CCW	1/4 x 1/2	3 3/8	Totally Enclosed	60	Tecumseh 810M035A28 EMS ESPL35EM2



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>Electric Motor and Specialties</b>										
<b>15040</b>	50	115	1500	1.70	CW	3/8 x 1 1/2	3 5/8	Open	60	Copeland 050-0244-01 EMS ESPOL50EM1
<b>15041</b>	50	230	1500	0.85	CW	3/8 x 1 1/2	3 5/8	Open	60	Copeland 050-0244-00 EMS ESPOL50EM2

## Electric Motors And Specialties Unit Bearing Motors - 15-75 Watts

### Features

- Double foot pad mounting
- Mounting hardware included
- UL recognized
- Rotation is determined by viewing the lead (opposite shaft) end
- Cast iron
- Shaded pole



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15045	50	230	1500	0.85	CCW	5/16 x 2 1/2	3 5/8	Open	60	Tecumseh 810M050A62 EMS ESPOL50EMJR21	479
Lead end and shaft end are the same.											



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15049	50	208-230	1500	0.85	CW	3/8 x 1 1/2	3 5/8	Open	50/60	Copeland 050-0241-01 EMS ESPOL50EM13	96, 97
15460	50	460	1500	0.44	CW	3/8 x 1 1/2	3 5/8	Open	60	Copeland 050-0244-02 EMS ESPOL50EM461	96



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15461	50	460	1500	0.44	CCW	5/16 x 2	3 5/8	Open	60	Copeland 050-0264-03 ESPOL50EMJR41	
Lead end and shaft end are the same.											



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15042	50	115	1500	1.7	CCW	3/8 x 1 1/2	3 5/8	Open	60	ESPOL50EMR1	
15043	50	230	1500	0.85	CCW	3/8 x 1 1/2	3 5/8	Open	60	ESPOL50EMR2	
15044	50	230	1500	0.85	CW	5/16 x 1 1/2	3 5/8	Open	60	ESPOL50EM2B	
15046	50	208-230	1500	1.20	CW	3/8 x 1 1/2	3 5/8	Open	60	ESPOL60EM2	97



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15050	50	115	1500	1.70	CW	5/16 x 3	3 7/8	Open	60	ESPOL50EM1B1 IMI Cornelius 134350000	



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15051	50	115	1500	1.70	CW	3/8 x 1 1/2	3 5/8	Open	60	Copeland 998-1008-00	



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15116	50	115	1500	1.7	CW	1/4 - 20 Thread	4.18	Open	60	Copeland 050-0344-01	
15126	50	208-230	1500	0.85	CW	1/4 - 20 Thread	4.18	Open	60	Copeland 050-0344-00	
15146	50	460	1500	0.44	CW	1/4 - 20 Thread	4.18	Open	60	Copeland 050-0344-03	



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces	Notes
<b>Electric Motor and Specialties</b>											
15075	75	208-230	1500	1.50	CW	3/8 x 1 1/2	3 5/8	Open	60	EMS ESPOL75EM2	97

### Notes:

96. Copeland replacement

97. May be used on 208 Volt applications

479. Tecumseh replacement



## Direct Replacements For General Electric 11 Frame



### Features

- All angle unit bearings
- 60 Hertz
- Automatic overload
- 1.83 inch resilient rings
- Single speed / single phase
- Stud and resilient mounting
- 4 Holes #8-32 UNF-2B on 2.84" bolt circle



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces
<b>Packard</b>											
41336	1/20	230	1550	1.10	CCWLE	5/16 x 1 5/8	4.25	Shaded Pole	Sleeve	Totally Enclosed	GE 1336



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces
<b>Packard</b>											
61232	1/15	208-230	1550	0.93	CCWLE	5/16 x 2	4.90	Shaded Pole	Sleeve	Open	GE 1232
61331	1/20	115	1550	2.20	CWLE	5/16 x 2	4.82	Shaded Pole	Sleeve	Open	GE 1331
61332	1/20	208-230	1550	1.10	CWLE	5/16 x 2	4.82	Shaded Pole	Sleeve	Open	GE 1332
61432	1/30	208-230	1550	0.87	CWLE	5/16 x 1 1/4	4.82	Shaded Pole	Sleeve	Open	GE1432
61431	35 MHP	115	1550	1.70	CCWLE	5/16 x 1 1/4	4.82	Shaded Pole	Sleeve	Open	GE1431
61441	35 MHP	115	1550	1.70	CWLE	5/16 x 1 1/4	4.82	Shaded Pole	Sleeve	Open	GE1441
61442	35 MHP	208-230	1550	0.87	CWLE	5/16 x 1 1/4	4.82	Shaded Pole	Sleeve	Open	GE1442



### Features

- Shaded pole
- Sleeve and ball bearing
- Open enclosure
- 60 Hertz
- Automatic overload
- Bolt circle 2.84"



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Fasco</b>											
D477	1/35	208-230	1550	0.75	CCWSE	5/16 x 1 5/8	4 1/4	Sleeve	Open	GE 1432	40, 43, 44, 46
D471	1/20	208-230	1550	1.10	CCWSE	5/16 x 2 1/2	4 1/4	Sleeve	Open	GE 1332	47
D417	1/20	208-230	1550	1.10	CCWSE	5/16 x 2 1/2	4 1/4	Ball	Open	GE 1332	47
D473	1/20	115	1550	2.00	CCWSE	5/16 x 2 5/8	4 1/4	Sleeve	Open	GE 1331	47
D472	1/20	115	1550	1.90	CWSE	5/16 x 2 5/8	4 1/4	Sleeve	Open	GE 1341	47
D470	1/20	208-230	1550	0.94	CWSE	5/16 x 2 5/8	4 1/4	Sleeve	Open	GE 1342	47

#### Notes:

40. Mounting bracket designed to match the original motor (four 8-36 drilled and tapped holes)  
 43. Mounting hardware included

44. Has 22" leads with 1/16" thick insulation  
 46. Three studs opposite shaft end are 8-32 on a standard 2.84" bolt circle, 120° apart

47. Includes 1/2" studs for mounting



### Features

- Shaded pole
- Stud mounting
- 60 Hertz
- Automatic overload
- Single phase
- Rotation is determined by viewing the shaft end; leads are on shaft end
- Bolt circle 2.84"



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
81671	1/15	115/230	1550	2.10-1.10	CCW	5/16 x 1 5/8	4 1/4	Ball	Totally Enclosed	GE 1331 GE 1332	486, 487 488, 489
81672	1/15	115/230	1550	2.10-1.10	CW	5/16 x 1 5/8	4 1/4	Ball	Totally Enclosed	GE 1341 GE 1342	486, 487 488, 489

#### Notes:

486. Drilled and tapped holes for mounting  
 487. Includes 1 7/8" diameter mounting rings

488. 8/32 mounting studs included  
 489. Rotation is determined by viewing the lead end



## Applications

- Supermarket refrigeration, vending machines and other condenser and evaporator fan applications

## Features

- Drop in replacement for shaded pole and PSC motors
- Electronically commutated motors with integrated electronic control
- ECR up to 70%; UL recognized
- IP55 moisture and dust protection
- Totally enclosed, ball bearings, CCWSE rotation, can be mounted in any position
- Operating temperature of ECR ONE motors: -22°F to +122°F
- Operating temperature of ECR UltraSynch motors: -22°F to +104°F
- Motors are built using 30% less copper and 80% less steel for a greener, more affordable solution
- ECR UltraSynch motor includes Lyall plug
- ECR ONE is a constant torque motor and will replace a shaded pole motor of matching wattage using the same fan blade
- ECR UltraSynch is a constant speed motor operating at 1800 RPM over a wide range of voltage and load conditions. The correct fan blade must be specified to properly balance air flow.

## ECR ONE Constant Torque Motor



Item ID	Watts	Volts	RPM	Amps	Hertz
<b>Wellington - ECR ONE</b>					
ECR01A0241	9	115	1550	0.23	60
ECR01A0102	12	115	1550	0.31	60
ECR01A0243*	16	115	1550	0.41	60

\*7 Drilled and tapped inserts for mounting.

## ECR UltraSynch™ Constant Speed Motor



Item ID	Watts	Volts	RPM	Amps	Hertz
<b>Wellington - ECR UltraSynch™</b>					
ECR92PJA12	9-16	120	1800	0.34	60

## High Efficient Motors - ECM-IP Series

### Features

- Electronically commutated - 115V, 50/60Hz
- Moisture protection: IP65
- Front mount: M4 studs on 3.72" B.C. for shroud / guard
- Drop-in replacement for front mount shaded pole / ECM
- CCW rotation from the shaft end
- All angle mount
- Totally enclosed
- Continuous air over
- Long-life sealed ball bearings



Item ID	Watts	Volts	RPM	Amps	Rotation	Length Less Shaft (In.)	Cord Length (In.)	Terminal / Plug	Replaces
<b>Elco</b>									
ECHE0170	12	115	1450	0.18	CCWSE	3.33	14	3 pin 90°	EDA12153UN0170 34410012 (For Fan 34415010)



Item ID	Watts	Volts	RPM	Amps	Rotation	Length Less Shaft (In.)	Cord Length (In.)	Terminal / Plug	Replaces
<b>Elco</b>									
ECHE0176	15	115	1600	0.22	CCWSE	4.00	16	2 pin 90°	EDA15253UC0176 P078449H
ECHE0182	10	115	1550	0.19	CCWSE	3.61	16	2 pin 90°	EDA10153UC0182 P079441C P066237A



## EC Unit Bearing Motor



### Features

- 60/50 Hz
- IP65 Certified
- 61312 has a straight pin plug and 61313 has a 90 degree plug



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>Packard</b>										
61313	4-16	115	1550	0.16-0.42	1	CWLE	1/4 X 1/2	3 1/8	Ball	Double Foot Pad



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>Packard</b>										
61312	4-16	115	1550	0.16-0.42	1	CWLE	1/4 X 1/2	3 1/8	Ball	Double Foot Pad

# TechTip >>>>

from Packard Academy



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# What's inside matters when it comes to HVACR...

...from universal to OEM direct replacements, your choice of reliable replacement parts is important to us.



## ECM Replacements for Heatcraft

### Features

- 3.3" Diameter
- Brushless High Efficiency up to 75%
- Constant Speed Design
- Straight Lyall Plug
- Rated IP55
- 6 Drilled Holes with Threaded Inserts on Opposite Shaft End



Item ID	Watts	RPM	Volts	Amps	Rotation	Shaft Dimension (In.)	Hertz	Replaces
<b>Packard</b>								
91635	16-35	1625	120-230	0.76 - 0.48	CWSE	5/16 x 2 1/2	60/50	Heatcraft 25317701 Heatcraft 25317801



### Features

- Will replace 6 to 16 watt shaded pole unit bearing motors with clockwise shaft end rotation



Item ID	Watts	RPM	Volts	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Packard</b>							
91636	6-16	1550	120-230	0.35 - 0.22	CWSE	1/4 x 1/2 Threaded	60/50



## Unitronix Unit Bearing EM Motors

### Features

- Patented EMS electronically commutated motor technology
- Drop in replacements for shaded pole and PSC unit bearing motors
- Utilizes traditional cast iron unit bearing design for proven, trouble free long life
- Up to 70% efficient
- Low heat rise maximizes system efficiency
- Maintains constant speed over a wide range of fan applications
- Special patented water protection package
- 60/50 Hz
- Includes Lyall plug
- Rotation determined viewing lead end
- 13 mounting holes
- UL and cUL recognized



Item ID	Watts	RPM	Volts	Amps	Rotation	Mounting Holes	Replaces
<b>Electric Motor &amp; Specialties</b>							
15621	6-12	1550	115	0.2 - 0.3	CWLE	5 Rear holes	Hussman, Hill, Kysor/Warren
15624	14-16	1550	115	0.47 - 0.58	CWLE	5 Rear holes	Hussman, Hill, Kysor/Warren

### Applications

- Commercial refrigeration walk in coolers and freezers, air moving applications demanding high efficiency

### Features

- Electronically commutated motor
- Drop in replacements for 3.3" Diameter Shaded Pole & PSC Motors
- Includes Lyall plug
- Unit Bearing
- Standard thru bolt configuration
- Totally enclosed, air over
- Rotation determined viewing the shaft end
- Automatic overload
- Efficiencies up to 3 times higher than shaded pole motors and 40% higher than PSC



Item ID	H.P.	RPM	Volts	Amps	Rotation	Mounting	Replaces
<b>Electric Motor &amp; Specialties</b>							
15211	1/15-1/25	1550	115	1.25	CWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15212	1/15-1/25	1550	115	1.25	CCWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15221	1/15-1/25	1550	230	0.77	CWSE	4 STUDS SE	Heatcraft, Bohn, and Krack
15222	1/15-1/25	1550	230	0.77	CCWSE	4 STUDS SE	Heatcraft, Bohn, and Krack



Item ID	Watts	RPM	Volts	Amps	Rotation	Mounting	Replaces
<b>Electric Motor &amp; Specialties</b>							
15546	12	1550	115	0.3	CWLE	Double Foot Pad	Hussman 4410546
15547	13	1725	115	0.3	CWLE	Double Foot Pad	Hussman 4410547



## Solid State Commutated Unit Bearing Motors

### Features

- The next generation of ECM unit bearing motor with multi-watt range capability
- Used for commercial refrigeration
- IP65 Certified making it compatible for applications where the use of pressurized water for wash down is a standard procedure
- ATEX Certified allowing its application where flammable refrigerants are used
- 66% Peak Efficiency = 45% higher than a PSC motor
- Ball bearing with low temperature grease
- Operating Temps: -40° C to 55° C ambient
- 5 drilled & tapped mounting holes on rear of the motor

**KRYO™ · SSC**



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Mounting
<b>Morrill Motors</b>								
<b>10999</b>	4 - 25	115	1550	0.60	1	CWLE	1/4 x 1/2	Universal 5-Hole Mount
IP65 Certified								



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz	Replaces	Notes
<b>Morrill Motors</b>									
<b>10012</b>	6-12	115	1550	0.30	CWLE	1/4 Threaded	60	Hussmann 4410546	554
<b>10013</b>	6-12	115	1550	0.30	CCWLE	1/4 Threaded	60	—	554
<b>10020</b>	16-25	115	1575	0.60	CWLE	1/4 Threaded	60	Hussmann 4410547	554
<b>10022</b>	16-25	115	1575	0.60	CCWLE	1/4 Threaded	60	—	554
<b>Notes:</b> 554. Includes water shield to protect motor during coil cleaning									



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz	Notes
<b>Morrill Motors</b>								
<b>20020</b>	16-25	208-230	1575	0.30	CWLE	1/4 Threaded	60	554
<b>20022</b>	16-25	208-230	1575	0.20	CCWLE	1/4 Threaded	60	554
<b>Notes:</b> 554. Includes water shield to protect motor during coil cleaning								



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Morrill Motors</b>							
<b>10036</b>	35-50	208-230	1550	0.45	CWLE	1/4 Threaded	50/60
<b>10040</b>	35-50	115	1550	0.90	CCWLE	1/4 Threaded	50/60



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Hertz
<b>Morrill Motors</b>							
<b>10042</b>	35-50	208-230	1550	0.45	CCWLE	1/4 Threaded	50/60



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
<b>10112</b>	12	115	1550	0.30	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	12CSHEMA1
<b>10215</b>	12	230	1550	0.15	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	15CSHEMA2



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
<b>10312</b>	12	115	1550	0.30	CWLE	90 Degree 2 Prong Plug	50/60	Double	Aluminum	12CSHBV2



## Solid State Commutated Unit Bearing Motors

### Features

- Direct drop-in replacements
- Ultimate commutated technology
- Unit bearing construction
- 100% performance tested
- Includes Lyall plug
- Rotation is determined by viewing opposite shaft end
- Peak efficiencies in excess of 80% means lower operating temperatures and extended motor life
- Constant 1550 RPM operating speed is identical on either 50 or 60 Hertz
- Constant 1550 RPM regardless of fluctuations in voltage



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10313	16	115	1550	0.30	CWLE	90 Degree 2 Prong Plug	50/60	Double	Aluminum	12CSHEMV1



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10113	16	115	1550	0.40	CWLE	Straight 2 Prong Plug	50/60	Double	Aluminum	13CSHEMA1



Item ID	Watts	Volts	RPM	Amps	Rotation	Plug	Hertz	Foot Pads	Material	Replaces
<b>Morrill Motors</b>										
10218	38	115	1550	0.90	CCWLE	Straight 2 Prong Plug	50/60	Double	Cast Iron	18AHEMAR1
10219	38	208-230	1550	0.45	CCWLE	Straight 2 Prong Plug	50/60	Double	Cast Iron	19AHMAR2

## Electronically Commutated Refrigeration Motors And Fan Kits



9-16 Watt, 120 Volt, 0.34 Amps  
Assembled in the USA

Item ID	Replaces	Includes
<b>Wellington</b>		
ECR92950	GE FAN PACK 5SME58AAF1430 900 & 950 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 15 Degree Fan Blade</li> </ul>
ECR921200	GE FAN PACK 5SME58AAF1430 1100 & 1200 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 25 Degree Fan Blade</li> </ul>
ECR921400	GE FAN PACK 5SME58AAF1430 1300 & 1400 RPM	<ul style="list-style-type: none"> <li>• ECR92PJA12 Motor</li> <li>• Mounting Shroud</li> <li>• 8 Inch 28 Degree Fan Blade</li> </ul>

## 58MM ECM Fan Pack



### Features

- Includes basket w/ 9.8 inch bolt circle mounting and fan blade
- Lyall plug
- 40° to 55°C ambient operating temperature
- Variable torque, constant speed EC motors
- Class B Insulation

Item ID	H.P.	Volts	RPM	Amps	Speeds	Hertz	Rotation	Bearing	Phase	CFM at 0.05" Static Pressure	Replaces
<b>Morrill Motors</b>											
5R026	Replaces up to 12W	115	1550	0.3	1	60	CW	Unit Bearing	1	330	3426B, SSC2B12CSHEMA1
5R027	Replaces up to 12W	115	1450	0.4	1	60	CW	Unit Bearing	1	370	3427B, SSC2B13CNHEMA1
5R028	Replaces up to 12W	115	1550	0.4	1	60	CW	Unit Bearing	1	400	3428B, SSC2B13CSHEMA1

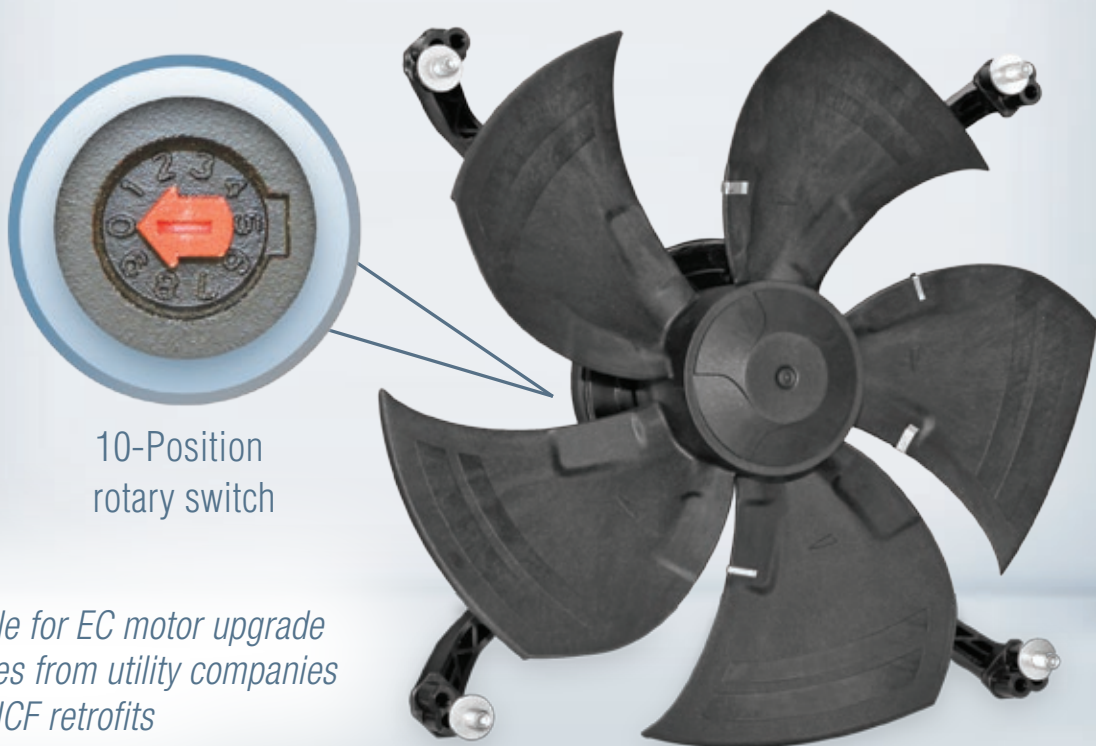


**ebmpapst**

The engineer's choice

## The new standard in EC unit cooler fans.

The S1G305 is specifically designed for harsh environments.



10-Position  
rotary switch

*Eligible for EC motor upgrade rebates from utility companies for WICF retrofits*

- Wide voltage range
- Rotary switch to set the required RPM
- Reliable and efficient EC technology
- Fully assembled for fast installation in the field



Scan for Packard  
install video

Scan for time lapse  
install video







## EBM Energy Saving Motor (ESM) Axial Fan Assembly

### Features

- Can be programmed with Nano programmer
- Program two-speeds between available range
- 50/60 Hertz
- 115 & 230 VAC models available
- Three wiring harness termination options, sold separately



Item ID	Diameter Fan (in.)	Watts	Volts	RPM	Amps	Speeds	Rotation	Bearing
<b>ebmpapst</b>								
EBM9122	7	21	230	1700-2500	0.18	2	CCWSE	Ball
EBM9137	8	31	230	800-2100	0.24	2	CCWSE	Ball
EBM9523	7	22	115	1700-2500	0.3	2	CCWSE	Ball
EBM9538	8	31	115	800-2100	0.46	2	CCWSE	Ball

## EBM Programmer

### Features

- Allows for effortless programming of the two ESM speeds
- Inserts directly into fan's programming port
- Battery operated, no cables required
- Easy to read LCD display



Item ID
<b>ebmpapst</b>
EBM600003



## EBM Unit Cooler Fan Assembly

### Features

- Heatcraft replacement
  - Voltage sensing
  - High efficiency ECM design
  - Plug included
- Two options available:**
- Fixed RPM suitable for use in Heatcraft unit coolers
  - RPM adjustable rotary switch



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Bearings
<b>ebmpapst</b>							
EBM0207	63	100-240	1590	0.55	1	CWSE	Ball
EBM0210	70	100-240	900-1650	0.5	10	CWSE	Ball

## EBM Harness

### Features

- Interchangeable cord sets for 8 in (200mm) EBM fan basket



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
EBM10637	3 wire connection without plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
EBM10901	2 wire connection without plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
EBM10847	Two Pin Right Angle Lyall Plug	17.7



Item ID	Connection	Length (in.)
<b>ebmpapst</b>		
EBM10910	Three Pin Straight Lyall Plug	11

## Square Frame Condenser Fan Motors

### Applications

- Industrial and commercial refrigeration fans for condensing, ventilating and evaporator units, walk-in and reach-in coolers, freezers, food and beverage chillers.

### Features

- All angle self-aligning sleeve bearings
- Totally Enclosed
- Continuous air over
- Class B insulation
- Standard operating temperatures: -40° F to + 104° F (-40° C to +40° C)
- UL recognized
- Rear mount: 6 tapped holes #8-36 thread
- Foot mount: 4 holes, #8-36 thread



Item ID	Watts	Volts	RPM	Amps	Rotation	Protection
<b>Packard</b>						
PSQ4CW115	4	115	1550	0.36	CW Lead End	Impedence
PSQ5CW115	5	115	1550	0.40	CW Lead End	Thermal
PSQ6CW115	6	115	1550	0.41	CW Lead End	Impedence
PSQ9CW115	9	115	1550	0.58	CW Lead End	Thermal
PSQ9CW230	9	230	1550	0.35	CW Lead End	Thermal
PSQ18CW115	18	115	1550	1.00	CW Lead End	Thermal
PSQ18CW230	18	230	1550	0.50	CW Lead End	Thermal

## Bracket Adapter Kit



### Features

- This kit allows mounting "American style" ELCO motors (NU Series) on "European style" U-type or V-type brackets
- See page 411 for bracket offering

Item ID	Contains
ELCO	
EUBKT01	Plastic Bracket M4x16 Screw (4 pcs.) Serrated M4 Hex nut (6 pcs.)

## Packard 3.3 Inch Diameter Motors - Open Enclosure

### Features

- Shaded pole
- Automatic overload
- Open enclosure
- 60 Hertz
- Single phase
- Rotation is determined by viewing the shaft end



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces
<b>Packard - Single Shaft</b>											
82621	1/10	115	1550	3.80	1	CCW	5/16 x 1 1/2	3 5/8	Ball	Stud	Nutone 67176 Nutone 32997 UE 621



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Single Shaft</b>												
40188	1/20	208-230	1500	0.90	1	CW	5/16 x 2 5/16	2 3/4	Sleeve	Stud	Emerson 9648 Fedders S196-00047-002	329
40189	1/20	208-230	1500	0.90	1	CCW	5/16 x 2 5/16	2 3/4	Sleeve	Stud	Emerson 9647	329
40132	1/20	115	1550	1.80	1	CW	5/16 x 2 1/4	2 3/4	Sleeve	Stud	Heatcraft/Bohn	329
40133	1/20	115	1550	1.80	1	CCW	5/16 x 2 1/4	2 3/4	Sleeve	Stud	Heatcraft/Bohn	329

Notes:  
329. Motor has 4 studs on both ends

## Packard 3.3 Inch Diameter Motors - Open Enclosure

### Features

- Shaded pole
- Automatic overload
- Open enclosure
- 60 Hertz
- Single phase
- Rotation is determined by viewing the shaft end



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Single Shaft</b>												
40030	1/25	115	1550	1.70	1	CW	5/16 x 2 1/2	2 11/16	Sleeve	Stud	UE 30	
40031	1/25	115	1550	1.70	1	CCW	5/16 x 2 1/2	2 3/4	Sleeve	Stud	UE 31	
40514	1/30	115	1550	1.30	1	CW	5/16 x 2 3/8	2 5/8	Sleeve	Stud	Emerson 9628 UE 28	329
40515	1/30	115	1550	1.30	1	CCW	5/16 x 2 3/8	2 5/8	Sleeve	Stud	UE 29	329



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Single Shaft</b>												
82584	1/30	120	1550	1.3	1	CCW	5/16 x 1 7/8	2 1/2	Sleeve	Resilient Hubs	Broan 97008584	513



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Single Shaft</b>												
40126	1/40	115	1500	1.10	1	CW	5/16 x 2 1/4	2 7/16	Sleeve	Stud	UE 26	329
40127	1/40	115	1500	1.10	1	CCW	5/16 x 2 1/4	2 7/16	Sleeve	Stud	Trane MOT-6227 UE 27	329



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Single Shaft</b>												
40752	1/40	120	1500	1.30	1	CCW	1/4 x 1 1/2	2 1/8	Sleeve	Stud	Broan 97009752 Broan 99080096 Broan 99080345 UE 632	512 482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Double Shaft</b>												
82973	1/15	120	1600	2.6	1	CCWLE	2 1/2 x 5/16 x 2 1/2	3 1/2	Sleeve	Stud	Broan 99080359	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard - Double Shaft</b>												
82011	1/30	115	3000	1.10	1	CWLE	1 1/2 x 1/4 x 1 1/2	2 7/8	Sleeve	Stud	UE 11	
82127	1/40	115	1550	1.10	3	CCWLE	2 1/2 x 1/4 x 2 1/2	2 1/2	Sleeve	Stud	UE 395	
82128	1/40	115	1500	1.30	3	CCWLE	2 1/2 x 5/16 x 2 1/2	2 1/4	Sleeve	Stud		

### Notes:

329. Motor has 4 studs on both ends  
482. Two prong plug and cord attached

512. With cord and 2 prong 90 degree plug  
513. Special plug and cord attached

## Packard 3.3 Inch Diameter Motors - Open Enclosure

### Features

- Shaded pole
- Automatic overload
- Open enclosure
- 60 Hertz
- Single phase
- Rotation is determined by viewing the shaft end



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
41107	1/20	115	1550	1.5	1	CW	5/16 x 2 1/2	3	Sleeve	Stud	RMR 1107	431
44107	1/20	208-230	1550	1.1	1	CW	5/16 x 2 1/2	3	Sleeve	Stud	RMR 4107	431



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
80391	1/20	115	1550	2.1	1	CW	5/16 x 2 3/8	3 7/8	Sleeve	Stud	UE 307	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
40933	1/50	120	1550	1.20	1	CCW	1/4 x 1	1 7/8	Sleeve	Stud	Nutone 86933 Nutone 86933000 Universal JA2B104N	482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
82633	1/50	120	1400	0.78	1	CW	5/16 x 1 3/8	2 1/2	Sleeve	1 1/8" Hex Hubs	BROAN 99080273 BROAN 99080274 BROAN 99080633 UE 633	513



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
40120	1/70	115	1500	0.70	1	CW	1/4 x 2 1/4	2 1/16	Sleeve	Stud	Emerson 9621 UE 14	329
40121	1/70	115	1550	0.70	1	CCW	1/4 x 2 1/4	2 1/16	Sleeve	Stud	Trane MOT-6225 UE 15	329



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
80865	1/70	115	1550	0.66	1	CCW	1/4 x 2 5/8	2 3/8	Sleeve	1 1/8" Hex Hubs	Nutone 26721	41
80913	1/70	115	1550	0.66	1	CW	1/4 x 1 1/2	2 3/8	Sleeve	1 1/8" Hex Hubs	Nutone C30434	41

#### Notes:

41. 1 1/8" Hubs  
329. Motor has 4 studs on both ends

431. Mechanically Reversible  
482. Two prong plugs and cord attached

513. Special plug and cord attached

## Packard 3.3 Inch Diameter Motors - Open Enclosure



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
82510	1/70	115	1320	0.85	1	CW	1/4 x 1 1/8	2 1/16	Sleeve	1 1/8" Hex Hubs	Nutone C65073	41 482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
80600	1/80	115	3000	0.65	1	CW	1/4 x 2 1/8	2 1/2	Sleeve	Stud	Emerson 9613 Nutone 16553 UE 32	41



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
82583	1/100	120	1550	0.55	1	CCW	5/16 x 1 3/4	2 9/16	Sleeve	1 1/8" Hex Hubs	Broan 97008583	45 513



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Packard</b>												
82308	1/100	115	3000	0.57	1	CCW	1/4 x 2 1/2	2 1/16	Sleeve	Stud	Emerson 9600 Century 308 UE 308	

**Notes:**  
41. 1 1/8" Hubs  
45. Impedence Protected

482. Two prong plugs and cord attached  
513. Special plug and cord attached

## Fasco 3.3 Inch Diameter Motors - Open Enclosure

### Features

- Shaded pole
- Automatic overload
- Open enclosure
- 60 Hertz
- Single phase
- Rotation is determined by viewing the shaft end
- 4 studs on each end



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting	Notes
<b>Fasco - Single Shaft</b>										
D202	1/85	115	3000	0.60	CW	1/4 x 2 1/4	2 3/8	Sleeve	Stud	496
D120	1/70	115	1500	0.70	CW	1/4 x 2 1/4	2 1/8	Sleeve	Stud	496
D121	1/70	115	1500	0.70	CCW	1/4 x 2 1/4	2 1/8	Sleeve	Stud	496
D126	1/40	115	1500	1.10	CW	5/16 x 2 1/4	2 1/2	Sleeve	Stud	496
D127	1/40	115	1500	1.00	CCW	5/16 x 2 1/4	2 1/2	Sleeve	Stud	496
D203	1/40	115	3000	1.00	CCW	1/4 x 2 1/4	2 3/4	Sleeve	Stud	496



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces	Notes
<b>Fasco - Single Shaft</b>											
D130	1/40	115	1500	1.00	CW	5/16 x 4 1/8	3 1/3	Sleeve	Stud	Emerson 3803 Trane MOT-6221	496
D131	1/40	115	1500	1.00	CCW	5/16 x 2 1/4	3 1/3	Sleeve	Stud		496

**Notes:**  
496. 4 studs on each end

## Fasco 3.3 Inch Diameter Motors - Open Enclosure

### Features

- Shaded pole
- Automatic overload
- Open enclosure
- 60 Hertz
- Single phase
- Rotation is determined by viewing the shaft end
- 4 studs on each end



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Single Shaft</b>									
D206	1/30	115	3000	1.20	CW	1/4 x 2 1/4	2 3/4	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Single Shaft</b>									
D208	1/30	115	3000	1.10	CW	1/4 x 3	3 5/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Single Shaft</b>									
D210	1/25	115	3000	1.30	CW	1/4 x 2 1/4	3 1/4	Sleeve	Stud
D188	1/20	230	1500	0.90	CW	5/16 x 2 1/4	2 7/8	Sleeve	Stud
D189	1/20	230	1500	0.90	CCW	5/16 x 2 1/4	2 7/8	Sleeve	Stud
D133	1/20	115	1500	1.80	CCW	5/16 x 2 1/4	2 3/4	Sleeve	Stud
D132	1/20	115	1500	1.80	CW	5/16 x 2 1/4	2 3/4	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Double Shaft</b>									
D129	1/125-1/200	115	1500	0.40-0.30	DS	3 1/4 x 1/4 x 3 1/4	2 1/8	Sleeve	Stud
D128	1/40-1/50-1/80	115	1500	1.30-0.90-0.60	DS	4 x 5/16 x 4	2 1/2	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Double Shaft</b>									
D207	1/30	230	3000	0.60	DS	2 1/4 x 1/4 x 2 1/4	2 3/4	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Double Shaft</b>									
D209	1/30	115	3000	1.10	DS	3 1/4 x 1/4 x 3 1/4	3 5/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Fasco - Double Shaft</b>									
D213	1/15	115	3000	2.10	DS	2 3/4 x 1/4 x 2 3/4	3 7/8	Sleeve	Stud
D211	1/15	230	3000	1.10	DS	2 1/2 x 1/4 x 2 1/2	3 7/8	Sleeve	Stud

## Packard 3.3 Inch Diameter Motors - Totally Enclosed

### Applications

Ideal replacement for many range hoods

### Features

- Shaded pole
- Totally enclosed
- Stud mounting
- Automatic overload
- Single phase
- 60 Hertz
- Rotation is determined by viewing the shaft end



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Notes
<b>Packard</b>											
40122	1/80	115	1550	0.65	1	CW	1/4 x 2 1/4	2 1/16	Sleeve	Stud	329
40123	1/80	115	1550	0.65	1	CCW	1/4 x 2 1/4	2 1/16	Sleeve	Stud	329



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Packard</b>										
82500	1/70	115	3000	1.04	1	CCW	1/4 x 1	2 3/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Packard</b>										
80402	1/60	115	3000	0.75	1	CW	1/4 x 1 3/4	2 3/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting
<b>Packard</b>										
80403	1/60	115	3000	0.75	1	CCW	1/4 x 1 3/4	2 3/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Notes
<b>Packard</b>											
40124	1/50	115	1500	0.88	1	CW	1/4 x 2 1/4	2 3/8	Sleeve	Stud	329
40125	1/50	115	1550	0.80	1	CCW	1/4 x 2 1/4	2 3/8	Sleeve	Stud	329



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Notes
<b>Packard</b>											
41105	1/50	115	1550	1.0	1	CW	1/4 x 2 1/2	2 3/8	Sleeve	Stud	431

Notes:  
329. Motor has 4 studs on both ends

431. Mechanically Reversible



TRACEY LUMPKINS  
Buyer - Planner

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*I'm proud to be a Packard employee owner...*

“...because of the commitment to give the best and most professional service to all of our customers.”

## Fasco 3.3 Inch Diameter Motors - Totally Enclosed

### Features

- Shaded Pole
- Automatic Overload
- Single Phase
- Totally Enclosed
- 60 HZ
- Rotation is determined by viewing the shaft end



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Levs Shaft (In.)	Bearings	Mounting
<b>Fasco</b>										
D122	1/80	115	1500	0.60	1	CW	1/4 x 2 1/4	2 1/8	Sleeve	Stud
D123	1/80	115	1500	0.60	1	CCW	1/4 x 2 1/4	2 1/8	Sleeve	Stud
D124	1/50	115	1500	0.75	1	CW	1/4 x 2 1/4	2 1/2	Sleeve	Stud
D125	1/50	115	1500	0.75	1	CCW	1/4 x 2 1/4	2 1/2	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Levs Shaft (In.)	Bearings	Mounting
<b>Fasco</b>										
D205	1/40-1/70	115	3000	1.00-0.50	1	DS	3 x 1/4 x 3	2 7/8	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Levs Shaft (In.)	Bearings	Mounting
<b>Fasco</b>										
D214	1/20	115/230	3000	1.70-0.80	1	CW	5/16 x 6 1/2	4 5/8	Sleeve	Stud

## 3.3 Inch Diameter Nutone Replacement Assemblies

### Features

- Complete assembly
- Shaded pole
- 60 Hertz
- Includes motor, mounting bracket and blower wheel
- Automatic overload
- Includes 2-prong plug



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Enclosure	Mounting	Replaces
<b>Packard</b>												
40695	1/100	120	1180	0.60	1	CCWLE	1/4 x 1 1/8	SP	Sleeve	Open	Mounting Plate	Nutone 0695B000
40696	1/45	115	1400	0.86	1	CCWLE	1/4 x 1	SP	Sleeve	Open	Mounting Plate	Nutone 0696B000 Nutone 86322

## 3.3 Inch Diameter Fan And Blower Duty Nutone Replacements

### Features

- Direct replacements for Nutone and many other popular range hoods
- Shaded pole
- 60 Hertz
- Rotation is determined by viewing the shaft end
- Stud and ring mounting
- Automatic overload



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
82512	1/100	115	1550	0.70	CCW	1/4 x 1 1/8	2 1/16	Sleeve	Totally Enclosed	Nutone 26750 Nutone 26761	42



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
82513	1/100	115	1550	0.70	CCW	1/4 x 1 1/4	2 1/16	Sleeve	Totally Enclosed	Nutone 23388 Nutone 23405	41, 42

Notes:  
41. 1 1/8" Hubs

42. Includes cord and plug



## 3.3 Inch Diameter Fan And Blower Duty Nutone Replacements

### Applications

Direct replacements for Nutone and many other popular range hoods

### Features

- Rotation is determined by viewing the shaft end
- Shaded pole
- Stud and ring mounting
- 60 Hertz
- Automatic overload



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82514</b>	1/100	115	1550	0.70	CW	1/4 x 1 1/8	2 1/16	Sleeve	Totally Enclosed	UE 692	42
<b>82635</b>	1/91	115	1550	0.45	CCW	1/4 x 1 1/8	2.09	Sleeve	Totally Enclosed	Nutone 54123 Nutone 54257	42



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>80600</b>	1/80	115	3000	0.65	CW	1/4 x 2 1/8	2 1/2	Sleeve	Open	Emerson 9613 Nutone 16553	41



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82637</b>	1/75	115	1550	0.63	CCW	1/4 x 1 1/8	2	Sleeve	Totally Enclosed	Nutone 53581	42



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82510</b>	1/70	115	1320	0.85	CW	1/4 x 1 1/8	2 1/16	Sleeve	Open	Nutone C65073	41, 482



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82694K</b>	1/70	115	3000	1.04	CCW	1/4 x 1	2 3/8	Sleeve	Totally Enclosed	Emerson 2694	42



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82733</b>	1/50-1/80	115	3000	1.00-0.60	CW	1/4 x 1 1/4	2.59	Sleeve	Totally Enclosed	Nutone C26733	42



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>40933</b>	1/50	120	1550	1.20	CCW	1/4 x 1	1 7/8	Sleeve	Open	Nutone 86933 Nutone 86933000 Universal JA2B104N	482



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Replaces	Notes
<b>Packard</b>											
<b>82621</b>	1/10	115	1550	3.80	CCW	5/16 x 1 1/2	3 5/8	Ball	Open	Nutone 67176 Nutone 32997	

#### Notes:

41. 1 1/8" Hubs

42. Includes cord and plug

482. Two prong plug and cord attached

## Direct Replacements for Bohn & Larkin

### Features

- Stud mounting
- Single speed, single phase
- Special Lyall plug and cord included
- Sleeve bearings
- Open enclosure
- Automatic overload
- 60 Hertz
- All copper windings
- Low temp oil



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Replaces	Notes
<b>Packard</b>										
41101	1/20	120	1500	1.90	CCWSE	5/16 x 2 1/4	2 3/4	Shaded Pole	Larkin 253-1194 UE 574	329, 513, 551
41103	1/20	208-230	1500	0.93	CCWSE	5/16 x 2 1/4	2 7/8	Shaded Pole	Larkin 253-1195 UE 575	329, 513, 551



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Replaces	Notes
<b>Packard</b>										
41124	1/15	120	1550	2.00	CWSE	5/16 x 3	3	Shaded Pole	BOHN 5008S UE 572A	329, 513, 551
41126	1/15	208-230	1550	1.10	CWSE	5/16 x 3	3 1/2	Shaded Pole	BOHN 5008T BOHN 5034L UE 573A	329, 513, 551



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Replaces	Notes
<b>Packard</b>										
41125	1/12	208-230	1550/1400	0.50	CCWSE	5/16 x 2 5/8	3 1/2	PSC	BOHN 25305101 BOHN 7071061	304, 551

**Notes:**  
 304. Run capacitor mounted on motor shell  
 329. Motor has 4 studs on both ends  
 513. Special plug and cord attached  
 551. Low Temp. Oil

## Direct Replacement for Krack

### Features

- Shaded pole
- Totally enclosed
- Automatic overload
- 50/60 Hertz
- Rotation is determined by viewing the shaft end
- Low Temp Oil



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces
<b>Packard</b>											
41189	1/20	115/ 208-230	1350/1550	1.60/0.80	1	CW	5/16 x 1 5/8	3 1/16	Ball	Lug	Franklin 8254111030 Franklin 8354110940 Krack 11528 Krack 11529 Universal JA2P216N Universal JA2P217N Universal JB2P046N Universal JB2P047N

## Permanent Split Capacitor Replacements for Bohn, Emerson, GE and Heatcraft

### Features

- Permanent split capacitor
- Multi-Horsepower
- Electrically reversible, includes reversing plug
- Open enclosure
- Single phase
- 50/60 Hertz
- All angle mounting
- UL recognized
- Capacitor mounted on motor
- Low temp oil



Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Mounting	Replaces
<b>Packard</b>									
49101*	1/12-1/15-1/20	115/208-230	1550/1400	1.10/0.60	5/16 x 3 1/8	3 5/8	Ball	Stud	GE 5KSM59JSK1435 GE 5KSM59LS2262AS Heatcraft 25309101 Heatcraft 7071061 Interlink 25309501S Interlink 25309801S



<b>FASCO</b>									
9721	1/12	115/208-230	1550	1.10/0.50	5/16 x 3 1/4	3 5/8	Ball	Stud	BOHN 25309101 Emerson 9656 Emerson 9664 Heatcraft 7071061

**Notes:** \*Has all copper windings

## 4 1/8 Inch Diameter Fan and Blower Motor

### Features

- Stud and hub mount
- 1.2" diameter hubs both ends
- Replaces Franklin 8414040471 and 9414310111



Item ID	HP	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Enclosure
<b>Packard Shaded Pole</b>									
80958	1/8	115	1550	3.8	1	CWSE	3/8 x 2 3/8	Shaded Pole	Open

## 4.4 Inch Diameter Fan Coil Motors

### Features

- Sleeve bearings
- Automatic overload
- Open enclosure
- 60 Hertz
- Shaded pole
- Single phase



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Mounting
<b>Fasco Shaded Pole</b>								
D236	1/10-1/15-1/25	115	1550	3.50-2.40-1.80	7 1/2 x 1/2 x 7 1/2	3 3/8	Open	Resilient Base
D336	1/10-1/15-1/25	115	1550	3.50-2.40-1.80	7 1/2 x 3/8 x 7 1/2	3 1/2	Open	Resilient Rings
D337	1/8-1/10-1/12-1/15	115	1550	4.10-2.70-2.30-1.90	7 1/2 x 1/2 x 7 1/2	3 5/8	Open	Resilient Rings
D339	1/8-1/12	230	1550	2.00-1.40	6 1/2 x 1/2 x 6 1/2	4 1/8	Open	Resilient Rings
D338	1/6-1/10-1/12-1/15	115	1550	5.40-3.20-2.50-2.10	7 1/4 x 1/2 x 7 1/4	4 1/8	Open	Resilient Rings

## 42 Frame Fan Coil Motors

### Features

- Sleeve bearings
- Automatic overload
- Models without a base fit existing bases
- Shaded pole and PSC
- Open enclosure
- Single phase
- 60 Hertz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Mounting	Replaces
<b>Packard Shaded Pole</b>										
40089	1/10	115	1050	3.60	5	Double Shaft	10 5/8 x 1/2 x 10 5/8	3 5/8	Base	Century 89
40093	1/10	115	1050	3.60	5	Double Shaft	10 5/8 x 3/8 x 10 5/8	3 5/8	Base	Century 93
40320	1/10	208-230	1050	2.40	3	Double Shaft	10.18 x 1/2 x 10.18	3 3/8	Base	Century 320



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Mounting	Replaces	Notes
<b>Packard Shaded Pole</b>											
40389	1/10	115	1050	3.60	5	Double Shaft	10 5/8 x 1/2 x 10 5/8	3 3/8	2 1/2 Rings	Century 389	28



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Mounting	Replaces	Notes
<b>Packard Shaded Pole</b>											
40347	1/8	115	1550	3.30	4	Double Shaft	10 x 1/2 x 10	4	Hex Hubs	Universal 347	9, 28



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Mounting	Replaces	Notes
<b>Packard Permanent Split Capacitor</b>											
82456*	1/25	115	1075	0.80	5	Double Shaft	10 5/8 x 1/2 x 10 5/8	3 3/8	Resilient Base	Trane	471

Notes: 9. No mounting rings  
\*Ball Bearing Motor

28. No base

471. Capacitor mounted on motor

## 42 Frame Fan Coil Motors

### Features

- Sleeve bearings
- Automatic overload
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting
<b>Fasco Shaded Pole</b>								
D255	1/25-1/50-1/80	115	1050	1.50-1.00-0.60	7 1/2 x 1/2 x 7 1/2	3 1/4	Open	Resilient Rings
D252	1/20-1/40-1/70	115	1050	1.60-0.80-0.50	7 1/2 x 3/8 x 7 1/2	2 5/8	Open	Resilient Rings
D253	1/20-1/40-1/50	115	1050	2.20-1.40-0.80	7 1/2 x 1/2 x 7 1/2	2 5/8	Open	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
<b>Fasco Shaded Pole</b>									
D251	1/15-1/35-1/50	208-230	1050	1.20-0.50-0.40	9 1/4 x 1/2 x 8 1/2	2 5/8	Open	Resilient Base	34



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting
<b>Fasco Shaded Pole</b>								
D254	1/15-1/30-1/50	115	1050	2.10-1.30-0.80	8 x 3/8 x 8	3 1/4	Open	Resilient Rings
D389	1/15-1/20-1/30-1/50	115	1050	2.40-1.60-1.10-0.80	10 1/4 x 1/2 x 10 1/4	3 1/8	Open	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting
<b>Fasco Shaded Pole</b>								
D257	1/15-1/20-1/25	277	1050	1.10-0.70-0.60	9 x 1/2 x 9	3 1/4	TE	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
<b>Fasco Shaded Pole</b>									
D289	1/10-1/30-1/40-1/45-1/50	115	1050	3.60-1.60-1.20-0.80-0.60	10 3/4 x 1/2 x 10 3/4	3 1/4	Open	Resilient Base	34
D293	1/10-1/30-1/40-1/45-1/50	115	1050	3.60-1.60-1.20-0.80-0.60	10 3/4 x 3/8 x 10 3/4	3 1/4	Open	Resilient Base	34



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting
<b>Fasco Shaded Pole</b>								
D256	1/10-1/20-1/30	115	1050	3.40-1.70-1.00	8 x 1/2 x 8	3 7/8	Open	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
<b>Fasco Permanent Split Capacitor</b>									
D294	1/10-1/20-1/25-1/35-1/50	115	1050	1.30-1.00-0.70-0.60-0.50	10 3/4 x 3/8 x 10 3/4	3 1/4	Open	Resilient Base	
D291	1/10-1/15-1/25-1/40	115	1050	2.20-1.40-1.00-0.70	10 3/4 x 1/2 x 10 3/4	3 1/4	Open	Resilient Base	514



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
<b>Fasco Permanent Split Capacitor</b>									
D290	1/10-1/15-1/25-1/40	115	1050	2.20-1.40-1.00-0.70	1/2 x 8 1/2	3 1/4	Open	Resilient Rings	514 517

Notes:  
34. 3 1/2" shaft height

514. 4MFD 370V capacitor included

517. Electrically reversible

## 42 Frame Fan Coil Motors

	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Fasco Permanent Split Capacitor</b>									
	<b>D277</b>	1/10-1/12-1/20	277	1050	0.70-0.50-0.40	8 1/2 x 1/2 x 8 1/2	3 7/8	Open	Resilient Rings	514
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Fasco Permanent Split Capacitor</b>									
	<b>D347</b>	1/8-1/10-1/15-1/20	115	1550	2.30-1.60-1.20-0.70	10 1/2 x 1/2 x 10 1/2	3	Open	Resilient Rings	250, 514
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Fasco Permanent Split Capacitor</b>									
	<b>D354</b>	1/6-1/10-1/20	115	1050	3.10-1.50-1.10	8 1/2 x 1/2 x 8 1/2	3 7/8	Open	Resilient Rings	514
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Fasco Permanent Split Capacitor</b>									
	<b>D247</b>	1/6-1/8-1/12	230	1550	1.00-0.70-0.50	8 x 1/2 x 8	3 7/8	Open	Resilient Rings	514
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Fasco Permanent Split Capacitor</b>									
	<b>D1092</b>	1/3	115	1675	3.4	7 15/16 x 1/2 x 3 1/2	3 1/2	Open	Belly Band	
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Century Shaded Pole</b>									
	<b>DBL4411</b>	1/10-1/12-1/20-1/25	115	1550	3.5	10 11/16 x 3/8 x 10 11/16	3 3/8	Open	Resilient Base	
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Notes
	<b>Century Shaded Pole</b>									
	<b>DBL4404</b>	1/10-1/15-1/20	115	1550	3.50	9 5/16 x 1/2 x 9 5/16	3 3/8	Open	Resilient Base	
	<b>DB6407</b>	1/10-1/15-1/20-1/25	208-230	1050	1.60	9 5/16 x 1/2 x 9 5/16	3 3/8	Open	Resilient Base	
	<b>DBL6409</b>	1/10-1/15-1/20-1/25-1/30	115	1050	3.50	10 5/16 x 1/2 x 10 5/16	3 3/8	Open	Resilient Base	
	Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Cap. Req.	ENCL.	Mounting
	<b>Century Permanent Split Capacitor</b>									
	<b>DBL4500V1</b>	1/10-1/12-1/15	115	1625	1.30-1.00-0.70	9 5/16 x 1/2 x 9 5/16	3 3/8	5mfd 370V	Open	Resilient Base
	<b>DBL6501V1</b>	1/10-1/12-1/15-1/20	115	1075	1.70	10 5/16 x 1/2 x 10 5/16	3 3/8	5mfd 370V	Open	Resilient Base
	<b>DB6502V1</b>	1/10-1/15-1/20-1/25	208-230	1075	0.70-0.50-0.40-0.30	9 5/16 x 1/2 x 9 5/16	3 3/8	5mfd 370V	Open	Resilient Base
	<b>DB4505</b>	1/5-1/10-1/20	230	1500	1.50	9 5/16 x 1/2 x 9 5/16	3 3/8	5mfd 370V	Open	Resilient Base
	<b>DB6525</b>	1/4-1/6-1/10	208-230	1075	2.00	10 x 1/2 x 10	4 1/16	5mfd 370V	Open	Resilient Base

Notes:  
250. Mounting rings not included

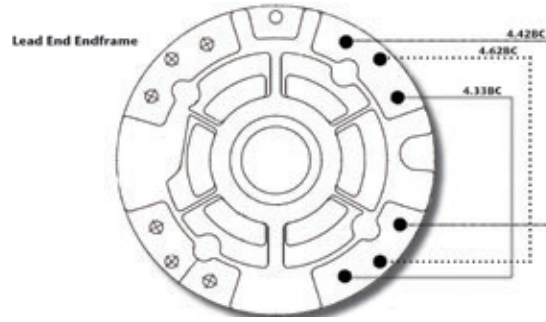
514. 4MFD/370V capacitor included

## MultiFit® Condenser Fan Motors

### Features

Replaces hundreds of 1/4 - 1/12 horsepower applications

- All angle mount
- Class B insulation
- Reversing plug
- Totally enclosed
- 36 inch leads
- 60°C ambient
- Single speed
- Multi-mounting system
- Double sealed ball bearings
- Energy efficient PSC design
- One simple connection eliminates the need to select various horsepower or change capacitor sizes



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Hertz	Replaces
<b>Century</b>										
9712	1/8 1/15 1/40	115	1625	1.90 0.94 0.56	1/2 x 5 3/4	4.5	Sleeve	5MFD/370V	60	
9714	1/6 1/8 1/12	115	1625	2.40 1.70 1.10	1/2 x 5 3/4	4.5	Sleeve	5MFD/370V	60	
9715	1/6 1/8 1/12	115	1075	3.10 2.00 1.40	1/2 x 5 3/4	4.5	Sleeve	5MFD/370V	60	
9722	1/8 1/10 1/12	208-230	1075 1135 1155	0.90 0.60 0.50	1/2 x 3	4	Ball	5MFD/370V	60	GE 2243 GE 2248 GE 2249 GE 2251
9723	1/4 1/5 1/6	208-230	1075 1145 1165	2.00 1.20 1.00	1/2 x 3	4 1/2	Ball	7.5MFD/370V	60	GE 2244 GE 2245 GE 2246 GE 2247 GE 2250
9724	1/4 1/5 1/6	208-230	1625 1715 1759	1.60 1.00 0.70	1/2 x 3	4 1/2	Ball	5MFD/370V	60	

### 3-in-1 Design

Approximate Speeds and Amps in Application

Stock Number 9722			Stock Number 9723			Stock Number 9724 <span style="color: red; font-weight: bold;">NEW</span>		
HP	Approximate RPM	Approximate Amps	HP	Approximate RPM	Approximate Amps	HP	Approximate RPM	Approximate Amps
1/8	1075	0.9	1/4	1075	2.0	1/4 1	625	1.6
1/10	1135	0.6	1/5 1	145	1.2	1/5	1715	1.0
1/12	1155	0.5	1/6	1165 1	.0	1/6	1759	0.7

## 5 Inch Diameter Unit Heater Motors

### Features

- U6520 and U6521 have capacitor mounted on motors
- Permanent split capacitor and shaded pole
- Automatic overload
- Sleeve bearings
- Totally enclosed
- Reznor replacements
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Mounting
<b>Packard</b>										
70385	1/40	115	1050	1.60	1	CWSE	1/2 x 2 1/2	2 3/4	Shaded Pole	Stud and Mounting Rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Mounting	Notes
<b>Packard</b>											
70224	1/20	115	1050	2.30	1	CWSE	1/2 x 3	3 7/8	Shaded Pole	Stud	9



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Mounting
<b>Packard</b>										
40387	1/15	115	1050	3.10	1	CWSE	1/2 x 2 5/8	3 5/8	Shaded Pole	Stud and Mounting Rings
40386	1/8	115	1050	5.50	1	CWSE	1/2 x 3 3/8	3 7/8	Shaded Pole	Stud and Mounting Rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Cap. Required	Type	Mounting	Notes
<b>Century</b>												
U6520	1/8	115	1075	2.60	1	Reversible	1/2 x 3	3 7/8	5mfd 370V	PSC	Resilient Rings	201, 504



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Cap. Required	Type	Mounting	Notes
<b>Century</b>												
U6521	1/8	115	1075	2.60	1	REV.	1/2 x 2 7/8	3 7/8	5mfd 370V	PSC	Resilient Base	201, 504, 505



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Mounting	Notes
<b>Century</b>											
U6432	1/15	115	1050	3.30	1	CWSE	1/2 x 2 5/8	3 5/8	Shaded Pole	Resilient Base	555



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Mounting
<b>Century</b>										
U6433	1/15	115	1050	3.30	1	CWSE	1/2 x 2 7/8	3 5/8	Shaded Pole	Stud

Notes:  
9. No mounting rings  
201. 3 thru bolts, 4.42 dia. bolt circle

504. 60" leads  
505. 2.6" shaft height

555. 3.5" shaft height

# What's inside matters when it comes to HVACR...

...from universal to OEM direct replacements, your choice of reliable replacement parts is important to us.



## 5 5/8 Inch Diameter Unit Heater Motors

### Features

- Permanent split capacitor
- Continuous duty air over
- Ball bearing
- Class B insulation
- Single phase
- Includes capacitor mounted on motor
- Horizontal or vertical mounting
- Dual bolt circle applications, 30-60 degree and 45 degree
- Automatic overload
- UL recognized
- Mounting clamps included

### Replaces

- |                  |               |
|------------------|---------------|
| Brownell MTG3206 | Packard 70066 |
| Emerson 9034     | Reznor 55682  |
| GE 3206          | Rotom R12834  |
| Marathon X302    | Trane MOT6195 |



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearing	Cap. Required	ENCL.	Mounting	Hertz	Overload	Frame
<b>Packard</b>															
40066	1/6	115	1075	2.40	1	REV.	1/2 x 3 3/8	4 1/2	Ball	4mfd 370V	TE	Stud & Resilient	60	Automatic	48



### Features

- Permanent split capacitor
- Totally enclosed
- Automatic overload
- 60 Hertz
- Single phase

Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Cap. Required	Frame	Mounting	Notes
<b>Century</b>												
US1016NB	1/6	115	1075	2.80	Reversible	1/2 x 3	4 3/8	Sleeve	4mfd 370V	48	Stud	28, 210, 411, 504
UH1016	1/6	115	1075	2.20	Reversible	1/2 x 3 1/4	4 1/4	Ball	4mfd 370V	48	Resilient Base	27, 208, 411, 504
US1016	1/6	115	1075	2.80	Reversible	1/2 x 2 1/2	4 3/8	Sleeve	4mfd 370V	48	Resilient Base	27, 210, 411, 504
UH1026	1/4	115	1075	4.90	Reversible	1/2 x 2 1/2	4 3/8	Ball	4mfd 370V	48	Resilient Base	27, 210, 411, 504
US1026	1/4	115	1075	4.90	Reversible	1/2 x 2 1/2	4 3/8	Sleeve	4mfd 370V	48	Resilient Base	27, 210, 411
US1026NB	1/4	115	1075	4.90	Reversible	1/2 x 2 1/2	4 3/8	Sleeve	4mfd 370V	48	Stud	28, 210, 411, 504
US1036	1/3	115	1075	5.30	Reversible	1/2 x 3	4 5/8	Sleeve	5mfd 370V	48	Resilient Base	210, 411, 504
UH1036	1/3	115	1075	5.30	Reversible	1/2 x 3	4 5/8	Ball	5mfd 370V	48	Resilient Base	210, 411, 504

**Notes:**  
 27. Has a 3" shaft height  
 28. No base  
 208. 60° C ambient

210. 40° C ambient  
 411. 4 thru bolts and 4 dummy studs on a 5.15" diameter bolt circle  
 504. 60" leads



# What's inside matters when it comes to HVACR...

...from universal to OEM direct replacements, your choice of reliable replacement parts is important to us.



## 5 Inch Diameter Shaded Pole Direct Drive Blower Motors

### Features

- Shaded pole
- CWSE rotation
- Automatic overload
- 42 Frame
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Mounting	
<b>Packard</b>												
40140	1/15	115	1050	2.7	1	3/8 x 2 3/8	2 5/8	SP	Sleeve	Open	Stud	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Mounting
<b>Packard</b>											
40096	1/15-1/30	115	1050	2.65	2	3/8 x 2 3/8	2 5/8	SP	Sleeve	Open	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Mounting	Replaces
<b>Packard</b>												
40180	1/8-1/11	115	1050	4.5-3.4	2	1/2 x 4	3 3/16	SP	Sleeve	Open	Belly Band	Coleman



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Mounting
<b>Packard</b>											
40317	1/8-1/10	230	1050	2.1-1.8	2	1/2 x 3 1/2	3 3/16	SP	Sleeve	Open	Resilient Hub/Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Mounting	Replaces
<b>Packard</b>												
40099	1/8-1/10-1/12	115	1050	4.30-3.5-3.0	3	1/2 x 3 1/2	4.19	SP	Sleeve	Open	Stud	GE 3541 GE 3931 Century 98
40166	1/6	115	1050	6.60	2	1/2 x 4 1/2	3 7/8	SP	Sleeve	Open	Resilient Rings	
40849	1/6	115	1050	5.50	1	1/2 x 3 3/4	3 7/8	SP	Sleeve	Open	Resilient Rings	
40850	1/5	115	1050	6.50	1	1/2 x 5 1/2	3 3/8	SP	Sleeve	Open	Resilient Rings	
40851	1/5	115	1050	6.30	2	1/2 x 4 1/4	3 7/8	SP	Sleeve	Open	Resilient Rings	
40852	1/5	115	1050	7.3-4.8-3.8	3	1/2 x 5	3 7/8	SP	Sleeve	Open	Resilient Rings	
40853	1/5	208-230	1050	3.20	3	1/2 x 5 1/2	3 7/8	SP	Sleeve	Open	Resilient Rings	

### Features

- Shaded pole
- 1050 RPM
- Automatic overload
- Single phase
- 60 Hertz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Bearings	Mounting
<b>Fasco Shaded Pole</b>											
D340	1/40	115	1050	1.1	1	CWSE	3/8 x 2 5/8	2 5/8	TE	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Bearings	Mounting
<b>Fasco Shaded Pole</b>											
D143	1/30-1/40	115	1050	1.5-1	2	CCWSE	1/2 x 1 5/8	2 1/4	Open	Sleeve	Belly Band

## Fasco 5 Inch Diameter Direct Drive Blower Motors

### Features

- Shaded pole or permanent split capacitor
- Single phase
- Automatic overload
- 60 Hertz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Bearings	Mounting
<b>Fasco Shaded Pole</b>											
<b>D176</b>	1/10-1/20	115	1050	3.9 - 1.7	2	CWSE	3/8 x 3	2 5/8	Open	Sleeve	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Bearings	Mounting	Notes
<b>Fasco Shaded Pole</b>												
<b>D180</b>	1/8	115	1050	4.50	2	CWSE	1/2 x 4	3 1/4	Open	Sleeve	Resilient Rings	9, 19, 20



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Bearings	Mounting	Notes
<b>Fasco Shaded Pole</b>												
<b>D156</b>	1/6	115	1050	6.60	1	CWSE	1/2 x 3 7/8	3 7/8	Open	Sleeve	Resilient Rings	
<b>D166</b>	1/6-1/9	115	1050	7.20	2	CWSE	1/2 x 3 1/2	3 7/8	Open	Sleeve	Resilient Rings	
<b>D318</b>	1/6-1/8	230	1050	3.10	2	CWSE	1/2 x 3 1/2	4	Open	Sleeve	Stud	9
<b>D158</b>	1/5-1/6-1/7	115	1050	6.70	3	CWSE	1/2 x 4 1/8	3 7/8	Open	Sleeve	Resilient Rings	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Mounting
<b>Fasco Shaded Pole</b>											
<b>D356</b>	1/8-1/10-1/12	115	1050	4.70-3.70-3.20	3	CWSE	1/2 X 3 1/2	3 1/8	SP	Sleeve	Stud



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Cap. Required	Bearings	Mounting
<b>Fasco Permanent Split Capacitor</b>												
<b>D151</b>	1/4-1/5-1/6	230	1050	2.00-1.40-1.10	3	Rev.	1/2 x 6	4 1/8	PSC	7.5mfd 370V	Sleeve	Stud
<b>D150</b>	1/4-1/5-1/6	115	1050	4.10-3.20-2.50	3	Rev.	1/2 x 6	4 1/8	PSC	7.5mfd 370V	Sleeve	Stud
<b>D152</b>	1/4-1/5-1/6-1/8	277	1050	1.50-1.10-0.80-0.70	4	Rev.	1/2 x 6	4 1/8	PSC	7.5mfd 370V	Sleeve	Stud

### Notes:

- 9. No mounting rings
- 19. Drilled and tapped for Coleman mounting
- 20. For International Oil Burner Co.

# TechTip >>>

from Packard Academy



## RICK'S TIP

Rick Streacker  
National Training Coordinator



When installed properly a direct drive, air over induction motor should not exceed 10% over nameplate amps or 25% below.

## 42 Frame Direct Drive Blower Motors

### Features

- 42 Frame
- 60 Hertz
- Open enclosure
- Single phase
- Automatic overload



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting
<b>Century</b>											
BL6409	1/12	115	1050	3.10	1	CCWLE	1/2 x 3	3 7/8	Sleeve	SP	Resilient Rings
BL6408	1/10	115	1050	3.90	1	CCWLE	1/2 x 3	3 7/8	Sleeve	SP	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting	Notes
<b>Century</b>												
BL6410	1/8	115	1050	5.20	1	CWSE	1/2 x 5 1/2	3 3/8	Sleeve	SP	Resilient Rings	187, 201, 205



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting
<b>Century</b>											
BL6407	1/6	115	1000	7.80	1	CCWLE	1/2 x 3	3 7/8	Sleeve	SP	Resilient Rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting	Notes
<b>Century</b>												
BL6412	1/6	115	1050	5.50	1	CWSE	1/2 x 3 5/8	3 7/8	Sleeve	SP	Resilient Rings	187, 201, 205



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting	Notes
<b>Century</b>												
9640	1/6	115	1550	6.40	1	CWLE	1/2 x 3 5/16	4	Sleeve	SP	Resilient Base	256



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Mounting	Notes
<b>Century</b>												
BL6420	1/6-1/9	115	1050	5.60	2	CWSE	1/2 x 4 1/2	3 7/8	Sleeve	SP	Resilient Rings	187, 201, 205
BL6413	1/5	115	1050	6.00	1	CWSE	1/2 x 5 1/2	3 3/8	Sleeve	SP	Resilient Rings	187, 201, 205
B6415	1/5-1/8-1/10	208-230	1050	3.20	3	CWSE	1/2 x 5 1/2	3 7/8	Sleeve	SP	Resilient Rings	187, 201, 205
BL6414	1/5-1/8-1/10	115	1050	6.50	3	CWSE	1/2 x 5 1/2	3 7/8	Sleeve	SP	Resilient Rings	187, 201, 205
BL6416	1/5-1/8-1/10-1/15	115	1050	7.10	4	CWSE	1/2 x 2 5/8	3 7/8	Sleeve	SP	Resilient Rings	187, 201, 205



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Cap. Required	Mounting	Notes
<b>Century</b>													
B6507	1/5-1/6-1/10	230	1075	1.3-9-.7	3	Rev.	1/2 x 3	3.5	Sleeve	PSC	7.5mfd 370V	Resilient Rings	187, 201, 205



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Type	Cap. Required	Mounting	Notes
<b>Century</b>													
B6520	1/4-1/5-1/6	230	1075	2.0	3	Rev.	1/2 x 4 5/8	4 1/16	Sleeve	PSC	7.5mfd 370V	Resilient Rings	201

### Notes:

187. Resilient mounting rings included  
201. 3 thru bolts, 4.42 dia. bolt circle

205. Extended thru bolts, shaft end only  
256. Includes base

## Direct Replacements For Loren Cook's Gemini Motors

### Features

- Permanently lubricated sealed sleeve bearings
- Automatic overload
- Open enclosure
- 60 Hertz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	Mounting	Replaces
<b>Packard</b>												
90220	1/114	115	1500	0.75	2	CWSE	3/8 x 2 3/4	2 3/8	Shaded Pole	4.4	Thru Bolt	Gemini Loren Cook 220/240



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	Mounting	Replaces
<b>Packard</b>												
90420	1/23	115	1500	1.50	1	CWSE	3/8 x 2 3/4	2 5/8	Shaded Pole	4.4	Thru Bolt	Gemini Loren Cook 420
90320	1/16	115	1550	2.20	2	CWSE	3/8 x 2 1/2	2 5/8	Shaded Pole	4.4	Thru Bolt	Gemini Loren Cook 320/340



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	Mounting	Replaces
<b>Packard</b>												
90520	1/16	115	1200	1.50	1	CWSE	3/8 x 2 1/4	3	PSC Cap Included	5.12	Thru Bolt	Gemini Loren Cook 520



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	Mounting	Replaces
<b>Packard</b>												
90620	1/11	115	1500	4.60	2	CWSE	1/2 x 6 1/4	3	Shaded Pole	4.4	Lug Mount	Gemini Loren Cook 620/640
90720	1/4	115	1625	3.90	2	CWSE	1/2 x 6 1/4	3 3/8	PSC Cap Included	5.12	Lug Mount	Gemini Loren Cook 720/740

## Direct Replacements For Greenheck



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
<b>Packard</b>													
90145	1/90	115	950	1.15	CWSE	5/16 x 2 5/8	2 3/4	Sleeve	3.3"	OAO	Stud	SP	Greenheck 310145
90198	1/40	115	1050	1.80	CWSE	5/16 x 2 5/8	3	Sleeve	3.3"	OAO	Stud	SP	Greenheck 310198



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Mounting	Type	Replaces
<b>Packard</b>													
90318	1/8	115	1550/1300/1050	2.60	3	CCWSE	1/2 x 2 3/4	3 5/8	PSC Cap Included	Ball	Thru Bolt		Greenheck 308318



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
<b>Packard</b>													
90153	1/4	115	1725	4.60	CCWLE	1/2 x 2	7 5/8	Ball	5.69"	ODP	Resilient Base	Split Phase	Greenheck 309153



Item ID	Watt	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
<b>Packard</b>													
90955	5	115	700	0.19	CWSE	5/16 x 2 3/4	2 1/2	Ball	3.3"	TEAO	Stud	PSC	Greenheck 314955
90038	3	115	675	0.15	CWSE	5/16 x 2 3/4	2 1/2	Ball	3.3"	TEAO	Stud	PSC	Greenheck 315038

## Direct Replacements For Broan / Lomanco



### Features

- Open enclosure
- Automatic overload
- 60 Hertz
- 42 Frame
- Single phase
- Made in the USA



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Mounting	Replaces
<b>Packard</b>												
69316	1/12	120	1100	3.40	1	CWSE	1/2 x 3 1/16	2 1/4	SP	Sleeve	Stud	Broan 97009316
69317	1/7	120	1100	4.30	1	CWSE	1/2 x 2 5/8	2 5/8	SP	Sleeve	Stud	Broan 97009317 Broan 99080267



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Mounting	Replaces
<b>Packard</b>												
70059	1/10	120	1100	3.40	1	CWSE	1/2 x 1 5/8	2 1/4	SP	Sleeve	Lug	Lomanco A0510B2497 Lomanco A0416B2059 Lomanco A0510B2389

## Direct Replacement For L.L. Building Products

### Features

- Open enclosure
- Automatic overload
- 60 Hertz
- Single phase
- Direct replacements for Leslie Locke



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Diameter (In.)	Replaces
<b>Packard</b>											
99320	1/14	120	900	3.40	1	CWSE	1/2 x 2.05	2.25	SP	5.12	L.L. Building V909320



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Diameter (In.)	Capacitor Included	Replaces
<b>Packard</b>												
99319	1/4	120	1050	3.30	1	CWSE	1/2 x 2.30	3.33	PSC	5.12	10MFD/ 250V	L.L. Building V909319



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Diameter (In.)	Capacitor Included	Replaces
<b>Packard</b>												
99321	1/5	120	1050	3.30	1	CWSE	1/2 x 2.30	3.33	PSC	5.12	10MFD/250V	L.L. Building V909321 L.L. Building V909337
99371	1/7	120	1050	2.80	1	CWSE	1/2 x 2.30	3.08	PSC	5.12	8MFD/250V	L.L. Building V909371 L.L. Building V909336

## Electronically Commutated Direct Drive Motors

### Features

- High Efficiency ECM: Up to 80% Efficient
- Replaces either PSC or X13 model of equivalent HP
- Dual Voltage Design: Replace 115 or 230V with one motor
  - 4 motors replaces 8 motors
- Wiring harness and simple installation guide included
- Rotation Sensing Technology
  - Automatically selects rotation upon first start up
- 45" wiring harness

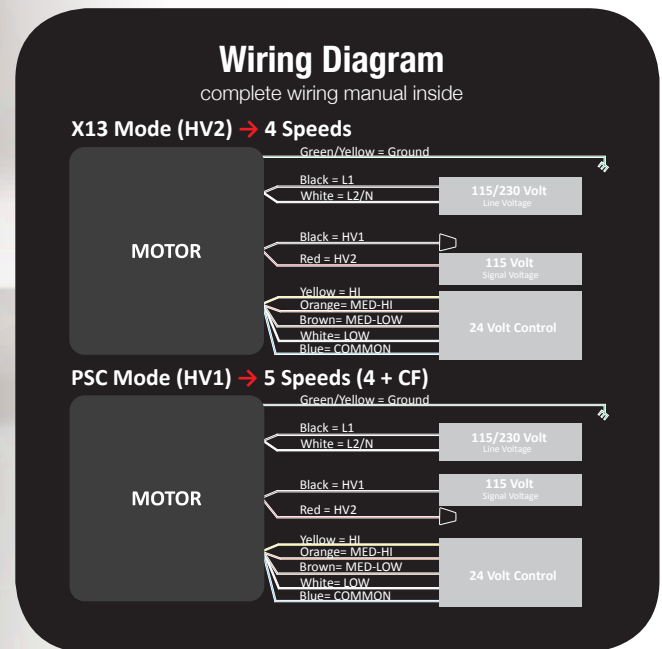


Item ID	H.P.	Volts	RPM	Amps	Hertz	Shaft Dimension (in.)	Length Less Shaft (in.)	Motor Type	Chord Length
<b>EC Max</b>									
46013	1/3	115/230	1075	5.0/3.0	60/50	1/2 x 5	6 3/8	ECM	45"
46012	1/2	115/230	1075	6.7/4.0	60/50	1/2 x 5	6 3/8	ECM	45"
46034	3/4	115/230	1075	8.2/4.9	60/50	1/2 x 5	7 5/8	ECM	45"
46001	1	115/230	1075	11.0/6.7	60/50	1/2 x 5	7 5/8	ECM	45"



# EC MAX<sup>®</sup>

The NEW Electronically Commutated Motor!



## Condenser Fan Motors

### Features

- Efficiency levels meet EISA requirements
- UL recognized



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (in.)	Length Less Shaft (in.)	Bearings	Mounting
<b>genteq</b>										
3082	1/3	115	1075	6	4	CCWLE	1/2 X 2 1/2	5 3/8	Sleeve	Ring



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (in.)	Length Less Shaft (in.)	Bearings	Mounting
<b>genteq</b>										
3229	1/3	208-230	1075	2.4	2	Reversible	1/2 x 6	5	Sleeve	Thru Bolts Both Ends

### Features

- UL recognized



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>Packard</b>											
43405	1/6	208-230	1500	0.9	1	CCWSE	1/2 X 1 3/4	4.25	Ball	Bracket	Carrier HC33GE208

**I OWN  
PACKARD!**

**DION ROHRER**  
Product Development Manager

*I'm proud to be a Packard employee owner...*

“ because our corporate philosophy coincides with my personal philosophy of how business should be conducted. ”

What **if**...

you always had the right replacement motor on hand?



Century® HVAC motors are designed for universal compatibility, to maximize same-day repairs with minimal inventory.

Century HVAC motors can replace thousands of different motors making them the Serviceman's Best Friend™.

### WHAT IS THE VALUE OF HAVING THE PART YOU NEED ON THE TRUCK?

- Reduce unnecessary trips to the distributor and long drive times to get a replacement
- Eliminate temporary motor substitutions
- Get the job done the same day with the right part
- Reduce truck stocking costs
- Get more jobs done in the same day





## Permanent Split Capacitor Condenser Fan Motors



### Features

- Permanent split capacitor
- Single speed
- Reversible rotation
- Totally enclosed
- Automatic overload
- 48 Frame
- 60 Hertz
- Single phase
- Rheem Mounting

**!** Bracket available for Trane applications See page 408



Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces	Notes
<b>Packard</b>										
80825	1/8	208-230	825	1.00	1/2 x 6 1/2	3 7/8	Ball	5MFD/370V	Emerson 1872	126
43727B	1/6	208-230	1075	1.0-1.1	1/2 x 6 1/2	3 7/8	Ball	5MFD/370V	Emerson 1859	126
60825	1/6	208-230	825	1.0-1.1	1/2 x 6 1/2	4 1/8	Ball	5MFD/370V	Emerson 1873	126
40825	1/4	208-230	825	1.3-1.4	1/2 x 6 1/2	4 5/8	Ball	5MFD/370V	Emerson 1874	126
43732	1/4	208-230	1075	1.8-2.0	1/2 x 6 1/2	4 1/8	Ball	5MFD/370V	Emerson 1860 & 1876	126
30825	1/3	208-230	825	1.6-1.8	1/2 x 6 1/2	5 1/8	Ball	7.5MFD/370V	Emerson 1875	126
43733	1/3	208-230	1075	2.2-2.5	1/2 x 6 1/2	4 5/8	Ball	7.5MFD/370V	Emerson 1861 & 1877	126
43734	1/2	208-230	1075	3.0-3.5	1/2 x 6 1/2	5 1/8	Ball	10MFD/370V	Emerson 1862 & 1878	126
43735	3/4	208-230	1075	4.6-5.3	1/2 x 6 1/2	5 3/8	Ball	10MFD/370V	Emerson 1868 & 1879	126

**Notes:**  
126. 4 drilled and tapped holes in shell for Rheem applications



## Permanent Split Capacitor Condenser Fan Motors



### Features

- Permanent split capacitor
- Single speed
- Reversible rotation
- Totally enclosed
- Automatic overload
- 48 Frame
- 60 Hertz
- Single phase
- Rheem Mounting



Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces	Notes
<b>Century</b>										
FSE1016SV1	1/6	208-230	1075	0.90	1/2 x 6 1/2	4	Sleeve	5MFD/370V		189, 422
FSE1026SV1	1/4	208-230	1075	2.00	1/2 x 6 1/2	4 3/8	Sleeve	5MFD/370V		189, 422
FE1026SC	1/4	208-230	1075	1.30	1/2 x 6	4 5/8	Ball	5MFD/370V		189, 246
FSE1036SV1	1/3	208-230	1075	1.80	1/2 x 6 1/2	4 7/8	Sleeve	7.5MFD/370V		189, 422
FE1036SC	1/3	208-230	1075	1.80	1/2 x 6	5 1/4	Ball	7.5MFD/370V		189
FSE1056SV1	1/2	208-230	1075	2.80	1/2 x 6 1/2	5 3/8	Sleeve	10MFD/370V		189, 422
FE1056SC	1/2	208-230	1075	2.80	1/2 x 6	5 5/8	Ball	10MFD/370V		189
FSE1076SV1	3/4	208-230	1075	4.20	1/2 x 6 1/2	5 5/8	Sleeve	15MFD/370V		189, 422
<b>Fasco</b>										
D799	1/8	208-230	825	0.90	1/2 x 6	4	Sleeve	5MFD/370V		126, 138, 208, 517
D919	1/8	208-230	1075	0.90	1/2 x 6 1/2	3 3/4	Sleeve	5MFD/370V		126, 135, 208, 517
D917	1/6	208-230	1075	1.00	1/2 x 6 1/2	3 3/4	Sleeve	5MFD/370V		126, 135, 208, 517
D794	1/5	208-230	825	1.30	1/2 x 6	4 1/3	Sleeve	5MFD/370V		126, 138, 208, 517
D906	1/5	208-230	1075	1.20	1/2 x 6 1/2	4	Sleeve	5MFD/370V		126, 135, 208, 517
D934	1/4	208-230	825	1.90	1/2 x 6	4 1/3	Sleeve	5MFD/370V		126, 138, 208, 517
D909	1/4	208-230	1075	1.80	1/2 x 6 1/2	4	Sleeve	5MFD/370V		126, 135, 208, 517
D7909	1/4	208-230	1075	1.80	1/2 x 6 1/2	4	Ball	5MFD/370V		126, 135, 208, 517
D936	1/3	208-230	825	2.00	1/2 x 6	5	Sleeve	7.5MFD/370V		138, 208, 517
D908	1/3	208-230	1075	2.40	1/2 x 6 1/2	4 1/2	Sleeve	7.5MFD/370V		126, 135, 208, 517
D7908	1/3	208-230	1075	2.60	1/2 x 6 1/2	4 1/2	Ball	7.5MFD/370V		126, 135, 208, 517
D7907	1/2	208-230	1075	3.70	1/2 x 6 1/2	5	Ball	10MFD/370V		135, 208, 517
D913	1/4	460	1075	1.10	1/2 x 6 3/8	4	Ball	5MFD/370V		135, 208, 517
D915	3/4-1/2	460	1075	2.5-1.6	5/8 x 4 1/2	5 1/3	Ball	15MFD/370V		145, 146, 208, 517

**Notes:**  
 126. 4 drilled and tapped holes in shell for Rheem applications  
 135. All angle mount bearings  
 138. All angle mount bearings. Use rain shield when necessary

145. Special wiring configuration. Cannot be used with SPDT switching.  
 146. Keyed Shaft  
 189. Reversing plug  
 208. 60°C ambient

246. No hubs on either end  
 422. 1/2" hub on shaft end frame with slinger. Grommet on lead exits.  
 517. Electrically reversible

## 5 5/8 Inch Diameter Multi-Horsepower Condenser Fan Motors



### Features

Replaces Rheem and Hundreds of Other Condenser Motors!

- Permanent split capacitor
- Single speed
- Ball bearings
- UL recognized
- Totally enclosed
- Electrically reversible
- Mounts by belly band, thru bolts or Rheem mounting holes with screws
- Single phase
- All angle mounting
- 48 Frame
- Automatic overload
- 60 Hertz

Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Cap. Required	Replaces	
<b>Packard</b>										
45488B	1/4-1/5-1/6-1/8	208-230	825	1.8-2.0	1/2 x 6 1/2	4 1/8	Ball	7.5MFD 370V	Emerson 5464	Rheem 51-20760-11 Rheem 51-21276-01 Rheem 51-23054-13 Rheem 51-23055-12
45458B	1/3-1/4-1/5-1/6	208-230	1075	1.8-2.0	1/2 x 6 1/2	4 1/8	Ball	7.5MFD 370V	Emerson 5458 Emerson 5462	Rheem 51-20354-11 Rheem 51-20668-11 Rheem 51-23053-11 Rheem 51-23055-11

## Multi-Horse Power High Temp Condenser Fan Motors



### Features

- Permanent split capacitor
- Totally enclosed
- Electrically reversible
- UL recognized
- Single Phase
- All angle mounting
- Mounts by belly band, thru bolts or Rheem mounting holes with screws
- 48 Frame
- Automatic overload
- 60 Hertz
- 70°C ambient



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (in.)	Length Less Shaft (in.)	Bearings
<b>Packard</b>									
45462F	1/3-1/5	208-230	1075	2.6-1.4	2	Reversible	1/2 X 6	4.86	Ball
45464F	1/3-1/5	208-230	825	1.9-1.2	2	Reversible	1/2 X 6	5.24	Ball
45465F	1/2-1/4	208-230	1075	3.6-1.7	2	Reversible	1/2 X 6	5.24	Ball

## Vulcan High Temperature Outdoor Condenser Fan Motors



**70° Max Ambient Temp**



### Features

- Class F Insulation
- 70°C Ambient
- Ball bearing
- Single speed
- Drilled and tapped holes in the shell for Rheem mounting
- Reversible
- All angle mounting
- Extended thru bolts
- 36" leads
- Energy efficient PSC design
- UL recognized

Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces
<b>Packard</b>									
60825F	1/6	208-230	825	1.0-1.1	1/2 x 6 1/2	4 1/8	Ball	5MFD/370V	20403, Rheem 51-20760-11 US Motors 1873H
40825F	1/4	208-230	825	1.3-1.4	1/2 x 6 1/2	4 5/8	Ball	5MFD/370V	20404, Rheem 51-23054-13 US Motors 1874H
30825F	1/3	208-230	825	1.6-1.8	1/2 x 6 1/2	5 1/8	Ball	7.5MFD/370V	20405, Rheem 51-21853-83, US Motors 1875H
43727BF	1/6	208-230	1075	1.0-1.1	1/2 x 6 1/2	3 7/8	Ball	5MFD/370V	20727, Rheem 51-21854-17, US Motors 1859H
43732F	1/4	208-230	1075	1.8-2.0	1/2 x 6 1/2	4 1/8	Ball	5MFD/370V	20728, Rheem 51-23054-11, US Motors 1860H
43733F	1/3	208-230	1075	2.2-2.5	1/2 x 6 1/2	4 5/8	Ball	7.5MFD/370V	20729, Rheem 51-21583-21, US Motors 1861H
43737F	1/3	460	1075	1.3	1/2 x 6 1/2	5 1/4	Ball	7.5MFD/370V	US Motors 3737H
43734F	1/2	208-230	1075	3.0-3.5	1/2 x 6 1/2	5 1/8	Ball	10MFD/370V	20730, US Motors 1862H
43738F	1/2	460	1075	1.5	1/2 x 6 1/2	5 5/8	Ball	10MFD/370V	US Motors 3738H
43735F	3/4	208-230	1075	4.6-5.3	1/2 x 6 1/2	5 3/8	Ball	10MFD/370V	20731, US Motors 1868H

## Vulcan High Temperature Multi-Horsepower Condenser Fan Motors

**70° Max Ambient Temp**



### Features

Replaces Rheem and Hundreds of Other Condenser Motors!

- Permanent split capacitor
- UL recognized
- Mounts by belly band, thru bolts or Rheem mounting holes with screws
- Single speed
- Totally enclosed
- Single phase
- 48 Frame
- 60 Hertz
- Ball bearings
- Electrically reversible
- All angle mounting
- Automatic overload
- 70°C Ambient

Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Frame	Bearings	Capacitor Required	Rotation
<b>Packard</b>										
45458BF	1/3-1/4-1/5-1/6	208-230	1075	1.8-2.0	1/2 x 6 1/2	4 1/8	48	Ball	7.5MFD 370V	Reversible
45488BF	1/4-1/5-1/6-1/8	208-230	825	1.8-2.0	1/2 x 6 1/2	4 1/8	48	Ball	7.5MFD 370V	Reversible

## Genteq Condenser Fan Motors

### Applications

- Designed for condenser fan and heat pump units requiring vertical shaft up or vertical shaft down positioning with “belly band” or extended clamp screw mounting.

### Features

- Permanent split capacitor
- Standard efficiency designs
- Sleeve or ball bearings
- Designed for 370 Volt capacitor, not included
- Mounting holes in shell for capacitor bracket
- Water slinger on shaft
- 26 inch motor leads
- Single phase
- 48 Frame




Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Bearings	Cap. Required	Notes
<b>genteq - Shaft Up or Down Application</b>									
3201	1/10	208-230	825	0.80	1	Reversible	Ball	5MFD 370V	1, 5
3202	1/8	208-230	825	1.10	1	Reversible	Ball	5MFD 370V	1, 5
3727	1/6	208-230	1075	1.00	1	Reversible	Sleeve	5MFD 370V	
3203	1/6	208-230	825	1.00	1	Reversible	Ball	5MFD 370V	
3403	1/6	208-230	825	1.00	1	Reversible	Sleeve	5MFD 370V	
3728	1/4	208-230	1075	1.80	1	Reversible	Sleeve	5MFD 370V	1
3732	1/4	208-230	1075	1.80	1	Reversible	Ball	5MFD 370V	2
3204	1/4	208-230	825	1.50	1	Reversible	Ball	5MFD 370V	
3404	1/4	208-230	825	1.50	1	Reversible	Sleeve	5MFD 370V	
3729	1/3	208-230	1075	2.30	1	Reversible	Sleeve	7.5MFD 370V	1, 4
3733	1/3	208-230	1075	2.30	1	Reversible	Ball	7.5MFD 370V	1
3205	1/3	208-230	825	2.20	1	Reversible	Ball	7.5MFD 370V	
3405	1/3	208-230	825	2.20	1	Reversible	Sleeve	7.5MFD 370V	
3730	1/2	208-230	1075	3.50	1	Reversible	Sleeve	10MFD 370V	1
3734	1/2	208-230	1075	3.50	1	Reversible	Ball	10MFD 370V	
3731	3/4	208-230	1075	4.70	1	Reversible	Sleeve	15MFD 370V	
3735	3/4	208-230	1075	4.70	1	Reversible	Ball	15MFD 370V	




Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Bearings	Cap. Required	Notes
<b>genteq - Shaft Up or Horizontal Application</b>									
3327	1/6	208-230	1075	0.90	1	Reversible	Sleeve	7.5MFD 370V	1, 3, 6
3328	1/4	208-230	1075	1.80	1	Reversible	Sleeve	5MFD 370V	1, 3
3329	1/3	208-230	1075	2.40	1	Reversible	Sleeve	7.5MFD 370V	1, 3, 6
3330	1/2	208-230	1075	3.60	1	Reversible	Sleeve	10MFD 370V	1, 3, 6
3331	3/4	208-230	1075	5.10	1	Reversible	Sleeve	10MFD 370V	3, 6

- Notes:**
1. Designed for 60°C ambient
  2. Designed for 65°C ambient
  3. Opposite shaft-end endshield is open
  4. TENV construction
  5. Designed for 50 or 60 Hertz operation
  6. 6" shaft extension with two flats 90° apart


! Don't Forget!



**TR001**  
See page 408



**A60048**  
See page 412



**1410A**  
See page 412

## TechTip >>>>

from Packard Academy

When replacing a condenser fan motor, it is always a good idea to check the fan blade. If a fan blade replacement is needed, make sure your technicians supply you with the maximum horsepower to help find the right replacement.

See our line of Revcor fan blades starting on page 371.



## HeatMaster® Condenser Fan Motor

### Features

- 70°C (158°F) max ambient
- UL recognized Class F insulation
- High-temperature UL recognized overload protector
- Energy-efficient PSC design
- All-angle mount
- Mounts by belly band, adjustable extended thru-bolts, or Rheem mounting holes, with screws supplied
- Lead length 26 to 48 inch
- Water-resistant reversing plug
- Double sealed ball bearing, or dependable all-angle sleeve bearings
- 60 Hertz
- 48 Frame
- Class F insulation
- Totally enclosed
- Single speed
- Continuous duty, air over
- UL recognized



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces
<b>Century 825 RPM Sleeve Bearing</b>										
FSE1008SF	1/8	208-230	825	1.00	Reversible	1/2 x 6 1/2	4 1/4	Sleeve	5MFD/370V	Emerson 1872
FSE1018SF	1/6	208-230	825	1.10	Reversible	1/2 x 6 1/2	4 1/8	Sleeve	5MFD/370V	Emerson 1873 GE 3403
FSE1028SF	1/4	208-230	825	1.50	Reversible	1/2 x 6 1/2	4 5/8	Sleeve	5MFD/370V	Emerson 1874 GE 3404
FSE1038SF	1/3	208-230	825	2.10	Reversible	1/2 x 6 1/2	5 1/8	Sleeve	7.5MFD/370V	Emerson 1875 GE 3405
FSE1058SF	1/2	208-230	825	2.50	Reversible	1/2 x 6 1/2	5 5/8	Sleeve	10MFD/370V	Emerson 1870
<b>Century 825 RPM Ball Bearing</b>										
FE1008SF	1/8	208-230	825	1.00	Reversible	1/2 x 6 1/2	4 1/4	Ball	5MFD/370V	GE 3202
FE1018SF	1/6	208-230	825	1.10	Reversible	1/2 x 6 1/2	4 1/8	Ball	5MFD/370V	GE 3203
FE1028SF	1/4	208-230	825	1.50	Reversible	1/2 x 6 1/2	4 5/8	Ball	5MFD/370V	GE 3204
FE1038SF	1/3	208-230	825	2.10	Reversible	1/2 x 6 1/2	5 1/8	Ball	7.5MFD/370V	GE 3205
FE1058SF	1/2	208-230	825	2.50	Reversible	1/2 x 6 1/2	5 5/8	Ball	10MFD/370V	
<b>Century 1075 RPM Sleeve Bearing</b>										
FSE1016SF	1/6	208-230	1075	1.40	Reversible	1/2 x 6 1/2	4	Sleeve	5MFD/370V	Emerson 1859 GE 3727
FSE1026SF	1/4	208-230	1075	2.00	Reversible	1/2 x 6 1/2	4 3/8	Sleeve	5MFD/370V	Emerson 1860 GE 3728
FSE1036SF	1/3	208-230	1075	2.80	Reversible	1/2 x 6 1/2	4 7/8	Sleeve	7.5MFD/370V	Emerson 1861 GE 3729
FSE1056SF	1/2	208-230	1075	4.00	Reversible	1/2 x 6 1/2	5 3/8	Sleeve	10MFD/370V	Emerson 1862 GE 3730
FSE1076SF	3/4	208-230	1075	5.10	Reversible	1/2 x 6 1/2	5 5/8	Sleeve	15MFD/370V	Emerson 1868 GE 3731
<b>Century 1075 RPM Ball Bearing</b>										
FE1016SF	1/6	208-230	1075	1.40	Reversible	1/2 x 6 1/2	4	Ball	5MFD/370V	
FE1026SF	1/4	208-230	1075	2.00	Reversible	1/2 x 6 1/2	4 3/8	Ball	5MFD/370V	Emerson 1876 GE 3732
FE1036SF	1/3	208-230	1075	2.80	Reversible	1/2 x 6 1/2	4 7/8	Ball	7.5MFD/370V	Emerson 1877 GE 3733
FE1056SF	1/2	208-230	1075	4.00	Reversible	1/2 x 6 1/2	5 3/8	Ball	10MFD/370V	Emerson 1878 GE 3734
FE1076SF	3/4	208-230	1075	5.10	Reversible	1/2 x 6 1/2	5 5/8	Ball	15MFD/370V	Emerson 1879 GE 3735

## PSC, Air Over, 48 Frame, Thru-Bolt, All-Angle

### Application

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-boltson shaft end, 1" thru-boltson 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
- Reversible rotation
- 60°C ambient, as noted
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X467	1/4	1625/1	208-230	48Y	048A47T87	5MFD / 370V	2.0-2.0	12	4 1/2	1/2 x 6	5	21, 36
X463	1/4	1625/2	208-230	48Y	048A17T356	5MFD / 370V	1.4-1.4	13	4 1/2	1/2 x 6	4.56	45, 94
X412	1/4	1140	208-230	48Y	48A11T569	5MFD / 370V	1.4-1.4	16	4 1/4	1/2 x 6	4.75	45
X456	1/4	1075/1	460	48Y	048A11T578	7.5MFD / 370V	0.75	15	4 1/2	1/2 x 6	5	45
X450	1/4	840/1	208-230	48Y	048A8T71	7.5MFD / 370V	1.9-1.9	17	5 1/4	1/2 x 6	5.75	45
X466	1/3	1625/1	208-230	48Y	048A17T86	5MFD / 370V	2.0-2.0	15	5	1/2 x 6	5.5	21, 36
X415	1/3	1075/2	208-230	48Y	048A11T2012	7.5MFD / 370V	2.6-2.6	16	5 1/2	1/2 x 6	5.5	36
X413	1/3	1075/1	208-230	48Y	048A11T529	7.5MFD / 370V	1.9-1.9	14	4 3/4	1/2 x 6	5.25	45
X457	1/3	1075/1	460	48Y	048A11T579	7.5MFD / 370V	0.9	17	5 1/2	1/2 x 6	5.5	36, 45
X451	1/3	825/1	208-230	48Y	048A8T72	10MFD / 370V	2.3-2.3	19	5 3/4	1/2 x 6	6.25	34, 45
X468	1/2	1625/1	208-230	48Y	048A17T96	5MFD / 370V	2.9-2.6	16	5 1/4	1/2 x 6	5.75	21
X464	1/2	1625/2	208-230	48Y	048A17T359	5MFD / 370V	3.1-2.9	17	5 1/4	1/2 x 6	5.31	45
X416	1/2	1075/2	208-230	48Y	048A11T2013	10MFD / 370V	4.2-4.2	19	6	1/2 x 6	6	36
X414	1/2	1075/1	208-230	48Y	048A11T571	10MFD / 370V	2.7-2.7	17	5	1/2 x 6	5.5	36, 45
X458	1/2	1075/1	460	48Y	048A11T580	10MFD / 370V	1.4	20	6	1/2 x 6	6	36, 45
X469	3/4	1075/1	208-230	48Y	048A11T276	15MFD / 370V	4.2-3.65	21	6 1/2	1/2 x 6	6.5	21, 63
X459	3/4	1075/1	460	48Y	048A11T581	15MFD / 370V	2.1	23	6 1/2	1/2 x 6	6.5	32, 45
X462	1	1140	460	48Y	48A11T619	25MFD / 370V	3.4	27	7 1/4	1/2 x 6	7.75	32, 45

#### Notes:

- 21. Double shaft extension 1-1/2" long by 1/2" diameter with flat each end
- 32. 3/4" Thru bolts, shaft end
- 34. 1" thru-bolts, shaft end
- 36. 1-1/4" thru-bolts, shaft end

- 45. 60° C ambient
- 63. 1-1/2" thru-bolts, opposite shaft end
- 94. 1/2" thru-bolts, shaft end

## MasterFit® Pro Outdoor Condenser Fan Motors



### Features

- All purpose, multi-rating
- Permanent split capacitor
- Extended thru bolts
- Rheem mounting holes in shells
- 4 end frame mounting holes for Trane
- Class F insulation
- Energy efficient
- Ball bearing
- Reversible
- Totally enclosed
- 60 Hertz
- 70°C ambient
- 2 Speed

Item ID	H.P.	Volts	RPM	Amps	Speed to Use	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Frame	Capacitor @ 208V	Capacitor @ 230V	Replaces
<b>Century</b>												
<b>FE6001F</b>	1/3	208-230	825	1.90	High	Reversible	1/2 x 6 1/2	5 1/4	48Y	10MFD/370V	7.5MFD/370V	Emerson 5464
	1/4			1.50	High							
	1/5			1.20	Low							
	1/6			1.00	Low							
<b>FE6000F</b>	1/3	208-230	1075	2.60	High	Reversible	1/2 x 6 1/2	4 7/8	48Y	7.5MFD/370V	5MFD/370V	Emerson 5462
	1/4			2.50	High							
	1/5			2.00	Low							
	1/6			1.80	Low							
<b>FE6002F</b>	1/2	208-230	1075	3.90	High	Reversible	1/2 x 6 1/2	5 3/8	48Y	12.5MFD/370V	10MFD/370V	Emerson 5465
	1/3			2.20	High							
	1/4			1.60	Low							
	1/5			1.30	Low							

## TechTip >>>>

from Packard Academy



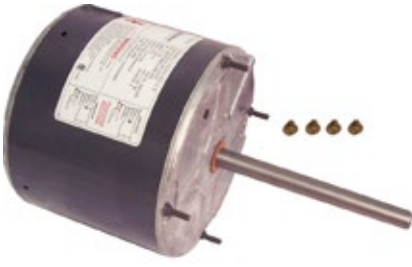
**RICK'S TIP**  
Rick Streacker  
National Training Coordinator



When installing a condenser fan motor, allow a “drip loop” in the leads to prevent moisture from migrating along the leads into the motor.



## genteq Life-Line Multi-Horsepower Motors



### Applications

- Designed for condenser fan and heat pump units requiring vertical shaft up or vertical shaft down positioning with “belly band” or extended clamp screw mounting.

### Features

- Ball bearings
- Water slinger on shaft
- Class B insulation
- Single phase
- Automatic overload
- Permanent split capacitor
- Designed for 370 Volt capacitor, not included
- Different capacitor/speed combinations to fit various HP applications
- Holes in motor shell for mounting brackets
- Extended clampbolts or studs for mounting

Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Base
<b>genteq</b>									
3465	1/3-1/6	208-230	1075	2.60	2	Reversible	PSC	Ball	NB
3458	1/3-1/6	208-230	1075	2.80	1	Reversible	PSC	Ball	NB
3469	1/3-1/6	208-230	825	1.90	2	Reversible	PSC	Ball	NB
3459	1/3-1/8	208-230	825	2.40	1	Reversible	PSC	Ball	NB
3468	1/2-1/5	208-230	1075	3.00	2	Reversible	PSC	Ball	NB



### Applications

- Designed for continuous air over applications, such as direct drive residential, commercial and industrial air conditioners, fan and blowers.

### Features

- Permanent split capacitor
- Ball and sleeve bearings
- Class B insulation
- Single phase
- Automatic overload
- Different capacitor/speed combinations to fit various HP applications
- Holes in motor shell for mounting brackets
- Mounts and accessories can be found on pages 408-422

Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Base
<b>genteq - Shaft Up or Horizontal Application</b>									
3463	1/2-1/6	115	1075	6.20	4	Reversible	PSC	Sleeve	2RR
3464	1/2-1/6	208-230	1075	2.70	4	Reversible	PSC	Sleeve	2RR
3466	3/4-1/5	115	1075	8.40	4	Reversible	PSC	Ball	2RR
3467	3/4-1/5	208-230	1075	4.20	4	Reversible	PSC	Ball	2RR

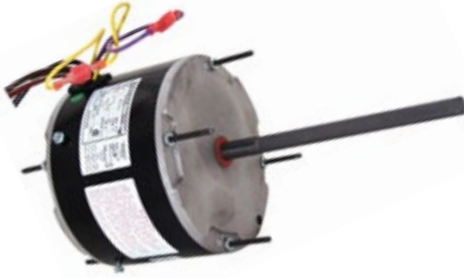
### Capacitor/Speed Selection Guide

Item ID	H.P.	Speeds to Use	Capacitor @		Amps
			208V	230V	
3465	1/3	Hi	7.5/370	5/370	2.60
	1/4	Hi	7.5/370	5/370	2.50
	1/5	Lo	7.5/370	5/370	2.00
	1/6	Lo	7.5/370	5/370	1.80
3458	1/3	Hi	7.5/370	7.5/370	2.80
	1/4	Hi	7.5/370	7.5/370	2.80
	1/6	Hi	7.5/370	7.5/370	2.80
3469	1/3	Hi	10/370	7.5/370	1.90
	1/4	Hi	10/370	7.5/370	1.50
	1/5	Lo	10/370	7.5/370	1.20
3459	1/6	Lo	10/370	7.5/370	1.00
	1/3	Hi	12.5/370	12.5/370	2.40
	1/4	Hi	12.5/370	12.5/370	2.40
3468	1/5	Hi	12.5/370	12.5/370	2.40
	1/6	Hi	12.5/370	12.5/370	2.40
	1/8	Hi	12.5/370	12.5/370	2.40
	1/2	Hi	12.5/370	10/370	3.00
3467	1/3	Hi	12.5/370	10/370	2.20
	1/4	Lo	12.5/370	10/370	1.60
	1/5	Lo	12.5/370	10/370	1.30

Item ID	H.P.	Capacitor	Speeds to Use	Amps
3463	1/2	10/370	All Speeds	6.20
	1/3	5/370 or 7.5/370*	All Speeds	6.10
	1/4	5/370 or 7.5/370*	Med-Hi or Med-Lo:Lo	4.40
	1/5	5/370 or 7.5/370*	Med-Lo:Lo	3.20
	1/6	5/370 or 7.5/370*	Lo	2.40
	3464	1/2	10/370	All Speeds
1/3		5/370 or 7.5/370*	All Speeds	2.60
1/4		5/370 or 7.5/370*	Med-Hi or Med-Lo:Lo	1.90
1/5		5/370 or 7.5/370*	Med-Lo:Lo	1.40
1/6		5/370 or 7.5/370*	Lo	1.10
3466		3/4	20/370	All Speeds
	1/2	10/370	All Speeds	7.50
	1/3	10/370	Med-Hi or Med-Lo:Lo	4.20
3467	1/4	10/370	Med-Lo:Lo	3.20
	1/5	10/370	Lo	2.60
	3/4	20/370	All Speeds	4.20
	1/2	10/370	All Speeds	3.80
	1/3	10/370	Med-Hi or Med-Lo:Lo	2.30
3467	1/4	10/370	Med-Lo:Lo	1.90
	1/5	10/370	Lo	1.50

\* Using a 7.5 MFD/370V capacitor will result in approximately 10% stronger motor.

## 4-in-1® Fan Motors (Economy Models) - 60°C Ambient



### Features

- Class B insulation
- Energy-efficient PSC design
- Reversing connectors
- Durable ball bearings or dependable all-angle sleeve bearings
- Mounts by belly band, adjustable extended thru-bolts or Rheem mounting holes with supplied screws
- All-angle mount
- Lead length 36 inch to 48 inch
- Single speed
- Totally enclosed
- Continuous duty, air over
- UL recognized
- 48 Frame
- 60 Hertz
- 60°C ambient

Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces	
<b>Century</b>										
ORM5488	1/3-1/8	208-230	825	2.10	1/2 x 6 1/2	4 7/8	Sleeve	7.5MFD/370V	Emerson 5457 Rheem 51-23055-12	Rheem 51-23054-13 Rheem 51-20760-11
ORM5488B	1/3-1/8	208-230	825	2.10	1/2 x 6 1/2	4 7/8	Ball	7.5MFD/370V	Rheem 51-20761-11	
ORM5458	1/3-1/6	208-230	1075	2.00	1/2 x 6 1/2	4	Sleeve	7.5MFD/370V	Emerson 5458 Rheem 51-41465-01	Rheem 51-23055-11 Rheem 51-20668-11
ORM5458B	1/3-1/6	208-230	1075	2.00	1/2 x 6 1/2	4	Ball	7.5MFD/370V	Rheem 51-20672-01 Rheem 51-20668-11	Rheem 51-23053-11 Rheem 51-23055-11

## 4-in-1® HeatMaster® Fan Motors (Deluxe Models) - 70°C Ambient



### Features

- Energy-efficient PSC design
- Reversing connectors
- Water-resistant reversing plug
- Double sealed ball bearings or dependable all-angle sleeve bearings
- Mounts by belly band, adjustable extended thru-bolts or Rheem mounting holes with supplied screws
- All-angle mount
- Lead length 36 inch to 48 inch
- Single speed
- Totally enclosed
- Continuous duty, air over
- UL recognized
- 48 Frame
- Class F insulation
- 60 Hertz
- 70°C ambient
- High-temperature UL approved overload protector

Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces	
<b>Century</b>										
ORM5484F	1/8-1/15	208-230	825	0.80	1/2 x 6 1/2	4 1/4	Sleeve	5MFD/370V	Emerson 5456 Rheem 51-20761-01	Trane MOT6314
ORM5484BF	1/8-1/15	208-230	825	0.80	1/2 x 6 1/2	4 1/4	Ball	5MFD/370V	Rheem 51-20760-01 Trane MOT6314	
ORM5454F	1/8-1/15	208-230	1075	0.80	1/2 x 6 1/2	4	Sleeve	5MFD/370V	Emerson 5459	
ORM5454BF	1/8-1/15	208-230	1075	0.80	1/2 x 6 1/2	4	Ball	5MFD/370V		
ORM5488F	1/3-1/8	208-230	825	2.10	1/2 x 6 1/2	4 7/8	Sleeve	7.5MFD/370V	Emerson 1875H	Marathon X072
ORM5458F	1/3-1/6	208-230	1075	2.00	1/2 x 6 1/2	4	Sleeve	7.5MFD/370V	Emerson 1860H	
ORM5488BF	1/3-1/8	208-230	825	2.10	1/2 x 6 1/2	4 7/8	Ball	7.5MFD/370V		
ORM5489BF	1/2-1/5	208-230	825	2.50	1/2 x 6 1/2	5 5/8	Ball	10MFD/370V		
ORM4688BF	1/3-1/8	460	825	1.00	1/2 x 6 1/2	5 1/8	Ball	7.5MFD/370V		
ORM5458BF	1/3-1/6	208-230	1075	2.00	1/2 x 6 1/2	4	Ball	7.5MFD/370V	Emerson 5458H	
ORM5459BF	1/2-1/5	208-230	1075	3.60	1/2 x 6 1/2	5 3/8	Ball	10MFD/370V		
ORM4658BF	1/3-1/6	460	1075	1.20	1/2 x 6 1/2	4 7/8	Ball	7.5MFD/370V	Emerson 3736H	Rheem 51-23063-11
ORM4659BF	1/2-1/5	460	1075	1.50	1/2 x 6 1/2	5 5/8	Ball	10MFD/370V		

## 4-in-1® HeatMaster® Ultra Multi-horsepower Replacement Motors- 80°C Ambient



### Features

- 80°C (176°F) max ambient
- Double sealed ball bearings with high temperature synthetic grease
- Energy-efficient PSC design
- Mounts by belly band, adjustable extended thru-bolts, or Rheem/Trane mounting holes, with screws supplied
- Works with Johnson Controls Speed controls
- Reversible rotation

Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Capacitor Required
<b>Century</b>									
ORM5488BU	1/3-1/8	208-230	825	1.8	1/2 x 6 1/2	4.86	PSC	Double Sealed Ball	7.5MFD/370V
ORM5458BU	1/3-1/6	208-230	1075	1.9	1/2 x 6 1/2	4.11	PSC	Double Sealed Ball	7.5MFD/370V

## HeatMaster® Ultra Condenser Fan Motors- 80°C Ambient



Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Capacitor Required
<b>Century</b>									
FE1038SU	1/3	208-230	825	1.6	1/2 X 6.5	5.11	PSC	Double Sealed Ball	7.5MFD/370V
FE1036SU	1/3	208-230	1075	2.5	1/2 X 6.5	4.86	PSC	Double Sealed Ball	7.5MFD/370V
FE1056SU	1/2	208-230	1075	3.8	1/2 X 6.5	5.36	PSC	Double Sealed Ball	10MFD/370V
FE1076SU	3/4	208-230	1075	5.1	1/2 X 6.5	5.61	PSC	Double Sealed Ball	15MFD/370V
5FE1076S	3/4	575	1075	1.8	1/2 X 6.5	5.61	PSC	Double Sealed Ball	15MFD/370V
FEH1026SU	1/4	460	1075	0.9	1/2 X 6.5	4.74	PSC	Double Sealed Ball	7.5MFD/370V
FEH1036SU	1/3	460	1075	1.2	1/2 X 6.5	5.24	PSC	Double Sealed Ball	7.5MFD/370V
FEH1056SU	1/2	460	1075	1.5	1/2 X 6.5	5.61	PSC	Double Sealed Ball	10MFD/370V

**Don't Forget!**

**TR001**  
See page 408

**A60048**  
See page 412

**1410A**  
See page 412

## REMEMBER: REPLACE THE MOTOR, REPLACE THE CAPACITOR.



**TITAN HD®**  
Professional Grade  
Motor Run Capacitors  
Page: 342

**TITAN PRO®**  
Professional Grade  
Motor Run Capacitors  
Page: 344



# MOTORS | MARATHON CONDENSER FAN/HEAT PUMP

## PSC, Open Air Over, Thru-Bolt, Shaft Up or Horizontal

### Application

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 and X012 have open frames
- Single and multi-speed models as noted
- Ball bearings
- Weather resistant reversing plug
- 30" long leads
- Shaft with flat, unless otherwise 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
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X012	1/4	1625/1	208-230	48Y	48A1702006	5MFD/370V	1.9-1.8	12	4 1/2	1/2 x 6	5.00	30, 34, 44
X011	1/3	1625/3	208-230	48Y	48A1702005	5MFD/370V	2.3-2.3	14	4 3/4	1/2 x 6	11.75	30, 34, 44



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X420	1/4	1625/1	460	48Y	48A170169	5MFD/370V	1.0	12	4	1/2 x 6	10.94	34
X423	1/4	1075/1	460	48Y	48A1102055	5MFD/370V	1.0	13	4 1/4	1/2 x 6	11.19	36
X213	1/4	1075/1	208-230	48Y	48A1101524	7.5MFD/370V	1.4-1.2	12	4 1/4	1/2 x 6	11.19	21



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X087	1/4	1075/1	208-230	48Y	48A1102029	5MFD/370V	2.0-2.0	12	4 1/4	1/2 x 6	11.19	

## PSC, Open Air Over, Thru-Bolt Mount, Shaft Down

### Application

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

### Features

- Frame and opposite shaft end bracket are enclosed for vertical shaft down mounting
- Weather resistant reversing plug
- 30" Long leads
- Shaft slinger
- 1-1/4" Extended thru-bolts on shaft end, except where noted
- Automatic reset thermal protector
- Ball bearings
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X278	1/8	825	208-230	48Y	048A80206	5MFD/370V	0.9-0.9	11	4 1/4	1/2 x 4 3/4	4.31	37, 44
X216	1/5	1075	208-230	48Y	048A1101097	5MFD/370V	1.8-1.6	10	3 3/4	1/2 x 6	3.81	37, 44, 60
X297	1/3	1075	208-230	48Y	048A11T509	5MFD/370V	1.8-1.8	12	4 1/4	1/2 x 3 3/4	4.31	N, 29, 41, 60

### Notes:

21. Double shaft extension 1-1/2" long by 1/2" diameter with flat each end  
 29. Weep holes with removable plugs on end brackets. Remove bottom plug after installation  
 30. Resilient ring mount, base not included  
 34. 1" thru-bolts, shaft end

36. 1-1/4" thru-bolts, shaft end  
 37. 1-1/2" thru-bolts, shaft end  
 41. 1/2" thru-bolts, opposite shaft end

44. 1" thru-bolts, opposite shaft end  
 60. Foot locating Set Screws on frame, 90 apart  
 N - Totally Enclosed, Non-Ventilated

## PSC, Open Air Over, Thru-Bolt Mount, Shaft Down

### Application

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

### Features

- Frame and opposite shaft end bracket are enclosed for vertical shaft down mounting
- Weather resistant reversing plug
- 30" Long leads
- Shaft slinger
- 1-1/4" Extended thru-bolts on shaft end, except where noted
- Automatic reset thermal protector
- Ball bearings
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>											
X440	1/6	1075	208-230	48Y	048A1102065	5MFD / 370V	0.67-0.90	10	4	1/2 x 6	4.5
X441	1/4	1075	208-230	48Y	048A1102062	5MFD / 370V	1.35-1.35	12	4 1/4	1/2 x 6	4.75
X442	1/3	1075	208-230	48Y	048A1102064	5MFD / 370V	2.0-1.95	14	4 3/4	1/2 x 6	5.25
X443	1/2	1075	208-230	48Y	048A1102063	5MFD / 370V	3.9-3.9	18	5 1/4	1/2 x 6	5.75
X444	3/4	1075	208-230	48Y	048A1101596	15MFD / 370V	4.3-4.7	18	5 1/2	1/2 x 6	6

## PSC, Open Air Over, Thru-Bolt, Shaft Up or Horizontal

### Application

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
- 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 UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Length Less Shaft (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X214	1/3	1075/1	208-230	48Y	048A1101525	7.5MFD / 370V	2.3-2.6	13	4 1/2	1/2 x 6	5.5	45
X088	1/3	1075/1	208-230	48Y	048A1102032	5MFD / 370V	3.0-3.0	14	4 3/4	1/2 x 6	5.75	
X424	1/3	1075/1	460	48Y	048A1102054	7.5MFD / 370V	1.4	15	4 3/4	1/2 x 6	5.75	36
X086	1/3	825/1	208-230	48Y	048A802001	5MFD / 370V	2.4-2.4	17	5 1/4	1/2 x 6	6.25	
X422	1/2	1625/1	460	48Y	048A170172	7.5MFD / 370V	1.7	15	5	1/2 x 6	6	36
X096	1/2	1075/1	208-230	48Y	048A110840	10MFD / 370V	4.2-4.2	18	5 1/2	1/2 x 6	6.5	
X089	1/2	1075/1	208-230	48Y	048A1102035	5MFD / 370V	4.2-4.2	17	5 1/4	1/2 x 6	6	45
X221	1/2	1075/1	208-230	48Y	048A1101526	10MFD / 370V	2.75-2.70	15	5	1/2 x 6	6	45
X400	1/2	1075/1	460	48Y	048A1102017	10MFD / 370V	1.4	16	5	1/2 x 6	6	35
X098	1/2	825/1	208-230	48Y	048A80181	10MFD / 370V	3.3-3.3	18	5 1/2	1/2 x 6	6.5	
X085	3/4	1075/2	208-230	48Y	048A110678	15MFD / 370V	5.1-5.1	19	5 1/2	1/2 x 6	6.5	
X298	3/4	1075/1	208-230	48Y	048A1102059	15MFD / 370V	4.0-4.2	17	5 1/4	1/2 x 6	7	
X090	3/4	1075/1	208-230	48Y	048A1102007	15MFD / 370V	4.6-4.6	17	5 1/2	1/2 x 6	6.5	
X099	3/4	1075/1	460	48Y	048A1102016	15MFD / 370V	2.5	19	5 1/2	1/2 x 6	6.5	34
P190	1	1075/1	200-230/460	56Z	5KCP49Z9617T	25MFD / 370V	6.7-6.8/3.4	40	9.0	5/8 x 1 7/8	13.33	

Notes:  
34. 1" thru-bolts, shaft end  
35. 1-1/8" thru-bolts, shaft end

36. 1-1/4" thru-bolts, shaft end  
45. 60° C ambient

# MOTORS | MARATHON CONDENSER FAN/HEAT PUMP

## Single Phase, PSC, 56 Frame, Resilient Ring, Thru-Bolt, Open Air Over, Shaft Up

### Application

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
- Reversible rotation
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X206	1	1075	208-230/460	56Y	056A1105310	20MFD/370V	5.4-5.2/2.6	34	10 1/2	5/8 x 6	10.44	37
X271	1 1/2	1075	208-230/460	56Y	056A1105305	30MFD/370V	7.7-7.6/3.8	43	11 1/2	5/8 x 6	11.44	34, 45

## PSC, Open Air Over, Resilient Ring & Thru-Bolt Mount

### Features

- Open end bracket
- Ball bearings
- Automatic reset thermal protector
- BX connector included in frame (except Marathon # X262)
- Reversible rotation
- UL recognized and CSA certified
- Capacitor included (except Marathon # X262)



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X270	1/4	1625	208-230	48Y	048A170149	1.9	12	5.69	1/2 X 2 1/2	5.75	1



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X262	1/4	1075	208-230	48Y	048A11D245	1.8	15	7.25	1/2 X 1 5/8	7.32	67, 69, 82



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X230	1/3	1625	208-230	48YZ	048A170136	1.8	14	5.69	1/2 X 3 1/2	5.75	15

### Notes:

- 1. Capacitor Start/Capacitor Run design for reduced amperage
- 15. Fixed CW Rotation, viewing opposite shaft (or lead end) of motor
- 34. 1" thru-bolts, shaft end
- 37. 1-1/2" thru-bolts, shaft end

- 45. 60° C ambient
- 67. Capacitor not included, 5 MFD/370V Required
- 69. 50° C ambient
- 82. Welded Rigid Base

## 5 5/8 Inch Diameter Direct Drive Blower Motors



### Features

- Permanent split capacitor
- Continuous air over
- 2 1/2 inch mounting rings
- Class B insulation
- 40°C ambient
- Electrically reversible
- Open enclosure
- Automatic overload
- 48 Frame
- 60 Hertz
- Single phase

Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim.(In.)	Length Less Shaft (In.)	Bearings	Capacitor Required	Replaces	
<b>Packard</b>											
43581	1/6	115	1075	2.50	3	1/2 x 5 1/2	4	Sleeve	5MFD/370V	GE 3581	Emerson 8891
43582	1/6	208-230	1075	1.40	3	1/2 x 7	4	Sleeve	5MFD/370V	GE 3582	Emerson 8896
43583	1/4	115	1075	4.40	3	1/2 x 4 1/2	4	Sleeve	5MFD/370V	GE 3583	Emerson 1863
43584	1/4	208-230	1075	1.70	3	1/2 x 4 1/2	4	Sleeve	5MFD/370V	GE 3584	Emerson 1971
43585	1/3	115	1075	6.00	3	1/2 x 4 1/2	4 1/4	Sleeve	5MFD/370V	GE 3585	Emerson 1864
43586	1/3	208-230	1075	2.60	3	1/2 x 4 1/2	4 1/4	Sleeve	5MFD/370V	GE 3586	Emerson 1972
43587	1/2	115	1075	7.80	3	1/2 x 4 1/2	5 1/8	Sleeve	5MFD/370V	GE 3587	Emerson 1865
43588	1/2	208-230	1075	3.60	3	1/2 x 4 1/2	5 1/8	Sleeve	5MFD/370V	GE 3588	Emerson 1973
43589	3/4	115	1075	10.50	3	1/2 x 4 1/2	5 1/8	Sleeve	15MFD/370V	GE 3589	Emerson 8904
43590	3/4	208-230	1075	4.60	3	1/2 x 4 1/2	5 1/8	Sleeve	10MFD/370V	GE 3590	Emerson 8905
43595	1	115	1075	9.70	3	1/2 x 6 1/2	5 7/8	Ball	20MFD/370V	GE 3595	Emerson 8906
43596	1	208-230	1075	4.4-5.4	3	1/2 x 6 1/2	5 7/8	Ball	20MFD/370V	GE3596	Emerson 8907



Detailed wiring diagram shown for ease of installation



Capacitor leads equipped with quick connect terminals



Compatible with a three-wire or four-wire installation



## 5 5/8 Inch Diameter Multi-Horsepower Direct Drive Blower Motors

### Features

- Permanent split capacitor
- Multiple capacitor/speed combinations
- Continuous duty, air over
- Mounting rings, thru bolts and holes in shell
- Class B insulation
- Reversible rotation
- Automatic overload
- 48 Frame
- 60 Hertz
- Single phase
- 5 Speed



Item ID	H.P.	Volts	RPM	Amps	Rotation	Type	Bearings	ENCL.	Replaces
<b>Packard</b>									
45460*	1/2-1/3-1/4-1/5-1/6	115	1075	5.80-5.10-3.50-3.20-2.20	Reversible	PSC	Sleeve	Open	Emerson 5460 Rheem 51-23012-41
45461*	1/2-1/3-1/4-1/5-1/6	208-230	1075	2.90-2.50-1.80-1.40-1.30	Reversible	PSC	Sleeve	Open	Emerson 5461 Rheem 51-23022-41
45470*	3/4-1/2-1/3-1/4-1/5	115	1075	9.10-6.50-5.50-4.00-2.30	Reversible	PSC	Sleeve	Open	Emerson 5470 Rheem 51-23017-41
45471*	3/4-1/2-1/3-1/4-1/5	208-230	1075	4.60-3.30-3.40-2.30-1.70	Reversible	PSC	Sleeve	Open	Emerson 5471 Rheem 51-21898-01



Item ID	H.P.	Volts	RPM	Amps	Rotation	Type	Bearings	ENCL.	Replaces
<b>Century</b>									
FDL6001*	1/2, 1/3, 1/4, 1/5, 1/6	115	1075	7.00, 6.70, 4.40, 3.20, 2.40	Reversible	PSC	Sleeve	Open	Emerson 5460 Rheem 51-23012-41
FD6000*	1/2, 1/3, 1/4, 1/5, 1/6	208-230	1075	3.90, 3.60, 2.50, 1.80, 1.30	Reversible	PSC	Sleeve	Open	Emerson 5461 Rheem 51-23022-41
7FD6000A*	1/2, 1/3, 1/4, 1/5, 1/6	277	1075	3.30, 2.30, 1.70, 1.30, 1.00	Reversible	PSC	Sleeve	Open	—
FDL6002*	3/4, 1/2, 1/3, 1/4, 1/5	115	1075	9.10, 6.60, 5.50, 3.00, 2.30	Reversible	PSC	Ball	Open	Emerson 5470
FD6001*	3/4, 1/2, 1/3, 1/4, 1/5	208-230	1075	3.90, 3.60, 3.00, 2.30, 2.00	Reversible	PSC	Ball	Open	Emerson 5471
7FD6001A*	3/4, 1/2, 1/3, 1/4, 1/5	277	1075	3.60, 2.30, 1.70, 1.30, 1.00	Reversible	PSC	Ball	Open	—

\*Capacitor Required: HP 3/4 and 1/2 - 10MFD 370V | HP 1/3, 1/4, 1/5, 1/6 - 7.5MFD 370V

Chris Foster  
Regional Sales Manager

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PACKARD!

*Customer Focused...*

“...means we care about our customers satisfaction, which helps in the overall success of our customers. We support and service our customers to the highest level.”



## 5 5/8 Inch Diameter Direct Drive Blower Motors

### Features

- Permanent split capacitor
- Class B insulation
- Open enclosure
- 60 Hertz
- Continuous air over
- 40°C ambient
- Automatic overload
- Single phase
- 2 1/2 inch mounting rings
- Electrically reversible
- 48 Frame



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Req.	Notes
<b>Fasco</b>										
D721	1/4-1/5-1/6	115	1075	4.80	3	1/2 x 6	4	Sleeve	15MFD/370V	138, 148
D725	1/4-1/6-1/8	208/230	1075	2.20	3	1/2 x 6	4	Sleeve	15MFD/370V	138, 148
D727	1/3-1/4-1/5	115	1075	5.90	3	1/2 x 6	4 1/4	Sleeve	5MFD/370V	138, 148
D923	1/3-1/4-1/5	208-230	1075	2.90	3	1/2 x 6	4 1/4	Sleeve	5MFD/370V	138, 148
D701	1/2-1/3-1/4-1/5	115	1075	7.70	4	1/2 x 5 1/2	5 1/4	Sleeve	10MFD/370V	138, 148
D703	1/2-1/3-1/4	208-230	1075	4.00	3	1/2 x 6	5	Sleeve	7.5MFD/370V	138, 148
D974	1/2-1/3-1/4	277	825	2.3-1.6-1.3	3	1/2 x 5	5 1/3	Sleeve	15MFD/370V	138, 148
D728	3/4-1/2-1/3	115	1075	10.50	3	1/2 x 6	5 1/2	Sleeve	10MFD/370V	138, 148
D729	3/4-1/2-1/3	208-230	1075	5.40	3	1/2 x 6	5 1/2	Sleeve	10MFD/370V	138, 148



Item ID	H.P.	Volts	RPM	Amps	Speeds	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Capacitor Req.	Notes
<b>Century</b>										
DL1026	1/4	115	1075	3.50	3	1/2 x 4 1/2	4 1/8	Sleeve	5MFD/370V	
D1026	1/4	208-230	1075	1.80	3	1/2 x 4 1/2	4 1/8	Sleeve	5MFD/370V	
DL1036	1/3	115	1075	4.90	3	1/2 x 4 1/2	4 1/2	Sleeve	7.5MFD/370V	
D1036AO	1/3	208-230	1075	2.60	3	1/2 x 4 1/2	4 3/8	Sleeve	5MFD/370V	
DL1056	1/2	115	1075	6.50	3	1/2 x 4 1/2	5	Sleeve	10MFD/370V	
D1056AO	1/2	208-230	1075	3.20	3	1/2 x 4 1/2	4 7/8	Sleeve	7.5MFD/370V	
DL1076	3/4	115	1075	8.90	3	1/2 x 4 1/2	5 5/8	Sleeve	15MFD/370V	264
D1076	3/4	208-230	1075	4.00	3	1/2 x 4 1/2	5 5/8	Sleeve	10MFD/370V	
BDL1106	1	115	1075	12.30	3	1/2 x 6	6	Ball	20MFD/370V	
BD1106	1	208-230	1075	5.10	3	1/2 x 6 1/2	5 5/8	Ball	20MFD/370V	187, 424
BDH1106	1	460	1100	3.20	3	1/2 x 6 1/2	5 7/8	Ball	15MFD/370V	187, 308, 321

### Notes:

138. All angle mount bearings. Use rain shield when necessary  
 148. Ideal for blowers and fans used in furnaces and air-conditioners  
 187. Resilient mounting rings included

264. 50°C ambient  
 308. Reconnect for separate speeds

321. No extended thru bolts  
 424. 1/2" double flat shaft, 2 1/2" rings

## 1/5 HP 1050 RPM/3 Speed 115 Volt Motor & Torsion Flex Bracket

### Features

- Replaces Lennox 89C3701PR
- Automatic Overload
- 60 Hz
- Shaded Pole
- 42 Frame
- Kit includes Motor & Torsion Flex Bracket
- CW Shaft End



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>Packard</b>											
48937K	1/5	115	1050	6.50	3	CCWLE	5 1/2 x 1/2	5	SP	Sleeve	89C37 Lennox 89C3701PR



## 5 5/8 Inch Diameter Torsion Flex Direct Drive Blower Motors

### Features

- Permanent split capacitor
- Continuous air over
- Energy efficient
- Electrically reversible
- Automatic overload
- Open enclosure
- Single phase
- 48 Frame
- 60 Hertz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Capacitor Required	Replaces
<b>Packard</b>												
43782	1/6	115	1075	2.50	3	Reversible	1/2 x 5	4	PSC	Sleeve	5MFD/370V	3782
43783	1/4	115	1075	3.60	4	Reversible	1/2 x 6	4	PSC	Sleeve	5MFD/370V	3783
43784	1/4	208-230	1075	1.80-2.00	4	Reversible	1/2 x 6	4	PSC	Sleeve	5MFD/370V	3784
43785	1/3	115	1075	4.80	4	Reversible	1/2 x 6	4 1/4	PSC	Sleeve	10MFD/370V	3785, 9377
43786	1/3	208-230	1075	2.30-2.60	4	Reversible	1/2 x 6	4 1/4	PSC	Sleeve	10MFD/370V	3786
43787	1/2	115	1075	8.00	4	Reversible	1/2 x 6	4 7/8	PSC	Sleeve	10MFD/370V	3787
43788	1/2	208-230	1075	3.30-4.00	4	Reversible	1/2 x 6	4 7/8	PSC	Sleeve	10MFD/370V	3788
43789	3/4	115	1075	9.00	3	Reversible	1/2 x 5	5.41	PSC	Sleeve	15MFD/370V	3789
43790	3/4	208-230	1075	4.50	3	Reversible	1/2 x 5	5.41	PSC	Sleeve	10MFD/370V	3790

## Direct Drive, PSC, Open Air Over, Torsion Flex Mount

### Application

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

### Features

- Open frames and brackets
- Three lug mount fits 9" or 10" bolt circle. Mounting holes on lugs are .435" dia., with gromets and sleeves for .26" dia. option.
- Multi-speed capacity
- Weather resistant reversing plug
- 30" long leads
- Automatic reset thermal protector
- Ball bearings
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>											
X034	1/4	1075/4	115	48Y	48A1101773	5MFD / 370V	3.05	14	4 1/2	1/2 x 6	4.31
X035	1/3	1075/4	115	48Y	48A1101774	10MFD / 370V	4.15	15	4 1/2	1/2 x 6	4.56
X036	1/2	1075/4	115	48Y	48A1101772	15MFD / 370V	6.0	19	5	1/2 x 6	5.06



Item ID	HP	RPM	Volts	Frame	Cap. Required	F.L. Amps	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Century</b>								
FML1026	1/4	1075	115	48Y	7.5MFD-370V	3.6	1/2 x 6	4.11
FM1026	1/4	1075	208-230	48Y	5MFD-370V	1.5	1/2 x 6	4.11
FML1036	1/3	1075	115	48Y	10MFD-370V	7.6	1/2 x 6	4.36
FM1036	1/3	1075	208-230	48Y	7.5MFD-370V	3.7	1/2 x 6	4.36
FML1056	1/2	1075	115	48Y	10MFD-370V	12.3	1/2 x 6	4.86
FM1056	1/2	1075	208-230	48Y	10MFD-370V	4.9	1/2 x 6	4.86
FML1076V1	3/4	1075	115	48Y	15MFD-370V	10.9	1/2 x 6	5.36

## 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)
- 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

Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X219	1/5	1075/3	115	48Y	048A1102047	5MFD / 370V	3.5	11	4	1/2 x 4	6	39
X013	1/4	1625/3	115	48Y	048A170152	7.5MFD / 370V	2.9	12	5	1/2 x 4	6	32
X014	1/4	1625/3	208-230	48Y	048A170154	5MFD / 370V	1.8-1.35	11	4 1/4	1/2 x 4	5.25	32
X000	1/4	1075/3	115	48Y	048A1101798	7.5MFD/370V	3.4	12	4 1/4	1/2 x 4	5.25	32
X001	1/4	1075/3	208-230	48Y	048A1101799	5MFD/370V	1.5-1.5	12	4 1/2	1/2 x 4	5.5	32
X015	1/3	1625/3	115	48Y	048A170151	7.5MFD/370V	4.0	13	4 3/4	1/2 x 4	5.75	32
X002	1/3	1075/3	115	48Y	048A1101769	7.5MFD / 370V	4.6	14	4 3/4	1/2 x 4	5.75	32
X003	1/3	1075/3	208-230	48Y	048A110B2042	5MFD / 370V	3.3-3.3	14	4 3/4	1/2 x 4	5.75	32
X037	1/3	1075/2	460	48Y	048A1101876	7.5MFD / 370V	1.0	14	4 3/4	1/2 X 6	5.69	51
X016	1/2	1625/3	115	48Y	048A170153	15MFD / 370V	5.0	16	5 1/4	1/2 x 4	6.25	32
X017	1/2	1625/3	208-230	48Y	048A170155	5MFD / 370V	4.1-4.1	16	5 1/4	1/2 x 4	6.25	32
X019	1/3	1075	277	48Y	48A1101351	5MFD / 370V	2.7	15	4 3/4	1/2 x 4	5.75	32
X004	1/2	1075/3	115	48Y	048A1101755	10MFD / 370V	6.2	17	5 1/2	1/2 x 4	6.25	32
X005	1/2	1075/3	208-230	48Y	048A1101756	7.5MFD / 370V	2.65-2.6	17	5 1/2	1/2 x 4	6.25	32
X020	1/2	1075/3	277	48Y	048A1101352	7.5MFD / 370V	3.6	17	5 1/2	1/2 x 4	6.5	32
X022	3/4	1625/3	230	48Y	048A170174	7.5MFD / 370V	3.7	18	5 1/2	1/2 x 5 1/2	6.44	39,43
X009	3/4	1075/3	115	48Y	048A110787	15MFD / 370V	10.2	20	5 3/4	1/2 x 4	6.75	32
X010	3/4	1075/3	208-230	48Y	048A1102046	10MFD / 370V	5.6	19	5 1/2	1/2 x 4	6.5	32
X021	3/4	1075/3	277	48Y	048A1101353	10MFD / 370V	5.0	20	5 3/4	1/2 x 4	6.75	32
X211	1	1625	208-230	48Y	48A170125	10MFD / 370V	6.2	20	6 1/4	1/2 x 2 1/2	7.25	39,42,43
X023	1	1075/3	230	48Y	048A1101583	15MFD / 370V	5.3	24	6 1/2	1/2 x 5	7.44	34



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X012	1/4	1625/1	208-230	48Y	48A1702006	5MFD / 370V	1.8-1.8	12	4 1/2	1/2 x 6	6	34,44
X011	1/3	1625/3	208-230	48Y	48A1702005	5MFD / 370V	2.3-2.3	14	4 3/4	1/2 x 6	5.75	30,34,44



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X033	1/2	1075/4	115	48Y	048A1101674	5MFD / 370V	6.1	15	5	1/2 x 5	5	31,73
X241	3/4	1075/4	208-230	48Y	048A110697	10MFD / 440V	5.4-5.4	17	5 1/2	1/2 x 6	6.5	39



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X242	1	1075/3	208-230	48YZ	048A110756	25MFD / 370V	6.2	26	7 1/4	5/8 x 8 1/4	8.25	39,51

### Notes:

30. Resilient ring mount, base not included  
 31. 5/8" thru-bolts, shaft end  
 32. 3/4" Thru bolts, shaft end

34. 1" thru-bolts, shaft end  
 39. No thru-bolts, shaft end  
 42. 3/4" thru-bolts, opposite shaft end

43. 2-1/2" Resilient Rings included  
 44. 1" Thru-bolts, opposite shaft end  
 51. Does not include resilient rings  
 73. No hubs

## Two And Three Speed Direct Drive Blower Motors

### Applications

- Designed for continuous air over applications, such as furnace blowers or central air handling units with single shaft requirements.

### Features

- Reversible rotation
- Automatic overload
- Single phase
- 5 1/2 inch diameter
- Permanent split capacitor
- Standard efficiency designs
- 4 inch shaft extension
- Extended thru bolts on shaft end with a mounting ring kit provided
- Ring kit allows both 2 1/4 inch and 2 1/2 inch resilient ring mounting
- Mounting holes in shell for capacitor bracket
- Designed for 370 volt capacitor, not included (See Electrical Section).



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Capacitor Required
<b>genteq</b>									
3383	1/4	115	1075	4.20	2	Reversible	PSC	Sleeve	5MFD 370V
3583	1/4	115	1075	4.20	3	Reversible	PSC	Sleeve	5MFD 370V
3384	1/4	208-230	1075	2.00	2	Reversible	PSC	Sleeve	5MFD 370V
3584	1/4	208-230	1075	2.00	3	Reversible	PSC	Sleeve	5MFD 370V
3385	1/3	115	1075	6.20	2	Reversible	PSC	Sleeve	7.5MFD 370V
3585	1/3	115	1075	6.10	3	Reversible	PSC	Sleeve	7.5MFD 370V
3386	1/3	208-230	1075	2.90	2	Reversible	PSC	Sleeve	5MFD 370V
3586	1/3	208-230	1075	2.70	3	Reversible	PSC	Sleeve	5MFD 370V
3387	1/2	115	1075	9.00	2	Reversible	PSC	Sleeve	10MFD 370V
3587	1/2	115	1075	9.00	3	Reversible	PSC	Sleeve	10MFD 370V
3388	1/2	208-230	1075	4.30	2	Reversible	PSC	Sleeve	7.5MFD 370V
3588	1/2	208-230	1075	4.30	3	Reversible	PSC	Sleeve	7.5MFD 370V
3389	3/4	115	1075	10.30	2	Reversible	PSC	Sleeve	15MFD 370V
3589	3/4	115	1075	11.20	3	Reversible	PSC	Sleeve	15MFD 370V
3390	3/4	208-230	1075	5.20	2	Reversible	PSC	Sleeve	10MFD 370V
3590	3/4	208-230	1075	5.00	3	Reversible	PSC	Sleeve	10MFD 370V

## 460 Volt Two Speed Direct Drive Blower Motors

### Applications

- Designed for continuous air over applications, such as high voltage fan and blower systems.

### Features

- Energy saver designs
- Ball bearings
- Extended thru bolts
- Designed for 50Hz or 60Hz operation
- Single phase
- 5 1/2 inch diameter
- Open enclosure
- Single shaft
- Automatic overload



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Capacitor Required	Type	Bearings
<b>genteq</b>									
3470	1/4	460	1625	0.80	2	Reversible	5MFD/370V	PSC	Ball
3280	1/3	460	1075	1.10	2	Reversible	5MFD/370V	PSC	Ball
3490	1/2	460	1625	1.70	2	Reversible	7.5MFD/370V	PSC	Ball
3290	3/4	460	1075	2.10	2	Reversible	10MFD/370V	PSC	Ball

## Direct Drive, PSC, Open Air Over, Resilient Ring

### Application

Single speed PSC motors designed to replace PSC and Shaded pole motors, used in direct drive furnace, air conditioners, and others blowers.

### Features

- Open frame and brackets
- Heavy gauge steel frame and base
- Shaft with flat side
- Reversible rotation
- 70°C ambient
- 37" Leads
- Thermal overload protection
- 1/4" terminals on the capacitor leads
- 2 1/4" resilient rings, includes 2 1/2" expanders
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	
<b>Marathon</b>												
X477	1/6	1625	115	48Y	48A170128	5MFD / 370V	2.6	9	4	1/2 x 4	5	
X475	1/6	1625	230	48Y	48A170123	5MFD / 370V	1.3	9	4	1/2 x 4	5	
X473	1/6	1075	115	48Y	48A1101046	5MFD / 370V	2.9	9	4	1/2 x 4	5	
X471	1/6	1075	230	48Y	48A1101044	5MFD / 370V	1.3	10	4	1/2 x 4	5	
X476	1/4	1625	230	48Y	48A170124	5MFD / 370V	1.8	10	4 1/4	1/2 x 4	5.25	
X472	1/4	1075	115	48Y	48A1101045	5MFD / 370V	4.0	11	4 1/4	1/2 x 4	5.25	
X474	1/4	1075	230	48Y	48A1101047	5MFD / 370V	2.0	11	4 1/4	1/2 x 4	5.25	

## Direct Drive, PSC, Open Air Over, Extended Thru-Bolt, 460 Volt

### Application

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



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X038	1/2	1075/2	460	48Y	48A1101874	10MFD / 370V	1.6	17	5 1/4	1/2 X 6	6.19	51
X039	3/4	1075/2	460	48Y	48A1101875	15MFD / 370V	2.1	19	5 1/2	1/2 X 6	6.44	51

**Notes:**  
51. Does not include resilient rings

For additional product information visit [packardonline.com](http://packardonline.com).



## PSC, TEAO, Resilient Base

### Application

Replacement motors for unit heaters. Air over motors need to be mounted within the airstream for proper cooling.

### Features

- Totally enclosed
- Direct drive, air over
- Ball bearings
- Horizontal or vertical mount
- Weather resistant reversing plug
- BX connector mounted in frame
- 1" Extended thru-bolts
- 48Y frame has non-standard BA dimension
- Automatic reset thermal protection
- UL recognized and CSA certified
- Capacitor included



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
X305	1/6	1625	115	48Y	48A17T2001	2	13	4 3/4	1/2 x 2 3/4	5.75
X301	1/6	1625	115	48Y	48A17T72	2	13	5 1/4	1/2 x 2 3/4	7.25
X302	1/6	1075	115	48Y	48A11T199	3	13	4 3/4	1/2 x 2 3/4	5.75
X303	1/4	1075	115	48Y	48A11T198	4.1	14	4 3/4	1/2 x 2 3/4	5.75
X304	1/3	1075	115	48Y	48A11T201	6.5	21	21	1/2 x 2 3/4	7

## TechTip >>>>

from Packard Academy



### RICK'S TIP

Rick Streacker  
National Training Coordinator



One of the major reasons for the failure of unit heater motors is dust and dirt that accumulates on the motor winding. This will prevent proper cooling of the motor. The resultant additional heat will break down the winding insulation, shortening the life of the motor. This dust and dirt can also penetrate the motor through the shaft, wicking the oil out of some sleeve bearing motors causing premature failure. Even though the original motor might be an open air over motor, a replacement motor that is totally enclosed air over might be the best choice in that extended motor life might result. The totally enclosed motor design will help protect from dust and dirt getting on the winding.

## Direct Drive, PSC, Open Air Over, Belly Band Thru-Bolt, Double Shaft

### Application

Continuous air over applications, such as room air conditioners, fan coil units, and other air moving applications.

### Features

- Open frame and brackets
- Multi-speed capability
- Automatic reset thermal protector
- 30" leads
- CCW rotation, fixed lead end
- 1" extended thru-bolts both ends
- 20" overall length
- Length adapter kits included where noted
- Ball bearings
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X042	1/6	1075/3	115	48Y	048A110653	5MFD / 370V	2.05	11	4	8 1/5 X 1/2 X 7 3/4	4.05	71
X049	1/6	1075/3	208-230	48Y	048A110773	5MFD / 370V	1.5	9	4	8 1/5 X 1/2 X 7 3/4	4.05	
X043	1/6	1075/3	208-230	48Y	048A110654	5MFD / 370V	1.5	11	4	8 1/5 X 1/2 X 7 3/4	4.05	71
X061	1/4	1075/3	115	48Y	048A1102022	5MFD / 370V	4.8	14	4 1/4	8 X 1/2 X 7 3/4	4.25	71
X050	1/4	1075/3	208-230	48Y	048A110774	5MFD / 370V	2.2	13	4 1/4	8 X 1/2 X 7 3/4	4.25	
X044	1/4	1075/3	208-230	48Y	048A110655	5MFD / 370V	2.2	16	4 1/4	8 X 1/2 X 7 3/4	4.25	71
X041	1/3	1625/3	208-230	48Y	048A17070	5MFD / 370V	1.8-1.7	15	4 3/4	7 1/2 X 1/2 X 7 3/4	4.75	71
X052	1/3	1075/3	208-230	48Y	048A110775	5MFD / 370V	3.4	16	4 3/4	7 1/2 X 1/2 X 7 3/4	4.75	
X045	1/3	1075/3	208-230	48Y	048A110656	5MFD / 370V	3.4	17	4 3/4	7 1/2 X 1/2 X 7 3/4	4.75	71
X071	1/2	1075/3	115	48Y	048A1102026	7.5MFD / 370V	9.4	20	5 1/2	6 3/4 X 1/2 X 7 3/4	5.5	71
X062	1/2	1075/3	208-230	48Y	048A1102009	5MFD / 370V	4.7	17	5 1/2	6 3/4 X 1/2 X 7 3/4	5.5	71
X067	1/2	1075/3	208-230	48Y	048A1102014	5MFD / 370V	4.7	19	5 1/2	6 3/4 X 1/2 X 7 3/4	5.5	
X063	3/4	1075/3	208-230	48Y	048A1102028	10MFD / 370V	5.7-4.5	19	5 1/2	6 3/4 X 1/2 X 7 3/4	5.5	71

### Notes:

71. Includes length adapter bracket

## 48 Frame Fan Coil Motors

### Features

- Reversible rotation
- Automatic overload
- Single phase
- 5 1/2 inch diameter
- Permanent split capacitor



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting
<b>genteq</b>										
3986	1/3	208-230	1075	2.5	3	Reversible	1/2 X 6	4 1/4	Ball	Studs
3994	1/3	115	1625	3.9	3	Reversible	1/2 X 4	5.6	Sleeve	Resilient



Item ID	H.P.	Volts	RPM	Amps	Speed	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearing	Mounting
<b>genteq</b>										
3682	1/3	208-230	1075	2.5	3	Double Shaft	7 1/2 x 1/2 x 1 1/4	5.25	Sleeve	Studs
3691	1/2	115	1075	7.3	3	Double Shaft	7 1/2 x 1/2 x 1 1/4	5.25	Sleeve	Studs
3692	1/2	208-230	1075	3.5	3	Double Shaft	7 1/2 x 1/2 x 1 1/4	5.25	Sleeve	Studs
3892	1/2	208-230	1625	3	3	Double Shaft	7 1/2 x 1/2 x 7 1/4	5.25	Sleeve	Thru Bolt/ Belly Band

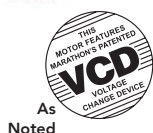
## Three Phase, Open Air Over, Rigid Base, Shaft Up or Horizontal

### Application

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



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X532	1/3	1140	208-230/460	56Z	056T11011001	1.8-1.8/0.9	22	8 1/4	1/2 x 5	8.37	45,50
X533	1/2	1140	208-230/460	56Z	056T11011002	2.1-2.0/1.0	20	8 1/2	1/2 x 5	8.37	45,50
X529	1/2	850	208-230/460	56HC	056T805531	2.9-3.0/1.5	31	9 1/2	5/8 x 5	9.68	VC,5
X513	1	1140	208-230/460	56HZ	056T1105305	4.1-4.2/2.1	29	9 1/2	5/8 x 5	9.68	VC,5
X528	1	850	208-230/460	56HZ	056T805306	5.1-5.3/2.65	49	12	5/8 x 5	12.06	VC,5
X531	1 1/2	850	208-230/460	56Z	056T8015504	7.0-7.0/3.5	47	11 1/2	5/8 x 5	11.68	VC,5
X525	2	1140	208-230/460	56HZ	056T1105310	7.2-6.8/3.4	47	12	5/8 x 5	11.68	VC,5

## Three Phase, Open Air Over, Shaft Up & Horizontal Rigid Base Mount

### Application

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



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X523	1.5	1140	208-230/460	56HZ	56T1105306	5.45-5.4/2.7	36	15.68	5/8 x 5	10.68	VC,5

### Notes:

5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
45. 60° C ambient

50. Designed for 50 Hz operation  
VC - Voltage Change Device feature for quick voltage changes



## JuggerNaut® Three Phase Inverter Duty Condenser Fan Motors

Removable 56H Base 70°C (158°F) Max Ambient



### Features

- Inverter duty
- 70°C (158°F) max ambient
- Class F moisture resistant insulation
- Automatic overload protector
- Large water slinger
- Double sealed ball bearings
- Lugs for belly-band mounting
- Shaft up mounting
- Quick connect design
- Energy-efficient three phase design
- Conductive bearing grease for inverter applications
- 50/60 Hertz
- Three phase
- Energy-efficient three phase design

Item ID	H.P.	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less Shaft (In.)	Belly Band	Replaces Belly Band	Rigid Base
<b>Century</b>									
H1055A	1/2	460/200-230	1140	1.3/2.8-2.6	5/8 X 6	10.4			
H1056A	3/4	460/200-230	1140	1.5/2.8-3.0	5/8 X 6	10.5			
H1050A	1	460/208-230	1140	2.20/4.40-4.00	5/8 x 6	10 5/8	Marathon X502 Emerson 1818 G.E. K379 Fasco D6608	Leeson 111147 Baldor CFM3156A Mars 3189	Marathon X513 Emerson 1820 G.E. K1485 Leeson 115778
H1051A	1 1/2	460/208-230	1140	2.90/5.80-5.80	5/8 x 6	11 5/8	Marathon X503 Emerson 1819 G.E. K380 Fasco D6610	Leeson 111148 Baldor CFM3166A Mars 3190	Marathon X523 Emerson 1821 G.E. K1486 Leeson 115779
H1052A	2	460/208-230	1140	3.70/7.40-7.00	5/8 x 6	12 5/8	Marathon X509	Emerson 8987	Marathon X525 Emerson 1822
H1053A	1	460/208-230	850	2.60/5.20-5.00	5/8 x 6	12 5/8	Marathon X507 Emerson 1828	G.E. K1482 Mars 1482	Marathon X528
H1054A	1 1/2	460/208-230	850	3.60/6.70-7.20	5/8 x 6	13 1/8	Marathon X530		Marathon X531

**Note:** It is the responsibility of the installer to properly adjust the drive to the motor for the specific application. The correct volts/Hz settings are application specific and unique to each motor. Failure to perform proper set up can lead to substandard performance and/or premature failure of the system components. All other replacements are not inverter duty.

Rigid 56H Base 70°C (158°F) Max Ambient



### Features

- Inverter duty
- 70°C (158°F) max ambient
- Class F moisture resistant insulation
- Automatic overload protector
- Large water slinger
- Double sealed ball bearings
- Shaft up mounting
- Quick connect design
- Energy-efficient three phase design
- Conductive bearing grease for inverter applications
- 50/60 Hertz
- Three phase
- Energy-efficient three phase design

Item ID	H.P.	Volts	RPM	Amps	Shaft Dimension (In.)	Length Less Shaft (In.)
<b>Century</b>						
H1050RB	1	460/208-230	1140	2.20/4.40-4.00	5/8 x 6	10.3
H1051RB	1 1/2	460/208-230	1140	2.90/5.80-5.80	5/8 x 6	11.3
H1052RB	2	460/208-230	1140	3.70/7.40-7.00	5/8 x 6	12.3
H1053RB	1	460/208-230	850	2.60/5.20-5.00	5/8 x 6	12.3
H1054RB	1 1/2	460/208-230	850	3.60/6.70-7.20	5/8 x 6	12.3

**Note:** It is the responsibility of the installer to properly adjust the drive to the motor for the specific application. The correct volts/Hz settings are application specific and unique to each motor. Failure to perform proper set up can lead to substandard performance and/or premature failure of the system components. All other replacements are not inverter duty.

## HeatMaster® Fan Canopy

### Features

- 70°C (158°F) max ambient
- UL recognized Class F insulation
- Energy-efficient PSC and three phase designs
- Patented fan canopy
- Vertical shaft up only
- Double sealed ball bearing
- Open, air over
- Reversible
- 60 Hertz
- Totally enclosed
- Single speed
- 48 Frame
- UL recognized



Item ID	H.P.	Volts	RPM	Amps @		Rotation	Shaft Dim. (In.)	Length Less		Capacitor Required	Replaces	Notes
				230V	460V			Shaft (In.)	Frame			
<b>Century Single Phase</b>												
FC1046F	0.4	200-230/460	1075	3.20	1.60	Reversible	1/2" Flat x 3 9/16	5 5/16	56	5MFD/370V	GE 03945	511
FC1066F	0.6	200-230/460	1075	4.00	2.00	Reversible	1/2" Flat x 3 9/16	6 15/16	56	7.5MFD/370V	GE 03946	511
FC1086F	0.8	200-230/460	1075	4.60	2.30	Reversible	1/2" Flat x 3 9/16	8 13/16	56	20MFD/370V	GE 03197	352, 511
FC1086AF	0.8	200-230/460	1075	4.60	2.30	Reversible	5/8" Flat & Key x 3 9/16	8 13/16	56	20MFD/370V	GE 03198	511
FC1106F	1	200-230/460	1075	6.40	3.20	Reversible	5/8" Flat & Key x 4 1/16	9 9/16	56	25MFD/370V	GE 03199	403, 511
FC1156F	1 1/2	200-230/460	1075	7.00	3.50	Reversible	5/8" Flat & Key x 4 1/16	10 1/6	56	25MFD/370V		403
<b>Century Three Phase</b>												
FC3056F	1/2	200-230/460	1140	3.00	1.50	Reversible	1/2" Flat x 3 9/16	6 15/16	56	—	GE K1403	
FC3076F	3/4	200-230/460	1140	4.00	2.00	Reversible	5/8" Flat & Key x 4 1/16	9 1/16	56	—	GE K1404	
FC3106F	1	200-230/460	1140	5.60	2.80	Reversible	5/8" Flat & Key x 4 1/16	9 9/16	56	—		
FC3156F	1 1/2	200-230/460	1140	5.80	2.90	Reversible	5/8" Flat & Key x 4 1/16	9 9/16	56	—		

### Notes:

352. Includes 5/8" adapter and key

403. All 1 HP and 1 1/2 HP Motor supplied with conversion kit allowing motor to be used in most 56 frame applications

511. Suitable for use with some solid state speed control devices

## 56 Frame Three Phase Commercial Condenser Fan Motors

### Features

- Class B moisture resistant insulation
- 5/8 inch diameter shaft with keyway and flat
- Double sealed ball bearings
- 1.0 service factor
- Automatic overload
- 60°C ambient
- Single speed
- 60 Hertz
- Three phase
- Air over



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		Frame	Enclosure	Mounting	Notes
							Shaft (In.)	Frame				
<b>Century</b>												
H567	3/4	460/200-230	1140	1.50/2.80-3.00	Reversible	5/8 x 6	10 3/8	56	56	Open Shaft End	Belly Band	
H686	1	460/200-230	850	2.00/4.40-4.00	Reversible	5/8 x 4 7/8	9 3/8	56	56	Open Shaft End	Belly Band	319
H667	1	460/200-230	1140	2.60/5.30-5.20	Reversible	5/8 x 6	10 7/8	56	56	Open Shaft End	Belly Band	
H767	1 1/2	460/200-230	1140	3.00/5.80-6.00	Reversible	5/8 X 6	10 7/8	56	56	Open Shaft End	Belly Band	407, 520

### Notes:

319. No keyway, double flat

407. 70°C ambient

520. 1.15 service factor

## Commercial, PSC, Open Air Over, Belly Band, Shaft Up

### Application

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
- 60°C ambient (as noted)
- Reversible rotation
- Ball bearings
- UL recognized and CSA certified
- Capacitor not included



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
X446	0.6	1075	200-230/460	48Y	048A1101643	7.5MFD / 440V	3.0-3.6/1.8	20	8 1/4	1/2 x 4	7.82	
X447	0.8	1075	200-230/460	48Y	048A1101642	20MFD / 370V	5.0-4.4/2.2	27	10 1/16	1/2 x 4	9.69	45
X448	1	1075	200-230/460	56Y	056A1105314	30MFD / 370V	6.0-5.2/2.6	33	11	1/2 x 4	10.47	45
P195	1	1075	200-230/460	48Y	5KCP39SNB482S	12.5MFD / 440V	5.6/2.8	21	12 1/4	5/8 X 3 1/2 w/key/flat	12.37	

Notes:  
45. 60° C ambient

## Shaft Up with Fan Canopy / Rainshield



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K1404	3/4	1140	200-230/460	48Y	5K38SN267S	3.3-3.8/1.9	24	8.95	5/8 Keyed X 4.02	10.78	46

Notes:  
46. 65° C ambient

## PSC, Resilient Base, Shaft Up or Horizontal

### Application

Condenser fans, installed outdoors. These motors need to be mounted within the airflow of the fan for proper cooling.

### Features

- Frame and shaft end bracket enclosed
- Automatic reset thermal protector
- Ball bearings
- UL recognized and CSA certified
- Reversible rotation
- Capacitor included



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
X431	1/2	1075	208-230/460	48YZ	048A1101461	3.0-3.0/1.5	19	7	1/2 x 4 1/2	6.94

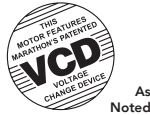
## Three Phase, Open Air Over, Belly Band/Resilient Ring

### Application

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, Climatrol 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
- 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, see Accessories section (except X524 - horizontal only)
- UL recognized and CSA certified
- External shaft slinger on all, internal slinger on 5K models



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
X500	1/2	1140	200-230/460	56Y	056T1105300	2.4-2.7/1.35	21	9.00	5/8x5	9.06	VC
X501	3/4	1140	200-230/460	56Y	056T1105301	3.1-3.2/1.6	25	9.50	5/8x5	9.56	VC
X502	1	1140	200-230/460	56Y	056T1105302	4.0-4.2/2.1	29	10.00	5/8x5	10.06	VC
X522	1	1140	575	56Y	056T1105308	1.7	30	10.00	5/8x5	10.06	70
X507	1	850	200-230/460	56Y	056T805302	5.3-5.3/2.6	46	12.00	5/8x5	12.06	VC
X527	1	850	575	56Y	056T805304	2.1	46	12.00	5/8x5	12.06	70
X503	1 1/2	1140	200-230/460	56Y	56T1105303	5.5-5.4/2.7	35	11.00	5/8 x 5	11.06	VC
X524	1 1/2	1140	575	56Y	056T1105307	2.2	37	11.00	5/8x5	10.68	73
X530	1 1/2	850	208-230/460	56Y	056T805307	7.5-6.8/3.4	47	11.25	5/8x5	12.06	VC
X509	2	1140	208-230/460	56Y	56T1105304	7.2-6.8/3.4	49	12.00	5/8 x 5	12.06	VC
X526	2	1140	575	56Y	56T1105309	2.7	45	11.63	5/8 x 5	12.06	73

Notes:  
70. Not Nameplated 50 hz

73. No hubs  
VC - Voltage Change Device feature for quick voltage changes

## TechTip >>>>

from Packard Academy

It is not uncommon to see commercial condenser fan motors in which the frame is open to some degree. When mounted in the condensing unit if the top side of the motor is open a rainshield may be attached to prevent rain from entering the motor. Some rainshields may be identified as fan canopies. This indicates that not only will the canopy shield against rain but that it also is designed with blades that actually act as a fan when the motor is operating, providing additional air for cooling the motor.



### DION'S TIP

Dion Rohrer  
Product Development Manager



## Evaporative Cooler Motors

### Applications

- Belt driven evaporative coolers

### Features

- Brass current carrying terminal board parts
- Class B insulation
- Continuous oil filtration
- Electro-zinc plated governor parts, dust caps, terminal board cover
- Heavy magnet wire insulation
- High viscosity encapsulating varnish
- Moisture resistance terminal board
- No ventilation openings in the top portion of the frame
- 7 1/2" ring to ring dimension (Split Phase)
- 60 Hertz
- Automatic overload
- NEMA 56Z Frame
- 1.0 Service Factor



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure
<b>Century Split Phase</b>											
VB2034	1/3	115	1725	6.50	1	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
SVB2034	1/3-1/10	115	1725/1140	6.50/3.60	2	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
VB2054	1/2	115	1725	7.80	1	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
SVB2054	1/2-1/6	115	1725/1140	8.50/4.10	2	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
SVB2054H	1/2-1/6	230	1725/1140	4.40	1	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
VB2074	3/4	115	1725	10.60	1	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
SVB2074	3/4-1/4	115	1725/1140	10.50/5.00	2	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
SVB2074H	3/4-1/4	230	1725/1140	5.60/2.80	2	CCWLE	1/2 x 1 5/8	9.45	Split Phase	Ball	Open drip proof
<b>Century Capacitor Start</b>											
SV2104L	1-1/3	115	1725/1140	12.70/7.60	1	CCWLE	1/2 X 1 5/8	12.1	Capacitor Start	Sleeve	Open
SV2104HL	1-1/3	230	1725/1140	6.40/3.90	2	CCWLE	1/2 X 1 5/8	12.1	Capacitor Start	Sleeve	Open

## 48/56 Frame, Split Phase Belt Drive Fan And Blower Motors

### Applications

- Centrifugal pumps, belt drive furnace blowers, fans

### Features

- 40°C ambient
- Continuous duty
- 5/8 inch shaft adapter and key included
- Resilient base has 48 and 56 Frame mounting holes
- Full service factor ratings
- Class B insulation
- Electrically reversible
- Open drip proof enclosure
- 5 5/8 inch diameter
- Split phase
- Automatic overload
- 60 Hertz
- Single speed



Item ID	H.P.	Volts	RPM	Amps	Rotation	Service Factor	Shaft Dim. (In.)	Length Less Shaft (In.)	Frame	Bearings	Replaces
<b>Packard - Single Voltage</b>											
<b>NEW</b> 45016	1/6	115	1725	3.60	Rev.	1.35	1/2 x 1 7/8	7 1/2	48/56	Sleeve	Mars 10301 US Motors 3615
45014	1/4	115	1725	4.80	Rev.	1.35	1/2 x 1 7/8	6 3/4	48/56	Sleeve	Emerson 8000 GE 4701 Marathon B206
45013	1/3	115	1725	6.60	Rev.	1.35	1/2 x 1 7/8	6 3/4	48/56	Sleeve	Emerson 8100 GE 4706 Marathon B207
45012	1/2	115	1725	8.30	Rev.	1.25	1/2 x 1 7/8	7 3/4	48/56	Sleeve	Emerson 8200 GE 4708 Marathon B208
<b>Packard - Dual Voltage</b>											
45014D	1/4	115/208-230	1725	4.60/2.20-2.10	Rev.	1.30	1/2 x 1 7/8	6.75	48/56	Ball	Marathon B303
45013D	1/3	115/208-230	1725	6.60/3.40-3.10	Rev.	1.35	1/2 x 1 7/8	6.75	48/56	Ball	Marathon B305
45012D	1/2	115/208-230	1725	7.60/3.70-3.80	Rev.	1.25	1/2 x 1 7/8	8.58	48/56	Ball	Marathon B307
45230D	3/4	115/208-230	1725	11.60/5.90-5.80	Rev.	1.25	5/8 x 1 7/8	10.55	56H	Ball	Marathon 56S17D2060

## Split Phase Resilient Base Motors

### Features

- Continuous duty
- Resilient base mounting
- Reversible rotation
- 40°C ambient
- Open and open drip proof enclosure
- Automatic overload
- Split phase
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	Full Load Amps	Service Factor	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Enclosure	Dia. (In.)	Frame	Notes
<b>Century Single Voltage</b>												
GF2014	1/6	115	1725	4.90	1.35	1/2 x 1 5/8	7.30	Sleeve	Open	5 5/8	48/56	3, 266
GF2024	1/4	115	1725	5.40	1.35	1/2 x 1 5/8	7.50	Sleeve	Open Drip Proof	5 5/8	48/56	3, 266
GF2034	1/3	115	1725	6.80	1.35	1/2 x 1 5/8	7.80	Sleeve	Open	5 5/8	48/56	3, 266
GF2054	1/2	115	1725	8.00	1.25	1/2 x 1 5/8	8.30	Sleeve	Open Drip Proof	5 5/8	48/56	3, 266
GK2074	3/4	115	1725	12.20	1.25	5/8 x 1 7/8	8.80	Sleeve	Open	6 1/2	56	
<b>Century Dual Voltage</b>												
GF2024D	1/4	115/208-230	1725	5.20/2.60	1.35	1/2 x 1 5/8	7 1/2	Sleeve	Open	5 5/8	48/56	266
GF2034D	1/3	115/230	1725	6.40/3.20	1.35	1/2 x 1 5/8	7 1/3	Sleeve	Open	5 5/8	48/56	196, 266
GF2054D	1/2	115/208-230	1725	8.20/4.10	1.25	1/2 x 1 5/8	8 1/3	Sleeve	Open	5 5/8	48/56	266
F681	3/4	230/115	1725	5.20/10.40	1.25	5/8 x 1 7/8	9.50	Sleeve	Open Drip Proof	6 1/2	56	
GK2104DV1	1	115/230	1725	15.60/7.80	1.25	5/8 x 1 7/8	10.30	Sleeve	Open	6 1/2	56	

**Notes:**

3. 5/8" Shaft adapter and key Included  
196. Suitable for 208 volts @ 1.0 service factor

266. 48/56 FR = 1/2" X 1 1/2" shaft with 5/8" shaft adapter - 48/56 slotted 3" height base

## Capacitor Start Resilient Base Motors

### Features

- Capacitor start, dual voltage
- Single speed
- Resilient base mounting
- Reversible rotation
- Automatic overload
- 56 Frame
- 60 Hertz
- Single phase
- Class B insulation



Item ID	H.P.	Volts	RPM	Full Load Amps	Service Factor	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Dia. (In.)	Enclosure	Notes
<b>Century</b>											
C412V1	1/2	115/208-230	1725	9.00/4.00-4.50	1.25	5/8 x 2	9 1/8	Ball	6 1/2	Open Drip Proof	205
C426V1	3/4	115/208-230	1725	11.00/5.40-5.50	1.25	5/8 x 2	9 1/8	Ball	6 1/2	Open Drip Proof	205
C523V1	1	115/208-230	1725	12.60/6.20-6.30	1.15	5/8 x 2 3/8	9 1/2	Ball	6 1/2	Open Drip Proof	205, 510
C692	1	115/208-230	1725	6.2-6.3/12.6	1.25	5/8 Keyed x 1-7/8	9.5	Sleeve	6 1/2	Open Drip Proof	
C621	1 1/2	115/208-230	1725	7.8-7.5/15.0	1.2	5/8 Keyed x 1-7/8	10.8	Ball	6 1/2	Open Drip Proof	



Item ID	H.P.	Volts	RPM	FL amps	Service Factor	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Frame	ENCL.	Notes
<b>Century</b>											
RB1104AV1	1	115/208-230	1725/1425	14.4/6.6-7.2	1.25	5/8 Keyed x 1-7/8	9.8	Sleeve	56	Open	60/50 HZ

## Capacitor Start Capacitor Run Resilient Base Motors

### Features

- Capacitor start, dual voltage
- Single speed
- Reversible rotation
- Automatic overload
- Resilient base mounting
- Class B insulation
- 56 Frame
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	FL amps	Service Factor	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Frame	ENCL.	Notes
<b>Century</b>											
RB1154AV1	1 1/2	115/208-230	1725/1425	19.2/9.6	1.2	5/8" Keyed x 1-7/8"	10.8	Ball	56H	Open	60/50 HZ

**Notes:**

205. Extended thru bolts, shaft end only

510. 5/8" keyed shaft - 2.31" long

## Split Phase, Drip proof, Resilient Base (Single & Two-Speed)

### Features

- Ball bearings (except as noted)
- Service Factor, as noted
- Thermal protection, as noted
- Reversible rotation
- 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



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
D107M	1/6	1725	115	48Y	Auto	48S17D2017	3.6	12	1/2 X 1 1/2	7.49	CF, 20
4304	1/6	1725	115	48	None	5KH39QN5543	3.9	12	1/2 X 1 1/2	7.43	20
HG156	1/6	1725	115	48Z	None	5KH32DN3085	3.9	12	1/2 X 1 7/8	7.44	8, 20
B300	1/6	1800	115	48YZ	None	48S17D2052	3.6	13	1/2 X 1 7/8	7.44	CF, 20, 31, 52
B322	1/6	1800	115	48YZ	Auto	48S17D2053	3.6	13	1/2 X 1 7/8	7.44	CF, 20, 31, 52
HG695	1/6	1140	115	48	None	5KH37PNA233	4	24	1/2 X 1 1/2	8.9	20
D180M	1/4	1800/1200	115	48Y	Auto	48S17D7204	4.1/2.5	18	1/2 X 1 1/2	8.56	20
H172	1/4	1725/1140	115	48Z	Auto	5KH37PN33X	4.2/2.7	21	1/2 X 1 7/8	8.81	8, 20, 54
H171	1/4	1725/1140	115	48Z	None	5KH37PN33	4.2/2.7	21	1/2 X 1 7/8	8.81	8, 20, 54
4305	1/4	1725	115	48	Auto	5KH39QN5511X	5.1	13	1/2 X 1 1/2	7.43	20
4355	1/4	1725	115	48	None	5KH39QN5225	5.1	13	1/2 X 1 1/2	7.43	20, 47
4701	1/4	1725	115	48Y	Auto	5KH39QN5512T	5.1	12	1/2 X 1 1/2	7.69	CF, 20, 53
B206	1/4	1800	115	48YZ	Auto	48S17D2107	5	14	1/2 X 1 7/8	7.74	8, 20, 26
H160	1/4	1725	115	48Z	None	5KH32FN3083	5.1	14	1/2 X 1 7/8	7.42	CF, 20, 31, 52
B302	1/4	1800	115	48YZ	None	48S17D2054	5	14	1/2 X 1 7/8	7.69	9, 20, 28
4680	1/4	1725	115/208-230	48Z	Auto	5KH32FN3120T	5.0/2.5	13	1/2 X 2 1/4	7.69	8, 20
HG161	1/4	1725	115	48Z	Auto	5KH32FN3083X	5.1	14	1/2 X 1 7/8	7.44	CF, 20, 31, 52
B303	1/4	1800	115	48YZ	Auto	48S17D2055	5	14	1/2 X 1 7/8	7.69	20, 32, 53
B201	1/4	1800	115	56Z	Auto	56S17D2047	5	14	1/2 X 1 7/8	7.59	8, 20, 26
4306	1/4	1725	230	48	Auto	5KH39QN5537X	2.5	13	1/2 X 1 1/2	7.43	20
H162	1/4	1140	115	56	None	5KH46MN6053	5.6	27	5/8 X 1 7/8	9	19
D143M	1/3	1800	115	48	Auto	48S17D2086	6.1	15	1/2 X 1 1/2	7.84	20
B306	1/2	1725	115	48Y	None	48S17D2058	7.5	18	1/2 x 1 7/8	8.44	CF, 19, 31, 52

### Notes:

- 8. Shaft extension 1-7/8" long by 1/2" diameter
- 9. Shaft extension 2-1/4" long by 1/2" diameter
- 19. 1.25 Service Factor
- 20. 1.35 Service Factor
- 26. 5/8" shaft adapter included
- 28. Steel Endshields
- 31. 5/8" thru-bolts, shaft end

- 32. 3/4" Thru bolts, shaft end
- 47. Connected for CCW rotation (U.S. standard) facing opposite shaft end. Reversible by reconnection of leads
- 52. 1/2" x 1-7/8" Shaft with 1-5/8" Flat
- 53. 1/2" Shaft with 5/8" adapter and Key
- 54. 30 minute duty cycle, not rated for continuous duty
- CF - Consult Factory for Accessory Kit and/or Modification Selection



The most reliable and efficient residential and commercial motors supplied by Packard.

## Permanent Split Capacitor Oil Burner Motor



### Features

- Direct replacement for Beckett 21805U as well as a suitable replacement for many other oil burner motors
- Easy installation with new flange style
- 18 1/2 Inch lead sets
- Continuous duty
- Automatic thermal protection
- 60 Hertz
- Class F insulation
- 40°C Ambient
- UL recognized
- Open shaft end bracket
- Totally enclosed
- Ball bearing

### Replaces

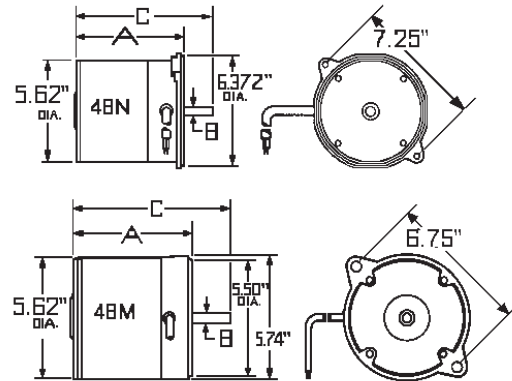
- Beckett 21805U
- Emerson 3083
- Emerson 3248
- Emerson 3274
- GE 4777
- Marathon 0700
- Nordyne 621945
- Rotom R21805U

Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Frame	Mounting	Flange Material	Flange Type	Capacitor Included
<b>Century</b>													
<b>OBK6002V1</b>	1/7	115	3450	1.80	1	CWOSE	1/2 x 1 7/8	PSC	48M	Flange	Aluminum	Ventilated	20MFD/250V

## Split Phase Oil Burner Motors

### Features

- Continuous duty
- Totally enclosed
- 40°C Ambient
- 5 5/8 Inch diameter
- Split phase
- Manual reset overload
- Single speed
- 60 Hertz
- Single phase



Item ID	H.P.	Volts	RPM	Approximate Full Load Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Frame	Mounting
<b>Century</b>										
<b>EL2004V1</b>	1/8	115	1725	2.50	Reversible	1/2 x 1 13/16	5 1/4	Sleeve	48N	N Flange
<b>XEL2014</b>	1/6	115	1725	3.20	Reversible	1/2 x 1 13/16	5 3/4	Sleeve	48N	N Flange
<b>EL2014V1</b>	1/6	115	1725	3.20	Reversible	1/2 x 1 13/16	5 3/4	Sleeve	48N	N Flange
<b>EL2022</b>	1/4	115	3450	3.40	Reversible	1/2 x 1 13/16	6 3/4	Sleeve	48N	N Flange
<b>EL2024</b>	1/4	115	1725	3.70	Reversible	1/2 x 1 13/16	6 3/4	Sleeve	48N	N Flange



Item ID	H.P.	Volts	RPM	Approximate Full Load Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Bearings	Frame	Mounting
<b>Century</b>										
<b>EL2002</b>	1/7	115	3450	2.50	Reversible	1/2 x 1 13/16	5 1/2	Sleeve	48M	M Flange
<b>EL2002V1</b>	1/7	115	3450	2.50	CCWOSE	1/2 x 1 13/16	5 1/2	Sleeve	48M	M Flange
<b>EL2012</b>	1/6	115	3450	2.70	Reversible	1/2 x 1 13/16	6	Sleeve	48M	M Flange



## Split Phase and Capacitor Start, NEMA 48M and 48N Flange Mount

### Application

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
- Reversible rotation
- Two-bolt, NEMA N- or M-Flange direct
- Catalog numbers 0010 and 0011 have drip proof enclosures
- 1.0 Service Factor



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
0005	1/8	3450	115	48N	Manual	48S34S2004	2.4	9	1/2 X 1 3/4	5.34	3, 61
0600	1/8	1725	115	48N	Manual	48S17T286	2.8	11	1/2 x 1 7/8	5.71	CF, N, 3
0601	1/6	1725	115	48N	Manual	48S17T290	2.7	12	1/2 X 2	5.6	CF, N, 3
0012	1/5	3450	115/230	48N	Manual	48C34S24	3.0/1.5	14	1/2 X 1 3/4	6.6	2, 61
0004	1/4	3450	115	48N	Manual	48S34S2003	4.2	13	1/2 X 2	6.13	CF, 3
0010	1/3	3450	115/208-230	48N	Manual	48C34D2024	5.6/2.7-2.8	14	1/2 X 1 3/4	8.59	2
0003	1/3	1725	115	48N	Manual	48S17S24	5	17	1/2 X 1 3/4	6.59	3
0011	1/2	3450	115/208-230	48N	Manual	48C34D2028	7.4/3.5-3.7	17	1/2 X 1 3/4	9.09	2



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
0100	1/7	3450	115	48M	Manual	48S34S361	2.8	11	1 7/8 x 1/2 x 1	5.49	CF, 3
0102	1/6	3450	115	48M	Manual	48S34S2005	3	11	1/2 X 1 7/8	5.37	3

## PSC, NEMA 48M Flange Mount



### Application

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

Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
0701	1/7	3450	115	48M	Auto	48A34SU1001	1.7	8	1/2 X 2	4.29	3, 61

### Notes:

2. Capacitor Start Induction Run design

3. Split Phase design

61. 24" long #18 SO 2-conductor cord out shell at 11 o'clock position

N - Totally Enclosed, Non-Ventilated

CF - Consult Factory for Accessory Kit and/or Modification Selection

## Split Phase, Drip Proof, Resilient Ring

### Application

Direct replacements for Taco hot water circulators.

### Features

- Quiet sleeve bearing construction
- 48Y frame with 1/2" diameter shaft, 1" long without flat
- 1.40 Service Factor (except as noted)
- Fixed CCW rotation, viewed opposite shaft end
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	Service Factor	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>Marathon</b>											
4722	1/12	1800	115	48Y	5KH39QN5558T	1.40	2.1	12	1/2 x 1	6.29	Taco 110-388, Marathon 48S17D1027, 48S17D2102
4404	1/8	1800	115	48Y	5KH39QN5550X	1.40	2.6	11	1/2 x 1 1/2	7.43	GE No. 5KH32EG129GA, Marathon No. 48S17D1084

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## Hot Water Circulator Pump Motors

### Features

- Replacement motors for use on hot water circulator pumps by Bell and Gossett, Armstrong, Taco and others
- Sleeve and ball bearings
- Cushion rings and base included
- For use with adjustable base
- Special red paint
- Open drip proof
- Automatic overload
- 60 Hertz
- Single phase
- Capacitor included



Item ID	H.P.	Volts	RPM	Full Load Amps	Service Factor	Rot.	Bearings	Hub to Hub	Shaft Dimension (In.)	Frame	Mouting Type	Replaces
<b>Century</b>												
<b>OBG2004 *</b>	1/8	115	1725	3.10	1.00	REV.	Sleeve	—	1/2 x 5/8 set screw	48Y	Base Included	Bell & Gossett

### Notes:

\* Suitable replacement for 1/12 HP and 1/10 HP



Item ID	H.P.	Volts	RPM	Full Load Amps	Service Factor	Rot.	Bearings	Hub to Hub	Shaft Dimension (In.)	Frame	Mouting Type	Replaces
<b>Century</b>												
<b>HW20084L</b>	1/12	115	1725	2.70	1.00	CCWLE	Sleeve	7 5/8	1/2 x 1/2 flat	48YZ	Cushion Rings	Armstrong Bell & Gossett
<b>OTA2004</b>	1/12	115	1725	2.90	1.00	REV.	Sleeve	6 1/8	1/2 x 7/8 flat	48Y	Cushion Rings	Taco
<b>HW2014L</b>	1/6	115	1725	3.60	1.35	CWLE	Sleeve	7 5/8	1/2 x 5/8 flat	48YZ	Cushion Rings	Armstrong Bell & Gossett
<b>HW2014V1L</b>	1/6	115	1725	3.60	1.00	CWLE	Sleeve	7 7/8	1/2 x 5/8 flat	48YZ	Cushion Rings	Armstrong Bell & Gossett
<b>C240</b>	1/2	115/230	1725	7.20/3.60	1.25	REV.	Sleeve	8 7/8	5/8 x 1 7/8 flat	56Y	Cushion Rings	Taco
<b>C242</b>	1/2	115/230	1725	7.20/3.60	1.25	REV.	Sleeve	9 3/4	5/8 x 1 3/8 flat	56Y	Cushion Rings	Armstrong
<b>C241</b>	1/2	115/230	1725	9.60/4.80	1.25	CWLE	Sleeve	9	5/8 x 1 1/8 flat	56Y	Cushion Rings	Bell & Gossett
<b>C243</b>	3/4	115/230	1725	11.80/5.90	1.25	CWLE	Sleeve	9	5/8 x 1 1/8 flat	56Y	Cushion Rings	Bell & Gossett
<b>C233</b>	3/4	115/230	1725	10.40/5.20	1.30	REV.	Sleeve	9 3/4	5/8 x 1 3/8 flat	56Y	Cushion Rings	Armstrong
<b>C244</b>	3/4	115/230	1725	10.40/5.20	1.30	REV.	Sleeve	9 7/16	5/8 x 1 7/8 flat	56Y	Cushion Rings	Taco
<b>C247</b>	1	230/115	1725	6.50/13.00	1.25	REV.	Sleeve	9 5/8	5/8 x 1 7/8 flat	56Y	Cushion Rings	Taco
<b>C248</b>	1 1/2	230/115	1725	7.50/15.00	1.20	REV.	Ball	10 1/5	5/8 x 1 7/8 flat	56Y	Cushion Rings	Taco

## Three Phase Hot Water Circulator Pump Motors

### Features

- Cushion ring mounting
- Bell and Gossett, Armstrong and Taco replacement motors
- Sleeve and ball bearings
- No base
- Three phase
- Special red paint
- Open drip proof
- No protector



Item ID	H.P.	Volts	RPM	Full Load Amps	Service Factor	Bearings	Hub to Hub	Shaft Dim. (In.)	Frame	Hertz	Replaces
<b>Century</b>											
<b>H982V1</b>	3/4	208-230/460	1800	2.50-2.60/1.30	1.30	Sleeve	9.43	5/8 x 1 7/8	56Y	60	Taco
<b>H986L</b>	1 1/2	208-230/460	1800	4.80-5.00/2.50	1.15	Sleeve	9.62	5/8 x 1 3/8	56Y	60	3N826 Armstrong Bell & Gossett

## Square Flange Pool Pump Motors

### Features

- Used on many Sta-Rite, Red Jacket, Pac Fab, American Products and Sears jet and pool pumps
- High and low service factors
- Open drip proof enclosure
- Sealed ball bearings
- CCW pump end rotation
- 303 Stainless steel threaded shaft
- 50°C ambient
- Square flange mounting
- Capacitor start
- 3450 RPM
- Automatic overload
- 60 Hertz
- Single speed
- Single phase



Item ID	H.P.	Volts	Max Amps	Service Factor	Frame	Notes
<b>Century Square Flange/High Service Factor (Full Rated)</b>						
<b>SQ1032</b>	1/3	115/230	9.90/5.00	1.95	48Y	
<b>SQ1052</b>	1/2	115/230	13.40/6.70	1.90	48Y	
<b>SQ1072</b>	3/4	115/230	15.30/7.60	1.65	48Y	
<b>QC1072</b>	3/4	115/230	12.60/6.30	1.65	48Y	199
<b>SQ1102</b>	1	115/230	19.20/9.60	1.65	48Y	
<b>QC1102</b>	1	115/208-230	16.00/8.00	1.65	48Y	199
<b>SQ1152</b>	1 1/2	230	10.40	1.47	48Y	199
<b>SQ1202</b>	2	230	11.20	1.30	48Y	199
<b>SQ1302V1</b>	3	230	15.40	1.15	56Y	199
<b>Century Square Flange / Low Service Factor (Up-Rated)</b>						
<b>USQ1052</b>	1/2	115/230	9.90/5.00	1.30	48Y	
<b>USQ1072</b>	3/4	115/230	13.40/6.70	1.27	48Y	
<b>USQ1102</b>	1	115/230	15.30/7.60	1.25	48Y	
<b>USQ1152</b>	1 1/2	115/230	19.20/9.60	1.10	48Y	
<b>USQ1202</b>	2	230	10.40	1.10	48Y	199
<b>USQ1252</b>	2 1/2	230	11.20	1.00	48Y	199

### Notes:

199. Energy efficient capacitor start, capacitor run Conservationist motor

## NEMA C Face Pool Pump Motors

Total output (HP x service factor) of replacement motor must equal or exceed motor being replaced

### Features

- Sealed ball bearings
- Sealed switch design
- 50°C ambient
- 3450 RPM
- Not reversible
- Capacitor start and capacitor start-capacitor run
- NEMA "56C" face mount
- 303 Stainless shaft (56J (threaded shaft) and 56C (keyed shaft))
- 304 Ball bearing on shaft end
- High service factor (full rated)
- Standard efficiency and high efficiency design (conservationist)
- Open drip proof enclosure
- Automatic overload
- CCWPE rotation
- "1081" Design
- 60 Hertz
- Single speed
- Single phase



Item ID	H.P.	Volts	Max Amps	Service Factor	Frame	Notes
<b>Century NEMA C Face Pool Filter Motors</b>						
<b>SK1052</b>	1/2	115/230	10.60/5.30	1.60	56C	
<b>ST1052</b>	1/2	115/230	11.00/5.50	1.60	56J	
<b>SK1072</b>	3/4	115/230	14.60/7.30	1.50	56C	
<b>CK1072</b>	3/4	115/230	11.00/5.50	1.50	56C	199
<b>ST1072</b>	3/4	115/230	15.00/7.50	1.50	56J	
<b>SK1102</b>	1	115/230	17.00/8.50	1.50	56C	
<b>ST1102</b>	1	115/230	18.60/9.30	1.50	56J	
<b>CT1102</b>	1	115/230	13.60/6.80	1.40	56J	199
<b>SK1152</b>	1 1/2	115/230	19.40/9.70	1.30	56C	199
<b>ST1152</b>	1 1/2	115/208-230	19.60/10.40-9.80	1.50	56J	199
<b>ST1202</b>	2	208-230	12.60-11.40	1.30	56J	199
<b>ST1302V1</b>	3	208-230	14.50-13.80	1.15	56J	199

### Notes:

199. Energy efficient capacitor start, capacitor run Conservationist motor

## Split Phase and Capacitor Start, Drip Proof, NEMA 56C, C-Face Footless

### Features

- Ball bearings
- Manual or automatic reset thermal
- Split Phase and capacitor start designs
- NEMA 56C direct mounting
- NEMA Jet Pump Service Factors
- Moderate starting torque
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
0200	1/4	3600	115	56C	Man	56S34D2000	4.3	14	5/8 X 1 7/8	8.07	3,15,115
0211	1/3	3450	115/208-230	56C	Man	56C34D2109	5.6/2.7-2.8	14	5/8 X 2 1/16	8.38	2, 115
0210	1/3	3600	115/208-230	56C	Auto	56C34D2114	5.6/2.7-2.8	14	5/8 X 1 7/8	8.32	2,115
0212	1/2	3600	115/208-230	56C	Auto	56C34D2098	7.4/3.5-3.7	17	5/8 X 1 7/8	8.57	2,114
0213	1/2	3600	115/208-230	56C	Man	56C34D2099	7.4/3.5-3.7	16	5/8 X 1 7/8	8.57	2,114
0214	3/4	3600	115/208-230	56C	Auto	56C34D2104	9.8/4.8-4.9	20	5/8 X 1 7/8	9.06	2,113
0215	3/4	3600	115/208-230	56C	Man	56C34D2112	9.8/4.8-4.9	18	5/8 X 1 7/8	9.06	2,113
0217	1	3450	115/208-230	56C	Man	56C34D2105	12.0/6.2-6.0	24	5/8 X 2 1/16	9.88	2, 112
0231	1 1/2	3600	115/208-230	56C	Man	56B34D2028	13.4/7.4-6.7	25	5/8 X 1 7/8	10.09	1,111



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
J1025	1/3	3600	115/230	56C	Auto	5KC37FN71X	6.4/3.2	14	5/8 X 1 7/8	8.83	2,115
C330	1/2	3600	115/230	56C	Auto	5KC36JN268X	7.6/3.8	17	5/8 X 1 7/8	8.43	2,114
C332	3/4	3600	115/230	56C	Auto	5KC39NN50X	11.2/5.6	22	5/8 X 1 7/8	9.96	2,113
C334	1	3600	115/230	56C	Auto	5KC39RN44X	13.2/6.6	22	5/8 X 1 7/8	10.71	2,112
C336	1 1/2	3600	115/208-230	56C	Auto	5KC49NN2140X	18.4-9.8/9.2	27	5/8 X 1 7/8	9.5	1, 111
C338	2	3600	115/208-230	56C	Auto	5KC49TN2141X	21.2-11.5/10.6	38	5/8 X 1 7/8	11.34	1, 110

## Three Phase, Drip Proof, NEMA 56C, C-Face Footless

### Features

- Double sealed Ball bearings
- NEMA Jet Pump Service Factors
- NEMA 56C direct mounting
- Ball bearings
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K218	3/4	3600	208-230/460	56C	None	5K37MN37	2.6-2.6/1.3	17	5/8 X 1 7/8	8.83	68,113
K220M	1	3600	208-230/460	56C	None	5K38PN47	3.3-3.2/1.6	20	5/8 X 1 7/8	9.43	68, 112
K222	1 1/2	3600	208-230/460	56C	None	5K46KN2173	5.0-4.8/2.4	24	5/8 X 1 7/8	8.85	68, 111
K224	2	3600	208-230/460	56C	None	5K49NN2180	6.0-6.0/3.0	27	5/8 X 1 7/8	9.45	68, 110
K226	3	3600	208-230/460	56C	None	5K48TN2182	8.9-8.2/4.1	36	5/8 X 1 7/8	10.73	68, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
3. Split Phase design
15. Fixed CW Rotation, viewing opposite shaft (or lead end) of motor

18. 1.15 Service Factor
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower
110. 1.20 Service Factor
111. 1.30 Service Factor

112. 1.40 Service Factor
113. 1.50 Service Factor
114. 1.60 Service Factor
115. 1.75 Service Factor

## Single Phase, Drip proof, C-Face Footless, 56C/56J

### Features

- Double sealed Ball bearings, mechanically locked on shaft end
- Capacitor start/capacitor run design for higher efficiency, as noted
- Fixed CW rotation, viewed opposite shaft end
- Automatic reset thermal protector
- 56C = carbon steel shaft with key
- 56J = 416 stainless steel threaded shaft with slinger
- Drip cover not included, see Accessory section
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	Service Factor	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>G329</b>	1/3	3600	115/230	56J	5KC37FN65X	1.75	6.4/3.2	14	5/8 X 2 3/8	8.83	3
<b>G331</b>	1/2	3600	115/230	56J	5KC36JN269X	1.6	7.6/3.8	15	5/8 X 2 3/8	8.43	15
<b>G333M</b>	3/4	3600	115/230	56J	5KC39QN3219X	1.5	11.2/5.6	18	5/8 X 2 3/8	9.96	15
<b>G335M</b>	1	3600	115/230	56J	5KC39RN45X	1.4	13.2/6.6	22	5/8 X 2 3/8	10.75	15
<b>G337</b>	1 1/2	3600	115/230	56J	5KC49NN2167X	1.3	18.4/9.2	26	5/8 x 1 7/8	10.01	—
<b>G339M</b>	2	3600	115/208-230	56J	5KC49TN2170X	1.2	21.2/10.6	36	5/8 x 1 7/8	11.85	-
<b>G341</b>	3	3600	115/230	56J	5KCR48TN2174T	1.15	29.4/14.7	38	5/8 X 2 3/8	10.78	1, 15

## Three Phase, Drip proof, C-Face Footless, 56C/56J

### Features

- Service Factor, as noted
- Double sealed Ball bearings, mechanically locked on shaft end
- Continuous Duty
- Nameplated 60/50 hertz, 190/380 Volts at next lower HP, as noted
- 56C = carbon steel shaft with key
- 56J = 416 stainless steel threaded shaft with slinger
- UL recognized and CSA certified
- Drip cover not included, see Accessory section



Item ID	HP	RPM	Volts	Frame	Model No.	Service Factor	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>K217</b>	1/2	3600	208-230/460	56J	5K36JN56	1.6	2.0-2.0/1.0	16	5/8 X 2 3/8	8.43	48, 68
<b>K227</b>	3	3600	208-230/460	56J	5K48TN2181	1.15	8.9-8.2/4.1	38	5/8 X 2 3/8	10.73	48, 68

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage  
 3. Split Phase design  
 15. Fixed CW Rotation, viewing opposite shaft (or lead end) of motor

48. Connected for CW rotation (Canadian standard) facing opposite shaft end. Reversible by reconnection of leads  
 68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

## Three Phase, Totally Enclosed, C-Face Footless, 56C/56J

### Features

- Service Factor, as noted
- Double sealed Ball bearings, mechanically locked on shaft end
- Continuous Duty
- Nameplated 60/50 hertz, 190/380 Volts at next lower HP, as noted
- 56C = carbon steel shaft with key
- 56J = 416 stainless steel threaded shaft with slinger
- UL recognized, CSA certified, and CE mark
- Drip cover not included, see Accessories Section



Item ID	HP	RPM	Volts	Frame	Model No.	Service Factor	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K230	1/2	3600	200-230/460	56J	5K35JN47	1.6	2.1-2.0/1.0	17	5/8 X 2 3/8	9.05	18,82

## Split Phase, Drip proof, 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
- Reversible rotation
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
D181M	1/3	1800/1200	115	48Y	Auto	048S17D7205	5.3/2.9	20	1/2 X 1 1/2	8.81	20
H173	1/3	1725/1140	115	56	None	5KH46MN3025	5.7/3.2	24	5/8 X 1 7/8	9	20,31
H174	1/3	1725/1140	115	56	Auto	5KH46MN3025X	5.7/3.2	32	5/8 X 1 7/8	9	20,31
B703M	1/3	1800	115	48Y	Auto	048N17D14	3.2	17	1/2 X 1 1/2	8.34	20,74
HG700	1/3	1725	115	48Y	Auto	5KHC37NNA167T	3.7	24	1/2 X 1 1/2	8.39	ES, 20, 26, 47
B207	1/3	1800	115	48YZ	Auto	048S17D2108	5.5	15	1/2 X 1 7/8	7.74	CF, 20, 53
H164	1/3	1725	115	48Z	None	5KH32JN3128	6.2	15	1/2 X 1 7/8	7.44	8, 20
B304	1/3	1800	115	48YZ	None	048S17D2056	5.5	15	1/2 X 1 7/8	7.44	CF, 20, 31, 52
H165	1/3	1725	115	48Z	Auto	5KH32JN3128X	6.2	16	1/2 X 1 7/8	7.44	8, 20
B305	1/3	1800	115	48YZ	Auto	048S17D2057	5.5	15	1/2 X 1 7/8	7.44	CF, 20, 31, 52
B202	1/3	1800	115	56Z	Auto	56S17D2048	6.1	15	1/2 X 1 7/8	7.86	20, 32, 53
H167	1/3	1725	230	48Z	Auto	5KH35JN26X	3.3	16	1/2 X 1 7/8	8.07	8, 20
4309	1/3	1725	230	48	Auto	5KH39QN9514X	3.1	15	1/2 X 1 1/2	7.68	20
4682	1/3	1725	115/208-230	56Z	Auto	5KH35JN3132T	6.2/3.1	16	5/8 X 2 1/4	8.01	9, 20, 26, 72
H168	1/3	1140	115/230	56	None	5KH49PN6055	7.0/3.5	27	5/8 X 1 7/8	9.6	20
H175	1/2	1725/1140	115	56	None	5KH49PN3026	8.0/4.2	31	5/8 X 1 7/8	9.6	19, 31
H176	1/2	1725/1140	115	56	Auto	5KH49PN3026X	8.0/4.2	31	5/8 X 1 7/8	9.6	19, 31
D162	1/2	1800	115	48Y	Auto	048S17D2087	7.2	19	1/2 X 1 1/2	8.84	19
B208	1/2	1800	115	48YZ	Auto	048S17D2109	7.5	20	1/2 X 1 7/8	8.55	CF, 19, 53
B307	1/2	1800	115	48YZ	Auto	048S17D2059	7.5	18	1/2 X 1 7/8	8.44	CF, 19, 31, 52
4392	1/2	1725	115	56	Auto	5KH39QN9405X	7.9	21	5/8 X 1 7/8	8.44	19
D149	1/2	1800	115	56	Auto	056S17D2050	7.2	19	5/8 X 1 7/8	8.59	19
H286	1/2	1725	115	56	None	5KH36MN3106	9.3	18	5/8 X 1 7/8	8.44	19
B200	1/2	1800	115	56Z	Auto	056S17D2049	7.2	19	1/2 X 1 7/8	8.59	19, 32, 53
B100	1/2	1800	115/230	56	Auto	056S17D2064	7.2/3.6	20	5/8 X 1 7/8	8.59	19
4684	1/2	1725	115/230	56Z	Auto	5KH36MN3127T	8.9/4.5	18	5/8 X 2 1/4	8.44	9, 26
4759	1/2	1725	230	56Z	Auto	5KH39QN9697T	4	17	1/2 X 1 1/2	8.49	19
D163M	1/2	1800	230	48Y	Auto	048S17D2088	3.6	19	1/2 X 1 1/2	8.59	19
H298M	1/2	1140	115/230	56	Auto	5KH48UN6054X	9.0/4.5	32	5/8 X 1 7/8	10.88	19
4338	3/4	1725	115	56	Auto	5KH39QN9541T	11.4	21	5/8 X 1 7/8	8.84	18

### Notes:

- 8. Shaft extension 1-7/8" long by 1/2" diameter
- 9. Shaft extension 2-1/4" long by 1/2" diameter
- 18. 1.15 Service Factor
- 19. 1.25 Service Factor
- 20. 1.35 Service Factor
- 26. 5/8" shaft adapter included

- 31. 5/8" thru-bolts, shaft end
- 32. 3/4" Thru bolts, shaft end
- 47. Connected for CCW rotation (U.S. standard) facing opposite shaft end. Reversible by reconnection of leads
- 52. 1/2" x 1-7/8" Shaft with 1-5/8" Flat
- 53. 1/2" Shaft with 5/8" adapter and Key

- 72. Usable on 200 Volts at 1.0 Service Factor
- 74. Split phase/capacitor run electrical design
- 82. Welded Rigid Base
- CF - Consult Factory for Accessory Kit and/or Modification Selection
- ES - Energy Saver Design

## Split Phase, Open, PDQ Mounting

### Application

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 the 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
- Attic Fan
- NEMA Service Factors
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Min/Max Base Dim.	Notes
<b>Marathon</b>												
4730	1/4	1725	115	48Y	Auto	5KH39QN9725T	5	13	1/2 X 1 1/2	8.28	6.62" & 7.91"	30
4731	1/3	1725	115	48Y	Auto	5KH39QN9696X	5.8	15	1/2 X 1 1/2	8.78	7.12" & 8.41"	30
4732	1/2	1725	115	48Y	Auto	5KH39QN9702T	7.9	17	1/2 X 1 1/2	9.16	7.50" & 8.79"	30
4739	1/2	1725	230	48Y	Auto	5KH39QN9704T	4	17	1/2 X 1 1/2	9.16	7.50" & 8.79"	30

**Notes:**  
30. Resilient ring mount, base not included

## Split Phase, Open Air Over, Resilient Base

### Features

- Variable torque on two speed motors
- 48Y frame has 48/56 frame mounting holes
- 56YZ frame with 3" shaft height, 1/2" diameter shaft, and 5/8" adapter with keyway included
- UL recognized and CSA certified
- Attic Fan
- Reversible rotation



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
B402	1/3	1800/1200	115	48Y	Auto	48S17D7209	5.3	21	1/2 x 1 1/2	8.81	
B400	1/3	1800	115	48Y	Auto	48S17D997	6.6	14	1/2 x 1 1/2	7.84	
B401	1/2	1800	115	56YZ	Auto	56S17D2062	7.0	18	1/2 x 2	8.53	53

**Notes:**  
53. 1/2" Shaft with 5/8" adapter and key



# MARATHON FAN AND BLOWER DUTY, SINGLE PHASE | MOTORS

## (NEMA Service Factor), Drip Proof -Two Speed, Variable Torque, Resilient Base

### 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 frame mounting holes
- Service Factor, as noted
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>C475</b>	1 1/3	1800/1200	115	56	None	5KCR49SN3009	10.8/7.4	35	5/8 x 1 7/8	10.13	ES, 1, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage  
18. 1.15 Service Factor

ES - Energy Saver Design

## (1.0 Service Factor), Drip Proof - Resilient Base

### Features

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- 1.0 Service Factor
- Economical split phase or capacitor start designs, as noted
- 48Y and 48YZ have 48/56 frame mounting holes
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>S102</b>	1/4	1800	115	48	None	048S17D2042	5.7	13	1/2 x 1 1/2	7.56	3,7
<b>S119</b>	1/4	1800	115/230	48	Auto	048C17D2046	6.2/3.1	13	1/2 x 1 1/2	7.56	2,7
<b>S118</b>	1/4	1800	115/230	48	None	048C17D2045	6.2/3.1	14	1/2 x 1 1/2	7.56	2,7
<b>S126</b>	1/4	1800	115	48Z	Auto	048S17D2104	5.3	14	1/2 x 1 7/8	7.84	3,53
<b>4369</b>	1/3	1800	115	48	None	5KH39QN5508	6.2	14	1/2 x 1 1/2	7.43	3,7
<b>S106</b>	1/3	1800	115	48	None	048S17D2093	6.5	14	1/2 x 1 1/2	7.81	3,7,31,CF
<b>S111</b>	1/3	1800	115/230	48	Auto	048C17D2029	7.0/3.5	16	1/2 x 1 1/2	7.81	2,7
<b>S110</b>	1/3	1800	115/230	48	None	048C17D2028	7.0/3.5	16	1/2 x 1 1/2	7.81	2,7
<b>S127</b>	1/3	1800	115	48Y	Auto	048S17D2105	6.6	14	1/2 x 1 7/8	7.84	3,53
<b>4377</b>	1/3	1800	115	56Z	None	5KH39QN5524	6.2	15	1/2 x 1 1/2	7.69	3,7
<b>4311</b>	1/3	1800	230	48	Auto	5KH39QN5529X	3.3	14	1/2 x 1 1/2	7.43	3,7
<b>S128</b>	1/2	1800	115	48Z	Auto	048S17D2106	9.2	17	1/2 x 1 7/8	8.34	3,53
<b>S120</b>	1/2	1800	115	56	None	056S17D2023	9.2	18	5/8 x 1 7/8	8.34	3,31

### Notes:

2. Capacitor Start Induction Run design  
3. Split Phase design

7. Shaft extension 1-1/2" long by 1/2" diameter  
31. 5/8" thru-bolts, shaft end

53. 1/2" Shaft with 5/8" adapter and Key  
CF - Consult Factory for Accessory Kit and/or Modification Selection

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# MOTORS | MARATHON SPECIAL PURPOSE, SINGLE PHASE

## (1.0 Service Factor), Drip Proof - Rigid Base

### Features

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- Economical split phase or capacitor start designs, as noted
- 1.0 Service Factor
- Reversible rotation
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
S003	1/4	1800	115	48	None	048S17D2089	5.7	12	1/2x1 1/2	7.59	3
S006	1/3	1800	115	48	None	048S17D2090	6.6	14	1/2x1 1/2	7.84	3
S022	1/2	1800	115	56	None	056S17D2046	9.2	17	5/8x1 7/8	8.34	3



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
S010	1/3	1800	115/230	48	None	048C17D2023	7.0/3.5	15	1/2x1 1/2	7.84	2
S011	1/3	1800	115/230	48	Auto	048C17D2024	7.0/3.5	16	1/2x1 1/2	7.84	
S012	1/2	1800	115/230	56	None	056C17D2098	9.2/4.6	18	5/8x1 7/8	8.34	2
S013	1/2	1800	115/230	56	Auto	056C17D2051	9.2/4.6	18	5/8x1 7/8	8.34	2
S015	3/4	1800	115/230	56	Auto	056C17D2055	10.4/5.2	24	5/8x1 7/8	10.09	2
S014	3/4	1800	115/230	56	None	056C17D2054	10.4/5.2	24	5/8x1 7/8	10.09	2
S038	1	1800	115/230	56	Auto	056C17D5343	13.6/6.8	27	5/8x2 5/16	8.62	2
S037	1	1800	115/230	56	None	056C17D5319	13.6/6.8	28	5/8x2 5/16	8.62	2

#### Notes:

2. Capacitor Start Induction Run design
3. Split Phase design



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# MARATHON GENERAL PURPOSE, SINGLE PHASE | MOTORS

## (NEMA Service Factor), Drip Proof - Rigid Base

### Features

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- Economical split phase or capacitor start designs, as noted
- Service Factor, as noted
- Reversible rotation
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>4354</b>	1/4	1800	115	48	None	5KH39QN9538	5.1	13	1/2 x 1 1/2	7.44	3, 20
<b>G078</b>	1/4	1800	115/208-230	48	Manual	048C17D2034	5.0/2.3-2.5	17	1/2 x 1 1/2	8.34	2, 20
<b>C147A</b>	1/4	1800	115/208-230	48	None	048B17D11005	2.4/1.2	17	1/2 x 1 1/2	8.84	1, 20
<b>C153A</b>	1/3	1800	115/208-230	48	None	048B17D11004	3.8/1.9	20	1/2 x 1 1/2	9.09	1, 17, 68
<b>C154</b>	1/3	1800	115/208-230	48	Auto	5KC36LN30X	6.0/3.2-3.0	18	1/2 x 1 1/2	8.16	2, 20, 68
<b>C158A</b>	1/3	1800	115/208-230	56	None	056B17D11019	3.8/1.9	21	5/8 x 1 7/8	7.12	1, 17, 68
<b>C159</b>	1/3	1800	115/208-230	56	Auto	5KC36LN7X	6.0/3.2-3.0	18	5/8 x 1 7/8	8.44	2, 20, 68
<b>G095</b>	1/3	1800	115/208-230	56	Manual	056C17D2010	6.4/3.0-3.2	18	5/8 x 1 7/8	8.34	2, 20
<b>G1098A</b>	1/2	3600	115/230	48	None	048B34D11003	4.4/2.2	20	1/2 x 1 1/2	9.09	2, 19
<b>C1474</b>	1/2	3600	115/230	56	Manual	5KC37LN502Y	7.4/3.7	17	5/8 x 1 7/8	8.84	2, 17
<b>C168</b>	1/2	1800	115/230	56	Auto	5KC49GN0010X	8.8/4.4	21	5/8 x 1 7/8	8.50	2, 19
<b>G915A</b>	3/4	3600	115/208-230	56	None	056B34D11019	7.2/3.6	25	5/8 x 1 7/8	7.62	1, 19
<b>C176</b>	3/4	1800	115/230	56	Auto	5KC46LN0153X	13.2/6.6	24	5/8 x 1 7/8	8.90	2, 19
<b>C179A</b>	1	3600	115/208-230	56	None	056B34D11014	8.8/4.4	30	5/8 x 2	9.24	1, 19
<b>C180</b>	1	3600	115/208-230	56	Auto	5KC38RN60X	12.4/6.4-6.2	24	5/8 x 1 7/8	9.16	2, 19
<b>C182</b>	1	1800	115/208-230	56	Auto	5KC49PN0161X	13.6/6.6-6.8	31	5/8 x 1 7/8	9.50	2, 18



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>G919</b>	3/4	1800	115/208-230	56	Manual	056B17D2010	11.0/5.5-5.5	26	5/8 x 1 7/8	9.59	1, 19
<b>C185A</b>	1 1/2	1800	115/208-230	56H	None	056B17D15548	12.6/6.3	45	5/8 x 1 7/8	11.77	ES, 1, 18
<b>C186</b>	1 1/2	1800	115/208-230	56H	Auto	5KCR49SN0068X	18.2/9.1	35	5/8 x 1 7/8	10.03	ES, 1, 18
<b>C191</b>	1 1/2	1800	115/208-230	145T	None	5KCR49SN0065	18.2/9.1-9.1	35	7/8 x 2 1/4	10.03	ES, 1, 18
<b>C187A</b>	2	3600	115/230	56	None	056B34D11011	14.2/7.1	37	5/8 x 1 7/8	11.06	1, 18



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>C188</b>	1	1800	115/208-230	143T	None	5KC49PN0162	13.6/6.7-6.8	31	7/8 x 2 1/4	9.50	2, 11, 18



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>CG381</b>	2	1800	115/208-230	56HZ	Auto	5KCR49WNO270T	22.0/10.9-11.0	44	7/8 x 2 1/4	12.08	ES, 1, 11, 18
<b>I112A</b>	2	1800	115/208-230	182T	None	182TCDW7026	23.0/12.3-11.5	62	1 1/8 x 2 3/4	10.44	2, 13, 18
<b>I113A</b>	3	1800	115/208-230	184T	None	184TCDW7026	33.5/17.4-16.8	78	1 1/8 x 2 3/4	11.46	2, 13, 18
<b>I114A</b>	5	1800	208-230	184T	None	184TBDW7026	23.0-21.0	82	1 1/8 x 2 3/4	11.96	1, 13, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
3. Split Phase design
11. Shaft extension 2-1/4" long by 7/8" diameter

13. F1 Mounting only, cannot reassemble to F2
17. 1.0 Service Factor
18. 1.15 Service Factor
19. 1.25 Service Factor

20. 1.35 Service Factor
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower
- ES - Energy Saver Design

# MOTORS | MARATHON GENERAL PURPOSE, SINGLE PHASE

## (NEMA Service Factor), Drip proof - Extended thru-bolts, Split Phase - Steel Endshields

### Features

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- Economical split phase or capacitor start designs
- Service Factor, as noted
- Reversible rotation
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
H901	1/4	1800	115	48Z	None	5KH32DNA612	5.1	11	1/2x2 1/4	6.49	9, 18, 28
H905	1/2	1800	115	56Z	None	5KH36JNA769	8.1	16	5/8x2 1/4	8.64	10, 18, 28

### Notes:

9. Shaft extension 2-1/4" long by 1/2" diameter  
 10. Shaft extension 2-1/4" long by 5/8" diameter

18. 1.15 Service Factor  
 28. Steel Endshields

## (1.0 Service Factor), Drip proof - Resilient Base

### Features

- Heavy gauge steel frame and base
- Ball bearings (except as noted)
- 1.0 Service Factor
- Economical split phase or capacitor start designs, as noted
- 48Y and 48YZ have 48/56 frame mounting holes
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
S113	1/2	1800	115/230	56Z	Auto	056C17D2099	9.1/4.5	19	5/8x17/8	8.34	2
S112	1/2	1800	115/230	56	None	056C17D2097	9.1/4.5	19	5/8x17/8	8.34	2
C133	1/2	1800	115/230	48	Auto	5KC36MN27X	8.2/4.1	19	1/2x1 1/2	7.69	2, 7
S114	3/4	1800	115/230	56	None	056C17D2060	10.4/5.2	25	5/8x17/8	10.09	2
4422	3/4	1800	115	56	None	5KH39QN9687	11.2	21	5/8x17/8	8.84	3
S117	1	1800	115/230	56	Auto	056C17D5340	13.6/6.8	28	5/8x17/8	9.47	2
S116	1	1800	115/230	56	None	056C17D5339	13.6/6.8	29	5/8x17/8	9.47	2

### Notes:

2. Capacitor Start Induction Run design

3. Split Phase design

7. Shaft extension 1-1/2" long by 1/2" diameter



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# MARATHON FAN AND BLOWER DUTY, SINGLE PHASE | MOTORS

## (NEMA Service Factor), Drip Proof - Resilient Base



### 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 frame mounting holes
- Service Factor, as noted
- Reversible rotation
- UL recognized and CSA certified

Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
C138	3/4	1800	115/208-230	56	Auto	5KC46JN0002X	11.4/5.6-5.7	23	5/8 x 1 7/8	9.00	19
D1113M	3/4	1800	115/230	56	Auto	5KC46LN0158X	13.2/6.6	25	5/8 x 1 7/8	8.93	D, 19
D118M	1	3600	115/208-230	56	Auto	56C34D2106	12.0/6.2-6.0	25	5/8 x 1 7/8	10.34	18
C1158	1	1800	115/208-230	56	Auto	5KC49PN0164X	14.7/7.2-7.4	29	5/8 x 1 7/8	9.50	18
C235M	1	1800	115/208-230	56H	None	5KC49PN0155	13.6/6.7-6.8	31	5/8 x 1 7/8	9.53	5, 18
CG239	1 1/2	1800	115/208-230	56H	Auto	5KCR49SN0012X	18.2/9.1	35	5/8 x 1 7/8	10.03	ES, 1, 5, 18
D115M	1 1/2	3600	115/208-230	56	Auto	56B34D2027	13.4/7.4-6.7	28	5/8 x 1 7/8	9.84	1, 18
I146	1 1/2	1800	115/208-230	145T	None	145TCDR5331	18.0/9.3-9.0	42	7/8 x 2 1/4	10.97	18, 32
B336	1 1/2	1800	115/208-230	56H	None	56C17D5347	18.0/9.3-9.0	39	5/8 x 1 7/8	10.97	5, 18, 32
C1160	1 1/2	1800	115/208-230	56H	Auto	5KCR49SN0150X	16.4/8.4-8.2	35	5/8 x 1 7/8	10.03	ES, 1, 18
C1161	2	3600	115/208-230	56H	Auto	5KCR49RN2148T	19.6/10.4-9.8	33	5/8 x 1 7/8	10.03	ES, 1, 5, 110
B352	2	1800	115/208-230	56H	Auto	56B17D5331	21/11.3-10.5	50	5/8 x 1 7/8	11.97	1, 5, 18
I147	2	1800	115/208-230	145T	None	145TBDR5345	21/11.3-10.5	49	7/8 x 2 1/4	11.97	1, 18
G1115	1/4	1725	115/230	48	Auto	5KC35JN7X	5.2/2.6	16	1/2 x 1 1/2	8.07	20
C208M	1/3	3600	115/208	48	Auto	5KC35FN51X	6.8/3.4	15	1/2 x 1 1/2	8.07	20
C209	1/3	1800	115/208-230	48	None	5KC36LN26	6.0/3.2-3.0	18	1/2 x 1 1/2	8.50	20, 68
C210M	1/3	1800	115/208-230	48	Auto	5KC36LN26X	6.0/3.2-3.0	18	1/2 x 1 1/2	8.50	20, 68
C216	1/3	1800	115/208-230	56	Auto	5KC36LN1X	6.0/3.2-3.0	18	5/8 x 1 7/8	8.44	20, 68
C548	1/3	1200	115/230	56	Auto	5KC49PN6051X	8.6/4.3	28	5/8 x 1 7/8	9.53	20
C1152	1/2	3600	115/208-230	48	Auto	5KC39QN3220X	8.2/3.9-4.1	19	1/2 x 1 1/2	9.50	19
B1316	1/2	1800	115/208-230	56	None	5KC49GN0001	8.8/4.2-4.4	21	5/8 x 1 7/8	8.50	19
B317	1/2	1800	115/208-230	56	Auto	56C17D2072	8.0/4.1-4.0	20	5/8 x 1 7/8	8.44	CF, 19, 31
CG223	1/2	1800	115/230	56	Auto	5KC49GN0001X	8.8/4.4	21	5/8 x 1 7/8	8.50	D, 19
D111M	1/2	1800	115/230	56	Auto	56C17D2079	7.2/3.6	20	5/8 x 1 7/8	8.84	19
G151	1/2	1725	115/230	56	Auto	56C17D2025	8.6/4.3	24	5/8 x 1 7/8	9.84	D, 19
C1155	3/4	3600	115/208-230	56	Auto	5KC38NN410X	10.0/4.9-5.0	17	5/8 x 1 7/8	9.44	19
C1156	3/4	1800	115/208-230	56	Auto	5KC46LN0149X	13.3/6.5-6.6	27	5/8 x 1 7/8	8.90	19
CG230	3/4	1725	115/208-230	56	None	5KC46LN0158	13.2/6.2-6.6	25	5/8 x 1 7/8	8.90	19
G156	3/4	1800	115/208-230	56	None	56B17D2012	11.0/5.5-5.5	26	5/8 x 1 7/8	9.59	1, 19

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage  
 5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
 18. 1.15 Service Factor  
 19. 1.25 Service Factor

20. 1.35 Service Factor  
 31. 5/8" thru-bolts, shaft end  
 32. 3/4" Thru bolts, shaft end  
 68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

110. 1.20 Service Factor  
 D - Will become build-up item when current stock is gone  
 CF - Consult Factory for Accessory Kit and/or Modification Selection  
 ES - Energy Saver Design

## Totally Enclosed - Rigid Base



### Features

- Ball bearings
- Heavy gauge steel constructions
- Economical split phase or capacitor start designs, as noted
- Service Factor, as noted
- Reversible rotation
- UL recognized and CSA certified

Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
G373	1	1800	115/208-230	56	Manual	56C17F5311	13.4/6.8-6.7	30	5/8 x 1 7/8	10.94	2, 14, 18
C276	1	1800	115/230	56	Auto	5KC49TN0034X	13.2/6.6	36	5/8 x 1 7/8	11.08	2, 17
G378	1 1/2	1800	115/208-230	56H	Manual	56B17F5302	15.2/8.2-7.6	40	5/8 x 2 5/16	11.50	1, 5, 14, 18
G1376	1 1/2	1800	115/208-230	56H	None	5KCR48WN0273	14.5/7.1-7.3	44	5/8 x 1 7/8	11.94	ES, 1, 5, 18
I212	2	1800	115/208-230	182T	None	182TBFR5326	20.0/10.8-10.0	52	1 1/8 x 2 3/4	12.90	F, 1, 18

## Totally Enclosed - C-Face Footless

### Features

- Ball bearings mechanically locked on shaft end (excludes 5K models)
- Heavy gauge steel constructions
- Suitable for horizontal or vertical mounting
- Economical split phase or capacitor start designs, as noted
- Will accept brake kits, see Accessory section (except as noted)
- Service Factor, as noted
- Reversible rotation
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
G1515	1/2	1800	115/230	56C	None	5KC42GN0018	8.6/4.3	21	5/8 x 1 7/8	9.13	2, 18, 24
G1517	3/4	1800	115/230	56C	None	5KC46PN0032	11.0/5.5	31	5/8 x 1 7/8	9.96	2, 17, 24

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
5. 56H, 143T, and 145T Combination Base with 12 mounting holes

14. Will accept C-Face kit, see Accessory Section
17. 1.0 Service Factor
18. 1.15 Service Factor

24. Motor will NOT accept a Brake kit
- ES - Energy Saver Design
- F - Class F Insulation

## Capacitor Start, Drip proof, 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
- Reversible rotation
- UL recognized and CSA certified

Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
G1115	1/4	1725	115/230	48	Auto	5KC35JN7X	5.2/2.6	16	1/2 X 1 1/2	8.07	20
C216	1/3	1725	115/208-230	56	Auto	5KC36LN1X	6.0/3.2-3.0	18	5/8 X 1 7/8	8.44	20, 50
C1152	1/2	3450	115/208-230	48	Auto	5KC39QN3220X	8.2/3.9-4.1	19	1/2 X 1 1/2	9.5	19
B317	1/2	1800	115/208-230	56	Auto	56C17D2072	8.0/4.1-4.0	20	5/8 X 1 7/8	8.44	CF, 19, 31
D111M	1/2	1800	115/230	56	Auto	56C17D2079	7.2/3.6	20	5/8 X 1 7/8	8.84	19
C1155	3/4	3450	115/208-230	56	Auto	5KC38NN410X	10.0/4.9-5.0	22.5	5/8 X 1 7/8	9.97	19
B319	3/4	1800	115/208-230	56	None	56C17D2074	10.0/5.2-5.0	23	5/8 X 1 7/8	8.84	CF, 19, 31
CG230	3/4	1725	115/208-230	56	None	5KC46LN0158	13.2/6.2-6.6	25	5/8 X 1 7/8	8.9	19
B318	3/4	1725	115/208-230	56	None	56C17D2073	10.0/5.2-5.0	24	5/8 X 1 7/8	8.84	CF, 19, 31
D1113M	3/4	1725	115/230	56	Auto	5KC46LN0158X	13.2/6.6	25	5/8 X 1 7/8	8.9	19
D118M	1	3600	115/208-230	56	Auto	56C34D2106	12.0/6.2-6.0	25	5/8 X 1 7/8	10.34	18
C1158	1	1725	115/208-230	56	Auto	5KC49PN0164X	14.7/7.2-7.4	29	5/8 X 1 7/8	9.5	18
C235M	1	1725	115/208-230	56H	None	5KC49PN0155	13.6/6.7-6.8	31	5/8 X 1 7/8	9.5	18
C420	3/4	1725/ 1140	115	56	None	5KCR49PN3011	9.0/6.4	31	5/8 X 1 7/8	9.6	ES, 1, 19
G156	3/4	1725	115/208-230	56	None	56B17D2012	11.0/5.5-5.5	26	5/8 X 1 7/8	9.59	1, 19
C475	1	1725/ 1140	115	56	None	5KCR49SN3009	10.8/7.4	35	5/8 X 1 7/8	10.13	ES, 1, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage  
 18. 1.15 Service Factor  
 19. 1.25 Service Factor  
 20. 1.35 Service Factor

31. 5/8" thru-bolts, shaft end  
 50. Designed for 50 Hz operation  
 CF - Consult Factory for Accessory Kit and/or Modification Selection  
 ES - Energy Saver Design

## Capacitor Start, Drip proof, 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
- Reversible rotation
- UL recognized and CSA certified

Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>B313</b>	1/4	1725	115/208-230	48YZ	Auto	48C17D2042	5.2/2.8-2.6	16	1/2 X 1 7/8	8.07	CF, 20, 31, 52
<b>B315</b>	1/3	1725	115/230	48Z	Auto	48C17D2044	5.8/3.1-2.9	17	1/2 x 1 7/8	8.34	20, 31, 52
<b>D119M</b>	1/3	1800	115/230	48YZ	Auto	48C17D2055	5.8/2.9	12	5/8 X 1 7/8	8.34	20, 31, 52
<b>B1316</b>	1/2	1725	115/208-230	56	None	5KC49GN0001	8.8/4.2-4.4	21	5/8 X 1 7/8	8.5	19
<b>B353</b>	1/2	1800	115/208-230	56Y	Auto	56B17D67	6.2/3-3.1	24	5/8 X 3 7/8	9.04	1, 19, 55
<b>G151</b>	1/2	1800	115/230	56	Auto	56C17D2025	8.6/4.3	24	5/8 X 1 7/8	9.84	19
<b>B608</b>	1/2	1800	277	56	None	56C17D2113	3.6	23	5/8 X 1 7/8	9.84	19
<b>C1156</b>	3/4	1725	115/208-230	56	Auto	5KC46LN0149X	13.3/6.5-6.6	27	5/8 X 1 7/8	8.9	19
<b>4686</b>	3/4	1725	115/208-230	56Z	Auto	5KC46LN0269X	13.3/6.5-6.6	25	5/8 X 2 1/4	8.9	10, 19
<b>B609</b>	3/4	1800	277	56	None	56B17D2013	4.3	27	5/8 X 1 7/8	9.59	1, 19, 31
<b>4688</b>	1	1725	115/208-230	56Z	Auto	5KC49NN0061T	14.4/7.2-7.2	27	5/8 X 2 1/4	9.5	10, 17
<b>B311</b>	1	1725	115/208-230	56H	Auto	056C17D5322	14.4/7.2-7.4	27	5/8 x 1 7/8	9.57	10, 18
<b>B337</b>	1	1800	277	56	None	56C17D5348	5.6	31	5/8 X 1 7/8	9.97	19, 32
<b>D115M</b>	1 1/2	3600	115/208-230	56H	Auto	56B34D2027	13/7.4-6.5	28	5/8 X 1 7/8	9.84	1, 18
<b>I146</b>	1 1/2	1800	115/208-230	145T	None	145TCDR5331	18.0/9.3-9.0	42	7/8 x 2 1/4	11.34	18, 32
<b>B336</b>	1 1/2	1800	115/208-230	56H	None	56C17D5347	18.0/9.3-9.0	41	5/8 X 1 7/8	10.97	5, 18, 32
<b>C1160</b>	1 1/2	1725	115/208-230	56H	Auto	5KCR49SN0150X	16.4/8.4-8.2	35	5/8 X 1 7/8	10.03	ES, 1, 18
<b>C1161</b>	2	3450	115/208-230	56H	Auto	5KCR49RN2148T	19.6/10.4-9.8	33	5/8 X 1 7/8	10.03	ES, 1, 110
<b>B352</b>	2	1800	115/208-230	56H	Auto	56B17D5331	21/11.3-10.5	50	5/8 X 1 7/8	11.97	1, 5, 32
<b>I147</b>	2	1725	115/208-230	145T	None	145TBDR5345	21/11.3-10.5	50	7/8 x 2 1/4	12.34	1, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
5. 56H, 143T, and 145T Combination Base with 12 mounting holes
10. Shaft extension 2-1/4" long by 5/8" diameter
17. 1.0 Service Factor
18. 1.15 Service Factor

19. 1.25 Service Factor
20. 1.35 Service Factor
31. 5/8" thru-bolts, shaft end
32. 3/4" Thru bolts, shaft end
52. 1/2" x 1-7/8" Shaft with 1-5/8" Flat

55. Shaft extension 3-13/16" long by 5/8" diameter with 3.5" keyway
  110. 1.20 Service Factor
- CF - Consult Factory for Accessory Kit and/or Modification Selection  
ES - Energy Saver Design



## Split Phase and Capacitor Start, Totally Enclosed, Resilient Base (Single & Two-Speed)

### Features

- Heavy gauge steel frame and base
- Split phase
- Ball bearings
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Service Factor	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>											
H234	1/4	1725	115	48	Auto	5KH39QN9105X	1.0	5.1	17	1/2 X 1 1/2	8.42
B1502	1/4	1725	115	48	None	5KH39QN9105	1.0	5.1	17	1/2 X 1 1/2	8.42

## Three Phase, Drip Proof, 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



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K1408	1/2	1800	208-230/460	56	Auto	5K42HN4089X	2.3-2.2/1.1	20	5/8 X 1 7/8	8.17	19
K381	1/2	1800	208-230/460	56	None	5K42HN4089	2.3-2.2/1.1	20	5/8 X 1 7/8	8.17	19
G140	1/2	1800	208-230/460	56	Auto	056T17D5345	2.3-2.4/1.2	22	5/8 X 1 7/8	8.97	VC, 19
K280	3/4	1800/1200	460	56	None	5K49PN3052	1.3/0.7	28	5/8 X 1 7/8	9.52	19
K1410	3/4	1800	208-230/460	56	Auto	5K46KN4085X	3.3-3.0/1.5	21	5/8 X 1 7/8	9	19
G141	3/4	1800	208-230/460	56	Auto	056T17D5346	2.9-3.0/1.5	23	5/8 X 1 7/8	8.97	VC, 19
K277	3/4	1800	208-230/460	56	None	5K46KN4085	3.3-3.0/1.5	24	5/8 X 1 7/8	9	19
K1411	1	3600	208-230/460	56	Auto	5K38PN258X	3.3-3.2/1.6	18	5/8 X 1 7/8	9.44	19
K518	1	1725/1140	200-230	56	None	5K49SN3054	3.7-3.9/2.0-2.2	35	5/8 X 1 7/8	10.87	18
G142	1	1800	208-230/460	56	Auto	056T17D5347	3.4-3.6/1.8	25	5/8 X 1 7/8	9.47	VC, 18
G100	1	1800	208-230/460	56H	Auto	056T17D2101	3.4-3.4/1.7	24	5/8 X 1 7/8	9.59	5, 18
G122	1 1/2	1725	208-230/460	56	None	56T17D5329	4.8-4.8/2.4	28	5/8 X 1 7/8	9.47	18
G145	3	1725	208-230/460	56HZ	Auto	56T17D5350	9.2-8.6/4.3	48	7/8 X 2 1/4	12.47	Z, VC, 5, 18

### Notes:

5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
18. 1.15 Service Factor

19. 1.25 Service Factor  
VC - Voltage Change Device feature for quick voltage changes  
Z - 56HZ with 7/8" shaft dia., 3-1/2" shaft height, and slotted 56 frame base

## Drip Proof, Rigid Base

### Features

- EISA compliant efficiencies, as noted
- Ball bearings (except where noted)
- NEMA Service Factors
- Will accept C-Face kits, non-stock item - Call Packard for details
- UL recognized and CSA certified

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
K065	2	1800	208-230/460	56HZ	Auto	056T17D3303	81.5	6.2-6.2/3.1	35	7/8 x 2 1/4	9.74	Z, 5, 68
K069	2	1800	208-230/460	56HZ	Auto	056T17D3307	81.5	6.2-6.2/3.1	34	7/8 x 2 1/4	9.74	VC, Z, 5, 68
U423A <sup>1</sup>	2	1800	208-230/460	145T	Auto	145TTDR6132	86.5	6.2-6.0/3.0	56	7/8 x 2 1/4	11.24	5, 13, 68
K066	3	1800	208-230/460	56HZ	Auto	056T17D3304	84.0	9.2-8.6/4.3	47	7/8 x 2 1/4	11.24	Z, 5, 68
K080	3	1800	208-230/460	56HZ	Auto	056T17D3308	84.0	9.2-8.6/4.3	47	7/8 x 2 1/4	11.74	VC, Z, 5, 68
U427B	5	1800	200	184T	Auto	184TTDW16326	87.5	6.0/3.0	48	1 1/8 x 2 3/4		
U428B <sup>1</sup>	3	1800	208-230/460	182T	Auto	184TTDW16038	89.5	13.6-12.6/6.3	75	1 1/8 x 2 3/4	11.44	13, 68
E909A <sup>1</sup>	20	1800	200	256T	None	256TTDR16027	91.0	57	260	1 5/8 x 4	18.32	



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
E904B <sup>1</sup>	3	1800	200	182T	None	182TTDW16064	86.5	10.1	60	1 1/8 x 2 3/4	10.44	13, 25, CF



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
H887L	3	1725	208-230/460	56HZ	Auto	H887L	84.3	4.4/9.0-8.8	43	7/8 x 2 5/16	12.29	

## Drip Proof, C-Face Footless

### Features

- Ball bearings, mechanically locked on shaft end
- NEMA Service Factors
- UL recognized and CSA certified



Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
K521A	1 1/2	1800	208-230/460	56C	056T17D15912	86.5	4.6/2.3	44	5/8 x 1 15/16	11.84

### Notes:

5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
 13. F1 Mounting only, cannot reassemble to F2  
 25. Motor will NOT accept C-Face Kits  
 68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

Z - 56HZ with 7/8" shaft dia., 3-1/2" shaft height, and slotted 56 frame base  
 CF - Consult Factory for Accessory Kit and/or Modification Selection  
 VC - Voltage Change Device feature for quick voltage changes  
<sup>1</sup>Has efficiency levels that meet EISA requirements

## Totally Enclosed, Four in One - C-Face Footed (Removable Base)



### Features

- Double sealed ball bearings, mechanically locked on shaft end
- Heavy gauge steel constructions
- Bolt-on, removable rigid base
- Suitable for horizontal or vertical mounting
- Capacitor start design for high starting torque
- Capacitor start/capacitor run design for higher efficiency, as noted
- 1.15 Service Factor (except as noted)
- Will accept brake kits, see Accessory section
- Will accept drip cover kits, non-stock item - Call Packard for details
- UL recognized and CSA certified

Item ID	HP	RPM	Volts	Four-N One	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>												
G570	1/3	1725	115/208-230	Yes	56C	None	056C17F5320	6.6/3.1-3.3	23	5/8 x 1 7/8	9.93	68
G571	1/2	1800	115/208-230	Yes	56C	None	056C17F5321	8.8/4.2-4.4	24	5/8 x 1 7/8	9.93	68
G578	1/2	1200	115/208-230	Yes	56C	None	056B11F5303	9.6/4.7-4.8	35	5/8 x 1 7/8	11.44	1, 68
D312M	3/4	3600	115/208-230	Yes	56C	None	056C34F5302	10.6/5.3-5.3	27	5/8 x 1 7/8	10.43	
G572	3/4	1800	115/208-230	Yes	56C	None	056C17F5322	11.0/5.4-5.5	30	5/8 x 1 7/8	10.43	68
G573	1	1800	115/208-230	Yes	56HC	None	056C17F5323	13.4/6.8-6.7	31	5/8 x 1 7/8	10.93	5, 68
D314M	1 1/2	3600	115/208-230	Yes	56C	None	056B34F5326	14.2/7.7-7.1	32	5/8 x 1 7/8	10.94	1
G574	1 1/2	1800	115/208-230	Yes	56HC	None	056B17F5305	15.2/8.2-7.6	40	5/8 x 1 7/8	11.93	1, 5, 68
G575	2	1800	115/208-230	Yes	56HC	None	056B17F5306	20.0/10.8-10.0	51	5/8 x 1 7/8	12.93	1, 5, 17
D316M	3	3600	208-230	Yes	56HC	None	056B34F5328	13.1-11.8	50	5/8 x 1 7/8	12.93	1, 5

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
5. 56H, 143T, and 145T Combination Base with 12 mounting holes

17. 1.0 Service Factor
18. 1.15 Service Factor
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower



## Customer Focused...

“ means doing everything you can to let that customer know how important and valued they are to Packard. To continually go above and beyond for each and every one of our customers. ”

ROSALIND PAGANO LESSIN  
Human Resources Manager

## Totally Enclosed - Rigid Base

### Features

- Ball bearings
- Heavy gauge steel constructions
- Economical split phase or capacitor start designs, as noted
- Service Factor, as noted
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>HG120</b>	1/4	1800	115	48	None	5KH32FN3123	5.1	15	1/2 x 1 1/2	8.42	3, 17



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>G352</b>	3/4	3600	115/208-230	56	None	056C34F5308	10.6/5.3-5.3	26	5/8 x 1 7/8	10.44	2, 14, 18
<b>C268</b>	3/4	1800	115/208-230	56	None	5KC46PN0015	11.0/5.4-5.5	31	5/8 x 1 7/8	9.95	2, 18



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>C271</b>	3/4	1200	115/230	56	None	5KCR48WN6066	10.6/5.3	44	5/8 x 1 7/8	11.94	ES, 1, 17

## (NEMA Service Factor), Drip Proof - C-Face Footless

### Features

- Ball bearings mechanically locked on shaft end (excludes 5K models)
- Heavy gauge steel frame and base
- Capacitor start design for high starting torque
- Capacitor start/capacitor run design for higher efficiency, as noted
- Service Factor, as noted
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>G216A</b>	1/3	3600	115/208-230	56C	None	056B34D11018	3.0/1.5	17	5/8 x 1 7/8	8.56	1, 20
<b>C356</b>	1/3	1800	115/208-230	56C	Auto	5KC36LN83X	6.0/3.2-3.0	16	5/8 x 1 7/8	8.13	20, 68
<b>G232A</b>	1/2	3600	115/208-230	56C	None	056B34D11017	4.4/2.2	20	5/8 x 1 7/8	9.06	1, 19
<b>G234A</b>	1/2	1800	115/208-230	56C	None	056B17D11017	4.6/2.3	25	5/8 x 1 7/8	9.56	1, 19
<b>CG361A</b>	3/4	1800	115/208-230	56C	None	056B17D15544	11.0/5.5-5.5	42	5/8 x 2	11.08	1, 19
<b>G272A</b>	2	3600	115/208-230	56C	None	056B34D15528	19.1/9.5	39	5/8 x 2 1/16	11.14	1, 18

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
3. Split Phase design
14. Will accept C-Face kit, see Accessory Section

17. 1.0 Service Factor
18. 1.15 Service Factor
19. 1.25 Service Factor
20. 1.35 Service Factor

68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower
- ES - Energy Saver Design

## Single Phase, Totally Enclosed Fan Cooled Rigid Base

### Features

- Ball bearings, shaft end mechanically locked on C-face models
- Heavy gauge steel constructions
- Capacitor start/capacitor run design for higher efficiency, (except as noted)
- Continuous duty, 1.15 Service Factor
- Manual reset thermal protector
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>										
G373	1	1800	115/208-230	56	56C17F5311	13.4/6.8-6.7	30	5/8 x 1 7/8	10.94	2, 14
G378	1 1/2	1800	115/208-230	56H	56B17F5302	15.2/8.2-7.6	40	5/8 x 1 7/8	11.94	1, 5, 14

## Single Phase, Totally Enclosed Fan Cooled, C-Face Footed (Rigid Base)

### Features

- Ball bearings, shaft end mechanically locked on C-face models
- Heavy gauge steel constructions
- Capacitor start/capacitor run design for higher efficiency, (except as noted)
- Continuous duty, 1.15 Service Factor
- Manual reset thermal protector
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>										
K612M	1 1/2	3600	115/208-230	56C	56B34F5306	12.1/6.9-6.0	37	5/8 x 1 7/8	11.44	1

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design

5. 56H, 143T, and 145T Combination Base with 12 mounting holes
14. Will accept C-Face kit, see Accessory Section

For full product details visit [packardonline.com](http://packardonline.com).

## Single Phase, Drip Proof, Rigid Base

### Features

- Capacitor start / capacitor run design for low amps and high efficiency, as noted
- High starting and breakdown torque
- Heavy gauge steel frame and base
- Continuous duty at nameplate ratings
- Thermal protection, as noted
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
C169	1/2	1800	115/208-230	56	Manual	5KC49GN0010Y	8.8/4.4	21	5/8 x 1 7/8	8.5	2
C1480	1	1800	115/208-230	56	Manual	5KC49PN0161U	13.6/6.8	31	5/8 x 1 7/8	9.5	2
I114A	5	1800	208-230	184T	None	184TBDW7026	23.0-21.0	82	1 1/8 x 2 3/4	11.96	1, 13

## Definite Purpose: Two-Speed, Two-Winding, Variable Torque

### Application

Commercial and industrial fans, blowers, pumps, and other machinery that have variable torque characteristics. Prolonged use at low speed can result in significant energy savings. Drip proof motors are intended for use in environments that are relatively clean and dry. For use outdoors an enclosure or drip cover may be required.

### Features

- Ball bearings
- Economical two-winding design
- 1.15 Service Factor
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
Y468A	3/7.5	1800/900	460	184T	184TTDW7230	82.5	4/2.75	68	1 1/8 x 2 3/4	10.44	13

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage
2. Capacitor Start Induction Run design
13. F1 Mounting only, cannot reassemble to F2

## TechTip >>>>

from Packard Academy

Some applications require high starting torque as well as high running torque. These requirements can usually be met with a three phase motor. However, three phase power is not always available. In the case when only single phase power is available then a motor designed with both start and run capacitors may be the answer. This design will provide the needed torque but minimize the operating amps.



**JOEY'S TIP**  
Joseph Laminack  
Product Engineer



# MARATHON GENERAL PURPOSE, THREE PHASE | MOTORS

## Drip Proof, Rigid Base

### Features

- EISA compliant efficiencies, as noted
- Ball bearings (except where noted)
- NEMA Service Factors
- Will accept C-Face Kits, see Accessories Section (except as noted)
- UL recognized and CSA certified

Suitable for use on VFD per guidelines on page 120.



As Noted



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
K041A	1/6	1075	230/460	56H	None	056T17D15715	84	6.0/3.0	5/8 x 1 7/8	11.56



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes	C-Face Kits
<b>Marathon</b>													
G044A	1/4	1725	208-230/460	48	None	048T17D11009	69.5	1.0/0.5	18	1/2 x 1 1/2	8.84	25, 68	
G067A	1/2	1200	208-230/460	56	None	056T11D15522	68.0	2.8/1.4	28	5/8 x 2 5/16	9.75	68	A435
G084A	3/4	1800	208-230/460	56	None	056T17D11055	75.5	2.6/1.3	32	5/8 x 1 7/8	9.44	25, 68, CF	
G908	3/4	1800	208-230/460	56	Auto	056T17D5339	75.5	2.9-3.0/1.5	22	5/8 x 2 5/16	8.12	68	A435
K000A	1	3600	208-230/460	56	None	056T34D15600	74.0	3.0/1.5	19	5/8 x 2 1/4	9.17		A435
K009A	1 1/2	3600	208-230/460	56	None	056T34D15599	80.0	4.2/2.1	26	5/8 x 1 7/8	8.56	68	A435
K022A	1 1/2	1800	208-230/460	56H	None	056T17D5309	80.0	4.8-4.8/2.4	28	1-7/8 x 5/8	10.94	5, 68	A436
G923	1 1/2	1800	208-230/460	56H	Auto	056T17D5344	80.0	4.8-4.8/2.4	27	5/8 x 2 5/16	8.62	VC, 5, 68	A436
K064	1 1/2	1800	208-230/460	56HZ	Auto	056T17D3302	80.0	4.8-4.8/2.4	30	7/8 x 2 1/4	8.74	Z, 5, 68	A436
U420A <sup>1</sup>	1 1/2	1800	208-230/460	145T	Auto	145TTDR6126	86.5	4.4-4.4/2.2	48	7/8 x 2 1/4	10.74	5, 13, 68	A436



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes	C-Face Kits
<b>Marathon</b>													
K113A	1/3	3600	208-230/460	48	None	048T34D11001	69.5	1.4/0.7	17	1/2 x 1 1/2	9.01		
K527A	1/3	1800	208-230/460	48	None	048T17D11010	66.5	1.2/0.6	20	1/2 x 1 1/2	9.34	68	
K115A	1/2	3600	208-230/460	48	None	048T34D11002	77.0	1.8/0.9	17	1/2 x 1 1/2	9.01		
G063A	1/2	1800	208-230/460	56	None	056T17D15908	70.0	1.7/0.85	28	5/8 x 1 7/8	9.44	25, 68, CF	
K004A	1	1800	208-230/460	56	None	056T17D15915	79.2	3.0/1.5	34	5/8 x 1 7/8	9.81		A534

## Three Phase, Drip Proof, 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



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K278	1	1800	208-230/460	56	None	5K46MN4087	3.6-3.8/1.9	27	5/8 X 1 7/8	9	18
K1413	1 1/2	3600	208-230/460	56H	Auto	5K49KN2150X	5.0-4.8/2.4	26	5/8 X 1 7/8	10.13	18
K1415	1 1/2	1800	208-230/460	56H	Auto	5K49PN4088X	5.5-5.6/2.8	31	5/8 X 1 7/8	10.13	18
K1416	2	3450	208-230/460	56H	Auto	5K49NN2147X	6.0-6.0/3.0	30	5/8 X 1 7/8	10.13	18
K1418	2	1800	208-230/460	56H	Auto	5K49UN4086X	6.2-6.0/3.0	39	5/8 X 1 7/8	12.08	18



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
G144	2	1800	208-230/460	56H	Auto	056T17D5349	6.2-6.2/3.1	35	5/8 X 1 7/8	10.47	VC, 5, 18
X251	5	3600	208-230/460	56HZ	Auto	056T34D5364	13.5-12.4/6.2	50	7/8 x 2 1/4	11.24	Z, 5, 12, 17, 70

#### Notes:

- 56H, 143T, and 145T Combination Base with 12 mounting holes
- With rigid base
- F1 Mounting only, cannot reassemble to F2
- 1.0 Service Factor
- 1.15 Service Factor

- 1.35 Service Factor
- Motor will NOT accept C-Face Kits
- Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower
- Not Nameplated 50 hz

- CF - Consult Factory for Accessory Kit and/or Modification Selection  
 VC - Voltage Change Device feature for quick voltage changes  
 Z - 56HZ with 7/8" shaft dia., 3-1/2" shaft height, and slotted 56 frame base  
<sup>1</sup>Has efficiency levels that meet EISA requirements

## Totally Enclosed (Four in One), C-Face Footed (Rigid and Removable Base)

### Features

- Ball bearings, mechanically locked on shaft end (excludes 5K models)
- 1.15 Service Factor (except as noted)
- Class F insulation (except as noted)
- Rated 60/50 hertz, 190/380 or 380 volt, at next lower horsepower (as noted)
- 56-145T frame motors accept brake kits
- UL recognized and CSA certified



### Additional features for "Four-In-One" motors only:

- CR200 Corona resistant magnet wire
- Bolt-on, removable rigid base
- Suitable for horizontal and vertical mounting
- Will accept drip cover kits

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Four-In-One	Model No.	CT Speed Range <sup>2</sup>	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>													
G580	1/3	1800	208-230/460	56C	Yes	056T17T5305	1000:1	68.0	1.8-1.6/0.8	20	5/8 x 1 7/8	8.05	N, 6, 13, 24, 68



Item ID	HP	RPM	Volts	Frame	Four-In-One	Model No.	CT Speed Range <sup>2</sup>	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>													
K1322	1/3	1800	208-230/460	56C	No	5K42FN4035	—	69.2	1.5-1.6/0.8	20	5/8 x 1 7/8	9.13	20, 24, 68
G581	1/2	1800	208-230/460	56C	Yes	056T17F5321	10:1	68.0	2.3-2.4/1.2	23	5/8 x 1 7/8	9.93	6, 13, 68
G588	1/2	1200	208-230/460	56C	Yes	056T11F5309	10:1	68.0	2.4-2.7/1.35	24	5/8 x 1 7/8	9.93	6, 13, 68
G582	3/4	1800	208-230/460	56C	Yes	056T17F5322	10:1	75.5	2.6-3.0/1.5	24	5/8 x 1 7/8	9.93	6, 13, 68
G589	3/4	1200	208-230/460	56C	Yes	056T11F5308	4:1	74.0	3.2-3.2/1.6	28	5/8 x 1 7/8	10.43	6, 13, 68
D393A	1	3600	208-230/460	56C	Yes	056T34F99008	4:1	74.0	3.7-3.7/1.85	25			6, 13, 68
G583A	1	1800	208-230/460	56HC	Yes	056T17F15639	10:1	77.0	3.5-3.6/1.8	26			5, 6, 13, 68
G584A	1 1/2	1800	208-230/460	56HC	Yes	056T17F15641	10:1	86.5	4.6/2.3	45	5/8 x 1 7/8	12.78	6, 13, 68
G585A	2	1800	208-230/460	56HC	Yes	056T17F15640	10:1	86.5	6.0/3.0	48	5/8 x 1 7/8	13.28	5, 6, 13, 68

<sup>2</sup>Requires nameplate modification

## Single Phase, Drip Proof, C-Face Footless, Single Speed

### Features

- Split phase (except as noted)
- Thermal protection, as noted
- Service Factor, as noted
- Motors with 56CZ frames have 2-1/4 x 5/8 shaft dimensions
- Ball bearings



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
H204	1/12	1140	115	56CZ	None	5KH32GN142	2.4	13	5/8 X 2 1/4	7.37	112
H206	1/8	1140	115	56CZ	None	5KH36KN112	3.8	15	5/8 X 2 1/4	8.43	112
H208	1/6	1725	115	56CZ	None	5KH32DN111	4.2	11	5/8 X 2 1/4	7.37	20
H209	1/6	1140	115	56CZ	None	5KH37PN36	4	19	5/8 X 2 1/4	8.83	20
H212	1/4	1725	115	56CZ	None	5KH33FN77	5.6	13	5/8 X 2 1/4	7.62	20
H223	1/4	1725/1140	115	56CZ	None	5KH37PN40	4.2/2.7	20	5/8 X 2 1/4	8.83	20
H214	1/4	1140	115	56CZ	None	5KH46MN6071	5.6	22	5/8 X 2 1/4	8.9	20
H217	1/3	1725	115	56CZ	None	5KH35JN121	6.6	14	5/8 X 2 1/4	8	20
H225	1/3	1725/1140	115	56CZ	None	5KH46MN3040	5.7/3.2	22	5/8 X 2 1/4	8.9	20
H290	1/2	1725	115	56CZ	None	5KH36MN137	7.2	16	5/8 X 2 1/4	8.43	19
H226	1/2	1725/1140	115	56CZ	None	5KH49PN3042	8.0/4.2	26	5/8 X 2 1/4	9.45	19

### Notes:

5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
 6. Bolt-on removable base for footless mounting option  
 13. F1 Mounting only, cannot reassemble to F2

19. 1.25 Service Factor  
 20. 1.35 Service Factor  
 24. Motor will NOT accept a Brake kit

68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower  
 112. 1.40 Service Factor  
 N - Totally Enclosed, Non-Ventilated



## Totally Enclosed, Rigid Base

### Application

General purpose use on pumps, fans, blowers, compressors, conveyors, and other industrial machinery installed in damp, dusty, or dirty environments. Additionally, cast iron frame motors may be suitable for the process industries.

### Features

- Ball bearings (except as noted)
- 1.15 Service Factor (except as noted)
- 60/50 hertz at next lower horsepower, as noted
- Will accept C-Face Kits as noted, also see Accessories section
- UL recognized and CSA certified

Suitable for use on VFD per guidelines on page 120



Item ID	HP	RPM	Volts	Frame	Model No.	CT Speed Range <sup>2</sup>	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes	C-Face Kits
<b>Marathon</b>													
K154	1/3	1800	208-230/460	56	5K49FN4136	—	69.2	1.5-1.6/8	20	5/8 x 1 7/8	8.85	20	A536
K158	1/2	1800	208-230/460	56	5K35MNB117	—	76.1	2.1-2.2/1.1	19	5/8 x 1 7/8	9.05	19	AG215
K159	1/2	1200	208-230/460	56	5K49MN6079	—	72.0	2.6-2.6/1.3	27	5/8 x 1 7/8	9.55	5, 19	A536
K161M	3/4	1800	208-230/460	56	5K36PNB111	—	78.9	2.8-2.8/1.4	20	5/8 x 1 7/8	9.48	19	AG215
K162	3/4	1200	208-230/460	56	5K46PN6082	—	76.1	2.9-2.8/1.4	27	5/8 x 1 7/8	9.95	68	AG215
G347A	1	1800	208-230/460	56	056T17F15666	2:1	85.5	3.3/1.65	42	5/8 x 2 5/16	12.3	68	A437
G360A	1	1200	230/460	56H	056T11F15525	—	82.5	3.8/1.9	37	5/8 x 1 7/8	11.42	18, 68	A536
G365A	1 1/2	1800	230/460	56H	056T17F15668	—	86.5	4.6/2.3	35	5/8 x 1 7/8	12.96	5, 18, 68	A536

<sup>2</sup>Requires nameplate modification

## Totally Enclosed, C-Face Footless

### Application

General purpose use on gear reducers, pumps, machine tools, and other direct-coupled equipment installed in damp, dusty, or dirty environments. Additionally, cast iron frame motors may be suitable for the process industries.

### Features

- Ball bearings, mechanically locked on shaft end (excludes 5K models)
- Rated 60/50 hertz, 190/380 or 380 volt, at next lower horsepower (as noted)
- 1.15 Service Factor (except as noted)
- Rolled steel 56-145T frame motors accept brake kits
- UL recognized and CSA certified

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
K255	3/4	1800	208-230/460	56C	5K36PNB116	78.9	2.8-2.8/1.4	20	5/8 x 1 7/8	9.48	19, 24, 68
G544A	2	1800	208-230/460	56C	056T17F15665	86.5	6.2-6.0/3.0	47	5/8 x 1 7/8	13.27	24, 68

<sup>2</sup>Requires nameplate modification

## Totally Enclosed, C-Face Footed (Rigid Base)

### Features:

Meets or exceeds NEMA Premium<sup>®</sup> efficiencies

NEMA Premium<sup>®</sup> models are in compliance with EISA2007

- Cast iron frame and brackets
- Inverter Duty 10:1 Variable Torque and 10:1 Constant Torque, 1.0 SF (except as noted)
- 1.15 Service Factor
- Class F Insulation
- Standard assembly F1, reversible to F2 assembly
- UL recognized, CSA certified, CE mark



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
GT1201	1	1765	208-230	143TC	143TTFR6032	85.5	3.3/1.65	42	7/8 x 2 1/8	11 3/4

### Notes:

5. 56H, 143T, and 145T Combination Base with 12 mounting holes  
18. 1.15 Service Factor

19. 1.25 Service Factor  
20. 1.35 Service Factor

24. Motor will NOT accept a Brake kit  
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

## Drip proof, C-Face Footless (Vertical) and C-Face Footed (Rigid Base)

### Features

- NEMA JM pump shaft dimensions
- JMV frame includes drip cover for vertical mount without base
- JM frame has rigid base, drip cover not included
- Ball bearings, mechanically locked on shaft end
- Continuous duty
- 1.15 Service Factor
- UL recognized and CSA certified
- UL Listed for Fire Pump applications (except as noted)

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
<b>E100M<sup>1</sup></b>	1	1800	230/460	143JM	143TTDR4035	82.5	3.1/1.55	44	7/8 X 4 1/4	9.87	68
<b>GT4104<sup>1</sup></b>	1 1/2	1800	230/460	145JMV	145TTDR16329	86.5	4.4/2.2	46	7/8 X 4 1/4	11.17	27,68

### Notes:

27. Drip Cover included

68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

<sup>1</sup>Has efficiency levels that meet EISA requirements

## TechTip >>>>

from Packard Academy

Always remember that when replacing a general purpose, or self cooled motors, such as a pump motor, to consider Service Factor (SF). Service Factor is a multiplier. Multiplying the Service Factor times the nameplate horsepower of the motor provides the available range of horse power. For example, a 1 horsepower motor with a 1.15 Service Factor can safely operate a 1.15 horsepower load, i.e.,  $1 \times 1.15 = 1.15$ . A 1 horsepower motor with a 1.40 Service Factor can safely operate a 1.4 horsepower load, i.e.,  $1 \times 1.40 = 1.4$ .



### CHRIS'S TIP

Chris Baxter  
Technical Support



## Drip proof, NEMA Premium® XRI® Efficiency, Rigid Base

### Application

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 mark
- Will accept C-Face kits, Non-stock item - Call Packard for details

Suitable for use on VFD per guidelines on page 120.

Models ending in "-P" denotes BCP - Bearing Current Protection



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Cast Iron Frame	Notes
<b>Marathon</b>												
U758 <sup>1</sup>	1	1800	208-230/460	143T	143TTDR6027	85.5	3.2/1.6	38	7/8 x 2 1/4	9.87	N	TS
U758-P <sup>1</sup>	1	1800	208-230/460	143T	143TTDR6027	85.5	3.2/1.6	38	7/8 x 2 1/4	9.87	N	TS
U759 <sup>1</sup>	1 1/2	1800	208-230/460	145T	145TTDR6028	86.5	4.8-5.6/2.4	48	7/8 x 2 1/4	10.37	N	TS
U759-P <sup>1</sup>	1 1/2	1800	208-230/460	145T	145TTDR6028	86.5	4.8-5.6/2.4	48	7/8 x 2 1/4	10.37	N	TS
U1266 <sup>1</sup>	1 1/2	1200	208-230/460	182T	182TTDW6076	86.5	6.2/3.1	68	1 1/8 x 2 3/4	10.44	N	13
U760 <sup>1</sup>	2	1800	208-230/460	145T	145TTDR6029	86.5	5.8/2.9	50	7/8 x 2 1/4	11.37	N	TS
U760-P <sup>1</sup>	2	1800	208-230/460	145T	145TTDR6029	86.5	5.8/2.9	50	7/8 x 2 1/4	11.37	N	TS
E1930 <sup>1</sup>	3	1800	208-230/460	182T	182TTDW6030	89.5	8.4-8.0/4.0	72	1 1/8 x 2 3/4	10.44	N	13
E1930-P <sup>1</sup>	3	1800	208-230/460	182T	182TTDW6030	89.5	8.4-8.0/4.0	72	1 1/8 x 2 3/4	10.44	N	13
E1931 <sup>1</sup>	5	1800	208-230/460	184T	184TTDW6031	89.5	13.6-12.8/6.4	80	1 1/8 x 2 3/4	11.44	N	13
E1931-P <sup>1</sup>	5	1800	208-230/460	184T	184TTDW6031	89.5	13.6-12.8/6.4	80	1 1/8 x 2 3/4	11.44	N	13



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Cast Iron Frame	Notes
<b>Marathon</b>												
U763 <sup>1</sup>	7 1/2	1800	208-230/460	213T	213TTDC6026	91.0	20.6-19.8/9.9	174	1 3/8 x 3 3/8	13.00	Y	
U765 <sup>1</sup>	10	1800	208-230/460	215T	215TTDC6026	91.7	28.5-25.6/12.8	198	1 3/8 x 3 3/8	14.49	Y	
U767 <sup>1</sup>	15	1800	208-230/460	254T	254TTDC6026	93.0	40.5-37.0/18.5	304	1 5/8 x 4	16.94	Y	A, YD
U769 <sup>1</sup>	20	1800	208-230/460	256T	256TTDC6026	93.0	51.0-49.0/24.5	352	1 5/8 x 4	18.6	Y	YD

## Globetrotter® NEMA Premium® Efficiency, Drip Proof, Rigid Base

### Features

- Meets or exceeds NEMA Premium® efficiencies  
NEMA Premium® models are in compliance with EISA2007
- 182T-215T models steel frame, 254T-449T models cast iron frame
- Inverter Duty 10:1 Variable Torque and 2:1 Constant Torque, 1.0 SF
- 1.15 Service Factor
- Class F Insulation
- Standard assembly F1, reversible to F2 assembly
- UL recognized, CSA certified, CE mark
- Will accept C-Face kits, Non-stock item - Call Packard for details

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Cast Iron Frame	Notes
<b>Marathon</b>												
GT0010 <sup>1</sup>	3	1800	208-230/460	182T	182TTDB6026	89.5	8.4-7.8/3.9	76	1 1/8 x 2 3/4	10.97	N	
GT0016 <sup>1</sup>	7 1/2	1800	208-230/460	213T	213TTDB6026	91.0	18.6/9.3	128	1 3/8 x 3 3/8	14.14	N	

### Notes:

13. F1 Mounting only, cannot reassemble to F2  
A - NEMA Design A  
TS - Normally Closed Thermostats installed

YD - 12 Leads for WYE-DELTA, Part Winding on low voltage, or across-the-line starting  
<sup>1</sup>Has efficiency levels that meet EISA requirements

## Three Phase, Totally Enclosed, Rigid Base

### Application

General purpose use on compressors, pumps, conveyors, blowers, and other machinery in dirty and dusty environments. 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, except where noted NEMA Premium® models are in compliance with EISA2007
- Suitable for use on a VFD. Variable Torque and Constant Torque (as noted)
- 1.15 Service Factor on sinewave, 1.0 Service Factor on IGBT power
- F1 conduit box on Rigid Base, F3 on C-Face Footed (Rigid Base) motors
- Bearing Current Protection (BCP), as noted
- Shaft slinger
- Class F insulation
- 1.15 Service Factor
- Ball bearings (except as noted)
- C-Face Footed models are rated 60/50 Hz, same HP
- Motors accept C-face kits, as noted
- UL recognized, CSA certified and CE mark

Models through 40 HP are capable of modification as follows (contact factory to confirm):

- 1.25 Service Factor (sinewave only)
- 50Hz at same HP, 1.0 Service Factor (sinewave only)
- Certain combinations of existing and new nameplate markings are not possible (contact factory to confirm)
- Any nameplate changes are subject to modification charges (see MOD Central section)
- Contact Marathon Motors for optional nameplate markings on 50 HP and larger

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	CT Speed Range <sup>2</sup>	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	C-Face Kits
<b>Marathon</b>												
E2104 <sup>1</sup>	1 1/2	1800	230/460	145T	145TTFR16033	10:1	86.5	4.8/2.4	45	7/8 x 2 1/4	11.5	A642
E2107 <sup>1</sup>	2	1800	230/460	145T	145TTFR16035	10:1	86.5	5.8/2.9	50	7/8 x 2 1/4	12.5	A642
E2108 <sup>1</sup>	2	1200	230/460	184T	184TFW16076	10:1	88.5	6.4/3.2	82	1 1/8 x 2 3/4	12.22	A666
E2113 <sup>1</sup>	5	1800	230/460	184T	184TFW16026	10:1	89.5	12.6/6.3	86	1 1/8 x 2 3/4	12.22	A666
E2116 <sup>1</sup>	7 1/2	1800	230/460	213T	213TFW16026	10:1	91.7	21.6/10.8	158	1 3/8 x 3 1/2	15.2	A667

<sup>2</sup>Requires nameplate modification

## Totally Enclosed Wet Environment / Car Wash Motor, C-Face Footless, Three Phase

### Features

- 303 Stainless steel shafts with contact lip seal & V-ring slinger
- Rolled Steel construction
- Gray epoxy paint
- Class F insulation
- 1.15 Service Factor (except as noted)
- Automatic thermal protection

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>										
K610M	1 1/2	1800	230/460	56C	5K49RN4621	80.0	5.0/2.5	34	5/8 x 1 15/16	10.25

<sup>1</sup>Has efficiency levels that meet EISA requirements

## Steel Frame, Standard and NEMA Premium Efficiencies, Three Phase, Rigid Base

### Features

- 1.0 Service Factor (except as noted)
- Meets temperature code T3B
- Explosion proof conduit box included, shipped loose
- UL Listed File No. E12044
- CSA certified File No. LR47504
- Automatic Overload



Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Group E	Model No.	Nom. Eff.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>											
G649	1/2	1800	208-230/460	56	N	56T17G5312	68.0	2.3-2.4/1.2	28	5/8 x 1 7/8	12.06

## Class I and II, Groups C (as noted), D, F & G - Steel Frame, Single Phase, Rigid Base

### Features

- 1.0 Service Factor
- Automatic reset thermal protector
- Meets temperature code T3B
- Economical split phase or capacitor start designs, as noted
- Explosion proof conduit box included, shipped loose
- UL Listed File No. E12044
- CSA certified File No. LR47504



Item ID	HP	RPM	Volts	Frame	Group C	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
G639	1/4	1800	115/208-230	56	Y	56C17E5314	4.8/2.3-2.4	26	5/8 x 1 7/8	10.09	2, N
G654	1/2	1800	115/208-230	56	Y	56C17G5316	8.8/4.2-4.4	27	5/8 x 1 7/8	12.06	2

### Notes:

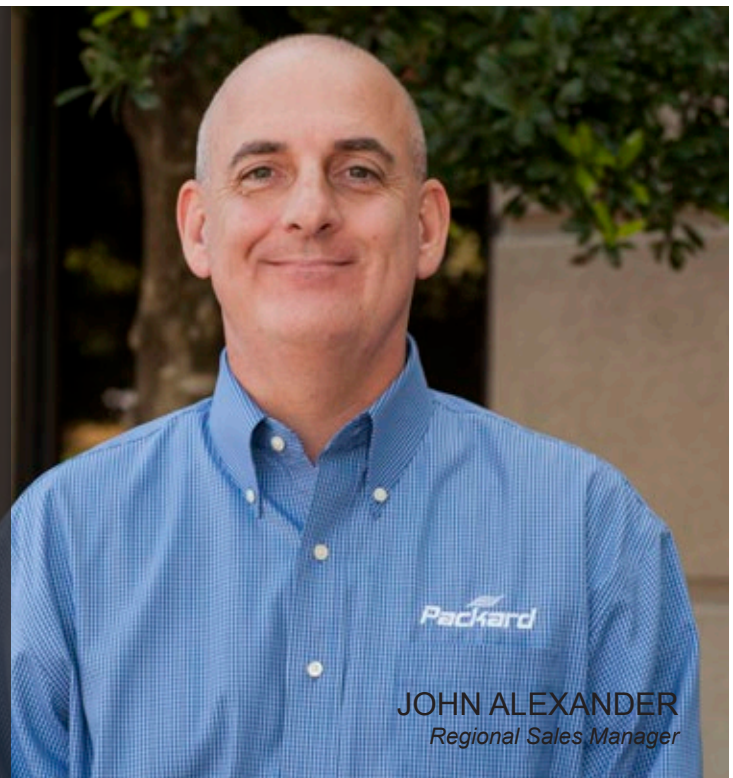
2. Capacitor Start Induction Run design

N - Totally Enclosed, Non-Ventilated

**I OWN  
PACKARD!**

*Customer Focused...*

“ means truly understanding your customer’s needs by listening and asking the right questions and then implementing a plan that is a win for both you and the customer. ”



**JOHN ALEXANDER**  
Regional Sales Manager

## High Torque, Single Phase, TEFC, Rigid Base

### Features

- Ball bearings, shaft end mechanically locked on C-face models (excludes 5K models)
- Capacitor start design for high starting torque
- Low temperature manual reset thermal protector
- Totally enclosed and fully gasketed construction for dirty environments
- Condensate drains
- Shaft slinger
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>										
F10E1	1	1800	115/230	56	5KC49TN0063Y	13.2/6.6	37	5/8 x 1 7/8	11.08	D, 17

Notes:  
17. 1.0 Service Factor

D - Non-stock - order only item

## High Torque, Single Phase, TEFC, C-Face Footed (Rigid Base)

### Features

- Ball bearings, shaft end mechanically locked on C-face models (excludes 5K models)
- 1.15 Service Factor (except as noted)
- Capacitor start design for high starting torque
- Low temperature manual reset thermal protector
- Totally enclosed and fully gasketed construction for dirty environments
- Condensate drains
- Shaft slinger
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)
<b>Marathon</b>									
F133	3/4	1800	115/208-230	56C	056C17F5913	11/5.4-5.5	29	5/8 x 1 7/8	10.44

## Single Phase, TEAO, Resilient Base-Thru Bolt

### Features

- Split Phase and PSC, as noted
- Ball bearings
- Extended thru-bolts on X1903, X1904, P250, and P251
- 48Z Frame has 1/2" dia. x 2-1/2" long shaft with two flats
- 56Z Frame has 1/2" dia. x 1-7/8" long with 1-5/8" flat
- 48Y & 48YZ have 48/56 Fr. Mounting holes
- 1.0 Service Factor (except as noted)
- Thermal protection, as noted
- Fully gasketed



Item ID	HP	RPM	Volts	Frame	Overload	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>											
H247	1/2	1800	115/208-230	56	Auto	5KH42JN0328S	8.0/4.0-4.0	21	5/8 x 1 7/8	8.17	3

Notes:  
3. Split Phase design

## Split Phase, Drip proof

### Features

- Resilient base
- Ball bearings
- 1.0 Service Factor (except as noted)
- Completely interchangeable with OEM units
- Automatic reset thermal protector
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Length Less Shaft (in.)	Notes
<b>Marathon</b>									
4725	1/4	1800	115	48Y	5KH32DN5587X	5.0	13	7.79	
4805	1/3	1800/1500	100-120/200-240	48Y	5KH32GNB811X	5.5-5.6/2.7-2.8	14	7.69	12, 68
4406	1/3	1800	115	48Y	5KH32FN5586X	5.6	14	7.79	12, 18
H684	1/2	1800/1500	100-120/200-240	48Y	5KH36MNA445X	7.1-7.2/3.4-3.6	19	8.75	12, 68

## Single Phase, Totally Enclosed, C-Face Footless (Removable Base)

### Features

- Fail-safe, spring set Stearns 56 Series brake for holding or stopping
- Brake has manual wear adjustment for longer pad life
- Manual release lever on rear of brake housing
- Brake leads are terminated at the brake
- Universal mounting, no modifications needed
- Brake coil voltage matches motor voltages, see mod section for other brake coils
- Ball bearings, mechanically locked on shaft end
- 1.15 Service Factor (1.0 Service Factor as noted)
- Nameplated 60/50 hertz at next lowest horsepower
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Brake Rating (lb/ft)	Notes
<b>Marathon</b>											
D402M	3/4	1800	115/208-230	56C	056C17F5354	11.0/5.4-5.5	38	5/8 x 1 7/8	14.82	6	2, 6
D403M	1	1800	115/208-230	56C	056C17F5355	13.4/6.8-6.7	40	5/8 x 1 7/8	15.32	6	2, 6
D404M	1 1/2	1800	115/208-230	56C	056B17F5330	15.2/8.2-7.6	50	5/8 x 1 7/8	17.16	10	1, 6

## Three Phase, C-Face Footed (Removable Base)

### Features

- Fail-safe, spring set Stearns 56 series brake for holding or stopping
- Manual release lever on rear of brake housing
- Brake leads are terminated at the brake
- Brake coil voltage matches motor voltages, see mod section for other brake coils
- Ball bearings, mechanically locked on shaft end
- Nameplated 60/50 hertz at next lowest horsepower
- UL recognized and CSA certified
- Brake has manual wear adjustment up to 25 Lb/Ft. for longer pad life
- Stearns brakes, 56 series through 25 Lb/Ft, 87 series above 35 Lb-Ft and larger
- Brake leads routed through motor conduit box (TENV only)
- Universal mounting up to 15 Lb/Ft, C406 has verticle springs included, for larger brakes, see mod section
- CR200 Corona resistant magnet wire (motor can be operated 10:1 variable torque and 2:1 constant torque)
- 1.15 Service Factor, 1.0 Service Factor where footnoted

Suitable for use on VFD per guidelines on page 120.



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Brake Rating (lb/ft)	Notes
<b>Marathon</b>											
D454M	3/4	1800	208-230/460	56C	056T17F5350	2.9-3.0/1.5	33	5/8 x 1 7/8	14.35	6	6
D455M	3/4	1200	208-230/460	56C	056T11F5327	3.1-3.2/1.6	37	5/8 x 1 7/8	14.85	6	6
D456M	1	1800	208-230/460	56C	056T17F5357	3.5-3.6/1.8	35	5/8 x 1 7/8	14.85	6	6
D457M	1 1/2	1800	208-230/460	56HC	056T17F5358	5.0-4.8/2.4	39	5/8 x 1 7/8	14.85	10	6

### Notes:

1. Capacitor Start/Capacitor Run design for reduced amperage  
2. Capacitor Start Induction Run design

6. Bolt-on removable base for footless mounting option  
12. With rigid base

18. 1.15 Service Factor  
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower

# MOTORS | MARATHON 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 (EPAAct exempt)	10:1	2:1	2:1	2:1	Contact Engineering					
	EPAAct 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 (EPAAct exempt)	10:1	2:1	2:1	2:1	Contact Engineering					
	EPAAct 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	EPAAct compliant	10:1	N/A	1000:1	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 (EPAAct exempt)	10:1	10:1 (2)	10:1 (2)	10:1 (2)	N/A	N/A	N/A	N/A	N/A	N/A
	EPAAct 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 (EPAAct exempt)	10:1	1000:1	1000:1	1000:1	N/A	N/A	N/A	N/A	N/A	N/A
	EPAAct 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 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 CR200 Corona Resistant Magnet Wire	1500 ft.	475 ft.	140 ft.
Motors with MAX GUARD® 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®*
microMAX® inverter duty "4 - in - 1" Three Phase, C-Face with Removable Base Standard Three Phase stock Brakemotors Blue Chip® Severe Duty Explosion Proof, EPAAct Efficiency Max +	Black Max® Vector Duty - All Product Blue Max® Vector Duty - All Products PowerWash™ XT, SXT, and SXT-Plus Washdown Duty - Three Phase Blue Chip® XRI Severe Duty Blue Chip® XRI-841 (IEEE841 compliant) Automotive Duty "T" Frame Blue Chip® Explosion Proof, XRI® Premium Efficiency Globetrotter® IEC Metric motors



# MARATHON ONLY MOTOR MODIFICATIONS | MOTORS

MODIFICATION DESCRIPTION	MODIFICATION NUMBER	PRODUCT	FRAME	LEAD-TIME DAYS*
<b>Altitude/Ambient</b>				
• AC Motor Altitude or Ambient Re-Rating	MOD7	All Non-EXP	48-449T	2
• AC Motor Altitude or Ambient Re-Rating	MOD7	Explosion Proof	143T-449T	2
<b>Assembly (see Mounting)</b>				
<b>Bearings</b>				
• Convert Ball to Roller (Drive End)	MOD18	TEFC	364T-449T	3
• Convert Roller to Ball (Drive End)	MOD18	TEFC	444T-449T	2
• Sealed Bearing	MOD18	All Non-EXP	143T-449T	Call
• Insulated Bearing	MOD18	Non Div 1 or 2	143T-449T	Call
<b>Blowers</b>				
• Axial Blower	MOD19	TEFC	213T-449T	3
<b>Brackets</b>				
• C-Face Non-Explosion Proof	MOD2	All Non-EXP	56-449T	2
• C-Face Explosion Proof	MOD2	Explosion Proof	56,254T-449T	Call
• C-Face IEEE 841	MOD2	All Non-EXP	143T-449T	2
• D-Flange	MOD17	All Non-EXP	254T-365T	Call
• B14 FT Flange (IEC C-Face)	MOD55	IEC	63-160	2
• B5 FF Flange (IEC D-Flange)	MOD55	IEC	63-315	2
<b>Brake Motors</b>				
• Brake Motors-Single Phase	MOD3	TEFC	56C	3
• Brake Motors-Three Phase	MOD3	TEFC	56C-145TC	3
• Brake Motors-Inverter Duty	MOD3	TENV	56C-326TC	3
• Electrical Modifications-Brake Coil	MOD3	Brake Motors	56-256TC	10
• Vertical Brake Mounting (Shaft Up or Shaft Down)	MOD3	All Brakes	56-256TC	3
<b>Conduit Box</b>				
• Rotate Conduit Box Lead Opening	MOD56	All Non-EXP	143T-449T	2
• Convert to Cast Iron	MOD56	All Non-EXP	143T-326T	2
• Auxiliary Box (Condulet)	MOD56	All Non-EXP	182T-5013L	Call
<b>Connections</b>				
• SO Cord, Plug, and Switch-Single Phase	MOD0	TEFC	48-215T	Call
<b>Drains</b>				
• Condensation Drain Holes	MOD21	All Non-EXP	143T-449T	2
• Brass Drain & Breather	MOD21	All Non-EXP	143T-449T	2
• Stainless Steel Drain & Breather	MOD21	All Non-EXP	143T-449T	2
<b>Drip Covers</b>				
• Canopy Cover	MOD4	ODP, TEFC	48-256T	2
<b>Encoders</b>				
• Avtron AV56 - Black Max <sup>®</sup> / Blue Max <sup>®</sup>	MOD22	TENV, TEBC	56-449T	2
• Avtron HS25A & HS35A	MOD22	TENV, TEBC	56-449T	2
• Avtron M56/M85 - Black Max <sup>®</sup> / Blue Max <sup>®</sup> brake motors	MOD24	TENV	143T-256T	2
• Northstar SL56 - Black Max <sup>®</sup> / Blue Max <sup>®</sup>	MOD22	TENV, TEBC	56-449T	2
• Northstar SL56/SL85 - Black Max <sup>®</sup> / Blue Max <sup>®</sup> brake motors	MOD24	TENV	143T-256T	2
• Dynapar HS20, HS35R, & HSD38 - Black Max <sup>®</sup> / Blue Max <sup>®</sup>	MOD22	TENV, TEFC, TEBC	56-449T	2
• BEI HS35 - Black Max <sup>®</sup> / Blue Max <sup>®</sup>	MOD31	TENV, TEFC, TEBC	56-449T	2
• Stub Shaft (XRI <sup>®</sup> -SD & XRI <sup>®</sup> - 841, TEFC only)	MOD42	TEFC	182-449T	2
<b>Fan</b>				
• Oversized fan (see Inverter Duty modification)	MOD43	TEFC	213T-449T	2
• Fan Removal	MOD44	All Non-EXP	56-449T	2
• Vane Axial	MOD43	All Non-Exp	143T-449T	4
<b>Frequency</b>				
• Frequency Re-Rate 60 Hz to 50 Hz	MOD7	All	56-449T	1
<b>Grease/Fittings</b>				
• Grease Relief Fittings	MOD15	All Non-EXP	143T-449T	2
• Zerk Fittings (Cast Iron Motors)	MOD15	All Non-EXP	182T-449T	2
• Low Temperature Grease	MOD0	All	48-449T	2
• High Temperature Grease	MOD0	All	48-449T	2

\*Lead-time days does not include the day order is received

# MOTORS | MARATHON ONLY MOTOR MODIFICATIONS

MODIFICATION DESCRIPTION	MODIFICATION NUMBER	PRODUCT	FRAME	LEAD-TIME DAYS*
<b>Grounding</b>				
• Conduit Box Grounding Lug	MOD20	All	48-215T	2
• On-Frame Grounding (Cast Iron Motors)	MOD20	All	143T-449T	2
• Shaft Grounding Ring	MOD20	Call	48-449T	2
<b>Inverter Duty Motors</b>				
• Variable Torque with Thermostats (R140)	MOD25	All	143T-449T	2
• Constant Torque with Thermostats (R142)	MOD26	All	143T-449T	2
• Constant Torque (R164)	MOD43	All	143T-449T	2
<b>Leads</b>				
• Reconnect Leads	MOD9	All	48-449T	2
• Terminal Lugs	MOD0	All	48-326T	2
• Remark Leads	MOD33	All	48-449T	2
• Longer Leads - Up to 24"	MOD0	All Non-EXP	48-449T	2
<b>Mounting/Assembly (Example: F1 to F2)</b>				
• Convert to Floor, Top, Ceiling, or Wall	MOD1	All Non-EXP	143T-449T	2
• Convert to Floor, Top, Ceiling, or Wall	MOD39	Explosion Proof	143T-449T	2
• Adjustable Bases	MOD39	All	143T-449T	2
<b>Nameplates / Markings</b>				
• Additional Data on Nameplate	MOD7	All	48-449T	1
• CE Marking	MOD7	All	48-449T	2
• Private Label	MOD7	All	48-449T	1
• Rotation Arrow	MOD7	Single Phase	48-215T	1
• Separate Nameplate for Customer Data	MOD7	All	48-449T	2
• Stainless Steel Nameplate	MOD7	All	48-449T	1
<b>Packaging</b>				
• Heat Treated Pallet	MOD29	All	48-449T	3
<b>Paint</b>				
• Repaint to a Marathon stock color	MOD8	All	48-449T	2-3
<b>Screens</b>				
• Rodent Screens	MOD0	ODP	364T-449T	Call
<b>Service Factor</b>				
• AC Motor Service Factor Re-Rating	MOD7	All Non-EXP	48-449T	1
<b>Severe Duty Construction</b>				
• Cast Iron Fan Cover and Conduit Box	MOD16	All Non-EXP	143T-449T	2
<b>Shaft Grounding Ring (see Grounding)</b>				
<b>Shaft Modifications</b>				
• Drill & Tap Hole	MOD42	All	56-449T	3
• TS Shaft	MOD42	All	284T-449T	2
• Mill Flat on Shaft	MOD0	All	56-184T	2
• Steps on Shaft	MOD0	All	143T-449T	Call
<b>Space Heaters</b>				
• Non Explosion Proof	MOD12	All Non-EXP	48-449T	2
• Explosion Proof	MOD41	Explosion Proof	56-449T	2
• IEC Frames	MOD12	IEC	100-250	2
<b>Terminal Blocks</b>				
• Terminal Block	MOD0	All Non-EXP	180-449T	Call
<b>Thermal Protection</b>				
• Thermostats - Windings	MOD14	All	56-449T	2
• Thermistors - Windings	MOD14	All	143T-449T	2
• Thermistors (including Control Module)	MOD14	All Non-EXP	143T-449T	2
• Thermocouples - Winding or Bearing	MOD0	All Non-EXP	145T-449T	2
<b>Weatherproofing / Special Service</b>				
• Tropical Anti-Fungus Treatment	MOD5	All	48-449T	2
• Division 2 Motors (CSA certified)	MOD49	Blue Chip*/XRI*	143T-449T	Call

\*Lead-time days does not include the day order is received

# MARATHON ONLY STOCK MOTORS | MOTORS

Contact Marathon Motors for all modification services on Explosion Proof and Blower (TEBC) motors.

## NEMA MOTORS

DESCRIPTION	KIT REQ'D	LIST PRICE												
		MOD #	48	56	143-145	182-184	213-215	254-256	284-286	324-326	364-365	404-405	444-445	447-449
Altitude / Ambient Bearings		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
Convert Ball to Roller (Drive End)	Yes	18	-----	-----	-----	-----	-----	-----	-----	-----	\$200	\$200	\$250	\$250
Convert Roller to Ball (Drive End)	Yes	18	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	\$250	\$250
Sealed Bearings		18	\$197	\$197	\$197	\$263	\$263	\$362	\$461	\$625	\$1,084	\$1,084	\$1,478	\$1,478
Insulated Bearings		18	-----	-----	\$461	\$526	\$526	\$1,530	\$1,645	\$1,645	\$1,737	\$1,776	\$1,882	\$2,061
Blowers														
Axial Blower	Yes	19	-----	-----	-----	-----	\$308	\$270	\$270	\$270	\$520	\$520	\$520	\$520
Brackets*														
C-Face (Non-Explosion Proof)	Yes	2	-----	\$143	\$143	\$168	\$168	\$195	\$290	\$329	\$329	\$329	\$329	\$329
C-Face (Explosion Proof)	Yes	2	-----	\$238	-----	-----	-----	\$325	\$483	\$648	\$648	\$648	\$948	\$948
C-Face (IEEE 841)	Yes	2	-----	-----	\$238	\$280	\$280	\$325	\$425	\$489	\$489	\$489	\$489	\$489
D-Flange	Yes	17	-----	-----	-----	-----	-----	\$168	\$240	\$408	\$408	-----	-----	-----
Brakes														
3 lb-ft for a TEFC motor	Yes	3	-----	\$165	\$165	-----	-----	-----	-----	-----	-----	-----	-----	-----
6 lb-ft for a TEFC motor	Yes	3	-----	\$165	\$165	-----	-----	-----	-----	-----	-----	-----	-----	-----
10 lb-ft for a TEFC motor	Yes	3	-----	\$165	\$165	-----	-----	-----	-----	-----	-----	-----	-----	-----
6 lb-ft for a Black Max (TENV) motor	Yes	3	-----	\$165	\$165	\$165	\$165	-----	-----	-----	-----	-----	-----	-----
10 lb-ft for a Black Max (TENV) motor	Yes	3	-----	\$165	\$165	\$165	\$165	\$165	\$165	-----	-----	-----	-----	-----
Brake Coil (56000 Series)		3	-----	\$410	\$410	\$410	-----	-----	-----	-----	-----	-----	-----	-----
Brake Coil (87000 Series)		3	-----	-----	-----	\$510	\$510	\$510	-----	-----	-----	-----	-----	-----
Vertical Mounting - Up or Down	Yes	3	-----	-----	-----	-----	\$73	\$73	-----	-----	-----	-----	-----	-----
Vertical Mounting - Shaft Down	Yes	3	-----	-----	-----	-----	\$73	\$73	-----	-----	-----	-----	-----	-----
Conduit Box														
Rotate Conduit Box Lead Opening		56	-----	-----	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145
Convert to Cast Iron	Yes	56	-----	-----	\$158	\$158	\$158	\$174	\$188	\$217	-----	-----	-----	-----
Auxiliary Box (Condulet)		56	-----	-----	-----	\$217	\$217	\$289	\$289	\$289	\$434	\$434	\$434	\$434
Connections:														
SO Cord, Plug, and Switch Single Phase		0	\$287	\$287	\$287	\$287	\$287	-----	-----	-----	-----	-----	-----	-----
Drains														
Condensation Drain Holes		21	-----	-----	\$171	\$171	\$171	\$191	\$191	\$191	\$191	\$191	\$191	\$191
Brass Drain & Breather		21	-----	-----	\$182	\$182	\$182	\$326	\$326	\$326	\$326	\$326	\$326	\$326
Stainless Steel Drain & Breather		21	-----	-----	\$263	\$263	\$263	\$471	\$471	\$471	\$471	\$471	\$471	\$471
Drip Cover														
Canopy Cover (ODP & TEFC Motors)	Yes	4	\$121	\$121	\$121	\$121	\$160	\$256	-----	-----	-----	-----	-----	-----
Encoders (NOTE: Multiplier Symbol E3)														
Avtron AV56	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
Avtron HS25A	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
Avtron HS35A	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Avtron HS35M	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Avtron M3	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BEI HS35	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Dynapar HS20	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
Dynapar HS35R	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EPC 260	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	-----	-----	-----	-----	-----
NorthStar HSD35	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NorthStar SL56	Yes	22	-----	\$0	\$0	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
Blue Max TEBC Encoders:														
Avtron HS35A	Yes	24	-----	-----	-----	-----	-----	-----	\$0	\$0	\$0	\$0	\$0	\$0
Avtron AV56	Yes	24	-----	-----	-----	-----	-----	-----	\$0	\$0	\$0	\$0	\$0	\$0
Dynapar HSD38	Yes	24	-----	-----	-----	-----	-----	-----	\$0	\$0	\$0	\$0	\$0	\$0
NorthStar SL56	Yes	24	-----	-----	-----	-----	-----	-----	\$0	\$0	\$0	\$0	\$0	\$0
Turck A02H	Yes	24	-----	-----	-----	-----	-----	-----	\$0	\$0	\$0	\$0	\$0	\$0
Blue Max Brakemotor Encoders:														
Avtron AV56	Yes	24	-----	-----	\$0	\$0	-----	-----	-----	-----	-----	-----	-----	-----
Avtron M85	Yes	24	-----	-----	-----	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
NorthStar SL56	Yes	24	-----	-----	\$0	\$0	-----	-----	-----	-----	-----	-----	-----	-----
NorthStar SL85	Yes	24	-----	-----	-----	\$0	\$0	\$0	-----	-----	-----	-----	-----	-----
Stub Shaft: (XRI®-SD & XRI®-841, TEFC only)	Yes	42	-----	-----	-----	\$182	\$182	\$182	\$182	\$182	\$182	\$182	\$182	\$182
Fan														
Oversized fan (Inverter Duty)		43	-----	-----	-----	-----	\$230	\$263	\$263	\$263	\$296	\$329	\$329	\$329
Fan Removal		44	-----	\$145	\$145	\$182	\$182	\$217	\$217	\$217	\$254	\$254	\$254	\$254
Vane Axial		43	-----	-----	\$315	\$623	\$623	\$934	\$934	\$934	\$1,231	\$1,231	\$1,231	\$1,231
Frequency														
Re-Rate 60Hz to 50Hz		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
Grease/Fittings														
Grease Relief Fittings		15	-----	-----	\$174	\$174	\$174	\$174	\$174	\$174	\$174	\$174	\$174	\$174
Zerk Fittings (Cast Iron Motors)		15	-----	-----	-----	\$276	\$276	\$276	\$276	\$276	\$276	\$276	\$276	\$276
Low Temperature Grease		0	\$461	\$461	\$461	\$816	\$816	\$816	\$816	\$816	\$1,092	\$1,461	\$1,461	\$1,461
High Temperature Grease		0	\$461	\$461	\$461	\$816	\$816	\$816	\$816	\$816	\$1,092	\$1,461	\$1,461	\$1,461

\*Addition of C-Face Kits may result in non-NEMA "BA", dimension. For the resulting "BA" dimension consult chart found in modification section

Continued on next page.

# MOTORS | MARATHON ONLY STOCK MOTORS

Contact Marathon Motors for all modification services on Explosion Proof and Blower (TEBC) motors.

DESCRIPTION	KIT REQ'D	LIST PRICE												
		MOD #	48	56	143-145	182-184	213-215	254-256	284-286	324-326	364-365	404-405	444-445	447-449
<b>Grounding:</b>														
Conduit Box Grounding Lug		20	\$105	\$105	\$105	\$118	\$118	-----	-----	-----	-----	-----	-----	-----
On-Frame Grounding (Cast Iron Motors)		20	-----	-----	\$145	\$158	\$158	\$239	\$239	\$239	\$334	\$334	\$334	\$334
Shaft Grounding Ring	Yes	20	\$177	\$177	\$177	\$204	\$204	\$292	\$292	\$403	\$531	\$553	\$776	\$776
<b>Inverter Duty Motors:</b>														
Variable Torque (R140)		25	-----	-----	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278
Constant Torque (fan chg, t-stats, re-nameplate)		26	-----	-----	\$278	\$278	\$278	\$441	\$441	\$441	\$441	\$542	\$542	\$542
Constant Torque (R164, fan chg, re-nameplate)		43	-----	-----	\$230	\$230	\$230	\$263	\$263	\$263	\$296	\$329	\$329	\$329
<b>Leads:</b>														
Reconnect Leads (Non-Explosion Proof)		9	\$168	\$168	\$168	\$249	\$249	\$439	\$439	\$439	\$575	\$575	\$575	\$575
Reconnect Leads (Explosion Proof)		40	\$271	\$271	\$271	\$417	\$417	\$562	\$562	\$562	\$709	\$709	\$709	\$709
Remark Leads		33	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176
Longer Leads - Up to 24"		0	\$138	\$138	\$138	\$207	\$207	\$362	\$362	\$362	\$507	\$507	\$507	\$507
<b>Mounting/ Assembly: (Ex. F1 to F2):</b>														
Non-Explosion Proof		1	-----	-----	\$209	\$209	\$209	\$278	\$278	\$278	\$347	\$347	\$347	\$347
Explosion Proof		39	-----	-----	\$487	\$487	\$487	\$555	\$555	\$555	\$626	\$626	\$626	\$626
Adjustable Motor Bases	Yes	39	-----	-----	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143
Transition Motor Bases	Yes	39	-----	-----	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143	\$143
<b>Nameplates / Markings:</b>														
Additional Data on Nameplate		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
CE Marking		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
Private Label		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
Rotation Arrow		7	\$114	\$114	\$114	\$114	\$114	-----	-----	-----	-----	-----	-----	-----
Stainless Steel Nameplate		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
Separate Nameplate for Customer Data		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
<b>Packaging:</b>														
Heat Treated Pallets		29	\$50	\$50	\$50	\$50	\$125	\$125	\$250	\$250	\$250	\$250	\$250	\$250
<b>Paint:</b>														
Repaint to a Marathon Stock Color		8	\$211	\$211	\$211	\$211	\$211	\$263	\$263	\$263	\$461	\$461	\$461	\$592
<b>Screens:</b>														
Rodent Screens		0	-----	-----	-----	-----	-----	-----	-----	-----	\$661	\$661	\$661	\$661
<b>Service Factor:</b>														
AC Motor Service Factor Re-Rating		7	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114	\$114
<b>Severe Duty Construction:</b>														
Cast Iron Fan Cover and Conduit Box	Yes	16	-----	-----	\$147	\$181	\$200	\$225	\$225	\$225	\$273	\$273	\$273	-----
<b>Shaft Modifications:</b>														
Drill & Tap Hole		42	-----	\$174	\$174	\$197	\$257	\$316	\$316	\$458	\$507	\$572	\$724	\$724
TS Shaft		42	-----	-----	-----	-----	-----	-----	\$1,579	\$1,579	\$1,711	\$1,911	\$1,911	\$1,911
Mill Flat on Shaft		0	-----	\$174	\$174	\$197	-----	-----	-----	-----	-----	-----	-----	-----
Steps on Shaft		0	-----	-----	\$217	\$289	\$289	\$362	\$434	\$507	\$579	\$651	\$724	\$796
<b>Space Heaters:</b>														
Non Explosion Proof		12	\$278	\$278	\$278	\$400	\$400	\$471	\$471	\$471	\$661	\$661	\$661	\$661
Explosion Proof		41	-----	\$417	\$417	\$525	\$525	\$661	\$661	\$661	\$800	\$800	\$800	\$800
<b>Terminal Blocks:</b>														
Terminal Block	Yes	0	-----	-----	-----	\$294	\$294	\$351	\$351	\$351	\$358	\$358	\$437	\$437
<b>Thermal Protection:</b>														
Thermostats (Non Explosion Proof)		14	-----	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278
Thermostats (Explosion Proof Motors)		14	-----	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556
Thermistors (Non Explosion Proof motors)		14	-----	-----	\$522	\$522	\$522	\$522	\$522	\$522	\$522	\$522	\$522	\$522
Thermistors (Explosion Proof motors)		14	-----	-----	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053	\$1,053
Thermistors (including Control Module)		14	-----	-----	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391
Thermocouples - Winding or Bearing (Non XP)		0	-----	-----	\$305	\$305	\$305	\$399	\$399	\$399	\$575	\$575	\$575	\$575
<b>Weatherproofing / Special Service:</b>														
Tropical Anti- Fungus Treatment		5	\$242	\$242	\$242	\$242	\$242	\$313	\$313	\$313	\$382	\$382	\$382	\$382
Division 2 Hazardous (CSA certified)		49	-----	-----	\$114	\$339	\$339	\$441	\$441	\$441	\$224	\$224	\$224	\$224
Other Modifications:		0	CONSULT FACTORY											

## IEC Motors

DESCRIPTION	Requires Kit	LIST PRICE														
		Mod#	63	71	80	90	100	112	132	160	180	200	225	250	280	315
<b>BRACKETS:</b>																
FF Flange (B5)	Yes	55	\$158	\$162	\$170	\$179	\$200	\$221	\$221	\$221	\$221	\$221	\$221	\$221	\$221	\$221
FT Flange (B14)	Yes	55	\$158	\$162	\$170	\$179	\$200	\$221	\$221	\$221	-----	-----	-----	-----	-----	-----
<b>SPACE HEATERS:</b>																
		12	-----	-----	-----	-----	\$405	\$502	\$502	\$554	\$554	\$554	\$693	\$693	\$693	\$693
<b>THERMOSTATS:</b>																
		14	-----	-----	-----	-----	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278
<b>HEAT TREATED PALLETS:</b>																
		29	\$95	\$95	\$95	\$95	\$250	\$250	\$250	\$325	\$325	\$325	\$325	\$325	\$325	\$325
<b>OTHER MODIFICATIONS:</b>																
		0	CONSULT FACTORY													

## Altitude/Ambient - MOD7 (Mult. Symbol S4)

The rating of standard motors assumes operation at sea level. Listed motors are suitable for operation at altitudes up to 3,300 feet in a maximum ambient temperature of 40°C. The ambient temperature is the temperature of the cooling medium surrounding the motor. All standard motors are suitable for operation over the range of -15°C to 40°C ambient per NEMA MG-1.

## AC Motor Altitude or Ambient Re-Rating

Re-rating of a non-explosion proof motor can be done by evaluating the performance data and possibly changing the Service Factor. Contact Marathon Motors for motor capabilities prior to motor selection and modification.

## Bearings - MOD18 (Mult. Symbol S4)

Most standard motors use anti-friction deep groove Conrad type Ball bearing, sized for the loads to be expected in industrial applications. Roller bearings are used on the drive end to handle heavy or overhung (radial) shaft loads.

## Ball to Roller Bearing

Roller bearings have the capability to handle higher radial loads than Ball bearings, but must have minimum radial loads to operate correctly. Roller bearings must only be used on belted loads. They are not suitable for direct-coupled loads. (Marathon Motors recommends that belting data is reviewed by Engineering prior to converting any motor to roller bearing.) This option includes replacing only the standard drive end bearing with a roller bearing and locking the opposite bearing axially. Available on TEFC Blue Chip® and Blue Chip® XRI® motors. Lead-time is 3 days.

## Roller to Ball bearing

Larger horsepower motors are stocked standard with a roller bearing on the drive end. For direct-coupled applications, a Ball bearing must be installed on the drive-end. Lead-time is 2 days.

## Sealed Bearing

This modification provides the option of replacing the standard bearings in AC motors with sealed bearings and replacing the grease fittings with plugs. May not be suitable for belted applications. 250 - 449 frame, 3600RPM, no sealed bearing option. 250 - 445, 1800RPM and below, non contact sealed only. 48 - 215, All RPM's are available for sealed bearings. Consult Marathon Motors for full application details. Call for lead-time.

## Insulated Bearing

Insulated bearings are used to reduce the transmission of shaft currents. In accordance with NEMA MG1-31.4.4.3, both bearings must be insulated to protect inverter-driven motors from inverter-sourced shaft voltages. The connected load must also be insulated from the motor shaft to prevent damage to it's bearings. Per UL, insulated bearings may not be installed in Division 1 or Division 2 hazardous locations. Division 2 will be removed from XRI®-Severe Duty and IEEE 841 motors when this modification is performed. Call for lead-time.

## Blowers - MOD19 (Mult. Symbol S4)

Low rotational speeds, common in many vector drive applications, cause additional heat within the motor. As a result, these motors are designed as TENV or TEBC. Marathon Motors offers two types of blower units, depending upon the application requirements. The axial blower is available on Marathon's XRI® and XRI®-Severe Duty.

## Axial Blower

Most TEBC requirements are satisfied with Marathon's axial blower. The blower motor and fan are in the same (horizontal) plane as the motor drive shaft. Lead-time is 3 days.

## C-Face Brackets - MOD2 (Mult. Symbol S4)

The addition of a C-Face kit to a standard foot mount (rigid base) motor, results in a non-NEMA "BA" dimension in 143-256 Frames due to NEMA's establishment of two distinct "BA" dimensions for each of the affected frame sizes: one for rigid base motors and another for C-Face/rigid base motors. No motor manufacturer can meet both prescribed dimensions on reworked motors. The following table identifies the "BA" dimensions (defined as the distance from the center of the front foot hole to the shaft shoulder) for 143T-256T and TC frames:

\* C-Face Kit (rework) "BA" dimension is identical to foot mount "BA."

## D-Flange Brackets - MOD17

NEMA FRAME	FOOT MOUNT*	C-FACE
143T-145T	2.38"	2.75"
182T-184T	2.75"	3.50"
213T-215T	3.50"	4.25"
254T-256T	4.25"	4.75"

## (Mult. Symbol S4)

Add a D-Flange Kit to rigid base, cast iron motor. Available on Blue Chip 254T-365T and Drip proof 284T-286T ("TTDP" and "TTDC" designs). Addition of D-Flange Kit results in non-NEMA 'BA' dimension or 254T-256T. Lead time is 2 days.

## IEC Brackets - MOD55 (Mult. Symbol S4)

B14 FT Flange (IEC C-Face)

IEC mounting arrangement with the motor flange at the drive end similar to a NEMA C-Face motor. Modification includes motor disassembly and installation of a FT Flange to a Globetrotter® motor. Lead-time is 2 days.

## B5 FF Flange (IEC D-Flange)

IEC mounting arrangement with the motor flange at the drive end similar to a D-Flange. Modification includes motor disassembly and installation of a FF Flange to Globetrotter® motor. Lead-time is 2 days.

## Brake Motors - MOD3 (Mult. Symbol S4)

Spring-set, electrically released mechanical disc brakes are available for stopping and/or holding the load. Marathon's brakes are suitable for any angle mounting. Price of modification includes brake kit and installation.

# MOTORS | MARATHON ONLY MOTOR MODIFICATIONS

MOTOR HP	BRAKEMOTOR SHAFT R.P.M.		
	Lb-Ft @3600	Lb-Ft @1800	Lb-Ft @1200
1/4	---	---	3
1/3	---	3	3
1/2	3	3	3
3/4	3	6	6
1	3	6	6
1 1/2	6	10	10
2	6	10	---

## Brake Selection Chart

\*\* For normal (140%) torque rating, do not apply on motors larger than 2 HP. Reduced braking torque and /or longer stopping times can result from applying an undersized brake on higher HP motors.

## Brake Addition - TEFC

This modification includes the addition of a 3,6, or 10 Lb-Ft brake to single or three phase, TEFC, 56 (5000 series model numbers) and 143/145T Frame motors. Operating voltages are 115/208-230, 208-230/460, and 575 Volts. Lead-time is 3 days.

## Brake Addition - Inverter Duty

This modification includes the addition of a 6 or 10 Lb-Ft brake to Marathon Motors's Black Max® or Blue Max® Vector Duty motors. Operating voltages are 115/208-230, 208-230/460, or 575 Volts. Lead-time is 3 days.

## Brake Coil Voltage (Stearns only)

Brake coil changes allow for operation of brakes at various voltages on 50 or 60 Hertz AC power supplies. Available coil voltages at 50 HZ are 110, 220, 415, and 110/220 Volts. Coil voltages at 60 HZ are 115, 200, 575, and 200/400 Volts. Coil voltages at 60/50 HZ are 230/190, 460/380, and 208-230/460-190/380 Volts. External brake coil lead connections will be brought out from the brake. Specify brake lead location, brake coil voltage, and supply frequency at time of order. Lead-time is 10 days.

MOD NUMBER	BRAKE RATING	BRAKE SERIES	LIST PRICE PER MOTOR
MOD3X	3 Ft/Lb	56,000	\$410
	6 Ft/Lb		
	10 Ft/Lb		
	15 Ft/Lb		
MOD3Y	25 Ft/Lb	87,000	\$510
	35 Ft/Lb		
	50 Ft/Lb		
	75 Ft/Lb		
	105 Ft/Lb		

## Vertical Modification Kit (Stearns 87,000 series)

Includes required hardware to accommodate vertical above (shaft down) or vertical below (shaft up) mounting.

TORQUE RATING (Lb/Ft)	MOUNTING	
	SHAFT UP	SHAFT DOWN
25,35	Not req'd	Required
50,75,105	Required	Required

## Conduit Box - MOD56 (Mult. Symbol S4)

Standard conduit box construction is based on the individual product description, e.g. severe duty motors always have a cast iron conduit box, while some standard duty motors come with stamped steel and others cast iron. Conduit boxes meet or exceed NEC 430.12 requirements for volume.

Termination of protective or monitoring devices can be provided in a separate auxiliary conduit box or conduit. Auxiliary conduit boxes are not available on explosion proof motors.

## Rotate Conduit Box Lead Opening

Standard motors have lead opening facing down toward motor base. Modifications include rotating the conduit box so the lead opening is facing the desired direction. Specify lead opening location facing conduit box. Available on non-explosion proof motors. Lead-time is 2 days.

## Convert to Cast Iron

Replacement of steel conduit box with a cast iron conduit box. This modification is available on non-explosion proof cast iron motors as Marathon's explosion proof integral stock motors come standard with a cast iron conduit box. Lead-time is 2 days.

## Auxiliary Box (Condulet)

A condulet can be added to the main motor conduit box for routing of accessory leads. Available on ODP and TEFC (non-explosion proof) motors. Call for lead-time.

## Connections - MOD0 (Mult. Symbol S4)

Motor connections consist of special cords, plugs, and switches added to a single phase motor.

## Drains - MOD21 (Mult. Symbol S4)

Standard duty motors include a weep hole as standard, while severe duty and explosion proof motors include a brass drain/breather as standard. These are located in the drive end bracket at the lowest point.

## Condensation Drain Holes

Additional drilled holes will be made in both end brackets of TEFC motors. Not available on explosion proof motors. Lead-time is 2 days.

## Brass Drain & Breather

Combination self-draining and breather plugs are available on TEFC motors. Not available on explosion proof motors. Lead-time is 2 days.

## Stainless Steel Drain & Breather

Combination self-draining and breather plugs are available on TEFC motors. Not available on explosion proof motors. Lead-time is 2 days.

## Drip Covers - MOD4 (Mult. Symbol S4)

Drip covers can be furnished on standard motors for extra protection from dripping liquids and falling objects when the motor is mounted in the vertical shaft down position. These covers are recommended on all open Drip proof and totally enclosed motors for vertical shaft down operation. These covers have no vertical lifting provisions provided.

## Canopy Cover (ODP and TEFC Motors)

Modification includes installation of a sheet metal drip cover to the motor for vertical shaft down mounting. Available on rolled steel Drip proof motors through 256T frame and select TEFC motors. Lead-time is 2 days.

## Encoders - MOD22, and MOD24 (Mult. Symbol E3)

These electrical devices sense rotor speed and direction providing feedback to a control device. An encoder is a feedback device that translates mechanical motion into an electrical signal. A cable is connected from the encoder to the variable frequency drive to provide this feedback. Various mechanical provisions on the motor are required to attach the encoder. These may include C-Face on the non-drive end of the motor and special shaft extension. Various resolutions are available. All encoders offered have quadrature signal with line driver output.

Encoders can be mounted on Black Max® and Blue Max® 2000 Vector Duty motors, TENV 56 through 286T Frame, TEBC construction in 284T through 449T Frame.

## Stub Shaft - MOD42 (Mult. Symbol S4)

Add Stub Shaft to Fan Cooled XRI-SD, XRI-841 (182-449 Frames) to accommodate addition of encoder on opposite drive end of motor. Lead-time 2 days.

## Fan - MOD43, and MOD44 (Mult. Symbol S4)

Marathon Motors's XRI® Severe Duty and IEEE841 motors have non-sparking fans made with, high-temperature, reinforced corrosion resistant plastic that is impervious to chemical attack and has been specially designed for motor applications. All motors utilize bi-directional cooling fans.

**Oversized fan (Inverter Duty)** - See MOD43 Inverter Duty

## Fan Removal - MOD44

TEFC to TEAO. Convert a motor from totally enclosed, fan cooled construction to totally enclosed, air-over by removing fan cover, fan, and cutting off the fan end shaft. The modified motor must be mounted in the air stream of the driven fan for cooling purposes. The customer is responsible for providing adequate airflow over the motor. Lead-time is 2 days.

## Vane Axial Fan - MOD43

The modification can be done on rigid or C-Face mount, TEFC, TENV, EPFC, EPNV, or DP enclosures. Motors will be modified for Vane Axial fan applications. All motors will get an additional nameplate, and 42" extended leads. TEFC models will have the fan and fan guard removed and enclosure changed to TEAO. A minimum airstream velocity of 3000' per minute is required.

Lead time is 4 days.

## Frequency - MOD7 (Mult. Symbol S4)

Most motors commonly operate on 60 hertz (HZ) within North America. However, 50 hertz systems are common in other countries.

## Frequency Re-Rate 60 HZ to 50 HZ

Marathon Motors's standard motors rated at 60 HZ may be operated at 50 HZ at reduced voltage and horsepower or Service Factor. A label containing specific re-rating information will be attached to the motor. Frame size is subject to change.

Lead-time is 1 day.

Standard grease is Exxon Polyrex® EM with a bearing operating temperature range of -30° to +150°C for ball and roller bearings. Devices for installing grease into the motors, such as zerk fittings, are available.

## Grease Relief Fittings - MOD15

Install standard grease relief fitting on motor. Grease relief fittings serve as an outlet to equalize pressure in the motor. Not available on explosion proof motors. Lead-time is 2 days.

## Zerk Fittings (Cast Iron Motors) - MOD15

Replace standard grease plugs on motors with zerk fittings. XRI® Severe Duty and IEEE841 motors come with zerk fittings as standard equipment. Not available on explosion proof motors. Lead-time is 2 days.

## Low Temperature Grease - MOD0

Bearing grease may be changed to allow for a lower operation range. The motor bearings and end bells are purged and repacked with Beacon 325 grease or equivalent with a grease temperature range of -60°C to +120°C. Call for lead-time.

## High Temperature Grease - MOD0

Bearing grease may be changed to allow for a higher operating range. The motor bearings and end bells are purged and repacked with Dow Corning DC44M grease or equivalent with a grease temperature range of -40° to +204°C. Call for lead-time.

## Grounding - MOD20 (Mult. Symbol S4)

All motors 48 to 449T Frame have grounding provisions per NEMA and NEC Standards. Explosion proof motors are permitted to have a frame ground, but electrical ground in conduit box must also be connected.

## Conduit Box Grounding Lug

Add clamp-type grounding lug in the conduit box. Lead-time is 2 days.

## On-Frame Grounding (Cast Iron Motors)

Addition of drilled and tapped hole on conduit box side of frame with installation of grounding lug. Available on non-explosion proof cast iron ratings only. Lead-time is 2 days.

## Bearing Current Protection - BCP

BCP is a shaft current mitigation system utilizing shaft ground rings for MODS. They are recommended (NEMA MG1 31.4.4.3) as an effective means of bearing protection for motors operated from inverter power. One ring is adequate to bleed down inverter-sourced shaft voltages, thereby protecting both bearings for motors as large as 5011 frame. BCP may not be installed on motors used in Division 1 or Division 2 hazardous locations or motors with a modified shaft. Does not fit all motor types. Lead-time is 2 days.

## Inverter Duty - MOD25, MOD26, and MOD43 (Mult.Symbol S4)

"Inverter Duty" describes a class of motors that are capable of operation from a variable frequency drive. Many Marathon general purpose motors are suitable for most variable torque and some limited constant torque applications.

These motors do not have provisions for mounting encoders, but are suitable for use with Volts/hertz or open loop vector controls. As required under Federal law, these motors comply with EPA efficiencies when operating from utility power. Lead-time is 2 days.

**Grease/Fittings - MOD0, MOD15 (Mult. Symbol S4)**

# MOTORS | MARATHON ONLY MOTOR MODIFICATIONS

## INV. DUTY (LEADTIME 2 DAYS)

Mod #	Appl.	Mtr. Type	Mod
25	Variable Torque	Any	Add thermostats, re-nameplate
26	10:1 CT	EPAct TEFC	Oversized fan, Add thermostats, re-nameplate
	20:1 CT	NEMA Premium® TEFC	
43	10:1 CT	EPAct TEFC	Oversized fan, re-nameplate
	20:1 CT	NEMA Premium® TEFC	

Operation of motor on VFD exempts motor from Epact mandated efficiency levels.

### Leads - MOD0, MOD9, and MOD33, (Mult. Symbol S4)

All motors are provided with standard leads of ample length for easy connection in the conduit box to the power leads. Lead size and material are dependent upon the class of insulation system in the motor and the current capacity required.

### Reconnection - MOD9

Reconnect dual voltage 9-lead or 12-lead motors to a 3-lead single voltage. Connection is made inside the motor frame. Specify desired voltage when ordering. On single phase motors, specify rotation. Lead-time is 2 days.

\*Part Winding Start and Star-delta connections are excluded.

### Remark Leads - MOD33

Using cloth markers, remark leads with numbers or letters. Please specify markings. Lead-time is 2 days.

### Longer Leads - MOD0

Extend leads up to two feet longer than standard by splicing. Splice will be visible in conduit box. Not available on explosion proof motors. Lead-time is 2 days.

### Mounting/Assembly - MOD1, and MOD39 (Mult. Symbol S4)

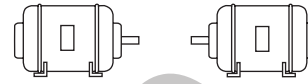
Motors listed are horizontal, foot mounted. Many stock motors can be furnished in assembly positions as illustrated. Modification may include repositioning of vents, baffles, drains, and conduit box. Also end brackets are assembled and grease fittings are properly installed for operation with the motor in the position shown. No attempt is made to locate fittings on any particular side of the motor. Horizontal Ball bearing motor assemblies W5, W6, W7, and W8 are not suitable for external thrusts in excess of rotor weight and half-coupling. Cast Iron ODP and TEFC, 360 and larger, are not suitable for vertical operation. Consult Engineering for TEFC Build Up. Lead-time is 2 days.

### Convert to Floor, Ceiling, or Wall Mount - MOD1

Convert standard F1 mount to F2, W1, W2, W3, W4, W5, W6, W7, W8, C1, or C2 mount. The mounting symbol is required when ordering to indicate the proper mounting. Lead-time is 2 days.

Example: Motor will be modified F1 to wall mounting W3.

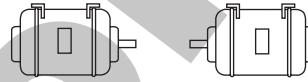
### FLOOR MOUNTING ASSEMBLIES



F-1

F-2

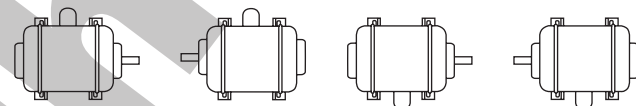
### CEILING MOUNTING ASSEMBLIES



C-1

C-2

### WALL MOUNTING ASSEMBLIES

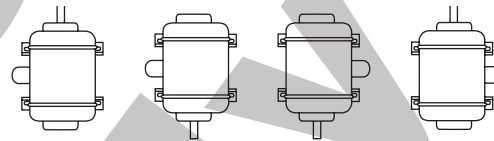


W-1

W-2

W-3

W-4



W-5

W-6

W-7

W-8

### Adjustable Motor Bases - MOD39

Adjustable bases are a convenient means for adjusting belt tension or may be used as mounting plates. Adjustable motor bases are bolted to fixed base of motor prior to shipping. NEMA 215T and smaller bases feature one adjusting screw. Bases on NEMA 254T and larger feature two adjusting screws. Bases are not suitable for vertical mounting. Lead-time is 2 days.

### Nameplates / Markings - MOD7 (Mult. Symbol S4)

Nameplate material is mylar or stainless steel depending on motor design and enclosure.

### Additional Data on Nameplate

Motors can be re-nameplated for alternate ratings. Changes in horsepower, altitude, ambient, voltage, frequency, etc. Lead-time is 1 day.

### CE Mark

CE compliant mark can be provided for all non explosion proof NEMA frame motors. Many stock motors already contain the CE mark. Lead-time is 2 days.



## Rotation Arrow

All motors utilize bi-directional cooling fans. Specify rotation facing shaft extension on order entry form. Available on Single Phase only. Lead-time is 1 day.

## Stainless Steel Nameplate

Replace existing mylar nameplate with 304 stainless steel nameplate. Lead-time is 1 day.

## Separate Nameplate for Customer Data

A separate customer nameplate can be furnished. Information contained must be submitted at time of order. These additional nameplates cannot be supplied with CSA or UL Listings unless installed to motor in a Marathon Motors facility. Lead-time is 2 days.

## Packaging - MOD29

### (Mult. Symbol S4)

Heat Treated Pallets

ISPM-15 requires the use of heat-treated wooden packaging materials when shipping into all foreign countries (a temporary exemption exists for Canada). Modification includes replacement of wooden pallet with heat-treated pallet. Does not include export crating for ocean freight (contact factory for export packaging cost).

## Paint - MOD8

### (Mult. Symbol S4)

The standard paint finish is a two-coat paint system. The first coat is a rust-inhibitive primer applied to protect the castings during storage and manufacturing. The second coat is a powder coat on 48-140 frame, enamel on non-severe duty motors, or a 2-part epoxy on severe duty 180-5000 frame motors.

Special paints and color options are available if compatible and reviewed by application engineering. Paint chips and material safety data sheets are required.

## Repaint to a Marathon Stock Color

Repaint motor to another Marathon Motors stock paint color. Colors include: Marathon Motors Blue Chip™ blue, PowerWash™ white, farm duty black, Fire Pump red, light gray, or dark gray. Specify color on order. Leadtime on enamel paint is 2 days. Epoxy paint requires a 3 day lead-time.

## Screens - MOD0 (Mult. Symbol S4)

Corrosion resistant screens can be furnished over the air intake and discharge openings of cast iron Drip proof motors. Drip proof motors equipped with these screens conform to the Drip proof guarded definition appearing in NEMA MG-1, Part 1. Call for lead time.

## Service Factor - MOD7 (Mult. Symbol S4)

A multiplier that may be applied to the rated horsepower of a motor, which indicates a permissible horsepower loading at rated voltage and frequency. Lead-time is 1 day.

## AC Motor Service Factor Re-Rating

When a 1.15 Service Factor or higher is required, please refer to the list adder. Frame size is subject to change. Not available on explosion proof motors. Lead-time is 1 day.

## Severe Duty Construction - MOD16

### (Mult. Symbol S4)

This modification starts with a Marathon Blue Chip™ Totally Enclosed cast iron frame motor and reworks it to all cast iron construction. With additional enhancements, the motor is prepared for a severe or harsh industrial environment. (Domestic Built Product Only)

Remove polypropylene fan cover and sheet metal conduit box from the motor and replace with cast iron fan cover, threaded and gasketed conduit box, apply epoxy finish to motor exterior, and add brass drain and breather. Lead-time is 2 days.

## Shaft Modification - MOD0, and MOD42

### (Mult. Symbol S4)

Motors are furnished with a single straight shaft with sled runner keyway and a rectangular key. For motors in frames 143T through 449T, a long shaft for V-Belt drive is supplied. 2-Pole motors in frames 324 through 449 and certain other 4-Pole ratings are furnished with short shafts for direct connections. Modifications are for existing shafts only. Not applicable if a new shaft is required.

## Drill & Tap Hole - MOD42

Drilled radially or in the end of the shaft. Drilled and tapped in the end of the shaft. Lead-time is 3 days.

## TS Shaft - MOD42

Convert "T" frame shaft to a "TS" Frame shaft. Modify motor by reducing the shaft, adding new keyway, and shortening the shaft length to the NEMA "TS" dimension. Lead-time is 3 days.

## Mill Flat on Shaft - MOD0

Mill a flat on the drive end shaft extension. Provide detail of flat with the order. Lead-time is 3 days.

## Steps on Shaft - MOD0

One to three reductions in shaft diameter. Customer to specify number of reductions at time of order. Call for lead time.

# MOTORS | MARATHON ONLY MOTOR MODIFICATIONS

## Space Heaters - MOD12, and MOD41 (Mult. Symbol S4)

Space heaters are used to prevent the build-up of condensation on the windings of the motor when the motor is not operating. Space heaters are typically installed on the end-turns of the coils.

## Space Heaters - ODP & TEFC - MOD12

Space heaters can be furnished on Drip proof and totally enclosed motors. Heater leads are normally brought out to the motor conduit box. Heater voltage is available in three voltages for 60 Hz operation of 115, 230, or 460 volt, single-phase. Space heaters are sized per NEMA standards.

Lead-time is 2 days.

## Space Heaters - IEC Frames - MOD12

Space heaters can be furnished on IEC motors. Heater leads are normally brought out to the main terminal box. Heater voltage is available in two voltages for 50 Hz operation.

Lead-time is 2 days.

## Space Heaters - Explosion Proof - MOD41

Space heaters can be furnished on explosion proof motors. Heater leads are normally brought out to the motor conduit box. Heater voltage is available in three voltages for 60 Hz operation of 115, 230, or 460 volt, single-phase. Space heaters are sized per NEMA standards.

Lead-time is 2 days.

## Terminal Blocks - MOD0 (Mult. Symbol S4)

Conduit box mounted terminal blocks provide for a convenient termination of power leads. The terminal blocks are sized for the proper amperage and voltage of the motor. The Globetrotter® IEC motor has IEC terminal blocks as standard.

## Terminal Block

Install terminal blocks in conduit box of NEMA motor with lead connection. Customer to advise on lead connection. Call for lead-time. Contact factory to verify capability.

## Thermal Protection - MOD0, and MOD14 (Mult. Symbol S4)

Thermal protection are built in protective devices that prevent motor overheating. They work either by interrupting the power supply when the motor overheats or by incorporating a pilot device that opens the holding circuit of a magnetic starter or energizes an alarm bell or warning light.

## Thermostats - All Motors - MOD14

Thermostats are mounted on the stator winding and are temperature-sensing only, with normally closed snap action contacts. These devices are installed on the end-turns of the motor winding. Their purpose is to activate a warning device or shut down the motor upon excessive winding temperatures. The standard arrangement is the addition of 2 or 3 thermostats to the winding end-turns, connected in series with the leads brought out to the main motor conduit box. Class I Groups C & D / Class II Groups F & G Explosion Proof motors have hermetically sealed thermostats as standard.

Lead-time is 2 days.

## Thermistors - All Motors - MOD14

Thermistors are small, non-linear resistance devices placed on the stator windings. As the critical temperature is reached, the resistance of the thermistor changes radically, causing operation of a control relay. The standard arrangement is Q-3 positive temperature coefficient (PTC) type on winding end-turns with leads brought out to the main motor conduit box. On IEC motors the leads are brought into a conduit adjacent to the main conduit box and includes a terminal block. As standard, 3 Texas Instrument thermistors are furnished, one per phase. Control Module is available.

Lead-time is 2 days.

## Thermocouples - Non XP Motors - MOD0

Thermocouples sense temperature and offer inherent protection against abnormal stall and running conditions. The standard arrangement is the addition of an iron constantan thermocouple to the winding end turns or bearing housing with leads brought out to the main motor conduit box. Customer must specify number, type, and location at time of order.

Lead-time is 2 days.

## Weatherproofing/Special Service

### MOD5, and MOD49

#### (Mult. Symbol S4)

Weatherproofing or special service provides additional protection to windings and mechanical parts as well as special greases or modifications per industry specifications such as NEMA, or IEEE. Call for lead-time.

## Tropical Anti-Fungus Treatment - MOD5

Windings and mechanical parts coated with polyurethane for superior protection to resist tropical environments. Not available on brake motors.

Lead-time is 2 days.

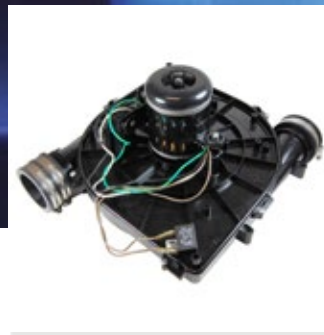
## Hazardous Duty™ Service

### Division 2 Hazardous Motors - MOD49

The Division 2 hazardous modification incorporates a new fan, fan guard, and nameplate on most TEFC motors. XRI-SD and IEEE841 motors have Division 2 statement on the nameplate as standard. The nameplate will say "CSA certified, Group I, Division 2, Groups A, B, C, and D, Temperature Code.

(See chart below) Call for lead-time.

NEMA FRAME	SERVICE FACTOR	POWER SUPPLY	FREQUENCY RANGE	TEMP CODE
143-449T	1.0	SineWave	50-60Hz	T3
143-449T	1.0	PWM	3-120Hz	T2D
143-449T	1.15	SineWave	60Hz	T2B



# BLOWERS

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## Aladdin Steel



Replaces	
7002-2983	230-1460
Item ID	<b>A120</b>
H.P.	1/40
Volts	120
RPM	3000
Amps	1.10
Speeds	2
Type	Shaded Pole
Enclosure	Open
Bearing	Ball
Hertz	60

## Amana



Replaces	
D98686-7	7062-3151
Item ID	<b>A158</b>
H.P.	1/25
Volts	115
RPM	3450
Amps	0.70
Speeds	1
Type	PSC
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Amana



Replaces	
20190601	7021-9625
Item ID	<b>A180</b>
H.P.	1/30
Volts	115
RPM	3400
Amps	1.80
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Amana



Replaces		
098862-1	D68862-1	D98862-1
7021-9574	7021-9924	
Item ID	<b>82862</b>	
H.P.	1/35	
Volts	208/240	
RPM	3000	
Amps	0.6/0.5	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Amana/Armstrong Magic Pak



Notes: Includes Pressure switch and leads

Replaces			
35HWC	48HWC	60 HWC	66HWC
Item ID	<b>66426K</b>		
H.P.	1/30		
Volts	208-230		
RPM	3000		
Amps	0.65		
Speeds	1		
Rotation	CWLE		
Type	Shaded Pole		
Bearings	Ball		
Enclosure	Open		
Hertz	60		
Overload	Automatic		



## Armstrong



Replaces	
40404-003	117521-00
Item ID	<b>66404</b>
H.P.	1/30
Volts	115
RPM	3300
Amps	0.53
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Armstrong



Replaces	
35035B001	
Item ID	<b>80280</b>
H.P.	1/50
Volts	208-230
RPM	3000
Amps	0.55
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Burnham



Replaces	
6116056	
Item ID	<b>66056</b>
H.P.	1/15
Volts	115
RPM	3000
Amps	0.48
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic
Includes	Gasket & Capacitor

## Carrier



Replaces	
HC21ZE123A	
<b>Item ID</b>	<b>65123</b>
Stack Size (In.)	1.5
Volts	115
RPM	3000
Amps	1.50
Rotation	CCWLE
Speeds	1
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic

## Carrier



Replaces	
HC21ZE117B	J238-150220
<b>Item ID</b>	<b>65569</b>
Stack Size (in.)	1.5
Volts	115
RPM	3300
Amps	1.80
Speeds	1
Shaft Dimension (In.)	1 x 5/16 x 1 7/8
Length Less Shaft (In.)	3 3/8
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



**A65569BW**  
4" x 1.5" CCW  
5/16" Bore  
Blower Wheel  
Replace Carrier  
LA11AA005

## Carrier



Replaces	
HC24HE230	J238-15161
<b>Item ID</b>	<b>65570</b>
Stack Size (in.)	1.5
Volts	230
RPM	3000
Amps	0.80
Speeds	1
Shaft Dimension (In.)	1 x 5/16 x 1 7/8
Length Less Shaft (In.)	3 5/8
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



**A65569BW**  
4" x 1.5" CCW  
5/16" Bore  
Blower Wheel  
Replace Carrier  
LA11AA005

## Carrier



Replaces	
HC21ZE118	
<b>Item ID</b>	<b>65118</b>
Stack Size (in.)	1 5/8
Volts	115
RPM	2800/2500
Amps	1.80/0.60
Rotation	CCWLE
Speeds	2
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



**BW11046**  
Blower Wheel  
See Page 390

## Carrier



Replaces	
J238-150-15103	HC24HE230
<b>Item ID</b>	<b>65230</b>
Watts	28
Volts	208-230
RPM	3000
Amps	0.80
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Carrier



Replaces	
309868-755	
<b>Item ID</b>	<b>66755</b>
H.P.	1/20
Volts	115
RPM	3300
Amps	0.86
Rotation	CWSE
Speeds	1
Type	PSC
Bearings	Ball
Hertz	60
Overload	Automatic



## Carrier



Replaces	
320725-756	
<b>Item ID</b>	<b>66756</b>
Watts	58
Volts	115
RPM	3300
Amps	0.85
Rotation	CWSE
Speeds	1
Type	PSC
Bearings	Ball
Hertz	60
Overload	Automatic



## Carrier



Replaces	
320725-757	
<b>Item ID</b>	<b>66757</b>
Watts	58
Volts	115
RPM	3300
Amps	0.85
Rotation	CWSE
Speeds	1
Type	PSC
Bearings	Ball
Hertz	60
Overload	Automatic



## Carrier



Replaces	
320725-758	
<b>Item ID</b>	<b>66758</b>
Watts	78
Volts	115
RPM	3400
Amps	1.15
Rotation	CWSE
Speeds	1
Type	PSC
Bearings	Ball
Hertz	60
Overload	Automatic



## Carrier



Replaces	
326628-761	
<b>Item ID</b>	<b>66761</b>
H.P.	8.2 MHP
Volts	115
RPM	3000
Amps	0.63/0.3
Rotation	CWSE
Speeds	2
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



Notes: Includes Motor, 2 Speed Plug, Cooling Fan, Blower Wheel, Mounting Bracket, Screws & Grommets

## Carrier



Replaces	
326628-762	
<b>Item ID</b>	<b>66762</b>
H.P.	16 MHP
Volts	115
RPM	3000
Amps	1.06/0.28
Rotation	CWSE
Speeds	2
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



Notes: Includes 2 Spd Plug, Blower Wheel, Cooling Fan, Screws & Grommets

## Carrier



Replaces	
326628-763	
<b>Item ID</b>	<b>66763</b>
H.P.	28 MHP
Volts	115
RPM	3000
Amps	1.32/0.39
Rotation	CWSE
Speeds	2
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic



Notes: Includes Motor, Blower Wheel, Mounting Bracket, Cooling Fan, Screws & Grommets

## Carrier



Replaces		
HC24AU600	HC24AU600B	HC24A0701
<b>Item ID</b>	<b>82520</b>	
H.P.	1/15	
Volts	115/230	
RPM	3000	
Amps	2.00/1.00	
Speeds	1	
Rotation	CWSE	
Shaft Dimension (In.)	1/4 x 2	
Length Less Shaft (In.)	5 5/8	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

Notes: 56. Includes 5/16" Shaft Adapter

## Carrier



Replaces		
HC24AU700	HC24AU710	
<b>Item ID</b>	<b>82521</b>	
H.P.	1/15	
Volts	115/230	
RPM	3000	
Amps	2.00/1.00	
Speeds	1	
Rotation	CCWSE	
Shaft Dimension (In.)	1/4 x 2	
Length Less Shaft (In.)	6 3/16	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

Notes: 56. Includes 5/16" Shaft Adapter

## Carrier



Replaces	
48GS400106 48GS400649	
<b>Item ID</b>	<b>66649</b>
H.P.	1/16
Volts	208-230
RPM	3450
Amps	0.5
Speeds	1
Rotation	CCWSE
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60

## Carrier



Replaces		
48SS400380 48SS400606 50DK406181		
<b>Item ID</b>	<b>66815</b>	
H.P.	1/16	
Volts	208-230	
RPM	3450	
Amps	0.48	
Speeds	1	
Type	PSC	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	



Notes: 4 MFD/370 Capacitor Required

## Carrier



Notes: Includes Gasket

Replaces	
48SS400381 48SS400607 50DK406182	
<b>Item ID</b>	<b>66816</b>
H.P.	1/16
Volts	460
RPM	3450
Amps	0.25
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic



## Carrier



Replaces		
HC24AU725B	JA1P053	P251-2307
<b>Item ID</b>	<b>82180</b>	
H.P.	1/20	
Volts	115	
RPM	3300	
Amps	1.54	
Speeds	1	
Rotation	CWSE	
Shaft Dimension (In.)	5/16 x 2 1/8	
Length Less Shaft (In.)	3 5/8	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Carrier



Replaces		
8251510431	JA1M086	JA1M147
JA1M147N	P251-2916	
<b>Item ID</b>	<b>82121</b>	
H.P.	1/33	
Volts	115	
RPM	3000	
Amps	1.10	
Speeds	1	
Rotation	CCWLE	
Shaft Dimension (In.)	5/16 x 2 1/8	
Length Less Shaft (In.)	3 3/8	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Carrier



Replaces	
LA11AA005	
<b>Item ID</b>	<b>A65569BW</b>
Diameter (In.)	4
Width (In.)	1 1/2
Rotation	CCW
Bore (In.)	5/16

## Carrier



Replaces	
LAXA046	
<b>Item ID</b>	<b>BW11046</b>
Diameter (In.)	4 1/2
Width (In.)	1 5/8
Rotation	CCW
Bore (In.)	1/4

## Carrier



Replaces	
LA21RB548	
<b>Item ID</b>	<b>BW16548</b>
Diameter (In.)	5 3/4
Width (In.)	1
Rotation	CW
Bore (In.)	5/16

## Coleman Evcon



Notes: C-Frame motor with centrifugal switch

Replaces	
7990-317P	7102-2187
<b>Item ID</b>	<b>K629</b>
Stack Size (in.)	1
H.P.	1/85
Volts	115
RPM	2950
Amps	0.67
Speeds	1
Rotation	CW
Shaft Dimension (In.)	1/4 x 1 1/8
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Carrier



Replaces	
LA21RB549	
<b>Item ID</b>	<b>BW16549</b>
Diameter (In.)	5 1/4
Width (In.)	1
Rotation	CW
Bore (In.)	5/16

## Coleman Evcon



### Replaces

373-19801-820 373-19801-821

Item ID	<b>65475</b>
H.P.	1/150
Volts	115
RPM	3315
Amps	0.4
Speeds	1
Rotation	CCWSE
Type	Shaded Pole
Bearings	Ball
Hertz	60
Overload	Automatic

## Dunkirk



### Replaces

433-00-510

Item ID	<b>82052</b>
H.P.	1/50
Volts	115
RPM	3000
Amps	1.00
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Goodman



### Replaces

5KSB46GF0001S B4833000

Item ID	<b>48331</b>
Stack Size (in.)	1.25
Volts	115
RPM	3200
Amps	1.80
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic
Includes	Rubber Boot

## Goodman



### Replaces

0131M00002P 0131M00002S

Item ID	<b>66002</b>
Stack Size (in.)	1.5
Volts	115
RPM	3000
Amps	1.20
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic
Includes	Gasket

## Consol. Ind./ Universal



Notes: Includes Gasket

### Replaces

401570 JA1P082

Item ID	<b>82570</b>
H.P.	1/33
Volts	115
RPM	3300
Amps	0.9
Rotation	CWSE
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Fedders



### Replaces

031-7059

Item ID	<b>82618</b>
H.P.	1/50
Volts	115/230
RPM	3000
Amps	0.90/0.45
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Goodman



### Replaces

5KSB46GF0003S B48330001

Item ID	<b>48332</b>
Stack Size (in.)	1.25
Volts	115
RPM	3200/2800
Amps	1.80/1.10
Speeds	2
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic
Includes	Rubber Boot

## Goodman



### Replaces

071M00000

Item ID	<b>66071</b>
Stack Size (in.)	1.5
Volts	120
RPM	3000
Amps	2.8
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic



## Goodman



Replaces		
11009001	11009002	11009003
Item ID	<b>66003</b>	
Watts	30	
Volts	115	
RPM	3250	
Amps	0.92	
Speeds	1	
Type	PSC	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
0131M00003	0131M00003P	
Item ID	<b>66202</b>	
Watts	56	
Volts	115	
RPM	3000	
Amps	1.13/0.56	
Speeds	2	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
D9868602		
Item ID	<b>66743</b>	
H.P.	1/24	
Volts	115	
RPM	3000	
Amps	1.5	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B4059000	J238-112-11195	7002-3036
J238-11195		
Item ID	<b>66590</b>	
H.P.	1/30	
Volts	115	
RPM	3000	
Amps	1.50	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B1859005	J238-11128	
Item ID	<b>66005</b>	
H.P.	1/30	
Volts	115	
RPM	3000	
Amps	1.60	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B29590005		
Item ID	<b>66959</b>	
H.P.	1/30	
Volts	208/230	
RPM	3000	
Amps	0.60/0.56	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B4059000	7002-3036	
Item ID	<b>A182</b>	
H.P.	1/35	
Volts	115	
RPM	3125	
Amps	1.20	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B1859000	B18590005	
Item ID	<b>82483</b>	
H.P.	1/50	
Volts	115	
RPM	3000	
Amps	0.9	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B2833001S	B2833001	7021-9000
7021-9087	FB-RFB140	
Item ID	<b>A140</b>	
H.P.	1/50	
Volts	115	
RPM	3400	
Amps	1.40	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
0131M00121P	0131M00121S	
Item ID	<b>66121</b>	
H.P.	1/50	
Volts	230	
RPM	3000	
Amps	0.22	
Speeds	1	
Type	PSC	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Heil-Quaker



Replaces		
608971		
Item ID	<b>A064</b>	
H.P.	1/55	
Volts	115	
RPM	3150	
Amps	0.70	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## ICP



Replaces		
1011350	HQ1011350	HQ1011350FA
R7-RFB350		
Item ID	<b>A173</b>	
H.P.	1/18	
Volts	115	
RPM	3450	
Amps	0.80	
Speeds	1	
Type	PSC	
Enclosure	Open	
Bearings	Ball	
Hertz	60	
Overload	Automatic	

## Goodman



Replaces		
B295900	7021-8656	
Item ID	<b>A162</b>	
H.P.	1/50	
Volts	208-230	
RPM	3000	
Amps	0.50	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Heat n' Glow



Replaces		
7002-1241		
Item ID	<b>A133</b>	
Volts	115	
RPM	3000	
Amps	1.20	
Speeds	1	
Type	Shaded Pole	
Enclosure	Open	
Hertz	60	

## ICP



Notes: Includes  
Vent Draining Fitting  
Mounting Screw  
Exhaust Blower Gasket  
Adapter Harness  
Instructions

Replaces		
1012002	1013388A	
1014338		
Item ID	<b>66338</b>	
H.P.	50 MHP	
Volts	115	
RPM	3000	
Amps	2.40	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Totally Enclosed	
Hertz	60	
Overload	Automatic	

## ICP



Replaces		
1149097	1008416P	
Item ID	<b>A307</b>	
H.P.	1/24	
Volts	115	
RPM	3450	
Amps	0.70	
Speeds	1	
Type	PSC	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

# What's inside matters when it comes to HVACR...



- choose from thousands of dependable OEM replacement draft inducers.

## ICP



### Replaces

1010238P	1010324	1708-607
1708-607P	R7-RFB134	7021-7700
7021-8735	7021-8736	7021-9335

### Item ID **A134**

H.P.	1/25
Volts	115
RPM	3060
Amps	1.50
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1000814	1001371	1001609	1002543
1007360	1011350	1150474	HQ1011350

### Item ID **66350**

H.P.	1/25
Volts	115
RPM	3350
Amps	0.92
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Overload	Automatic
Hertz	60
Includes	5MFD Capacitor

## ICP



### Replaces

1010312	1010526	1010928
1011095	1011097	1011409
1164280		

### Item ID **A170**

H.P.	1/25
Volts	115
RPM	3400
Amps	2.30
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1010491	1010527P	1011096
1011410		

### Item ID **A171**

H.P.	1/25
Volts	115
RPM	3450
Amps	0.70
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1054268P
----------

### Item ID **82148**

H.P.	1/30
Volts	208-230
RPM	3000
Amps	0.16
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1010975	1010975P
---------	----------

### Item ID **A172**

H.P.	1/35
Volts	115
RPM	3000
Amps	1.60
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1010324	1010238P
1013833	

### Item ID **66833**

H.P.	1/50
Volts	115
RPM	3000
Amps	1.60
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



### Replaces

1054268P	7021-7617	7021-9237
HQ1054268FA		

### Item ID **A148**

H.P.	1/50
Volts	208-230
RPM	3000
Amps	0.50
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## ICP



Replaces		
1110008	1085571	1085571P
7021-10048	7021-10580	
Item ID	<b>66254</b>	
H.P.	1/50	
Volts	230	
RPM	3000	
Amps	0.30	
Speeds	1	
Type	PSC	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Johnson



Replaces	
8973C	66HWC301
Item ID	<b>80280</b>
H.P.	1/50
Volts	230
RPM	3000
Amps	0.55
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Lennox



Replaces		
67K0401	67K0401P	7021-9450
FB-RFB547		
Item ID	<b>A163</b>	
H.P.	1/20	
Volts	115	
RPM	3400	
Amps	1.80	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Lennox



Replaces		
31L5501	101202-01	24W95
7002-2975	102359-01	
Item ID	<b>66501</b>	
H.P.	1/30	
Volts	115	
RPM	3000	
Amps	1.20	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## ICP



Replaces	
1006168	
Item ID	<b>82672</b>
H.P.	1/60
Volts	115
RPM	3300
Amps	0.90
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Lennox



Replaces	
80C93	
Item ID	<b>66093</b>
Stack (in.)	5/8
Volts	120
RPM	3000
Amps	0.43
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Lennox



Replaces		
7021-8473	20J89	76714300
Item ID	<b>66300</b>	
H.P.	1/25	
Volts	120	
RPM	3300	
Amps	1.50	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Rotation	CWSE	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Lennox



Replaces	
313L5501	7002-2975
Item ID	<b>A200</b>
H.P.	1/30
Volts	115
RPM	3000
Amps	1.35
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic



## Lennox

Replaces	
7021-10046	
Item ID	<b>A155</b>
H.P.	1/30
Volts	115
RPM	3000
Amps	1.40
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic



## Lennox

Replaces	
88K8401 J238-087-8171	
Item ID	<b>66401</b>
H.P.	1/60
Volts	120
RPM	2800
Amps	1.30
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Lennox



Replaces	
47H12 LB-82590CA	
Item ID	<b>82590</b>
Volts	115
RPM	3000
Amps	1.20
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Magic Chef/ Amana



Replaces	
HWC Series	
Item ID	<b>80280</b>
H.P.	1/50
Volts	230
RPM	3000
Amps	0.55
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Miller



Replaces	
303875000	
Item ID	<b>80270</b>
H.P.	1/50
Volts	115/230
RPM	3000
Amps	0.90/0.45
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic



## Nordyne

Replaces	
903404	
Item ID	<b>65404</b>
Stack Size (In.)	7/8
Volts	120
RPM	3000
Amps	0.3
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

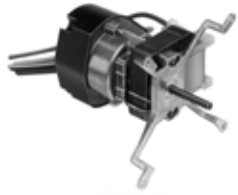
## Nordyne



Replaces	
622567	
Item ID	<b>66567</b>
H.P.	1/33
Volts	115
RPM	3000
Amps	0.43
Speeds	1
Rotation	CCWSE
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60

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Notes: C-Frame motor with centrifugal switch

## Rheem

Replaces	
51-21964-01	51-21964-11
Item ID	<b>K628</b>
Stack Size (In.)	3/4
Volts	208-230
RPM	3000
Amps	0.25
Speeds	1
Rotation	CW
Shaft Dimension (In.)	1/4 x 1 1/2
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic



Notes: C-Frame motor with centrifugal switch. This Kit contains one motor and three fan blades each with 10 blades and 1/4" diameter bore, in diameters of 3", 3 1/2", and 4"

## Rheem

Replaces	
51-21964-11	
Item ID	<b>21964K</b>
Stack Size (In.)	3/4
Volts	208-230
RPM	3000
Amps	0.25
Speeds	1
Rotation	CW
Shaft Dimension (In.)	1/4 x 1 1/2
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Rheem



Replaces	
70-23641-81	
Item ID	<b>A241</b>
H.P.	1/25
Volts	208-230
RPM	3200
Amps	0.62
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic



## Rheem

Replaces		
117104-01	117847-07	70-22838-82
70-24157-03		
Item ID	<b>66847</b>	
H.P.	1/30	
Volts	120	
RPM	3000	
Amps	1.70	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Rheem



Notes: Includes Gasket

Replaces	
70-23641-82	
Item ID	<b>82182</b>
H.P.	1/30
Volts	460
RPM	3300
Amps	0.35
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Rotation	CWSE
Enclosure	Open
Diameter	3.3"
Hertz	60
Overload	Automatic



Notes: Includes Gasket

## Rheem

Replaces	
70-23641-81	
Item ID	<b>82641</b>
H.P.	1/35
Volts	208-230
RPM	3200
Amps	0.25
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Rheem



Replaces	
70-101087-81	7021-11559
Item ID	<b>66781</b>
H.P.	1/50
Volts	115
RPM	3000
Amps	0.60
Speeds	1
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic



## Rheem

Replaces		
70-21496-01	7021-5239	JAIM102
Item ID	<b>A090</b>	
H.P.	1/50	
Volts	115	
RPM	3000	
Amps	1.10	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Skymark



Replaces	
MTR136PK	
Item ID	<b>82136</b>
H.P.	1/35
Volts	208-230
RPM	3000
Amps	0.56
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Trane



Replaces	
C661452P01	X38080029010
Item ID	<b>A150</b>
H.P.	1/35
Volts	208-230
RPM	3000
Amps	0.50
Speeds	1
Type	Shaded Pole
Bearings	Sleeve
Enclosure	Open
Hertz	60
Overload	Automatic

## Trane



Replaces	
X38040253057	
Item ID	<b>82057</b>
H.P.	1/40
Volts	115
RPM	3000
Amps	1.00
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Trane



Replaces	
7021-8925	BLW00362
Item ID	<b>66362</b>
H.P.	1/100
Volts	115
RPM	3000
Amps	1/0.35
Speeds	2
Type	Shaded Pole
Bearings	Sleeve
Rotation	CWSE
Enclosure	Open
Hertz	60
Overload	Automatic

## Trane



Replaces		
D330787P01	D330809P01	BLW473
X38040305010	X38040305017	
Item ID	<b>66787</b>	
H.P.	1/30	
Volts	120	
RPM	3000	
Amps	1.3	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	
Includes	Special Plug	

## Trane



Replaces	
X38040253057	7021-8569
Item ID	<b>A192</b>
H.P.	1/40
Volts	115
RPM	3000
Amps	1.00
Speeds	1
Type	Shaded Pole
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

## Trane



Replaces		
210330673	210340125	X38040305017
7021-8428	D330809P01	R7-RFB143
Item ID	<b>A143</b>	
H.P.	1/50	
Volts	115	
RPM	3000	
Amps	0.95	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## Weil McClain



Replaces	
510-312-312	
Item ID	<b>66312</b>
H.P.	1/8
Volts	115
RPM	3100
Amps	1.8
Speeds	1
Rotation	CWSE
Type	PSC
Bearings	Ball
Enclosure	Open
Hertz	60
Overload	Automatic

**NEW**



## York



Replaces		
7021-11577	17503	7021-11577S
7021-11830	024-34558-000	
Item ID	<b>A225</b>	
H.P.	1/15	
Volts	115	
RPM	3200	
Amps	2.25	
Speeds	1	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
7062-2442	7062-3342	7062-3484
Item ID	<b>A137</b>	
H.P.	1/25	
Volts	115	
RPM	3450	
Amps	0.70	
Speeds	1	
Type	PSC	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
024-25960-000	7062-3958	
Item ID	<b>A165</b>	
H.P.	1/25	
Volts	115	
RPM	3450	
Amps	0.70	
Speeds	1	
Type	PSC	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
026-33999-001		
Item ID	<b>A223</b>	
H.P.	1/30	
Volts	208-230	
RPM	3200	
Amps	0.64	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
026-33999-001		
Item ID	<b>82999</b>	
H.P.	1/30	
Volts	208-230	
RPM	3200	
Amps	0.64	
Speeds	1	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Notes: Includes Gasket

Replaces		
326-32067-000		
Item ID	<b>66067</b>	
H.P.	1/35	
Volts	115	
RPM	3000	
Amps	1.13	
Speeds	1	
Rotation	CCWSE	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
373-10337-702	7021-8612	
Item ID	<b>82702</b>	
H.P.	1/50	
Volts	115	
RPM	3000	
Amps	1.2	
Speeds	1	
Rotation	CCWSE	
Type	Shaded Pole	
Bearings	Sleeve	
Enclosure	Open	
Hertz	60	
Overload	Automatic	

## York



Replaces		
341449	7058-1023	
Item ID	<b>A984</b>	
Volts	115	
RPM	3000	
Amps	2.63	
Speeds	1	
Rotation	CCWSE	
Type	Shaded Pole	
Bearings	Ball	
Enclosure	Enclosed	
Hertz	60	
Overload	Automatic	

**NEW**

## Fasco



Item ID	A167
Nameplate CFM	30
Volts	115
RPM	2900
Amps	0.4
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	B30
Nameplate CFM	45
Volts	115
RPM	3200
Amps	0.59
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	A071
Nameplate CFM	71
Volts	115
RPM	2850
Amps	0.7
Speeds	1
Rotation	CCW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	A082
Nameplate CFM	75
Volts	115
RPM	2800
Amps	0.95
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	B75F
Nameplate CFM	75
Volts	115
RPM	3200
Amps	0.59
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	A166
Nameplate CFM	115
Volts	115
RPM at Free Air	3200
Amps at Free Air	1.40
Hertz	50/60

## Fasco



Item ID	A125
Nameplate CFM	125
Volts	115
RPM	3200
Amps	1.1
Speeds	1
Rotation	CW/CCW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	B24220
Nameplate CFM	135
Volts	115
RPM	2600
Amps	1.3
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Fasco



Item ID	B47120
Nameplate CFM	180
Volts	115
RPM at Free Air	1360/1100/830
Amps at Free Air	1.95
Speeds	3
Bearing	Sleeve
Hertz	60

## Fasco



Item ID	A212
Nameplate CFM	212
Volts	115
RPM	2500
Amps	1.25
Speeds	1
Rotation	CW/CCW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	B45227
Nameplate CFM	265
Volts	115
RPM	1650
Amps	1.86
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	B45227-2
Nameplate CFM	265
Volts	230
RPM	1650
Amps	0.93
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	A455
Nameplate CFM	455
Volts	115
RPM	1500/1100
Amps	1.5
Speeds	2
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	B45230
Nameplate CFM	460
Volts	208-230
RPM	1600/1400
Amps	1.2
Speeds	2
Rotation	CCW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	B45267
Nameplate CFM	460
Volts	115
RPM at Free Air	1600/1400
Amps at Free Air	2.90
Speeds	2
Bearing	Sleeve
Hertz	60



## Fasco

Item ID	B68042
Nameplate CFM	815
Volts	115
RPM	1100
Amps	5.6
Speeds	1
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	A1000
Nameplate CFM	1000
Volts	115/230
RPM	1100/1100
Amps	4-2.9/2-1.4
Speeds	2
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve



## Fasco

Item ID	A1200
Nameplate CFM	1200
Volts	115/230
RPM	1500/1400
Amps	8-6.8/4-3.4
Speeds	2
Rotation	CW
Type	Shaded Pole
Bearings	Sleeve

## Direct OEM Replacements for Water Heaters



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>American Water Heater Replacement</b>										
W1	1/25	115	3210	1.90	1	CW	SP	Sleeve	OFC	American Water Heater 3000288



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>AO Smith Replacements</b>										
W2	1/14	115	3275	2.30	1	CW	SP	Ball	Open	AO Smith 183505-000



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>AO Smith Replacements</b>										
W4	1/20	115	3400	1.80	1	CCW	SP	Sleeve	Open	AO Smith 183381-000



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>Bradford White Replacements</b>										
W3	1/17	115	3000	1.80	1	CCW	SP	Sleeve	Open	Bradford White 117524-00, 239-39785-00



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>Bradford White Replacements</b>										
W5	1/14	115	3275	2.50	1	CW	SP	Ball	Open	Bradford White 239-42133-00B



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>Bradford White Replacements</b>										
W6	1/15	115	3000	2.20	1	CCW	SP	Sleeve	Open	Bradford White 239-40614-00C



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>Bradford White Replacements</b>										
W11	1/12	120	3000	3.1	1	CW	SP	Ball	Totally Enclosed	Bradford White 265-45584-00



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>GSW Replacements</b>										
W7	1/25	115	3200	1.30	1	CW	SP	Sleeve	OFC	GSW 63217



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>GSW Replacements</b>										
W8	1/25	115	3200	1.30	1	CW	SP	Sleeve	OFC	GSW 63172



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>State Ind. Replacements</b>										
W9	1/60	115	3000	0.95	1	CW	SP	Sleeve	OFC	State Ind. 0012400500



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>State Ind. Replacements</b>										
W10	1/20	115	3400	1.80	1	CCW	SP	Sleeve	OFC	State Ind. 0012400540

## Transflow Blowers



Item ID	Nameplate CFM	Volts	RPM at Free Air	Amps at Free Air	Speeds	Type	Enclosure	Hertz	Overload	Phase
<b>Fasco</b>										
<b>B22505</b>	80	115	3200	0.55	1	Shaded Pole	Open	50/60	Automatic	1



Item ID	Nameplate CFM	Volts	RPM at Free Air	Amps at Free Air	Speeds	Type	Enclosure	Hertz	Overload	Phase
<b>Fasco</b>										
<b>B22508</b>	105	115	1500	0.70	1	Shaded Pole	Open	60	Automatic	1



Item ID	Nameplate CFM	Volts	RPM at Free Air	Amps at Free Air	Speeds	Type	Enclosure	Hertz	Overload	Phase
<b>Fasco</b>										
<b>B22507</b>	115	115	3100	0.85	1	Shaded Pole	Open	50/60	Automatic	1



Item ID	Nameplate CFM	Volts	RPM at Free Air	Amps at Free Air	Speeds	Type	Enclosure	Hertz	Overload	Phase
<b>Fasco</b>										
<b>B22510</b>	150	115	3100	1.00	1	Shaded Pole	Open	50/60	Automatic	1



Item ID	Nameplate CFM	Volts	RPM at Free Air	Amps at Free Air	Speeds	Type	Enclosure	Hertz	Overload	Phase
<b>Fasco</b>										
<b>B22513</b>	215	115	2780	1.30	1	Shaded Pole	Open	60	Automatic	1



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## Aaon



Item ID	H.P.	Volts	RPM	Amps	ROT.	Length		Bearings	Dia.	ENCL.	Mounting	Capacitor	Replaces
						Shaft Dim. (In.)	Less Shaft (In.)						
<b>OAN470</b>	1/4	460/380-415	3200	0.90	CCWLE	1/2 x 3 1/4	5.49	Ball	5 5/8	Open	Horizontal	5MFD/370V	P48470 F548S08A27



Item ID	H.P.	Volts	RPM	Amps	ROT.	Length		Bearings	Dia.	ENCL.	Mounting	Capacitor	Replaces
						Shaft Dim. (In.)	Less Shaft (In.)						
<b>OAN1076</b>	3/4	460	1075	2.60	CWSE	1/2 x 4.00	6.0	Ball	5 5/8	TEAO	Belly Band	12.5MFD/370V	F48F37A27 F48SP6V9
<b>OAN1076V1</b>	3/4	460/380-415	1075	2.8-1.8	CWSE	1/2 x 2.825	7.38	Ball	5 5/8	TEAO	Belly Band	12.5MFD/370V	F48K04A27



Item ID	H.P.	Volts	RPM	Amps	ROT.	Length		Bearings	Dia.	ENCL.	Mounting	Capacitor	Replaces
						Shaft Dim. (In.)	Less Shaft (In.)						
<b>OAN140</b>	3/4	460	1075	2.75	CCWLE	1/2 x 4	6.36	Ball	5 5/8	Semi	Vertical Shaft Up with Belly Band	12.5M/370V	P99140 F48R38A27C



Item ID	H.P.	Volts	RPM	Amps	ROT.	Length		Bearings	Dia.	ENCL.	Mounting	Capacitor	Replaces
						Shaft Dim. (In.)	Less Shaft (In.)						
<b>OAN460</b>	3/4	208-230	1075	5.40	CCWLE	1/2 x 3	7.36	Ball	5 5/8	Semi	Vertical Shaft Up	15M/370V	P85460 F48K44A27C



Item ID	H.P.	Volts	RPM	Amps	ROT.	Length		Bearings	Dia.	ENCL.	Mounting	Capacitor	Replaces
						Shaft Dim. (In.)	Less Shaft (In.)						
<b>OAN747</b>	3/4	460	1075	2.00	CCWLE	1/2 x 3 1/4	7.11	Ball	5 5/8	Semi	Vertical Shaft Up with Belly Band	15M/370V	R17470 F48U09A27



## Amana



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>65337</b>	3/4	120	3000	0.68	1	CCWSE	SP	Sleeve	Open	60	C87131-1



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>82862</b>	1/35	208/240	3000	0.6/0.5	1	CWSE	SP	Sleeve	Open	60	098862-1 7021-9259



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A286</b>	1/35	208/230	3125	0.6	1	CW	SP	Sleeve	Open	60	11096904 7021-9398



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A289</b>	1/32	208/230	3125	0.75	1	CW	SP	Ball	Open	60	20351402 7058-0081



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A160</b>	1/30	115	3000	1.6	1	CW	SP	Sleeve	Open	60	20044401 7021-8252 7002-2407



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A180</b>	1/30	115	3400	1.80	1	CCW	SP	Ball	Open	60	20190601 7021-9625



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A185</b>	1/30	115	3000	1.15	1	CW	SP	Sleeve	Open	60	105854-04 7021-9316



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A158</b>	1/25	115	3450	0.70	1	CW	PSC	Sleeve	Open	60	D98686-7 7062-3151



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A280</b>	1/25	115	3000	1.5	1	CW	SP	Sleeve	Open	60	D986868 7021-7794
<b>A283</b>	1/25	115	3000	1.5	1	CCW	SP	Sleeve	Open	60	D9868617 7021-8730

## Amana



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A287</b>	1/25	115	3000	1.15	1	CW	SP	Sleeve	Open	60	10585405 7021-9655



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A129</b>	1/20	115	3250	1.95	1	CW	SP	Sleeve	Open	60	7021-9064 7021-9259



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>G2243</b>	1/10	208-230	1100	0.74	1	CWLE	PSC	Ball	TE	60	20181701
<b>G2246</b>	1/5	208-230	1080	1.60	1	CWLE	PSC	Ball	TE	60	20181702

## American Water Heater



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W1</b>	1/25	115	3210	1.90	1	CW	SP	Sleeve	OFC	3000288

## A.O. Smith



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W4</b>	1/20	115	3400	1.80	1	CCW	SP	Sleeve	Open	183381-000 7021-10195 7021-10910



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W2</b>	1/14	115	3275	2.30	1	CW	SP	Ball	Open	183505-000 7021-10770

## Armstrong



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>66404</b>	1/30	115	3300	0.53	1	CWLE	PSC	Ball	Open	60	40404-003 117521-00 7021-12439

## Beckett



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	ENCL.	Frame	Hertz	Mounting	Replaces
<b>OBK6002V1</b>	1/7	115	3450	1.80	1	CWOSE	1/2 x 1 7/8	PSC	Ball	TE	48M	60	M Flange	21805U 621945

## Bradford White



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W3</b>	1/17	115	3000	1.80	1	CCW	SP	Sleeve	Open	117524-00 239-39785-00



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W6</b>	1/15	115	3000	2.20	1	CCW	SP	Sleeve	Open	239-40614-00C 7021-9764



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>W5</b>	1/14	115	3275	2.50	1	CW	SP	Ball	Open	239-42133-00B 7021-10712

## Broan



Item ID	Bore (In.)	Diameter (In.)	Bore	Replaces
<b>A65216FB</b>	3/16	4 1/2	D Shape	99110379



Item ID	Stack Size		Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces	Notes
	(In.)	(In.)											
<b>65366</b>	5/8	5/8	120	3000	0.50	2	CCWSE	0.185 splined x 1 1/4	SP	Sleeve	Open	99080365	45, 513



Item ID	Stack Size		Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces	Notes
	(In.)	(In.)											
<b>65216</b>	5/8	5/8	120	3000	0.51	1	CCWSE	0.181 x 1 1/2	SP	Sleeve	Open	99080090, 99080216	485, 491
<b>65094</b>	7/8	7/8	120	3000	0.75	1	CCWSE	7/32 x 1 1/4	SP	Sleeve	Open	99080094, 99080099, 99080166	4285 491
<b>65159</b>	7/8	7/8	120	3000	0.71	1	CCWSE	1/4 x 2 5/8	SP	Sleeve	Open	99080159	491, 485
<b>65176</b>	1 1/8	1 1/8	120	3000	1.00	1	CWSE	7/32 x 1 1/2	SP	Sleeve	Open	99080176	485, 491



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim.	Length Less	Type	Bearings	Enclosure	Replaces
							(In.)	Shaft (In.)				
<b>69316</b>	1/12	120	1100	3.40	1	CWSE	1/2 x 3 1/16	2 1/4	SP	Sleeve	Open	97009316
<b>69317</b>	1/7	120	1100	4.30	1	CWSE	1/2 x 2 5/8	2 5/8	SP	Sleeve	Open	97009317 99080267

**Notes:**  
42. Includes Cord and Plug  
485. Includes two prong plug

491. Has a flatted shaft  
513. Special plug and cord attached

## Broan



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces	Notes
								Shaft (In.)						
<b>82583</b>	1/100	120	1550	0.55	1	CCWSE	5/16 x 1 3/4	2 5/8		SP	Sleeve	Open	97008583	513
<b>82633</b>	1/50	120	1400	0.789	1	CWSE	5/16 x 1 3/8	2 1/2		SP	Sleeve	Open	99080273 99080274 99080633	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces	Notes
								Shaft (In.)						
<b>82048</b>	1/40	120	1550	0.90	1	CWSE	5/16 x 2 1/16	2 1/4		SP	Sleeve	Open	97008342, 99080048J 99080050 7163-9263	482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces	Notes
								Shaft (In.)						
<b>40752</b>	1/40	120	1500	1.30	1	CCWSE	1/4 x 1 3/8	2 1/8		SP	Sleeve	Open	97009752 99080096 99080345	512



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces	Notes
								Shaft (In.)						
<b>82584</b>	1/30	120	1550	1.30	1	CCWSE	5/16 x 1 7/8	2 1/2		SP	Sleeve	Open	97008584	513



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces	Notes
								Shaft (In.)						
<b>82152</b>	1/20	120	1550	1.8	1	CWLE	1 3/4 x 5/16 x 1 3/4	3		SP	Sleeve	Open	99080152	42



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Replaces
								Shaft (In.)					
<b>D1087</b>	1/12	115	1050	2.90	1	CW	1/2 x 2 1/3	2 5/8		SP	Sleeve	Open	99080178 7151-3160

## Burnham



Item ID	Volts	RPM	Amps	Speeds	Type	Bearings	ENCL.	Hertz	Overload	Includes	Replaces
<b>66056</b>	115	3400	0.48	1	PSC	Ball	Open	60	Automatic	Gasket	6116056

**Notes:**  
42. Includes Cord and Plug  
482. Two prong plugs and cord attached

512. With cord and 2 prong 90 degree plug  
513. Special plug and cord attached

## Carrier



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>62530</b>	28 Watts	208-230	3000	0.80	1	CWSE	—	—	SP	Ball	HC24HE230



Item ID	Watts	Volts	RPM	Amps	Speeds	ROT.	Type	Bearings	Hertz	Overload	Replaces
<b>66755</b>	40	115	3300	0.86	1	CWSE	PSC	Ball	60	Automatic	309868-755



Item ID	Watts	Volts	RPM	Amps	Speeds	ROT.	Type	Bearings	Hertz	Overload	Replaces
<b>66756</b>	58	115	3300	0.85	1	CWSE	PSC	Ball	60	Automatic	320725-756
<b>66757</b>	58	115	3300	0.85	1	CWSE	PSC	Ball	60	Automatic	320725-757
<b>66758</b>	78	115	3400	1.15	1	CWSE	PSC	Ball	60	Automatic	320725-758



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Type	Bearings	Hertz	Overload	Replaces
<b>66761</b>	8.2 MHP	115	3000	0.63/0.3	2	CWSE	Shaded Pole	Ball	60	Automatic	326628-761
<b>66762</b>	16 MHP	115	3000	1.06/0.28	2	CWSE	Shaded Pole	Ball	60	Automatic	326628-762
<b>66763</b>	28 MHP	115	3000	1.32/0.39	2	CWSE	Shaded Pole	Ball	60	Automatic	326628-763



Notes: Includes Motor, 2 Speed Plug, Cooling Fan, Blower Wheel, Mounting Bracket, Screws & Grommets



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>65569</b>	25 MHP	115	3300	1.80	1	CWSE	1 x 5/16 x 1 7/8	3 3/8	SP	Ball	HC21ZE117B 318984-753
<b>65570</b>	25 MHP	230	3000	0.80	1	CWSE	1 x 5/16 x 1 7/8	3 5/8	SP	Ball	HC24HE230



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Type	Bearings	Replaces
<b>66649</b>	1/16	208-230	3450	0.48	1	CCWSE	PSC	Ball	48GS400106, 48GS400649 50DK406815, HC30GB232



Item ID	H.P.	Volts	RPM	Amps	Speeds	Type	Bearings	Enclosure	Hertz	Overload	Replaces
<b>66815</b>	1/16	208-230	3450	0.48	1	PSC	Ball	Open	60	Automatic	50DK406181
<b>66816</b>	1/16	460	3450	0.25	1	PSC	Ball	Open	60	Automatic	50DK406182



66815 Notes: 4 MFD/370 Capacitor Required  
66816 Notes: Includes Gasket



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>D1184</b>	1/16	460	3450	0.30	1	CCWSE	5/16 x 3.30	4 3/4	PSC	Ball	HC30GB460, HC30GB462 JF1H091, JF1H101
<b>D1182</b>	1/16	208-230	3450	0.57	1	CCWSE	5/16 x 3.30	4 1/2	PSC	Ball	HG30GB230, HG30GB232 JF1H012, JF1H092



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>82180</b>	1/20	115	3300	1.54	1	CCWLE	5/16 x 2 1/8	3 5/8	SP	Sleeve	JA1P053, P251-2307

## Carrier



Item ID	H.P.	Volts	RPM	Amps	Speeds	Type	Bearings	Enclosure	Hertz	Overload	Replaces
<b>66743</b>	1/24	115	3000	1.5	1	Shaded Pole	Sleeve	Open	60	Automatic	D9868602



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>65118</b>	1/30	115	2800/ 2500	1.80/0.60	2	CCWLE	3/4 x 5/16 x 1 5/8	2 3/4	SP	Ball	HC21ZE118



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>82121</b>	1/33	115	3000	1.10	1	CCWLE	5/16 x 2 1/8	3 3/8	SP	Sleeve	JA1M086 P251-2916



Item ID	H.P.	Stack Size (In.)	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>65123</b>	1/40	1 1/2	115	3000	1.50	1	CCWLE	3/4 x 5/16 x 1 1/8	2.54	SP	Ball	HC21ZE123A



Item ID	Bore (In.)	Diameter (In.)	Width	Replaces
<b>A65048BW</b>	5/16	3.82	1 5/8	LA11XA048

## Carrier, Three Phase, Open Air Over

### Features

- 70°C ambient
- Ball bearings



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>X235</b>	1	1140	200-230/460	56Y	56T11D5209	6.6-6.0/3.0	36	10 1/2	5/8 x 2 7/8	11.92	Carrier HD52VE214 Marathon 56T11D33



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X251</b>	5	3600	208-230/460	56HZ	056T34D5364	13.5-12.4/6.2	50	13.49	7/8 x 2 1/4	11.24	Carrier HD60AZ660 Marathon 56T34D903	Z, 5



Item ID	HP	RPM	Volts	Amps	Speeds	Bearings	Hertz	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>43405</b>	1/6	1500	208-230	0.9	1	Ball	60	CCWSE	1/2 x 1 3/4	4.25	HC33GE208 OCA1014



Notes: 5. 56H, 143T, and 145T Combination Base with 12 mounting holes

Z. 56HZ with 7/8" shaft dia., 3-1/2" shaft height, and slotted 56 frame base

## Carrier, PSC, Open Air Over, Resilient Ring & Thru-Bolt Mount

### Features

- Ball bearings
- Multi-speed capability, as noted
- Resilient ring/belly band mount
- Capacitor not included, see Electrical section



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X203</b>	1/2	1075	208-230	48Y	48A1101062	5.3	19	6 1/2	1/2 x 5 1/2	7.34	Carrier HC44AL230 Fasco D804 Magnetek 655	16



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X241</b>	3/4	1075/4	208-230	48Y	048A110697	5.4	17	5 1/2	1/2 x 6	6.5	Carrier HC45SE651 P251-5701	39



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X242</b>	1	1000/3	208-230	48YZ	048A110756	6.2	26	7 1/4	5/8 x 4	8.25	Carrier HC52AL230 231, 232 HC52SE208 P251-5101 & -5102	51 68

### Notes:

16. Fixed CCW Rotation, viewing opposite shaft (or lead end) of motor  
39. No thru-bolts, shaft end

51. Does not include resilient rings, see Electrical Section  
68. Rated 60/50 hertz, 190/380 or 380 volt at next lower horsepower  
Replacements listed may not be an exact duplicate of the original motor

## Carrier, PSC, Open Air Over

### Features

- Single and multi-speed models, as noted
- 3 lug mounting
- Ball bearings (except as noted)
- Capacitor not included, see Electrical section



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>X210</b>	1/4	1075/2	208-230	48Y	48A1101068	5MFD / 370V	2.2	13	4 1/8	1/2 X 4 1/4	4.19	Carrier HC37M220 HC39VE608, HC39ML706 HC37ME720, HC37ML702 Emerson 3303, Fasco D843 Magnetek 514 Century (A.O. Smith) OCB1026



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>X222</b>	1/3	1075/2	230	48Y	48A1101109	7.5MFD / 370V	2.6	15	4 3/4	1/2 X 3	5.25	Carrier HC41VE700 & 701, Emerson 3225, Magnetek 536, Century (A.O. Smith) OCB1036



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X405</b>	1/2	1075/1	208-230/460	48Y	48A1101744	7.5MFD / 370V	3.6/ 1.8	25	6 7/8	1/2 X 3 1/2	8.32	Century (A.O. Smith) OCA1056	21

### Notes:

21. Double shaft extension 1-1/2" long by 1/2" diameter with flat each end

Replacements listed may not be an exact duplicate of the original motor

## Carrier



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>82520</b>	1/15	115/230	3000	2.00/1.00	1	CWSE	1/4 x 2	6	SP	Ball	HC24AU600 HC24AU600B HC24A0701 HC24AU231 HC24A0701 HC30GU208A HC30GU209A HC680001 HC24AU700
<b>82521</b>	1/15	115/230	3000	2.00/1.00	1	CCWSE	1/4 x 2	5 5/8	SP	Ball	HC24AU700



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>G2243</b>	1/10	208-230	1100	0.74	1	CWLE	1/2 x 2 3/4	3 3/8	PSC	Ball	HC34GE234 HC32GE230



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>40230</b>	1/8	208-230	1125	0.90	1	CCWSE	1/2 x 4 3/8	3 3/4	PSC	Ball	HC35VE230



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>D847</b>	1/8	208-230	1125	0.90	1	CCWSE	1/2 x 3 1/2	3 3/4	PSC	Sleeve	HC35VE230



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>G2246</b>	1/5	208-230	1080	1.60	1	CWLE	1/2 x 2 3/4	3 7/8	PSC	Ball	HC37GE232



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>82210</b>	1/3	208-230	1625	1.80	1	CCWLE	5 5/8 x 1/2 x 5 5/8	4 1/4	PSC	Ball	HC41FB666



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>35046</b>	1/10	208-230	1100	0.75	1	CW	1/2 x 2.5	3.75	PSC	Ball	HC33GE235 5KCP39BGY540S 5KCP39BGU996AS
<b>35048</b>	1/5	208-230	810	1.2	1	CW	1/2 x 3.25	4.5	PSC	Ball	HC37GE228 5KCP39FFAB35S 5KCP39FFBC51AS
<b>35047</b>	1/4	208-230	1100	1.4	1	CW	1/2 x 3.	4.3	PSC	Ball	HC39GE226 5KCP39FGY563S 5KCP39FGU997AS



## Carrier



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>35049</b>	1/4	208-230	1100	1.5	1	CW	1/2 x 2.5	4.3	PSC	Ball	HC39GE238 5KCP39GGS238BS 5KCP39GFWB01S
<b>35050</b>	1/4	208-230/220	1100/900	1.42/1.42	1	CW	1/2 x 2.5	4.8	PSC	Ball	HC39GE208 5KCP39HFS277DS 5KCP39HFWB02S
<b>35051</b>	1/4	460/400	1100/900	.8/8	1	CW	1/2 x 2.5	4.6	PSC	Ball	HC39GE464 5KCP39HGS239S 5KCP39HGWB04S
<b>35052</b>	1/4	460/400	1100/900	.7/7	1	CW	1/2 x 2.5	5.3	PSC	Ball	HC39GE466 5KCP39MFS303BS 5KCP39MFWB11S



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>35041</b>	1/3	208-230	1075	2.7	3	CCW	1/2 x 3.75	5.36	PSC	Sleeve	HC41AE193 5KCP39KGS081S 5KCP39KGZ186S
<b>35042</b>	1/3	208-230	950	2.4	2	CCW	1/2 x 3.75	5.1	PSC	Sleeve	HC41AE194, 5KCP39GGS080S, 5KCP39GGZ188S
<b>35044</b>	1/3	115	1075	5.2	4	CCW	1/2 x 4.75	4.6	PSC	Sleeve	HC41AE117 5KCP39GGS336S 5KCP39GGZ183S
<b>35045</b>	1/2	115	1075	7.9	4	CCW	1/2 x 4.5	5.8	PSC	Sleeve	HC43AE116, 5KCP39LGR668AS 5KCP39LGZ184S
<b>35043</b>	3/4	208-230	1075	5.2	3	CCW	1/2 x 4	6.3	PSC	Sleeve	HC45AE198, 5KCP39PGS083S 5KCP39PGZ187S



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>82113</b>	3/4	115	1075	11.0	3	CWSE	1/2 x 2 7/8	5 3/8	PSC	Ball	HC45TE113 5KCP39PGV623CS



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>35053</b>	1	208-230	1620	4.9	1	CW	1/2 x 2.25	6.8	PSC	Ball	HC52ER230 5KCP39PGU661CS 5KCP39PGWB12S
<b>35054</b>	1	460	1650	2.1	1	CW	1/2 x 2.25	6.8	PSC	Ball	HC52ER460 5KCP39PGU660CS 5KCP39PGWB13S

## Choice Vending



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces
<b>65533</b>	1/2	120	3000	0.22	1	CCWSE	Splined (3/16 Diameter)	SP	Sleeve	Open	863243



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Hertz	Replaces
<b>A087</b>	1/6	115/230	2400	2.8/1.1	1	CCW	PSC	Sleeve	Open	3.3	50/60	7062-3496 7062-4087 7062-4687

## Coleman Evcon



Item ID	Stack Size		Volts	RPM	Amps	Speeds	Rotation	Shaft Dim.		Type	Bearings	ENCL.	Replaces
	(In.)	H.P.						(In.)	Type				
<b>K629</b>	1	1/85	115	2950	0.67	1	CW	1/4 x 1 1/8	SP	Sleeve	Open	7990-317P 7102-2187	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Replaces
<b>65475</b>	1/150	115	3315	0.4	1	CCWSE	SP	Ball	373-19801-820 373-19801-821



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A156</b>	1/35	115	3000	1.1	1	CW	SP	Sleeve	Open	7021-10882 7021-8935 2702321P



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A088</b>	1/25	115	3200	1.3	1	CW	SP	Sleeve	Open	7021-10267 7021-9908 D6868608 7021-5478

## Consolidated Ind.



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A128</b>	1/50	120	3000	0.9	1	CW	SP	Sleeve	3.3	7021-10271 7021-6376 7021-9404 302065



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>82570</b>	1/33	115	3300	0.9	1	CWSE	SP	Sleeve	3.3	401570, JA1P082

## Copeland



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>65020</b>	35	115	1500	1.40	1	CWLE	1/4 x 1/2	3 3/8	SP	Unit	TE	50/60	050-0267-0



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15041</b>	50	230	1500	0.85	1	CWLE	3/8 x 1 1/2	3 5/8	SP	Unit	Semi	60	050-0244-00

## Copeland



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15045</b>	50	230	1500	0.85	1	CCWLE	5/16 x 2 1/2	3 3/4	SP	Unit	Open	60	050-0264-0



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15049*</b>	50	208-230	1500	0.85	1	CWLE	3/8 x 1 1/2	3 3/4	SP	Unit	Semi	50/60	050-0244-00
<b>15460</b>	50	460	1500	0.44	1	CWLE	3/8 x 1 1/2	3 5/8	SP	Unit	Semi	60	050-0244-02

\*Notes: May be used on 208 volt applications.



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15461</b>	50	460	1500	0.44	1	CCWLE	5/16 x 2	3 5/8	SP	Sleeve	Open	60	050-0264-03



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15116</b>	50	115	1500	1.70	1	CWLE	1/4-20 x .4	4.18	SP	Unit	Open	60	0344-01 050-0344-01 950-0344-01
<b>15126</b>	50	208-230	1500	0.85	1	CWLE	1/4-20 x .4	4.18	SP	Unit	Open	60	0344-10 050-0344-10 950-0344-10
<b>15146</b>	50	460	1500	0.44	1	CWLE	1/4-20 x .4	4.18	SP	Unit	Open	60	0344-03 05-0344-03 950-0344-03



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>65040</b>	50	115	1500	1.70	1	CWLE	3/8 x 1 1/2	3 5/8	SP	Unit	Semi	50/60	050-0244-01
<b>65041</b>	50	230	1500	0.85	1	CWLE	3/8 x 1 1/2	3 5/8	SP	Unit	Semi	50/60	050-0244-00
<b>65045</b>	50	230	1500	0.85	1	CCWLE	5/16 x 2	4	SP	Unit	Open	50/60	050-0264-0



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Hertz	Replaces
<b>40251</b>	1/6	208-230	1550	1.10	1	CCWSE	1/2 x 3	3 1/2	PSC	Sleeve	Open	5 5/8	50/60	998-0251-00 050-0251-00 K55HSJNG-2974



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Hertz	Replaces
<b>40265</b>	1/6	208-230	1550	1.10	1	REV.	1/2 x 3	3 1/2	PSC	Sleeve	Open	5 5/8	50/60	050-0265-00 950-0265-00 K55HXPGP-5104



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Hertz	Replaces
<b>40250</b>	1/4	208-230	1625	1.50	1	CCWSE	1/2 x 3 Dbl Flat	4 1/4	PSC	Sleeve	Open	5 5/8	50/60	950-0250-00 050-0250-00 K55HXJZJ-3126

## Copeland



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Length		Type	Bearings	ENCL.	Dia.		Replaces
							Shaft Dim. (In.)	Less Shaft (In.)				(In.)	Hertz	
<b>OCP0108</b>	1/3	208-230	1625	2.6	1	CWLE	1/2 x 2 1/4	5 3/4	PSC	Ball	TE	5 3/5	50/60	050-0108-00 050-0018-00

## Delfield



Item ID	Stack Size		Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Hertz	Replaces
	(In.)	(In.)											
<b>65514</b>	5/8		120	3000	0.44	1	CWSE	3/16 x 3/4	SP	Sleeve	Open	60	1175-10-4439

## Ducane



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft		Type	Bearings	Dia. (In.)	ENCL.	Capacitor	Replaces
							Dimension (In.)	Length Less Shaft (In.)						
<b>G2243</b>	1/10	208-230	1100	0.74	1	CWLE	1/2 x 2 3/4	3 3/8	PSC	Ball	5	TE	5M/370V	20390801
<b>G2246</b>	1/5	208-230	1080	1.60	1	CWLE	1/2 x 2 3/4	3 7/8	PSC	Ball	5	TE	5M/370V	20390806
<b>G2244</b>	1/4	208-230	1075	1.70	1	CWLE	1/2 x 2 3/4	3 7/8	PSC	Ball	5	TE	7.5M/370V	20390802

## Dunkirk



Item ID	H.P.	Volts	RPM	Amps	Speeds	Type	Bearings	Enclosure	Hertz	Replaces
<b>82052</b>	1/50	115	3000	1.00	1	SP	Sleeve	Open	60	433-00-510 98E6101

## Excel Comfort



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Diameter	Replaces
<b>A100</b>	1/45	115	2900	1.21	1	CW	SP	Sleeve	C-Frame	20093603 7058-0280

## Fedders



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A159</b>	1/40	230	1550	0.5	1	CCW	SP	Ball	Open	60	7063-7334 AK4K84BX 11-7096



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>A161</b>	1/40	230	1600	0.6	1	CCW	SP	Ball	Open	60	7063-7943 8353920103

## Fedders



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Replaces
<b>40188</b>	1/20	208-230	1500	0.9	1	CWSE	SP	Sleeve	Open	60	S196-00047-002, S196-00047-003

## First Company



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim.(In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Dia. (In.)	Replaces
<b>D236</b>	1/10- 1/15- 1/25	115	1550	3.50-2.40- 1.80	3	DS	7 1/2 x 1/2 x 7 1/2	3 3/8	SP	Sleeve	Open	4.4	SD-110021



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Dia. (In.)	Replaces	Notes
<b>D258</b>	1/5- 1/10	208- 230	1550	2.80- 1.30	2	CCWLE	8 x 1/2 x 8	3 3/8	PSC	Sleeve	Open	5	M10	515 556

**Notes:**  
515. 5M 370V capacitor included

556. Comes with 2 1/2" O.D. rubber mounting rings



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Dia. (In.)	Replaces
<b>80010</b>	1/4	208-230	1625	1.65	2	CCWLE	7 1/4 x 1/2 x 7 1/4	4 1/2	PSC	Ball	Open	5 5/8	M10



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Dia. (In.)	Replaces
<b>82201</b>	1/4	208-230	1125	1.5	1	CCWSE	1/2 x 7 1/2	4 3/8	PSC	Ball	Open	5 5/8	M201B



Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Material	Replaces
<b>A60200BW</b>	7 11/16	8	CW	1/2	Galvanized Steel	W200

**Notes:**  
Can be used with motor 82201

## Franklin



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Diameter	Replaces
<b>B23617</b>	115/230	3000	0.9/0.45	1	CCW	SP	Sleeve	Open	3.3	303875, 7021-10288 7021-5703



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Diameter	Replaces
<b>B23618</b>	115/208-230	3000	0.95/0.45	1	CCW	SP	Ball	Open	3.3	031-7059, 7021-10289 7021-5932

# OEM | OEM DIRECT REPLACEMENTS

## Frymaster



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Diameter	Replaces
<b>A110</b>	1/70	115	3212	0.76	1	CW	SP	Ball	C-Frame	7002-3093 7002-3512 7021-0898

## General Electric



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Encl.	Hertz	Replaces
<b>65338</b>	3/8	120	3000	0.16	1	CCWSE	1/8 x 1 1/4	SP	Sleeve	Open	60	WR60X162



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Encl.	Replaces
<b>65685</b>	1	120	3000/1550	0.90	2	CWSE	3/16 x 1 5/8	SP	Sleeve	Open	WB26X45



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Encl.	Hertz	Replaces
<b>65017</b>	9	115	1550	0.55	1	CWLE	1/4 x 1/2	SP	Unit	TE	50/60	5KSM81FFL17
<b>65018</b>	5	115	1550	0.34	1	CWLE	1/4 x 1/2	SP	Unit	TE	50/60	5KSM81FFL18



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Dia. (In.)	Encl.	Hertz	Replaces
<b>OTR4513</b>	1/8	208-240	1550	0.80-0.90	1	CCWLE	1/2 x 3 1/8	PSC	Sleeve	5	TE	60	5KSP29DK17285



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Dia. (In.)	Encl.	Hertz	Replaces
<b>41728</b>	1/8	230	1550	1.10	1	CWSE	1/2 x 3	PSC	Sleeve	5	ODP	60/50	5KSP29DK17285 WW94X936PSC



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Dia. (In.)	Encl.	Hertz	Replaces
<b>D1050</b>	1/8	230	1550	1.10	1	CW	1/2 x 3	PSC	Sleeve	5	Open	60	5KSP29DK17285

## Gibson



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>65335</b>	5/8	120	3000	0.4	1	CWSE	3/16 x 1 7/8	SP	Sleeve	Open	60	33-335

## Goodman



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces	Notes
<b>48331</b>	115	3200	1.80	1	CWLE	SP	Ball	Open	C-Frame	5KSB46GF0001S, B4833000	79

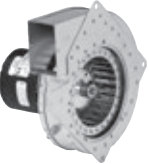
Notes:  
79. Includes rubber boot



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66003</b>	115	3250	0.92	1	CCWLE	PSC	Ball	Open	3.3	098862-1 11009001 11009003



Item ID	Stack Size	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
	(In.)										
<b>66071</b>	1 1/2	115	3000	2.80	1	CWLE	SP	Ball	Open	C-Frame	071M00000 223075015 20190601



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A282</b>	1/60	220	2600	0.45	1	CCW	SP	Sleeve	Open	3.3	B18590505 7021-8448



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>82483</b>	1/50	115	3000	0.90	1	CWLE	SP	Ball	Open	3.3	B1859000 B18590005



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A079</b>	1/50	115	3000	1.10	1	CCW	SP	Sleeve	Totally Enclosed	3.3	B1859000, 74-70-21964-03-01 7021-6804



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A140</b>	1/50	115	3400	1.40	1	CW	SP	Sleeve	Open	3.3	B28330015 B2833001 7021-9000 7021-9087 FB-RFB140

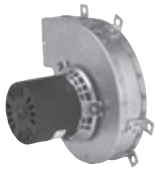


Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66121</b>	1/50	230	3000	0.22	1	CCWSE	PSC	Ball	Open	3	0131M00121P 0131M00121S



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A162</b>	1/50	208-230	3000	0.50	1	CCW	SP	Sleeve	Open	3.3	B295900 7021-8656

## Goodman



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A281</b>	1/40	115	3000	0.9	1	CW	SP	Sleeve	Open	3.3	D6996405 7021-8252



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A285</b>	1/40	115	3250	1.4	2	CW	SP	Sleeve	Open	3.3	B2833002 7021-9236



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66002</b>	1/35	115	3000	1.2	1	CWLE	SP	Ball	Open	C-Frame	0131M00002P 0131M00002S



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A157</b>	1/35	115	3000	1.3	1	CCW	SP	Sleeve	Open	C-Frame	7002-2307



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A182</b>	1/35	115	3125	1.20	1	CCW	SP	Sleeve	Open	C-Frame	B4059000 7002-3036



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A184</b>	1/35	115	3125	1.55	1	CCW	SP	Ball	Open	C-Frame	B4059001 7058-0229



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66005</b>	1/30	115	3000	1.60	1	CWLE	SP	Ball	Open	C-Frame	B1859005 J238-11128



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66590</b>	1/30	115	3000	1.50	1	CWLE	SP	Ball	Open	C-Frame	B4059000 J238-112-11195



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>A181</b>	1/30	115	3192	1.5	1	CW	SP	Ball	Open	C-Frame	20044403 7058-0136



## Goodman



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A284</b>	1/30	208/240	3000	0.59/0.5	1	CW	SP	Sleeve	Open	3.3	D9886202 7021-9227



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A288</b>	1/30	115	3100	1.4/.65	2	CW	SP	Ball	Open	3.3	11177202 7021-9727



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A189</b>	1/24	115	3000	1.5	1	CW	SP	Sleeve	Open	3.3	D9868620 7021-7302



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A290</b>	1/20	115	3200/2400	0.7	2	CCW	PSC	Ball	Open	3.3	20245903 7062-5015



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A187</b>	1/20	208-230	3250	0.8	1	CW	SP	Sleeve	Open	3.3	20028901 7021-10006



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Dia. (In.)	Replaces
<b>A188</b>	1/18	115	3250	1.6	1	CW	SP	Sleeve	Open	3.3	B4833000 7021-10958



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces	Cap. Required
<b>OGD1016</b>	1/6	208-230	1075	1.00	1	CCWLE	PSC	Sleeve	Open	B13400-251	5M/370V
<b>OGD1026</b>	1/4	208-230	1075	1.50	1	CCWLE	PSC	Sleeve	Open	B13400-247	5M/370V

## Greenheck

### Features

- Thru-bolt mounting
- Automatic reset thermal protector
- Internal cooling fan
- Ball bearings
- Capacitor included



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
90145	8 Watt	115	950	1.15	CWSE	5/16 x 2 5/8	2 3/4	Sleeve	3.3"	OAO	Stud	SP	310145
90198	1/40	115	1050	1.80	CWSE	5/16 x 2 5/8	3	Sleeve	3.3"	OAO	Stud	SP	310198



Item ID	Watt	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
90955	5	115	700	0.19	CWSE	5/16 x 2 3/4	2 1/2	Ball	3.3"	TEAO	Stud	PSC	314955
90038	3	115	675	0.15	CWSE	5/16 x 2 3/4	2 1/2	Ball	3.3"	TEAO	Stud	PSC	315038



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
90318	1/8	115	1550/ 1300/ 1050	2.60	3	CCWSE	1/2 x 2 3/4	3 5/8	PSC Cap Included	Ball	5.12	Thru Bolt	308318



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
X261	1/8	825	115	48Y	48A80151	2.1	13	5 1/2	1/2 x 2 1/2	7.59	Greenheck 300008
X260	1/6	1140	115	48Y	48A110251	2.2	13	5 1/4	1/2 x 2 1/2	7.34	Greenheck 300010



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Bearings	Dia.	ENCL	Mounting	Type	Replaces
90153	1/4	115	1725	4.60	CCWLE	1/2 x 2	7 5/8	Ball	5.69"	ODP	Stud	Split Phase	309153

## GSW



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
W7	1/25	115	3200	1.30	1	CW	SP	Sleeve	OFC	63217



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
W8	1/25	115	3200	1.30	1	CW	SP	Sleeve	OFC	63172

## Heatcraft - Bohn - Larkin



Item ID	Stack Size (In.)	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces	Notes
65691	5/8	120	3000	0.64	CWSE	0.181x15/16	SP	Sleeve	Open	5007S 5018S, 5036F	354 472 474
65692	5/8	240	3000	0.26	CWSE	0.181x15/16	SP	Sleeve	Open	5007 5018T, 5036G	354 472 474



Item ID	Watts	RPM	Volts	Amps	Rotation	Hertz	Replaces
91636	6-16	1550	120-230	0.35-0.22	CWSE	50/60	Heatcraft 25317701 Heatcraft 25317801
91635	16-36	1625	120-230	0.76-0.48	CWSE	50/60	



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
41101	1/20	115	1500	1.90	CCWSE	5/16 x 2 1/4	2 3/4	SP	Sleeve	Open	253-1194	329, 500
41103	1/20	208-230	1500	0.93	CCWSE	5/16 x 2 1/4	2 7/8	SP	Sleeve	Open	253-1195	329, 500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
41194	1/20	115	1550	1.90	CCWSE	5/16 x 2 1/2	2 5/8	SP	Sleeve	Open	253-1194	463
41195	1/20	208-230	1550	0.89	CCWSE	5/16 x 2 1/2	2 7/8	SP	Sleeve	Open	253-1195	463



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
45036	1/20	115	1550	2.10	CWSE	5/16 x 2 1/2	3	SP	Sleeve	Open	5036-SS	500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
D1101	1/20	115	1500	1.90	CCW	5/16 x 2 1/4	2 3/4	SP	Sleeve	Open	253-1194	
D1103	1/20	208-230	1500	1.15	CCW	5/16 x 2 1/4	3	SP	Sleeve	Open	253-1195	



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
D1124	1/20	115	1550	2.10	CW	5/16 x 3	3	SP	Sleeve	Open	5008S, 5KSM59JSK143S	500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
35100	1/15	115	1550	1.30	CWOSE	5/16 x 2 5/8	4 1/8	ECM	Ball	TE	253-1194	500
35101	1/15	115	1550	1.30	CCWOSE	5/16 x 2 5/8	4 1/8	ECM	Ball	TE	5008S	500
35201	1/15	208-230	1550	0.80	CCWOSE	5/16 x 2 5/8	4 1/8	ECM	Ball	TE	5008T	500

**Notes:**

329. Motor has 4 studs on both ends  
 354. Impedence protected  
 463. Identical Bolt Pattern of Larkin

472. Includes stand offs for other Bohn applications  
 474. Used in Bohn commercial evaporators  
 500. Includes Cord and Lyall Plug

## Heatcraft - Bohn - Larkin



Item ID	H.P.	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
41124	1/15	120	1550	2.00	CWSE	5/16 x 3	3 1/2	SP	Sleeve	Open	5008S	329 500 551
41126	1/15	208-230	1550	1.10	CWSE	5/16 x 3	3 1/2	SP	Sleeve	Open	5008T, 5034L	329 500



Item ID	H.P.	Volts	RPM	Amps	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
45008S	1/15	115	1550	1.80	CWSE	5/16 x 3	3	SP	Sleeve	Open	5008S, 5034LS	499 500
45008T	1/15	208/230	1550	1.20-1.00	CWSE	5/16 x 3	3 1/2	SP	Sleeve	Open	5008T, 5034MS	499 500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
D1126	1/15	230	1550	1.10	CW	5/16 x 3	3 1/2	SP	Sleeve	Open	5008T, 5KSM59LS2262AS	500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
97701	1/15, 1/20, 1/25	230	1625	0.70	CWSE	5/16 x 2.95	2.85	ECM	Ball	TE	22617701, 22617901, 25307701, 25307901	500, 499
97801	1/15, 1/20, 1/25	120	1625	1.20	CWSE	5/16 x 2.95	2.85	ECM	Ball	TE	22617801, 22618001, 25307801, 25308001	500, 499



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
9721	1/12	115/208-230	1550	1.10/0.50	Rev.	5/16 x 3 1/4	3 5/8	PSC	Ball	Open	7071061, 25309101	189 498 500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
41125	1/12	208-230	1550/1400	0.50	CCWSE	5/16 x 2 5/8	3 1/2	PSC	Sleeve	Open	5008T	304 500



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
D1125	1/12	208-230	1550	0.40	CCW	5/16 x 2 5/8	3 3/4	PSC	Sleeve	Open	7190-0442	42, 304



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Encl.	Replaces	Notes
49101	1/12-1/15-1/20	115/208-230	1550/1400	1.10/0.50	Rev.	5/16 x 3 1/8	3 5/8	PSC	Ball	Open	7071061, 25309101	189, 304 498, 499 500

**Notes:**

42. Includes Cord and Plug  
189. Includes reversing plug

304. Run capacitor mounted on motor shell  
329. Motor has 4 studs on both ends

498. 50/60 Hertz  
499. Identical bolt pattern as OEM motor

500. Includes Cord and Lyall Plug  
551. Low Temp. Oil

## Heil-Quaker



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Hertz	Overload	Replaces
<b>A064</b>	1/55	115	3150	0.70	1	CW	SP	Sleeve	Open	60	Automatic	5C085 610672 608971

## Herman Nelson



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D827</b>	1/8	115	700	2.50	1	CCW	1/2 x 2	5 1/2	PSC	Ball	5 5/8	7-150444-02

## Hill Refrigeration, PSC, Open Air Over

### Features

- Resilient base
- Ball bearings
- Capacitor included



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X230</b>	1/3	1625	208-230	48YZ	048A170136	1.8	14	4 3/4	1/2 x 3 1/2	5.75	Magnetek 160, Steveco S3001, Fasco D801, GE 5KCP39KG13695	15

**Notes:**  
15. Fixed CW Rotation, viewing opposite shaft (or lead end) of motor

## Hill



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Mounting	Replaces	Notes
<b>65119</b>	5	115	1550	0.34	CWLE	1/4 x 1/2	2 3/8	Totally Enclosed	50/60	Double Foot Pads	PP7577M	87 551

**Notes:**  
87. Includes straight Lyall plug

551. Low Temp. Oil

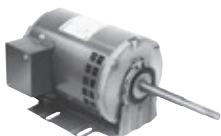
## Huebsch, Single Phase, Drip proof, Resilient Base

### Application

Commercial laundry dryer motors.

### Features

- Replaces Huebsch commercial laundry dryer motors
- Automatic reset thermal protection
- Special threaded shaft extension
- Ball bearings



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Notes
<b>X601</b>	1/3	1725	115/208-230	56Z	56C17D2101	5.8/2.8-2.9	20	5/8 x 5 5/8	8.79	16
<b>X602</b>	1/2	1725	115/208-230	56Z	56C17D2102	8.0/4.0-4.0	24	5/8 x 5 5/8	9.85	16
<b>X603</b>	3/4	1725	115/208-230	56Z	56C17D5346	12.0/5.8-6.0	29	3/4 x 5 5/8	9.47	16

**Notes:**  
16. Fixed CCW Rotation, viewing opposite shaft (or lead end) of motor

Replacements listed may not be an exact duplicate of the original motor

## Hussmann



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Mounting	Replaces	Notes
65133	9	115	1550	0.50	CWLE	1/4 x 1/2	2 1/2	SP	Unit	TE	Single Foot Pad	58698	87 551



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Mounting	Replaces	Notes
61103	12	115	1550	0.62	CWLE	1/4 x 1/2	2 11/16	SP	Unit	TE	No Foot Pad	0047000, 441-103, 0440421, 125-01-0615A	87 551



Item ID	Watts	Volts	RPM	Amps	ROT.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Mounting	Replaces
15546	12	115	1550	0.30	CWLE	1/4-20 x .425	3.13	ECM	Unit	TE	Rear Mount	0477655 4410546
15547	13	115	1725	0.30	CWLE	1/4-20 x .425	3.13	ECM	Unit	TE	Rear Mount	0477656 4410547



Notes:  
87. Includes straight Lyall plug

551. Low Temp. Oil



*Customer Focused...*

“ means paying close attention to the needs and opinions of our customers. ”

TERRI ABBOTT  
Customer Service Representative

## Ice-O-Matic



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
<b>15020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	60	9161078-01
<b>15021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	60	9161078-03 309316-000
<b>65020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	50/60	9161078-01
<b>65021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	50/60	9161078-03 309316-000



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
<b>15041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi Encl.	Double Foot Pads	60	319357-000
<b>65041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi Encl.	Double Foot Pads	50/60	319357-000

## ICP



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces	
<b>66833</b>	28 MHP	115	3000	1.60	1	CWSE	SP	Ball	Open	1010324 1013833 1010975	1010238P 4MH28



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces	
<b>66338</b>	50 MHP	115	3000	2.40	1	CWSE	SP	Ball	TE	1012002 1014338	1013388A 1013188



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A174</b>	1/100	115	2350	0.8	1	CW	SP	Sleeve	Open	1010239, 7021-9188
<b>A301</b>	1/100	115	2350	0.8	1	CW	SP	Sleeve	Open	1010239, 1094073



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces	
<b>A151</b>	1/90	230	2800	0.3	1	CW	SP	Sleeve	Open	1050144 4MH40	1170870 7021-10287



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces	
<b>A141</b>	1/60	115	2800	1	1	CW	SP	Ball	Open	1094073 4MH33 7021-8741	1094074 7021-10280 7021-8742



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A179</b>	1/60	115	3300	0.9	1	CW	SP	Sleeve	Open	1006168P, 7021-8693

# OEM | OEM DIRECT REPLACEMENTS

## ICP



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>82672</b>	1/60	115	3300	0.90	1	CWSE	SP	Sleeve	Open	1006168 1006168P 7021-8693



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A148</b>	1/50	208-230	3000	0.50	1	CCW	SP	Sleeve	Open	1054268P 7021-7617 7021-9237 HQ1054268FA



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>66254</b>	1/50	230	3000	0.30	1	CCWLE	PSC	Ball	Open	1110008 1085571 1085571P 7021-10048 7021-10580 119254-00



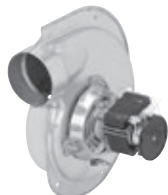
Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A175</b>	1/40	115	3300	1.0	1	CCW	SP	Sleeve	Open	1708600 7002-1891



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A177</b>	1/36	115	3000	1.4	2	CW	SP	Ball	Open	1011632 7021-10363



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>66529</b>	1/35	115	3000	1.50	1	CCWSE	SP	Ball	—	100011645 10011645 10011945 1014433 1014529



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A172</b>	1/35	115	3000	1.60	1	CW	SP	Ball	—	1010975 1010975P



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A178</b>	1/30	115	3400	1.8	1	CW	SP	Ball	Open	1012002 1013188



## ICP



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>82148</b>	1/30	208-230	3000	0.16	1	CCWSE	PSC	Ball	Open	1054268P 1054268 HQ1054268FA



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A306</b>	1/30	208-230	3350/2900	0.3	2	CCW	PSC	Sleeve	Open	1097245 7062-4532



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A134</b>	1/25	115	3060	1.50	1	CW	SP	Sleeve	Open	1010238P 1010324 1708-607 1708-607P R7-RFB134 7021-7700 7021-8735 7021-8736 7021-9335



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A302</b>	1/25	115	3060	1.5	1	CW	SP	Sleeve	Open	1010324P 7021-9499 7021-9277
<b>A304</b>	1/25	115	3060	1.5	1	CW	SP	Sleeve	Open	7021-9701 1011021



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A176</b>	1/25	115	3100	2.2	1	CW	SP	Ball		1011899 7002-2946



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>66350</b>	1/25	115	3350	0.92	1	CCWSE	PSC	Ball	Open	1000814 1001371 1001609 1002543 1007360 1011350 1150474 HQ1011350



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A170</b>	1/25	115	3400	2.30	1	CCW	SP	Ball	Open	1010312 1010526 1010928 1011095 1011097 1011409 1164280



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
<b>A145</b>	1/25	115	3450	0.7	1	CCW	PSC	Ball	Open	1008695 4MH47 7021-10299 7062-4061

# OEM | OEM DIRECT REPLACEMENTS

## ICP



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces	
<b>A171</b>	1/25	115	3450	0.70	1	CCW	PSC	Ball	Open	1010491 1011096	1010527P 1011410



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces	
<b>A169</b>	1/25	230	2800	0.75	1	CW	SP	Sleeve	Open	1010008 1110008 7021-10580	1085571 7021-10048



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces	
<b>A307</b>	1/24	115	3450	0.7	1	CW	PSC	Sleeve	Open	7062-5165 7062-3794	1149097 1008416P



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces	
<b>A173</b>	1/18	115	3450	0.80	1	CCW	PSC	Ball	Open	1011350 HQ1011350FA	HQ1011350 R7-RFB350

## IEC



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1045</b>	1/30	115-127	1100	0.53	PSC	3	CW	1/2 X 9	Sleeve	5	3 1/8	5KCP29BK8382S, S89202



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1053</b>	1/30	265	1075	0.38	PSC	3	CW	1/2 X 7 1/8	Sleeve	5	3 1/3	5KCP29BK8094S S89203



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1048</b>	1/20	277	1075	0.5	PSC	3	CW	1/2 X 7 1/4	Sleeve	5	3 7/8	5KCP29FK8132S S89205



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1049</b>	1/20	265	1075	0.4	PSC	3	CW	1/2 X 7 1/8	Sleeve	5	3 7/8	5KCP29FK8388S S89204
<b>D1041</b>	1/15	265	1075	0.6	PSC	3	CW	1/2 X 7 1/8	Sleeve	5	3 7/8	5KCP29DK8389S S89206

Notes:  
A Dim. equals depth of the motor housing

## IEC



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1055</b>	1/12	115-127	1375	1.4	PSC	3	DS	9 1/8 X 1/2 X 9 1/2	Sleeve	5	3 1/8	5KCP29BK8383S S89207



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1059</b>	1/6	115-127	1450	2.3	PSC	3	DS	8 3/4 X 1/2 X 9	Sleeve	5	3 1/3	5KCP29DK8384S S89208



Item ID	H.P.	Volts	RPM	Amps	Type	Speeds	Rotation	Shaft Dim. (In.)	Bearings	Dia. (In.)	A Dim.	Replaces
<b>D1044</b>	1/4	115	970	6	PSC	3	CW	1/2 X 8	Sleeve	5	4 1/3	5KCP29DK8387S S89210

**Notes:**  
A Dim. equals depth of the motor housing

## IMI Cornelius



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Enclosure	Hertz	Replaces
<b>15050</b>	50	115	1500	1.70	CWLE	5/16 x 3	3 7/8	Open	60	ESPOL50EM1B1 134350000



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
<b>15041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	60	319357-000
<b>65041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	50/60	319357-000



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
<b>15021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	60	9161078-03 309316-000
<b>65021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	50/60	9161078-03 309316-000

## Johnson Furnace



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces	
<b>80280</b>	1/60	230	3000	0.55	1	CWLE	SP	Ball	Open	3.3	36HW 48HWC181 36HWC18A	35HC181 36HC241



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces	
<b>A081</b>	1/40	230	3000	0.5	1	CCW	SP	Ball	3.3	36HWC18A 36HWC241	36HW 48HW



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Dia. (In.)	Replaces	
<b>A085</b>	1/30	230	3000	0.7	1	CCW	SP	Ball	Open	3.3	35035B001 36HW	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>40493</b>	1/6-1/10	208-230	1075	1.40	2	CCWSE	1/2 x 2	4	PSC	Sleeve	Open	5 5/8	3699B

## Kitchen Aid



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)	Type	Bearings	Enclosure	Replaces	
<b>65455</b>	1/2	120	3000	0.35	1	CWSE	7/32 x 1	SP	Sleeve	Open	240332-1 4162472	

## Krack



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>41189</b>	1/20	115/ 208-230	1350/ 1550	1.60/ 0.80	1	CWSE	5/16 x 1 5/8	3 1/16	SP	Ball	3.3	Lug	11528 11529



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>D1189</b>	1/20	115/ 208-230	1550	1.40/ 0.76	1	CWSE	5/16 x 1 5/8	3 1/8	SP	Ball	3.3	Lug	11528 11529



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>OKR1096</b>	1/2	208-230/ 460	1140	2.00- 1.90/0.95	1	Rev.	5/8 x 2	9 1/4	3 phase	Ball	6 1/2	Belly Band	150372 11096



Item ID	H.P.	Volts	RPM	Amps	Speeds	ROT.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>OKR1503</b>	1	200-230/ 460	850	4.40- 4.00/2.00	1	Rev.	5/8 x 3 1/4	10 1/4	3 phase	Ball	6 1/2	Belly Band	151437 11503

## Kysor Warren



Item ID	Watts	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	ENCL.	Hertz	Mounting	Replaces
10019	9	115	1550	0.53	1	CW	1/4 x 1/2	2 3/8	SP	TE	60	No Foot Pads	5991

## L.L. Building



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	ENCL.	Dia. (In.)	Replaces
99320	1/14	120	900	3.40	1	CWSE	1/2 x 2.02	2.27	SP	Open	5.12	V909320



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	ENCL.	Dia. (In.)	Capacitor Included	Replaces
99371	1/7	120	1050	2.80	1	CWSE	1/2 x 2.30	3.08	PSC	Open	5.12	8MFD / 250VAC	V909371 V909336
99321	1/5	120	1050	3.30	1	CWSE	1/2 x 2.30	3.33	PSC	Open	5.12	10MFD / 250VAC	V909321 V909337
99319	1/4	120	1050	3.30	1	CWSE	1/2 x 2.30	3.33	PSC	Open	5.12	10MFD / 250VAC	V909319

## Lennox



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
A138	1/70	120	3000	0.7	1	CCW	SP	Sleeve	Open	60	Auto	7021-8657 7021-8825



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
A322	1/70	120	3000	1.1	2	CCW	SP	Sleeve	Open	60	Auto	67M6401 24L0101 83L8201 7021-9884



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
A219	1/65	120	3000	0.7	1	CCW	SP	Sleeve	Open	60	Auto	88J3901 7021-9262



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
A320	1/60	115	3000	0.8	1	CCW	SP	Sleeve	Open	60	Auto	27K6101 10115401



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
66401	1/60	120	2800	1.30	1	CWLE	SP	Ball	Open	60	Auto	88K8401 J238-087-8171 43K4101, 46K4101 67M5401, 67M5401



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
A135	1/60	120	3000	0.7	1	CCW	SP	Sleeve	Open	60	Auto	33J4101 7021-10276 4MH29 7021-8812

## Lennox



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A164</b>	1/50	120	3400	0.8	1	CCW	SP	Sleeve	Open	60	Auto	10K5101 43K4101	10K5301 46K4101



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>66501</b>	1/30	115	3000	1.20	1	CCWSE	SP	Ball	Open	60	Auto	31L5501 102359-01 313L5501	101202-01 24W95 68M26



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A200</b>	1/30	115	3000	1.35	1	CCW	SP	Sleeve	Open	60	Auto	313L5501 7002-2975	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A155</b>	1/30	115	3000	1.40	1	CCW	SP	Ball	Open	60	Auto	7021-10046 40425-002	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A210</b>	1/30	115	3000	1.7	2	CCW	SP	Ball	Open	60	Auto	18M6701 27M1301	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A201</b>	1/30	208-230	3000	0.65	1	CCW	SP	Ball	Open	60	Auto	41144-001 7021-10055	41144-002 7021-10743



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A207</b>	1/28	115	3000	1.75	1	CCW	SP	Ball	Open	60	Auto	60M7901 7058-0217	

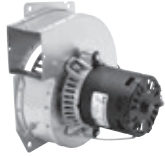


Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A208</b>	1/28	115	3000	1.75	1	CCW	SP	Ball	Open	60	Auto	60M8101 7058-0322	

## Lennox



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A218</b>	1/28	220-240	3000	0.6/0.52	1	CCW	SP	Ball	Open	60	Auto	39L4201 60J4201



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A206</b>	1/25	115	3000	1.5	1	CW	SP	Sleeve	Open	60	Auto	20J8091 7021-8473



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A213</b>	1/25	115	3200	2.1	2	CCW	SP	Ball	Open	60	Auto	18L0401 7021-10376



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A216</b>	1/25	115	3200	2.1	2	CCW	SP	Ball	Open	60	Auto	60L1401 7021-10915



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	ENCL.	Hertz	Bearing	Replaces
<b>66300</b>	1/25	115	3300	1.5	1	CWSE	SP	Open	60	Sleeve	7021-8473 20J89



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A209</b>	1/20	115	3200/ 2800	0.8	2	CCW	PSC	Ball	Open	60	Auto	38M5001 7062-5441



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A163</b>	1/20	115	3400	1.80	1	CCW	SP	Ball	Open	60	Auto	7021-9450 67K0401P 36717D1 36717D4



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces
<b>A204</b>	1/20	115	3400	1.8	1	CCW	SP	Ball	Open	60	Auto	83L4101 7021-11406

# OEM | OEM DIRECT REPLACEMENTS

## Lennox



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A205</b>	1/20	120	3000	0.7	1	CCW	SP	Sleeve	Open	60	Auto	19J0401 7021-9001	7021-8372 T6-2118



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A217</b>	1/16	230	3000	0.83	1	CCW	SP	Ball	Open	60	Auto	25M5501, 7021-11231	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A211</b>	1/15	115	3400	2.35	1	CCW	SP	Ball	Open	60	Auto	81M1601, 7021-11634	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Hertz	Overload	Cap. Req.	Replaces
<b>A324</b>	1/12	230	3200	0.44	1	CW	PSC	Ball	Open	60	Auto	Included	28G6601, 7062-1794



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Hertz	Overload	Cap. Req.	Replaces
<b>A329</b>	1/12	208-230	3200	0.5	1	CW	PSC	Ball	Open	60	Auto	Included	19L1501, 7062-4819



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Hertz	Overload	Cap. Req.	Replaces
<b>A330</b>	1/12	208-230	3200	0.55	1	CW	PSC	Ball	Open	60	Auto	Included	69M3301, 97J8201



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A325</b>	1/10	208-230	3200	0.6	1	CW	PSC	Ball	Open	60	Auto	98G8701, 99K5701	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>A331</b>	1/10	460	3200	0.38/0.33	1	CW	PSC	Ball	Open	60	Auto	69M3201, 97J8101	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Cap. Req.	Replaces
<b>G2247</b>	1/6	208-230	1100	1.30	1	CCWLE	PSC	Ball	TE	60	Auto	5M/370V	31L1901



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Hertz	Overload	Replaces	
<b>82590</b>	115	3000	1.20	1	CWLE	SP	Sleeve	Open	60	Auto	47H12	



## Lennox, PSC, Totally Enclosed & Open Air Over

### Features

- Ball bearings
- Capacitor not included, see Electrical section



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>X411</b>	1/6	1075/1	208-230	48Y	48A11T2008	1.3	10	3 3/4	1/2 x 6	4.25	Lennox 47F9901, Magnetek 9402, Marathon 48A11T300, 48A11T247

## 1/5 HP 1050RPM/3 Spd 115 Volt Motor & Torsion Flex Bracket

### Features

- Replaces Lennox 89C3701PR
- Shaded pole
- CW shaft end
- Automatic overload
- 42 Frame
- Kit includes motor & Torsion Flex Bracket
- 60 Hz



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Replaces
<b>48937K</b>	1/5	115	1050	6.50	3	CCWLE	5 1/2 x 1/2	5	SP	Sleeve	89C37 Lennox 89C3701PR



## Liebert, Three Phase, Resilient Base

### Features

- Ball bearings



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X259</b>	1/3	1140	208-230/460	48Y	56T11015	1.9-1.8/.9	29	10.06	1/2 x 1 1/2	8.56	GE 5K36PN2945	15

### Notes:

15. Fixed CW Rotation, viewing opposite shaft (or lead end) of motor

## Lomanco



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	ENCL.	Mounting	Replaces
<b>70059</b>	1/10	115	1100	3.40	1	CWSE	1/2 x 2	2 1/4	SP	Sleeve	5	Open	Lug	A0416B2059 A0510B2389 A0510B2497



Item ID	Diameter (In.)	Blades	Hub Location	Bore	Pitch (°)	Rotation	Note
<b>FB99100</b>	12	5	Discharge	1/2	33	CW	Used with 70059

## Loren Cook



Item ID	Watt	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension	Length Less Shaft	Type	Bearings	Dia.	ENCL.	Mounting	Replaces
<b>90254</b>	5	115	1550	0.25	2	CWSE	5/16 x 2-3/8	2-3/4	PSC	Sleeve	3.3"	OAO	Stud	615254
<b>90255</b>	15	115	1550	0.40	2	CWSE	5/16 x 2-3/8	2-3/4	PSC	Sleeve	3.3"	OAO	Stud	615255



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>90220</b>	1/114	115	1500	0.75	2	CWSE	3/8 x 2 3/4	2 3/8	SP	Sleeve	4.4	Thru Bolt	220/240



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>90420</b>	1/23	115	1500	1.50	1	CWSE	3/8 x 2 3/4	2 5/8	SP	Sleeve	4.4	Thru Bolt	420
<b>90320</b>	1/16	115	1550	2.20	2	CWSE	3/8 x 2 1/2	2 5/8	SP	Sleeve	4.4	Thru Bolt	320/340



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>90520</b>	1/16	115	1200	1.50	1	CWSE	3/8 x 2 1/4	3	PSC	Sleeve	5.12	Thru Bolt	520

Cap Included



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>90620</b>	1/11	115	1500	4.60	2	CWSE	1/2 x 6 1/4	3	SP	Sleeve	4.4	Lug Mount	620/640



Item ID	HP	Volts	RPM	Amps	Speeds	Rotation	Shaft Dimension	Length Less Shaft	Type	Bearings	Dia.	ENCL.	Mounting	Replaces
<b>90E2A</b>	1/8	115	1600	1.70	1	CWSE	1/2 x 3	3-1/2	PSC	Ball	5.63	OAO	Stud	C06E2A



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Mounting	Replaces
<b>90720</b>	1/4	115	1625	3.90	2	CWSE	1/2 x 6 1/4	3 3/8	PSC	Sleeve	5.12	Lug Mount	720/740

Cap Included

## Manitowoc



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		ENCL.	Mounting	Hertz	Replaces
							Shaft (In.)					
<b>65001</b>	25	115	1500	1.10	CWLE	1/4 x 1/2	3	3/8	TE	Double Foot Pads	50/60	002412283
<b>15020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3	3/8	TE	Double Foot Pads	60	002401591 002412373
<b>65020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3	3/8	TE	Double Foot Pads	50/60	002401591 002412373



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Diameter	Bearings	Hertz	Cap. Required	Replaces
<b>D1143</b>	1/20	115	1550	0.9	1	CCW	3.3	Ball	60	5MFD/370V	2008243 71902830
<b>D1137</b>	1/20	208-230	1550	0.34	1	CCW	3.3	Ball	50/60	3MFD/370V	2008253 71902831



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Diameter	Bearings	Hertz	Cap. Required	Replaces
<b>D1029</b>	1/8	208-230	1350/1620	0.8	1	CW	5	Sleeve	50/60	5MFD/370V	2009653 71850274



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Diameter	Bearings	Hertz	Cap. Required	Replaces
<b>D1026</b>	1/5	208-230	1050	1.5	1	CW	5	Ball	60	3MFD/370V	2009633 71870252



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Diameter	Bearings	Hertz	Cap. Required	Replaces
<b>D1031</b>	1/5	208-230	1050	1.8	1	CW	5	Sleeve	50/60	3MFD/370V	2009663 71870263



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		ENCL.	Mounting	Hertz	Replaces
							Shaft (In.)					
<b>15041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3	5/8	Semi	Double Foot Pads	60	002412353
<b>65041</b>	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3	5/8	Semi	Double Foot Pads	50/60	002412353

## McQuay



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	Dia. (In.)	Replaces
							Shaft (In.)					
<b>D1144</b>	1/25-1/35-1/65	115	1200	1.10-0.90-0.60	CW	3/8 x 5/8	4	3/4	PSC	Sleeve	3.3	BA2H015

## McQuay



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D1141</b>	1/15-1/25-1/35	115	1000	1.30-1.10-0.90	Double Shaft	5 5/8 x 3/8 x 5 5/8	4 3/4	PSC	Sleeve	3.3	879-382563B-00
<b>D1140</b>	1/10-1/12-1/15	115	1500	2.20-2.00-1.70	Double Shaft	5 5/8 x 3/8 x 5 5/8	4 3/4	PSC	Sleeve	3.3	879-382564B-00



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces	Notes
<b>D1142</b>	1/15	115/230	1500	1.70-0.90	CW	5/16 x 2 1/2	3 1/2	SP	Sleeve	3.3	879-382-562-ZB-00	356

**Notes:**  
356. Has special 3.15" bolt circle

## Mid Continent



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Hertz	Replaces
<b>82357</b>	1/30	115	3000	1.10	1	CWSE	1/4 x 1 1/8	4 3/4	SP	Ball	60	JA1M069NV 357 8211915103

## Miller



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>80270</b>	1/50	115/230	3000	0.90/0.45	1	CWLE	SP	Ball	60	303875000

## Nordyne



Item ID	H.P.	Stack Size (In.)	Volts	RPM	Amps	Speeds	Type	Bearings	Replaces
<b>65404</b>	1/100	7/8	120	3000	0.69	1	SP	Ball	903404



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A131</b>	1/50	115	3000	1.1	1	CW	SP	Sleeve	3.3	4MH26 6217000 6212850 7021-10159



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A132</b>	1/50	115	3000	1.1	1	CW	SP	Sleeve	3.3	4MH27 7021-10274 6212850 7021-10493



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A126</b>	1/45	115	3000	1.8	1	CW	SP	Ball	C-Frame	6219500, 7002-3158



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A121</b>	1/45	240	3000	0.5	1	CW	SP	Sleeve	3.3	6217930 7021-10381



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	ENCL.	Hertz	Bearing	Replaces
<b>66567</b>	1/33	115	3000	0.43	1	CCWSE	PSC	Open	60	Ball	622567

## Nordyne



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A123</b>	1/18	115	3300	1.95	1	CW	SP	Ball	3.3	622064 7021-11385



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A122</b>	1/17	115	3000	1.75	1	CW	SP	Sleeve	3.3	6219490 7021-11227
<b>A124</b>	1/15	115	3000	1.75	1	CW	SP	Sleeve	3.3	6219290 7021-11379



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	ENCL.	Capacitor	Replaces
<b>G2243</b>	1/10	208-230	1100	0.74	1	CWLE	1/2 x 2 3/4	3 3/8	PSC	Ball	5	TE	5M/370V	621865

## Nutone



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
<b>82423K</b>	1/2	120	2650	0.60	1	CWSE	7/32 x 1 1/2	1 5/8	SP	Sleeve	Open	89423-000	42, 106



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
<b>65100</b>	1/2	120	3000	0.6	1	CCWSE	7/32 x 1 5/8	1 5/8	SP	Sleeve	Open	C65878	42, 105



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
<b>65106</b>	5/8	115	3000	0.70	1	CCWSE	7/32 x 2 3/8	1 3/4	SP	Sleeve	Open	C68627	485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
<b>65112</b>	5/8	120	3000	0.76	1	CCWSE	7/32 x 1 3/4	1 5/8	SP	Sleeve	Open		104, 105



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
<b>65709</b>	5/8	120	3000	0.8	1	CCWSE	7/32 x 2 3/8	1 3/4	SP	Sleeve	Open	C53709	108, 485

**Notes:**

42. Includes cord and plug  
104. Same as 65100 except mounting screws are on the shaft end  
105. Includes A65100FB impeller

106. Assembled with bracket as illustrated  
108. Has a one shot overload  
485. Includes two prong plug

# OEM | OEM DIRECT REPLACEMENTS

## Nutone



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65104	3/4	120	3000	0.74	1	CCWSE	7/32 x 1 3/4	1 7/8	SP	Sleeve	Open	C66582	107



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65894K	3/4	120	3000	0.90	1	CCWSE	7/32 x 2 3/8	1 7/8	SP	Sleeve	Open	82229 K5894	42, 106



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65103	7/8	120	3000	0.71	1	CCWSE	7/32 x 1 1/4	2	SP	Sleeve	Open	C63675	485



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65101	7/8	120	3000	0.86	2	CWSE	7/32 x 1 5/16	2	SP	Sleeve	Open	C52367	110



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65105	7/8	120	3000	0.88	2	CCWSE	7/32 x 1 7/16	2	SP	Sleeve	Open	C27987	110



Item ID	Stack Size (In.)	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Enclosure	Replaces	Notes
65272	1	120	3000	1	1	CCWSE	7/32 x 1 1/2	2 1/8	SP	Sleeve	Open	C23272	485



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
82512	1/100	115	1550	0.70	1	CCWSE	1/4 x 1 1/8	2 1/16	SP	Sleeve	TE	26750, 26761	485



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
82513	1/100	115	1550	0.70	1	CCWSE	1/4 x 1 1/4	2 1/16	SP	Sleeve	TE	23388, 23405	41, 485



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
40695	1/100	120	1180	0.60	1	CWSE	1/4 x 1 1/8	—	SP	Sleeve	Open	0695B000	529

Notes:  
 41. 1 1/8" Hubs  
 42. Includes cord and plug  
 106. Assembled with bracket as illustrated

107. Has eyelet terminals on leads  
 110. Includes two speed plug  
 485. Includes two prong plug

529. Complete assembly, motor, mounting flange and blower wheel

## Nutone



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>82635</b>	1/91	115	1550	0.45	1	CCWSE	1/4 x 1 1/8	2.09	SP	Sleeve	TE	54123, 54257	42



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>80600</b>	1/80	115	3000	0.65	1	CWSE	1/4 x 2 1/8	2 1/2	SP	Sleeve	Open	16553	41



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>82637</b>	1/75	115	1550	0.63	1	CCWSE	1/4 x 1 1/8	2	SP	Sleeve	TE	53581	482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>82510</b>	1/70	115	1320	0.85	1	CWSE	1/4 x 1 1/4	2 1/16	SP	Sleeve	Open	C65073	41, 482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>40933</b>	1/50	120	1550	1.20	1	CCWSE	1/4 x 1	1 7/8	SP	Sleeve	Open	86933000, 86933	482



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>82733</b>	1/50-1/80	115	3000	1.00-0.60	2	CWSE	1/4 x 1 1/4	2 5/8	SP	Sleeve	TE	C26733	42



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>40696</b>	1/45	115	1400	0.86	1	CWSE	1/4 x 1	—	SP	Sleeve	Open	0696B000, 86322	529



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Replaces	Notes
<b>82621</b>	1/10	115	1550	3.80	1	CCWSE	5/16 x 1 1/2	3 3/4	SP	Ball	Open	32997, 67176	



Item ID	Bore (In.)	Diameter (In.)	Width (In.)	Bore	Replaces
<b>A65900</b>	1/4	5 3/4	2	D Shape	59000A000



Item ID	Bore (In.)	Diameter (In.)	Bore	Replaces
<b>A65100FB</b>	7/32	4 9/16	D Shape	68920

**Notes:**

41. 1 1/8" Hubs  
42. Includes cord and plug

482. Two prong plug and cord attached  
529. Complete assembly, motor, mounting flange and blower wheel

## Oasis



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Enclosure	Hertz	Mounting	Replaces
<b>10037</b>	5	115	1550	0.34	CWLE	1/4 x 1/2	2 3/8	SP	TE	60	Double Foot Pads	027354-026, 027354-037
<b>10038</b>	9	115	1550	0.53	CWLE	1/4 x 1/2	2 1/2	SP	TE	60	Double Foot Pads	027354-038

## Penn Ventilator



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>OPV400206</b>	1/40	115	1050	1.10	CCWLE	3/8 x 2 1/4	3	SP	5	Open	D340 Z-6



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>D0343</b>	1/40	115	1550/1050	1.40/0.60	CCWLE	1/3 x 5 3/4	2 1/4	SP	3.3	Open	56343-0 JA2M414-T



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>OPV747</b>	1/7-1/11-1/25	115	1550/1300/1050	2.50/2.10/1.60	CCWLE	1/2 x 2 1/2	4 1/4	PSC	5	Open	63747-0 DE2F7085-T



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>OPV748</b>	1/6-1/12-1/20	115	1550/1300/1050	2.10/1.90/1.40	CCWLE	1/2 x 2 3/5	4 1/4	PSC	5	Open	63748-0 DE2F7088-T



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>D342</b>	1/15	115	1050	2.30	CW	3/8 x 2 1/2	2 5/8	SP	5	Open	7151-3081 7151-3565



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>D0746</b>	1/12	115	1550/1300	1.50/0.90	CCWLE	1/3 x 3 1/3	3 5/6	PSC	3.3	Open	63746-0 JE2H057-T



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Dia. (In.)	ENCL.	Replaces
<b>D0346</b>	1/4	115	1550/1050	3.60/2.50	CCWLE	1/3 x 5 1/3	4 2/3	PSC	3.3	Open	56346-0 JE2K007-T



## PennVent Direct Replacements

### Features

- Capacitor included



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less		Bearings	Mounting	Replaces
								Shaft (in.)				
D0346	1/14	115	1550	3.6/2.5	2	CWSE	3/8 X 5-3/8	4.74		Sleeve	Bracket	46346, JE2K007

**FASCO**

# What's inside matters when it comes to HVACR...



... and when there is a need for a specific OEM direct replacement, we've got you covered.

## Reznor



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>66505</b>	1/10	115/ 208/ 230	3000	1.40/0.80	1	Rev.	5/16 x 3 1/4	4 1/4	PSC	Ball	Open	3.3	CW175-40069 CCW505-43424 CCW175-40070 7162-0293 7162-0348 7162-0294 CCW77162-0311 CCW175-43846 CW7162-0224 CW36860



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>82384</b>	1/8	115	1075	2.3	1	CWSE	1/2 x 2 7/8	3 7/8	PSC	Sleeve	TE	4.97	170-45888 319P384



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>D461</b>	1/8	480	3200	0.32	1	CCW	5/16 x 3 1/3	4 1/4	PSC	Sleeve	TE	3.3	43762 7162-0396



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Replaces
<b>40066</b>	1/6	115	1075	2.40	1	Rev.	1/2 x 3 3/8	4 1/2	PSC	Ball	TE	5 5/8	55682



Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Replaces
<b>BW43425</b>	3.75	3.5	CCW Hub End	5/16	3600	43525



## Rheem



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>PF12406</b>	120	40VA	24	Foot	Wire Lead	46-24124-06



Item ID	Primary Voltage	Secondary Rating	Output Option	Mounting Option	Connection	Replaces
<b>PF90501</b>	208/240	40VA	24	Foot	1/4" QC Term.	46-101905-01



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>PF85602</b>	120	50VA	24	Foot	Wire Lead	46-102856-02



Item ID	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Type	Bearings	ENCL.	Replaces
<b>21964K</b>	208-230	3000	0.25	1	CWSE	1/4 x 1 1/2	SP	Sleeve	Open	51-21964-11



Item ID	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Type	Bearings	ENCL.	Replaces
<b>K628</b>	208-230	3000	0.25	1	CWSE	1/4 x 1 1/2	SP	Sleeve	Open	51-21964-01

Notes: K628 and 21964K: Stack Size - 3/4"

## Rheem



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A139</b>	1/55	115	3000	0.95	1	CW	SP	Sleeve	Open	7021-7577



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>66781</b>	1/50	115	3000	0.60	1	CWLE	PSC	Ball	Open	70-101087-81 70-21496-83 70-24157-03 7021-11559



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A090</b>	1/50	115	3000	1.10	1	CW	SP	Sleeve	Open	74-70-21496-01 7021-5239 JAIM102



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A240</b>	1/50	115	3000	1.1	1	CCW	SP	Sleeve	Open	7021-8183, 70-21496-00



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A242</b>	1/50	115	3400	1.36	1	CW	Open	SP	Sleeve	3.3	7021-7150 70-22436-01



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A243</b>	1/50	115	3400	1.36	1	CW	Open	SP	Sleeve	3.3	7021-7790 70-22436-02



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A247</b>	1/40	115	3250/3800	0.95	2	CW	Open	PSC	Sleeve	3.3	7062-5519



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>66847</b>	1/30	120	3000	1.70	1	CCWLE	Open	SP	Ball	C-Frame	117104-01 117847-07 70-22838-82 70-24157-03



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	ENCL.	Replaces
<b>82182</b>	1/30	460	3300	0.35	1	CWSE	SP	Open	70-23641-82



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A086</b>	1/25	115	3200	1.3	1	CW	Open	SP	Sleeve	3.3	7021-5990 7021-5853

# OEM | OEM DIRECT REPLACEMENTS

## Rheem



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>82641</b>	1/25	208-230	3200	0.25	1	CWSE	Open	PSC	Ball	3.3	70-23641-81 70-23563-02 70-23586-01 70-23586-81



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A241</b>	1/25	208-230	3200	0.62	1	CW	Open	SP	Sleeve	3.3	70-23641-81



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A246</b>	1/20	115	3400/ 2400	0.85	2	CW	Open	PSC	Ball	3.3	70-24206-01 7062-3925



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A136</b>	1/20	115	3450	0.75	1	CW	Open	PSC	Sleeve	3.3	7062-3861



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A142</b>	1/20	115	3450	0.7	1	CW	Open	SP	Sleeve	3.3	7062-2513 416673-00003 7062-1881



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A244</b>	1/20	208-230	3300	0.85	1	CCW	Open	SP	Ball	3.3	7021-6967 70-42241-01



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	ENCL.	Type	Bearings	Dia. (In.)	Replaces
<b>A245</b>	1/15	208-230	3000	.95/.85	1	CW	Open	SP	Ball	3.3	7021-7490 70-42278-02



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length		Type	Bearings	Dia. (In.)	Replaces
								Less Shaft (In.)					
<b>80825</b>	1/8	208-230	825	1.00	1	Rev.	1/2 x 6 1/2	4		PSC	Ball	5 5/8	21276-02 21276-01 512076-01
<b>60825</b>	1/6	208-230	825	1.1-10	1	Rev.	1/2 x 6 1/2	4 1/4		PSC	Ball	5 5/8	51-20760-11 51-20763-01 51-20763-02



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less		Type	Bearings	Dia. (In.)	Replaces
							Shaft (In.)					
<b>63382</b>	1/5	208-230	1075	1.4	Rev.	1/2 x 4 3/8	3 3/4		PSC	Ball	5 5/8	51-21853-82 KA55HXMP-6557 51-20672-01 51-20673-01 51-20674-01 51-20675-01 51-20679-01 51-20680-01 51-20681-01 51-20682-01 51-21826-01

## Rheem



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D743</b>	1/5	208-230	1075	1.20	Rev.	1/2 x 6	3 1/2	PSC	Sleeve	5 5/8	95-3154



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D2840</b>	1/5	208/230	1075	1.30	CW	1/2 x 4 1/8	3 3/4	PSC	Sleeve	5 5/8	51-21853-82



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>ORM10206V1</b>	1/5	208-230	1075	1.40	Reversible	1/2 x 4 1/4	3 7/8	PSC	Sleeve	5 5/8	KA55HXMPT-6557 51-20672-01 51-20673-01 51-20674-01 51-20675-01 51-20679-01 51-20680-01 51-20681-01 51-20682-01 51-21826-01 51-21827-01 51-21828-01 51-21829-01 51-21830-01 51-21831-01



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Diameter (In.)
<b>D742</b>	1/4	208-230	1075	2.10	Rev.	1/2 x 6	4	PSC	Sleeve	5 5/8



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>ORM1056</b>	1/2	115	1075	5.70	CWSE	1/2 x 3 1/2	4 5/8	PSC	Sleeve	5 5/8	51-22873-01
<b>ORM1076</b>	3/4	115	1075	10.5	Rev.	1/2 x 5	5 5/8	PSC	Sleeve	5 5/8	51-22859-01



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D2850</b>	1 3/4	208-230/460 (60Hz) 200/380-415 (50Hz)	1125/ 950	4.60/ 2.30	CW	1/2 x 3.45	6 1/2	PSC	Ball	5 5/8	5KCP395FL153DS MOT05717 X70671180017 X70670706010 MOT03771
<b>D2851</b>	1 3/4	208-230/460 (60Hz) 200/380-415 (50Hz)	1125/ 950	4.60/ 2.30	CW	1/2 x 3.45 Keyed	6 1/2	PSC	Ball	5 5/8	5KCP395FL153DS MOT09188 MOT09192 X7067165301 X70671656010

## Rheem / Ruud, PSC, Totally Enclosed & Open Air Over

### Features

- Ball bearings
- Capacitor not included, see Electrical section



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X278</b>	1/8	825/1	208-230	48Y	048A80206	5MFD / 370V	0.9	11	4 1/4	1/2 x 4 3/4	4.31	Rheem 21276-02, 21276-01, 51207-01, Fasco D832	37, 44
<b>X216</b>	1/5	1075/1	208-230	48Y	048A1101097	5MFD / 370V	1.6	10	3 3/4	1/2 x 6	3.81	Emerson 5454, Magnetek 619	37, 44 60



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X470</b>	1/4	1075/1	208-230	48Y	48A110885	5MFD / 370V	1.6	9	3 3/4	1/2 x 3	3.81	Rheem / Ruud condenser fans	56, 60



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X297</b>	1/3	1075/1	208-230	48Y	048A11T509	5MFD / 370V	1.8	12	4 1/4	1/2 x 3 3/4	4.31	Century (A.O. Smith) ORM1036, Magnetek 620, Fasco D283	N, 29 41, 60



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
<b>X033</b>	1/2	1075/4	115	48Y	048A1101674	5MFD / 370V	6.1	16	5	1/2 x 5	5	Rheem Time-Savers, Emerson K55HXMDA-4122, Rheem / Ruud 51-23012-41	31

### Notes:

29. Weep holes with removable plugs on end brackets. Remove bottom plug after installation  
31. 5/8" thru-bolts, shaft end

37. 1-1/2" thru-bolts, shaft end  
41. 1/2" thru-bolts, opposite shaft end  
44. 1" thru-bolts, opposite shaft end

56. 1-5/8" Thru-bolts, shaft end  
60. Foot locating Set Screws on frame, 90 apart  
N - Totally Enclosed, Non-Ventilated

## Russell Coil



Item ID	Stack Size		Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (In.)	Type	Bearings	Enclosure	Hertz	Replaces
	(In.)												
<b>67154</b>	3/4		120	3000	0.55	1	CCWSE	1/4 x 5/8	SP	Sleeve	Open	60	102249-005

## Scotsman



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
15001	25	115	1500	1.10	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	60	18-7200-01
65001	25	115	1500	1.10	CWLE	1/4 x 1/2	3 3/8	TE	Double Foot Pads	50/60	18-7200-01



Item ID	Watts	Volts	RPM	Amps	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	ENCL.	Mounting	Hertz	Replaces
15040	50	115	1500	1.70	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	60	18-5105-11
15041	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	60	18-5105-02
65040	50	115	1500	1.70	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	50/60	18-5105-11
65041	50	230	1500	0.85	CWLE	3/8 x 1 1/2	3 5/8	Semi	Double Foot Pads	50/60	18-5105-02

## Sears/Whirlpool, PSC, Open Air Over

### Features

- Single split phase, open air over
- Capacitor not included, see Electrical section



Item ID	HP	RPM	Volts	Frame	Model No.	Cap. Required	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
X218	3/4	1075/1	208-230	56Z	56A1105313	15MFD / 370V	3.9-3.6	34	8 5/8	7 x 5/8 x 7	9.82	Steveco Package Unit 3100	16, 21

### Notes:

16. Fixed CCW Rotation, viewing opposite shaft (or lead end) of motor  
 21. Double shaft extension 1-1/2" long by 1/2" diameter with flat each end

## Skymark



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
A251	1/35	208-230	3000	1.10	1	CCW	SP	Sleeve	Open	MTR136PK 7021-9136



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Enclosure	Replaces
82136	1/35	208-230	3000	0.56	1	CCWSE	SP	Sleeve	Open	MTR136PK

## State Ind.



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
W9	1/60	115	3000	0.95	1	CW	SP	Sleeve	OFC	0012400500



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
W10	1/20	115	3400	1.80	1	CCW	SP	Sleeve	OFC	0012400540

## Sterling Direct Replacement

### Features

- OEM Direct Replacement for Sterling Motors



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>Packard</b>											
90766	1/20	115	1650	1.9	1	CWSE	5/16 x 3	2.68	Sleeve	Stud	J31-04766



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>Packard</b>											
90871	1/20	120	1000	1.4	1	CWSE	3/8 x 3 1/2	2.58	Sleeve	Stud	J31-01871



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>Packard</b>											
90872	1/12	115	1000	2.2	1	CWSE	3/8 x 3 1/2	3.08	Sleeve	Stud	J31-01872



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>Packard</b>											
90091	1/10	120	1000	2.6	1	CWSE	3/8 x 3	2.58	Sleeve	Stud	J31-04091

## Sterling Radiator Co.



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Dia. (In.)	Mounting	Replaces
40242	1/20	115	1050	2.00	1	CWSE	3/8 x 3	3.19	SP	Sleeve	TE	5	Stud	7151-0103

## Sub Zero



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Material	Hertz	Mounting	Replaces	Notes
65740	2.3	115	1300	0.2	CWLE	1/4 x 1/2	2.48	Aluminum	50/60	Double Foot Pads	4200740	Pin terminals



## Taco, Single Split Phase, Open Air Over

### Features

- Resilient ring mounting
- UL recognized and CSA certified



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame Length (in.)	Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces
<b>4722</b>	1/12	1800	115	48Y	5KH39QN5558T	2.1	12	7.29	1/2 x 1	6.29	Taco 110-388, Marathon 48S17D1027, 48S17D2102
<b>4404</b>	1/8	1800	115	48Y	5KH39QN5550X	2.6	11	8.93	1/2 x 1 1/2	7.43	GE 5KH32EG129GA, Marathon 48S17D1084

## Tappan



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces
<b>A073</b>	1/40	115/230	3000	0.7/0.35	1	CCW	SP	BALL	3.3	82932 11429-32 HQ6D1023UN 8251560133 4MH13

## Tecumseh



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3 3/8	SP	Unit	TE	60	810M035A29
<b>65020</b>	35	115	1500	1.40	CWLE	1/4 x 1/2	3 3/8	SP	Unit	TE	50/60	810M035A29
<b>15021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	SP	Unit	TE	60	810M035A21 810M035A28
<b>65021</b>	35	230	1500	0.70	CWLE	1/4 x 1/2	3 3/8	SP	Unit	TE	50/60	810M035A21 810M035A28



Item ID	Watts	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	ENCL.	Hertz	Replaces
<b>15045</b>	50	230	1500	0.85	CCWLE	5/16 x 2 1/2	3 3/4	SP	Unit	Open	60	810M050A62
<b>65045</b>	50	230	1500	0.85	CCWLE	5/16 x 2 1/2	4	SP	Unit	Open	50/60	810M050A62



Item ID	HP	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	ENCL.	Hertz	Replaces
<b>OTC6004</b>	1/20	230	1500	1.11	CCWSE	5/16 x 2 1/2	3 1/16	SP	Sleeve	5	Open	50/60	810S037B01
<b>OTC6001</b>	1/15	230	1500	1.30	CCWLE	5/16 x 2 3/4	3 1/16	SP	Sleeve	5	Open	50/60	810S050A99



Item ID	HP	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	ENCL.	Hertz	Replaces
<b>OTC1862</b>	1/4	230	1625	1.90	CWLE	1/2 x 2 3/4	4 3/8	PSC	Ball	5 5/8	Open	50/60	TFM1862 8330 KA55HXKGD8330
<b>OTC1864</b>	1/4	460	1625	0.95	CWLE	1/2 x 2 3/4	4 3/8	PSC	Ball	5 5/8	Open	50/60	TFM1864 8331 KA55HGE8331

## Tradewinds



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces	Notes
<b>82324</b>	1/25	115	1550	2.10	CWLE	1 7/8 x 5/16 x 1 7/8	3	SP	Sleeve	3.3	19-09-215 324	41

Notes:  
41. 1 1/8" Hubs

## Trane



Item ID	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Replaces		
<b>66787</b>	120	3100	1.3	1	CCWLE	SP	Ball	BLW473 21C138126	210330673 21D330673	210340125 787P01

Notes:  
111. Includes special plug



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Replaces
<b>A265</b>	1/125	115	3000	0.75	2	CW	SP	Ball	D342078P02 7002-3444
<b>A266</b>	1/125	115	3000	1.0	2	CW	SP	Ball	D342078P04 7002-3445
<b>A267</b>	1/125	115	3000	1.4	2	CW	SP	Ball	D342078P05 D342078P06 7002-3446



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A279</b>	1/125	115	3000	0.75	2	CW	SP	Ball	D341663P04 7002-3275	D341095P04 7002-2531



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces
<b>A264</b>	1/120	115	3000	0.75	2	CW	SP	Ball	D342078P01 D342079P01 7002-3443



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A146</b>	1/100	115	3000	1.0-0.35	2	CW	SP	Sleeve	7021-7986 X3804276047	7021-8925 7002-2531



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>66362</b>	1/100	115	3000	1/0.35	2	CWSE	SP	Sleeve	Open	7021-8925 BLW00362



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces
<b>A370</b>	1/100	208-230	2920	0.18	2	CCW	PSC	Ball	C664099P01 7062-3918



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A194</b>	1/80	115	3000/1950	1.0/0.5	2	CW	SP	Sleeve	X38020420017 7021-9561	D330900P01 7021-9511

## Trane



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A197</b>	1/70	33-110	1500/4700	1.0	VAR	CW	3 PHASE	Ball	X38010571010 D342097P01 7092-0238	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A069</b>	1/70	208-230	3000	0.5	1	CCW	SP	Sleeve	38040252 X3804025202	7021-10259 X38040252017



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A367</b>	1/60	115	3000	0.95	2	CW	SP	Sleeve	21D340096P02 7021-8051 7021-9011	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A276</b>	1/55	115	3000	1.0	1	CW	SP	Sleeve	D330757P01 7021-9011	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces		
<b>A143</b>	1/50	115	3000	0.95	1	CW	SP	Sleeve	210330673 R7-RFB143	210340125 7021-8428	X38040305017 D330809P01



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A278</b>	1/50	115	3000	1.4	2	CW	SP	Ball	D341095P02 7002-2530	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Replaces	
<b>A198</b>	1/45	115	3000	1.75	1	CW	SP	Ball	D342077P01	7058-0259
<b>A199</b>	1/45	115	3000	1.75	1	CW	SP	Ball	D342077P02	7058-0260
<b>A268</b>	1/45	115	3000	1.4	2	CW	SP	Ball	D342078P06	7002-3447
<b>A260</b>	1/45	115	3250	1.0	1	CW	SP	Ball	D342077P03	
<b>A261</b>	1/45	115	3250	1.0	1	CW	SP	Ball	D342077P04	7058-0262
<b>A262</b>	1/45	115	3250	1.0	1	CW	SP	Ball	D342077P05	7058-0263
<b>A263</b>	1/45	115	3250	1.0	1	CW	SP	Ball	D342077P06	7058-0264



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>A369</b>	1/45	208-230	2800	0.34	2	CCW	PSC	Ball	60	C663946P01 7062-3915	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>A361</b>	1/42	115	3000	1.6	1	CW	SP	Ball	60	D330787P01 7002-2558	

## Trane



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A362</b>	1/42	115	3000	1.6	1	CW	SP	Ball	60	D341663P05 7002-3273



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>82057</b>	1/40	115	3000	1.00	1	CCWSE	SP	Ball	60	X38040253057 7021-8569



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A192</b>	1/40	115	3000	1.00	1	CCW	SP	Ball	60	7021-8569 X38040253057



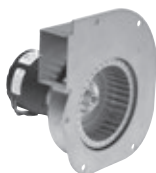
Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A075</b>	1/40	230	3000	0.4	1	CCW	SP	Ball	60	38050005 X38050005007



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>82253</b>	1/35	208/240	3000	0.6/0.5	1	CCWSE	SP	Ball	60	21C729631P1 7021-10286	C661452P01 7021-7833



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>A150</b>	1/35	208-230	3000	0.50	1	CCW	SP	Sleeve	60	C661452P01 21C729631P1	X38080029010 BLW-451



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A269</b>	1/35	208-230	2500/3000	0.58/0.6	1	CCW	SP	Ball	50/60	X38040363010 7021-11054



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A373</b>	1/35	208-230	3000	0.6	1	CCW	SP	Ball	60	C665662P01 7021-9396

## Trane



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A193</b>	1/35	208-240	3480	0.59/0.5	1	CCW	SP	Ball	60	X38040050010 7021-8591



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>A360</b>	1/25	115	2700	1.0	2	CW	SP	Ball	60	D341663P01 7002-2532	D341095P01, 7002-3274



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A196</b>	1/25	115	3200	1.35	1	CW	SP	Sleeve	60	X38040313060 X38040313027 D342094P02



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A274</b>	1/24	208-230	3500	0.28	1	CW	PSC	Ball	50/60	X38040311-01 7062-3973



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A368</b>	1/20	115	3200	0.8	2	CW	PSC	Sleeve	60	D340623P01 7062-3782



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces	
<b>A130</b>	1/20	115	3450	0.7	1	CW	PSC	Sleeve	60	X38040313037 D330757P03	D330757P035 21D340365P03



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A271</b>	1/18	208-230	3500	0.62	2	CW	PSC	Ball	50/60	X38040308-01 7062-3969



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Hertz	Replaces
<b>A195</b>	1/16	115	3400	1.75	1	CW	SP	Ball		X38040313070 D342094P03 D330757P03

# OEM | OEM DIRECT REPLACEMENTS

## Trane



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Replaces	
<b>A191</b>	1/15	208-230	3000	0.8	1	CCW	SP	Sleeve	X38040251017 7021-6683	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Hertz	Replaces
<b>A270</b>	1/15	208-230	3350/2800	0.42/0.5	2	CCW	PSC	Ball	50/60	X38040369010 7062-5033



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	Hertz	Replaces
<b>A272</b>	1/12	208-230	3500	0.65	2	CW	PSC	Ball	50/60	X38040309-01 7062-3971
<b>A273</b>	1/8	208-230	3500	0.62	2	CW	PCS	Ball	50/60	X38040310-01 7062-3972



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Replaces
<b>D895</b>	1/8	208-230	1650	0.80	CW	1/2 x 1 1/2	3 1/4	PSC	Sleeve	5 5/8	5KCP39BGR4265 MOT6363



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Capacitor Required	Replaces
<b>G2249</b>	1/8	208-230	1075	0.75	CCW	1/2 x 2 3/4	3 7/8	PSC	Ball	5	5M/370V	D151316P01



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Capacitor Required	Replaces
<b>OTR4513</b>	1/8	208-240	1550	0.80-0.90	CCWLE	1/2 x 3 1/8	3 3/8	PSC	Sleeve	5	Included	5KSP29DK1728S MOT-3438



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Capacitor Required	Replaces
<b>41728</b>	1/8	230	1550	1.10	CWSE	1/2 x 3	3 1/8	PSC	Sleeve	5	Included	WW94X236SP WW94X936PSC MOT-3438



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft Dimension (In.)	Length Less Shaft (In.)	Type	Bearings	Dia. (In.)	Capacitor Required	Replaces
<b>D1050</b>	1/8	230	1550	1.10	CW	1/2 x 3	3 1/4	PSC	Sleeve	5	Included	WW94X236SP WW94X936PSC

## Trane



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim. (In.)	Length Less		Type	Bearings	ENCL.	Hertz	Replaces
							Shaft (In.)						
<b>2S004</b>	1/6	208-230	1625	1	CCWLE	1/2 x 2 3/4	3 7/8		PSC	Ball	TEAO	60	5KCP29BCA427 5KCP29BCA427S 5KCP29BA010AS



Item ID	H.P.	Volts	RPM	Amps	Rot.	Shaft		Type	Bearings	Dia. (In.)	Capacitor Required	Replaces
						Dimension (In.)	Length Less Shaft (In.)					
<b>G2247</b>	1/6	208-230	1100	1.30	CCWLE	1/2 X 2 3/4	3 7/8	PSC	Ball	5	5M/370V	D151276P01
<b>G2245</b>	1/4	208-230	1075	1.70	CCW	1/2 x 2 3/4	3 7/8	PSC	Ball	5	7.5M/370V	D151060P01 D151269P01 D151270P01

## Tyler



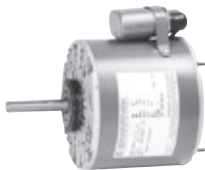
Item ID	Watts	Volts	RPM	Amps	Shaft Dim. (In.)	Length Less		Type	Enclosure	Mounting	Hertz	Replaces
						Shaft (In.)						
<b>15990</b>	9	115	1550	0.23	1/4 threaded	2 1/2		PSC	TE	Rear mounting	50/60	52179990

**Notes:**  
Special reversing plug for Tyler freezer applications.

## Tyler, PSC, Open Air Over

### Features

- Resilient ring thru-bolt mounting
- Ball bearings
- Capacitor included



Item ID	HP	RPM	Volts	Frame	Model No.	F.L. Amps	Weight (lbs.)	Frame		Shaft Dim. (in.)	Length Less Shaft (in.)	Replaces	Notes
								Length (in.)					
<b>X270</b>	1/4	1625/1	208-230	48Y	48A170149	1.9	12	4 3/4		1/2 x 2 1/2	5.75	Tyler 760, Fasco D870 Century (A.O. Smith) OTY1024	16

**Notes:**  
16. Fixed CCW Rotation, viewing opposite shaft (or lead end) of motor

Replacements listed may not be an exact duplicate of the original motor

## Ventline



Item ID	Stack Size		RPM	Amps	Speeds	Rot.	Shaft Dim.		Bearings	ENCL.	Hertz	Replaces	Notes
	(In.)	Volts					(In.)	Type					
<b>65110K</b>	1/2	120	3000	0.41	1	CWSE	Splined	SP	Sleeve	Open	60	J238-050-5330	101

**Notes:**  
101. Includes 6 1/2" Fan Blade. Used on Ventline found in many Mobile Homes

## Whalen



Item ID	H.P.	Volts	RPM	Amps	Rotation	Shaft Dim.		Type	Bearings	Enclosure	Dia. (In.)	Replaces
						(In.)	Length Less Shaft (In.)					
<b>40485</b>	1/20-1/35	115	1050	1.0	Reversible	1/2 x 2 3/4	3 1/4	PSC	Ball	Open	4.68	DA3D060 DA3D061

## Whirlpool



Item ID	Stack Size		RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)		Type	Bearings	Replaces	Notes
	(In.)	Volts					Metal Hub	SP				
<b>65328</b>	1/2	120	3000	0.32	1	CCWSE	Metal Hub	SP	Sleeve	482469	112	



Item ID	Stack Size		RPM	Amps	Speeds	Rotation	Shaft Dimension (In.)		Type	Bearings	Replaces	Notes
	(In.)	Volts					Metal Hub	SP				
<b>65327</b>	1/2	120	3000	1.50	1	CWSE	Metal Hub	SP	Sleeve	482468	112	



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Length Less		Type	Bearings	Dia. (In.)
							Shaft Dimension (In.)	Shaft (In.)			
<b>82516</b>	1/15	115	1550	2.50	3	CCWLE	3 1/4 x 5/16 x 3 1/4	3 1/4	SP	Sleeve	3.3

**Notes:**  
112. Motor Manufactured with Howard Industries Tooling. All Metal Hubs.

## Williamson



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	Dia. (In.)	Replaces



## Williams

### Features

- Direct replacement for Holly Williams Furnace motors
- Welded bars to accommodate band mounts
- Special stud placement for use as a general purpose replacement



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Shaft Dim. (in.)	Length Less Shaft (in.)	Bearings	Mounting	Replaces
<b>92201</b>	1/25-1/40	115	1050	2.2-1.1	2	CCWSE	1/2X2	2.65	Sleeve	Stud/Bracket	RL2201



## York



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A231</b>	1/75	115	3000	1.3	2	CW	SP	Sleeve	Open	024-27653-000 7021-10213 7021-10675



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A083</b>	1/60	230	3000	0.8	1	CCW	SP	Ball	Open	026-16323-0000 026-20224-000 026-20224-700



Item ID	H.P.	Volts	RPM	Amps	Rotation	Type	Enclosure	Hertz	Replaces
<b>82702</b>	1/50	115	3000	1.2	CCWSE	SP	Open	60	373-10337-702 7021-8612

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**RICK STREACKER**  
National Training Coordinator

# OEM | OEM DIRECT REPLACEMENTS

## York



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A063</b>	1/56	230	3000	0.6	1	CCW	SP	Ball	Open	026-22239-000 026-22234-700 7021-10257



Item ID	H.P.	Volts	RPM	Amps	Type	Enclosure	Bearing	Hertz	Replaces
<b>66067</b>	1/30	115	3000	1.13	SP	Open	Ball	60	326-32067-000



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A144</b>	1/40	208-230	3000	0.5	1	CW	SP	Sleeve	Open	7021-6770 024-24115-014



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A221</b>	1/40	208-230	3000	0.55	1	CCW	SP	Sleeve	Open	026-30614-700 026-31221-700 026-32067-700



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>82018</b>	1/40	208-230	3200	0.78	1	CCWSE	SP	Ball	Open	7121-10621 024-24115-018 S1-02424115018



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A222</b>	1/35	115	3000	1.05	1	CCW	SP	Ball	Open	026-32067-000 026-32067-700 7021-7481



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A226</b>	1/35	115	3000	1.7	1	CW	SP	Ball	—	024-34490-000 7058-0266



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A154</b>	1/30	115	3000	1.2	1	CW	SP	Sleeve	Open	024-27519-000 7021-10300 7021-9428

## York



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>82999</b>	1/30	208-230	3200	0.65	1	CWSE	SP	Sleeve	Open	026-33999-001 7021-10096 7021-9656



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A223</b>	1/30	208-230	3200	0.64	1	CW	SP	Sleeve	Open	026-33999-001 7021-10096 7021-9656



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A229</b>	1/25	115	3000	1.75	1	CW	SP	Ball	—	024-32052-000 024-32085-000 7058-0267



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A228</b>	1/25	115	3000	2.0	1	CW	SP	Ball	—	024-31957-000, 024-32085-000 7002-3285 7002-2941



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A137</b>	1/25	115	3450	0.70	1	CW	PSC	Sleeve	Open	024-25007-000 024-25007-700 024-25057-000



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A165</b>	1/25	115	3450	0.70	1	CW	PSC	Ball	Open	024-25960-000 7062-3958



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A227</b>	1/25	115	3450	0.7	1	CW	PSC	Sleeve	Open	024-27641-000 373-20717-001



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A220</b>	1/20	115	3000	1.6	1	CW	SP	Ball	Open	026-30887-700, 026-27510-700, 026-27510-000 026-30887-000, 7021-7217, 7021-5838

# OEM | OEM DIRECT REPLACEMENTS

## York



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rot.	Type	Bearings	ENCL.	Replaces
<b>A168</b>	1/20	115	3450	0.7	1	CW	PSC	Ball	Open	20000101 7062-1881 7062-3136



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A230</b>	1/20	115	3450	0.8	2	CW	PSC	Sleeve	Open	024-31953-000 7021-5094



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A224</b>	1/18	115	3450	0.8	2	CW	SP	Sleeve	Open	024-27654-000 7062-4743 7062-5048



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A225</b>	1/15	115	3200	2.25	1	CW	SP	Ball	Open	024-34558-000 17503 7021-11577 7021-11830



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>A234</b>	1/12	208-230	3200	0.5	1	CW	PSC	Ball	Open	026-39532-000 7062-5155 7062-5267



Item ID	H.P.	Volts	RPM	Amps	Speeds	Rotation	Type	Bearings	ENCL.	Replaces
<b>G2248</b>	1/8	208-230	1075	0.86	1	CWLE	SP	Sleeve	TEAO	024-27551-000



Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Replaces
<b>BW16626</b>	3.82	2.05	CW	3/8	3600	026-32626-700
<b>BW16623</b>	4	1	CCW	1/4	3600	026-32623-700 51-02632623700

Notes:  
stainless steel



Item ID	Diameter	Replaces
<b>A60459</b>	11 Bolt Circle	York 326-31459-000 York 02626372000 York 37308073700 York 3730807300



# COOLING SOLUTIONS

Let Packard meet all your compressor needs. Our diverse offering gets you what you want, when you want it!



# COOLING SOLUTIONS | RECIPROCATING COMPRESSORS

## AC Compressor Offerings



Nominal H.P. (Tons)	1/2	3/4	1	1.25	1.5	2	2.5	3	3.5	4	5	6	7	8	9	10	12	13	24
R22 Reciprocating						15500 to 287300 BTU													
R410A Reciprocating						13000 to 50300 BTU													
R22 Scroll						21500 to 393883 BTU													
R410A Scroll						15200 to 121602 BTU													

### COMPRESSOR MODEL NUMBER SYSTEM



**H 8 2 J 1 9 3 A B C A**

- Mounting Feet Dimension (Inches).....**
  - A = 7.5 x 7.5
  - B = 4.8 x 8.0
  - C = 8.44 x 9.75
  - D = 6.12 x 8.0
  - E = 9.5 x 9.5
  - F = 10.5 x 10.5
  - H = 7.5 x 21.5
  - J = 7.5 x 22.5
  - K = 7.5 x 17
  - L = Offset Mounting Rail
  - R = Horizontal/Vertical Mount
  - S = 7.5 x 8.2 Trane 3-Hole
  - T = 8.75 x 10.56 Trane 3-Hole
  - X = 8.8 x 6.1
  - Y = 7.5 x 7.75
- Electrical Characteristics.....**
  - A = 115 1 60
  - B = 230 1 60
  - C = 208-230 1 60
  - D = 208-230 3 60 (200-220 3 50)
  - E = 460 3 60 (380-415 3 50)
  - F = 575 3 60 (500 3 50)
  - G = 230 1 50
  - H = 265 1 60 (220-240 1 50)
  - J = 208-230 1 50
  - K = 220-240 1 50
  - L = 200-230 3 60 (200-220 3 50)
  - M = 200-220 3 50
  - N = 400 3 50
  - P = 200-240 1 50
  - S = 400 3 60
  - T = 208 1 60
  - U = 220-380 3 60
  - V = 380-460 3 60 (380-415 3 50)
  - W = 380-460 3 60
  - X = 380 3 60
  - Y = 208-230 3 60
  - Z = 380-415 3 50
  - 2 = 180 3 120
- Motor Protector.....**
  - B = Internal Line Break
  - P = Pilot Duty - Solid State
  - R = Pilot Duty - Solid State (2<sup>nd</sup> Generation)
  - T = Pilot Duty - Internal Thermostat and External Sensing Elements
- Motor Type.....**
  - A = PSC Permanent Split Capacitor
  - B = CSR Capacitor Start/Cap. Run
  - C = RSCR Resistance Start/Cap. Run
  - D = AL 3 Phase-Across the Line
  - E = CSIR Cap. Start/Induction Run
  - F = PWS 3 Phase-Part Winding Start
  - G = 3 Phase 2/4 Pole (2 Speed)
  - J = 1 Phase 2/4 Pole (2 Speed)
  - K = 3 Phase Dual Voltage
  - L = 3 Phase - WYE DELTA
  - M = 3 Phase Variable Speed Permanent Magnet
  - N = 3 Phase Variable Speed Induction Requiring Drive
  - P = 3 Phase ALS Synchronous Speed Permanent Magnet Motor
- Nominal Capacity (BTU/Hr).....**
  - 193 = 19+000 or 19,000 BTU/Hr; 244 = 24+0,000 or 240,000 BTU/Hr
  - 19B = 19+000 Internal bleed applied for equalized start
  - Note: A letter (B, E, M, Q, S or U) in the third position also indicates k+000
- Family.....**
  - A = Model A Reciprocating
  - B = Model B Reciprocating
  - C = Scroll (<42k)
  - D = Dual Compressor Application
  - G = Model G Reciprocating
  - J = Benchmark Model Reciprocating
  - R = Scroll (>42k)
  - T = Start Winding Protected
- Generation.....**
  - B = Second Generation - No PRV (Except G Series)
  - D = Dual Compressor Application (Single and Interconnected)
  - E = High Efficiency
  - M = Alternate Pressure Relief Valve
  - N = No Pressure Relief Valve (Except G Series)
  - P = Basic Standard Model - Upgrade Plus
  - R = Direct (Drop-in) Aftermarket Replacement
  - S = Debris Resistant
  - X = Prototype/Development
  - 0 = Basic Standard Model
  - 1 = Second Generation - Basic Standard Model
  - 2 = Third Generation - Basic Standard Model
  - 3 = Fourth Generation - Basic Standard Model
  - 4 = Basic Standard Model - Improved Sound
  - 5 = Inertia Series - Standard Model
  - 6 = Inertia Series - High Efficiency Model
  - 7 = Inertia Series - Second Generation High Efficiency Model
  - 8 = Fifth Generation - Basic Standard Model Upgrade
  - 9 = Sixth Generation - Basic Standard Model Upgrade
- Type of Refrigerant.....**
  - 1 = R12\*
  - 2 = R22
  - 3 = R448A
  - 4 = R134a
  - 5 = R502 or Alternate Replacement Refrigerant R402B
  - 6 = R404A
  - 7 = R407C\*
  - 8 = R410A
  - 9 = R407C, R22 (High Temp), R404A (Medium Temp)\*
  - B = R22 or R407C Beast Series (HBST)
  - C = R22 or R407C Copeland Reciprocating Replacement
  - T = R22 or R407C Trane Replacement
- Refrigeration Application.....**
  - H = High Temperature
  - L = Low Temperature
  - M = Medium Temperature
  - R = Designed for Use with Multiple Refrigerants
  - T = High Temperature (2 Capacities/2 or 4 Cylinders) - Twin/Single
  - V = Variable Speed

*\*Compressors in this series may be applied with additional refrigerants. Please contact your Bristol Compressors account representative for details.*

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**NOW WITH  
POE OIL!  
FOR MORE  
VERSILITY**

## BRISTOL COMPRESSORS



### H2EB

- Improved sound and vibration levels
- Reduced suction and discharge pulsations
- Increased energy efficiency
- Enhanced capacity
- Extended voltage range for selected models
- Approved for R22/R407C
- Charged with POE oil
- See Page 216



### HTRB AND HTRJ

- Trane **drop-in** replacement with rotolock connections
- Includes sweat adapters and wiring harness
- Approved for R22/R407C
- Charged with POE oil

### HCRB

- Copeland **drop-in** replacement
- Includes wiring harness
- Approved for R22/R407C
- Charged with POE oil
- See Page 217

Item ID	Refrigerant	Nominal H.P.	Volts-Phase-Hertz	Capacity BTU @ ARI	Foot	Discharge Rotolock	Suction Rotolock	CCH
HTRB183ABCS	R22/R407C	1 1/2	208/230-1-60	17800	Triangular	1.00 - 14THD	1.25 - 12THD	No
HTRB253ABCS	R22/R407C	2	208/230-1-60	23000	Triangular	1.00 - 14THD	1.25 - 12THD	Optional
HTRJ243ABCT	R22/R407C	2	208/230-1-60	23300	Triangular	1.25 - 12THD	1.75 - 12THD	Optional
HTRJ303ABCT	R22/R407C	2 1/2	208/230-1-60	29700	Triangular	1.25 - 12THD	1.75 - 12THD	Optional
HTRJ363ABCT	R22/R407C	3	208/230-1-60	35500	Triangular	1.25 - 12THD	1.75 - 12THD	Optional

## Bristol Residential Heat Pump And AC Reciprocating Compressors



H22J



H22A

### Features

- Single phase and three phase
- Designed for easy drop in installation in air conditioning and heat pump applications
- Quick connect wiring connections
- Direct replacement compressors for OEM applications
- Compressors come with internal high pressure relief valve and internal linebreak motor protection
- Compressors come completely dehydrated, fully oil charged with mounting hardware and terminal cover

Item ID	Nominal H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge I.D. (In.)	Suction I.D. (In.)	CCH	Replaces		
								Tecumseh	Copeland	Bristol
<b>Bristol R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>										
H2EB18SABCAP	1 1/2	208/230-1-60	17600	7.5 x 7.5	3/8	5/8	NO	AW*F5519	CR18K	H29B18UABCA
H2EB18SABCBP	1 1/2	208/230-1-60	17600	4.8 x 8	3/8	5/8	NO	NA (rectangle Foot Mount)	NA (rectangle Foot Mount)	H23B18UABCB
H2EB223ABCAP	2	208/230-1-60	21800	7.5 x 7.5	3/8	5/8	NO	AW*5522	CR22K	H29B22UABCA
H2EB24SABCAP	2	208/230-1-60	23600	7.5 x 7.5	1/2	3/4	NO	AW*5524	CR24K	H29B24UABCA
H2EB24SABCBP	2	208/230-1-60	23600	4.8 x 8	3/8	5/8	NO	NA (rectangle Foot Mount)	NA (rectangle Foot Mount)	H23B24UABCB
H2EB28SABCAP	2 1/2	208/230-1-60	28300	7.5 x 7.5	1/2	3/4	NO	AW*5528	CR28K	H29B28UABCA
H2EB283ABCBP	2 1/2	208/230-1-60	28300	4.8 x 8	3/8	5/8	NO			H23B28UABCB
H2EB32SABCAP	2 1/2	208/230-1-60	31500	7.5 x 7.5	1/2	3/4	NO	AW*5532	CR32K	H29B32UABCA

Item ID	Nominal H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge I.D. (In.)	Suction I.D. (In.)	CCH	Replaces		
								Tecumseh	Copeland	Bristol
<b>Bristol R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>										
H22J133ABCAP	1	208/230-1-60	13300	7.5 x 7.5	1/2	3/4	YES		CR14K	H22J13BABCA
H22J153ABCAP	1 1/4	208/230-1-60	15500	7.5 x 7.5	1/2	3/4	YES	AW*5515	CR16K	H22J15BABCA
H22J183ABCAP	1 1/2	208/230-1-60	18300	7.5 x 7.5	1/2	3/4	YES	AW*F5518	CR18K	H22J18BABCA
H22J223ABCAP	2	208/230-1-60	22600	7.5 x 7.5	1/2	3/4	YES	AW*5522	CR22K	H22J22BABCA
H22J253ABCAP	2	208/230-1-60	24200	7.5 x 7.5	1/2	3/4	YES	AW*5524	CR24K	H22J25BABCA
H22J293ABCAP	2 1/2	208/230-1-60	28800	7.5 x 7.5	1/2	3/4	YES	A*5528	CR28K	H22J29BABCA
H22J333ABCAP	2 1/2	208/230-1-60	31900	7.5 x 7.5	1/2	3/4	YES	AW*5532	CR32K	H22J33BABCA
H22J363ABCAP	3	208/230-1-60	35700	7.5 x 7.5	1/2	3/4	YES	AV*5535	CR35K, CR36K	H22J36BABCA
H22J383ABCAP	3	208/230-1-60	37800	7.5 x 7.5	1/2	3/4	YES	AV*5538	CR38K	H22J38BABCA
H22J383DBLAP	3	208/230-3-60	37500	7.5 x 7.5	1/2	3/4	YES	AV*5538	CR38K	H22J383DBLA
H22J383DBVAP	3	380/460-3-60	37500	7.5 x 7.5	1/2	3/4	YES	AV*5538	CR38K	H22J383DBVA
H22J413ABCAP	3 1/2	208/230-1-60	40900	7.5 x 7.5	1/2	3/4	YES	AV*5542	CR41K	H22J41BABCA
H22J413DBEAP	3 1/2	460-3-60	40400	7.5 x 7.5	1/2	3/4	YES	AV*5542	CR41K	H22J413DBEA
H22J413DBLAP	3 1/2	208/230-3-60	40500	7.5 x 7.5	1/2	3/4	YES	AV*5542	CR41K	H22J413DBLA
H22J443ABCAP	4	208/230-1-60	44300	7.5 x 7.5	1/2	3/4	YES	AV*5546	CR47K	H22J44BABCA
H22J443DBDAP	4	208/230-3-60	44100	7.5 x 7.5	1/2	3/4	YES	AV*5546	CR47K	H22J443DBDA
H22J443DBEAP	4	460-3-60	44100	7.5 x 7.5	1/2	3/4	YES	AV*5545	CR47K	H22J443DBEA
H22A503ABCAP	4	208/230-1-60	49000	7.5 x 7.5	1/2	7/8	YES			H22A503ABCA
H22A543ABCAP	4 1/2	208/230-1-60	53400	7.5 x 7.5	1/2	7/8	YES	AV*5555	CR53K	H22A543ABCA
H22A543DBLAP	4 1/2	208/230-3-60	53400	7.5 x 7.5	1/2	7/8	YES	AV*5555	CR53K	H22A543DBLA
H22A543DBEAP	4 1/2	460-3-60	53400	7.5 x 7.5	1/2	7/8	YES	AV*5555	CR53K	H23A543DBEA
H22A563DBLAP	5	208/230-3-60	55600	7.5 x 7.5	1/2	7/8	YES	AV*5558		H22J563DBLA
H22A583ABCAP	5	208/230-1-60	57100	7.5 x 7.5	1/2	7/8	YES	AV*5558	CRP5-0450	H22A583ABCA
H22A583DBEAP	5	460-3-60	58400	7.5 x 7.5	1/2	7/8	YES	AV*5558	CRN5-0500	H22A583DBEA
H22A623ABCAP	5	208/230-1-60	60800	7.5 x 7.5	1/2	7/8	YES	AV*5558	CR60K	H22A623ABCA
H22A623DBLAP	5	208/230-3-60	60800	7.5 x 7.5	1/2	7/8	YES	AV*5558	CR60K	H22A623DBLA
H22A623DBEAP	5	460-3-60	60800	7.5 x 7.5	1/2	7/8	YES	AV*5558	CR60K	H22A623DBEA
H29A723DBLAP	6	208/230-3-60	72400	7.5 x 7.5	1/2	7/8	YES			H29A723DBLA
H29A723DBEAP	6	460-3-60	71900	7.5 x 7.5	1/2	7/8	YES			

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.



## Bristol Residential Heat Pump And AC Reciprocating Compressors



### Features

- Single phase and three phase
- Designed for easy drop in installation in air conditioning and heat pump applications
- Quick connect wiring connections
- Direct replacement compressors for OEM applications
- Compressors come with internal high pressure relief valve and internal linebreak motor protection
- Compressors come completely dehydrated, fully oil charged with mounting hardware and terminal cover

**Expanded Line!**

Item ID	Nominal H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge I.D. (In.)	Suction I.D. (In.)	CCH	Replaces Bristol
<b>Bristol R410A Series</b>								
H82J133ABCA	1	208/230-1-60	13000	7.5 x 7.5	1/2	3/4	YES	H8*J13*ABCA
H82J153ABCA	1 1/4	208/230-1-60	14700	7.5 x 7.5	1/2	3/4	YES	H8*J15*ABCA
H82J183ABCA	1 1/2	208/230-1-60	18100	7.5 x 7.5	1/2	3/4	YES	H8*J18*ABCA
H82J213ABCA	2	208/230-1-60	22300	7.5 x 7.5	1/2	3/4	YES	H8*J22*ABCA
H82J283ABCA	2 1/2	208/230-1-60	28100	7.5 x 7.5	1/2	3/4	YES	H8*J28*ABCA
H82J323ABCA	3	208/230-1-60	32200	7.5 x 7.5	1/2	3/4	YES	H8*J31*ABCA
H82J403ABCA	3 1/2	208/230-1-60	39700	7.5 x 7.5	1/2	3/4	YES	H8*J38*ABCA
H82J443ABCA	4	208/230-1-60	44000	7.5 x 7.5	1/2	3/4	YES	
H82J443DBLA	4	208/230-3-60	43300	7.5 x 7.5	1/2	3/4	YES	
H82J443DBVA	4	460-3-60	43300	7.5 x 7.5	1/2	3/4	YES	
H82J483ABCA	4 1/2	208/230-1-60	48000	7.5 x 7.5	1/2	3/4	YES	
H82J483DBLA	4 1/2	208/230-3-60	47600	7.5 x 7.5	1/2	3/4	YES	
H82J483DBVA	4 1/2	460-3-60	47600	7.5 x 7.5	1/2	3/4	YES	

## Bristol HCR Series Compressors



### Features

- Approved for R407C and R22
- Same tubing and mounting configuration as Copeland CR series
- Wiring Harness with plug included
- Charged with POE oil

**Replaces Copeland**

Item ID	Nominal H.P.	Volts-Phase-Hertz	Capacity (Btu)	Foot Mount (In.)	Discharge I.D. (In.)	Suction I.D. (In.)	CCH	Replaces
<b>Bristol R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>								
HCRB183ABCA	1 1/2	208/230-1-60	18300	7.5 x 7.5	1/2	3/4	Yes	CR18K6-PFV
HCRB223ABCA	1 3/4	208/230-1-60	22600	7.5 x 7.5	1/2	3/4	Yes	CR22K6-PFV
HCRB243ABCA	2	208/230-1-60	24200	7.5 x 7.5	1/2	3/4	Yes	CR24K6-PFV
HCRB283ABCA	2 1/4	208/230-1-60	28800	7.5 x 7.5	1/2	3/4	Yes	CR28K6-PFV
HCRB303ABCA	2 1/2	208/230-1-60	29900	7.5 x 7.5	1/2	3/4	Yes	CR30K6-PFV
HCRB323ABCA	2 3/4	208/230-1-60	31900	7.5 x 7.5	1/2	3/4	Yes	CR32K6-PFV
HCRB353ABCA	3	208/230-1-60	35700	7.5 x 7.5	1/2	3/4	Yes	CR35K6-PFV

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Bristol Commercial Air Conditioning Reciprocating Compressors



### Features

- Completely dehydrated, fully oil charged with mounting hardware and terminal cover provided
- Single and two speed compressors
- Internal line break protection through 12 HP
- 15HP through 24HP compressors shipped with external protective module
- Available with Rotolock and Sweat connections
- Available with sight glass
- See compressor accessories on page 255-265
- H92G series are charged with POE Oil for use with R407C and R22



Item ID	Nom. H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge (In.) x THD	Suction (In.) x THD	CCH	Module	Replaces	
									Copeland BR	Bristol
<b>Bristol Single Speed Rotolock - R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>										
H92G094DBDE-R	7 1/2	208/230-3-60	90500	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	N/REQD	BRD20750TFC	H2*G094DBDE-R
H92G094DBEE-R	7 1/2	460-3-60	88700	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	N/REQD	BRD20750TFD	H2*G094DBEE-R
H92G104DBDE-R	8 1/2	208/230-3-60	102000	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	N/REQD	BRG20900TFC	H2*G104DBDE-R
H92G104DBEE-R	8 1/2	460-3-60	103900	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	N/REQD	BRG20900TFD	H2*G104DBEE-R
H92G124DBDE-R	10	208/230-3-60	121500	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	N/REQD	BRH21000TFC	H2*G124DBDE-R
H92G124DBEE-R	10	460-3-60	119000	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	N/REQD	BRH21000TFD	H2*G124DBEE-R
H92G144DBDE-R	12	208/230-3-60	140000	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	N/REQD	BRK21200TFC	H2*G144DBDE-R
H92G144DBEE-R	12	460-3-60	140000	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	N/REQD	BRK21200TFD	H2*G144DBEE-R
H92G184DPDF-R	15	208/230-3-60	183200	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G184DPDF-R
H92G184DPEF-R	15	460-3-60	183200	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G184DPEF-R
H92G204FRDF-R	17	208/230-3-60	212400	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G204FRDF-R
H92G204DREF-R	17	460-3-60	212400	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G204DREF-R
H92G244FRDF-R	20	208/230-3-60	252900	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G244FRDF-R
H92G244DREF-R	20	460-3-60	252900	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G244DREF-R
H92G294FPDF-R	24	208/230-3-60	287300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G294FPDF-R
H92G294DPEF-R	24	460-3-60	287300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G294DPEF-R

Item ID	Nom. H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge (In.) x THD	Suction (In.) x THD	CCH	Module	Replaces	
									Copeland BR	Bristol
<b>Bristol Single Speed Sweat Connections - R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>										
H92G094DBDE-S	7 1/2	208/230-3-60	90500	9.5 x 9.5	7/8 S	1-1/8 S	230V	N/REQD	BRD20750TFC	H2*G094DBDE-S
H92G094DBEE-S	7 1/2	460-3-60	88700	9.5 x 9.5	7/8 S	1-1/8 S	460V	N/REQD	BRD20750TFD	H2*G094DBEE-S
H92G104DBDE-S	8 1/2	208/230-3-60	102000	9.5 x 9.5	7/8 S	1-1/8 S	230V	N/REQD	BRG20900TFC	H2*G104DBDE-S
H92G104DBEE-S	8 1/2	460-3-60	103900	9.5 x 9.5	7/8 S	1-1/8 S	460V	N/REQD	BRG20900TFD	H2*G104DBEE-S
H92G124DBDE-S	10	208/230-3-60	121500	9.5 x 9.5	7/8 S	1-1/8 S	230V	N/REQD	BRH21000TFC	H2*G124DBDE-S
H92G124DBEE-S	10	460-3-60	119000	9.5 x 9.5	7/8 S	1-1/8 S	460V	N/REQD	BRH21000TFD	H2*G124DBEE-S
H92G144DBDE-S	12	208/230-3-60	140000	9.5 x 9.5	7/8 S	1-1/8 S	230V	N/REQD	BRK21200TFC	H2*G144DBDE-S
H92G144DBEE-S	12	460-3-60	140000	9.5 x 9.5	7/8 S	1-1/8 S	460V	N/REQD	BRK21200TFD	H2*G144DBEE-S
H92G184DPDF-S	15	208/230-3-60	183200	10.5 x 10.5	1-1/8 S	1-1/8 S	230V	115/230V		H2*G184DPDF-S
H92G184DPEF-S	15	460-3-60	183200	10.5 x 10.5	1-1/8 S	1-1/8 S	460V	115/230V		H2*G184DPEF-S
H92G244FRDF-S	20	208/230-3-60	252900	10.5 x 10.5	1-1/8 S	1-1/8 S	230V	115/230V		H2*G244FRDF-S
H92G244DREF-S	20	460-3-60	252900	10.5 x 10.5	1-1/8 S	1-1/8 S	460V	115/230V		H2*G244DREF-S
H92G294FPDF-S	24	208/230-3-60	287300	10.5 x 10.5	1-1/8 S	1-1/8 S	230V	115/230V		H2*G294FPDF-S

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Bristol Commercial Air Conditioning Reciprocating Compressors



Rotolock with Sight Glass



H2DA Series

### Features

- Completely dehydrated, fully oil charged with mounting hardware and terminal cover provided
- Single and two speed compressors
- Internal line break protection through 12 HP
- 15HP through 24HP compressors shipped with external protective module
- Available with Rotolock and Sweat connections
- Available with sight glass
- See compressor accessories on page 250-265
- H92G series are charged with POE Oil for use with R407C and R22
- H2DA series are charged with Mineral Oil for use with R22 only

Item ID	Nom. H.P.	Volts-Phase-Hertz	Capacity (BTU)	Foot (In.)	Discharge (In.) x THD	Suction (In.) x THD	CCH	Module	Replaces	
									Copeland BR	Bristol
<b>Bristol Two Speed Rotolock with Sight Glass - R22, R407C with POE oil - Allows for the use of POE or mineral oil based refrigerants</b>										
H92G094GPDE-R	7 1/2	208/230-3-60	87700	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G094GPDE-R
H92G094GPPE-R	7 1/2	460-3-60	87700	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G094GPPE-R
H92G124GPDE-R	10	208/230-3-60	119400	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G124GPDE-R
H92G124GPPE-R	10	460-3-60	119400	9.5 x 9.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G124GPPE-R
H92G184GPDF-R	15	208/230-3-60	182300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	230V	115/230V		H2*G184GPDF-R
H92G184GPEF-R	15	460-3-60	182300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 12	460V	115/230V		H2*G184GPEF-R
H92G244GPDF-R	20	208/230-3-60	253300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 13	230V	115/230V		H2*G244GPDF-R
H92G244GPEF-R	20	460-3-60	253300	10.5 x 10.5	1 1/4 x 12	1 3/4 x 14	460V	115/230V		H2*G244GPEF-R
<b>Bristol Dual Tandem H2DA Series - R22</b>										
H2DA923DBEL	7 1/2	460-3-60	92700	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		
H2DA923DBLL	7 1/2	208/230-3-60	92700	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		
H2DA114DBEL	9	460-3-60	111300	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		
H2DA114DBLL	9	208/230-3-60	111300	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		
H2DA124DBEL	10	460-3-60	121600	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		
H2DA124DBLL	10	208/230-3-60	121600	Base plate	3/4" T @90° UP W/EXT	1 1/8 T @90° UP	23-40W	—		

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

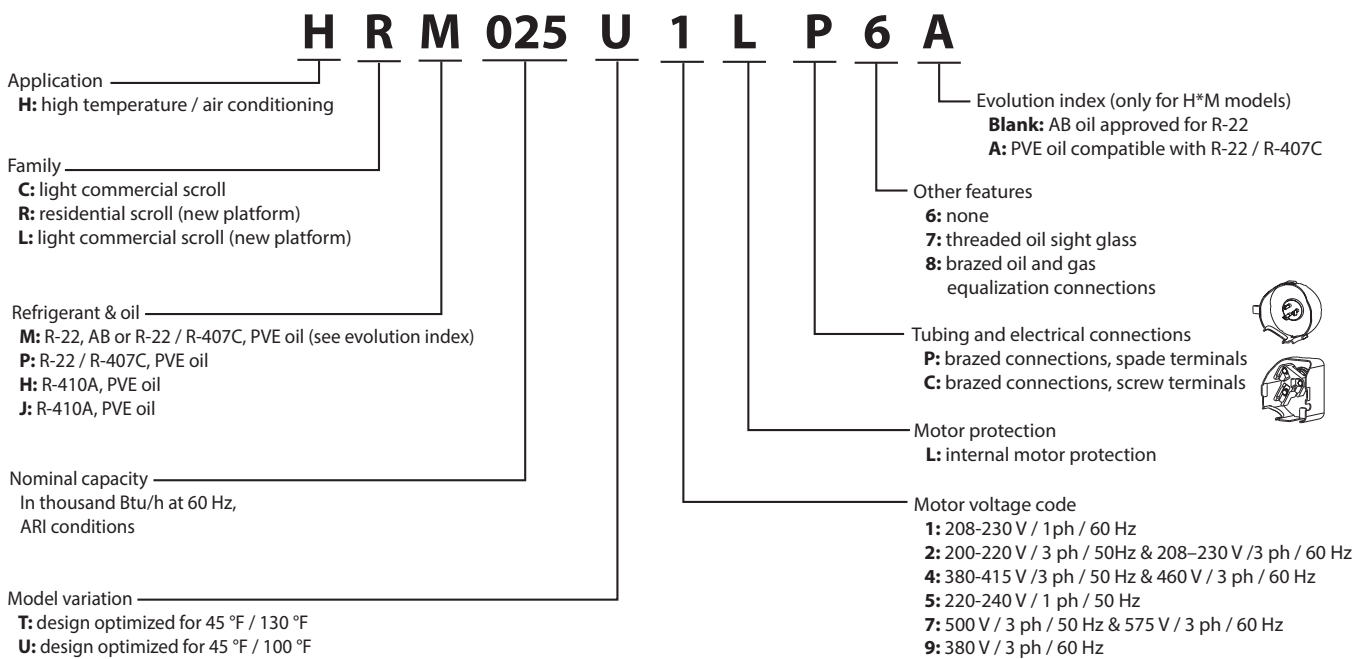
## H Series - Residential and Light Commercial Scroll Compressors

Danfoss Residential and Light Commercial Air Conditioning Scroll Compressors install quickly and easily and feature a design that minimizes internal parts, decreasing the overall weight and significantly reducing noise during operation. With a bolt pattern and

liquid and suction line connections that line up with those of other major scroll compressor manufacturers, Danfoss scroll compressors can be used to replace compressors made by nearly any company.



See page 262 for wire harness specs.



## Danfoss Residential Heat Pump And Commercial AC



### Features

- Carrier and Bristol direct replacements
- High-quality, quiet, and easy to install
- Universal replacement for air conditioning and heat pump applications
- Same 7.5" square bolt pattern with similar suction/discharge connection heights as Copeland
- Lighter and quieter with 30% fewer parts than Copeland
- Unloaded scroll set eliminates the need for start capacitor
- Superior thermal fault protection (blocked TXV, loss of charge, etc.)

Item ID	MFG #	Nom. H.P.	Volts-Phase-Hertz	Capacity (BTU)	Discharge ODF (In.)	Suction ODF (In.)	Replaces			
							Trane	Copeland	Carlyle	Old Bristol
<b>Danfoss R22/407C Series</b>										
HRP025T1LP6	120U3086	2	208/230-1-60	25000	1/2	3/4		ZR25K*-PFV	XCD250AA	—
HRM032U1LP6A	120U3196	3	208/230-1-60	32305	1/2	3/4		ZR28K*-PFV	XCD320HA	H23C323ABCA
HRM034T1LP6	120U3092	3	208/230-1-60	34103	1/2	3/4		ZR34K*-PFV	XCD340HA	H23C343ABCA
HRM034U2LP6A	120U3208	3	208/230-3-60	34507	1/2	3/4				
HRM038U1LP6A	120U3197	3+	208/230-1-60	38000	1/2	3/4		ZR36K*-PFV	XCD380HA	H23C383ABCA
HRP038T2LP6	120U1086	3+	208/230-3-60	38000	1/2	3/4		ZR36**_***_***	XCY382HA	H23C383DBDA
HRP042T1LP6	120U3310	3 1/2	208/230-1-60	42000	1/2	3/4		ZR42K*-PFV	XCD420HA	H23C423ABCA
HRM042U2LP6A	120U3209	3 1/2	208/230-3-60	42006	1/2	3/4		ZR42K*-TF5	XCY422HA	H23C423DBDA
HRM047U1LP6A	120U3199	4	208/230-1-60	47509	1/2	7/8		ZR47K*-PFV	XCD470HA	H23C473ABCA
HRP047T2LP6	120U1126	4	208/230-3-60	47511	1/2	7/8		ZR47K*-TF5	XCY472HA	H23C473DBDA
HRP047T4LP6	120U1046	4	460-3-60 400-3-50	47511	1/2	7/8		ZR47K*-TFD	XCH472HA	H23C473DBEA
HRM054U1LP6A	120U3212	4 1/2	208/230-1-60	54000	1/2	7/8		ZR54K*-PFV	XRD540HA	H23R543ABCA
HRM054U2LP6A	120U3225	4 1/2	208/230-3-60	53705	1/2	7/8		ZR54K*-TF5	XRY542HA	H23R543DBDA
HRP054T4LP6	120U1691	4 1/2	460-3-60 400-3-50	53705	1/2	7/8		ZR54**_***_***	XRH542HA	H23R543DBEA
HRP060T1LP6	120U3070	5+	208/230-1-60	60000	1/2	7/8		ZR61K*-PFV	XRD600HA	H23R603ABCA
HRP060T2LP6	120U2297	5+	208/230-3-60	60000	1/2	7/8		ZR61K*-TF5	XRY602HA	H23R603DBDA
HRP060T4LP6	120U1726	5+	460-3-60 400-3-50	60000	1/2	7/8		ZR61K*-TFD	XRH602HA	H23R603DBEA
HLP068T1LP6	120U1561	5 3/4	208/230-1-60	68811	1/2	7/8				
HLP068T2LC6	120U3276	5 3/4	208/230-3-60	68917	1/2	7/8				
HLP068T4LC6	120U2014	5 3/4	460-3-60 400-3-50	68917	1/2	7/8				
HLP072T1LP6	120U1571	6	208/230-1-60	72000	1/2	7/8		ZR72**_***_***	XRD720AA	
HLP072T2LC6	120U2903	6	208/230-3-60	72000	1/2	7/8		ZR72**_***_***	XRY722AE	
HLP072T4LC6	120U1756	6	460-3-60 400-3-50	72000	1/2	7/8		ZR72**_***_***	XRH722AE	
HLP075T2LC6	120U3098	6 1/4	208/230-3-60	75000	7/8	1/2	CSHA-075R-0*00 OR 0A, CSHS-075R-0*00 OR 0A	ZR72**_***_***		
HLP075T4LC6	120U1766	6 1/4	460-3-60	75000	7/8	1/2	CSHA-075K-0*00 OR 0A, CSHS-075K-0*00 OR 0A	ZR72**_***_***		
HLP081T2LC6	120U1916	7	208/230-3-60	81000	3/4	7/8		ZR81**_***_***	XRY812AE	
HLP081T4LC6	120U1766	7	460-3-60 400-3-50	81000	3/4	7/8		ZR81**_***_***	XRH812AE	
HCP094T2LC6	120U0906	8	208/230-3-60	94000	7/8	1 1/8		ZR90**_***_***	SRY942AE	
HCP094T4LC6	120U0601	8	460-3-60 400-3-50	94000	7/8	1 1/8		ZR90**_***_***	SRH942AE	
HCP109T4LC6	120U0376	9	460-3-60 400-3-50	109000	7/8	1 1/8		ZR108**_***_***	SRH109AE	
HCP120T2LC6	120U0766	10	208/230-3-60	120000	7/8	1 1/8	CSHA-120R-0*00 OR 0A, CSHS-120R-0*00 OR 0A	ZR12**_***_***		
HCP120T4LC6	120U0401	10	460-3-60 400-3-50	120000	7/8	1 1/8		ZR12**_***_***	SRH120AE	

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Danfoss Residential Heat Pump And Commercial AC



### Features

- High-quality, quiet, and easy to install
- Universal replacement for air conditioning and heat pump applications
- Same 7.5" square bolt pattern with similar suction/discharge connection heights as Copeland
- Lighter and quieter with 30% fewer parts than Copeland
- Unloaded scroll set eliminates the need for start capacitor
- Superior thermal fault protection (blocked TXV, loss of charge, etc)



Item ID	MFG #	H.P.	Volts-Phase-Hertz	Capacity (Btu)	Discharge ODF (In.)	Suction ODF (In.)	Replaces	
							Copeland	Carlyle
<b>Danfoss R410A Series</b>								
HRH032U1LP6	120U1141	2 1/2	208/230-1-60	32000	1/2	3/4	ZP32K3E-PFV	
HRH038U1LP6	120U1156	3	208/230-1-60	37901	1/2	3/4	ZP38K*E-PFV	XGD380HA
HRH038U2LP6	120U1271	3	208/230-3-60	37908	1/2	3/4		
HRH040U1LP6	120U1161	3 1/2	208/230-1-60	41503	1/2	7/8	ZP41K3E-PFV	
HRH040U2LP6	120U1276	3 1/2	208/230-3-60	41510	1/2	7/8	ZP38K*E-TF5	
HRH040U4LP6	120U1211	3 1/2	460-3-60	41510	1/2	7/8	ZP38K3E-TFD	
HRH048U1LP6	120U2582	4	208/230-1-60	49010	1/2	7/8	ZP49K5E-PFV	
HRH049U4LP6	120U1366	4	460-3-60	48997	1/2	7/8	ZP50K3E-TFD	
HRH050U2LP6	120U2859	4 1/2	208/230-3-60	50505	1/2	7/8	ZP50K3E-TF5	
HRH054U1LP6	120U1301	4 1/2	208/230-1-60	54498	1/2	7/8	ZP54K*E-PFV	
HLH061T1LP6	120U2042	5	208/230-1-60	60793	1/2	7/8	ZP61K5E-PFV	XND610HA
HLH061T2LC6	120U2062	5	208/230-3-60	61874	1/2	7/8	ZP61***_***_***	XNY612HE
HLH061T4LC6	120U2052	5	460-3-60 400-3-50	61898	1/2	7/8	ZP61***_***_***	XNH612HE
HLH068T2LC6	120U1481	5 3/4	208/230-3-60	68702	1/2	7/8		
HLH068T4LC6	120U1391	5 3/4	460-3-60 400-3-50	68702	1/2	7/8		
HLJ072T2LC6	120U1486	6	208/230-3-60	72502	1/2	7/8		
HLJ072T4LC6	120U1396	6	460-3-60 400-3-50	72502	1/2	7/8		
HLJ083T2LC6	120U1491	7	208/230-3-60	83092	1/2	7/8	ZP83***_***_***	XNY832AE
HLJ083T4LC6	120U1401	7	460-3-60 400-3-50	83092	1/2	7/8	ZP83***_***_***	XNH832AE
HCJ090T2LC6	120U2307	8	208/230-3-60	92056	7/8	1 1/8	ZP90***_***_***	SNY902AE
HCJ090T4LC6	120U2302	8	460-3-60 400-3-50	91503	7/8	1 1/8	ZP90***_***_***	
HCJ105T2LC6	120U2327	9	208/230-3-60	106811	7/8	1 1/8	ZP103***_***_***	SNY105AE
HCJ105T4LC6	120U2322	9	460-3-60 400-3-50	108368	7/8	1 1/8	ZP103***_***_***	
HCJ120T2LC6	120U2347	10	208/230-3-60	121086	7/8	1 1/8	ZP120***_***_***	SNY120AE
HCJ120T4LC6	120U2342	10	460-3-60 400-3-50	121602	7/8	1 1/8	ZP120***_***_***	

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## S Series - Light Commercial and Commercial Scroll Compressors

Danfoss Performer® Universal Scroll Compressors are designed to serve as quick, easy replacements for most commercial air conditioning scroll compressors. These compressors come with a bolt

pattern, suction and discharge lines, and performance characteristics that match up directly with some competitors' products.



### Nomenclature / Model No.

**SM 115 S 4 Q C**  
**SH 090 A 4 AL C**

Refrigerant & oil

**SM:** R-22, mineral oil  
**SY:** R-22, R-407C (SY185-300), POE oil  
**SZ:** R-407C, R-134a, R-404A / R-507A (SZ084-185), POE oil  
**SH:** R-410A, POE oil

Nominal Capacity

In thousand Btu/h at 60 Hz, ARI Conditions

UL index

Motor voltage code

**3:** 200-230 V / 3 ph / 60 Hz  
**4:** 380-400 V / 3 ph / 50 Hz & 460 V / 3 ph / 60 Hz  
**6:** 230 V / 3 ph / 50 Hz  
**7:** 500 V / 3 ph / 50 Hz & 575 V / 3 ph / 60 Hz  
**9:** 380 V / 3 ph / 60 Hz

Evolution index

Version (for SM, SY, SZ)	Motor protection module	Connection	Module voltage	Applies to
V	Internal overload protector	brazed		084, 090, 100, 110, 120, 148, 161
A		brazed		112, 124, 147
C	Internal thermostat	brazed		115, 125, 160, 175, 185
Q		brazed		
R		rotolock		
P	Electronic protection module	brazed	24V AC	
X		brazed	230V	
S		rotolock	24V AC	
Y		rotolock	230V	
CA		brazed	24V AC	
CB		brazed	115/230V	
PA		rotolock	24V AC	
PB	rotolock	115/230V		
AC	contact OEM			

Version (for SH)	Motor protection module	Connection	Module voltage	Applies to
AL	Internal overload protector	brazed		090, 105, 120, 140, 161, 175, 184
AA	Electronic protection module	brazed	24V AC	240, 295, 300, 380, 485
AB		brazed	115/230V	
AB		brazed	230V	180
AC	contact OEM			



Scan the QR Code for a video of a scroll compressor replacement or visit <http://bit.ly/ScrollInstall>

## Commercial Air Conditioning Scroll Compressors



### Features

- Economical **Trane Direct Replacements**
- All SM115-SM185 compressors feature brazed connections and thermostat motor protection
- "Q" as the 7th digit denotes that the compressor has a bracket to enable tandem installation
- Fully oil charged with mounting kit with grommets, bolts, nuts, sleeves and washers
- Standard SM product includes sight glass along with oil pick up tube and Schrader Valve for easy oil removal

Item ID	MFG #	Volts-Phase-Hertz	Capacity (BTU)	Discharge ODF (In.)	Suction ODF (In.)	Replaces	
						Trane	Copeland
<b>R22 Danfoss Performer Universal Scroll Compressors With Upper Mounting Bracket</b>							
SM090S3VC	SM090-3VI	208/230-3-60	90049	3/4	1 1/8	CSHA-090R-0*00 or OA, CSHS-090R-0*00 or OA	ZR90K3-TWC, ZR90K3E-TWC
SM090S4VC	SM090-4VI	460-3-60	90049	3/4	1 1/8	CSHA-090K-0*00 or OA, CSHS-090K-0*00 or OA	ZR90K3-TWD, ZR90K3E-TWD
SM115S3QC	SM115-3QAI	208/230-3-60	115215	7/8	1 3/8	CSHA-093R-0*00 or OA, CSHS-093R-0*00 or OA	ZR108KC-TF5, ZR11M3-TWC
SM115S4QC	SM115-4QAI	460-3-60 400-3-50	115215	7/8	1 3/8	CSHA-093K-0*00 or OA, CSHS-093K-0*00 or OA	ZR108KC-TFD, ZR11M3-TWD
SM125S3QC	SM125-3QAI	208/230-3-60	126423	7/8	1 3/8	CSHA-100R-0*00 or OA, CSHS-100R-0*00 or OA	ZR125KC-TF5, ZR12M3-TWC
SM125S4CC	SM125-4QAI	460-3-60 400-3-50	126423	7/8	1 3/8	CSHA-100K-0*00 or OA, CSHS-100K-0*00 or OA	ZR125KC-TFD, ZR12M3-TWD
SM160T3CC	SM160-3CBI	208/230-3-60	163000	1 1/8	1 5/8	CSHA-125R-0*00 or OA	ZR16M3-TWC
SM160T4CC	SM160-4CBI	460-3-60 400-3-50	163000	1 1/8	1 5/8	CSHA-125K-0*00 or OA	ZR16M3-TWD
SM175S3QC	SM175-3QAI	208/230-3-60	174355	1 1/8	1 5/8	CSHA-140R-0*00 or OA, CSHS-140R-0*00 or OA	
SM175S4QC	SM175-4QAI	460-3-60 400-3-50	174355	1 1/8	1 5/8	CSHA-140K-0*00 or OA, CSHS-140K-0*00 or OA	
SM185S3QC	SM185-3QAI	208/230-3-60	185474	1 1/8	1 5/8	CSHA-150R-0*00 or OA, CSHS-150R-0*00 or OA	ZR190KC-TW5, ZR19M3-TWC
SM185S4QC	SM185-4QAI	460-3-60 400-3-50	185474	1 1/8	1 5/8	CSHA-150K-0*00 or OA, CSHS-150K-0*00 or OA	ZR190KC-TWD, ZR19M3-TWD

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.



## LG Scroll Compressors Nomenclature



**A P A 026 D A A**

Refrigerant •

Type	Series	Ref
LSS	A	R410a
LSS	H	R407c
LSS	S	R22
HSS	J	R410a

Compressor size (unit : mm) •

B :  $\phi$  160    Q :  $\phi$  147  
 G :  $\phi$  224    R :  $\phi$  179  
 P :  $\phi$  139

Generation code (A-Z) •

Capacity •

(Btu/Hr x 1,000) @ 60Hz

• Exterior specification (A-Z)

• Motor specification (A-Z)

• Motor code

Series	Power Source (V)			Motor
	Phase( $\phi$ )	V	HZ	
K	1	208-230	60	Constant
P	1	220/240	50	Constant
R	3	208-230	60	Constant
S	3	460	60	Constant
T	3	575	60	Constant
U	3	380	60	Constant
W	3	460	60	Constant
		380/420	50	
Y	3	380/420	50	Constant
D		BLDC Inverter		BLDC / Distributed
M		BLDC Inverter		BLDC / Distributed

## A HIGH QUALITY OEM DROP-IN REPLACEMENT



### QUIET START-UP AND SHUT-DOWN

Discharge check valve minimizes sound



### INTERNAL OVERLOAD PROTECTION

Thermal switch protects the compressor motor from overheating



### DISCHARGE TEMPERATURE SENSOR

External thermal sensor protects the scroll mechanism from overheating



### INTERNAL PRESSURE RELIEF

A relief valve that opens to protect against high internal pressure

← **SQUARE MOUNT FOR A QUICK AND EASY INSTALL**

## LG Scroll Compressors



### Features

- **Quiet Start-up and Shut-down:** Sound is minimized by a check valve in the discharge port of the scroll sets
- **Discharge Temperature Protection (DTS):** External thermal sensor protects against excessively high scroll temperatures
- **Internal Pressure Relief (IPR):** Relief valve opens at very high internal pressures protecting the unit
- **Internal Motor Overload Protection (OLP):** Thermal switch senses high temperature of the compressor motor windings

Item ID	Nominal H.P.	Volts-Phase-Hertz	Capacity (BTU)	Discharge Line I.D.	Suction Line I.D.	Run Capacitor MFD/Volts	Replaces	
							Copeland	Danfoss
<b>R22, R407C Series</b>								
SQA022KAZ	1 3/4	208/230-1PH-60	21500	1/2	3/4	35/440	ZR21K5-PFV, ZR22K4PFV	
SQA026KAZ	2+	208/230-1PH-60	26100	1/2	3/4	35/440	ZR25K5-PFV	HRM025T1LP6
SQA032KAZ	2 1/2	208/230-1PH-60	32300	1/2	3/4	45/440	ZR32K5-PFV, ZR30K3PFV	HRM032U1LP6
SQA038KAZ	3	208/230-1PH-60	37000	1/2	3/4	50/440	ZR38K5-PFV, ZR36K3PFV	HRM038U1LP6
SQA042KAZ	3 1/2	208/230-1PH-60	41200	1/2	3/4	50/440	ZR42K5-PFV, ZR40K3PFV	HRM040U1LP6
SR047KBZ	4	208/230-1PH-60	47600	1/2	7/8	60/440	ZR48K5-PFV	HRM048U1LP6
SRA053KAZ	4 1/2	208/230-1PH-60	53500	1/2	7/8	70/440	ZR54K5-PFV	HRM054U1LP6
SR057KCZ	4 3/4	208/230-1PH-60	58000	1/2	7/8	70/440	ZR57K3-PFV	HRM058U1LP6
SR061RBZ	5	208/230-3PH-60	62000	1/2	7/8	N/A	ZR61K3-TF5	HRM060U2LP6
<b>R410A Series</b>								
APB016KAA	1 1/2	208/230-1-60	15200	1/2"	3/4"	35/370	ZP16K5EPFV	
APB020KAA	2	208/230-1-60	19500	1/2"	3/4"	35/370	ZP20K5EPFV	
APB024KAA	2+	208/230-1-60	22500	1/2"	3/4"	40/370	ZP24K5EPFV	
APA032KAA	3	208/230-1-60	30500	1/2"	3/4"	45/440	ZP29K5EPFV, ZP31K5EPFV	HRH032U1LP6
AQA034KAA	3	208/230-1-60	34100	1/2"	7/8"	45/440	ZP34K5EPFV	HRH034U1LP6
AQA036KAA	3+	208/230-1-60	36000	1/2"	7/8"	45/440	ZP36K5EPFV, ZP38K5EPFV	HRH038U1LP6
AQA042KAA	4	208/230-1-60	41500	1/2"	7/8"	70/440	ZP42K5EPFV	HRH040U1LP6
ABA051KAC	5	208/230-1-60	51500	1/2"	7/8"	75/440	ZP51K5EPFV	HRH051U1LP6
ABA054KAA	5+	208/230-1-60	54000	1/2"	7/8"	80/440	ZP54K5EPFV	HRH054U1LP6
ABA054RAB	5+	208/230-3-60	54500	1/2"	7/8"	—	ZP54K5ETF5	HRH054U2LP6
ABA054WAB	5+	460-3-60	54000	1/2"	7/8"	—	ZP54K5ETF5	HRH054U4LP6

Capacities are at ARI conditions.

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Packard Refrigeration Compressor and Condensing Unit Offerings



Nominal H.P. (Tons)	1/10	1/8	1/6	1/5	1/4	1/3	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	8	9	10	12	13	24	40
R12 Reciprocating	350 to 5000 BTU																									
R22 Reciprocating												15903 to 287300 BTU														
R134a Reciprocating	113 to 107631 BTU																									
R404A Reciprocating	702 to 87421 BTU																									

\*For large refrigeration scrolls SY, SZ series please call for availability.

## Refrigeration Compressors



Bristol

### Features

- L1NB Series for ultra low temperature applications
- Replacement compressors for low temperature refrigeration and food service equipment

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

\* Additional mounting configurations on base plate.

Item ID	Volts-Phase-Hertz	BTU			Foot (In.)	I.D. Discharge Size (In.)	I.D. Suction Size (In.)
		LT @ -10°F	MT @ 20°F	HT @ 45°F			
<b>R12 Blend</b>							
L1NB262EBAB	115-1-60	2400	—	—	4.8 x 8	3/8	5/8
L1NB262EBCB	208/230-1-60	2400	—	—	4.8 x 8	3/8	5/8
Item ID	Volts-Phase-Hertz	BTU			Foot (In.)	I.D. Discharge Size (In.)	I.D. Suction Size (In.)
		LT @ -10°F	MT @ 20°F	HT @ 45°F			
<b>R404A</b>							
L63B562BBAB	115-1-60	4800	—	—	4.8 x 8.0	3/8	5/8
L63B562BBCB	208/230-1-60	5100	—	—	4.8 x 8.0	3/8	5/8
L63B652BBCB	208/230-1-60	6200	—	—	4.8 x 8.0	3/8	5/8
L63A113BBCA	208/230-1-60	10600	—	—	7.5 x 7.5	1/2	3/4
L63A113DBLA	208/230-3-60	10800	—	—	7.5 x 7.5	1/2	3/4
L63A183BBCA	208/230-1-60	18000	—	—	7.5 x 7.5	1/2	3/4
L63A183DBDA	208/230-3-60	18000	—	—	7.5 x 7.5	1/2	3/4

## Embraco Refrigeration Compressors

### Features

- Triple duty compressors that may be used in low, medium and high temperature applications (Copeland and Tecumseh Replacements)
- Direct replacement compressors for Whirlpool, GE and Electrolux appliances
- Replacement compressors for food service equipment, vending machines, bottle coolers, ice machines and other refrigeration equipment



Item ID	Nominal H.P.	Volts-Phase-Hertz	BTU			Foot (In.)	I.D. Discharge Size (In.)	I.D. Suction Size (In.)	Replaces	
			LT @ -10°F	MT @ 20°F	HT @ 45°F				Tecumseh	Copeland
<b>R12 Blend</b>										
EMI30ER1	1/10	115-1-60	350	—	—	4 x 6.5*	3/16	1/4		
EMI45ER1	1/8	115-1-60	485	—	—	4 x 6.5*	3/16	1/4		
EMI55ER1	1/6	115-1-60	570	—	—	5.91 X 5.67*	1/4	5/16		
FFC60BK1	1/5+	115-1-60	756	1644	2573	4 x 6.5*	1/4	5/16		
FF8.5BK1	1/5	115-1-60	850	1759	3080	4 x 6.5*	1/4	5/16	AEA3430AXA	
FF10BK1	1/4	115-1-60	915	1908	3240	4 x 6.5*	1/4	5/16	AEA3430AXA	
FF11.5BK1	1/4	115-1-60	1130	1893	4000	4 x 6.5*	1/4	5/16		
FFI12BX1	1/3	115-1-60	1350	2142	5000	4 x 6.5*	1/4	5/16	AEA4440AXA	ARE41C3-IAA (HST) JFB1-0033-IAA (HST)



Item ID	Nominal H.P.	Volts-Phase-Hertz	BTU			Foot (In.)	I.D. Discharge Size (In.)	I.D. Suction Size (In.)	Replaces	
			LT @ -10°F	MT @ 20°F	HT @ 45°F				Tecumseh	Copeland
<b>R134a</b>										
EMIS30HHR1	1/10	115-1-60	340	950	1480	4 x 6.5*	3/16	1/4	AEA0335YXA	
EM45HHR1	1/8	115-1-60	420	1053	1775	4 x 6.5*	3/16	1/4	AZA0350YXA	
EMI55HER1	1/6	115-1-60	510	—	—	4 x 6.5*	3/16	1/4	THG1358YXA	
EM65HHR1	1/6+	115-1-60	—	—	2600	4 x 6.5*	1/4	1/4		
FF7.5HBK1	1/5	115-1-60	630	1622	2760	4 x 6.5*	1/4	5/16	AEA1360YXA AEA3425YXA	ARB13C3E-SAA
EMIS70HHR1	1/5	115-1-60	700	1829	—	4 x 6.5*	1/4	1/4		
FF8.5HBK1	1/4	115-1-60	740	1745	3135	4 x 6.5*	1/4	5/16	AEA3430YXA	AF05C1E-SAA (LST)
FF8.5HBK1C**	1/4	115-1-60	740	1745	3135	4 x 6.5*	1/4	5/16	AEA4430YXA	ARE27C3E-IAA
FF10HBX1	1/4+	115-1-60	840	—	3650	4 x 6.5*	1/4	5/16		
NEK6160Z1	1/4	115-1-60	—	—	2884	4 x 6.5*	3/16	1/4		
NEK6170Z1	1/4	115-1-60	—	—	3336	4 x 6.5*	3/16	1/4		
FF10HBK1	1/4+	115-1-60	840	1995	3530	4 x 6.5*	1/4	5/16		
NE2134Z1	1/4	115-1-60	1452	—	—	4 x 6.5*	1/4	5/16	AEA2413YXA	AFE12C3E-IAA
FFI10HBX1	1/3	115-1-60	1065	2038	4400	4 x 6.5*	1/4	5/16	AEA4440YXA AEA3440YXA	ARE37C3E-IAA
NEK6187Z1	1/3	115-1-60	—	—	3830	4 x 6.5*	1/4	5/16		
FFI12HBX1	1/3+	115-1-60	1190	2886	5300	4 x 6.5*	1/4	5/16	AEA4448YXA	ARE41C3E-IAA
NEK6212Z1	1/2	115-1-60	—	—	5178	4 x 6.5*	1/4	5/16	AEA4448Y	ARE46C4E
NT6215Z1	1/2+	115-1-60	—	3705	6626	4.8 x 8.0*	1/4	3/8	AKA4460YXA	RRT62C1-IAA
NEK6214Z1	3/4	115-1-60	—	—	5960	4 x 6.5*	1/4	5/16		
NT6217Z1	3/4	115-1-60	—	3909	7460	4.8 x 8.0*	1/4	3/8	AKA4476YXA	ART64C1E-IAA
NT6217Z2	3/4	208/230-1-60	—	3909	7579	4.8 x 8.0*	1/4	3/8	AKA4460YXD	ART64C1E-IAV
NJ6220Z1	1	115-1-60	—	—	10169	4.8 x 8.0*	5/16	3/8		AR84C1E-IAA
NT6220Z1	1	115-1-60	—	5730	8514	4.8 x 8.0*	1/4	3/8	AJA4492*X*	
NT6220Z2	1	208/230-1-60	—	6325	8351	4.8 x 8.0*	1/4	3/8	AJA4492*X*	

\* Additional mounting configurations on base plate.

\*\*FF8.5HBK1C includes start capacitor.

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Embraco Refrigeration Compressors



Embraco

### Features

- Direct replacement compressors for Whirlpool, GE and Electrolux appliances
- Replacement compressors for food service equipment, vending machines, bottle coolers, ice machines and other refrigeration equipment

Item ID	Nominal H.P.    Volts-Phase-Hertz		BTU			Foot (In.)	I.D. Discharge Size (In.)	I.D. Suction Size (In.)	Replaces	
			LT @ -10°F	MT @ 20°F	HT @ 45°F				Tecumseh	Copeland
<b>R404A</b>										
NEK2121GK1	1/3	115-1-60	1212	—	—	4 x 6.5	3/16	1/4		
NEK2125GK1	1/3	115-1-60	1455	—	—	4 x 6.5*	1/4	5/16	AEA2411ZXA	AFE11C4E-IAA
NEK2134GK1	1/2	115-1-60	1947	—	—	4 x 6.5*	1/4	5/16	AJA2419ZXA	AFE13C4E-IAA
NEK2134GK2	1/2	208/230-1-60	1858	—	—	4 x 6.5*	1/4	5/16	AJA2419ZXA	AFE13C4E
NEK6210GK1	1/2	115-1-60	—	—	5355	4 x 6.5*	1/4	5/16		ASE26C4E
NEK2150GK1	1/2+	115-1-60	2448	—	—	4 x 6.5*	1/4	5/16	AJA2425ZXA	AFE17C4E-IAA
NT2168GKV1	3/4	115-1-60	2628	—	—	4.8 x 8.0*	1/4	3/8	AJA2425ZXA	AFT22C1E-IAA
NT2168GKV2	3/4	208/230-1-60	2694	—	—	4.8 x 8.0*	1/4	3/8	AJA2425ZXD	AFT22C1E-CAV
NT2180GKV1	1	115-1-60	3892	—	—	8 X 4.8"	*1/4	*3/8		
NEK6181GK1	1/3+	115-1-60	—	—	4389	4 x 6.5	3/16	1/4		
<b>NEK6181GK2</b>										
NEK6213GK1	1/2+	115-1-60	—	—	6660	4 x 6.5	3/16	1/4		
NT6220GKV1	3/4	115-1-60	—	—	8464	4.8 x 8.0*	1/4	3/8	AWA9490Z	RST45C1E
NT6222GKV2	1	208/230-1-60	—	—	9992	4.8 x 8.0*	1/4	3/8	AWA9512Z	RST55C1E
NT6224GKV2	1	208/230-1-60	—	—	11984	4.8 x 8.0*	1/4	3/8		
NT2180GKV2	1	208/230-1-60	3962	—	—	4.8 x 8.0*	1/4	3/8	AJA2425ZXD	AFT296C1E-CFV
NJ2192GK1	1 1/4	115-1-60	4500	—	—	4.8 x 8.0*	5/16	1/2		
NJ2192GK2	1 1/4	208/230-1-60	4502	—	—	4.8 x 8.0	5/16	1/2	AJA2444ZXD	AFJ31C2E-CFV
NT2212GKV1	1 1/2	115-1-60	5629	—	—	4.8 x 8.0*	1/4	3/8	AWA2460Z	AFJ37C2E
NT2212GKV2	1 1/2	208/230-1-60	5710	—	—	4.8 x 8.0*	1/4	3/8	AWA2460ZXD	RS86C1E-PFV

**I OWN  
PACKARD!**

*Customer Focused...*

“...means that our relationship with our customers doesn't end at the point of sale, because we know if our customers succeed then we succeed.”

MARK ESBROOK

Database Administrator and IT Solutions Developer

## Danfoss/Nidec (Secop) Refrigeration Compressors



### Features

- Triple duty compressors that may be used in low, medium and high temperature applications (Copeland and Tecumseh Replacements)
- Replacement compressors for food service equipment, vending machines, bottle coolers, ice machines and other refrigeration equipment
- The BD Compressor (Battery Driven) has been widely used in N. America for over 20 years by OEM's such as Dometic in the transportation, marine and medical sectors

Item ID	Nominal H.P.	Volts-Phase-Hertz	BTU			Foot (In.)	Discharge Size (In.)	I.D. Suction Size (In.)	Replaces	
			LBP -10/130	MBP 20/130	HBP 45/130				Tecumseh	Copeland
<b>R134a</b>										
BD35F-W/ELE	—	12-24V DC, 10-45V DC Solar & 100-240V AC, 50/60HZ	113 - 171	140 - 257	518 - 648	2.76 x 6.7	3/16	1/4		
BD50F-W/ELE	—	12-24V DC & 100-240V AC, 50/60 Hz	142 - 245	360 - 613	633 - 810	2.76 x 6.7	3/16	1/4		
TL2.5F-1	1/10	115-1-60	190	493	966	2.76 x 6.7	3/16	1/4		
TL4G-1	1/10+	115-1-60	306	729	1369	4 x 6.5	3/16	1/4	AZA0370YXA	
TFS4.5FT-1	1/8	115-1-60	477	1135	—	4 x 6.5	3/16	1/4	AEA1338YXA	
FF8.5GX-1	1/4	115-1-60	662	1570	2842	4 x 6.5	1/4	5/16	AEA3430YXA	AF05C1E-SAA (LST)
NF6.1FX.2-1	1/4	115-1-60	721	1541	—	4 x 6.5	1/4	5/16	AEA3425YXA	ARE25C3E-IAA
NF7.3FX.2-1	1/4	115-1-60	892	1857	—	4 x 6.5	1/4	5/16	AEA4430YXA	
SC12G-1	1/3+	115-1-60	972	2588	4730	4 x 6.5	1/4	5/16	AEA4448YXA	ARE40C4E-IAA
NF10FX-1	1/3	115-1-60	1046	2123	3756	4 x 6.5	1/4	5/16		
NF11FX.2-1	1/3	115-1-60	1301	2700	4726	4 x 6.5	1/4	5/16	AEA3448YXA	ARE34C4E-IAA
SC15G-1	1/2+	115-1-60	1241	3045	5496	4 x 6.5	1/4	5/16	AKA4450YXA	AFE12C4E-IAA
SC18G-1	1/2+	115-1-60	1357	3469	6200	4 x 6.5	1/4	3/8	AKA4460YXA	ARE51C4E-CAA
SC15FTX-1	1/2	115-1-60	1550	3531	—	4 x 6.5	1/4	5/16		

Item ID	Nominal H.P.	Volts/Phase-Hertz	BTU			Foot (In.)	Discharge Size (In.)	I.D. Suction Size (In.)	Replaces	
			LBP -10/130	MBP 20/130	HBP 45/130				Tecumseh	Copeland
<b>R404A</b>										
TF4CLX-1	1/5	115-1-60	702	1285	—	4 x 6.5	3/16	1/4	TP9415ZAA	AFE06C4E-IAA
TFS4.5CLX-1	1/4	115-1-60	926	—	—	4 x 6.5	3/16	1/4	AEA2380ZXA	AFE08C4E-IAA
NF5.5CLX-1	1/3	115-1-60	1249	2209	—	4 x 6.5	1/4	5/16	AEA2411ZXA	
NF7CLX-1	1/3+	115-1-60	1543	2789	—	4 x 6.5	1/4	5/16	AKA9438ZXA	AFE13C4E-IAA
SC10CL-1	1/2	115-1-60	1420	3096	—	4 x 6.5	1/4	5/16	AEA2419ZXA	ASE26C4E-CAA
SC12CL-1	1/2	115-1-60	2374	—	—	4 x 6.5	1/4	5/16	AEA2425ZXA	
SC12CLX.2-1	1/2+	115-1-60	2746	—	—	4 x 6.5	1/4	5/16	AEA2425ZXA	AFE17C4E-IAA
SC12MLX-1	3/4	115-1-60	—	4391	—	4 x 6.5	1/4	5/16	AKA9455ZXA	RST45C1E-IAA
SC15CLX.2-1	3/4	115-1-60	3000	—	—	4 x 6.5	1/4	3/8	AJB2433ZXA	
SC15MLX.2-1	3/4	115-1-60	—	5120	—	4 x 6.5	1/4	3/8	AKA9455ZXA	
SC18CLX.2-1	3/4	115-1-60	3656	—	—	4 x 6.5	1/4	3/8	AJB2433ZXA	
SC18MLX-1	3/4	115-1-60	—	6296	—	4 x 6.5	1/4	3/8	AKA9462ZXA	
SC12CLX.2-2	3/4	220/240-1-50/60	2412	—	—	4 x 6.5	1/4	5/16		
SC15CLX.2-2	3/4	208/230-1-60	3005	—	—	4 x 6.5	1/4	3/8	AJB2433ZXB	
SC18CLX.2-2-230V	1	208/230-1-60	3797	—	—	4 x 6.5	1/4	3/8	AJB2444ZXD	RST64C1E-IAV

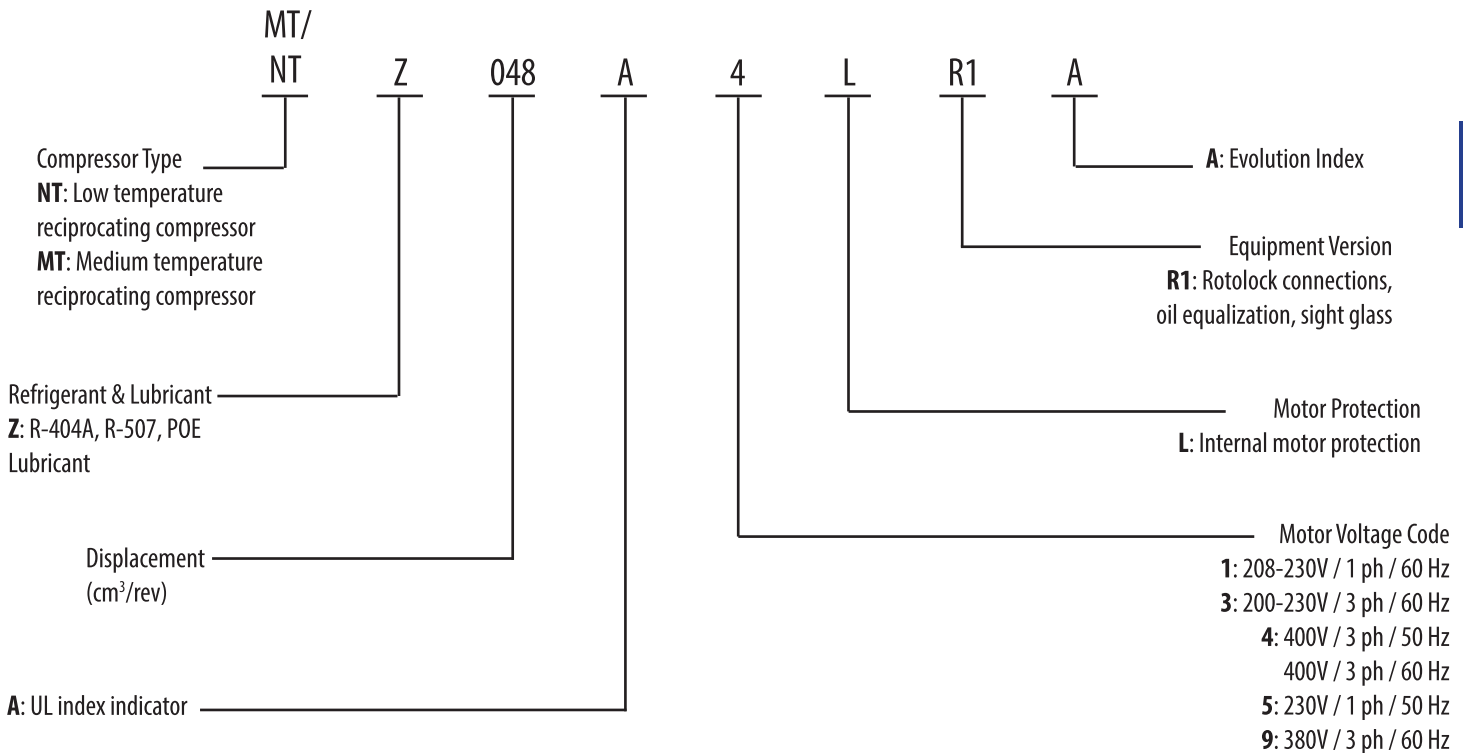
\*Additional mounting configurations on base plate.

## Maneurop® Reciprocating NTZ Series Compressors



### Features

- Maneurop NTZ series hermetic reciprocating compressors are designed for low evaporating temperature applications.
- The NTZ series is specifically designed for use with the HFC refrigerants R-404A and R-507A, using 160PZ polyester oil as lubricant.
- All compressors come with threaded sight glass and 3/8" oil equalization connection
- Parts shipped with compressor:
  - Mounting kit with grommets, bolts, nuts, sleeves and washers
  - Suction and discharge solder sleeves, rotolock nuts and gaskets
  - Initial oil charge and installation instructions



208/230-1-60			208/230-3-60			460-3-60			Conn. Type Rotolock (In.)	Conn. w/ Supplied Sleeve (In. ODF)	No. Cylinders
Item ID	Nominal Capacity <sup>1</sup> (Btu/h)	Danfoss Code No. <sup>2</sup>	Item ID	Nominal Capacity <sup>1</sup> (Btu/h)	Danfoss Code No. <sup>2</sup>	Item ID	Nominal Capacity <sup>1</sup> (Btu/h)	Danfoss Code No. <sup>2</sup>			
NTZ048A1LR1A	4547	120F0072	NTZ048A3LR1A	4490	120F0026	NTZ048A4LR1A	4490	120F0001	1¼ x 1	⅝ x ½	1
NTZ068A1LR1A	6649	120F0073	NTZ068A3LR1A	7518	120F0027	NTZ068A4LR1A	7518	120F0002	1¼ x 1	⅝ x ½	1
NTZ096A1LR1A	9155	120F0074	NTZ096A3LR1A	9110	120F0028	NTZ096A4LR1A	9110	120F0003	1¾ x 1¼	⅞ x ¾	2
NTZ108A1LR1A	10804	120F0075	NTZ108A3LR1A	10536	120F0029	NTZ108A4LR1A	10536	120F0004	1¾ x 1¼	⅞ x ¾	2
NTZ136A1LR1A	13900	120F0076	NTZ136A3LR1A	13900	120F0030	NTZ136A4LR1A	13900	120F0005	1¾ x 1¼	1⅛ x ¾	2
			NTZ215A3LR1A	21460	120F0031	NTZ215A4LR1A	21460	120F0006	1¾ x 1¼	1⅛ x ¾	4
			NTZ271A3LR1A	29788	120F0032	NTZ271A4LR1A	29788	120F0007	1¾ x 1¼	1⅛ x ¾	4

<sup>1</sup> Evaporator temperature = -25°F, condensing temperature = 105°F, superheat = 20°F, subcooling = 0°F

<sup>2</sup> Single compressor, threaded sight glass, 3/8" oil equalization connection

## Maneurop® Reciprocating MTZ Series Compressors

### Features

- Maneurop MTZ series hermetic reciprocating compressors are designed for medium and high evaporating temperature applications.
- The MTZ series is specifically designed for use with the HFC refrigerants R-407C, R-134a, R-404A, and R-507A, using 160PZ polyester oil as lubricant.
- Replacement for Trane Compressors

208/230-1-60		200/230-3-60		460-3-60		Nominal Capacity (Btu/h) <sup>2,3</sup>			Conn. Type Rotolock (In.)	Conn. with Supplied Sleeve (In. ODF)	No. Cylinders
Item ID	Danfoss Code No.	Item ID	Danfoss Code No.	Item ID	Danfoss Code No.	R-22	R-134a	R-404A / R-507			
MT18JA1PVE	MT18-1VI	MT18JA3MVE	MT18-3VI	MT18JA4BVE	MT18-4VI	15903			1 x 1	½ x ¾	1
MT22JC1TVE	MT22-1VI <sup>4</sup>	MT22JC3MVE	MT22-3VI	MT22JC4AVE	MT22-4VI	21975			1 x 1 <sup>(4)</sup>	½ x ¾ <sup>(4)</sup>	1
MT28JE1RVE	MT28-1VI <sup>4</sup>	MT28JE3MVE	MT28-3VI	MT28JE4AVE	MT28-4VI	30231			1 x 1 <sup>(4)</sup>	½ x ¾ <sup>(4)</sup>	1
MT32JF1MVE	MT32-1VI	MT32JF3EVE	MT32-3VI	MT32JF4DVE	MT32-4VI	33044			1¼ x 1	⅝ x 1½	1
MT36JG1QVE	MT36-1VI	MT36JF3FVE	MT36-3VI	MT36JG4EVE	MT36-4VI	37992			1¼ x 1	⅝ x 1½	1
MT40JH1NVE	MT40-1VI	MT40JH3FVE	MT40-3VI	MT40JH4EVE	MT40-4VI	42930			1¼ x 1	⅝ x 1½	1
MT44HJ1FVE	MT44-1VI	MT44HJ3BVE	MT44-3VI	MT44HJ4AVE	MT44-4VI	43999			1¾ x 1¼	⅞ x ¾	2
MT50HK1GVE	MT50-1VI	MT50HK3CVE	MT50-3VI	MT50HK4BVE	MT50-4VI	50160			1¾ x 1¼	⅞ x ¾	2
MT56HL1EVE	MT56-1VI	MT56HL3BVE	MT56-3VI	MT56HL4AVE	MT56-4VI	56420			1¾ x 1¼	⅞ x ¾	2
MT64HM1FVE	MT64-1VI	MT64HM3DVE	MT64-3VI	MT64HM4CVE	MT64-4VI	64366			1¾ x 1¼	⅞ x ¾	2
		MT72HN3CVE	MT72-3VI	MT72HN4AVE	MT72-4VI	74561			1¾ x 1¼	⅞ x ¾	2
		MT80HP3CVE	MT80-3VI	MT80HP4AVE	MT80-4VI	84976			1¾ x 1¼	1⅛ x ¾	2
		MT100HS3DVE	MT100-3VI	MT100HS4DVE	MT100-4VI	95898			1¾ x 1¼	1⅛ x ¾	4
		MT125HU3DVE	MT125-3VI	MT125HU4DVE	MT125-4VI	124678			1¾ x 1¼	1⅛ x ¾	4
		MT144HV3VE	MT144-3VI	MT144HV4AVE	MT144-4VI	140697			1¾ x 1¼	1⅛ x ¾	4
		MT160HW3DVE	MT160-3VI	MT160GW4EVE	MT160-4VI	140697			1¾ x 1¼	1⅛ x ¾	4
MTZ18JA1AVE	MTZ18-1VI	MTZ18JA3AVE	MTZ18-3VI	MTZ18JA4BVE	MTZ18-4VI		11200	8980	1 x 1	½ x ¾	1
MTZ22JC1BVE	MTZ22-1VI <sup>4</sup>	MTZ22JC3AVE	MTZ22-3VI	MTZ22JC4AVE	MTZ22-4VI		14849	12306	1 x 1 <sup>(4)</sup>	½ x ¾ <sup>(4)</sup>	1
MTZ28JE1AVE	MTZ28-1VI <sup>4</sup>	MTZ28JE3AVE	MTZ28-3VI	MTZ28JE4AVE	MTZ28-4VI		19276	15986	1 x 1 <sup>(4)</sup>	½ x ¾ <sup>(4)</sup>	1
MTZ32JF1AVE	MTZ32-1VI	MTZ32JF3AVE	MTZ32-3VI	MTZ32JF4BVE	MTZ32-4VI		20949	17480	1¼ x 1	⅝ x 1½	1
MTZ36JG1AVE	MTZ36-1VI	MTZ36JG3AVE	MTZ36-3VI	MTZ36JG4AVE	MTZ36-4VI		24482	20189	1¼ x 1	⅝ x 1½	1
MTZ40JH1AVE	MTZ40-1VI	MTZ40JH3AVE	MTZ40-3VI	MTZ40JH4AVE	MTZ40-4VI		27864	23031	1¼ x 1	⅝ x 1½	1
MTZ44HJ1AVE	MTZ44-1VI	MTZ44HJ3AVE	MTZ44-3VI	MTZ44HJ4AVE	MTZ44-4VI		30110	24323	1¾ x 1¼	⅞ x ¾	2
MTZ50HK1BVE	MTZ50-1VI	MTZ50HK3BVE	MTZ50-3VI	MTZ50HK4BVE	MTZ50-4VI		34538	28590	1¾ x 1¼	⅞ x ¾	2
MTZ56HL1BVE	MTZ56-1VI	MTZ56HL3BVE	MTZ56-3VI	MTZ56HL4AVE	MTZ56-4VI		38881	32451	1¾ x 1¼	⅞ x ¾	2
MTZ64HM1BVE	MTZ64-1VI	MTZ64HM3AVE	MTZ64-3VI	MTZ64HM4BVE	MTZ64-4VI		44404	36056	1¾ x 1¼	⅞ x ¾	2
		MTZ72HN3BVE	MTZ72-3VI	MTZ72HN4AVE	MTZ72-4VI		50000	40894	1¾ x 1¼	⅞ x ¾	2
		MTZ80HP3BVE	MTZ80-3VI	MTZ80HP4AVE	MTZ80-4VI		56336	46521	1¾ x 1¼	1⅛ x ¾	2
		MTZ100HS3VE	MTZ100-3VI	MTZ100HS4VE	MTZ100-4VI		63963	52953	1¾ x 1¼	1⅛ x ¾	4
		MTZ125HU3VE	MTZ125-3VI	MTZ125HU4VE	MTZ125-4VI		78906	68297	1¾ x 1¼	1⅛ x ¾	4
		MTZ144HV3VE	MTZ144-3VI	MTZ144HV4VE	MTZ144-4VI		96936	80472	1¾ x 1¼	1⅛ x ¾	4
		MTZ160HW3VE	MTZ160-3VI	MTZ160HW4VE	MTZ160-4VI		107631	87421	1¾ x 1¼	1⅛ x ¾	4

1. Evaporator temperature = -25°F, condensing temperature = 105°F, superheat = 20°F, subcooling = 0°F

2. Single compressor, threaded sight glass, 3/8" oil equalization connection

3. These compressor models have threaded sight glass and 3/8" flare oil equalization line.

4. Evaporator temperature = 45°F, condensing temperature = 130°F, superheat = 20°F, subcooling = 15°F.

5. To determine the nominal capacity for R-407C, visit [www.danfoss.com/odsg](http://www.danfoss.com/odsg).

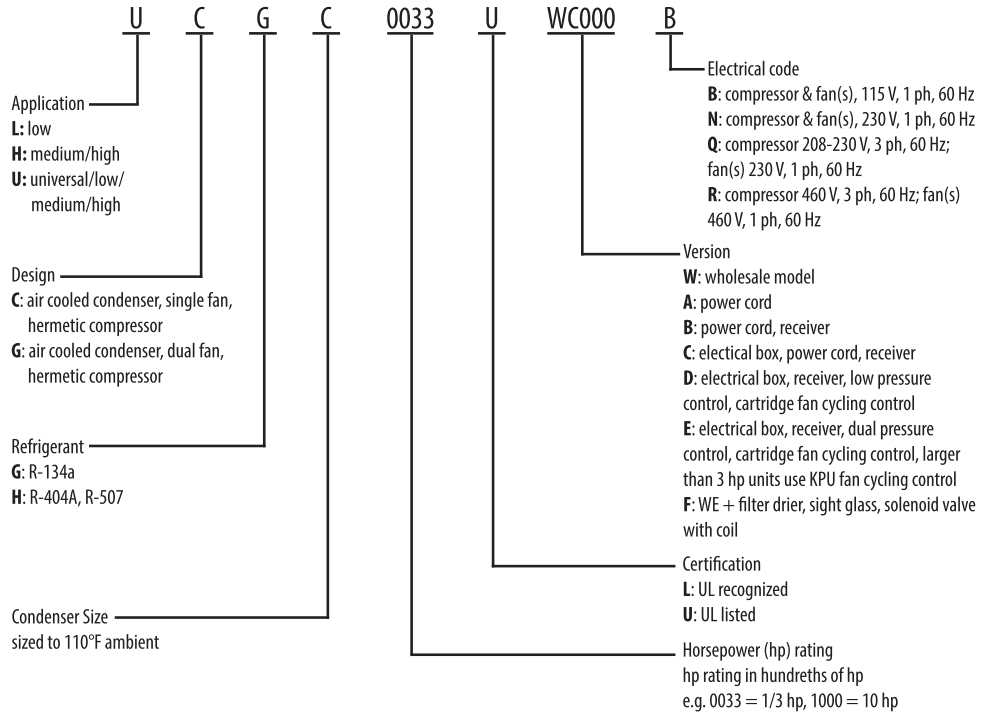
6. Actual connection for MTZ 22-28 (208-230/1/60) is rotolock 1 1/4" x 1" and connection with supplied sleeve is 5/8" x 1/2" ODF.



## Danfoss Refrigeration Condensing Units

### Features

- Broad range of fractional condensing units from 1/4 HP to 1 HP
- Designed for specific applications



Item ID	MFG #	Nominal H.P.	Volts-Phase-Hertz	BTU			Version Includes	Replaces	
				LT @ -10°F	MT @ 20°F	HT @ 45°F		Tecumseh	Copeland
<b>R134a</b>									
UCGC0020RWA000B	114N2017	1/5	115-1-60	—	1671	2699	Power Cord	AEA3417	M2FH0020
UCGC0025RWB000B	114N2019	1/4	115-1-60	—	1884	3029	Power Cord, Receiver	AEA4430	M2FH0026
HCGC0033UWC000B	114N2022	1/3	115-1-60	—	2431	3986	Electrical Box, Receiver, Power Cord	AEA4440	M2FHA033
UCGC0050UWC000B	114N2024	1/2	115-1-60	—	3815	6249	Electrical Box, Receiver, Power Cord	AKA4460, AKA7437	M2FH0049
HCGC0055RWB000B	114N2025	5/8	115-1-60	—	5009	7374	Power Cord, Receiver	AKA4476	M2FH0056
HCGC0075UWC000B	114N2027	3/4	115-1-60	—	6470	11052	Electrical Box, Receiver, Power Cord	AJA4492	FTAHA074
HCGC0075UWC000N	114N2028	3/4	230-1-60	—	6470	11052	Electrical Box, Receiver, Power Cord	AJA4492	FTAHA074
HCGC0100UWD000N	114N2029	1	230-1-60	—	8491	12555	Electrical Box, Receiver, Low Pressure Control	AJA4512	FTAHA100, FTAHA101
<b>R404A</b>									
UCHC0020RWA000B	114N2316	1/5	115-1-60	764	1422	2098	Power Cord	AEA9415	M4FH0022
UCHC0025RWB000B	114N2318	1/4	115-1-60	1303	2405	3635	Power Cord, Receiver	AEA9422	M4FH0025
UCHC0033RWB000B	114N2321	1/3	115-1-60	1577	2915	4340	Power Cord, Receiver	AKA9429	M4FHA036
UCHC0050RWB000B	114N2324	1/2	115-1-60	1959	3878	6030	Power Cord, Receiver	AKA9440	M4FH0050
UCHC0050UWC000N	114N2325	1/2	230-1-60	1959	3878	6030	Electrical Box, Receiver, Power Cord	AKA9440	M4FH0050
HCHC0075UWC000B	114N2330	3/4	115-1-60	—	6847	10113	Electrical Box, Receiver, Power Cord	AJA7465	FTAHA0074
HCHC0075UWC000N	114N2331	3/4	230-1-60	—	6847	10113	Electrical Box, Receiver, Power Cord	AJA7465	FTAHA0074
LCHC0075UWC000B	114N2337	3/4	115-1-60	3460	—	—	Electrical Box, Receiver, Power Cord	—	M4FL0067
HCHC0100UWD000N	114N2332	1	230-1-60	—	6867	10928	Electrical Box, Receiver, Low Pressure Control	—	FJAJA100
LCHC0100UWD000N	114N2339	1	230-1-60	5329	—	—	Electrical Box, Receiver, Low Pressure Control	AWA2448	FJALA100

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Danfoss Refrigeration Condensing Units



### Features

- Broad range of condensing units from 1 1/2 HP to 13 1/2 HP
- Designed for specific applications
- WF version includes: Electrical box, receiver, dual pressure control, fan cycling control, dual fan units larger than 3 HP use KPU fan cycling control, filter drier, sight glass, solenoid valve with coil.

Item ID	MFG #	Nominal H.P.	Volts-Phase-Hertz	BTU			Version Includes	Replaces	
				LT @ -10°F	MT @ 20°F	HT @ 45°F		Tecumseh	Copeland
<b>R404A</b>									
HCZC0150UWF300Q	114N6402	1 1/2	208/230-3-60Fan(s) 230-1-60	—	11135	18503	WF See Features	AWA7512	FJAMA125 FJAMA126 FJAMA150
HCZC0150UWF300R	114N6403	1 1/2	460-3-60	—	11153	18503	WF See Features	AWA7512	FJAMA125, FJAMA126, FJAMA150
HCZC0200UWF300N	114N6404	2	230-1-60	—	14286	22434	WF See Features	AWA7515	VJAF017H FJAMA200
HCZC0200UWF300Q	114N6405	2	208/230-3-60Fan(s) 230-1-60	—	14286	22434	WF See Features	AWA7515	VJAF017H FJAMA200
LCZC0200UWF300Q	114N6730	2	208/230-3-60Fan(s) 230-1-60	11757	—	—	WF See Features	—	—
HCZC0200UWF300R	114N6406	2	460-3-60	—	14286	22434	WF See Features	AWA7515	VJAF017H, FJAMA200
LCZC0200UWF300R	114N6731	2	460-3-60	11757	—	—	WF See Features	—	—
HCZC0250UWF300N	114N6408	2 1/2	230-1-60	—	18023	28532	WF See Features	—	—
HCZC0250UWF300Q	114N6409	2 1/2	208/230-3-60Fan(s) 230-1-60	—	18023	28532	WF See Features	—	—
HCZC0300UWF300N	114N6420	3	230-1-60	—	25514	40306	WF See Features	AWA7523	FJAMA300 VJAF030H FJAMA325
LCZC0300UWF300N	114N6709	3	230-1-60	16525	—	—	WF See Features	—	—
HCZC0300UWF300Q	114N6421	3	208/230-3-60Fan(s) 230-1-60	—	25514	40306	WF See Features	AWA7523	FJAMA300 VJAF030H FJAMA325
LCZC0300UWF300Q	114N6734	3	208/230-3-60Fan(s) 230-1-60	16525	—	—	WF See Features	—	—
HCZ0300UWF300R	114N6422	3	460-3-60	16525	—	—	WF See Features	—	—

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## Danfoss Refrigeration Condensing Units



### Features

- Broad range of condensing units from 1 1/2 HP to 13 1/2 HP
- Designed for specific applications
- WF version includes: Electrical box, receiver, dual pressure control, fan cycling control, dual fan units larger than 3 HP use KPU fan cycling control, filter drier, sight glass, solenoid valve with coil.

Item ID	MFG #	Nominal H.P.	Volts-Phase-Hertz	BTU			Version Includes	Replaces Copeland
				LT @ -10°F	MT @ 20°F	HT @ 45°F		
<b>R404A</b>								
HGZC0400UWF300N	114N6427	4	230-1-60	—	32798	53103	WF See Features	VJAF035Z* VJAF035H
HGZC0400UWF300Q	114N6428	4	208/230-3-60Fan(s) 230-1-60	—	32798	53103	WF See Features	VJAF035Z* VJAF035H
LGZC0401UWF300N	114N6737	4	230-1-60	23251	—	—	WF See Features	
LGZC0401UWF300Q	114N6738	4	208/230-3-60Fan(s) 230-1-60	23251	—	—	WF See Features	
LGZC0401UWF300R	114N6739	4	460-3-60	23251	—	—	WF See Features	
HGZC0500UWF300N	114N6435	5	230-1-60	—	38902	61623	WF See Features	FJAMB400 VJAF040Z* VJAF040H
HGZC0500UWF300Q	114N6436	5	208/230-3-60Fan(s) 230-1-60	—	38902	61623	WF See Features	FJAMB500 VJAF050Z* VJAF040H
LGZC0600UWF300Q	114N6741	6	208/230-3-60	34487	—	—	WF See Features	
LGZC0600UWF300R	114N6742	6	460-3-60	34487	—	—	WF See Features	
LGZC0750UWF300Q	114N6744	7 1/2	208/230-3-60	43286	—	—	WF See Features	
LGZC0750UWF300R	114N6745	7 1/2	460-3-60	43286	—	—	WF See Features	
HGZC1000UWF300Q	114N6445	10	208/230-3-60	—	79372	115042	WF See Features	FJAH100Z
HGZC1000UWF300R	114N6446	10	460-3-60	—	79372	115042	WF See Features	FJAH100Z

Cross reference comparisons do not imply that all products compared are exact in reference to form, fit and function. Review specifications carefully prior to purchase.

## Liquid Chillers



### Applications

- 1/2 - 80 tons

### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
  - Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)		Fluid	Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out			
<b>5" x 12" Models (4.9"W x 13.2"H)</b>						
GBS400H-8 (OA1,H2) B	1/2	5/8	5/8	7/8	1.1	6
GBS400H-10 (OA1,H2) B	3/4	5/8	5/8	7/8	1.3	7
GBS400H-12 (OA1,H2) B	1	5/8	5/8	7/8	1.4	8
GBS400H-20 (OA1,H2) B	2	5/8	5/8	7/8	2.1	10
GBS400H-24 (OA1,H2) B	2 1/2	5/8	5/8	7/8	2.5	11
GBS400H-30 (OA1,H2) B	3	5/8	5/8	7/8	3	13
GBS400H-36 (H1,OA1,H2) B	3 1/2	5/8	7/8	7/8	3.6	15
GBS400H-AE-44 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	4.3	17
GBS400H-AE-54 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	5.1	20
<b>5" x 20" Models (4.9"W x 20.9"H)</b>						
GBS500H-8 (OA1,H2) B	1 1/2	5/8	5/8	7/8	1.1	8
GBS500H-10 (OA1,H2) B	2	5/8	5/8	7/8	1.3	9
GBS500H-14 (OA1,H2) B	3	5/8	5/8	7/8	1.6	11
GBS500H-AE-20 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	2.1	14
GBS500H-AE-24 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	2.5	16
GBS500H-AE-30 (IA1,H1,IA2) B	6	7/8	1 1/8	1 1/8	3	19
GBS500H-AE-40 (IA1,H1,IA2) B	7 1/2	7/8	1 1/8	1 1/8	3.9	24
GBS500H-AE-50 (K1,H1,K2) B	10	7/8	1 3/8	1 3/8	4.8	29
GBS500H-AE-60 (K1,H1,K2) B	12	7/8	1 3/8	1 3/8	5.7	34
GBS500H-AE-70 (K1,H1,K2) B	15	7/8	1 3/8	1 3/8	6.5	39
<b>10" x 20" Models (10.7"W x 20.9"H)</b>						
GBS700M-AE-24 (K1,H1,LZA2) B	10	7/8	1 3/8	1 5/8	2.6	50
GBS700M-AE-30 (K1,H1,LZA2) B	12	7/8	1 3/8	1 5/8	3.1	57
GBS700M-AE-40 (K1,H1,LZA2) B	15	7/8	1 3/8	1 5/8	4	69
GBS700M-AE-50 (LZA1,H1,LZA2) B	20	7/8	1 5/8	1 5/8	4.9	81
GBS700M-AE-60 (LZA1,IA1,LAA2) B	25	1 1/8	1 5/8	2 1/8	5.8	93
GBS700M-AE-70 (LAA1,IA1,LAA2) B	30	1 1/8	2 1/8	2 1/8	6.6	105
GBS700M-AE-90 (LAA1,IA1,ZD2) B	35	1 1/8	2 1/8	2 5/8	8.4	129
GBS700M-AE-100 (LAA1,IA1,ZD2) B	40	1 1/8	2 1/8	2 5/8	9.3	141
GBS700M-AE-130 (ZD1,IA1.ZD2) B	50	1 1/8	2 5/8	2 5/8	12	176
GBS700M-AE-150 (ZD1,IA1.ZD2) B	60	1 1/8	2 5/8	2 5/8	13.7	200
GBS700M-AE-170 (ZD1,IA1.ZD2) B	70	1 1/8	2 5/8	2 5/8	15.5	224
GBS700M-AE-190 (ZD1,IA1.ZD2) B	80	1 1/8	2 5/8	2 5/8	17.3	248

Maximum Allowable Working Pressure: 450 psig (31 Bar)

## High Pressure Liquid Chillers



### Applications

- Designed for R-410a Applications, 1/2 to 80 tons, can be used with other refrigerants as well

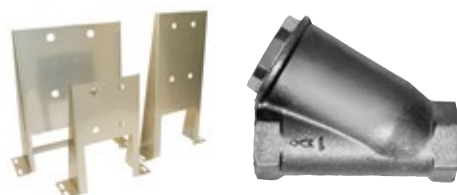
### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
  - Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)			Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out	Fluid		
<b>5" x 12" Models (4.9"W x 13.2"H)</b>						
GBH-UL400H-8 (OA1,H2) B	1/2	5/8	5/8	7/8	1.1	6
GBH-UL400H-10 (OA1,H2) B	3/4	5/8	5/8	7/8	1.3	7
GBH-UL400H-12 (OA1,H2) B	1	5/8	5/8	7/8	1.4	8
GBH-UL400H-20 (OA1,H2) B	2	5/8	5/8	7/8	2.1	10
GBH-UL400H-24 (OA1,H2) B	2 1/2	5/8	5/8	7/8	2.5	11
GBH-UL400H-30 (OA1,H2) B	3	5/8	5/8	7/8	3	13
GBH-UL400H-36 (OA1,H2) B	3 1/2	5/8	5/8	7/8	3.6	15
GBH-UL400H-AE-44 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	4.3	17
GBH-UL400H-AE-54 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	5.1	20
<b>5" x 20" Models (4.9"W x 20.9"H)</b>						
GBH-UL500H-8 (OA1,H2) B	1 1/2	5/8	5/8	7/8	1.1	8
GBH-UL500H-10 (OA1,H2) B	2	5/8	5/8	7/8	1.3	9
GBH-UL500H-14 (OA1,H2) B	3	5/8	5/8	7/8	1.6	11
GBH-UL500H-AE-20 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	2.1	14
GBH-UL500H-AE-24 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	2.5	16
GBH-UL500H-AE-30 (IA1,H1,IA2) B	6	7/8	1 1/8	1 1/8	3	19
GBH-UL500H-AE-40 (IA1,H1,IA2) B	7 1/2	7/8	1 1/8	1 1/8	3.9	24
GBH-UL500H-AE-50 (K1,H1,K2) B	10	7/8	1 3/8	1 3/8	4.8	29
GBH-UL500H-AE-60 (K1,H1,K2) B	12	7/8	1 3/8	1 3/8	5.7	34
GBH-UL500H-AE-70 (K1,H1,K2) B	15	7/8	1 3/8	1 3/8	6.5	39
<b>10" x 20" Models (9.8"W x 20.3"H)</b>						
CH10-XP	10	7/8	1 3/8	1 5/8	2.6	81
CH15-XP	15	7/8	1 3/8	1 5/8	4.1	97
CH20-XP	20	7/8	1 5/8	1 5/8	5	107
CH25-XP	25	1 1/8	1 5/8	2 1/8	5.9	117
CH30-XP	30	1 1/8	1 5/8	2 1/8	6.8	128

Maximum Allowable Working Pressure: 650 psig (45 Bar)

**Don't Forget!**  
Mounting Accessories  
See page 246



## Two Refrigerant Liquid Chillers



### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
- Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)		Fluid	Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out			
<b>2 Circuit 10" x 20" Models (9.8"W x 20.3"H) - Low Pressure</b>						
CH10-2C	10	7/8	1 1/8	1 1/2" MPT	2.7	65
CH15-2C	15	7/8	1 1/8	1 1/2" MPT	3.8	77
CH30-2C	30	7/8	1 1/8	1 1/2" MPT	7.0	115
CH35-2C	34	7/8	1 1/8	1 1/2" MPT	8.5	131
CH50-2C	50	1 1/8	1 1/2	2 1/2 MPT	12.1	173
CH60-2C	60	1 1/8	2 1/8	2 1/2 MPT	13.9	194

Maximum Allowable Working Pressure: 450 psig (31 Bar)

<b>2 Circuit 10" x 20" Models (9.8"W x 20.3"H) - High Pressure XP</b>						
CH10-2C-XP	10	7/8	1-1/8	1-1/2" MPT	2.8	91
CH15-2C-XP	15	7/8	1-1/8	1-1/2" MPT	3.9	104
CH20-2C-XP	20	7/8	1-3/8	1-1/2" MPT	5	116
CH25-2C-XP	25	7/8	1-3/8	2" MPT	6.1	128
CH30-2C-XP	30	7/8	1-3/8	2" MPT	7.1	140
CH35-2C-XP	35	7/8	1-3/8	2" MPT	8.4	155
CH40-2C-XP	40	7/8	1-5/8	2-1/2" MPT	9.7	169
CH50-2C-XP	50	1-1/8	1-5/8	2-1/2" MPT	12.2	197
CH60-2C-XP	60	1-1/8	2-1/8	2-1/2" MPT	14	218

Maximum Allowable Working Pressure: 650 psig (45 Bar)

## TechTip

from Packard Academy

In brazed plate heat exchangers (BPHE) the #1 mode of failure is freezing. Do not cool water below 33° F. In water chiller applications the low pressure cut-out on the refrigerant side should be set no lower than 28° F, based on evaporator refrigerant pressure at this temperature.



### DION'S TIP

Dion Rohrer  
Product Development Manager



## Liquid Condensers



### Applications

- 1/2 - 80 tons

### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
- Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)				Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out	Fluid			
<b>5" x 12" Models (4.9"W x 13.2"H)</b>							
GBS400H-8 (OA1,H2) B	1/2	5/8	5/8	7/8	1.1	6	
GBS400H-10 (OA1,H2) B	3/4	5/8	5/8	7/8	1.3	7	
GBS400H-12 (OA1,H2) B	1	5/8	5/8	7/8	1.4	8	
GBS400H-20 (OA1,H2) B	2	5/8	5/8	7/8	2.1	10	
GBS400H-24 (OA1,H2) B	2 1/2	5/8	5/8	7/8	2.5	11	
GBS400H-30 (OA1,H2) B	3	5/8	5/8	7/8	3	13	
GBS400H-36 (OA1,H2) B	3 1/2	5/8	5/8	7/8	3.5	15	
GBS400H-44 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	4.2	17	
GBS400H-54 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	5.1	20	
<b>5" x 20" Models (4.9"W x 20.9"H)</b>							
GBS500H-12 (OA1,H2) B	2	5/8	5/8	7/8	1.4	10	
GBS500H-14 (OA1,H2) B	3	5/8	5/8	7/8	1.6	11	
GBS500H-18 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	2	13	
GBS500H-22 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	2.3	15	
GBS500H-24 (H1,OA1,IA2) B	6	5/8	7/8	1 1/8	2.5	16	
GBS500H-30 (IA1,H1,IA2) B	7 1/2	7/8	1 1/8	1 1/8	3	19	
GBS500H-40 (IA1,H1,IA2) B	10	7/8	1 1/8	1 1/8	3.9	24	
GBS500H-50 (K1,H1,K2) B	12	7/8	1 3/8	1 3/8	4.8	29	
GBS500H-60 (K1,H1,K2) B	15	7/8	1 3/8	1 3/8	5.7	34	
<b>10" x 20" Models (10.7"W x 20.9"H)</b>							
GBS700M-30 (K1,H1,LZA2) B	15	7/8	1 3/8	1 5/8	3.1	57	
GBS700M-40 (LZA1,IA1,LZA2) B	20	1 1/8	1 5/8	1 5/8	4	69	
GBS700M-50 (LZA1,IA1,LZA2) B	25	1 1/8	1 5/8	1 5/8	5	81	
GBS700M-60 (LAA1,K1,ZD2) B	30	1 3/8	2 1/8	2 5/8	5.8	93	
GBS700M-70 (LAA1,K1,ZD2) B	35	1 3/8	2 1/8	2 5/8	6.7	105	
GBS700M-80 (LAA1,LZA1,ZD2) B	40	1 5/8	2 1/8	2 5/8	7.6	117	
GBS700M-100 (LAA1,LZA1,ZD2) B	50	1 5/8	2 1/8	2 5/8	9.4	141	

Maximum Allowable Working Pressure: 450 psig (31 Bar)

## High Pressure Liquid Condensers



### Applications

- Designed for R-410A applications, 1/2 to 80 tons, can be used with other refrigerants as well

### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
- Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)			Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out	Fluid		
<b>5" x 12" Models (4.9"W x 13.2"H)</b>						
GBH-UL400H-8 (OA1,H2) B	1/2	5/8	5/8	7/8	1.1	6
GBH-UL400H-10 (OA1,H2) B	3/4	5/8	5/8	7/8	1.3	7
GBH-UL400H-12 (OA1,H2) B	1	5/8	5/8	7/8	1.4	8
GBH-UL400H-20 (OA1,H2) B	2	5/8	5/8	7/8	2.1	10
GBH-UL400H-24 (OA1,H2) B	2 1/2	5/8	5/8	7/8	2.5	11
GBH-UL400H-30 (OA1,H2) B	3	5/8	5/8	7/8	3	13
GBH-UL400H-36 (OA1,H2) B	3 1/2	5/8	5/8	7/8	3.6	15
GBH-UL400H-44 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	4.3	17
GBH-UL400H-54 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	5.1	20
<b>5" x 20" Models (4.9"W x 20.9"H)</b>						
GBH-UL500H-10 (OA1,H2) B	2	5/8	5/8	7/8	1.3	9
GBH-UL500H-14 (OA1,H2) B	3	5/8	5/8	7/8	1.6	11
GBH-UL500H-18 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	2	13
GBH-UL500H-22 (H1,OA1,IA2) B	5	5/8	7/8	1 1/8	2.3	15
GBH-UL500H-24 (H1,OA1,IA2) B	6	5/8	7/8	1 1/8	2.5	16
GBH-UL500H-30 (IA1,H1,IA2) B	7 1/2	1 1/8	7/8	1 1/8	3	19
GBH-UL500H-40 (IA1,H1,IA2) B	10	1 1/8	7/8	1 1/8	3.9	24
GBH-UL500H-50 (K1,H1,K2) B	12	1 3/8	7/8	1 3/8	4.8	29
GBH-UL500H-60 (K1,H1,K2) B	15	1 3/8	7/8	1 3/8	5.7	34

Maximum Allowable Working Pressure: 650 psig (45 Bar)





## Subcoolers



### Applications

- 1 to 120 tons

### Features

- Easy to install - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
- Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - Every heat exchanger is tested before it leaves the plant

Item ID	Nominal Tons	Standard Connections (IDS) (in.)			Depth (in.)	Weight (lbs.)
		Ref. In	Ref. Out	Fluid		
<b>5" x 12" Models (4.9"W x 13.2"H)</b>						
GBS400H-AE-8 (H1,OA1,IA2) B	1	5/8	7/8	1 1/8	1.1	6
GBS400H-AE-12 (H1,OA1,IA2) B	2	5/8	7/8	1 1/8	1.4	8
GBS400H-AE-16 (H1,OA1,IA2) B	3	5/8	7/8	1 1/8	1.8	9
GBS400H-AE-20 (H1,OA1,IA2) B	4	5/8	7/8	1 1/8	2.1	10
GBS400H-AE-22 (IA1,H1,IA2) B	5	7/8	1 1/8	1 1/8	2.3	11
GBS400H-AE-30 (IA1,H1,IA2) B	7 1/2	7/8	1 1/8	1 1/8	3	13
GBS400H-AE-36 (K1,H1,K2) B	8	7/8	1 3/8	1 3/8	3.5	15
GBS400H-AE-40 (K1,H1,K2) B	10	7/8	1 3/8	1 3/8	3.9	16
GBS400H-AE-50 (K1,H1,K2) B	12	7/8	1 3/8	1 3/8	4.8	18
GBS400H-AE-60 (K1,H1,K2) B	14	7/8	1 3/8	1 3/8	5.7	21
<b>10" x 20" Models (10.7"W x 20.9"H)</b>						
GBS700M-AE-20 (LZA1,IA1,LAA2) B	16	1 1/8	1 5/8	2 1/8	2.3	45
GBS700M-AE-30 (LZA1,IA1,LAA2) B	22	1 1/8	1 5/8	2 1/8	3.3	57
GBS700M-AE-40 (LAA1,IA1,ZD2) B	28	1 1/8	2 1/8	2 5/8	4.2	69

Maximum Allowable Working Pressure: 450 psig (31 Bar)



NEAL REEVES  
Creative Director

*I'm proud to be a Packard employee owner...*

“ because I look forward to coming to work for a company that truly cares about their customers and their employees! ”

## Liquid Heat Exchangers



### Features

- Easy to install
  - Compact size means it fits easily into confined spaces, especially when replacing a much larger shell-and tube heat exchanger
- High Performance
  - High turbulence created by corrugations in the plates results in closer approach temperatures with much smaller units
  - Fully brazed construction handles high operating pressures
- Copper brazed 316L stainless heat transfer plates
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant

Item ID	Standard Connection	Depth (in.)	Weight (lbs.)
<b>3" x 8" Models (3.5"W x 9.1"H) (Measurement is MPT)</b>			
GBS200H-8 (V1,V2) B	3/4	1.3	3.5
GBS200H-10 (V1,V2) B	3/4	1.4	3.7
GBS200H-14 (V1,V2) B	3/4	1.8	4.2
GBS200H-20 (V1,V2) B	3/4	2.4	5
GBS200H-30 (V1,V2) B	3/4	3.3	6.3
<b>5" x 12" Models (4.9"W x 13.2"H) (Measurement is MPT)</b>			
GBS400H-6 (V1,V2) B	3/4	0.9	5
GBS400H-8 (V1,V2) B	3/4	1.1	6
GBS400H-10 (V1,V2) B	3/4	1.3	7
GBS400H-12 (V1,V2) B	3/4	1.4	8
GBS400H-14 (V1,V2) B	3/4	1.6	8
GBS400H-16 (V1,V2) B	3/4	1.8	9
GBS400H-20 (W1,W2) B	1	2.1	10
GBS400H-24 (W1,W2) B	1	2.5	11
GBS400H-30 (FN1,FN2) B	1 1/4	3	13
GBS400H-36 (FN1,FN2) B	1 1/4	3.6	15
GBS400H-40 (FN1,FN2) B	1 1/4	3.9	16
GBS400H-50 (FN1,FN2) B	1 1/4	4.8	18
GBS400H-60 (FN1,FN2) B	1 1/4	5.7	21
GBS400H-70 (FN1,FN2) B	1 1/4	6.6	24
GBS400H-80 (FN1,FN2) B	1 1/4	7.4	27
GBS400H-90 (FN1,FN2) B	1 1/4	8.3	30
GBS400H-100 (FN1,FN2) B	1 1/4	9.2	33
GBS400H-110 (FN1,FN2) B	1 1/4	10.1	36
GBS400H-120 (FN1,FN2) B	1 1/4	11	39

Maximum Allowable Working Pressure: 450 psig (31 Bar)

GBS220H 3.5"X12.9" and GBS240H 3.5"X18.3" sizes also available

Item ID	Standard Connection	Depth (in.)	Weight (lbs.)
<b>5" x 20" Models (4.9"W x 20.9"H) (Measurement is MPT)</b>			
GBS500H-8 (V1,V2) B	3/4	1.1	8
GBS500H-10 (V1,V2) B	3/4	1.3	9
GBS500H-14 (V1,V2) B	3/4	1.6	11
GBS500H-20 (W1,W2) B	1	2.1	14
GBS500H-24 (W1,W2) B	1	2.5	16
GBS500H-30 (FN1,FN2) B	1 1/4	3	19
GBS500H-36 (FN1,FN2) B	1 1/4	3.6	22
GBS500H-40 (FN1,FN2) B	1 1/4	3.9	24
GBS500H-50 (FN1,FN2) B	1 1/4	4.8	29
GBS500H-60 (FN1,FN2) B	1 1/4	5.7	34
GBS500H-70 (FN1,FN2) B	1 1/4	6.6	39
GBS500H-80 (FN1,FN2) B	1 1/4	7.4	44
GBS500H-90 (FN1,FN2) B	1 1/4	8.3	49
GBS500H-100 (FN1,FN2) B	1 1/4	9.2	54
GBS500H-110 (FN1,FN2) B	1 1/4	10.1	59
GBS500H-120 (FN1,FN2) B	1 1/4	11	64
<b>10" x 20" Models (10.7"W x 20.9"H)* (Measurement is MPT)</b>			
GBS700M-24 (TE1,TE2) B	1 1/2	2.6	50
GBS700M-36 (TE1,TE2) B	1 1/2	3.6	64
GBS700M-50 (X1,X2) B	2	4.9	81
GBS700M-60 (X1,X2) B	2	5.8	93
GBS700M-80 (X1,X2) B	2	7.5	117
GBS700M-100 (LGA1,LGA2) B	2 1/2	9.3	141
GBS700M-110 (LGA1,LGA2) B	2 1/2	10.2	152

Maximum Allowable Working Pressure: 450 psig (31 Bar)

\*ASME May Be Available

## Liquid Low Pressure Drop Heat Exchangers



### Features

- Copper Brazed - Stainless Steel Plates
- Easy to install
- High Performance
- Proven and Reliable
- UL listed and ASME Section VIII available
- Every heat exchanger is tested before it leaves the plant

Item ID	Standard Connection	Depth (in.)	Weight (lbs.)
<b>5" x 12" L Models (5.0"W x 11.1"H) (Measurement is MPT)</b>			
GBS420L-08 (XVC1,XVC2) B UL	3/4	1.2	5
GBS420L-10 (XVD1,XVD2) B UL	1	1.4	6
GBS420L-12 (XVD1,XVD2) B UL	1	1.7	6
GBS420L-14 (XVD1,XVD2) B UL	1	1.9	7
GBS420L-16 (XVD1,XVD2) B UL	1	2.1	8
GBS420L-20 (XFN1,XFN2) B UL	1 1/4	2.5	9
GBS420L-30 (XFN1,XFN2) B UL	1 1/4	3.6	11
GBS420L-36 (XFN1,XFN2) B UL	1 1/4	4.3	12
GBS420L-40 (XFN1,XFN2) B UL	1 1/4	4.7	13
GBS420L-50 (XFN1,XFN2) B UL	1 1/4	5.8	16
GBS420L-60 (XFN1,XFN2) B UL	1 1/4	6.9	18
<b>10" x 20" L Models (11.1"W x 21.4"H) (Measurement is MPT)</b>			
GBS757L-20 (XGZ1,XGZ2) B	1 1/2	2.5	51
GBS757L-24 (XGZ1,XGZ2) B	1 1/2	3	56
GBS757L-30 (XG1,XG2) B	2	3.6	62
GBS757L-40 (XG1,XG2) B	2	4.6	73
GBS757L-50 (XGA1,XGA2) B	2 1/2	5.7	84
GBS757L-60 (XGA1,XGA2) B	2 1/2	6.7	95
GBS757L-70 (XGA1,XGA2) B	2 1/2	7.8	106

Maximum Allowable Working Pressure: 300 psig (20.7 Bar)

## GBE Economy Models



### Features

- An economical solution for decentralized hot water systems, separating systems and various regenerative applications
- Compact brazed plate heat exchangers designed for hydronics
- Applications with up to 30 bar/435 psi and max. 200°C/392°F
- High thermal efficient plate heat exchangers
- Handle everything with minimal size and weight for maximal efficiency, quality and profitability

Item ID	Standard Connection	Depth (in.)	Weight (lbs.)
<b>3" x 9" Models (3.54"W x 9.09"H)</b>			
GBE200H-14 (V3,V4)	3/4 MPT	1.8	4
GBE200H-20 (V3,V4)	3/4 MPT	2.4	5
GBE200H-30 (V3,V4)	3/4 MPT	3.3	6
<b>5" x 12" Models (4.88"W x 13.19"H)</b>			
GBE400H-10 (W3,W4)	1 MPT	1.3	7
GBE400H-14 (W3,W4)	1 MPT	1.6	8
GBE400H-20 (W3,PA4)	1 MPT, 3/4FNPT	2.2	10
GBE400H-20 (W3,W4)	1 MPT	2.2	10
GBE400H-24 (W3,W4)	1 MPT	2.5	11
GBE400H-28 (W3,W4)	1 MPT	2.8	12
GBE400H-30 (W3,W4)	1 MPT	3	13
GBE400H-40 (W3,W4)	1 MPT	3.9	16
GBE400H-50 (FN3,FN4)	1 1/4 MPT	4.8	18

## Vacnox Brazed Liquid Heat Exchanger

### Features

- Vacnox Stainless Steel Heat Transfer Plates
  - Vacnox is a new, unique and revolutionary technology for a solid/resistant connection of stainless steel plates
  - Vacnox is the solution for applications with aggressive media and high pressures
- High Performance
  - High turbulence created by corrugations in plates results in closer approach temperatures with much smaller units
  - Handle high temperatures and pressures up to 35 bar/508 psi with special brazing filler free of non-ferrous metals
- Easy to install
  - Compact size means it fits easily into confined spaces when replacing a much larger shell-and tube heat exchanger
- Proven and Reliable
  - UL listed and ASME Section VIII available
  - Every heat exchanger is tested before it leaves the plant



Item ID	Standard Connection	Depth (in.)	Weight (lbs.)
<b>5" x 12" Models (4.9"W x 13.2"H)</b>			
GVH400H-8	1 MPT	1.2	6
GVH400H-10	1 MPT	1.4	6
GVH400H-12	1 MPT	1.6	7
GVH400H-14	1 MPT	1.7	8
GVH400H-16	1 MPT	1.9	9
GVH400H-20	1 1/4 MPT	2.3	10
GVH400H-24	1 1/4 MPT	2.7	11
GVH400H-30	1 1/4 MPT	3.2	12
GVH400H-40	1 1/4 MPT	4.1	15
GVH400H-50	1 1/4 MPT	5	18

Maximum Allowable Working Pressure: 363 psig (25 Bar)

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*Our Indy Team!*



**CALL US for more information about the  
GNS and GB-DW Series and place your order!**



## GNS Series

### Features

- When resistance of copper is not enough, nickel as brazing material is chosen
- This series has all advantages of a brazed plate heat exchanger, but it is more stable against corrosive media such as ammonia, deionised water, sulphides and sulphates
- A wide range of applications up to 200°C/392°F and 16 bar/232 psi the demands of the market
- Proven technical features like Safety Chamber™, Delta Injection™ and Full Flow System™ available
- 75% is made of pure nickel

GNS400H	(100 plates max.)	4.9" x 13.2"
GNS500H	(100 plates max.)	4.9" x 20.9"
GNS700L/M	(150 plates max.)	10.7" x 20.9"



## GB-DW Series

### Features

- Double-walled for better protection
- Heat exchangers consist of double-walled, hermetically sealed plates
- Two stainless steel plates instead of one
- Second wall not only separates the media from each other, but also makes the leak visible
- Reliability, efficiency and highest safety in one product

GBS-DW400H	(100 plates max.)	4.9" x 13.2"
GBS-DW500H	(100 plates max.)	4.9" x 20.9"

232 psig/16 bar models also available

## Mounting Brackets

### Features

- Holding a brazed plate heat exchanger in place while you pipe it up can be a difficult challenge, especially with sweat connections. Kelvion makes this easy to prevent. Most Kelvion brazed plate heat exchanger is equipped as standard with mounting studs which allow the use of our proprietary mounting brackets.
- Bracket is made of AISI 304 stainless steel



Model	Description	Weight (lbs.)
BKT5X12	Mounting Bracket (5x12)	1.1
BKT5X20	Mounting Bracket (5x20)	2.2
BKT10X20	Mounting Bracket (10x20), Max 40 Tons	3.1
FR10X20	Mounting Bracket (10x20), Max 80 Tons	4.9

## Y Strainers

### Features

- It is important to keep the liquid media clean to reduce fouling and clogging of the Kelvion heat exchanger. In some cases, it is a requirement for operation of the system. We stock sizes up to 2-1/2”.
- Construction material is cast bronze
- They are rated for working pressure of 400 psig at 150°F
- Connections at both ends are Female Pipe Thread (FPT)
- The 20 mesh filter is removable and cleanable



Model	Pipe Connection	Mesh	GPM @ 1 psi PD	GPM @ 2 psi PD	Weight (lbs.)
STR3/4	3/4" FPT	20	18	26	4
STR1	1" FPT	20	28	40	5
STR1-1/4	1-1/4" FPT	20	42	60	5
STR1-1/2	1-1/2" FPT	20	70	100	8
STR2	2" FPT	20	110	140	10
STR2-1/2	2 1/2" FPT	20	140	190	10
STR3	3" FPT	20	180	260	20
STR4	4" FPT	20	300	420	36

Jeff Huckaba  
Regional Sales Manager

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“ means that we do everything we can to partner with our customers. It goes beyond simply filling an order. It means we work together to grow each of our businesses. ”



# COMPONENTS

Packard is your dedicated source for the commercial refrigeration systems components and controls that are in high demand.



# SOLUTIONS MATTER

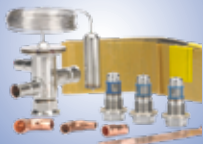
BUILD AN END-TO-END COMMERCIAL REFRIGERATION SOLUTION WITH ONE-STOP SHOPPING.

## EVR SOLENOID VALVES



pg. 254

## TXV TYPE TUA/TUAE



pg. 251

## DCL FILTER DRIERS



pg. 256

## GBC/BML BALL VALVES

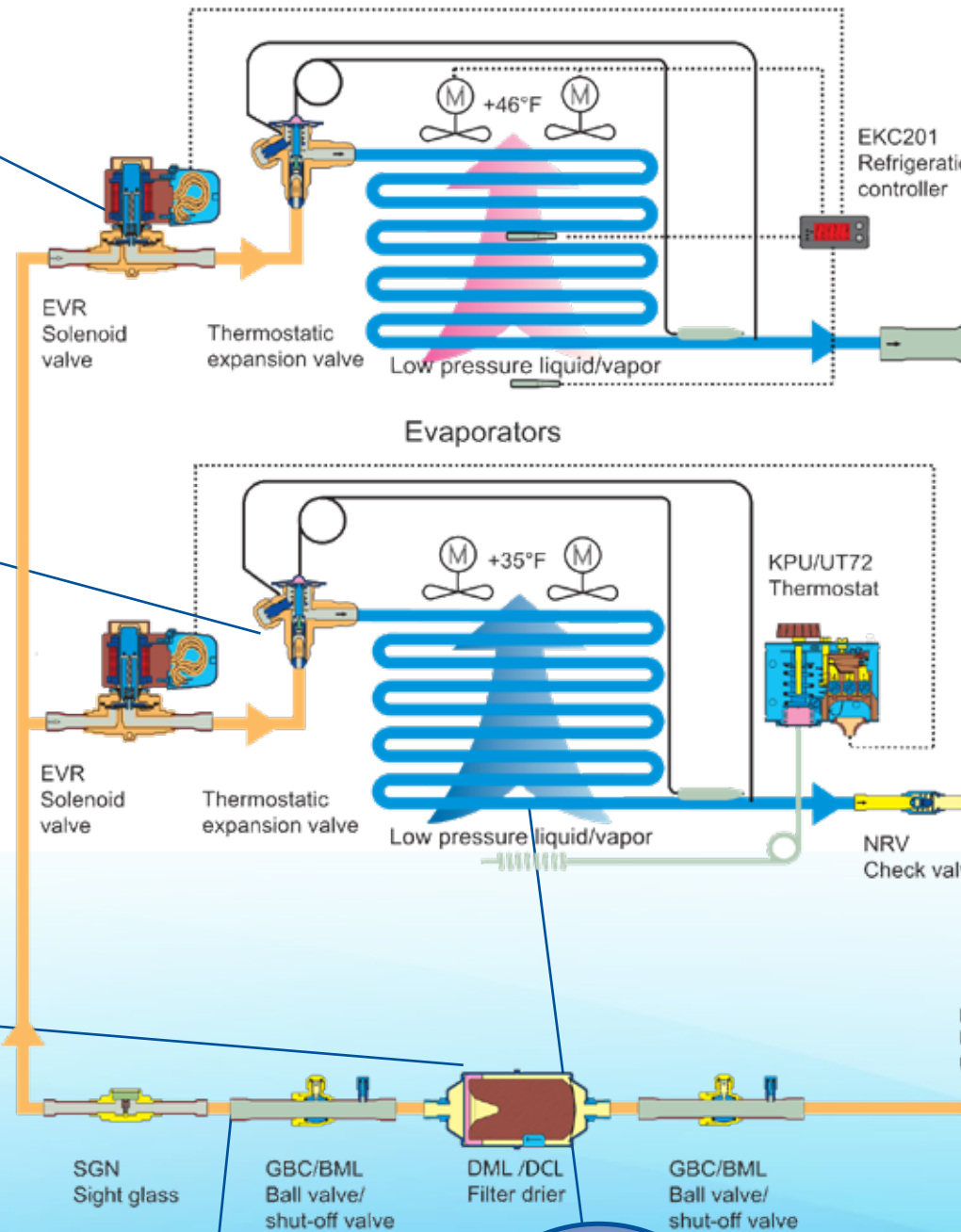


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## HEAT EXCHANGER



pg. 236-246

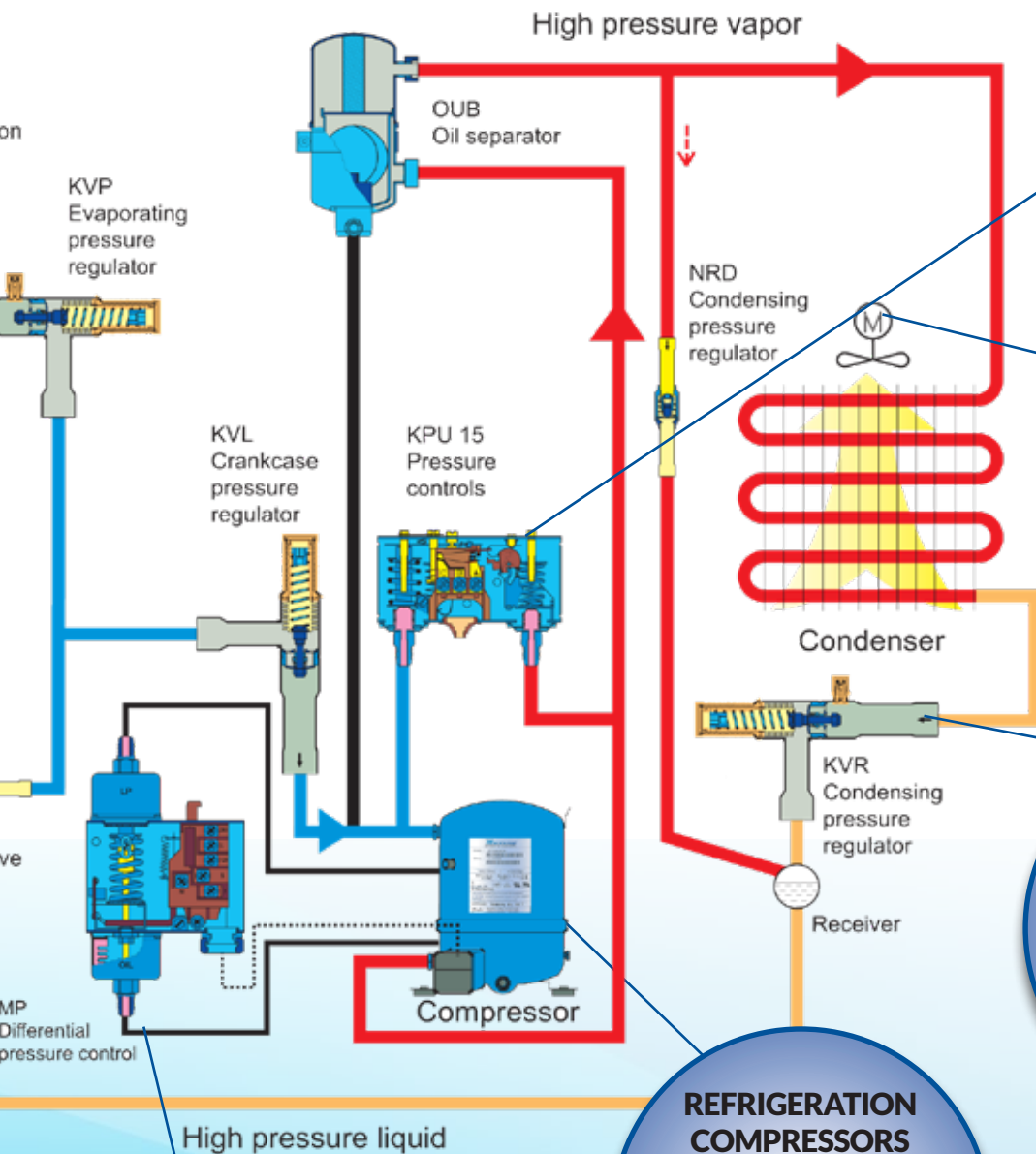




Packard supplies virtually every line component and control found in commercial refrigeration systems. Combine these with our huge selection of evaporator motors and commercial and industrial refrigeration compressors, and you have the complete package.

Contact our technical experts to help you put the right parts together, bundle your orders and save on shipping.

## GET IN OUR LOOP.



**KPU PRESSURE CONTROLS**

pg. 258

**EVAPORATOR MOTORS**

pg. 42

**PRESSURE REGULATORS**

pg.253

**REFRIGERATION COMPRESSORS**

pg. 227

**OIL PRESSURE CONTROLS**

pg. 260

## Danfoss TUA/TUAE Series Expansion Valves, Bodies and Orifices

### 1. Valve Body Selection

Equalization	R-22	R-404A	R-134a
Internal	<b>068U2235</b>	<b>068U2285</b>	<b>068U2205</b>
External	<b>068U2237</b>	<b>068U2287</b>	<b>068U2207</b>

All valves above have 3/8" x 1/2" solder ODF connections and are designed for evaporator temperatures -40°F to 50°F (N charge). Other variations available upon request.



### 2. Orifice Selection

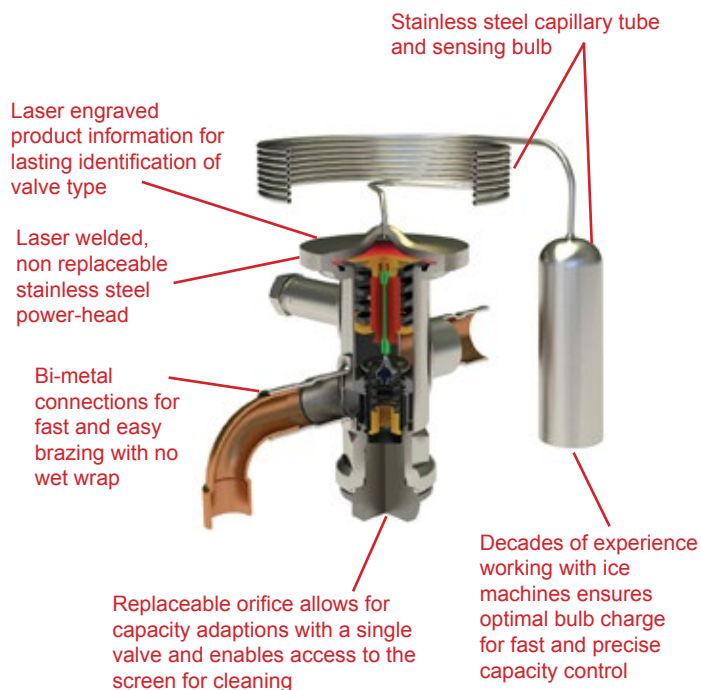
TUA/TUAE valve capacities are based on the installed orifice. To select the correct size, use one of the two methods below:

A. System characteristics: Select the orifice using appropriate refrigerant, evaporator temperature, and system capacity.

OR

B. Nominal capacity of the installed valve; Use the nominal capacity of the originally installed valve and match with the nominal capacity in chart (3rd. column from left.)

**IF EXACT CAPACITY IS NOT FOUND, USE NEXT LARGER ORIFICE**



R-22		Evaporator Temperature (°F)									
Orifice Size	Item ID	Nominal capacity of installed valve <sup>1</sup> (tons)	Rated Capacity <sup>2</sup> (tons)								
			-40	-30	-20	-10	0	25	35	45	
0	<b>068U1030</b>	1/5	1/10	1/10	1/10	1/8	1/8	1/6	1/6	1/6	
1	<b>068U1031</b>	1/4	1/10	1/8	1/8	1/6	1/8	1/4	1/4	1/4	
2	<b>068U1032</b>	1/3	1/8	1/8	1/6	1/6	1/5	1/4	1/4	1/3	
3	<b>068U1033</b>	1/2	1/6	1/6	1/4	1/4	1/3	1/3	1/3	1/2	
4	<b>068U1034</b>	3/4	1/4	1/4	1/3	1/3	1/2	1/2	1/2	3/4	
5	<b>068U1035</b>	1	1/3	1/3	1/2	1/2	1/2	3/4	3/4	1	
6	<b>068U1036</b>	1 1/2	1/2	1/2	3/4	3/4	3/4	1	1	1 1/2	
7	<b>068U1037</b>	2	3/4	3/4	1	1	1	1 1/2	1 1/2	2	
8	<b>068U1038</b>	3	1	1 1/4	1 1/2	1 3/4	2	2 1/2	2 1/2	3	
9	<b>068U1039</b>	4 1/2	1 1/2	1 3/4	2	2 1/2	3	4	4 1/4	4 1/2	
R-134a		Evaporator Temperature (°F)									
Orifice Size	Item ID	Nominal capacity of installed valve <sup>1</sup> (tons)	Rated Capacity <sup>2</sup> (tons)								
			-40	-30	-20	-10	0	25	35	45	
0	<b>068U1030</b>	1/8	1/20	1/15	1/15	1/10	1/10	1/10	1/8	1/8	
1	<b>068U1031</b>	1/5	1/20	1/15	1/15	1/10	1/8	1/6	1/5	1/6	
2	<b>068U1032</b>	1/4	1/15	1/15	1/10	1/8	1/8	1/5	1/4	1/4	
3	<b>068U1033</b>	1/3	1/10	1/10	1/8	1/6	1/6	1/4	1/3	1/3	
4	<b>068U1034</b>	1/2	1/8	1/6	1/6	1/4	1/3	1/2	1/2	1/2	
5	<b>068U1035</b>	3/4	1/6	1/4	1/4	1/3	1/3	1/2	3/4	3/4	
6	<b>068U1036</b>	1	1/4	1/3	1/3	1/2	1/2	1	1	1 1/4	
7	<b>068U1037</b>	1 1/2	1/3	1/2	1/2	3/4	3/4	1 1/4	1 1/3	1 1/2	
8	<b>068U1038</b>	2	1/2	3/4	3/4	1	1 1/3	2	2	2 1/3	
9	<b>068U1039</b>	3	3/4	1	1 1/3	1 1/2	2	3	3 1/4	3 1/2	
R-404A		Evaporator Temperature (°F)									
Orifice Size	Item ID	Nominal capacity of installed valve <sup>1</sup> (tons)	Rated Capacity <sup>2</sup> (tons)								
			-40	-30	-20	-10	0	25	35	45	
0	<b>068U1030</b>	1/8	1/20	1/15	1/15	1/10	1/10	1/10	1/8	1/8	
1	<b>068U1031</b>	1/5	1/15	1/15	1/10	1/8	1/8	1/6	1/6	1/6	
2	<b>068U1032</b>	1/4	1/10	1/10	1/8	1/8	1/6	1/4	1/4	1/4	
3	<b>068U1033</b>	1/3	1/8	1/8	1/6	1/6	1/4	1/3	1/3	1/3	
4	<b>068U1034</b>	1/2	1/6	1/5	1/4	1/3	1/3	1/2	1/2	1/2	
5	<b>068U1035</b>	3/4	1/4	1/4	1/3	1/3	1/2	1/2	3/4	3/4	
6	<b>068U1036</b>	1	1/3	1/3	1/2	1/2	3/4	1	1	1	
7	<b>068U1037</b>	1 1/2	1/2	1/2	3/4	3/4	1	1 1/3	1 1/2	1 1/2	
8	<b>068U1038</b>	2 1/2	3/4	1	1	1 1/3	1 1/2	2	2 1/4	2 1/2	
9	<b>068U1039</b>	3 1/2	1	1 1/3	1 1/2	2	2 1/4	3	3 1/3	3 1/2	

## Thermostatic Expansion Valves for Ice Machines, Type TUA

### Application

TUA universal thermostatic expansion valve kits for ice machines. These kits are designed with the contractor in mind to help save time and money by providing a universal valve that can easily be adapted to replace most OEM specific thermostatic expansion valves.

### Features

- Can easily be adapted to replace most OEM specific thermostatic expansion valves
- **Used in Manitowac and other Ice Machines**
- Each kit includes an exchangeable orifice valve and a selection of (3) orifice sizes covering ice machines ranging from 75 to 2300 pounds of ice per day
- The kits also include copper fittings (2 elbows and 1 reducer), copper bulb strap, insulation tape and instructions to allow for replacement of most OEM expansion valves originally installed



Item ID	068U4900 <sup>1</sup>	
Cuber	Flaker/Nugget	
	Nameplate lbs. of ice/24 hrs per valve	Estimated orifice size
75 to 150	75 to 200	1
151 to 350	201 to 500	3
351 to 600	501 to 950	5

Valve in kit above has straightway 1/4" x 3/8" ODF connections.

Item ID	068U4901 <sup>1</sup>	
Cuber	Flaker/Nugget	
	Nameplate lbs. of ice/24 hrs per valve	Estimated orifice size
351 to 600	501 to 950	5
601 to 1200	951 to 1650	7
1201 to 1800	1651 to 2300	8

Valve in kit above has straightway 3/8" x 1/2" ODF connections.

<sup>1</sup>Ice machine kits contain valve, (3) orifices in corresponding tables, (2) elbow fittings

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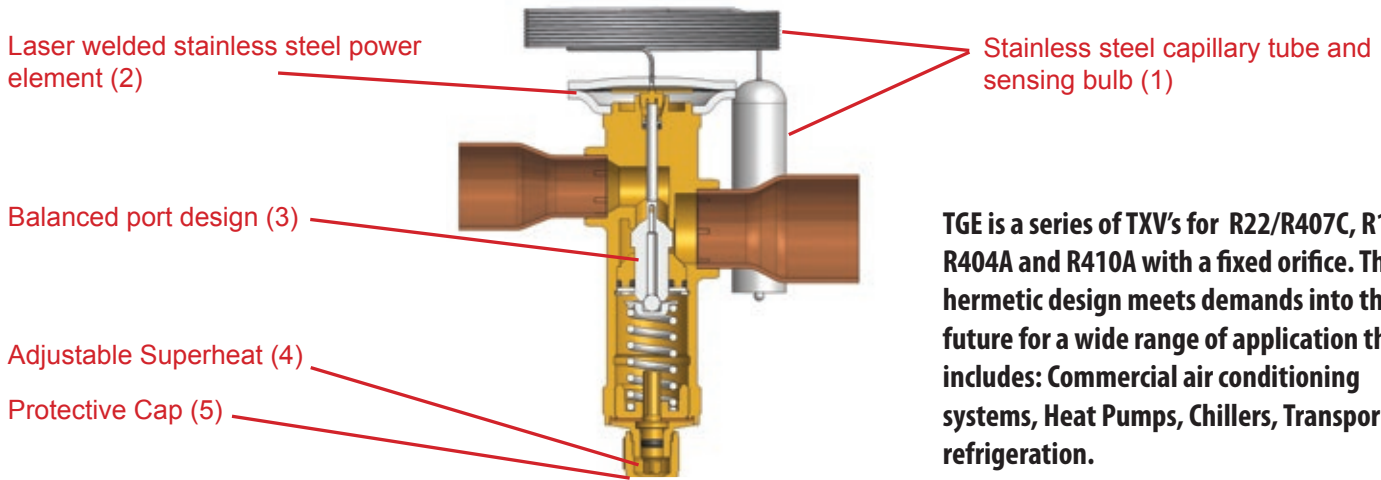
Quality HVACR products and timely customer service are Packard's areas of excellence.

To deliver those experiences as a Packard employee owner brings me an immense sense of pride. 🙌



**CHAD ROGHAI**  
Regional Sales Manager

## Danfoss TGE Series Fixed Orifice, Adjustable Superheat Expansion Valves



TGE is a series of TXV's for R22/R407C, R134A, R404A and R410A with a fixed orifice. The hermetic design meets demands into the future for a wide range of application that includes: Commercial air conditioning systems, Heat Pumps, Chillers, Transport refrigeration.

### Features

- Stainless steel capillary tube and bulb
- Laser welded stainless steel power element
- 2-way balance port
- Adjustable superheat
- MAH (Maximum Operating Pressure Anti-Hunt) charge standard for R22/R407C and R410A
- N charge standard for R404A
- Straight-way flow
- Maximum working pressure 667psi

Item ID	Type	Competitor Mode Nos.	Nominal Capacity (Tons) <sup>3</sup>	Solder ODF Connection (in.)	
<b>Danfoss</b>					
<b>R-22 / R-407C, MAH charge<sup>1</sup></b>					
067N9403	TGEX 10	SVE-5, EVRE-5	HFES-5H	6	½ x 5/8
067N9404	TGEX 10	SVE-5, EVRE-5	HFES-5H	6	½ x 7/8
067N9406	TGEX 10	SVE-6, EVRE-6		7½	5/8 x 7/8
067N9483	TGEX 10	SVE-6, EVRE-6		7½	5/8 x 1½
067N9407	TGEX 10	SVE-8, SVE-10, EBSVE 8, EVRE 8, EVRE 10	HFES-8H, HFES-10H, TRAE-10H	11	5/8 x 7/8
067N9409	TGEX 20	EBSVE 11, EVRE 12		12	5/8 x 7/8
067N9411	TGEX 20	EBSVE15, OVE 15	HFES-15H, TRAE-15H	15	5/8 x 1½
067N9412	TGEX 20	EBSVE15, OVE 15	HFES-15H, TRAE-15H	15	7/8 x 1½
067N9413	TGEX 20			18	7/8 x 1½
067N9415	TGEX 40	EBSVE 20, OVE 20	HFES-20H, TRAE 20H	26	7/8 x 1¾
067N9418	TGEX 40	OVE 30	TRAE 30H	30	1½ x 1¾
067N9419	TGEX 40	OVE 40	TRAE 40H	38	1½ x 1¾
<b>R-410A, MAH charge<sup>1</sup></b>					
067N9206	TGEL 10	ERZE-8		9	5/8 x 7/8
067N9207	TGEL 10	ERZE-12.5	TFES-12Z	13	5/8 x 7/8
067N9209	TGEL 20	ERZE-15	TFES-16Z	15	5/8 x 7/8
067N9210	TGEL 20	ERZE-15	TFES-16Z	15	5/8 x 1½
067N9213	TGEL 20	OZE-20		23	7/8 x 1½
067N9284	TGEL 20	OZE-20		23	1½ x 1½
067N9285	TGEL 40	OZE-25		31	7/8 x 1½
067N9215	TGEL 40	OZE-25		31	7/8 x 1¾
067N9218	TGEL 40	OZE-35		35	1½ x 1¾
067N9219	TGEL 40			46	1½ x 1¾
<b>R-134a, N charge<sup>2</sup></b>					
067N5158	TGEN 10	SJE-5, SJE-6, EBSJE-5	HFES-6M	7	5/8 x 1½
<b>R-404A / R-507, N charge<sup>2</sup></b>					
067N6151	TGES 10	SSE-3	HFES-3.5S	4	½ x 7/8
067N6166	TGES 10	SSE-4	HFES-5S	5	½ x 7/8
067N6150	TGES 10	SSE-4	HFES-5S	5	5/8 x 7/8
067N6154	TGES 10	SSE-6, SSE-7, EBSSE-6	HFES-7S	7½	5/8 x 7/8

<sup>1</sup>MAH charge: -22°F to 60°F, Max operating temp=300°F

<sup>2</sup>N charge: -40°F to 50°F, Max operating temp=210°F

## Danfoss TR6 Air Conditioning And Heat Pump Expansion Valve Kits

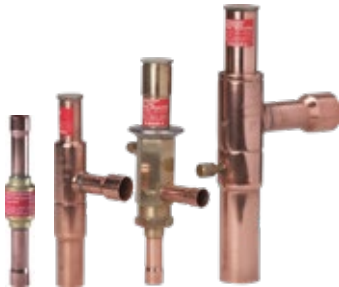
### Features

- Complete with valve, bulb strap and instructions
- Includes Aeroquip and Chatleff fittings normally found in most evaporators
- Anti-hunt bulb charge
- Retrofit unit with a capillary tube for energy efficiency upgrade
- Contractor friendly bulb strap
- Durable stainless steel power element and capillary tube
- Ideal to optimize performance of mismatched system
- Internal check valve permits use in heat pump systems



Item ID	Refrigerant	System Capacity (tons)	Solder ODF connection (in.)
<b>Danfoss</b>			
067L5955	R-410A	1½ - 3	¾ x ¾
067L5956		3½ - 4	¾ x ¾
067L5957		4½ - 5	¾ x ¾
067L5856	R-22	1½ - 2	¾ x ¾
067L5857		2½ - 3	¾ x ¾
067L5858		3½ - 4	¾ x ¾
067L5859		5 - 6	¾ x ¾

## Danfoss Pressure Regulators- EPR, CPR, Head Pressure, Hot Gas Bypass



### Features

- All valves may be used with all CFC, HCFC or HFC, except R410A
- Hermetic brazed construction - 100% leak tested
- Stainless steel elbows
- Built-in valve seat dampening design
- 1/4" Schrader valve for pressure testing
- Pressure regulation side:
  - KVP/KVR- opens on a rising pressure
  - KVC/KVL- opens on a falling pressure

Item ID	Type	Rated Capacity (Tons)				Solder ODF Connection (In.)	Setting Range psig	Factory Setting psig	Max Working Pressure PSIG
		R-22	R-134a	R-404A	R-407C				
<b>Danfoss Pressure Regulator</b>									
034N0082	CPCE12	6.2	4.3	6.3	6.7	1/2	0 to 85	5.8	400
034N0083	CPCE15	9.2	6.3	9.1	9.9	5/8	0 to 85	5.8	400
034N0084	CPCE22	12.2	8.4	12.1	12.2	7/8	0 to 85	5.8	400
034L0143	KVC12	2.14	1.36	2.02	2.31	1/2	3 to 85	29	400
034L0147	KVC15	4.17	2.65	3.93	4.5	5/8	3 to 85	29	400
034L0043	KVL12	1.3	0.8	1	1.1	1/2	3 to 85	29	261
034L0049	KVL15	1.3	0.8	1	1.1	5/8	3 to 85	29	261
034L0045	KVL22	1.3	0.8	1	1.1	7/8	3 to 85	29	261
034L0023	KVP12	1.3	0.9	1.2	1.2	1/2	0 to 80	29	261
034L0093	KVR12	Liquid: 12.7 Hot gas: 4.13	Liquid: 11.8 Hot gas: 3.03	Liquid: 8.2 Hot gas: 3.27	Liquid: 13.8 Hot gas: 4.5	1/2	70 to 250	145	400
034L0097	KVR15	Liquid: 12.7 Hot gas: 4.13	Liquid: 11.8 Hot gas: 3.03	Liquid: 8.2 Hot gas: 3.27	Liquid: 13.8 Hot gas: 4.5	5/8	70 to 250	145	400
020-1132	NRD12s*					1/2	70 to 250	145	400

Note: \*: NRD generally used in conjunction with a KVR to regulate the condensing pressure.

## EVR Solenoid Valves and Coils

### Features

- Danfoss EVR type solenoid valves are general purpose valves designed for use in refrigeration, freezer, and air conditioning systems.
- Valve body and coil ordered separately.



Item ID		Type	Rated capacity R-22 / R-407C (liquid) (tons)	Rated capacity R-134a (liquid) (tons)	Rated capacity R-404A / R-507 (liquid) (tons)	Solder ODF Connection (in.)	Port size (in.)
with manual stem	without manual stem						
<b>Danfoss</b>							
	<b>032F1206</b>	EVR 3	2.03	1.55	1.4	1/4	1/8
	<b>032F1204</b>	EVR 3	2.03	1.55	1.4	3/8	1/8
<b>032L7116</b>	<b>032L7115</b>	EVR 6	5.83	4.43	4.01	3/8	15/64
<b>032L7144</b>	<b>032L1209</b>	EVR 6	5.83	4.43	4.01	1/2	15/64
<b>032L7148</b>	<b>032FL121</b>	EVR 8	8.01	6.09	5.52	1/2	5/16
<b>032L7149</b>	<b>032L1214</b>	EVR 10	13.8	10.5	9.53	5/8	3/8
	<b>032L1228</b>	EVR 15	18.9	14.4	13	5/8	9/16
<b>032L1004</b>		EVR 20	24.6	18.7	17	7/8	19/32
<b>032L1254</b>	<b>032L1240</b>	EVR 20	36.4	27.7	25.1	7/8	7/8
<b>032L7137</b>	<b>032L7145</b>	EVR 20	43.7	33.3	30.1	1 1/8	15/16
<b>032L2207</b>	<b>032L2208</b>	EVR 25	72.8	55.4	50.2	1 3/8	1
<b>032L1103</b>	<b>042L1104</b>	EVR 32	116.5	88.7	80.3	1 5/8	7/8

Item ID	Length of wire (in.)	Voltage (V)	Frequency (Hz)	Power consumption (W)	Type (Junction Box) <sup>2</sup>	Type (Conduit Boss) <sup>3</sup>
<b>Danfoss</b>						
<b>018F4100</b>	7	24	50/60	14	BJ024CS	-
<b>018F4102</b>	18				-	BX024CS
<b>018F4110</b>	7	110 or 120	50/60 or 60	16 or 15	BJ120CS	-
<b>018F4112</b>	18				-	BX120CS
<b>018F4120</b>	7	208-240 or 230	60 or 50	14 or 17	BJ230CS	-
<b>018F4122</b>	18				-	BX230CS

Item ID	Manual Opener
<b>018F0091</b>	Magnetic Solenoid Opener

## EVU, Specialty Solenoid Valves and Coils



**NO  
WET WRAP  
REQUIRED**

**ADOPTED BY  
ORIGINAL  
EQUIPMENT  
MANUFACTURERS**

### Features

- Danfoss EVU solenoid valves are designed to fit into compact refrigeration systems. Their lightweight, compact design includes bimetal connections to permit fast, easy soldering without the need for wet wrapping.
- Valve body and coil ordered separately
- **Used in Manitowac and other Ice Machine manufacturers**

Item ID	Body	Connection (In.)	C <sub>v</sub> Value (gal/min)
<b>Danfoss</b>			
<b>032F5024</b>	EVU 3	1/4	0.35
<b>032F5026</b>	EVU 3	3/8	0.35
<b>032F5049</b>	EVU 6	1/2	0.93

Item ID	Coil (VAC)
<b>042N4233</b>	115
<b>042N4230</b>	220

# VALVES AND SIGHT GLASSES

## Danfoss Ball Valves



**Maximum flow in open position, Maximum tightness in closed position**  
 GBC valves are used in liquid, suction and hot gas lines in all refrigeration and air-conditioning systems with fluorinated refrigerants. Danfoss GBC ball valves are manually operated shut-off valves suitable for bi-directional flow. The valve concept includes a high precision laser welding ensuring both a strong and a light slim line valve body design. The design, weld, and choice of the sealing material enables the ball valves to meet the most demanding requirements, for example, the high working pressure when operating with R410A.

### Features

- UL and CUL recognized
- Seal cap with retaining strap
- Has a pressure rating of 650 psi and is approved for R410A
- Precision laser welded
- Rotation stops and position indicator
- Full flow with minimum pressure drop
- Panel mounting holes
- Bi-directional flow – valve orientation is unimportant
- Slimline design ensures easy operational handling
- Burst proof spindle design prevents liquid from being trapped internally
- Teflon valve seat to secure maximum tightness and a long lifetime
- Access port with schrader valve reduces cost if service of the system is necessary

Item ID	Description	Solder ODF connection (in)	C <sub>v</sub> value (gal/min)	Weight (lbs)	Max. working pressure (psig)	Max. test pressure (psig)
<b>Danfoss</b>						
009G8050	GBC6S	1/4	2.27	0.52	650	940
009G8051	GBC10S	3/8	6.57	0.52	650	940
009G8052	GBC12S	1/2	12.23	0.54	650	940
009G8053	GBC16S	5/8	16.31	0.54	650	940
009G8054	GBC18S	3/4	23.61	0.86	650	940
009G8065	GBC22S	7/8	32.56	0.94	650	940
009G8066	GBC28S	1 1/8	60.05	1.96	650	940
009G8067	GBC35S	1 3/8	93.51	3.09	650	940
009G8068	GBC42S	1 5/8	139.96	4.91	650	940
009G8059	GBC54S	2 1/8	260.05	9.32	650	940
009G8069	GBC67S	2 5/8	358.36	12.46	650	725

## Packard Sight Glass / Moisture Indicators



### Features

- Easily visible
- Accurate moisture indicator
- Brass body
- 754 psi max working pressure
- OEM approved

Item ID	Conn. Size	Connection Type	Overall Length (In.)
<b>Packard</b>			
PSG025FFMF	1/4" SAE	Female x Male Flare	2.44
PSG375FFMF	3/8" SAE	Female x Male Flare	2.52
PSG050FFMF	1/2" SAE	Female x Male Flare	2.64
PSG025ODF	1/4" ODF	Solder	3.98
PSG375ODF	3/8" ODF	Solder	4.69
PSG050ODF	1/2" ODF	Solder	5.75
PSG625ODF	5/8" ODF	Solder	5.75
PSG875ODF	7/8" ODF	Solder	6.81



**Sand Screens**  
See page 420

## Danfoss Sight Glass / Moisture Indicators

### Features

- Indicates dangerous moisture levels to prevent formation of harmful acids
- Accurate moisture indication for system monitoring
- High visibility view port
- Brass body design minimizes corrosion
- Inline and vessel mount versions available
- UL recognized
- 754 psi max working pressure



Item ID	Description	Conn. Size ODF	Connection Type	Overall Length
<b>Danfoss</b>				
014L0171	SGP 6 N	1/4" SAE	M Flare x F Flare	1.81
014L0172	SGP 10 N	3/8" SAE	M Flare x F Flare	2.24
014L0181	SGP 6s N	1/4"	Solder	3.98
014L0182	SGP 10s N	3/8"	Solder	4.69
014L0183	SGP 12s N	1/2"	Solder	5.75
014L0145	SGP 16s N	5/8"	Solder	5.75
014L0186	SGP 22s N	7/8"	Solder	6.81

## Danfoss Liquid Line Filter Driers

Black, high-quality and durable coating offers a cleaner appearance after brazing.

Easy to remove pull-off cap for sweat or twist-off cap for flare.



One-piece plasma welded shell minimizes risk of refrigerant loss.

Eliminator® core for the highest possible drying capacity.

High dirt retention - down to 25 µm particles - with minimal pressure drop.

### Features

- Solid core design
- Mixture of molecular sieve and activated alumina ensures excellent absorption of moisture and acid
- Greater protection against contaminants
- Industry leading moisture capacity
- Solid copper connections for easy installation

Item ID	Description	Conn. Size Inches	Cubic Inches	Conn. Type	Length	Liquid Capacity (tons)		
						R12/R134a Capacity	R22/R410A Capacity	R404A/R507 Capacity
<b>Danfoss</b>								
DCL032	023Z5075	1/4	3	Flare	4.33	2.0	2.0	1.4
DCL032S	023Z5013	1/4	3	Sweat	3.86	2.0	2.0	1.4
DCL052	023Z5002	1/4	5	Flare	4.69	2.0	2.3	1.4
DCL052S	023Z5018	1/4	5	Sweat	4.21	2.0	2.3	1.4
DCL053	023Z5003	3/8	5	Flare	5.2	3.66	4.1	2.79
DCL053S	023Z5019	3/8	5	Sweat	4.45	5.1	5.4	4.0
DCL082	023Z5004	1/4	8	Flare	5.71	2.18	2.37	1.55
DCL083	023Z5005	3/8	8	Flare	6.22	4.03	4.56	3.12
DCL083S	023Z5023	3/8	8	Sweat	5.47	5.4	6.0	4.0
DCL084	023Z5006	1/2	8	Flare	6.54	8.14	9.03	6.07
DCL084S	023Z5026	1/2	8	Sweat	5.63	8.14	9.03	6.07
DCL162	023Z5007	1/4	16	Flare	6.06	2.18	2.36	1.54
DCL163	023Z5008	3/8	16	Flare	6.57	6.3	6.9	4.6
DCL163S	023Z5029	3/8	16	Sweat	5.83	6.3	6.9	4.6
DCL164	023Z5009	1/2	16	Flare	6.89	9.15	10.07	6.69
DCL164S	023Z5032	1/2	16	Sweat	5.98	8.6	9.4	6.3
DCL165	023Z5010	5/8	16	Flare	7.24	12.69	14.74 / 15.59	10.41
DCL165S	023Z5033	5/8	16	Sweat	6.22	12.3	13.4	8.6
DCL303	023Z0012	3/8	30	Flare	9.57	4.46	4.72 / 4.40	3
DCL303S	023Z0030	3/8	30	Sweat	8.82	6.0	6.6	4.3
DCL304	023Z0013	1/2	30	Flare	9.88	9.24	10.41 / 10.58	7.11
DCL304S	023Z0031	1/2	30	Sweat	8.98	8.8	9.7	6.3
DCL305	023Z0014	5/8	30	Flare	10.24	13	15.72	10.51
DCL305S	023Z0032	5/8	30	Sweat	9.21	12.6	14.0	9.4
DCL307S	023Z0034	7/8	30	Sweat	9.76	18.27	21.44 / 23.05	15.34
DCL415	023Z0103	5/8	41	Flare	10.28	15.78	17.66	11.9
DCL415S	023Z0105	5/8	41	Sweat	9.25	15.78	17.66	11.9
DCL417S	023Z0106	7/8	41	Sweat	9.8	18.89	22.32 / 24.08	16.01
DCL607S	023Z0036	7/8	60	Sweat	14.71	19.93	25.16 / 30.71	19.94

## Danfoss Filter Drier Cores



Item ID	Description	Material
<b>Danfoss</b>		
023U1392	DCR core insert, type 48-DM solid core	100% molecular sieve
023U4381	DCR core insert, type 48-DC solid core	80% molecular sieve & 20% activated alumina
023U5381	DCR core insert, type 48-DA solid core	30% molecular sieve & 70% activated alumina



## Danfoss Suction Line Driers



### Features

- Solid core design with mixture of activated alumina and molecular sieve maximizes acid and moisture absorption
- Contains two schrader valves for measuring pressure drop across the drier
- Burn out drier to be installed ahead of compressor

Item ID	Description	Conn. Size (In. ODF)	Cubic Inches	Conn. Type	Length	R12/R134a Capacity	R22/R410A Capacity	R404A/R507 Capacity
<b>Danfoss</b>								
DAS164SVV	023Z1009	1/2	16	Sweat	6	1.7	6.3	2.4
DAS165SVV	023Z1010	5/8	16	Sweat	6.2	2.7	4.3	3.7
DAS166SVV	023Z1011	3/4	16	Sweat	6.7	3.4	5.7	4.9
DAS167SVV	023Z1012	7/8	16	Sweat	6.8	3.9	6.3	5.4
DAS306SVV	023Z1014	3/4	30	Sweat	9.7	4	6.3	5.4
DAS307SVV	023Z1015	7/8	30	Sweat	9.8	4.6	7.4	6.3
DAS309SVV	023Z1016	1 1/8	30	Sweat	9.8	5.7	8.9	7.7
DAS419SVV	023Z1018	1 1/8	41	Sweat	9.8	6.3	10	8.6

## Danfoss Heat Pump Biflow Filter Driers

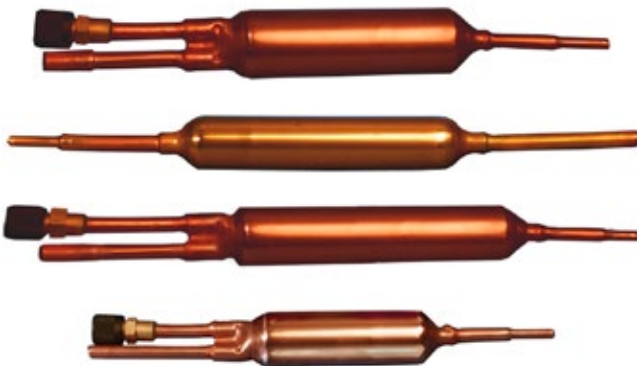


### Features

- Solid core design
- Check valves are insensitive to dirt and give minimum restriction regardless of flow direction
- Industry leading moisture capacity
- No dirt released in reverse flow
- High dirt retention – down to 25 µm particles with minimal pressure drop

Item ID	Description	Conn. Size (In. ODF)	Cubic Inches	Length	R12/R134a Capacity	R22/R410A Capacity	R404A/R507 Capacity
<b>Danfoss</b>							
DCB083S	023Z1433	3/8	8	5.6	2.1	2.3	1.5
DCB084S	023Z1432	1/2	8	5.7	2.4	2.6	1.7
DCB163S	023Z1437	3/8	16	5.9	5.1	5.7	3.7
DCB164S	023Z1436	1/2	16	6.1	8.0	9.1	5.7
DCB165S	023Z1435	5/8	16	6.3	10.6	11.4	8.3

## Spun Copper Driers



### Features

- All Copper Shells
- 100% Molecular Sieve with XH9 and XH11 desiccants
- Fully Compatible with ALL new refrigerants

\* PD4178: New breakthrough drier with UV Dye already installed in the drier to make it easy to locate leaks in sealed systems.

Item ID	Description	Stamford
<b>Packard</b>		
PD103	1" Directional Drier	4050
PD109	3/4" Non Directional Drier	4051
PD109B	50 Pack of PD109	4051
PD109P	3 Pack of PD109	4051
PD110	3/4" Directional Drier	4040
PD110B	50 Pack of PD110	4040
PD111	1" Valve Drier	4039
PD111B	50 Pack of PD111	4039
PD111P	3 Pack of PD111	4039
PD112	1" 30 Gram Drier	4049
PD113	1" Double Inlet Drier	4042
PD113B	50 Pack of PD113	4042
PD114	1" Directional Drier	4041
PD115	3/4" Valve Drier	4044
PD115B	50 Pack of PD115	4044
PD115P	3 Pack of PD115	4044
PD4178 *	3/4" Universal UV Dye	4178

## Danfoss KPU Pressure Controls



### Features

- Designed with contractor input
- Fingertip reset
- High visibility contrast scale
- Fail-safe bellows available
- Durable, rust proof plastic cover
- Universal mounting bracket
- Snap action switch
- Easy to maintain and access contacts with 24 FLA rating
- Large connector area
- Easy, direct replacements for most competitor controls
- Finger-tip test for contact operation

ADOPTED BY  
ORIGINAL EQUIPMENT  
MANUFACTURERS

Item ID		Pressure	Type	Reset	Contact system	Range (psig)	Differential (psig)	Max. Working Pressure (psig)	Replaces
1/4" M flare	36" capillary tube with 1/4" flare nut								
<b>Danfoss Pressure Controls</b>									
<b>060-5231</b>	<b>060-5233</b>	Low	KPU 1	Automatic	SPDT	6"-108	10 to 60	250	010-1483
<b>060-5237</b>	<b>060-5235</b>	Low	KPU 2	Automatic	SPST (open low)	6"-73	6 to 30	250	010-1402
<b>060-5239</b>	<b>060-5240</b>	Low	KPU 2	Automatic	SPDT	6"-73	6 to 30	250	
<b>060-5232</b>	<b>060-5234</b>	Low	KPU 1B	Manual	SPDT	28"-100	10	250	P70AB12 P70AB2
<b>060-5241</b>	<b>060-5242</b>	Fan cycling	KPU 5	Automatic	SPST (open low)	100-465	25 to 85	510	010-2054 P70AA118
<b>060-5243</b>	<b>060-5245</b>	High	KPU 6W <sup>2</sup>	Automatic	SPDT	100-600	58 to 145	675	016-108
<b>060-5244</b>	<b>060-5246</b>	High	KPU 6B <sup>2</sup>	Manual	SPDT	100-600	60	675	

Item ID		Low pressure side		Type	High pressure side		Reset		Contact system	Max. Working Pressure (low / high side) (psig)	Replaces
1/4" M flare	36" capillary tubes w/ 1/4" flare nuts	Range (psig)	Differential (psig)		Range (psig)	Differential (psig)	Low pressure side	High pressure side			
<b>Danfoss Pressure Controls</b>											
<b>060-5247</b>	<b>060-5248</b>	6" to 108	10 to 60	KPU 15	100-465	60	Automatic	Automatic	SPST dual pressure (LP/HP)	250 / 510	012-1549
<b>060-5249</b>	<b>060-5250</b>	6" to 108	10 to 60	KPU 15B	100-465	60	Automatic	Manual	SPST dual pressure (LP/HP)	250 / 510	P170LB1 <sup>3</sup> P70LB1 P70MA1
<b>060-5253</b>	<b>060-5254</b>	6" to 108	10 to 60	KPU 16B <sup>2</sup>	100-600	60	Convertible <sup>3</sup>	Convertible <sup>3</sup>	SPDT LP/HP signal	250 / 675	012-4834

<sup>1</sup>Competitor Part No. equipped with capillary tube for all but P170LB1 which has flare connection.

<sup>2</sup>KPU 6 and the high pressure side of KPU 16 are designed with fail-safe double bellows.

<sup>3</sup>Convertible reset controls can be adjusted for either automatic or manual reset.

All controls are supplied with universal mounting brackets and mounting screws. Ambient temperature: -40° F to +122° F (175° F for maximum 2 hours).

KPU 1, 2, 6, 16 suitable for all HFC refrigerants, including R-410A.

## Cartridge Pressure Controls

### Features

- 18 inch leads
- Hermetically sealed
- Tamper proof construction
- Direct mounting on tubing
- For use in residential and commercial A/C and commercial refrigeration
- 100% tested
- Contacts rated at 6 amps, 24-240 volts
- UL recognized



## Low Pressure Controls

Item ID	Open psi	Close psi	Tolerance	Replaces
<b>Packard</b>				
PLP0520	5	20	± 5 PSI	SLP0520
PLP1025	10	25	± 5 PSI	SLP1025
PLP1535	15	35	± 5 PSI	SLP1535
PLP2550	25	50	± 5 PSI	SLP2550
PLP2565	25	65	± 5 PSI	SLP2565
PLP2580	25	80	± 5 PSI	SLP2580
PLP4080	40	80	± 5 PSI	SLP4080
PLP5090	50	90	± 5 PSI	SLP5090
PLP75100	75	100	± 5 PSI	SLP75100
PLP90120	90	120	± 5 PSI	SLP90120

Item ID	Open psi	Close psi	Tolerance	Replaces
<b>Packard - Manual High Pressure Open on Pressure Rise</b>				
PMR375	375	Manual	± 15 PSI	SMR375
PMR410	410	Manual	± 15 PSI	SMR410
PMR440	440	Manual	± 15 PSI	SMR440
PMR575	575	Manual	± 15 PSI	SMR575
PMR610	610	Manual	± 15 PSI	SMR610
PMR630	630	Manual	± 15 PSI	SMR630

## High Pressure Controls

Item ID	Open psi	Close psi	Tolerance	Replaces
<b>Packard</b>				
PHP200150	200	150	± 15 PSI	SHP200150
PHP250150	250	150	± 15 PSI	SHP250150
PHP275195	275	195	± 15 PSI	SHP275195
PHP300200	300	200	± 15 PSI	SHP300200
PHP350250	350	250	± 15 PSI	SHP350250
PHP375265	375	265	± 15 PSI	SHP375265
PHP400200	400	200	± 15 PSI	SHP400200
PHP400280	400	280	± 15 PSI	SHP400280
PHP400300	400	300	± 15 PSI	SHP400300
PHP425300	425	300	± 15 PSI	SHP425300
PHP425325	425	325	± 15 PSI	SHP425325
PHP450250	450	250	± 15 PSI	SHP450250
PHP600475	600	475	± 15 PSI	33361
PHP610420	610	420	± 15 PSI	SHP610420

Item ID	Open psi	Close psi	Tolerance	Replaces
<b>Packard - Fan Cycle Close on Pressure Rise</b>				
PFC75120	75	120	± 15 PSI	SFC75120
PFC110170	110	170	± 15 PSI	SFC110170
PFC210275	210	275	± 15 PSI	SFC210275
PFC150225	150	225	± 15 PSI	SFC150225
PFC170250	170	250	± 15 PSI	SFC170250
PFC200365	200	365	± 15 PSI	SFC200365
PFC300400	300	400	± 15 PSI	SFC300400

## Differential Pressure Control / Lube Oil Protection Control, Type MP

**ADOPTED BY ORIGINAL EQUIPMENT MANUFACTURERS**



### Application

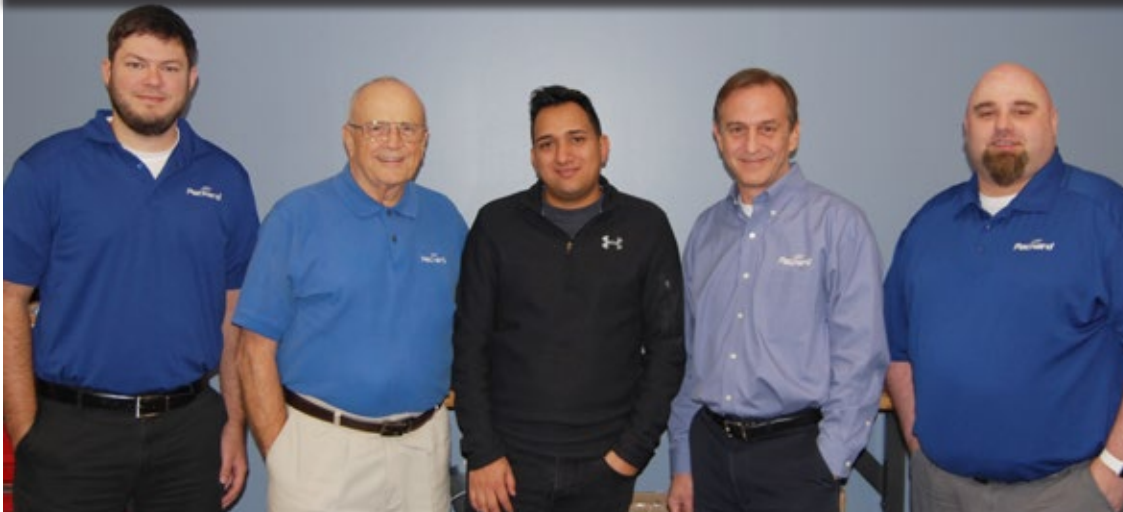
Used to protect refrigeration compressors against low oil pressure. Compatible with HCFC and non-flammable HFC refrigerants.

### Features

- Reliable, long life stainless steel bellows
- Sturdy metal cover and universal mounting hole patterns
- Integral 1/2" NPSM swivel connection allows direct attachment of 1/2" male pipe thread connector
- Simple manual trip, electrical test function eliminates need of tools and test "jumper" wires
- Suitable for both alternating and direct current (AC and DC)
- Versions available with adjustable or fixed differential

Item ID	1/4" M flare Replaces	Item ID	36" capillary tubes with 1/4" flare nuts Replaces	Danfoss Type	Control differential Δp (psig)	Regulation range LP side	Time relay delay time (seconds)
<b>Danfoss</b>							
060B200866	P145NCA/B-82C	060B205066	P45NCA-82C 3321-009	MP 54	6	29 inHg to 175 psi	45
060B200266	3321-001			MP 54	9	29 inHg to 175 psi	90
060B200366	P145NCA/B-12C P31-5827 3321-001	060B205366	P45NCA-12C P30-5826 3321-010	MP 54	9	29 inHg to 175 psi	120
		060B205466	P288AA-18/2C P30-3601 3321-014/5 <sup>3</sup>	MP 55	4.3 to 65	29 inHg to 175 psi	45
060B201266	P128AA-2C			MP 55	4.3 to 65	29 inHg to 175 psi	60
060B200766	P128AA-17C	060B205766	P28AA-17C P28NA-5C P30-3801 3321-014/5 <sup>3</sup>	MP 55	4.3 to 65	29 inHg to 175 psi	120

## Technical support when you need it!



Our in-house **team of experts** are available to help with cross referencing services & complete post-sale product support.

PICTURED FROM LEFT TO RIGHT:

**PRODUCT ENGINEERS & TECHNICAL SUPPORT**

Joseph Laminack, Bill Campbell, Argenis Cruz, Dion Rohrer and Chris Baxter

## Thermostat Type KPU

### Features

- Eliminates temperature fluctuations.
- Reliable and robust SPST and SPDT contact system, copper capillary tubing and bulb are stout to resist breakages.

**Replaces Penn/Johnson Controls and many others thermostats.**



Item ID	Type	Regulation Range (°F)	Differential ΔT (°F)	Bulb Type	Capillary Tube Length (In.)	Max. Bulb Temp. (°F)	Ambient Temp. (°F)	Contact Type	Reset Type	Replaces
<b>Danfoss</b>										
060L2150	KPU 19	-30 - 80	3.6 - 12.6	Remote	120	140	-31 - 158	SPDT	Auto.	Penn A19ABC-24C
060L2151	KPU 19	-30 - 80	3.6 - 12.6	Remote	80	140	-31 - 158	SPST	Auto.	Penn A19ABA-40C
060L2152	KPU 19	-30 - 80	3.6 - 12.6	Room	Room Sensor	140	-31 - 140	SPDT	Auto.	Penn A19BBC-2C

## Danfoss KPU Temperature Controls



### Features

- Designed with contractor input
- Fingertip reset
- High visibility contrast scale
- Fail-safe bellows available
- Durable, rust proof plastic cover
- Universal mounting bracket
- Snap action switch
- Easy to maintain and access contacts with 24 FLA rating
- Large connector area
- Easy, direct replacements for most competitor controls
- Finger-tip test for contact operation

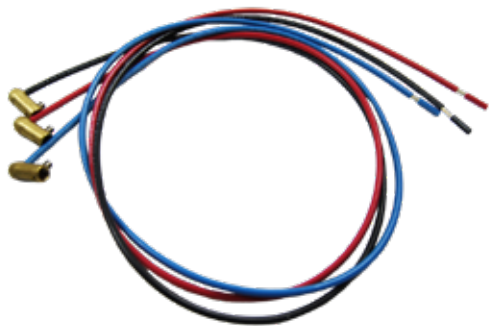
**ADOPTED BY ORIGINAL EQUIPMENT MANUFACTURERS**

Item ID	Type	Bulb Type	Capillary tube length (in.)	Reset	Range (°F)	Differential		Max. bulb temp. (°F)	Replaces
						at lowest temp. setting	at highest temp. setting		
<b>Danfoss Temperature Controls</b>									
060L5201	KPU 61	Straight Capillary Tube <sup>1</sup>	80	Automatic	-20 to 60	10 to 40	2.5 to 13	250	010-1416 010-1010 016-111 010-1419 A19BBC2
060L5206	KPU 62	Room sensor <sup>1</sup>	Room sensor	Automatic	-20 to 60	10 to 40	2.5 to 13	250	010-1072 060-1418 010-1802
060L5215	KPU 68	Room sensor <sup>1</sup>	Room sensor	Automatic	25 to 95	8 to 45	3 to 13	250	016-595 010-301 016-165
060L5208	KPU 73	Remote bulb <sup>2</sup>	80	Automatic	-15 to 60	6.5 to 32	5 to 50	175	A19ABA40 A19ABC24 010-1408 010-1409
060L5218	KPU 71	Remote bulb <sup>2</sup>	80	Automatic	25 to 70	5.5 to 18	4 to 16	175	
060L5223	KPU 77	Remote bulb <sup>2</sup>	80	Automatic	60 to 140	6 to 18	6.3 to 18	265	060-200 A19AAF-12C A19AAB-4C A19ABB-2C A19ABB-7C

<sup>1</sup>Bulb must be installed in colder position than thermostat housing and capillary tube.

<sup>2</sup>Temperature variations in excess of 70° F between sensing bulb, housing, and capillary tube will influence scale accuracy.

## Three Wire Compressor Terminal Repair Kits



### Features

- The Term-Lok Kit was designed for the repair of burned or damaged spade terminals or for non burned terminals to prevent future burn off.
- They are made of high quality, heat sensed brass and are guaranteed for the life of the compressor.

### Includes:

- Brass cylindrical tube with a diameter large enough to slip over the pins
- Stainless set screw to lock onto the terminal
- Wrench for easy installation
- Anti-arcing spacer to prevent arcing between posts
- Will never crack, break or burn off
- Provides four full points of contact on the new terminal

Item ID	Gauge	Services
<b>Term-LOK</b>		
<b>TLC38</b>	8	5 ton units and above
<b>TLC310</b>	10	3 - 5 ton units
<b>TLC312</b>	12	1 - 3 ton units

## Bristol and Danfoss Wiring Harnesses

### Features

- Most compressor failures may be attributed to mis-wiring the compressor. These wiring harnesses with molded plug help to eliminate costly mis-wires and eliminates the guess work out of wiring in the compressor. The Wiring Harness provides a low cost solution by getting the serviceman to the next job faster.
- For Bristol or Danfoss compressors



**651078**



**OEM Exact Replacement Parts**

**120Z5056  
120Z5057**

Item ID	Brand	Gauge	Compressor	Length (In.)
<b>651078</b>	Bristol	12	Hermetic	36
<b>120Z5056</b>	Danfoss	10	Wire harness, 5', for 200-230V, Scroll	60
<b>120Z5057</b>	Danfoss	10	Wire harness, 5', for 380-575V Scroll	60

# COMPRESSOR ACCESSORIES

## Universal Self Regulating Crankcase Heater



### Applications

Used on refrigeration compressors up to 5 HP and 40" circumference in non-hazardous locations.

### Features

- UNIVERSAL - Self Regulating
- Pre-stripped leads
- Flexible Lockstrap
- 60 watts at 0°F
- No thermostat required

Item ID	Length (in.)	Lead Length (in.)	Volts	Replaces
<b>Packard</b>				
CHU40120	40	28	120	CCH-1C 4DLE4
CHU40208-277	40	28	208-277	CCH-2C 4DLES

## Tutco Crankcase Heaters



### Features

- High temperature silicone rubber element and VW-1 insulated lead wires rated for 150°C
- Wattage for each model matches compressor requirements
- Nominal power consumption due to highly efficient heat transmission and low wattage
- Voltage ratings through 600 VAC
- Corrosion resistant exterior
- Completely moisture-proof
- Quick and easy installation
- UL recognized
- Custom leads and terminations available

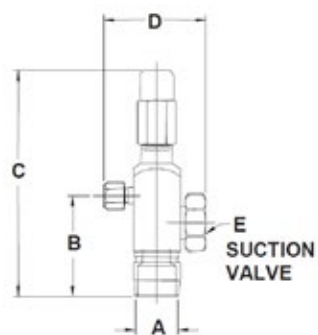
Item ID	Volts	Watts	Girth Dimensions		Shape
			Min	Max	
<b>Tutco</b>					
CH197240	120	25	13 13/16	21	Round
CH19740	240	25	13 13/16	21	Round
CH1982	120	35	16 13/16	24	Oval
CH135240	120	40	23 7/16	27 1/2	Oval
CH13540	240	40	23 7/16	27 1/2	Oval
CH196	240	40	19 15/16	27 1/8	Round
CH2057	460	40	21 3/16	24 3/8	Round
CH1963	480	40	19 15/16	27 1/8	Round
CH103240	120	45	24 13/16	32	Oval
CH10340	240	45	24 13/16	32	Oval
CH184	240	45	13 13/16	21	Round
CH10540	240	50	31 13/16	39	Round
CH101240	120	54	27 7/16	39 5/8	Oval
CH10140	240	54	27 7/16	39 5/8	Oval
CH101340	480	54	27 7/16	39 5/8	Oval
CH10240	240	60	25 13/16	33	Oval

Item ID	Volts	Watts	Girth Dimensions		Shape
			Min	Max	
<b>Tutco</b>					
CH2022	120	70	33 9/16	37 3/8	Round
CH2802	120	70	20 13/16	28	Round
CH202	240	70	33 9/16	37 3/8	Round
CH230	240	70	21 13/16	29	Round
CH280	240	70	20 13/16	28	Round
CH2023	480	70	33 9/16	37 3/8	Round
CH2303	480	70	21 13/16	29	Round
CH2803	480	70	28	20 13/16	Round
CH2552	120	100	28 5/16	35 1/16	Round
CH255	240	90	28 5/16	35 1/16	Round
CH2707	460	100	36	43 3/8	Round
CH2727	460	100	38	30 13/16	Round
CH2553	480	90	28 5/16	35 1/16	Round
CH2822	120	150	38 1/8	45 1/2	Round
CH2557	460	90	27 3/4	35 1/8	Round

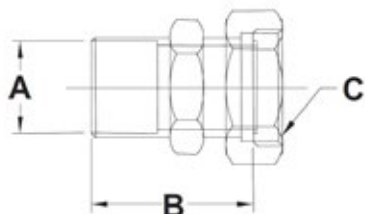
## Rotolock Adapters



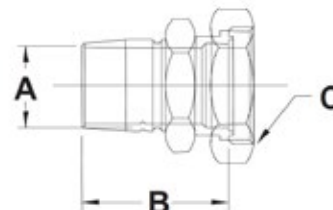
344030  
344033  
344034



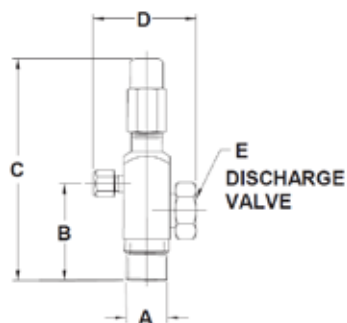
344036



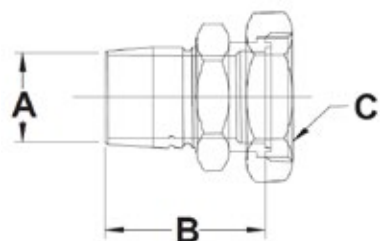
344032



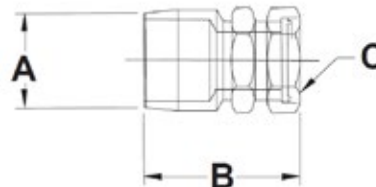
344029  
344035



344031



344039



### Applications:

- Adaptor valve used to change from Rotolock adapters to brazed connection

Item ID	Description	Includes	A	B	C	D	E	Replace Bristol
<b>Bristol</b>								
344030	Suction Valve	Teflon seal	1 1/8	3	7 3/16	2 1/2	1 3/4-12 UNF	250508
344033	Suction Valve	Teflon seal	1 3/8	3 5/16	7 3/16	2 1/2	1 3/4-12 UNF	250525
344034	Suction Valve	Teflon seal	1 5/8	3 1/2	7 3/16	2 1/2	1 3/4-12 UNF	250526
344036	Suction Adapter Straight	Teflon seal	1 3/8	2 1/2	1 3/4-12 UNF	—	—	250529
344032	Suction Adapter Straight	Teflon seal	1 1/8	2 3/16	1 3/4-12 UNF	—	—	250510
344029	Discharge Valve	Teflon seal	7/8	2 11/32	5 11/32	2 1/64	1 1/4-12 UNF	250507
344035	Discharge Valve	Teflon seal	1 1/8	19/32	5 11/32	2 5/32	1 1/4-12 UNF	250527
344031	Discharge Adapter Straight	Teflon seal	7/8	1 23/32	1 1/4-12 UNF	—	—	250509
344039	Discharge Adapter Straight	Teflon seal	1 1/8	2	1 1/4-12 UNF	—	—	250534

### Notes:

Compressors with sweat fittings or brazed fittings cannot be adapted to Rotolocks.



## Two Wire Electro-Mechanical Voltage Sensing Relay



### Features

- Potential relay and start capacitor for compressor hard start applications
- More reliable than PTC type hard starts
- Two wire connection
- For use with Hermetic or Scroll compressors
- Quick connect terminals
- Bleed down resistor to safely discharge the capacitor

Item ID	Capacitor Size (µF)	Tons	Compressor	Pick-Up Voltage (VAC)	Maximum Coil Voltage (VAC)	Replaces
<b>TorQstart</b>						
TQS1	189-227	1.5 - 3	Recip and Scroll	239-268	502	T0-5 SK3W3
TQS2	270-324	3.5 - 5	Recip and Scroll	280-315	502	KS1 SK3W6S

## Hard Start Kits And All In One Hard Start Packs



### Standard PTC Relay and Hard Start Capacitor



### Features

- Increases compressor starting torque for faster recycling
- For all permanent split capacitor, single phase air conditioning and heat pump systems
- Wired with "Piggy-Back" terminals for easy installation on run capacitors
- Designed for 115 volt thru 277 volt systems
- Mounts easily with either screw or clip



### All Purpose 3-N-1 Kit



### Features

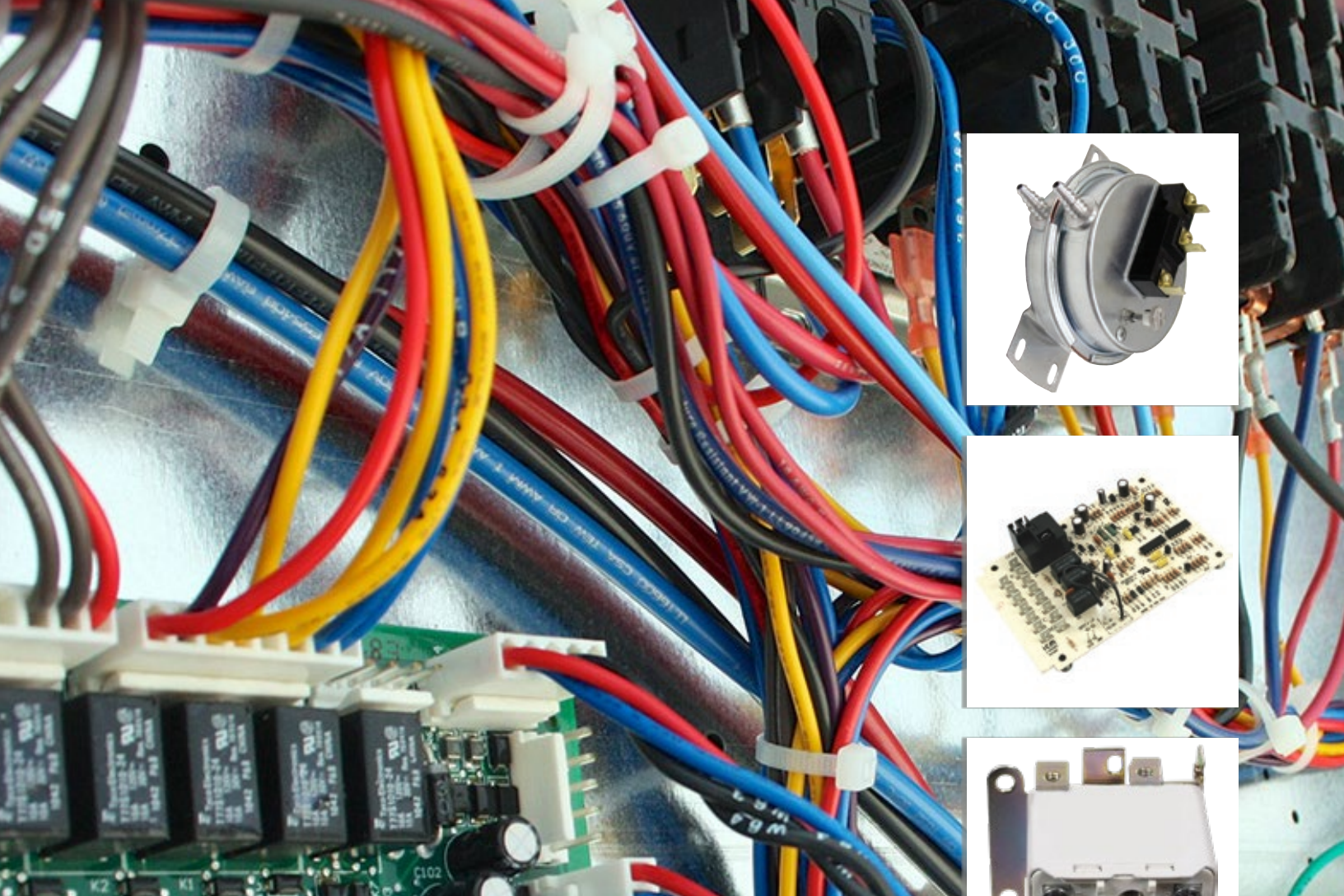
- Combination relay, overload and capacitor
- Pre-wired for easy installation
- Extra long compressor leads for mounting flexibility
- All models adapt to 115 volt compressors with external overload protector

Item ID	Operating Voltage (VAC)	Recommended range (HP)	Increase in Torque (%)	Replaces	Item ID	Compressor Sizes	Volts	Replaces
<b>TorQstart Hard Start</b>					<b>TorQstart 3-N-1 Kit</b>			
TQS5	115-277	1/2 to 10	300%	32701 600-057 SPP5	TQS21	1/2 HP	115	600-210 RC0210
TQS6	115-277	1/2 to 10	500%	32702 600-052 SPP6	TQS41	1/4 and 1/3 HP	115	600-410 RC0410
TQS8	115-277	1/2 to 10	600%	32708 SPP7S	TQS81	1/12 thru 1/5 HP	115	600-810 RC0810

# What's inside matters when it comes to HVACR...



...Packard stocks virtually every commercial refrigeration component for a complete package.



# CONTROLS

Innovative technology is ever-present in our controls. Shop products that offer dependability, quality and customizable features.



# Through innovation, comes affordability!

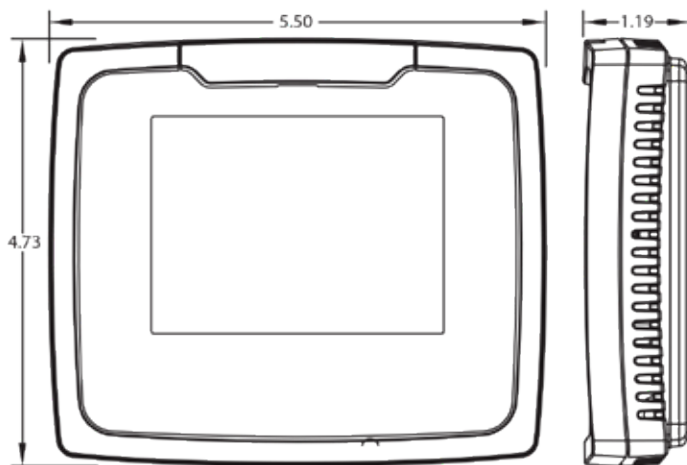
*Designed around capacitive touch sensing technology, the new and innovative I<sup>3</sup>™ – Series Touch Thermostats from ICM Controls feature huge displays and a patent-pending dynamic interface for intuitive programming that uses familiar icons that illuminate only when they are needed – all for an amazingly affordable price!*



## Features:

- **Large Display** – Touch icons positioned off display for larger viewing area; keeps display clean of fingerprints
- **Buttonless/Switchless Front** – No mechanical buttons or switches to break or wear
- **Dynamic Interface** – Highly intuitive - patent-pending! Icons illuminate ONLY when they are needed
- **Customizable Printed Interface** – Color and plastic can be customized
- **Customizable Icons** – Can use branded icons, or those found on most cell phones, in any desired backlit color
- **Humidity Control** – Humidity control model available
- **Positioning** – Thin profile ideal for either “in control” or “wall mount” applications
- **Mounting Base** – Designed with sub base to make installation a “snap”
- **Removable Logo Plate** – Great for customers to promote their business
- **WiFi** – WiFi compatible model available with user friendly connectivity
- **Thermal Safety** – Excessive heating bi-metal safety switch
- **User Coded Lockout** – Designed with renters and children in mind

## Dimensions



## Specifications:

- 6 (1A) relay outputs
- Dual powered – 24 VAC, 2 AA batteries & power stealing
- Remote temperature monitoring inputs (optional)
- Humidification/dehumidification (optional)
- WiFi (optional)
- Sub-base terminations
- Up to 13 buttons for customization

## Typical Applications:

- Temperature controls
- Appliances
- Pool & spa
- Test equipment
- Security locks
- Kiosks/POS displays
- And lots more!



## Thermostats

### Features

- Through innovation comes affordability! ICM's Programmable I<sup>3</sup> Series of touch thermostats is designed around a unique way of using capacitive sensing technology to bring affordability to the touch marketplace. Each model features a huge display and a patent-pending dynamic interface for intuitive programming that makes installation and set up incredibly easy.
- Large Display: Touch icons positioned off display for larger viewing area; keeps display clean of fingerprints
- Buttonless/Switchless Front: No mechanical buttons or switches to break or wear
- Dynamic Interface: Highly intuitive – patent-pending! Icons illuminate ONLY when they are needed
- Customizable Printed Interface: Color and plastic can be customized
- Customizable Icons: Can use branded icons, or those found on most cell phones, in any desired backlit color
- Wi-Fi: Wi-Fi compatible model available with user friendly connectivity
- Humidity Control: Humidity Control model available
- Dual Fuel Compatibility: On all 3H/2C models
- Positioning: Thin profile ideal for either “in control” or “wall mount” applications
- Mounting Base: Designed with sub base to make installation a “snap”
- Removable Logo Plate: Great for customers to promote their business
- Thermal Safety: Excessive heating bi-metal safety switch
- User Coded Lockout: Designed with renters and children in mind



Item ID	Type	Stages	Heat Pump	Power	Wi-Fi	Humidity	Terminations
<b>I3 Standard Thermostats</b>							
I1010	7-Day Programmable	1 H/1C	Y	Dual	N	N	R, C, W1/O/B, Y1, G, S1, S2
I2010	7-Day Programmable	2 H/1C	Y	Dual	N	N	R, C, W1/O/B, W2, Y1, G, S1, S2
I2020	7-Day Programmable	2 H/2C	Y	Dual	N	N	R, C, W1/O/B, W2, Y1, Y2, G, S1, S2
I2030	7-Day Programmable	3H/2C	Y	Dual	N	N	R, C, W1/O/B, W2, AUX, Y1, Y2, G, S1, S2

Item ID	Type	Stages	Heat Pump	Power	Wi-Fi	Humidity	Terminations
<b>I3 Wi-Fi Thermostats</b>							
I1010W	7-Day Programmable	1 H/1C	Y	Hardwired	Y	N	R, C, W1/O/B, Y1, G, S1, S2
I2010W	7-Day Programmable	2 H/1C	Y	Hardwired	Y	N	R, C, W1/O/B, W2, Y1, G, S1, S2
I2020W	7-Day Programmable	2 H/2C	Y	Hardwired	Y	N	R, C, W1/O/B, W2, Y1, Y2, G, S1, S2
I2030W	7-Day Programmable	3H/2C	Y	Hardwired	Y	N	R, C, W1/O/B, W2, AUX, Y1, Y2, G, S1, S2

Item ID	Type	Stages	Heat Pump	Power	Wi-Fi	Humidity	Terminations
<b>I3 Humidity Thermostats</b>							
I1010H	7-Day Programmable	1 H/1C	Y	Dual	N	Y	R, C, W1/O/B, AUX, Y1, G, S1, S2
I2010H	7-Day Programmable	2 H/1C	Y	Dual	N	Y	R, C, W1/O/B, W2, AUX, Y1, G, S1, S2
I2020H	7-Day Programmable	2 H/2C	Y	Dual	N	Y	R, C, W1/O/B, W2, AUX, Y1, Y2, G, S1, S2

Item ID	Type	Stages	Heat Pump	Power	Wi-Fi	Humidity	Terminations
<b>I3 Wi-Fi and Humidity Thermostats</b>							
I1010WH	7-Day Programmable	1 H/1C	Y	Hardwired	Y	Y	R, C, W1/O/B, AUX, Y1, G, S1, S2
I2010WH	7-Day Programmable	2 H/1C	Y	Hardwired	Y	Y	R, C, W1/O/B, W2, AUX, Y1, G, S1, S2
I2020WH	7-Day Programmable	2 H/2C	Y	Hardwired	Y	Y	R, C, W1/O/B, W2, AUX, Y1, Y2, G, S1, S2

Simple to install.  
Simple to operate.  
Simply dependable.






**SimpleComfort®** means simple control for year-round comfort and energy savings. These elegantly designed thermostats are extra rugged, highly reliable and accurate — ready for many years of worry-free operation. Simply perfect for residential or light commercial new construction or replacement. Easy, intuitive operation makes it simple to match temperature to any family's lifestyle. And with exclusive **SimpleComfort®** staging control, you can easily configure for optimum energy savings — or extra comfort.

#### **SimpleComfort® thermostats feature:**




- Vertical or horizontal mounting options (model dependent)
- Large display
- Precise temperature sensing
- Accuracy:  $\pm 1^{\circ}\text{F}$
- Easy access terminal block
- Soft touch controls
- Adjustable temperature differential
- Zoning system compatible
- Integrated four-minute short-cycle protection
- Mercury-free, environmentally safe
- Status LEDs



## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
	<p><b>SC1001</b></p> <ul style="list-style-type: none"> <li>• Single-stage heat/cool</li> <li>• Single-stage heat pump</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Elegant design</li> <li>• Simple operation</li> <li>• 2° fixed temperature differential</li> <li>• Hardwired</li> <li>• Easy access terminal block</li> <li>• Zone compatible</li> <li>• Manual changeover</li> <li>• Compatible with gas, oil and electric systems</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• 60-minute power backup</li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: (±1°F)</li> </ul>	R, C, W, Y, O, B, G
	<p><b>SC1800VL</b></p> <ul style="list-style-type: none"> <li>• Single-stage, heat only</li> <li>• Elegant design</li> <li>• Vertical design for easy J-box installation</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Manual Changeover</li> <li>• Simple operation</li> <li>• Large LCD display with backlight</li> <li>• Battery powered</li> <li>• Low battery indicator</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Compatible with gas, oil and hydronic systems</li> <li>• Millivolt compatible</li> <li>• Remote sensor compatible</li> <li>• Freeze protection feature</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	R, W, G, S1, S2
	<p><b>SC1901L</b></p> <ul style="list-style-type: none"> <li>• Single-stage, Cool only</li> <li>• Elegant design</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Manual Changeover</li> <li>• Simple operation</li> <li>• Large LCD display with backlight</li> <li>• Hardwired</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Compatible with A/C systems</li> <li>• Remote sensor compatible</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	R, C, Y, G, S1, S2




## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<p data-bbox="61 233 537 264"><b>Simple Comfort Non-Programmable Thermostats</b></p> 	<p data-bbox="375 275 477 302"><b>SC1901VL</b></p> <ul data-bbox="375 310 769 709" style="list-style-type: none"> <li>• Single-stage, Cool only</li> <li>• Elegant design</li> <li>• Vertical design for easy J-box installation</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Manual Changeover</li> <li>• Simple operation</li> <li>• Large LCD display with backlight</li> <li>• Hardwired</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Compatible with A/C systems</li> <li>• Remote sensor compatible</li> </ul>	<ul data-bbox="841 275 1208 474" style="list-style-type: none"> <li>• Electrical rating:                             <ul data-bbox="857 310 1138 407" style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	<p data-bbox="1289 275 1430 302">R, C, Y, G, S1, S2</p>
	<p data-bbox="375 726 477 753"><b>SC2000VL</b></p> <ul data-bbox="375 762 821 1360" style="list-style-type: none"> <li>• Single-stage heat/cool or single-stage heat pump</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Elegant design</li> <li>• Vertical design for easy J-box installation</li> <li>• Simple operation</li> <li>• Zoning system compatible</li> <li>• Adjustable temperature differential</li> <li>• Large backlit LCD display</li> <li>• Battery operated</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Millivolt compatible</li> <li>• Freeze protection feature</li> <li>• High temperature “run away” heat protection</li> <li>• Low battery indicator</li> <li>• Mercury-free, environmentally safe</li> <li>• Manual changeover</li> <li>• Soft touch controls</li> </ul>	<ul data-bbox="841 726 1208 926" style="list-style-type: none"> <li>• Electrical rating:                             <ul data-bbox="857 762 1138 858" style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	<p data-bbox="1289 726 1463 753">RC, RH, W, Y, O, B, G</p>
	<p data-bbox="375 1377 464 1404"><b>SC2001L</b></p> <ul data-bbox="375 1413 821 1942" style="list-style-type: none"> <li>• Single-stage heat/cool or single-stage heat pump</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Elegant design</li> <li>• Simple operation</li> <li>• Zoning system compatible</li> <li>• Adjustable temperature differential</li> <li>• Large backlit LCD display</li> <li>• Hardwired</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• 4- or 5-wire compatible</li> <li>• Freeze protection feature</li> <li>• High temperature “run away” heat protection</li> <li>• Mercury-free, environmentally safe</li> <li>• Manual changeover</li> <li>• Soft touch controls</li> </ul>	<ul data-bbox="841 1377 1208 1577" style="list-style-type: none"> <li>• Electrical rating:                             <ul data-bbox="857 1413 1138 1509" style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	<p data-bbox="1289 1377 1435 1404">R, C, W, Y, O, B, G</p>








## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<p data-bbox="126 239 602 270"><b>Simple Comfort Non-Programmable Thermostats</b></p> 	<p data-bbox="440 279 537 304"><b>SC2201VL</b></p> <ul data-bbox="440 315 834 913" style="list-style-type: none"> <li>• Non-programmable</li> <li>• For heat pumps only</li> <li>• Two-stage heat/Single-stage cool</li> <li>• Single-compressor heat pump system with auxiliary heat</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Elegant design</li> <li>• Vertical design for easy J-box installation</li> <li>• Simple operation</li> <li>• Adjustable temperature differential</li> <li>• Large, backlit LCD display</li> <li>• Hardwired</li> <li>• Easy access terminal block</li> <li>• Emergency heat mode</li> <li>• Zone compatible</li> <li>• Manual changeover</li> <li>• Soft touch controls</li> <li>• Status LEDs</li> </ul>	<ul data-bbox="867 279 1235 510" style="list-style-type: none"> <li>• Electrical rating:               <ul data-bbox="883 310 1179 443" style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> <li>• 30-minute power loss retention</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F</li> <li>• Accuracy: ±1°F</li> </ul>	<p data-bbox="1321 279 1507 304">R, C, Y1, W2, O, B, G, E</p>
	<p data-bbox="440 940 521 966"><b>SC2311L</b></p> <ul data-bbox="440 976 834 1472" style="list-style-type: none"> <li>• Non-programmable</li> <li>• Two-stage heat, single-stage cool</li> <li>• Single-stage heat pump with aux. heat</li> <li>• Elegant design with soft-touch controls</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• Manual Changeover</li> <li>• Adjustable temperature differential</li> <li>• Field adjustable calibration</li> <li>• Large LCD display with backlight</li> <li>• Hardwired</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Zoning system compatible</li> <li>• Status LED</li> <li>• Selectable °F and °C</li> </ul>	<ul data-bbox="867 940 1276 1171" style="list-style-type: none"> <li>• Electrical rating:               <ul data-bbox="883 972 1166 1066" style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	<p data-bbox="1321 940 1528 966">R, C, W1/O/B, Y, W2, E, G</p>
	<p data-bbox="440 1503 553 1528"><b>ACC-WIH21</b></p> <ul data-bbox="440 1539 834 1801" style="list-style-type: none"> <li>• Transfers the program and/or configuration from one thermostat to another like model in seconds</li> <li>• Saves valuable installation time</li> <li>• For use with select SimpleComfort® thermostats featuring ICM's patented SimpleSet™ Target programming technology</li> </ul>		



## Thermostats


ICM Control	Features and Applications	Specifications	Terminations
<p><b>Standard Programmable Thermostats</b></p> 	<p><b>SC3001L</b></p> <ul style="list-style-type: none"> <li>• Programmable</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Single-stage Heat/Cool</li> <li>• Single-stage heat pump</li> <li>• Soft-touch controls and large LCD display with backlight</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New SimpleSet™ Target Programming technology</li> <li>• Manual Changeover</li> <li>• Adjustable temperature differential</li> <li>• Field adjustable calibration</li> <li>• Hardwired</li> <li>• Permanent memory</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Compatible with heat pump, gas, oil or electric systems</li> <li>• Zoning system compatible                             <ul style="list-style-type: none"> <li>• Selectable °F and °C</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	<p>RC, RH, W, Y, O, B, G</p>
	<p><b>SC3010L</b></p> <ul style="list-style-type: none"> <li>• Programmable</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Single-stage Heat/Cool</li> <li>• Single-stage heat pump</li> <li>• Soft-touch controls and large LCD display with backlight</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New SimpleSet™ Target Programming technology</li> <li>• Manual Changeover</li> <li>• Adjustable temperature differential</li> <li>• Field adjustable calibration</li> <li>• Dual powered</li> <li>• Low battery indicator</li> <li>• Precise temperature sensing</li> <li>• Easy access terminal block</li> <li>• Compatible with heat pump, gas, oil or electric systems</li> <li>• 4- or 5-wire compatible                             <ul style="list-style-type: none"> <li>• Vacation hold</li> </ul> </li> <li>• Freeze protection feature                             <ul style="list-style-type: none"> <li>• Zoning system compatible</li> </ul> </li> <li>• High temp protection                             <ul style="list-style-type: none"> <li>• Selectable and °F and °C</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F</li> </ul>	<p>RC, RH, W, C, Y, O, B, G</p>
	<p><b>SC3211L</b></p> <ul style="list-style-type: none"> <li>• Programmable</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Two-stage heat pump</li> <li>• Soft-touch controls and large LCD display with backlight</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New SimpleSet™ Target Programming technology</li> <li>• Manual Changeover</li> <li>• Adjustable temp differential                             <ul style="list-style-type: none"> <li>• Keypad lockout</li> </ul> </li> <li>• Field adjustable calibration                             <ul style="list-style-type: none"> <li>• Vacation hold</li> </ul> </li> <li>• Hardwired                             <ul style="list-style-type: none"> <li>• Status LEDs</li> </ul> </li> <li>• Precise temperature sensing                             <ul style="list-style-type: none"> <li>• Selectable °F and °C</li> </ul> </li> <li>• Easy access terminal block                             <ul style="list-style-type: none"> <li>• Zoning system compatible</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>- 24 VAC (18-30 VAC)</li> <li>- 1 amp maximum per terminal</li> <li>- 3 amp maximum total load</li> </ul> </li> <li>• Temperature Control Ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	<p>R, C, Y1, Y2, W2, O, B, G, E, L</p>





## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
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### Standard Programmable Thermostats

	<p><b>SC3000L</b></p> <ul style="list-style-type: none"> <li>• For single-stage heat/cool or single-stage heat pump</li> <li>• 7-day, 5-2-day and 5-1-1-day programming</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• New SimpleSet™ Target Programming technology</li> <li>• Large display with backlight</li> <li>• Adjustable temperature differential</li> <li>• Battery powered</li> <li>• Manual changeover</li> <li>• Permanent memory</li> <li>• Easy access terminal block</li> <li>• Field adjustable calibration</li> <li>• Millivolt compatible</li> <li>• Freeze protection</li> <li>• Zoning system compatible</li> <li>• Soft-touch controls</li> <li>• Selectable °F and °C</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> <li>• Easy access terminal block</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	<p>RC, RH, W, Y, O, B, G</p>
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### PRO Series Programmable Thermostats

	<p><b>SC5010</b></p> <ul style="list-style-type: none"> <li>• For single-stage heat/cool or single-stage heat pump</li> <li>• 7-day, 5-2-day and 5-1-1-day programming</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• Manual or auto changeover</li> <li>• ICM patent-pending SimpleSet™ Target Programming technology</li> <li>• Large display with backlight</li> <li>• Permanent memory</li> <li>• Dual powered (battery or hardwire)</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> <li>• Easy access terminal block</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	<p>RC, RH, C, W/O/B, Y, G, S1, S2</p>
	<p><b>SC5011</b></p> <ul style="list-style-type: none"> <li>• For single-stage heat/cool or single-stage heat pump</li> <li>• 7-day, 5-2-day and 5-1-1-day programming</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• ICM SimpleSet™ Target Programming</li> <li>• Large backlit LCD display</li> <li>• Hardwired</li> <li>• Auto or Manual changeover</li> <li>• Permanent memory</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> <li>• Easy access terminal block</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	<p>RC, RH, C, W/O/B, Y, G, S1, S2</p>



# INNOVATIVE & AFFORDABLE

## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<b>Standard Non-Programmable Thermostats</b>			
	<p><b>SC1600L</b></p> <ul style="list-style-type: none"> <li>• Single-stage heat thermostat</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• Large backlit LCD display</li> <li>• Compatible with gas, oil and hydronic systems</li> <li>• Battery operated</li> <li>• Low battery indicator</li> <li>• Millivolt compatible</li> <li>• Freeze protection feature</li> <li>• Remote sensor compatible</li> <li>• Selectable °F and °C</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	R, W, S1, S2
	<p><b>SC2000L</b></p> <ul style="list-style-type: none"> <li>• For single-stage heat/cool or single-stage heat pump</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• Large backlit LCD display</li> <li>• Battery operated</li> <li>• Low battery indicator</li> <li>• Millivolt compatible</li> <li>• Manual changeover</li> <li>• Freeze protection</li> <li>• Zone compatible</li> <li>• Selectable °F and °C</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	RC, RH, W, Y, O, B, G
	<p><b>SC2010L</b></p> <ul style="list-style-type: none"> <li>• For single-stage heat/cool or single-stage heat pump</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• SimpleSet™ target programming technology (config. only)</li> <li>• Large display with backlight</li> <li>• Adjustable temperature differential</li> <li>• Dual powered</li> <li>• Manual changeover</li> <li>• Permanent memory</li> <li>• Easy access terminal block</li> <li>• Field adjustable calibration</li> <li>• 4- or 5-wire compatible</li> <li>• Freeze protection</li> <li>• Keypad lockout</li> <li>• Selectable °F and °C</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	RC, RH, C, W, Y, O, B, G
	<p><b>SC2201L</b></p> <ul style="list-style-type: none"> <li>• For two-stage heat, one-stage cool heat pump only</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• Large backlit LCD display</li> <li>• Hardwired</li> <li>• Manual changeover</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	R, C, Y1, W2, O, B, G, E
	<p><b>SC2211L</b></p> <ul style="list-style-type: none"> <li>• For three-stage heat, two-stage cool heat pump</li> <li>• ICM patented Thermal Intrusion Barrier</li> <li>• SimpleSet™ target programming technology (config. only)</li> <li>• Large display with backlight</li> <li>• Adjustable temperature differential</li> <li>• Hardwired</li> <li>• Manual changeover</li> <li>• Permanent memory</li> <li>• Easy access terminal block</li> <li>• Field adjustable calibration</li> <li>• Zoning system compatible</li> <li>• Selectable °F and °C</li> <li>• Permanent memory</li> <li>• Status LED</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> <li>• Temperature control ranges: 45°F to 90°F, Accuracy ± 1°F</li> </ul>	R, C, Y1, Y2, W2, O, B, G, E, L, W3



## Simple to install and operate enhanced quality features






Simplicity is in its name. ICM Controls **SimpleComfort® PRO** thermostats feature innovation and technology that delivers measurable value, simplifies installation and increases profitability. Blending the latest advances in thermostat technology with our new, patented **thermal intrusion barrier** and patented **SimpleSet™ Target Programming**, our **PRO** series thermostats set new industry standards exclusive to ICM Controls.

### **SimpleComfort® PRO** thermostats feature:



- Flexible 7-day, 5-2-day and 5-1-1-day programming (5000 series models only)
- ICM patented **thermal intrusion barrier**
- New ICM patented **SimpleSet™ Target Programming** technology
- Large display with backlight
- Permanent memory
- Accuracy:  $\pm 1^{\circ}\text{F}$ ,  $\pm 0.5^{\circ}\text{C}$
- Manual or auto changeover
- Field adjustable calibration
- Adjustable maximum heat/minimum cool setpoints
- Extra comfort and energy savings modes between stages
- Adjustable temperature differential
- Integrated four-minute short-cycle protection
- Configurable remote sensor compatible
- Mercury-free, environmentally safe
- Selectable  $^{\circ}\text{F}$  or  $^{\circ}\text{C}$
- Keypad lockout
- Soft-touch controls
- Remote sensor compatible
- Status LEDs

## Thermostats




ICM Control	Features and Applications	Specifications	Terminations
<b>Simple Comfort Non-Programmable Thermostat</b>			
	<p><b>SC4010-LF</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• Single-stage heat/cool</li> <li>• Single-stage heat pump</li> <li>• Dual Powered</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ technology (configuration mode only)</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Permanent memory</li> <li>• Adjustable max heat/min cool setpoints</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Selectable °F or °C</li> <li>• Keypad lockout</li> <li>• Status LED</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	RC, RH, C, W/O/B, Y, G, S1, S2
<b>PRO Series Non-Programmable Thermostats</b>			
	<p><b>SC4011</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• Single-stage heat/cool</li> <li>• Single-stage heat pump</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology (Configuration mode only)</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Permanent memory</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	RC, RH, C, W/O/B, Y, G, S1, S2
	<p><b>SC4211</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• Two-stage heat pump</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology (Configuration mode only)</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Permanent memory</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	R, C, Y1, Y2, W2, O/B, G, E, L, S1, S2



## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<b>PRO Non-Programmable Thermostats</b>			
	<p><b>SC4811</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• Two-stage heat/cool</li> <li>• Two-stage heat pump</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology (Configuration mode only)</li> <li>• Large display with backlight</li> <li>• Permanent memory</li> <li>• Accuracy: ± 1°F, +/- 0.5°C</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Soft-touch controls</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating: <ul style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	<p>R, C, W1/O/B, Y1, W2, Y2, G, S1, S2</p>
	<p><b>SC4812</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• Three-stage heat/two-stage cool</li> <li>• Two-stage heat pump</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology (configuration mode only)</li> <li>• Large display with backlight</li> <li>• Dual fuel compatible</li> <li>• Permanent memory</li> <li>• Accuracy: ± 1°F, +/- 0.5°C</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Soft-touch controls</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating: <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 3 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	<p>R, C, W1/O/B, Y1, W2, Y2, G, W3, S1, S2</p>



## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<b>PRO Series Non-Programmable Thermostats</b>			
	<p><b>SC4813</b></p> <ul style="list-style-type: none"> <li>• Programmable, permanent memory</li> <li>• Three-stage heat/Two-stage cool</li> <li>• Two-stage heat pump</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology (Configuration mode only)</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	R, C, W1/O/B, Y1, W2, Y2, G, W3, S1, S2
<b>PRO Series Programmable Thermostats</b>			
	<p><b>SC5211</b></p> <ul style="list-style-type: none"> <li>• Programmable, permanent memory</li> <li>• Two-stage heat pump</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Selectable °F or °C</li> <li>• Keypad lockout</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	R, C, Y1, Y2, W2, O/B, G, E, L, S1, S2
<b>Simple Comfort Programmable Thermostats</b>			
	<p><b>SC5813</b></p> <ul style="list-style-type: none"> <li>• Programmable, permanent memory</li> <li>• Three-stage heat/two-stage cool</li> <li>• Two-stage heat pump</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology</li> <li>• Soft-touch controls and large display with backlight</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:                             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	R, C, W1/O/B, Y1, W2, Y2, G, W3, S1, S2








## Thermostats




ICM Control	Features and Applications	Specifications	Terminations
<b>PRO Series Programmable Thermostats</b>			
	<p><b>SC5811</b></p> <ul style="list-style-type: none"> <li>• Programmable</li> <li>• Two-stage heat/cool</li> <li>• Two-stage heat pump</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology</li> <li>• Large display with backlight</li> <li>• Permanent memory</li> <li>• Accuracy: +/- 1°F, +/- 0.5°C</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Selectable °F or °C</li> <li>• Keypad lockout</li> <li>• Soft-touch controls</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:             <ul style="list-style-type: none"> <li>• 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ± 1°F (± 0.5°C)</li> </ul>	<p>R, C, W1/O/B, Y1, W2, Y2, G, S1, S2</p>
	<p><b>SC5812</b></p> <ul style="list-style-type: none"> <li>• Programmable</li> <li>• Three-stage heat/two-stage cool</li> <li>• Two-stage heat pump</li> <li>• Flexible 7-Day, 5-2-Day and 5-1-1-Day programming</li> <li>• Hardwired</li> <li>• New ICM patented thermal intrusion barrier</li> <li>• New ICM patent-pending SimpleSet™ Target Programming technology</li> <li>• Dual fuel compatible</li> <li>• Large display with backlight</li> <li>• Permanent memory</li> <li>• Accuracy: +/- 1°F, +/- 0.5°C</li> <li>• Manual or auto changeover</li> <li>• Field adjustable calibration</li> <li>• Adjustable maximum heat/minimum cool setpoints</li> <li>• Adjustable temperature differential</li> <li>• Configurable remote sensor compatible</li> <li>• Keypad lockout</li> <li>• Soft-touch controls</li> <li>• Status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating:             <ul style="list-style-type: none"> <li>• 24 VAC (18 to 30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 4 amp maximum total load</li> </ul> </li> <li>• Temperature Control Range: 45°F to 90°F (7°C to 32°C)</li> <li>• Accuracy: ±1°F (± 0.5°C)</li> </ul>	<p>R, C, W1/O/B, Y1, W2, Y2, G, W3, S1, S2</p>

## Thermostats

ICM Control	Features and Applications	Specifications	Terminations
<b>Fan Coil Thermostats</b>			
	<p><b>SC700V</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• 4 pipe heat/cool</li> <li>• 3 speed fan</li> <li>• Hardwired</li> <li>• Manual changeover</li> <li>• 110-277 VAC</li> <li>• Remote room temperature sensor (optional: order ACC-RT103)</li> </ul>	<ul style="list-style-type: none"> <li>• Fan Relay: 6A @ 120VAC, 3A @ 240VAC</li> <li>• Heat/Cool Relay: 1A @ 120VAC / 240VAC</li> <li>• Temp Control Range: 50°F-90°F</li> <li>• Accuracy: +/- 2°F</li> <li>• Deadband: 4°F</li> </ul>	<p>L1, L2, Y, W, GL, GM, GH, RS</p>
	<p><b>SC710V</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• 4 pipe heat/cool</li> <li>• 3 speed fan</li> <li>• Hardwired</li> <li>• Manual changeover</li> <li>• 110-277 VAC</li> <li>• Remote room temperature sensor (Optional: Order ACC-RT103)</li> </ul>	<ul style="list-style-type: none"> <li>• Fan Relay: 6A @ 120VAC, 3A @ 240VAC</li> <li>• Heat/Cool Relay: 1A @ 120VAC / 240VAC</li> <li>• Temp Control Ranges: 50°F to 90°F</li> <li>• Accuracy: 2°F</li> <li>• Differential Range: Fixed 2°F</li> </ul>	<p>L1, L2, Y, W, GL, GM, GH, RS</p>
	<p><b>SC900V</b></p> <ul style="list-style-type: none"> <li>• Non-programmable</li> <li>• 2 or 4 pipe</li> <li>• 3 speed fan</li> <li>• Hardwired</li> <li>• Pipe sensor for seasonal changeover</li> <li>• 85-250 VAC</li> <li>• Manual or auto changeover</li> <li>• Selectable °F or °C</li> <li>• Valve purge timer</li> <li>• Remote room temperature sensor (Optional: Order ACC-RT103)</li> <li>• Large backlit display</li> <li>• Icons for fan and outputs</li> <li>• Permanent memory</li> <li>• Key pad lockout function</li> <li>• Maximum heat/minimum cool set point limits</li> <li>• Soft touch controls</li> </ul>	<ul style="list-style-type: none"> <li>• Fan Relay: 6A @ 120VAC / 240VAC</li> <li>• Heat/Cool Relay: 1A @ 120VAC / 240VAC</li> </ul>	<p>L, N, H, C, FH, FM, FL, RS, SC, PS</p>



## Thermostats

ICM Control Garage Thermostats	Features and Applications	Specifications	Terminations
	<p><b>FS1500L</b></p> <ul style="list-style-type: none"> <li>• This easy-to-operate garage thermostat allows you to maintain temperature to your garage/storage area. Attractive, extra-rugged, highly reliable and accurate, this thermostat will look and perform like new for years to come. Ideal for garages, warehouse, storage facilities, etc.</li> <li>• Controls Single Stage Heating Systems</li> <li>• Millivolt and Hydronic (water or steam) System Compatible</li> <li>• Compatible with Gas and Electric Systems</li> <li>• Battery Operated</li> <li>• Backlit Display</li> <li>• Mercury-Free, Environmentally Safe</li> <li>• Remote sensor compatible (ACC-RT104)</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical rating: 24 VAC (18-30 VAC) <ul style="list-style-type: none"> <li>• 1 amp maximum per terminal</li> <li>• 2 amp maximum total load</li> </ul> </li> <li>• Temperature control ranges: 35°F to 75°F, Accuracy: <math>\pm 1^\circ\text{F}</math></li> <li>• System Configurations: Single-stage heat, gas, oil, electric</li> </ul>	S1, S2, W, G, R
	<p><b>FS1500VL</b></p> <ul style="list-style-type: none"> <li>• Controls single stage heating systems (heat only)</li> <li>• Millivolt, hydronic (water or steam) system, gas and electric systems</li> <li>• Battery operated</li> <li>• Backlit display</li> <li>• Mercury-free, environmentally safe</li> <li>• Remote sensor compatible (ACC-RT104)</li> <li>• Vertical design for easy J-box installation</li> <li>• Perfect for use with unit heaters</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical Rating: 24 VAC (18-30 VAC)</li> <li>• 1 amp maximum per terminal</li> <li>• 2 amp maximum total load</li> <li>• Easy access terminal block</li> <li>• Temperature control ranges: 35°F to 75°F, Accuracy: <math>\pm 1^\circ\text{F}</math></li> </ul>	R, W, G, S1, S2
	<p><b>FS40</b></p> <ul style="list-style-type: none"> <li>• When it comes to freezing cold temperatures, you can relax knowing that ICM's Frost Sentry™ is on guard. This low-cost, single-set point thermostat is perfect for areas requiring temporary or permanent freeze protection. Its special foam backing improves accuracy by providing separation from the wall at installation, while sealing up any unsightly wiring holes. This insulated backing helps eliminate the risk of "wall effect" (wall temperature causing false temperature readings). Ideal for storage areas, garages, workshops, crawl spaces, and other critical areas where protection from extreme cold is essential.</li> <li>• Easy, 2-wire installation</li> <li>• Fixed set point at 40°F</li> <li>• Special foam backing improves accuracy</li> <li>• Compatible with most standard electric heating units</li> <li>• Ideal for storage areas, garages, workshops and crawl spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Input: 18-30 VAC</li> <li>• Output: 2 amp maximum</li> <li>• Temperature Set Point: Fixed 40°F</li> <li>• Accuracy: <math>\pm 5^\circ\text{F}</math></li> </ul>	R, W, G







## Thermostats

### Features

- One-time configurable temperature minimum/maximum set points
- Patent-pending Abnormal Rate of Change (ARC) detection technology
- Placebo option
- 7-Day, 5-2 day, and 5-1-1 day programming (programmable models only)
- Auto and/or manual changeover
- Large, digital backlit display
- Selectable °F and °C
- Precise temperature sensing (accuracy  $\pm 1^\circ\text{F}$ )
- Patented Thermal Intrusion Barrier
- Permanent memory
- Adjustable temperature differential
- Easy-access terminal block
- Integrated 4-minute short-cycle timer
- Soft-touch controls
- Status LEDs (all models but MP2010L)
- Mercury-free, environmentally safe

### Specifications

- Electrical Rating: 24 VAC (18-30 VAC)
  - 1 amp maximum per terminal
  - 3 amp maximum total load (4 amps on multiple-stage units)
- Temperature control ranges:
  - 45°F to 75°F Heat (7°C to 24°C)
  - 70°F to 90°F Cool (21°C to 32°C)

	Item ID	Type	Stages	Changeover	Power	Remote Sensor Compatible	Terminations
<b>I3 Standard Thermostats</b>							
	MP2010L	Non-Programmable	1H/1C or 1HP	Manual	Dual	N	RC, RH, C, W, Y, O, B, G
	MP2211L	Non-Programmable	3H/2C HP Only	Manual	HW	N	R, C, Y1, Y2, W2, O, B, G, E, L, W3
	MP4010L	Non-Programmable	1H/1C or 1HP	Auto/Manual	Dual	Y	RC, RH, C, W/O/B, Y, G, S1, S2
	MP4211L	Non-Programmable	2-Stage HP Only	Auto/Manual	HW	Y	R, C, Y1, Y2, W2, O/B, G, E, L, S1, S2
	MP5010L	Programmable	1H/1C or 1HP	Auto/Manual	Dual	Y	RC, RH, C, W/O/B, Y, G, S1, S2
	MP5211L	Programmable	2-Stage HP Only	Auto/Manual	HW	Y	R, C, Y1, Y2, W2, O/B, G, E, L, S1, S2

## Dryout Thermostats

### Features

- Two-wire installation
- Four fixed setpoint models to choose from 60°F to 75°F
- Temporary use for dryout applications
- Can be used as a low ambient cutoff switch



### Specifications

- Input: 18-30 VAC
- Output: 2 amp maximum
- Temperature Control Range: 60°F to 75°F (±9°F)

Item ID	Dryout Thermostats			
	SC060	SC065	SC070	SC075
Temperature Range	60°F ±9°	65°F ±9°	70°F ±9°	75°F ±9°
2-Wire	•	•	•	•
Heat	•	•	•	
Cool				•

## Air Pressure Sensing Switch Kits



Manufactured by  
CLEVELAND CONTROLS

### Features

- Mounts with the diaphragm in vertical plane
- Easy installation
- Designed for residential furnace and light commercial aftermarket applications; duct heater, oven, and other HVAC or energy management applications



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS000	Field Adjustable Switch Kit	0.10"wc To 10.0"wc.	-40F To 190F	SPDT	1/4" Quick-Connect Terminals	UL, CUL



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS495	Field Adjustable Switch Kit	0.20"wc To 1.0"wc.	-40F To 190F	SPDT	3 Male 90° Quick-Connect terminals	UL



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS498	Field Adjustable Switch Kit	1.0"wc To 4.0"wc.	-40F To 190F	SPDT	3 Male 90° Quick-Connect terminals	UL



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS222	Field Adjustable Switch Kit	0.05"wc To 12.0"wc.	-40F To 180F	SPDT	Screw Top Terminals With Cup Washers	UL



## Air Pressure Sensing Switch Kits



Manufactured by  
CLEVELAND CONTROLS

### Features

- Mounts with the diaphragm in vertical plane
- Easy installation
- Designed for residential furnace and light commercial aftermarket applications; duct heater, oven, and other HVAC or energy management applications



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS221	Fixed Set Point Switch Kit	Operates On Pressure Rise At 0.05±0.02"w.c.	-40F To 180F	SPDT	1/4" Male 90° Quick-Connect terminals	UL



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS400	Field Adjustable Switch Kit	0.15"w.c To 5.0"w.c.	-40F To 180F	SPDT	Screw Terminals With Cup Washers	UL, CUL



Item ID	Description	Range	Operating Temp. Range	Contact Arrangement	Connection	Approval
<b>Packard</b>						
PS415	Field Adjustable Switch Kit	0.15"w.c To 5.0"w.c.	-40F To 180F	SPST-NO, SPST-NC, SPDT	1/4" 90° Quick-Connect Terminals, Screw Terminals With Cup Washers	UL



Item ID	Description	Includes
<b>Packard</b>		
PS606	Universal Air Flow Sample Probe & Tubing Kit	7" Universal Probe, Mounting Flange, 6-32 Slotted Flange-Locking set Screw, 3" Tubing

## Thermocouples

### Features

- Designed to simplify installation on automatic controls and burners.
- Stainless steel head and weld at tip to provide reliable performance.
- Kit includes adapters to fit most types of pilot burners.
- Five popular lengths are available.



Item ID	Length (In.)	Honeywell	Replaces		
			Johnson	Penn	Robertshaw
<b>Packard</b>					
22218	18	Q340A1066	K19AT-18 K15DS-18	K19AT-18 K15DS-18	1900-018 1980-018
22224	24	Q340A1074	K19AT-24 K15DS-24	K19AT-24 K15DS-24	1900-024 1980-024
22230	30	Q340A1082	K19AT-30 K15DS-30	K19AT-30 K15DS-30	1900-030 1980-030
22236	36	Q340A1090	K19AT-36 K15DS-36	K19AT-36 K15DS-36	1900-036 1980-036
22248	48	Q340A1108	K19AT-48 K15DS-48	K19AT-48 K15DS-48	1900-048 1980-048





## Universal Relay and Blower Controls

ICM Control	Features and Applications	Specifications	Replaces
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### Universal Motor Starting Relay

**UMSR-50**

- Replacement for all standard potential relays
- Patented differential voltage sensing
- No user-adjustments required
- Non-positional mounting configuration
- 50A switching capabilities
- Universal mounting bracket for easy installation
- .250" quick connect termination
- Safety timer

**General:**

- Input:
  - Voltage Rating: 110-270 VAC, Single Phase
  - Maximum Voltage Contact Rating: 502 VAC (absolute)
- Motor power rating: Up to 10 HP
- Operating Position: Non-positional
- Safety Time Out: Approximately 1-second per 100 microfarads
- Consumption: 5VA max.
- Insulation: Class B (130°C); Conforms to IEC 1000- standards (6kV impulse / 6kV contact)
- Life Expectancy (min. operations):
  - Mechanical: 1 x 10<sup>6</sup>
  - Electrical: 1x10<sup>6</sup> at 16A 400 VAC  
5x10<sup>5</sup> at 35A 400 VAC (break only)  
5x10<sup>5</sup> at 50A 400 VAC (break only)

**Contacts:**

- Contact rating: 50A (break only), 400 VAC cos  $\theta$  = 0.7 to 0.8

- All standard potential relays
- Supco: APR5, SUPR

### Fan Blower - Dual On/Off

**ICM255**

- Low cost open board design
- High power, relay output
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay purges ducts of residual air
- ON delay allows air to reach the proper comfort level prior to energizing the fan

- Voltage: 18-30 VAC
  - N.O.: 20 amps @ 240 VAC
  - N.C.: 20 amps @ 240 VAC
- Time delays fixed:
  - ON: 1 second
  - OFF: 60 seconds
- Dimensions: 2.5" x 2.5"

- A-1: 5893
- Bard: 8201-056
- Mars: 32574
- Rheem: 42-22515-01  
42-22515-02  
42-22515-03
- Snyder General/ ICP: 1395336

### Fan Blower Controls - Form, Fit and Functional OEM Replacement Parts

**ICM271**







- Reliable solid state fan blower control
- Specifically designed to replace popular gas furnace centers
- Pin selectable blower delays
- High power, relay output
- Dual function fan delay timer
- Controls the circulating fan in HP, A/C and forced air systems
- OFF delay purges ducts of residual air
- ON delay allows air to reach the proper comfort level prior to energizing the fan

- Voltage: 18-30 VAC
- Contact ratings: N.O.: 20 amps  
N.C.: 10 amps
- Time delays: Heat ON delay: 75 seconds  
Heat OFF delay: 105 seconds  
Cool OFF delay: 90 seconds

- Carrier: 302075-3  
CES0110017  
CES0110018  
HH84AA010  
HH84AA011  
HH84AA012  
HH84AA013/020  
P771-7002
- Robertshaw: 695-100



## Blower and Furnace Controls





ICM Control	Features and Applications	Specifications	Replaces
<b>Fan Blower Controls - Form, Fit and Functional OEM Replacement Parts</b>			
	<p><b>ICM275</b></p> <ul style="list-style-type: none"> <li>• Heavy duty heat relay</li> <li>• Purges ducts of residual air</li> <li>• Integral short cycle protection</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Contact ratings: High: 20 amps @ 240 VAC Low: 10 amps @ 240 VAC</li> <li>• Time delays: Heat ON delay: 60 seconds Heat OFF delay: 60-240 seconds Cool OFF delay: 90 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier: CES0110019, HH84AA001, HH84AA003, HH84AA005, HH84AA009, HH84AA014, HH84AA015, HH84AA021</li> <li>• Robertshaw: 695-101</li> </ul>
	<p><b>ICM277</b></p> <ul style="list-style-type: none"> <li>• Microprocessor-based fan blower</li> <li>• For circulating fan in heat pump, A/C and forced air systems</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Contact ratings: N.O.: 20 amps N.C.: 10 amps</li> <li>• Time delays: Blower ON: 7 seconds Blower OFF: 65 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Goodman: B1370735S, PCBFM131S</li> </ul> 
<b>Furnace Controls</b>			
	<p><b>ICM280</b></p> <ul style="list-style-type: none"> <li>• Microprocessor-based fan blower</li> <li>• Inducer fan outputs</li> <li>• Hot surface ignitor output</li> <li>• Flame sensor input</li> <li>• Gas valve output</li> <li>• Status LED for fault codes</li> <li>• Twinning compatible with another ICM280 board</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: Line (98-132 VAC) @ 60 Hz</li> <li>• Fan: 2 HP @ 240 VAC</li> <li>• Inducer motor: 7 amps @ 250 VAC</li> <li>• Gas valve: 1 amps @ 24 VAC</li> <li>• Ignitor: 5 amps @ 120 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Goodman: B1809906, B1809908, B1809910, B1809913, B1809913S</li> <li>• UTEC: 1012-933D</li> <li>• Texas Instruments: 41F-5</li> <li>• White-Rodgers: 50T35-730, 50T35-743</li> </ul>
	<p><b>ICM281</b></p> <ul style="list-style-type: none"> <li>• Control gas valve, ignitor, blower motor, inducer, humidifier and air cleaner</li> <li>• Microprocessor-based</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Model selection of 80+ and 90+ furnace operation</li> <li>• Reverse polarity protection</li> <li>• Secondary brownout voltage protection</li> <li>• Heating and cooling fan functions in response to standard thermostat</li> <li>• Provides diagnostic LEDs to aid in troubleshooting</li> <li>• Twinning compatible with another ICM281 board</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: Line (98-132 VAC) @ 60 Hz</li> <li>• Operating temperature: -40°F to 176°F -40°C to 75°C</li> <li>• Ignitor: 5A @ 120 VAC</li> <li>• Cool blower: 30A, 2HP, 240 VAC</li> <li>• Heat: 5A, 1/2 HP, 240 VAC</li> <li>• Inducer motor: 4A, FLA-8.0 LRA @ 120 VAC</li> <li>• Gas valve: 1.5A @ 30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier: CES0110020, CES0110048, CES0110057-00, CES0110057-01, CES0110057-02, HH84A016</li> </ul>
	<p><b>ICM282A</b></p> <ul style="list-style-type: none"> <li>• Control gas valve, ignitor, blower motor, inducer, humidifier &amp; air cleaner</li> <li>• Microprocessor-based</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Reverse polarity protection</li> <li>• Secondary brownout voltage protection</li> <li>• Heating and cooling fan functions in response to standard thermostat</li> <li>• Provides diagnostic LEDs to aid in troubleshooting</li> <li>• Includes adapter harness (not shown)</li> <li>• Twinning compatible with another ICM282A board</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: Line (98-132 VAC) @ 60 Hz</li> <li>• Operating temperature: -40°F to 176°F -40°C to 75°C</li> <li>• Ignitor: 5A @ 120 VAC</li> <li>• Cool blower: 30A, 2HP, 240 VAC</li> <li>• Heat: 5A, 1/2 HP, 240 VAC</li> <li>• Inducer motor: 4A, FLA-8.0 LRA @ 120 VAC</li> <li>• Gas valve: 1.5A @ 30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier: HK42FZ004, HK42FZ007, HK42FZ008, HK42FZ009, HK42FZ011, HK42FZ013, HK42FZ016, HK42FZ034, 325878-751</li> </ul>











## Furnace Controls

ICM Control	Features and Applications	Specifications	Replaces
 <p>OEM</p>	<p><b>ICM2801</b></p> <ul style="list-style-type: none"> <li>• Low cost form, fit and functional replacement for York/Evcon 7990-319P</li> <li>• Controls vent motor, blower control, hot surface ignitor and gas valve</li> <li>• Monitors timing, trial for ignition, flame sensing and lockout</li> <li>• Microprocessor-based</li> <li>• Reverse polarity detection</li> <li>• 100 percent lockout safety feature</li> <li>• Compatible with LP or Natural gas</li> <li>• Twinning compatible with another ICM2801 control</li> <li>• Status LED for fault codes to aid in troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Line voltage Range: 98 to 132 VAC @ 60Hz</li> <li>• Ignitor: 5A @ 120 VAC</li> </ul> <p><b>Electrical</b></p> <ul style="list-style-type: none"> <li>• Cool Blower: 10A, 2 HP, 240 VAC</li> <li>• Heat: 5A, 1/2 HP, 250 VAC</li> <li>• Inducer Motor: 4A FLA, 8A LRA @ 120 VAC</li> <li>• Gas Valve: 1A @ 24 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• York/Evcon 7990-319P</li> </ul>
	<p><b>ICM2804</b></p> <ul style="list-style-type: none"> <li>• Low cost form, fit and functional replacement for Carrier: CES0110074-01</li> <li>• Microprocessor-based</li> <li>• Controls vent motor and blower control</li> <li>• Monitors limit switch, pressure switch and gas valve</li> <li>• 100% lockout safety feature</li> <li>• Compatible with LP or Natural Gas</li> <li>• Status LED for fault codes to aid in troubleshooting</li> </ul>	<p><b>Electrical:</b></p> <ul style="list-style-type: none"> <li>• Line voltage Range: 98-132 VAC @ 60Hz</li> <li>• Cool Blower: 20A, 2 HP, 240 VAC</li> <li>• Heat: 10A, 240 VAC</li> <li>• Inducer Motor: 4A FLA, 8A LRA @ 120 VAC</li> </ul> <p><b>Timing:</b></p> <ul style="list-style-type: none"> <li>• Inducer Pre-Purge Time: 1 second</li> <li>• Heat Blower On Delay: 45 seconds</li> <li>• Heat Blower Off Delays: 120 or 180 second</li> <li>• Cool Blower On Delay: 1 second</li> <li>• Cool Blower Off Delay: 1 second</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier CES0110074-01</li> </ul>
	<p><b>ICM2808</b></p> <ul style="list-style-type: none"> <li>• Low cost fit, form and functional replacement for the York S1-331-03010000 and S1-331-02956000 furnace control boards.</li> <li>• Controls gas valve, Ignitor, blower motor, Inducer, humidifier, and air cleaner.</li> <li>• Microprocessor-based precision</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Twinning compatible with another ICM2808 control</li> <li>• Reverse polarity protection</li> <li>• Secondary brownout voltage protection</li> <li>• Compatible with 24 VAC standard thermostat</li> <li>• Provides dual-color diagnostic LED to aid in troubleshooting</li> </ul>	<p><b>Electrical:</b></p> <ul style="list-style-type: none"> <li>• Voltage Range: line (98 to 132VAC) @ 60Hz</li> <li>• Control voltage Range: 18-30VAC @ 60Hz</li> <li>• Relay Outputs: Meets or exceeds O.E.M. board</li> </ul> <p><b>Timing:</b></p> <ul style="list-style-type: none"> <li>• Heat Blower On Delay: 30 seconds</li> <li>• Heat Blower Off Delay: 90-180 seconds</li> </ul> <p><b>ENVIRONMENT:</b></p> <ul style="list-style-type: none"> <li>• Ambient Temperature: <ul style="list-style-type: none"> <li>• Operating: -40°F to 176°F</li> <li>• Storage: -40°F to 185°F</li> </ul> </li> <li>• Humidity: 5% to 95% R.H. (non-condensing) @ +55°F</li> </ul>	<ul style="list-style-type: none"> <li>• York S1-331-03010000, S1-331-02956000 (adaptor bracket for older systems not included)</li> </ul>
	<p><b>ICM2810</b></p> <ul style="list-style-type: none"> <li>• Microprocessor-based precision</li> <li>• Controls inducer and blower fan motors, hot surface ignitor, and gas valve</li> <li>• Monitors timing, trial for ignition, flame sensing, pressure &amp; limit switches, &amp; lockout</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Reverse polarity protection</li> <li>• Twinning compatible w/ another ICM2810 boards</li> <li>• Compatible with LP or natural gas</li> <li>• Diagnostic LED to aid in testing/troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-purge time: 15 seconds</li> <li>• Ignitor warm up time: 18 seconds</li> <li>• Post-purge time: 15 seconds</li> <li>• Total trials for ignition: 3 (auto reset after 1 hour)</li> <li>• Heat blower ON: 30 seconds</li> <li>• Heat blower OFF: Selectable 90/120/150/180 seconds</li> <li>• Fan (Heat) ON/OFF delay: 1 second</li> <li>• Cool ON: 5 seconds</li> <li>• Cool OFF: 45 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Goodman: PCBFB136</li> </ul>



## Furnace Controls

ICM Control	Features and Applications	Specifications	Replaces
	<p><b>ICM286</b></p> <ul style="list-style-type: none"> <li>• Microprocessor-based precision</li> <li>• Controls inducer and blower fan motors, hot surface ignitor, &amp; gas valve</li> <li>• Monitors timing, trial for ignition, flame sensing, pressure and limit switches, and lockout</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Reverse polarity protection</li> <li>• Twinning compatible with another ICM286 control board</li> <li>• Compatible with LP or natural gas</li> <li>• Diagnostic LED to aid in testing/troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Trial for Ignition: 7 seconds</li> <li>• Pre-purge Time: 15 seconds</li> <li>• Ignitor Warm Up Time: 7 seconds</li> <li>• Post-Purge Time: 15 seconds</li> <li>• Total Trials for Ignition: 3 (auto reset after 1 hr.)</li> <li>• Heat Blower On: 30 seconds</li> <li>• Heat Blower Off: Selectable 90/120/150/180 sec.</li> <li>• Fan (Heat) On/Off Delay: 1 sec.</li> <li>• Cool On: 5 seconds</li> <li>• Cool Off: 45 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Goodman: PCBBF112S, B18099-26S, 0130F00005S</li> </ul>
	<p><b>ICM289</b></p> <ul style="list-style-type: none"> <li>• Controls inducer fan motor, blower fan and monitors limit switches</li> <li>• Microprocessor based design</li> <li>• Functions with all 24 VAC thermostats</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage Range: Line (98-132 VAC) @ 60 Hz</li> <li>• Cool blower: 20A @ 120 VAC</li> <li>• Heat blower: 20A @ 120 VAC</li> <li>• Inducer motor: 5A @ 120 VAC</li> <li>• Cool blower On Delay: 1 second</li> <li>• Cool blower Off Delay: 1 second</li> <li>• Heat blower On Delay: 45 sec.</li> <li>• Heat blower Off Delay: 90, 150, 210, 270 sec.</li> </ul>	<ul style="list-style-type: none"> <li>• Lennox: Replaces all BCC1, BCC2 and BCC3 circuit boards, including 48K98 and 45K48.</li> </ul>
	<p><b>ICM2805A</b></p> <ul style="list-style-type: none"> <li>• Controls gas valve, inducer draft motor, circulating blower and hot surface ignitor</li> <li>• Monitors timing, trial for ignition, flame sensing, lockout, plus pressure, rollout and limit switches.</li> <li>• Microprocessor-based precision</li> <li>• Twinning compatible w/ another ICM2805 furnace control</li> <li>• Diagnostic LEDs aid in testing and troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage Range: Line (98 to 132 VAC) @ 60Hz</li> <li>• Ignitor: 5A, 120 VAC</li> <li>• Cool Blower: 10A, 2HP, 240 VAC</li> <li>• Heat: 5A, ½ HP, 250 VAC</li> <li>• Inducer Blower: 4A, 120 VAC</li> <li>• Gas Valve: 1A, 24 VAC</li> <li>• Humidifier Motor: 0.5A, 24 VAC</li> <li>• Electronic Air Cleaner: 1A, 120 VA</li> </ul>	<ul style="list-style-type: none"> <li>• Nordyne: 903106-Kit (for use with G3, G4, G5, G6, M2 and M3 furnace modules)</li> </ul>
	<p><b>ICM291</b></p> <ul style="list-style-type: none"> <li>• Direct Spark Ignition (DSI) control board</li> <li>• Microprocessor-based</li> <li>• Controls combustion, blower and indoor motors; spark ignitor and the gas valve</li> <li>• Monitors timing, trial for ignition, flame sensing and lockout</li> <li>• 100% lockout safety feature</li> <li>• Compatible with LP or Natural Gas</li> <li>• Status LED for fault codes to aid in troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Control voltage: 24 VAC (18-30 VAC), 60 Hz</li> <li>• Line voltage: 208/230 VAC, 60 Hz</li> <li>• Power cons: 0.3A plus gas valve current @ 24 VAC</li> <li>• Operating temp: -40°C (-40°F) to 75°C (176°F)</li> </ul> <p><b>Timing</b></p> <ul style="list-style-type: none"> <li>• Pre-purge: 45 seconds</li> <li>• Trial for Ignition: 5+2 seconds</li> <li>• Retry period: Every 20 sec. for 15 min.</li> <li>• Lockout: manual reset</li> <li>• Post-purge: 45 seconds</li> </ul> <p><b>Inputs</b></p> <ul style="list-style-type: none"> <li>• Power: RT and C</li> <li>• Thermostat interface: R, W and G</li> <li>• Safety switches: RS, LS, and CS</li> <li>• Combustion motor Hall Effect sensor</li> <li>• Flame sensing</li> </ul> <p><b>Outputs</b></p> <ul style="list-style-type: none"> <li>• Spark</li> <li>• Gas Valve: GV</li> <li>• Combustion motor: CM</li> <li>• Blower motor: BM</li> <li>• Indoor fan motor: IFO</li> </ul> <p><b>LED indicators</b></p> <ul style="list-style-type: none"> <li>• Red LED: Steady ON- normal operation/Flashing – fault codes</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier: LH33WP003/3A</li> </ul>



## Furnace and Ignition Controls

ICM Control Furnace Controls	Features and Applications	Specifications	Replaces
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### ICM292

- Direct Spark Ignition (DSI) control board
- Microprocessor-based
- Controls Induced Draft and indoor blower motors; humidifier output, spark ignitor and gas valve
- Monitors timing, trial for ignition, flame sensing and lockout
- 100% lockout safety feature
- Compatible with LP or Natural Gas
- Status LEDs for fault codes to aid in troubleshooting

- Control voltage: 24 VAC (18-30 VAC), 60 Hz
- Line voltage: 115 VAC, 60 Hz
- Power cons: 0.3A plus gas valve current at 24 VAC
- Operating temp: -40°C (-40°F) to 75°C (176°F)

### Timing

- Pre-purge: 30 seconds
- Trial for ignition: 7 seconds
- Retries: 2 groups of 2, 30 seconds delay within the group and 3 minutes delay between groups
- Lockout: 1 hour
- Post-purge: 90, 120, 160 and 180 seconds

### Inputs

- Power: 24 VAC and COM
- Thermostat interface: R, W, Y and G
- System switches: Vent Pressure and Limit switches (Main and Over-temperature switches in series)
- Flame Sensing
- Heat blower OFF delay: SW1 toggle switch

### Outputs

- Spark: SE
- Gas Valve: GV
- Inducer draft motor: IDM
- Electric Air Cleaner: EAC
- Humidifier relay: HUM
- Heat/Cool relay: H/C
- Blower motor: FAN, COOL and HEAT speeds

### LED indicators

- Power, green LED: PWR
- Status, green LED: OK
- Flame status, yellow LED: FLAME

- Rheem: 62-24140-04



### ICM2807

- Controls gas valve, ignitor, blower motor, inducer, humidifier and air cleaner
- Microprocessor-based precision
- Designed for 100% gas shutoff in case of ignition failure
- Twinning compatible w/ another ICM2807 control
- Reverse polarity protection
- Secondary brownout voltage protection
- Compatible with 24 VAC standard thermostat
- Continuous Blower Speed Jumper
- Limit Switch Lockout Time
- Limit Switch Lockout After Power Interruption
- Self-Diagnostics
- Provides diagnostic LEDs to aid in troubleshooting

### ENVIRONMENT

- Ambient Temperature Operating: -40°F to 176°F
- Storage: -40°F to 185°F
- Humidity: 5% to 95% R.H. (non-condensing) @+55°F

### ELECTRICAL

- Voltage Range: Line (98 to 132 VAC) @ 60Hz
- Ignitor: 5A @ 120 VAC
- Cool Blower: 10 HP, 120 VAC
- Low Heat: 5A, 1/2 HP, 120 VAC
- High Heat: 10A, 1 HP, 120 VAC
- Inducer Motor: 4A, FLA-8.0 LRA @ 120 VAC
- Gas Valve: 1.5A @ 30 VAC
- EAC: 1A@120 VAC
- Humidifier: 0.5A & 24 VAC

- Carrier: HK42FZ005, HK42FZ010, HK42FZ015, HK42FZ017, 325879-Kit

## Gas Ignition Controls



### ICM290A

- Universal intermittent pilot gas ignition control
- Provides ignition sequence, flame monitoring and safety shutoff for single/dual rod intermittent pilot control applications
- For gas fired furnaces, boilers and other heating appliances
- Switch selectable pre-purge and ignition trial times with permanent lock
- Works with or without vent damper connected
- Works with both Natural & LP gas systems






- Control voltage: Line 24V (18-30 VAC), 50-60 Hz
- Anticipator setting: 0.3A plus valve load @ 24 VAC
- Trial for ignition: 15 or 90 sec. (switch selectable)

### LEDs:

- Green status LED provides system status & error codes
- Yellow flame LED indicates flame presence & flame strength
- Operating temperatures: Min. ambient temp. rating of -40°F (-40°C) and max. of 176°F (75°C)
- Relative humidity: 0% to 95% non-condensing

- Honeywell: S8610U3009 (and compatible Camstat, Fenwal, HSC, Penn-Johnson, Robertshaw and White Rodgers models)

## Ignition Controls, Duty Timers, and Defrost Controls

ICM Control	Features and Applications	Specifications	Replaces
<b>Intermittent Ignition</b>			
	<p><b>ICM1503</b></p>	<ul style="list-style-type: none"> <li>• Safety Timing - 45 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Carlin: 48245</li> <li>• Honeywell: R8184G4009, R8184G1138, R8184G1427, R8184G4025</li> <li>• Tempstar/Hell: 1147017</li> <li>• White-Rodgers: 668-401</li> </ul>
<b>Duty Cycle Timers</b>			
	<p><b>ICM305</b> (minutes), <b>ICM306</b> (seconds)</p> <ul style="list-style-type: none"> <li>• Reliable duty cycle timer ideally suited for defrost applications</li> <li>• Suitable for process equipment or applications requiring intermittent delays</li> <li>• Switch-settable time delays</li> <li>• Digital timing accuracy</li> <li>• Reliable solid state output</li> <li>• Epoxy-encapsulated for greater reliability</li> <li>• On time starts at power up</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1 amp / 10 amp inrush</li> <li>• <b>Time delay: ICM305</b> Switch-settable from: 11,023 minutes in 1 minute intervals</li> <li>• <b>Time delay: ICM306</b> Switch-settable from: 11,023 seconds in 1 second intervals</li> <li>• Dimensions: 2" x 3"</li> </ul>	
<b>Defrost Controls - Form, Fit and Functional OEM Replacement Parts</b>			
	<p><b>ICM300</b></p> <ul style="list-style-type: none"> <li>• Replacement for OEM Type 621</li> <li>• Low cost, time and temperature defrost</li> <li>• HOLD input tracks compressor run times</li> <li>• Time and temperature terminate</li> <li>• 10-minute fixed defrost time</li> <li>• Pin-selectable intervals: 30/60/90 minutes</li> <li>• Test pins reduce test time by 256x</li> <li>• Stable pin post construction</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Output: Relay, SPST</li> <li>• N.O.: 1 amp</li> <li>• Defrost time: 10-minute fixed</li> <li>• Interval times: Pin-Sel. 30/60/90 min.</li> </ul>	<ul style="list-style-type: none"> <li>• Amana: C64301-1, C64310-1</li> <li>• Arcoaire: 32312-00, 3232140</li> <li>• Artesian: 10321-00</li> <li>• Coleman: 3030A374</li> <li>• Essex: 621-1 to 621-11, 621-310</li> <li>• Goodman: B12260-06</li> <li>• Heil Quaker: HQ1052757</li> <li>• Honeywell: ST74A1004, ST74A1020, ST74A1038</li> <li>• ICP: 1052757</li> <li>• Intertherm: 6208800</li> <li>• Lennox: 33G9501</li> <li>• Rheem: 47-21776-01</li> <li>• Robertshaw/Uni-Line: TD-10, DT2-1000</li> <li>• Snyder General: 1395-329</li> <li>• Steveco: 90-621</li> <li>• Therm-O-Disc: 26E-10</li> <li>• Weatherking (Addison): 840-4-5548</li> <li>• White-Rodgers: 90-621</li> </ul>
	<p><b>ICM301</b></p> <ul style="list-style-type: none"> <li>• Low cost, time and temperature defrost</li> <li>• Sensor input for defrost terminate</li> <li>• Time and temperature terminate</li> <li>• 10-minute fixed defrost time</li> <li>• Pin-selectable intervals: 30/60/90 min.</li> <li>• Test pins reduce test time by 256x</li> <li>• HOLD input accumulates actual compressor run times</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Output:</li> <li>• Type: Relay, SPST N.O.: 1 amp</li> <li>• Defrost time: 10-minute fixed</li> <li>• Interval times: Pin-Sel. 30/60/90 min.</li> </ul>	<ul style="list-style-type: none"> <li>• Goettl: 305007</li> <li>• ICM: DFOSP24A2</li> <li>• Rheem: 47-21776-06</li> </ul>
	<p><b>ICM302</b></p> <ul style="list-style-type: none"> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• 10-minute fixed defrost time</li> <li>• Pin-selectable intervals: 30/60/90 min.</li> <li>• Test pins reduce test time by 256x</li> <li>• Strip heat, reversing valve outputs</li> <li>• High power output (1 HP fan at 240 VAC)</li> <li>• Integral short cycle protection</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Output:</li> <li>• Type: Relay, SPST N.O.: 1 amp</li> <li>• Anti-short cycle time: 5 minutes</li> <li>• Defrost time: 10-minute fixed</li> <li>• Interval times: Pin-Sel. 30/60/90 min.</li> </ul>	<ul style="list-style-type: none"> <li>• ICM: DFORB-AB1004</li> <li>• Nordyne: 621301A, 621579B, 621579C, 917178</li> </ul>



## Defrost and Head Pressure Controls

ICM Control	Features and Applications	Specifications	Replaces
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### Defrost Controls - Form, Fit and Functional OEM Replacement Parts

**ICM304**

- Replacement for ICP 1069364
- Sensor input for defrost terminate
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/60/90 min.
- Y input tracks compressor run times
- Integral short cycle protection
- Cool active reversing valve  
(See ICM323 for heat active model)

- Voltage: 18-30 VAC
- Frequency: 50-60 Hz
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost time: 10-minute fixed
- Interval times: Pin-Sel. 30/60/90 min.

- ICP: 1069364

**ICM318**

- Low cost, time and temperature defrost
- Time and temperature terminate
- Pin-selectable intervals: 30/60/80 minutes
- Test pins reduce test time by 256x
- HOLD input tracks compressor run times
- High power output (1/2 HP fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)

- Voltage: 18-30 VAC
- Frequency: 50-60 Hz
- Outdoor fan relay output:
  - 1/2 HP fan @ 240 VAC
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost time: 10-minute fixed
- Interval times: Pin-selectable 30/60/80 minutes

- Goodman: B1226008
- ICM: W1001-4

**ICM321**

- Low cost, time and temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/50/90 minutes
- Test pins reduce test time by 256x
- High power output, outdoor fan (1/2 HP fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)
- Integral short cycle protection

- Voltage: 18-30 VAC
- Frequency: 50-60 Hz
- Outdoor fan relay output:
  - N.O.: 20 amps
  - N.C.: 10 amps
- Form: SPDT
- Anti-short cycle time: 5 minutes
- Defrost time: 10-minute fixed
- Interval times: Pin-selectable 30/50/90 minutes

- Carrier: CES0110063-00  
CES0110063-01  
CES0110063-02  
CES0110063-02A  
CES0130024-01  
150-83-6A

**ICM350C**

- Adjustable 30, 60, 90, & 120 minute timing sequences
- Speedup jumper for quicker testing and troubleshooting
- Brownout monitoring
- Microcontroller precision timing
- Time and temperature termination
- Quiet Shift : Reduces noise disturbance when entering & exiting the defrost sequence (HK32EA003 & HK32EA008)
- 5 minute anti short cycle delay (HK32EA003 & HK32EA008)
- Optional random start timer (HK32EA003 & HK32EA008)

- Voltage: 18-30 VAC
- Frequency: 50/60 Hz
- Power Consumption: 1 Watt max.
- Current Draw: 300mA maximum
- Maximum Defrost Sequence: 10 minutes

- Carrier: HK32EA001  
HK32EA003  
HK32EA008  
And comparable defrost control boards

### Head Pressure/Low Ambient Fan Controls


**ICM325HN (120-480 VAC)**

- Typical application: A/C and heat pumps
- Integral heat pump bypass circuitry allows electronic bypass of speed control
- Eliminates overshoots common to on/off and pressure switch controls
- Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions
- Hard start, low temperature cutoff, isolated 24 VAC supply
- Controls up to 3 refrigerant circuits


- Input:
  - Control: 18-30 VAC
  - Frequency: 50-60 Hz, 1.8 VA max.
- Line input: 120-480 VAC (ICM325HN)  
600 VAC (ICM325HNV)
- Output:
  - Maximum: 10 amps
  - Minimum: 100 mA
- Modulation: 70°F to 100°F
- Dimensions: 4.5" x 3" x 1.75"

- ACT: FM2000
- Hoffman: 800, 800A, 800AA  
814-50  
816-10
- Ranco: E31Series

## Head Pressure Controls

ICM Control	Features and Applications	Specifications	Terminations
Head Pressure/Low Ambient Fan Controls			
	<p><b>ICM326HN</b> (120 or 208/240 VAC)</p> <ul style="list-style-type: none"> <li>• Integral heat pump bypass circuitry allows electronic bypass of speed control</li> <li>• Built in transformer eliminates cost, reduces installation time and simplifies wiring</li> <li>• Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions</li> <li>• Hard start, low temperature cutoff, high temp. bypass</li> <li>• Ideal for line voltage air conditioning and refrigeration</li> </ul>	<ul style="list-style-type: none"> <li>• Input: Control: 120 or 208/240 VAC Frequency: 50-60 Hz</li> <li>• Output: Maximum: 10 amps Minimum: 100 mA</li> <li>• Modulation: 70°F to 100°F</li> <li>• Dimensions: 4.5" x 3" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• ACT: FM4000</li> <li>• Hoffman: 800, 800A, 800AA 814-50 816-10</li> <li>• Ranco: E31</li> </ul>

## ECM Controls

ICM Control	Features and Applications	Specifications	Terminations
Head Pressure/Low Ambient Fan Controls			
	<p><b>ECM713</b></p> <ul style="list-style-type: none"> <li>• Single or dual temperature inputs</li> <li>• Heat pump bypass circuitry</li> <li>• Low current pulse width modulated output</li> <li>• Lead free design</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Output: 13.5 VDC, 10mA maximum, 80 Hz, 0-100%</li> <li>• Operating temperature: -40°F to 158°F (-40°C to 70°C)</li> <li>• Storage temperature: -40°F to 185°F (-40°C to 85°C)</li> <li>• Temperature probes: 10 KOhm (NTC, J-Curve)</li> </ul>	<ul style="list-style-type: none"> <li>• Hoffman: 880-ECM(10) SSHP</li> </ul>



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PACKARD!




ALEJANDRA GUZMAN  
Customer Service Representative

I'm proud to be a Packard employee owner...




“ because I know that this will open doors for me in the future and coming in everyday becomes more than just a job. ”



## Furnace Controls

ICM Control OEM	Features and Applications	Specifications	Replaces
	<p><b>ICM284</b></p> <ul style="list-style-type: none"> <li>• Microprocessor based using software to determine the sequence of operation, timing, trial for ignition, flame sensing and lockout. The control monitors the status of the room thermostat, limit and rollout switches, air pressure switch and flame sensor before energizing the vent motor, blower control, hot surface ignitor and gas valve. The control provides diagnostic codes (flashing LEDs) to aid in testing and troubleshooting.</li> <li>• Low cost form, fit and functional replacement board for York 03101280000</li> <li>• Controls vent motor, blower control, hot surface ignitor and gas valve</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Monitors timing, trial for ignition, flame sensing and lockout</li> <li>• Diagnostic LEDs aid in testing / troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Line voltage Range: 208 VAC @ 60Hz</li> <li>• Ignitor: 5A resistive @ 208 VAC</li> <li>• Cool Blower: 30A, 2HP, 240 VAC</li> <li>• Heat Blower: 10A, 1/2HP, 250 VAC</li> <li>• Inducer Motor: 4A, 208 VAC</li> <li>• Gas Valve: 4A @ 24 VAC</li> <li>• Compressor: 5A resistive @ 24 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• York 03101280000 /</li> <li>• Robertshaw 100-825-04</li> </ul>
	<p><b>ICM287</b></p> <ul style="list-style-type: none"> <li>• Microprocessor based using software to determine the sequence of operation and timing. The control also monitors the status of the gas valve before energizing the inducer and heat and cool blowers.</li> <li>• Low cost form, fit and functional replacement board for Goodman B18099-04</li> <li>• Controls inducer and blower control</li> <li>• Microprocessor-based</li> <li>• Designed for 100% gas shutoff in case of ignition failure</li> <li>• Monitors timing and gas valve</li> </ul>	<ul style="list-style-type: none"> <li>• Line Volatge Range: 120 VAC @ 60Hz</li> <li>• Control voltage: 24 VAC @ 60Hz</li> <li>• Cool Blower: 30A resistive @ 120 VAC</li> <li>• Heat Blower: 10A resistive @ 120 VAC</li> <li>• Inducer Blower: 10A resistive @ 120 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Goodman B18099-04</li> </ul>
	<p><b>ICM288</b></p> <ul style="list-style-type: none"> <li>• Low cost form, fit and functional replacement for Rheem 62-24084-82 circuit boards</li> <li>• Microprocessor-based design</li> <li>• Monitors pressure, roll-out and limit switches</li> <li>• Controls gas valve, inducer draft motor, circulating blower and hot surface ignitor</li> <li>• Reverse polarity detection</li> <li>• Twinning compatible with other ICM288 control boards</li> <li>• Diagnostic LEDs for testing/troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage Range: line 98-132 VAC @ 60HZ</li> <li>• Ignitor: 5A, 120 VAC</li> <li>• Cool Blower: 10A, 2HP, 240 VAC</li> <li>• Heat: 5A, 1/2 HP, 250 VAC</li> <li>• Inducer Blower: 4A, 120 VAC</li> <li>• Gas Valve: 1A, 24 VAC</li> <li>• Humidifier Motor: 0.5A, 24 VAC</li> <li>• Electronic Air Cleaner: 1A, 120 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Rheem 62-24084-82</li> </ul>



## Fan Controls

ICM Control	Features and Applications	Specifications	Replaces
<p><b>Fan Safety Alarm</b></p> 	<p><b>ICM6100</b></p> <ul style="list-style-type: none"> <li>• Fan safety alarm circuit</li> <li>• Outputs provided ensure that a DDC controller can determine the root cause of a shutdown</li> <li>• DIP switch to bypass inputs not in use</li> <li>• Ideal for air handling unit safety shutdown</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• 24 VAC; 50-60 Hz (4A max.)</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Relay Outputs (6): 2A @ 24 VAC/DC per output</li> <li>• Master Relay 24 VAC (2): 1.5A @ 24 VAC per output</li> <li>• Master Relay Dry Contacts: 10A @ 250 VAC</li> </ul> </li> <li>• Alarm Status: <ul style="list-style-type: none"> <li>• Green LED ON = Activated</li> <li>• Red LED ON = Not activated</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Functional Devices RIBMNLB-6</li> </ul>
<p><b>ICM Fan Coil Relay</b></p> 	<p><b>ICM6200</b></p> <ul style="list-style-type: none"> <li>• Ability to operate line voltage, 3-speed fan motor with low voltage controls</li> <li>• Compatible with 4-pipe, 2-pipe, heat pump, auto changeover</li> <li>• 20 VA 24 VAC power supply</li> <li>• Suitable for 1/8 HP motors</li> <li>• 1/4" quick connect terminal</li> <li>• Mounts with standard 3" track</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• Transformer Primary: 115 VAC, 50-60 Hz</li> <li>• Fan Inputs HI, MED, LOW: Nominal 17mA @ 24 VAC</li> <li>• Heat &amp; Cool: 1.5A @ 24 VAC</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Transformer Secondary: 24 VAC; 20 VA</li> <li>• Relay Outputs HI, MED, LOW: 1/8 HP @ 115 VAC; 10A @ 240 VAC resistive max.</li> <li>• Heat &amp; Cool Valves: 1.5A @ 24 VAC</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Honeywell W6380B</li> <li>• Xactone FC/H-2</li> </ul>
	<p><b>ICM6201</b></p> <ul style="list-style-type: none"> <li>• Ability to operate line voltage, 3-speed fan motor with low voltage controls</li> <li>• Ability to operate line voltage electric heating element with low voltage controls</li> <li>• Compatible with 4-pipe, 2-pipe and heat pump</li> <li>• 20 VA 24 VAC power supply</li> <li>• Suitable for 1/8 HP motors</li> <li>• Screw terminal receptacles</li> <li>• Mounts with standard 3" track</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• Transformer Primary (L1 &amp; L2): 115 VAC, 50-60 Hz</li> <li>• HI, MED, LOW (8, 7, 6): Nominal 17mA @ 24 VAC</li> <li>• Inputs 1-5, Aqua Heat &amp; Cool: 1.5A @ 24 VAC</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Transformer Secondary: 24 VAC; 20 VA</li> <li>• Relay Outputs HI, MED, LOW: 1/8 HP @ 115 VAC; 10A @ 240 VAC resistive</li> <li>• HTR Output: 30A @ 240 VAC resistive</li> <li>• Heat &amp; Cool Valves: 1.5A @ 24 VAC</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Xactone FC/H-1</li> </ul>










## Fan Controls

ICM Control Fan Blower Control	Features and Applications	Specifications	Replaces
	<p><b>ICM274</b></p> <ul style="list-style-type: none"> <li>• Microprocessor-based fan blower control</li> <li>• Built in humidity relay</li> <li>• Manually adjustable post-purge off delay from 60-240 seconds</li> <li>• Electronic air cleaner output</li> </ul>	<ul style="list-style-type: none"> <li>• Input:             <ul style="list-style-type: none"> <li>• Voltage - 18-30 VAC</li> </ul> </li> <li>• Output:             <ul style="list-style-type: none"> <li>• Y out: 1.5 amps</li> <li>• Fan: 2 amps</li> <li>• Electric heat relay: 30 amps @ 240 VAC</li> <li>• Blower OFF delay: 60 seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• EMI 240-1764</li> </ul>
	<p><b>ICM278</b></p> <ul style="list-style-type: none"> <li>• Low cost replacement for both the Carrier HH84AA017 and HH84AA018 (replaces both boards together).</li> <li>• Controls blower motor and inducer</li> <li>• Combines functionality of two boards into one</li> <li>• Microprocessor-based precision</li> <li>• Adjustable blower off delay</li> <li>• Compatible with 24 VAC standard thermostat</li> </ul>	<ul style="list-style-type: none"> <li>• Input voltage: Terminals:             <ul style="list-style-type: none"> <li>• 120/240 VAC: N1-N5, S1-S5, H, L, L1, D1</li> <li>• 18-30 VAC: Y, G, W, C, R, W2, X, HL, PS1, PS2</li> </ul> </li> <li>• Line frequency: 60 Hz</li> <li>• Operating temperature: 40°F to +176°F</li> <li>• Maximum Operating Humidity: 95% R.H. Non-condensing @ 50°C</li> <li>• Time Delays: - Heat ON: 60 Seconds             <ul style="list-style-type: none"> <li>• Heat OFF: 60-200 Seconds</li> <li>• Cool OFF: 40 Seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Carrier HH84AA017, HH84AA018</li> </ul>






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## Fan Controls




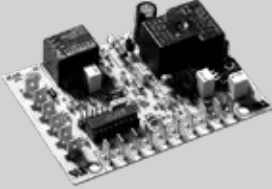


ICM Control	Features and Applications	Specifications	Replaces
<b>Fan Blower Control</b>			
	<p><b>ICM270</b></p> <ul style="list-style-type: none"> <li>• Dual function fan delay timer ICM270</li> <li>• Controls the circulating fan in a heat pump, A/C and forced air systems</li> <li>• OFF delay purges ducts of residual air</li> <li>• ON delay allows air to reach the proper comfort level prior to energizing the fan</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage - 18-30 VAC</li> </ul> </li> <li>• Output:                             <ul style="list-style-type: none"> <li>• Heat/Cool Speed</li> <li>• N.O.: 20 amps @ 240 VAC</li> <li>• N.C.: 10 amps @ 240 VAC</li> </ul> </li> <li>• Blower OFF delay: 90, 120, 150, 180 seconds (adjustable)</li> </ul>	<ul style="list-style-type: none"> <li>• Rheem 47-22827, 47-22828</li> <li>• Evcon</li> </ul>
	<p><b>ICM272</b></p> <ul style="list-style-type: none"> <li>• Cooling control module with fan delay</li> <li>• Integral low voltage terminal board with field thermostat wiring</li> <li>• Electronic air cleaner output</li> <li>• High power, relay output</li> <li>• DC output for fan relays and 1st stage of electric heater control</li> <li>• Interlock circuitry prevents 2nd and 3rd stage electric heat energization without proper fan operation</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage - 18-30 VAC</li> </ul> </li> <li>• Contact Ratings                             <ul style="list-style-type: none"> <li>• N.O.: 20 amps</li> <li>• N.C.: 10 amps</li> </ul> </li> <li>• Blower OFF delay: 60 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier HK61GA001, HK61GA003</li> </ul>
	<p><b>ICM273</b></p> <ul style="list-style-type: none"> <li>• Solid state output</li> <li>• Silent operation, "no clicking"</li> <li>• Controls the circulating fan in heat pump A/C and forced air systems</li> <li>• OFF delay purges ducts of residual air</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage - 18-30 VAC</li> </ul> </li> <li>• Output: 2 amps @240 VAC</li> <li>• Blower OFF delay: 60 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• EMI 240000-969</li> </ul>
<b>Fan Delay Timer</b>			
	<p><b>ICM251</b></p> <ul style="list-style-type: none"> <li>• Drives fan directly</li> <li>• High power, relay output</li> <li>• Dual function fan delay timer</li> <li>• Controls the circulating fan in heat pump, A/C and forced air systems</li> <li>• Off delay controls fan relay to purge ducts of residual air at the end of the heating/cooling cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Input: voltage: 18-30 VAC</li> <li>• Output:                             <ul style="list-style-type: none"> <li>• N.O.: 20 amps @ 240 VAC</li> <li>• N.C.: 10 amps @ 240 VAC</li> </ul> </li> <li>• Time Delays, Adjustable:                             <ul style="list-style-type: none"> <li>• On: 1-180 seconds</li> <li>• Off: 12-390 seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Mars:                             <ul style="list-style-type: none"> <li>32377</li> <li>32378</li> <li>32379</li> </ul> </li> </ul>
	<p><b>ICM254</b></p> <ul style="list-style-type: none"> <li>• Dual function fan delay timer</li> <li>• Controls circulating fan in heat pump, A/C and forced air systems</li> <li>• OFF delay controls fan relay to purge ducts of residual air at the end of the heating/cooling cycle</li> <li>• ON delay allows air to reach the proper comfort level prior to energizing the fan</li> </ul>	<ul style="list-style-type: none"> <li>• Input: voltage: 18-30 VAC</li> <li>• Output:                             <ul style="list-style-type: none"> <li>• 1 amp maximum</li> <li>• 40mA minimum</li> <li>• 10 amp inrush</li> </ul> </li> <li>• Time Delays, Adjustable:                             <ul style="list-style-type: none"> <li>• On: 1-180 seconds</li> <li>• Off: 12-390 seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Honeywell:                             <ul style="list-style-type: none"> <li>S876A1016</li> </ul> </li> <li>• Watsco:                             <ul style="list-style-type: none"> <li>PSTD-000-005W</li> <li>PSTD-000-060W</li> </ul> </li> </ul>



## Defrost Controls






ICM Control OEM Replacement Parts	Features and Applications	Specifications	Replaces
	<p><b>ICM303</b></p> <ul style="list-style-type: none"> <li>• Time and temperature terminate</li> <li>• Integral short cycle protection</li> <li>• High/low pressure switch monitoring</li> <li>• Strip heat, reversing valve outputs</li> <li>• High power condensor relay output</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Relay Output: 1 HP fan @ 240 VAC</li> <li>• Strip Heat / Reversing Valve</li> <li>• Outputs: 24 VAC, 2 amps</li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/60/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Evcon 9218-374</li> <li>• York 03101251000</li> <li>• 9218-3741</li> </ul>
	<p><b>ICM307</b></p> <ul style="list-style-type: none"> <li>• 3-minute, anti-short cycle protection</li> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• HOLD input tracks compressor run times</li> <li>• Test pins reduce test times by 256X</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Output: <ul style="list-style-type: none"> <li>• Relay, SPST</li> <li>• N.O.: 1 amp</li> </ul> </li> <li>• Anti-Short Cycle Time: 3 minutes</li> <li>• Defrost time: fixed 10 minutes</li> <li>• Interval time between defrosts: pin-selectable 30/60/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Fast 1093410</li> <li>• Lennox 86G16</li> <li>• Ranco DT2</li> </ul>
	<p><b>ICM315</b></p> <ul style="list-style-type: none"> <li>• Solid state replacement for Ranco E-15</li> <li>• Reliable thermistor-type sensor is less susceptible to breakage and easier to mount</li> <li>• Replaces faulty bulb-type sensors</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test times by 256X</li> <li>• Stable pin post construction</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 24, 120, 240 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Output: <ul style="list-style-type: none"> <li>• Relay, SPDT</li> <li>• N.O.: 20 amps</li> <li>• N.C.: 10 amps</li> </ul> </li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/45/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Ranco E-15</li> <li>• Avion DFT100</li> </ul>
	<p><b>ICM316</b></p> <ul style="list-style-type: none"> <li>• Replacement for Trane 21C142827G01</li> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test times by 256X</li> <li>• High power output (1/2 HP fan @ 240 VAC)</li> <li>• Strip heat, reversing valve outputs (24 VAC, 1 amp)</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 24 VAC</li> <li>• &gt;Frequency: 50/60 Hz</li> <li>• Outdoor Fan Relay Output: 1/2 HP fan @ 240 VAC</li> <li>• Strip heat, reversing valve outputs: 24 Vac, 1 amp</li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 50/70/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Trane 21C142827G01, CNT1152, CNT1642</li> </ul>
	<p><b>ICM317</b></p> <ul style="list-style-type: none"> <li>• Anti-bang reversing valve feature</li> <li>• Select 0 or 3 minute anti-short cycle time</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test time by 256X</li> <li>• HOLD input tracks compressor run times</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Output: <ul style="list-style-type: none"> <li>• Relay, SPST</li> <li>• N.O.: 1 amp</li> </ul> </li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 50/70/90 min</li> </ul>	<p>—</p>

## Defrost Controls




ICM Control OEM Replacement Parts	Features and Applications	Specifications	Replaces
	<p><b>ICM319</b></p> <ul style="list-style-type: none"> <li>• Replacement for Nordyne 624519A</li> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test time by 256X</li> <li>• HOLD input tracks compressor run times</li> <li>• Recycle function melts frost on coil</li> <li>• Integral short cycle protection</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Outdoor Fan Relay Output: 1/2 HP fan @ 240 VAC</li> <li>• Strip Heat, Reversing Valve Outputs: 24 Vac, 1 amp</li> <li>• Anti-Short Cycle Time: 5 minutes</li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/60/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• ICM DFORB24, A21300</li> <li>• Nordyne 624519A</li> </ul>
	<p><b>ICM320</b></p> <ul style="list-style-type: none"> <li>• Replacement for Carrier HK32FA006</li> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test time by 256X</li> <li>• Stable pin post construction</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Outdoor Fan Relay Output: 1/2 HP fan @ 240 VAC; N.O. 2 amps</li> <li>• Form: SPST</li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/50/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier HK25SZ359A, HK32FA006</li> </ul>
	<p><b>ICM322</b></p> <ul style="list-style-type: none"> <li>• Low cost, time and temperature defrost</li> <li>• Time and temperature terminate</li> <li>• Test pins reduce test time by 256X</li> <li>• High power output, outdoor fan (1/2 HP fan @ 240 VAC)</li> <li>• Strip heat, reversing valve outputs (24 VAC, 1 amp)</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Outdoor Fan Relay Output:                             <ul style="list-style-type: none"> <li>• N.O.: 20 amps</li> <li>• N.C.: 10 amps</li> </ul> </li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/50/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier CES0130024-00</li> </ul>
	<p><b>ICM323</b></p> <ul style="list-style-type: none"> <li>• Defrost Control - replacement for ICP control with heat active (B) reversing valve</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Strip Heat / reversing Valve Outputs: 24 VAC, 1 amp</li> <li>• Defrost time: Fixed 10 minutes</li> <li>• Interval Time Between Defrosts: Pin-selectable 30/60/90 min</li> </ul>	<ul style="list-style-type: none"> <li>• Like ICM304 with B terminal</li> </ul>
	<p><b>ICM324</b></p> <ul style="list-style-type: none"> <li>• Replacement for Goettl 305057 controls</li> </ul>	<p>—</p>	<ul style="list-style-type: none"> <li>• Goettl 305057</li> <li>• ICM AJ1008</li> </ul>
	<p><b>ICM 550</b></p> <ul style="list-style-type: none"> <li>• Adjustable 15 minutes to 23 hours 45 minutes defrost cycle</li> <li>• Time or manual defrost termination</li> <li>• High power condenser fan and defrost heater relay output</li> <li>• 100% monitoring of defrost inputs and outputs</li> </ul>	<p>Electrical Rating:</p> <ul style="list-style-type: none"> <li>• Voltage: 120-240 VAC</li> <li>• Frequency: 60 Hz</li> </ul> <p>Fan:</p> <ul style="list-style-type: none"> <li>• Type: Relay</li> <li>• Form: SPST, normally closed</li> <li>• Rating: 30 amps @ 240 VAC</li> </ul> <p>Time Delays</p> <ul style="list-style-type: none"> <li>• Minimum defrost time: 15 minutes</li> <li>• Maximum defrost time: 23 hr, 45 min.</li> </ul>	<ul style="list-style-type: none"> <li>• Grasslin: 010-0011B</li> <li>• Intermatic: DTAV40</li> </ul>



## Compressor Protection

ICM Control Compressor Protection Module	Features and Applications	Specifications	Replaces
	<p><b>ICM221</b></p> <ul style="list-style-type: none"> <li>The ICM221 is a low cost compressor protection module that monitors safety switch inputs and provides anti-short cycle protection.</li> <li>Low cost compressor protection module</li> <li>Anti-short cycle/lockout control</li> <li>Alarm output during lockout</li> <li>5-minute or 10-second ASC</li> <li>3- or 6-second DOM</li> <li>Conformal coating for moisture protection</li> <li>Compressor Protection Module</li> </ul>	<ul style="list-style-type: none"> <li>Input: <ul style="list-style-type: none"> <li>Voltage: 18 to 30 VAC</li> <li>Frequency: 50 to 60 Hz</li> </ul> </li> <li>Output: <ul style="list-style-type: none"> <li>Solid state (triac)</li> <li>1 amp at 30 VAC</li> </ul> </li> <li>Time Delays: <ul style="list-style-type: none"> <li>DOM time: 3- or 6-seconds (selectable)</li> <li>Anti-Short Cycle Time: 10-seconds or 5-minutes (selectable)</li> </ul> </li> </ul>	—
	<p><b>ICM222</b></p> <ul style="list-style-type: none"> <li>The ICM222 is a low cost compressor protection module that monitors safety switch inputs and provides anti-short cycle protection.</li> <li>Low cost compressor protection module</li> <li>Anti-short cycle/lockout control</li> <li>Alarm output during lockout</li> <li>5-minute ASC delay (5-second test mode)</li> <li>Conformal coating for moisture protection</li> <li>Compressor Protection Module</li> </ul>	<ul style="list-style-type: none"> <li>Input: <ul style="list-style-type: none"> <li>Voltage: 18 to 30 VAC</li> <li>Frequency: 50 to 60 Hz</li> </ul> </li> <li>CC: <ul style="list-style-type: none"> <li>Type: Solid state (triac)</li> <li>Rating: 1 amp at 30 VAC</li> </ul> </li> <li>Fault: <ul style="list-style-type: none"> <li>Relay (SPDT) N.O.</li> <li>1 amp at 30 VAC</li> </ul> </li> <li>Anti-Short Cycle Time Delay: <ul style="list-style-type: none"> <li>5-minutes fixed +/- 20% (5-second test mode)</li> </ul> </li> </ul>	—
<b>Delay on Break Timers</b>			
	<p><b>ICM210</b></p> <ul style="list-style-type: none"> <li>UL 873 recognition as compressor controller</li> <li>Compressor lockout anti-short cycle timer plus random start function</li> <li>Dual function delay on make/break</li> <li>Random start delay is ideal for stagger-starting multiple units</li> <li>Fixed timing</li> <li>Metal standoffs</li> </ul>	<ul style="list-style-type: none"> <li>Input: <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>Time Delay: <ul style="list-style-type: none"> <li>Random start time, up to 3 seconds</li> <li>ASC time delay: 5-minute fixed</li> </ul> </li> </ul>	• A-1: EAC 650
	<p><b>ICM211</b></p> <ul style="list-style-type: none"> <li>UL 873 recognition as compressor controller</li> <li>Compressor lockout anti-short cycle timer plus random start function</li> <li>Dual function delay on make/break</li> <li>Random start delay is ideal for stagger-starting multiple units</li> <li>Fixed timing</li> </ul>	<ul style="list-style-type: none"> <li>Input: <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>ASC time delay: 5-minute fixed</li> </ul>	Same as ICM210 without random start time
	<p><b>ICM12</b></p> <ul style="list-style-type: none"> <li>UL 873 recognition as compressor controller</li> <li>Compressor lockout anti-short cycle timer plus random start function</li> <li>Dual function delay on make/break</li> <li>Random start delay is ideal for stagger-starting multiple units</li> <li>Fixed timing</li> <li>Plastic standoffs</li> </ul>	<ul style="list-style-type: none"> <li>Input: <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>Time Delay: <ul style="list-style-type: none"> <li>Random start time, up to 3 seconds</li> <li>ASC time delay: 5-minute fixed</li> </ul> </li> </ul>	• A-1: EAC 650

## Condensation Controls

ICM Control	Features and Applications	Specifications	Replaces
	<p><b>ICM340</b></p> <ul style="list-style-type: none"> <li>Condensation Control with two sensors for water detection and an adjustable delay before break to prevent nuisance trips</li> </ul>	<ul style="list-style-type: none"> <li>Input: 18 to 30 VAC</li> <li>Output:                             <ul style="list-style-type: none"> <li>24 VAC to thermostat/cooling control</li> <li>24 VAC to optional overflow</li> </ul> </li> <li>LED Output Rating: 2 amps</li> <li>Delay Before Trip: 1-3 minutes</li> <li>Operating Frequency: 50 to 60 Hz</li> <li>Maximum Operating/Storage Relative Humidity: 95% non-condensing</li> <li>Storage Temperature: -40°C to 85°C</li> </ul>	<ul style="list-style-type: none"> <li>Water Guard 401475</li> </ul>
	<p><b>ICM342</b></p> <ul style="list-style-type: none"> <li>Condensate Control in open board design with integral DOM timer</li> </ul>	<ul style="list-style-type: none"> <li>Input:                             <ul style="list-style-type: none"> <li>Voltage: 18 to 30 VAC</li> <li>Frequency: 50 to 60 Hz</li> </ul> </li> <li>Output:                             <ul style="list-style-type: none"> <li>Type: Relay</li> <li>N.O.: 10 amps at 120 VAC</li> <li>N.C.: 10 amps at 120 VAC</li> </ul> </li> <li>Time Delay: DOM: Custom delay available, fixed or adjustable</li> </ul>	<p>—</p>
	<p><b>ICM345</b></p> <ul style="list-style-type: none"> <li>Condensate Control in open board design with integral DOM timer</li> </ul>	<ul style="list-style-type: none"> <li>Input:                             <ul style="list-style-type: none"> <li>Voltage: 18 to 30 VAC</li> <li>Frequency: 50 to 60 Hz</li> </ul> </li> <li>Output:                             <ul style="list-style-type: none"> <li>Type: Relay</li> <li>N.O.: 10 amps at 120 VAC</li> <li>N.C.: 10 amps at 120 VAC</li> </ul> </li> <li>Time Delay: DOM: Custom delay available, fixed or adjustable</li> </ul>	<p>—</p>

## TechTip

from Packard Academy

Minimize potential condensate problems. Regularly check condensate pumps for proper operation. Maintain clear condensate lines and drains. A condensate control is a cost effective method of providing an alert and preventing costly water damage if pump failure or drain blockage occurs.









**JOEY'S TIP**  
Joseph Laminack  
Product Engineer









## Motor Protection Controls

ICM Control 3-Phase Monitors	Features and Applications	Specifications	Replaces
	<p><b>ICM400</b></p> <ul style="list-style-type: none"> <li>• Three-phase line voltage monitor offering full line AND load side protection</li> <li>• Fully adjustable</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-630 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Voltage Unbalance: Adjustable: 2-25%</li> <li>• Control: 18-240 VAC</li> <li>• Delay on break timer: .1-5 minutes</li> <li>• Output:             <ul style="list-style-type: none"> <li>• Relay, SPDT</li> <li>• N.O.: 10 amps</li> <li>• N.C.: 6 amps</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• A-1: EAC-800, EAC-8000, EAC-8002</li> <li>• Diversified: AC-2020, AC-301, AC 302</li> <li>• Mars: 32512, 32515, 32516, 32517</li> <li>• Motorsaver: 455</li> <li>• SSAC: QLM/QLV</li> <li>• Time Mark: 265</li> <li>• Wagner/DiversiTech: DTP-3, WPC-800</li> </ul>
	<p><b>ICM408</b></p> <ul style="list-style-type: none"> <li>• Three-phase line voltage monitor offering protection against phase loss/reversal, unbalance and hi/lo voltage</li> <li>• 8-pin plug in mount (base sold separately)</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-480 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Adjustable DOB: .1-5 minutes</li> <li>• Adjustable DOM: .1-5 minutes</li> <li>• Contacts: 10 amps resistive @ 250 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Mars: 32532, 32534, 32540, 32541, 32542</li> </ul>
	<p><b>ICM409</b></p> <ul style="list-style-type: none"> <li>• Three-phase line voltage monitor offering protection against phase loss/reversal, unbalance and hi/lo voltage</li> <li>• DIN rail mount</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-480 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Adjustable DOB: .1-5 minutes</li> <li>• Adjustable DOM: .1-5 minutes</li> <li>• Contacts: 10 amps resistive @ 250 VA</li> </ul>	<p>—</p>
	<p><b>ICM431</b></p> <ul style="list-style-type: none"> <li>• Three-phase line voltage monitor offering protection against phase loss/reversal and unbalance</li> <li>• 8-pin plug in mount (base sold separately)</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-600 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Control: 18-30 VAC</li> <li>• Output:             <ul style="list-style-type: none"> <li>• Relay, SPST</li> <li>• N.O. 10 amps</li> </ul> </li> </ul>	<p>—</p>
	<p><b>ICM432</b></p> <ul style="list-style-type: none"> <li>• Three-phase line voltage monitor offering protection against phase loss/reversal and unbalance</li> <li>• 8-pin plug in mount (base sold separately)</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-600 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Control: 115 and 208/240 VAC</li> <li>• Output:             <ul style="list-style-type: none"> <li>• Relay, SPST</li> <li>• N.O. 10 amps</li> </ul> </li> </ul>	<p>—</p>
	<p><b>ICM441</b></p> <ul style="list-style-type: none"> <li>• Low cost, rugged, motor temperature monitoring device designed to shut off power to a motor before thermal damage occurs.</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 120 or 208/240 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Output:             <ul style="list-style-type: none"> <li>• Relay, SPST</li> <li>• N.O. 6 amps resistive / 4 amp inductive</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Bristol: 241680</li> <li>• Copeland: 071-0376-01, 071-0376-02, 071-0397-00, 071-0397-01, 071-0424-00, 071-0424-01, 071-9800-00, 071-9800-01</li> <li>• Mars: 37300, 37302, 37304, 37306, 37322</li> <li>• Texas Instruments: 15AA1600 B, 15AA1600 C, 15AA1603 B, 15AA1603 C, 31AA1600 E, 31AA1606 E</li> </ul>



## Motor Protection Controls

ICM Control	Features and Applications	Specifications	Replaces
<b>3-Phase Monitors</b>  	<p><b>ICM450</b></p> <ul style="list-style-type: none"> <li>Digital three-phase line voltage monitor offering full line AND load side protection</li> <li>Fully programmable with 25-fault memory</li> <li>190-630 VAC - Spanish version (18-240 control VAC)</li> </ul> <p>*If you would like this part in Spanish please order ICM450S</p>	<ul style="list-style-type: none"> <li>Voltage: 190-630 VAC</li> <li>Frequency: 50/60 Hz</li> <li>Voltage Unbalance: Adjustable: 2-25%</li> <li>Control: 18-240 VAC</li> <li>Delay on Break Timer: .1-5 minutes</li> <li>Output:                             <ul style="list-style-type: none"> <li>Relay, SPDT</li> <li>N.O.: 10 amps</li> <li>N.C.: 6 amps</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-800, EAC-8000, EAC-8002</li> <li>Copeland: 085-0160-00</li> <li>Diversified: AC-2020, AC-301, AC-302</li> <li>Mars: PFM-2000</li> <li>Motorsaver: 455</li> <li>SSAC: QLM, QLV</li> <li>TimeMark: 265</li> <li>Wagner/DiversiTech: DTP-3, WPC-800</li> </ul>
	<p><b>ICM455</b></p> <ul style="list-style-type: none"> <li>Fully programmable</li> <li>3-phase line voltage monitor with a backlit LCD</li> <li>100 fault memory</li> <li>Real-time clock for accurate date and time stamp</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 190-600VAC</li> <li>Frequency: 50/60 Hz</li> <li>Voltage unbalance: adjustable: 2-20%</li> <li>Fault Interrogation: adjustable: 0-15 seconds</li> <li>Over/under voltage: adjustable: 2-25%</li> <li>Reset modes: AUTO or 0-10 retries</li> <li>Control mode: ON or OFF</li> <li>Control: 18-240 VAC</li> <li>Delay on break timer: 0-10 minutes</li> <li>Output:                             <ul style="list-style-type: none"> <li>Relay, SPDT</li> <li>N.O.: 10 amps</li> <li>N.C.: 6 amps</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-800, EAC-8000, EAC-8002</li> <li>Copeland: 085-0160-00</li> <li>Diversified: AC-2020, AC-301, AC 302</li> <li>Mars: PFM-2000</li> <li>Motorsaver: 455</li> <li>SSAC: QLM/QLV</li> <li>Time Mark: 265</li> <li>Wagner/DiversiTech: DTP-3, WPC-800</li> </ul>
	<p><b>ICM461</b></p> <ul style="list-style-type: none"> <li>3-Phase Monitor</li> </ul>	<ul style="list-style-type: none"> <li>Universal 190-600 VAC,</li> <li>18-30 control VAC</li> <li>Frequency: 50/60 Hz</li> <li>DIN rail</li> </ul>	<p>—</p>
	<p><b>ICM462</b></p> <ul style="list-style-type: none"> <li>Three-phase line voltage monitor offering protection against phase loss/reversal, and unbalance</li> <li>DIN rail mount</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 190-600 VAC</li> <li>Frequency: 50/60 Hz</li> <li>Control: 115 and 208/240 VAC</li> <li>Output:                             <ul style="list-style-type: none"> <li>Relay, SPST</li> <li>N.O. 10 amps</li> </ul> </li> </ul>	<p>—</p>





## Three Phase Monitors

ICM Control	Features and Applications	Specifications	Replaces
<b>Phase Loss and Reversal Protection - Ultra Low Cost</b>			
	<p><b>ICM401</b></p> <ul style="list-style-type: none"> <li>• Low cost 3-phase protection for single side</li> <li>• Monitors for phase reversal, phase loss, unbalance % as a function of input voltage</li> <li>• Bright LED indicators for ON &amp; FAULT</li> <li>• Universal 3-phase input: 190-600 VAC</li> <li>• Highly reliable passive electronics</li> <li>• Epoxy coated for added protection</li> <li>• Patented: U.S. Patent No. 5,337,206</li> <li>• For open-board model order ICM403</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-600 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Control: 18-30 VAC</li> <li>• Output: Relay: SPST N.O.: 10 amps</li> <li>• Dimensions: 3.25" x 3" x 1.25"</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: TPMP2</li> <li>• Mars: 32536</li> </ul>
	<p><b>ICM402</b></p> <ul style="list-style-type: none"> <li>• Low cost 3-phase protection for single side</li> <li>• Monitors for phase reversal, phase loss, unbalance % as a function of input voltage</li> <li>• Bright LED indicators for ON &amp; FAULT</li> <li>• Universal 3-phase input: 190-600 VAC</li> <li>• Highly reliable passive electronics</li> <li>• Epoxy coated for added protection</li> <li>• Patented: U.S. Patent No. 5,337,206</li> <li>• For open board model order ICM404</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-600 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Control: 115 or 208/240 VAC</li> <li>• Output: Relay: SPST N.O.: 30 amps</li> <li>• Dimensions: 3.25" x 3" x 1.25"</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: TPMP2</li> <li>• Mars: 32536</li> </ul>



**I OWN PACKARD!**

*I'm proud to be a Packard employee owner...*

“ because not only do I value the customer-focused way of life, but I live by a family-focused way of life. Packard allows me to be a valued full-time team member and a full-time parent. Which I am proud to be a part of and provide for others. ”

**ANN CAREN**  
Program/Project Administrator



**I OWN PACKARD!**

*I love Packard because...*

“ they foster a teachable environment in which I can learn more and more about the ins and outs of our products! ”

**ALLISON GOSS**  
Warehouse - Receiving

## Motor Protection and Surge Protectors

ICM Control	Features and Applications	Specifications	Replaces
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### Single Phase Motor Protection



#### ICM491

- Low cost single phase motor protection
- Built in anti-short cycle protection
- Detects high/low voltage conditions
- Helps prevent rapid system recycling
- LED indicators: • Green for normal conditions, Red for fault
- Heavy duty SPDT, isolated relay output
- Interrogation delay prevents nuisance trips: 5 seconds

- Voltage: 95-270 VAC
- Output: Relay: SPDT  
N.C./N.O.: 5 amps
- Time delay range: Adjustable 6-600 seconds
- Dimensions: 3.25" x 3" x 1.25"

- A-1: EAC-401, EAC-402  
EAC-403, EAC-404
- Diversified: CV-100-RS  
CV-200-RS15  
CV-200-RS20
- Wagner/DiversiTech: DSP-1



#### ICM492

- Protects against over and under voltage, and rapid short cycling caused by transient faults and power interruptions
- Easy-view, backlit digital display
- RMS voltage monitoring
- Adjustable voltage set point
- Adjustable over voltage setting
- Adjustable under voltage setting
- Adjustable anti-short cycle time delay
- Adjustable response time
- Control mode
- 5-fault memory
- Universal line voltage input
- Heavy duty SPDT relay output
- Universal control voltage input (for integrating a thermostat)

#### User adjustable settings:

- Voltage set point: 80-300 VAC
- Anti-short cycle time delay: 0-720 sec.
- Over voltage setting: 5-25%
- Under voltage setting: 5-25%
- Control mode: On and Off
- Response time: 0.1-10 seconds

#### Inputs:

- Line voltage: 80-300 VAC
- Frequency: 50-60 Hz
- Accuracy:  $\pm 2\%$
- Low power consumption:
- Maximum 50 mA @ 120V
- Maximum 100 mA @ 240V
- Control voltage: 24-240 VAC

#### Output:

- Type: Dry relay contacts
- Form: SPDT
- Relay contact ratings:  
N.C. contacts: 10A resistive @ 277 VAC  
N.O. contacts: 10A resistive @ 277 VAC

#### Mechanical:

- Case dimensions: 3"L x 3.2"W x 1.35"H



# What's inside matters when it comes to HVACR...

...Packard stocks a full-line of controls with enhanced quality features.





## Motor Protection Controls

ICM Control	Features and Applications	Specifications
<p data-bbox="126 237 472 268"><b>Single Phase Motor Protection</b></p> 	<p data-bbox="472 279 565 310"><b>ICM493</b></p> <ul data-bbox="472 317 964 516" style="list-style-type: none"> <li>• An advanced, single-phase line voltage monitor with a bank of surge arresters for added protection against lightning strikes</li> <li>• Includes a built-in 40A contactor.</li> <li>• Ideal for mini-splits or other valuable, single-phase equipment</li> </ul>	<ul data-bbox="1029 279 1503 751" style="list-style-type: none"> <li>• User adjustable settings</li> <li>• Voltage setpoint: 207-253 VAC</li> <li>• Anti-short cycle delay: 0.5-10 minutes</li> <li>• Number of surge arresters required for operation: 0-5</li> <li>• Number of retries: 1-5, Auto</li> <li>• Inputs               <ul data-bbox="1045 485 1365 583" style="list-style-type: none"> <li>• Line voltage: 230 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Accuracy: +/- 2%, user calibration</li> </ul> </li> <li>• Output               <ul data-bbox="1045 621 1390 684" style="list-style-type: none"> <li>• Type: Contactor; 2-Pole</li> <li>• Contactor ratings: 40A FLA, 240A LRA</li> </ul> </li> <li>• Mechanical               <ul data-bbox="1045 722 1357 751" style="list-style-type: none"> <li>• NEMA rated 3R outdoor enclosure</li> </ul> </li> </ul>
	<p data-bbox="472 783 565 814"><b>ICM494</b></p> <ul data-bbox="472 821 964 1020" style="list-style-type: none"> <li>• An advanced, single-phase line voltage monitor with a bank of surge arresters for added protection against lightning strikes</li> <li>• Includes a built-in 40A contactor.</li> <li>• Ideal for mini-splits or other valuable, single-phase equipment</li> </ul>	<ul data-bbox="1029 783 1503 1255" style="list-style-type: none"> <li>• User adjustable settings</li> <li>• Voltage setpoint: 207-253 VAC</li> <li>• Anti-short cycle delay: 0.5-10 Minutes</li> <li>• Number of surge arresters required for operation: 0-5</li> <li>• Number of retries: 1-5, Auto</li> <li>• Inputs               <ul data-bbox="1045 978 1365 1077" style="list-style-type: none"> <li>• Line voltage: 230 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Accuracy: +/- 2%, user calibration</li> </ul> </li> <li>• Output               <ul data-bbox="1045 1115 1390 1178" style="list-style-type: none"> <li>• Type: Contactor; 2-Pole</li> <li>• Contactor ratings: 40A FLA, 240A LRA</li> </ul> </li> <li>• Mechanical               <ul data-bbox="1045 1215 1357 1245" style="list-style-type: none"> <li>• NEMA rated 3R outdoor enclosure</li> </ul> </li> </ul>

# TechTip >>>>

from Packard Academy




**CHRIS'S TIP**  
Chris Baxter  
Technical Support






The National Weather Service estimates that there are 25 million lightning strikes per year. The economic loss suffered if equipment is hit by a strike can be very substantial. Surge protection in the system can protect expensive equipment from a costly loss.

## Head Pressure Controls

ICM Control	Features and Applications	Specifications	Replaces
<p><b>Low Ambient Head Pressure Control</b></p> 	<p><b>ICM325HNV</b></p> <ul style="list-style-type: none"> <li>• Integral heat pump bypass circuitry allows electronic bypass of speed control</li> <li>• Eliminates overshoots common to on/off and pressure switch controls</li> <li>• Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions</li> <li>• Features: hard start, low temperature bypass, isolated 24 VAC supply</li> <li>• RoHS compliant / lead free design</li> <li>• Controls up to 3 refrigeration circuits</li> <li>• Typical application: A/C and heat pumps</li> </ul>	<ul style="list-style-type: none"> <li>• Hertz: 50/60</li> <li>• Input Line voltage: 600 VAC</li> <li>• Output ratings max.: 10 amps</li> <li>• Output ratings min.: 100 mA</li> <li>• Control voltage: 18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• ACT FM2000</li> <li>• Hoffman: 800, 800A, 800AA 814-50 816-10</li> <li>• Ranco: E31Series</li> </ul>
	<p><b>ICM326HM2</b></p> <ul style="list-style-type: none"> <li>• Head pressure control, 120 or 208/240 VAC, 80°F-105°F modulation; ideal for supermarkets/frozen food storage, computer rooms and temp/humidity-sensitive environments</li> </ul>	<ul style="list-style-type: none"> <li>• Input/Output voltage:                             <ul style="list-style-type: none"> <li>• Input/Output: 120 or 208/240 VAC</li> </ul> </li> <li>• Frequency: 50/60 Hz</li> <li>• Power Consumption: 4 VA @ 24 VAC</li> <li>• Output:                             <ul style="list-style-type: none"> <li>• Type: Solid State</li> <li>• Form: Triac</li> <li>• Output Current: Max - 4 amps; Min - 100mA</li> </ul> </li> <li>• Voltage Drop: 3.0 Volts max.</li> <li>• Leakage Current: 5 mA max.</li> <li>• Modulation: 80°-105°F</li> </ul>	<ul style="list-style-type: none"> <li>• Mitsubishi: MU09NW, MUH09NW, MU12NN, MU15NN, MU17NN, MUM18NW, MUM30NN, MUM30NN2</li> </ul>
	<p><b>ICM327HN</b></p> <ul style="list-style-type: none"> <li>• Head pressure control, 480 VAC; ideal for line voltage A/C and refrigeration systems</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 480 VAC</li> </ul> </li> <li>• Frequency: 50/60 Hz</li> <li>• Output:                             <ul style="list-style-type: none"> <li>• Maximum: 10 amps</li> <li>• Minimum: 100 mA</li> </ul> </li> <li>• Modulation: 70°-100°F</li> </ul>	<ul style="list-style-type: none"> <li>• ACT: FM4000</li> <li>• Hoffman: 800, 800A, 800AA 814-50 816-10</li> <li>• Ranco: E31</li> </ul>
	<p><b>ICM330</b></p> <ul style="list-style-type: none"> <li>• Head pressure control with support for pressure OR temperature control, DIN rail style, 120-600 VAC; ideal for line voltage A/C and refrigeration systems</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Control: 18-30 VAC</li> <li>• Frequency: 50/60 Hz, 1.8 VA max.</li> </ul> </li> <li>• Line Input: 120, 240 and 480 VAC</li> <li>• Output:                             <ul style="list-style-type: none"> <li>• Maximum: 4 amps</li> <li>• Minimum: 100mA</li> </ul> </li> <li>• Modulation:                             <ul style="list-style-type: none"> <li>• 70°-100°F</li> <li>• 35-465 psi pressure set point</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Johnson Controls P66AAB/AAD</li> </ul>
	<p><b>ICM333</b></p> <ul style="list-style-type: none"> <li>• Head pressure control with support for two pressure OR two temperature controls, 120-600 VAC; ideal for line voltage A/C and refrigeration systems</li> </ul>	<ul style="list-style-type: none"> <li>• Line voltage: 120, 208, 240, 277, 480 and 600 VAC</li> <li>• Control voltage: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Operating temperature: -40°F to 176°F</li> <li>• Heat Pump Override: 24 VAC, N.C./N.O.</li> <li>• Probes: Temperature: Thermistor, 10K ohm at 77°F, Pressure: ICM380 (ordered separately)</li> </ul>	<ul style="list-style-type: none"> <li>• Johnson Controls P66BAB/BAD</li> </ul>



## Head Pressure Control Accessories

ICM Control	Features and Applications	Specifications
<b>Pressure Probe</b>		
	<p><b>ICM379</b></p> <ul style="list-style-type: none"> <li>• Temperature Probe, 70°F-100°F, for use with ICM325HN, ICM326HN, ICM327HN, ICM330, ICM332, ICM333 head pressure controls</li> </ul>	<ul style="list-style-type: none"> <li>• Temperature Range: 70-100°F (21-38°C)</li> </ul>
	<p><b>ICM379M</b></p> <ul style="list-style-type: none"> <li>• Standard temperature probe (PTB12) for use with ICM326HM2</li> </ul>	<ul style="list-style-type: none"> <li>• Length: 6' - 7"</li> <li>• 70°F to 100°F (21°C to 38°C)</li> </ul>
<b>Pressure Transducer</b>		
	<p><b>ICM380</b></p> <ul style="list-style-type: none"> <li>• Pressure Transducer, 0-500 psi, for use with ICM330, ICM332 and ICM333 head pressure controls</li> </ul>	<ul style="list-style-type: none"> <li>• 0-500 PSI 1/4in SAE female flare with 6ft long Schraeder deflator</li> </ul>






LEE WASHINGTON  
Operations Manager

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## Gas Ignition Controls



ICM Control OEM Replacement Parts	Features and Applications	Specifications	Replaces
	<p><b>ICM283</b></p> <ul style="list-style-type: none"> <li>• Low cost replacement HSI control for Honeywell, Robertshaw and White Rodgers</li> <li>• Single/Dual rod sensing capabilities</li> <li>• For gas fired furnaces, boilers and other heating appliances</li> <li>• Switch selectable lockout times, ignition trials</li> <li>• Works with both Natural and LP systems</li> <li>• Diagnostic LED to aid in troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Input voltage: 120 &amp; 24 VAC, 60Hz                             <ul style="list-style-type: none"> <li>• HSI: 120V, 5A max</li> <li>• Valve: 24V, 2A max</li> <li>• Total: 24V Load = 0.4 + valve load</li> </ul> </li> <li>• Pre-purge Time: 32 seconds</li> <li>• Trial Time: 4 or 7 sec (switch selectable)</li> <li>• Ignition Trials to Lockout: 1 or 3 (switch selectable)</li> <li>• Flame Sense: Single rod or dual rod</li> <li>• Gas Type: Natural or LP</li> </ul>	<ul style="list-style-type: none"> <li>• Honeywell, S8910U</li> </ul>
	<p><b>ICM2901</b></p> <ul style="list-style-type: none"> <li>• Intermittent pilot gas ignition control</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based precision</li> <li>• Monitors timing, trial for ignition, rollout switch, flame sensing and lockout</li> <li>• Remote flame sensing</li> <li>• 100% lockout safety feature</li> <li>• Works with both Natural and LP gas systems</li> </ul>	<ul style="list-style-type: none"> <li>• Control voltage: line 24V (18-30 VAC), 50/60Hz</li> <li>• Anticipator Setting: 0.3A plus valve load @ 24VAC</li> <li>• Prepurge: None</li> <li>• Trial for Ignition: 85 seconds</li> <li>• Flame Failure Response Time: 0.5 seconds</li> <li>• Retry: None</li> </ul>	<ul style="list-style-type: none"> <li>• JCI G770RJA-1</li> <li>• Baso BG1600M00ER1BD</li> </ul>
	<p><b>ICM2902</b></p> <ul style="list-style-type: none"> <li>• Intermittent pilot gas ignition control</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based precision</li> <li>• Monitors timing, trial for ignition, flame sensing and lockout</li> <li>• Remote flame sensing</li> <li>• 100% lockout safety feature</li> <li>• Works with both Natural and LP gas systems</li> <li>• Status LED for fault codes to aid in troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Control voltage: line 24V (18-30 VAC), 50/60Hz</li> <li>• Anticipator Setting: 0.3A plus valve load @ 24VAC</li> <li>• Prepurge: 15 seconds</li> <li>• Trial for Ignition: 85 seconds</li> <li>• Lockout: 60 minutes</li> <li>• Flame Failure Response Time: 2 seconds</li> <li>• LED: See product label for error codes</li> </ul>	<ul style="list-style-type: none"> <li>• JCI G776RGD-14</li> <li>• Baso B1600M02CR1AB</li> </ul>
	<p><b>ICM2904</b></p> <ul style="list-style-type: none"> <li>• Intermittent pilot gas ignition control module</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based</li> <li>• Remote flame sensing</li> <li>• Compatible with LP or natural gas</li> <li>• Brown out monitoring circuit</li> </ul>	<ul style="list-style-type: none"> <li>• Control Voltage: Line 18-30 VAC, 50/60 Hz</li> <li>• Pilot Valve: 2A @ 24 VAC</li> <li>• Main Gas valve: 2A @ 24 VAC</li> <li>• Current draw: 100mA maximum</li> <li>• Pre-purge delay: 0 seconds</li> <li>• Operating temp.: -40°F to 167°F</li> <li>• Humidity: 5%-95% R.H. (non-condensing) @ +55°C</li> </ul>	<ul style="list-style-type: none"> <li>• Reznor: 257009</li> </ul>
	<p><b>ICM2905</b></p> <ul style="list-style-type: none"> <li>• Intermittent pilot gas ignition control module</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based</li> <li>• Monitor timing, Trial for ignition, flame sensing &amp; lockout</li> <li>• Remote flame sensing</li> <li>• 2 minute trial for ignition</li> <li>• 60 min. lock out if pilot flame is not sensed in 2 min.</li> <li>• Compatible with LP or natural gas</li> <li>• Damper control input</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Humidity: 5%-95% R.H. (non-condensing) @ +55°C</li> <li>• Operating temp.: -40°F to 167°F</li> <li>• Pilot valve: 2A @ 24 VAC</li> <li>• Main gas valve: 2A @ 24 VAC</li> <li>• Current draw: 100 mA maximum</li> <li>• Pre-purge delay: 0 seconds</li> <li>• Trial for ignition: 2 minutes</li> <li>• Lock out time: 60 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Reznor: 257010</li> </ul>



## Gas Ignition Controls

ICM Control OEM Replacement Parts	Features and Applications	Specifications	Replaces
	<p><b>ICM2906</b></p> <ul style="list-style-type: none"> <li>• Direct Spark Ignition (DSI) control board</li> <li>• Cooling and heating fan outputs</li> <li>• Microprocessor-based</li> <li>• Controls inducer motor, blower motor, air cleaner (if equipped), spark ignitor and the gas valve</li> <li>• Monitors timing, trial for ignition, system switches, flame sensing and lockout</li> <li>• Compatible with LP or natural gas</li> <li>• LED indication for status and fault codes to aid in troubleshooting</li> </ul>	<p>Voltage: 18-30 VAC            Frequency: 60 Hz            Inducer blower type: Relay            Rating: 1/6 HP @125 VAC            Gas valves type: Relay            Rating: 1A @ 24 VAC            Heat blower type: Relay            Rating: 1/4 HP @125 VAC            Cool blower type: Relay            Rating: 1 HP @125 VAC            Operating Temp: -40°F to 165°F            Dimensions: 14.5" x 5"</p>	<p>Reznor: 195573</p>
	<p><b>ICM2907</b></p> <ul style="list-style-type: none"> <li>• Direct Spark Ignition (DSI) control board</li> <li>• Microprocessor-based</li> <li>• Controls inducer motor, blower motor, air cleaner (if equipped), spark ignitor and the gas valve</li> <li>• Monitors timing, trial for ignition, system switches, flame sensing and lockout</li> <li>• Compatible with LP or natural gas</li> <li>• LED indication for status and fault codes to aid in troubleshooting</li> </ul>	<p>Voltage: 18-30 VAC            Frequency: 60 Hz            Inducer blower type: Relay            Rating: 1/6 HP @125 VAC            Blower type: Relay            Rating: 1/4 HP @125 VAC            Gas valves type: Relay            Rating: 1A @ 24 VAC            Operating Temp: -40°F to 165°F            Dimensions: 14.5" x 5"</p>	<p>Reznor: 195265</p>
	<p><b>ICM295</b></p> <ul style="list-style-type: none"> <li>• Spark ignition control module</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based precision</li> <li>• Continuous spark until pilot flame established</li> <li>• Push-on, high tension quick connect terminals</li> <li>• Works with both Natural and LP gas systems</li> </ul>	<ul style="list-style-type: none"> <li>• Control voltage: line 24V (18-30 VAC), 50/60Hz</li> <li>• Spark frequency: 15Hz for 90 seconds, 10Hz thereafter</li> <li>• Prepurge: 0 or 10 seconds (system dependent)</li> <li>• Retry: Continuous</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier LH33WZ510</li> </ul>
	<p><b>ICM296</b></p> <ul style="list-style-type: none"> <li>• Spark ignition control module</li> <li>• For use with intermittent pilot boilers, furnaces and other heating appliances</li> <li>• Microprocessor-based precision</li> <li>• 100% safety lockout</li> <li>• Works with both Natural and LP gas systems</li> </ul>	<ul style="list-style-type: none"> <li>• Control voltage: line 24V (18-30 VAC), 50/60Hz</li> <li>• Spark frequency: 60Hz</li> <li>• Prepurge: None</li> <li>• Lockout: 5-6 minutes</li> <li>• Retry: None</li> <li>• Relay contact rating: 1 amp @ 24 VAC</li> <li>• Trial for ignition: 90 seconds</li> <li>• Flame failure response time: 0.8 seconds max.</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier LH33WZ512</li> </ul>

## Oil Burner Primaries

ICM Control	Features and Applications	Specifications	Replaces
 <p><b>Oil Burner Primaries</b></p>	<p><b>ICM1501</b></p> <ul style="list-style-type: none"> <li>• Controls oil burner, oil valve (if desired) and the ignition transformer in response to a call for heat</li> <li>• Solid state flame sensing circuit</li> <li>• LED on terminal strip indicates system lockout</li> <li>• Enclosed safety switch with external reset button</li> <li>• Mounts on standard 4x4 J-Box (select models may be mounted directly on burner housing)</li> <li>• C554A Cadmium Sulfide Flame Detector and 24 VAC thermostat required</li> <li>• Replacement for popular competitive models</li> </ul>	<ul style="list-style-type: none"> <li>• Ignition Type: Intermittent</li> <li>• Timing, Safety Switch: 15</li> <li>• Mounting Bracket: Standard 4x4 J-Box or direct mounting on burner housing</li> <li>• Electrical Rating (Contacts - Full Load):                             <ul style="list-style-type: none"> <li>• 7.4 A @ 120 VAC</li> <li>• 3.7 A @ 240 VAC</li> </ul> </li> <li>• Electrical Rating (Contacts - Locked Rotor):                             <ul style="list-style-type: none"> <li>• 44.4 A @ 120 VAC</li> <li>• 22.2 A @ 240 VAC</li> </ul> </li> <li>• Temperature Range:                             <ul style="list-style-type: none"> <li>• -30°F to 130°F</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Honeywell: R8184G4066, R8184G1161, R8184G1294</li> </ul>
	<p><b>ICM1502</b></p> <ul style="list-style-type: none"> <li>• Controls oil burner, oil valve (if desired) and the ignition transformer in response to a call for heat</li> <li>• Solid state flame sensing circuit</li> <li>• LED on terminal strip indicates system lockout</li> <li>• Enclosed safety switch with external reset button</li> <li>• Mounts on standard 4x4 J-Box (select models may be mounted directly on burner housing)</li> <li>• C554A Cadmium Sulfide Flame Detector and 24 VAC thermostat required</li> <li>• Replacement for popular competitive models</li> </ul>	<ul style="list-style-type: none"> <li>• Ignition Type: Intermittent</li> <li>• Timing, Safety Switch: 30</li> <li>• Mounting Bracket: Standard 4x4 J-Box or direct mounting on burner housing</li> <li>• Electrical Rating (Contacts - Full Load):                             <ul style="list-style-type: none"> <li>• 7.4 A @ 120 VAC</li> <li>• 3.7 A @ 240 VAC</li> </ul> </li> <li>• Electrical Rating (Contacts - Locked Rotor):                             <ul style="list-style-type: none"> <li>• 44.4 A @ 120 VAC</li> <li>• 22.2 A @ 240 VAC</li> </ul> </li> <li>• Temperature Range:                             <ul style="list-style-type: none"> <li>• -30°F to 130°F</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Honeywell: R8184G4074, R8184G1179, R8184G1302, R8184G4033</li> </ul>



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## Surge Protector

ICM Control	Features and Applications	Specifications
<b>Single Phase Surge Protector</b> 	<b>ICM517</b> <ul style="list-style-type: none"> <li>• Suitable for use on a circuit capable of delivering not more than 10,000 rms symmetrical amps, 240 Volts max, when protected by a circuit breaker rated 20 to 60 amps maximum and 120 Volts minimum</li> <li>• Single Phase Surge Protective Device</li> <li>• UL Listed, Type 2 Device</li> <li>• Metal, NEMA Type 3r Rated Enclosure</li> <li>• Rugged and reliable</li> <li>• Easy Indoor/Outdoor Installation</li> <li>• LED status indicators</li> <li>• Backed by a Limited Lifetime Protection Warranty</li> <li>• Waterproof/fireproof enclosure</li> </ul>	<ul style="list-style-type: none"> <li>• Service voltage: 120/240 volt, single phase</li> <li>• Maximum surge current:100,000 Amps</li> <li>• Maximum energy dissipation:1,020 Joules</li> <li>• Installation Point:               <ul style="list-style-type: none"> <li>• Electrical panel</li> <li>• Service disconnect</li> </ul> </li> <li>• AC protection modes: L-L, L-N, L-G, N-G</li> <li>• Conduit connection: 3/4"</li> <li>• Dimensions: 5"L x 2.78"W x 2.16"D</li> <li>• Weight: 0.55 lbs.</li> </ul>

ICM Control	Features and Applications	Specifications	Replaces
<b>Single Phase Motor Protection</b> 	<b>ICM516</b> <ul style="list-style-type: none"> <li>• Type 2 surge protective device</li> <li>• UL Listed</li> <li>• Easy installation</li> <li>• Low cost, high performance</li> <li>• Rugged, reliable</li> <li>• Protects against: Lightning power surges and Voltage surges from A/C, generators, motors</li> <li>• Limited Lifetime Protection Warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Service voltage: 120-240 VAC, single phase</li> <li>• Maximum surge current: 100,000 amps</li> <li>• Maximum energy dissipation: 1,020 Joules</li> <li>• Installation point:               <ul style="list-style-type: none"> <li>• Electrical panel and Electrical disconnect</li> </ul> </li> <li>• AC protection modes: Line-line, line-ground</li> <li>• Dimensions: 2.75" x 4.75" x 1.75"</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: SCM Plus, SCM150</li> </ul>

## Lead Lag Control

ICM Control	Features and Applications	Specifications
<b>Lead Lag Control</b> 	<b>ICM600</b> <ul style="list-style-type: none"> <li>• True dual stage control</li> <li>• Built in thermostat -Adjustable set point -Adjustable deadband -Adjustable sequencer</li> <li>• Regulates 1 or 2 heating/cooling systems</li> <li>• Ideal for refrigeration applications, communication substations, water treatment plants, anywhere redundant systems are used</li> </ul>	<ul style="list-style-type: none"> <li>• Input: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Output: 2 amps maximum</li> <li>• Power consumption: 2 Watts maximum/lockout</li> <li>• Adjustable thermostat:               <ul style="list-style-type: none"> <li>• Set point: 55-90°</li> <li>• Deadband: 2-20°</li> <li>• Sequencer: 1-28 days</li> </ul> </li> </ul>
	<b>ICM602</b> <ul style="list-style-type: none"> <li>• Low cost, open board lead lag control</li> <li>• Regulates two devices</li> <li>• Reliable, long life switching</li> <li>• Ideal for refrigeration applications</li> </ul>	<ul style="list-style-type: none"> <li>• Input: 18-30 VAC (24 VAC)</li> <li>• Frequency: 50-60 Hz</li> <li>• Output: 2 amps maximum</li> <li>• Power consumption: 2 Watts maximum/lockout</li> </ul>

## Timers




ICM Control	Features and Applications	Specifications	Replaces
<b>Delay on Make Timers</b>			
	<p><b>ICM100</b></p> <ul style="list-style-type: none"> <li>• Ideal for compressor staging/delaying the startup of motors and other devices</li> <li>• Works with anticipator-type thermostats</li> <li>• Simple 2-wire hookup</li> <li>• Fixed Timing</li> <li>• 18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> </ul> </li> <li>• 3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>• A-1: EAC-710-180 EAC-701-180-W EAC-700-A</li> <li>• Diversified: ASC-600-3, ASC-601-3</li> <li>• Supco: TD693 (18-30 VAC)</li> </ul>
	<p><b>ICM100F</b></p> <ul style="list-style-type: none"> <li>• Ideal for compressor staging/delaying the startup of motors and other devices</li> <li>• Works with anticipator-type thermostats</li> <li>• Simple 2-wire hookup</li> <li>• Fixed Timing</li> <li>• 18-30 VAC</li> <li>• 6 inch wire leads</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> </ul> </li> <li>• 3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: TD695W (18-30 VAC)</li> </ul>
	<p><b>ICM101</b></p> <ul style="list-style-type: none"> <li>• Ideal for compressor staging/delaying the startup of motors and other devices</li> <li>• Works with anticipator-type thermostats</li> <li>• Simple 2-wire hookup</li> <li>• Fixed Timing</li> <li>• 18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> </ul> </li> <li>• 5 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>• A-1: EAC-710-300 EAC-701-300-W</li> <li>• Supco: TD695 (18-30 VAC)</li> </ul>
	<p><b>ICM101F</b></p> <ul style="list-style-type: none"> <li>• Ideal for compressor staging/delaying the startup of motors and other devices</li> <li>• Works with anticipator-type thermostats</li> <li>• Simple 2-wire hookup</li> <li>• Fixed Timing</li> <li>• 18-30 VAC</li> <li>• 6 inch wire leads</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> </ul> </li> <li>• 5 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: TD695W (18-30 VAC)</li> </ul>
	<p><b>ICM103</b></p> <ul style="list-style-type: none"> <li>• Highly precise digital timing</li> <li>• Switch-settable time delays</li> <li>• Ideal for ice machine applications</li> <li>• Universal voltage operation</li> <li>• Repeat accuracy .5% over voltage and temperature range</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1.5 amps</li> <li>• 10 amp inrush</li> <li>• 40mA holding current</li> </ul> </li> <li>• Switch-settable time delay                             <ul style="list-style-type: none"> <li>• From 1-1,023 seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• A-1: 7061</li> <li>• Gemline: 1C213</li> <li>• Ice-0-Matic: TD3001A</li> <li>• Mars: 32394, 32396</li> <li>• Robertshaw: 3310-068</li> <li>• Supco: TMF-19, TMF-80</li> </ul>
	<p><b>ICM104</b></p> <ul style="list-style-type: none"> <li>• Highly precise digital circuitry</li> <li>• High power, SPDT relay output</li> <li>• Input to output isolation</li> <li>• Works with anticipator-type thermostats</li> <li>• Repeat accuracy .5% over voltage and temperature range 115 and 240</li> <li>• VAC models available</li> </ul>	<ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> </ul> </li> <li>• Output:                             <ul style="list-style-type: none"> <li>• N.O.: 20 amps @ 240 VAC</li> <li>• N.C.: 10 amps @ 240 VAC</li> <li>• SPDT 1, 1 form</li> </ul> </li> <li>• 1 form C Knob Adjustable Time Delay:                             <ul style="list-style-type: none"> <li>• 10-1,000 seconds</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Mars: 32394/32398</li> </ul>



## Timers

ICM Control Delay on Break Timers	Features and Applications	Specifications	Replaces
	<p><b>ICM200</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps to protect compressors from damage caused by rapid short cycling</li> <li>Simple, 2-wire hookup</li> <li>Fixed timing</li> <li>18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-501-180-W</li> <li>Diversified: AC-100-3</li> <li>Supco: TD733 (18-30 VAC)</li> </ul>
	<p><b>ICM200F</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps to protect compressors from damage caused by rapid short cycling</li> <li>Simple, 2-wire hookup</li> <li>Fixed timing</li> <li>18-30 VAC</li> <li>6 inch wire leads</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-500</li> <li>Supco: TD733W (18-30 VAC)</li> </ul>
	<p><b>ICM201</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps to protect compressors from damage caused by rapid short cycling</li> <li>Simple, 2-wire hookup</li> <li>Fixed timing</li> <li>18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>5 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-500, EAC-501-300-W</li> <li>Diversified: ASC-500-5</li> <li>Mars: 32390</li> <li>Supco: TD735 (18-30 VAC)</li> </ul>
	<p><b>ICM204</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Brownout protection</li> <li>UL 873 recognition as compressor controller</li> <li>Helps prevent scroll compressor reversal</li> <li>18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-180</li> <li>Diversified: AC-100-3</li> <li>Mars: 32381</li> <li>Robertshaw: 3310-183</li> <li>Supco: TL243</li> </ul>
	<p><b>ICM205</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Brownout protection</li> <li>UL 873 recognition as compressor controller</li> <li>Helps prevent scroll compressor reversal</li> <li>18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>5 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-300</li> <li>Diversified: AC-100-5</li> <li>Mars: 32382</li> <li>Robertshaw: 3310-305</li> <li>Supco: TL245</li> </ul>
	<p><b>ICM206</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Brownout protection</li> <li>UL 873 recognition as compressor controller</li> <li>Helps prevent scroll compressor reversal</li> <li>18-30 VAC</li> </ul>	<ul style="list-style-type: none"> <li>Input:             <ul style="list-style-type: none"> <li>Voltage: 18-30 VAC</li> <li>1.5 amps</li> <li>15 amp inrush</li> </ul> </li> <li>10 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-ADJ</li> <li>Supco: TD74</li> </ul>

## Timers

ICM Control Delay on Break Timers	Features and Applications	Specifications	Replaces
	<p><b>ICM207</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps prevent scroll compressor reversal</li> <li>Works with anticipator-type thermostats</li> <li>Universal voltage operation</li> </ul>	<ul style="list-style-type: none"> <li>Input:                             <ul style="list-style-type: none"> <li>Voltage: 18-240 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>3 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-180</li> <li>Diversified: AC-100-3</li> <li>Mars: 32381</li> <li>Robertshaw: 3310-183</li> <li>Supco: TL243</li> </ul>
	<p><b>ICM208</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps prevent scroll compressor reversal</li> <li>Works with anticipator-type thermostats</li> <li>Universal voltage operation</li> </ul>	<ul style="list-style-type: none"> <li>Input:                             <ul style="list-style-type: none"> <li>Voltage: 18-240 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>5 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-300</li> <li>Diversified: AC-100-5</li> <li>Mars: 32382</li> <li>Robertshaw: 3310-305</li> <li>Supco: TL245</li> </ul>
	<p><b>ICM209</b></p> <ul style="list-style-type: none"> <li>Compressor lockout/anti-short cycle timer</li> <li>Helps prevent scroll compressor reversal</li> <li>Works with anticipator-type thermostats</li> <li>Universal voltage operation</li> </ul>	<ul style="list-style-type: none"> <li>Input:                             <ul style="list-style-type: none"> <li>Voltage: 18-240 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> </ul> </li> <li>10 minute fixed time delay</li> </ul>	<ul style="list-style-type: none"> <li>A-1: EAC-426-ADJ</li> <li>Mars: 32565</li> <li>Supco: TD74H</li> </ul>

## TechTip

from Packard Academy



### RICK'S TIP

Rick Streaker  
National Training Coordinator





Delay on break relays prevent a compressor from starting within a specified period of time after being de-energized. It can prevent short cycling of the compressor, that is, starting too quickly after it has completed an operating cycle. Short cycling can result in the loss of oil in the crankcase, liquid flood-back, and motor insulation failure. These can all lead to premature compressor failure. The time delay relay is also effective in helping to prevent a scroll compressor from starting in the wrong rotation.




## Timers



ICM Control	Features and Applications	Specifications	Replaces
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Random Start Timers			
	<p><b>ICM150</b></p> <ul style="list-style-type: none"> <li>UL 873 recognition as compressor controller</li> <li>Compressor lockout/anti-short cycle timer</li> <li>Integral random start capability</li> <li>Random start delay is ideal for stagger-starting multiple units</li> <li>Reduces nuisance lockouts/service calls</li> <li>Adjustable timing</li> </ul>	<ul style="list-style-type: none"> <li>voltage: 18-30 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> <li>40 mA holding current</li> <li>Form: SPST, N.O.</li> <li>Time delay:               <ul style="list-style-type: none"> <li>6-600 seconds knob-adjustable</li> </ul> </li> <li>voltage drop 1.5 V @ 1 amps</li> </ul>	<ul style="list-style-type: none"> <li>Diversified: ASC-200</li> <li>Mars: 32361, 32362</li> </ul>
	<p><b>ICM151</b></p> <ul style="list-style-type: none"> <li>UL 873 recognition as compressor controller</li> <li>Compressor lockout/anti-short cycle timer with random start feature plus:               <ul style="list-style-type: none"> <li>Safety switch lockout</li> <li>Remote thermostat reset</li> </ul> </li> <li>Reduces nuisance lockouts/service calls</li> <li>Adjustable timing</li> </ul>	<ul style="list-style-type: none"> <li>voltage: 18-30 VAC</li> <li>1 amp</li> <li>10 amp inrush</li> <li>40 mA holding current</li> <li>Time delay:               <ul style="list-style-type: none"> <li>6-600 seconds knob-adjustable</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Carrier: HN67KZ002</li> <li>York: 031-01204-000</li> </ul>

### Multi-Mode Timer




	ICM Series	Input voltage	Output Type	Description
	ICM500	24 VAC	Single pole, 1 FORM C 8-pin	Control operating modes: <ul style="list-style-type: none"> <li>DOM, DOB, interval, single shot, DOM/DOB and repeat cycle</li> </ul> Time delay adjustment: <ul style="list-style-type: none"> <li>Switch-settable delays from 1-1,023 seconds/minutes in multiples of .1, 1, 10 and 100</li> </ul> Plug-in bases are to be ordered separately <ul style="list-style-type: none"> <li>Specify 8-pin or 11-pin*</li> </ul> 8-pin = ACS-8 11-pin = ACS-11
	ICM501	115 VAC		
	ICM502	240 VAC		
	ICM503	12 VDC		
	ICM504	24VDC		
	ICM505	110VDC		

## Timers

ICM Control	Features and Applications	Specifications	Replaces
<b>Delay on Make Timers</b>			
	<p><b>ICM102, ICM102F</b></p> <ul style="list-style-type: none"> <li>• Universal voltage operation</li> <li>• Higher 1.5 amp power rating</li> <li>• Knob-adjustable time delays</li> <li>• Works with anticipator-type thermostats</li> <li>• One model replaces many in field</li> <li>• Ideal for compressor staging</li> <li>• Simple 2-wire hookup</li> <li>• "F" suffix denotes 6" wire leads</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> <li>• 40 mA holding current</li> <li>• Frequency: 50-60 Hz</li> <li>• Adjustable delay: .03-10 minutes (1.8-600 seconds)</li> <li>• Voltage drop: 2.5 V @ 1.5 amps</li> <li>• Dimensions: 2" x 2"</li> </ul>	<p><b>ICM102</b></p> <ul style="list-style-type: none"> <li>• A-1: EAC-701-ADJ</li> <li>• Diversified: AC-800</li> <li>• Gemline: 1C310, 1C213</li> <li>• Mars: 32019, 32391, 32367</li> <li>• Supco: TD69</li> <li>• Wagner/DiversiTech: ADM-1</li> </ul> <p><b>ICM102F</b></p> <ul style="list-style-type: none"> <li>• Supco: TD69W</li> <li>• Wagner/DiversiTech: ADM-2</li> </ul>
	<p><b>ICM105</b></p> <ul style="list-style-type: none"> <li>• Low holding current</li> <li>• Low cost version of the ICM102 without the cooling anticipator circuitry</li> <li>• Ideal for compressor staging</li> <li>• Universal voltage operation</li> <li>• Knob-adjustable time delays</li> <li>• Simple 2-wire hookup</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> <li>• 10 mA holding current</li> <li>• Frequency: 50-60 Hz</li> <li>• Adjustable delay: .03-10 minutes (1.8-600 seconds)</li> <li>• Voltage drop: 2.5 V @ 1 amp</li> <li>• Dimensions: 2" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified: AC-800, ASC-600/601</li> <li>• Gemline: 1C310/1C213</li> <li>• Mars: 32091</li> <li>• Supco: TD68</li> </ul>
<b>Delay on Break Timers</b>			
	<p><b>ICM201F</b></p> <ul style="list-style-type: none"> <li>• Higher 1.5 amp power rating</li> <li>• Compressor lockout/anti-short cycle timer</li> <li>• Helps to protect compressors from damage caused by rapid short cycling</li> <li>• Simple, 2-wire hookup</li> <li>• 5-minute delay</li> <li>• "F" suffix denotes 6" wire leads</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> <li>• Frequency: 50-60 Hz</li> <li>• Fixed time delays: 3 or 5-minutes</li> <li>• Voltage drop: 3.5 V typical 4.5 V maximum @ 1.5 amps</li> <li>• Holding current minimum: 40 mA</li> <li>• Dimensions: 2" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• A-1: EAC-500, EAC-501-300-W</li> <li>• Diversified: AC-505-5</li> <li>• Mars: 32005, 32505</li> <li>• Supco: TD735W (18-30 VAC)</li> </ul>
	<p><b>ICM203</b></p> <ul style="list-style-type: none"> <li>• Universal voltage operation</li> <li>• Higher 1.5 amp power rating</li> <li>• Compressor lockout/anti-short cycle timer</li> <li>• Helps to protect compressors from damage caused by rapid short cycling</li> <li>• Simple, 2-wire hookup</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1.5 amps</li> <li>• 15 amp inrush</li> <li>• Frequency: 50-60 Hz</li> <li>• Knob-adjustable delays: .03-10 mins. (1.8-600 sec.)</li> <li>• Voltage drop: 3.5 V typical 4.5 V maximum @ 1.5 amps</li> <li>• Holding current minimum: 40 mA</li> <li>• Dimensions: 2" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• A-1: EAC-501-ADJ</li> <li>• Diversified: AC-503</li> <li>• Mars: 32001, 32387, 32392</li> <li>• Robertshaw: 3310-072</li> <li>• Supco: TD72, TD73</li> <li>• Wagner/DiversiTech: ADB-1</li> </ul>






## Timers and Voltage Monitors

ICM Control	Features and Applications	Specifications	Replaces
<p><b>By-Pass Timer</b></p> 	<p><b>ICM175</b></p> <ul style="list-style-type: none"> <li>• Designed to bypass a low pressure switch or other device during startup</li> <li>• Ideal for low ambient startups</li> <li>• Key component for "winter start" kits</li> <li>• Helps to reduce nuisance lockouts</li> <li>• Universal AC voltage operation</li> <li>• Knob-adjustable time delay</li> <li>• Epoxy-encapsulated circuitry</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-240 VAC</li> <li>• 1 amp maximum</li> <li>• 10 amp inrush</li> <li>• 40 mA minimum</li> <li>• Frequency: 50-60 Hz</li> <li>• Knob-adjustable time delay: 10-1,000 seconds</li> <li>• Dimensions: 2" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• Mars: 32395</li> <li>• Supco: TD32</li> </ul>
<p><b>Lockout Protection</b></p> 	<p><b>ICM220</b></p> <ul style="list-style-type: none"> <li>• UL 873 recognition as compressor controller</li> <li>• Low cost lockout relay</li> <li>• Helps eliminate nuisance lockouts typical of Series 84 and 93 impedance relays</li> <li>• Ideal for use with safety/interlock switches</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• Frequency: 50-60 Hz</li> <li>• Power consumption: 2 watts maximum @ lockout</li> <li>• Relay: 1 form C</li> <li>• Contacts: 2 amps @ 30 VAC resistive</li> <li>• Dimensions: 2" x 2"</li> </ul>	<ul style="list-style-type: none"> <li>• Essex: Impedance Relays Series 84 and 93</li> </ul>
<p><b>Off Delay Timing Purges Residual Air</b></p> 	<p><b>ICM253</b></p> <ul style="list-style-type: none"> <li>• UL 873 recognition for compressor applications</li> <li>• Post-purge fan delay timer</li> <li>• OFF delay purges ducts of residual air at the end of the heating/cooling cycle</li> <li>• Interrogation delay eliminates nuisance trips due to thermostat bounce/tampering</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 18-30 VAC</li> <li>• 1 amp maximum</li> <li>• 40 mA minimum</li> <li>• 10 amp inrush</li> <li>• Adjustable time delay: 12-390 seconds</li> <li>• Dimensions: 2" x 3"</li> </ul>	<ul style="list-style-type: none"> <li>• Field Controls: 46144700</li> <li>• Gemline: 1C216</li> <li>• Mars: 32393</li> </ul>

## Freeze Protection


ICM Control	Features and Applications	Specifications
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	<p><b>ICM308</b></p> <ul style="list-style-type: none"> <li>• Low cost, fixed, single setpoint temperature controls that provide freeze protection</li> <li>• Small compact package</li> <li>• Epoxy encapsulated for moisture protection</li> <li>• Temperature sensor included</li> <li>• Temperature Cut-Out (OFF): 43°F</li> <li>• Temperature Cut-In (ON): 45°F</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50 to 60 Hz</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Solid state (triac)</li> <li>• 1.5 amps at 30 VAC</li> </ul> </li> </ul>
	<p><b>ICM309</b></p> <ul style="list-style-type: none"> <li>• Low cost, fixed, single setpoint temperature controls that provide freeze protection</li> <li>• Small compact package</li> <li>• Epoxy encapsulated for moisture protection</li> <li>• Temperature sensor included</li> <li>• Temperature Cut-Out (OFF): 28°F</li> <li>• Temperature Cut-In (ON): 55°F</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50 to 60 Hz</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Solid state (triac)</li> <li>• 1.5 amps at 30 VAC</li> </ul> </li> </ul>
	<p><b>ICM310</b></p> <ul style="list-style-type: none"> <li>• Low cost, fixed, single setpoint temperature controls that provide freeze protection</li> <li>• Small compact package</li> <li>• Epoxy encapsulated for moisture protection</li> <li>• Temperature sensor included</li> <li>• Temperature Cut-Out (OFF): 44°F</li> <li>• Temperature Cut-In (ON): 48°F</li> </ul>	<ul style="list-style-type: none"> <li>• Input: <ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC</li> <li>• Frequency: 50 to 60 Hz</li> </ul> </li> <li>• Output: <ul style="list-style-type: none"> <li>• Solid state (triac)</li> <li>• 1.5 amps at 30 VAC</li> </ul> </li> </ul>

Defrost Control
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	<p><b>ICM222</b></p> <ul style="list-style-type: none"> <li>• Replacement for Goettl 305023 controls</li> </ul>	<ul style="list-style-type: none"> <li>• voltage: 18-30 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• CC <ul style="list-style-type: none"> <li>• Type: Solid state (Triac)</li> <li>• Rating: 1 amp @ 30 VAC</li> </ul> </li> <li>• Fault <ul style="list-style-type: none"> <li>• Type: Relay (SPDT) N.O.</li> <li>• Rating: 1 amp @ 30 VAC</li> </ul> </li> <li>• Anti-short cycle time: 5-minutes fixed <math>\pm 20\%</math> (5-second test mode)</li> <li>• Dimensions: 3.5" x 3.25" x 1"</li> </ul>
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Temp Stat
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	<p><b>SC055</b></p> <ul style="list-style-type: none"> <li>• These low cost, single setpoint thermostate are intended for use as temporary devices to provide heating or cooling to allow drywall to dry during construction. They can also be used as a low ambient cutoff switch for a condenser fan motor.</li> <li>• Low cost dryout thermostats</li> <li>• Can be used for low ambient cutoff switch</li> <li>• Simple two-wire installation</li> <li>• Six fixed setpoint: 55°F</li> </ul>	<ul style="list-style-type: none"> <li>• Input: 18-30 VAC</li> <li>• Output: 2 amp maximum</li> <li>• Switch Opens: below 55°F</li> <li>• Switch Closes: above 55°F</li> <li>• Accuracy: (+/- 9°F)</li> </ul>
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## Class II Foot Mount Transformers

### Features

- Packard transformers replace models with equal or lower VA rating
- Foot mount
- Class II transformers

	Item ID <b>Packard</b> <b>PF12416</b>	Primary Voltage 120	VA Rating 10VA	Secondary Rating 16	Mounting Option Foot	Connection Wire Lead / Term	Replaces UET 10A
	Item ID <b>Packard</b> <b>PF24200</b>	Primary Voltage 120	VA Rating 20VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead / Term	Replaces Williams Furnace 24200
	Item ID <b>Packard</b> <b>PF42420</b>	Primary Voltage 120/208/240	VA Rating 20VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead	Replaces Jard 2031F UET 114
	Item ID <b>Packard</b> <b>PF12440</b>	Primary Voltage 120	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead	Replaces Jard 4011F
	Item ID <b>Packard</b> <b>PF40115</b>	Primary Voltage 120	VA Rating 40VA	Secondary Rating 24	Mounting Option Bracket	Connection 1/4" QC Term.	Replaces Goodman 013M001405
	Item ID <b>Packard</b> <b>PF113</b>	Primary Voltage 120	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead/Term	Replaces 90-113 Fan Center Transformer
	Item ID <b>Packard</b> <b>PF12406</b>	Primary Voltage 120	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead	Replaces 46-24124-06
	Item ID <b>Packard</b> <b>PF40224</b>	Primary Voltage 208/240	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Terminals	Replaces Goodman 013M001385
	Item ID <b>Packard</b> <b>PF22440</b>	Primary Voltage 208/240	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead	Replaces Jard 4021F
	Item ID <b>Packard</b> <b>PF137</b>	Primary Voltage 208/240	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection Wire Lead	Replaces First Company E137
	Item ID <b>Packard</b> <b>PF90501</b>	Primary Voltage 208/240	VA Rating 40VA	Secondary Rating 24	Mounting Option Foot	Connection 1/4" QC Term.	Replaces 46-101905-01

## Class II Foot Mount Transformers

### Features

- Packard transformers replace models with equal or lower VA rating
- Foot mount
- Class II transformers



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF105</b>	120/208/240	40VA	24	Foot	Wire Lead	UET 105	115



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF4031VM</b>	120/208/240	40VA	24	Foot	Wire Lead	Jard 4031VM Rheem 46-24124-06



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF42440</b>	120/208/240	40VA	24	Foot	Wire Lead	Jard 4031F UET 115



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF40310EM</b>	120/208/240	40VA	24	Foot	Terminals	Jard 40310EM Rheem 46-101905-01



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF32440</b>	120/208/240	40VA	24/12/2.5	Foot	Wire Lead	Jard 4032F UET 101	118



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF27440</b>	277	40VA	24	Foot	Wire Lead	Jard 40271F

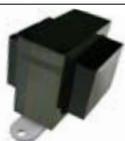


Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF12450</b>	120	50VA	24	Foot	Wire Lead	Rheem 46-102856-02

Includes an Internal 2.5 Amp, 250V, Slow Blow Fuse



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF85602</b>	120	50VA	24	Foot	Wire Lead	46-102856-02



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PF40350</b>	120/208/240	50VA	24	Foot	Wire Lead	Jard 5031F

### Notes:

115. Dimension between mounting holes is 2.756 inch or 70mm

118. Built-In fuse included

## Class II Multi-Mount Transformers

### Features

- Packard transformers replace models with equal or lower VA rating
- Foot mount
- Class II transformers



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF42450</b>	120/208/240/480	50VA	24	Foot	Wire Lead	Jard 5041C	117



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF52460</b>	120/208/240	60VA	24	Foot	Wire Lead	Jard 6041C UET 160	117



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF52475F</b>	120/208/240/480	75VA	24	Foot	Wire Lead	Jard 7541M UET 175	118



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF52475</b>	120/208/240/480	75VA	24	Foot	Wire Lead	Jard 7541C UET 179R	117
<b>PF57575</b>	120/208/240/575	75VA	24	Foot	Wire Lead	Mars 50375	117



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
<b>PF524100</b>	120/208/240/480	100VA	24	Foot	Wire Lead	Jard 10041C	117

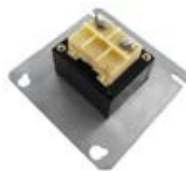
**Notes:**  
117. Equipped with a circuit breaker

118. Built-In fuse included

## Class II Multi-Mount Transformers

### Features

- Packard transformers replace models with equal or lower VA rating
- Multi-mount transformers
- 4 1/4" x 4 1/4" mounting plate included
- 1/2" conduit hub for electrical knockout mounting
- Class II transformers



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PM12040</b>	120	40VA	24	Plate	Wire Lead/Term	Universal Replacement



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
<b>PM12440</b>	120	40VA	24	Multi	Wire Lead	Jard 4011M UET 112
<b>PM32440</b>	120/240	40VA	24	Multi	Wire Lead	Jard 4021M UET 113
<b>PM42440</b>	120/208/240	40VA	24	Multi	Wire Lead	Jard 4031M

## Class II Multi-Mount Transformers



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
PM43440	120/208/240	40VA	24/12/2.5	Multi	Wire Lead	UET 111	118



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
PM43448	120/208/240	48VA	24/12/2.5	Multi	Wire Lead	Universal Replacement



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
PM44450	120/208/240	50VA	24	Multi	Wire Lead/Term	Jard 5031M UET 150	118



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
PM43450	120/208/240	50VA	24/12/2.5	Multi	Wire Lead	Jard 5032M



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces	Notes
<b>Packard</b>							
PM7541MCB	120/208/240/480	75VA	24	Multi	Wire Lead	Jard 7541MCB	117



Item ID	Primary Voltage	VA Rating	Secondary Rating	Mounting Option	Connection	Replaces
<b>Packard</b>						
PM10048P	208/240/480	100VA	24/120	Multi	Wire Lead	Jard 10048P

Notes:  
117. Equipped with a circuit breaker

118. Built-In fuse included

## Fan Control Centers

### Features

- UL recognized 40 VA transformer
- Color coded leads
- Low voltage terminal board



Item ID	Primary		Secondary		Relay	Replaces
	Voltage	Connections	Voltage	Connections		
<b>Packard</b>						
FC90112	120	Leads	24	Terminal Board	DPDT	White-Rodgers 90-112
FC90113	120	Leads	24	Terminal Board	SPDT	White-Rodgers 90-113
FC90118	120	Leads	24	Terminal Board	SPNO/SPNC	White-Rodgers 90-118E
FC90119	208/240	Leads	24	Terminal Board	SPDT	White-Rodgers 90-119
FC90130	120/208/240	Leads	24	Terminal Board	DPDT	White-Rodgers 90-130

# TITAN ICE<sup>®</sup>

REPLACES OVER 1,000 OEM MODELS

## TITAN ICE<sup>®</sup> POTENTIAL RELAY ADVANTAGE

- Up to 500,000 cycles ■
- Over 40 years proven performance ■
- Original GE tooling and design ■
- Replaces GE 3ARR3 ■



## APPLICATIONS

- Central air conditioner compressors
- Submersible pump motors
- Motors generally over 1/3 HP with start capacitors

## Potential Relays

### Applications:

Central air conditioner compressors

Submersible pump motors

Motors generally over 1/3 HP with start capacitors

# TITAN ICE®

### Features

- Universal replacements for thousands of GE 3ARR3 model relays and many other OEM's
- Manufactured using the original GE designs and tooling
- Proven performance for 40 years
- Contact rating: 35 amps max, break only
- Endurance up to 500,000 operations depending on load
- Screw type terminals #8-32 thread
- Six (6) quick connect terminals and screws packaged included with each relay
- Instructions included
- UL approved



Item ID	Mfg. #	Industry #	Continous Coil voltage	Pick up MIN	Pick Up Max	Drop-Out Max
<b>Packard</b>						
TR63	3ARR363223PR	19002	170V	136V	156V	58V
TR64	3ARR364252PR	19003	395V	257V	278V	123V
TR65	3ARR365333PR	19004	332V	165V	185V	93V
TR66	3ARR366252PR	19005	395V	210V	230V	123V
TR67	3ARR367262PR	19006	420V	292V	318V	130V
TR68	3ARR368433PR	19007	500V	322V	348V	138V
TR69	3ARR369243PR	19008	336V	177V	198V	108V
TR70	3ARR37053PR	19009	253V	282V	308V	80V
TR71	3ARR37163PR	19010	420V	209V	235V	124V

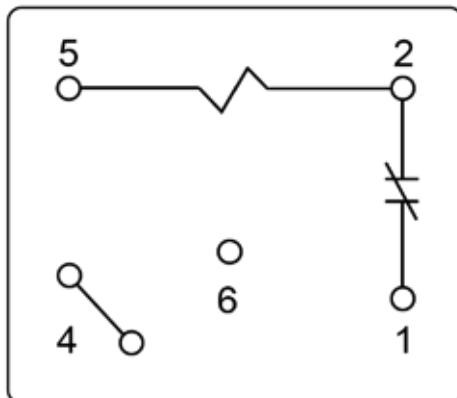


Item ID	Mfg. #	Industry #	Continous Coil voltage	Pick up MIN	Pick Up Max	Drop-Out Max
<b>Packard</b>						
TR550	3ARR355071PR	19550	130V	111V	134V	42V
TR551	3ARR355132PR	19551	332V	243V	271V	91V

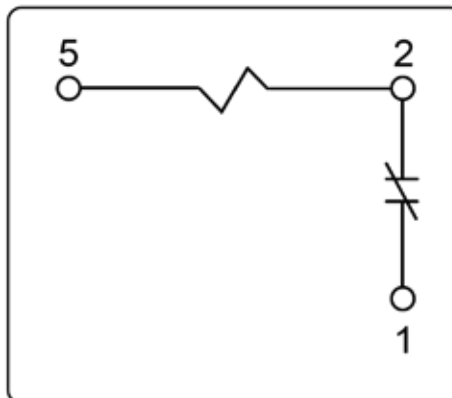


Item ID	Description
<b>Packard</b>	
TRQC6	Package of six (6) double quick connect terminals with screws

### Internal Wiring Diagrams




TR63  
TR64  
TR65  
TR66  
TR67  
TR68  
TR69  
TR70  
TR71



TR550  
TR551

## Universal Motor Starting Relay

ICM Controls	Features and Applications	Specifications	Replaces
	<b>UMSR-50</b> <ul style="list-style-type: none"> <li>• Replacement for all standard potential relays</li> <li>• Patented differential voltage sensing</li> <li>• No user-adjustments required</li> <li>• Non-positional mounting configuration</li> <li>• 50A switching capabilities</li> <li>• Universal mounting bracket for easy installation</li> <li>• .250" quick connect termination</li> <li>• Safety timer</li> </ul>	<b>General:</b> <ul style="list-style-type: none"> <li>• Input:                             <ul style="list-style-type: none"> <li>• Voltage Rating: 110-270 VAC, Single Phase</li> <li>• Maximum Voltage Contact Rating: 502 VAC (absolute)</li> </ul> </li> <li>• Motor power rating: Up to 10 HP</li> <li>• Operating Position: Non-positional</li> <li>• Safety Time Out: Approximately 1-second per 100 microfarads</li> <li>• Consumption: 5VA max.</li> <li>• Insulation: Class B (130°C); Conforms to IEC 1000- standards (6kV impulse / 6kV contact)</li> <li>• Life Expectancy (min. operations):                             <ul style="list-style-type: none"> <li>• Mechanical: 1 x 10<sup>6</sup></li> <li>• Electrical: 1x10<sup>6</sup> at 16A 400 VAC 5x10<sup>5</sup> at 35A 400 VAC (break only) 5x10<sup>5</sup> at 50A 400 VAC (break only)</li> </ul> </li> </ul> <b>Contacts:</b> <ul style="list-style-type: none"> <li>• Contact rating: 50A (break only), 400 VAC cos Ø = 0.7 to 0.8</li> </ul>	<ul style="list-style-type: none"> <li>• All standard potential relays</li> <li>• Supco: APR5, SUPR</li> </ul>

## Potential Relays

### Features

- Temperature range: 40°F to 130°F
- Class B insulation
- Continuous duty
- UL recognized



Item ID	Continuous Coil Voltage	Pick-Up		Drop Out Max.	DC Res	Coil Data			Class Insulation	Replaces
		Min.	Max.			MA	Nom. VA	Inrush VA		
<b>Packard</b>										
PR9026	395	180	195	100	7147	12.7	5	10	B	90-26, 19008
PR9063	170	140	153	65	1399	29	5	10	B	90-63, 19002
PR9064	395	245	275	140	7147	12.7	5	10	B	90-64, 19003
PR9065	332	171	184	90	5180	15	5	10	B	90-65, 19004
PR9066	395	208	239	130	7147	12.7	5	10	B	90-66, 19005
PR9067	420	300	328	121	10000	12	5	10	B	90-67, 19006
PR9068	495	323	352	135	11950	10	5	10	B	90-68, 19007
PR9071	420	223	252	150	10000	12	5	10	B	90-71, 19010
PR9169	332	180	193	105	5600	12	5	10	B	19008

## Direct Replacement Relays For ICP and Nordyne

### Features

- Electric heater relay
- Used with AMF(K,H)xxCxx heaters in ICP and Nordyne air handlers



Item ID	Description	Amps @ 277VAC	Amps @ 28VDC	Coil	Replaces
<b>Packard</b>					
PR1922	SPST-NO	40	30	DC	ICP 111001922 ICP 1084529



Item ID	Description	Amps @ 277VAC	Amps @ 28VDC	Coil	Replaces
<b>Packard</b>					
PR1931	31.2	30	20	AC	Nordyne 621931

## Time Delay Relays

### Application

- Prevents short cycling of air conditioning, refrigeration and heat pump compressors

### Features

- Universal voltage
- Mounts in any position
- Adjustable up to 10 minutes
- Easy two-wire installation
- Delay on make / delay on break



Delay on Make

Item ID	Conn.	Time Delay	Input Line Frequency	Input Line Voltage	Output Ratings Inrush	Output Ratings Max.	Output Ratings Min.	Replaces
<b>Packard</b>								
PTD102	2 - 1/4" male terminals	.03 - 10 mins.	50/60	18-240VAC/VDC	15 amps	1.5 amps	40 mA	Carrier P284-2391 Gemline IC213 Gemline IC310 ICM 102B ICM 102FB ICP 1160706 Lennox 24C4101 Lennox 47A7301 Rheem 42-22326-01 Rheem 42-41542-01 3310-068 ADM-2 McQuay 282101B14 McQuay 282101B2 McQuay 282101B3



Delay on Break

Item ID	Conn.	Time Delay	Input Line Frequency	Input Line Voltage	Output Ratings Inrush	Output Ratings Max.	Output Ratings Min.	Replaces
<b>Packard</b>								
PTD203	2 - 1/4" male terminals	.03 - 10 mins.	50/60	18-240VAC/VDC	15 amps	1.5 amps	40 mA	A-1 Components F7035 Carrier P284-2392 ICM 203B ICP 1160708 ICP 1160711 3310-072 Trane TMR107 Trane TMR52 ADB-1



## SPST and SPDT Fan Relays

### Features

- 1/4" Quick connect terminals
- Used for switching solenoids, fan motors, and other applications.



Item ID	Description	Amps Res.	FLA/LRA at		Coil Voltage	Replaces
			125 Volts	250 Volts		
<b>Packard</b>						
PR290Q	SPST-NO	16	—	8/25	24 VAC	90-290Q
PR291Q	SPST-NO	16	—	8/25	120 VAC	90-291Q
PR292Q	SPST-NO	16	—	8/25	240 VAC	90-292Q
PR293Q	SPDT	16	—	8/25	24 VAC	90-293Q
PR294Q	SPDT	16	—	8/25	120 VAC	90-294Q
PR295Q	SPDT	16	—	8/25	240 VAC	90-295Q
PR360	SPST-NO	18	12/60	8/48	24 VAC	90-360
PR362	SPST-NO	18	12/60	8/48	120 VAC	90-362
PR370	SPDT	18	12/60	8/48	24 VAC	90-370
PR372	SPDT	18	12/60	8/48	120 VAC	90-372
PR374	SPDT	18	12/60	8/48	240 VAC	90-374
PR380	SPST NO + NC	18	12/60	8/48	24 VAC	90-380
PR382	SPST NO + NC	18	12/60	8/48	120 VAC	90-382
PR384	SPST NO + NC	18	12/60	8/48	240 VAC	90-384

## Switching Relays

### Features

- Used on heat pumps, vending machines, fans, and heating and air conditioning



Item ID	Coil Voltage	Description	Terminal 1-2-3	Terminal 4-5-6	Replaces
<b>Packard</b>					
PR340	24	DPDT	Power	Power	90-340
PR341	110/120	DPDT	Power	Power	90-341
PR342	208/240	DPDT	Power	Power	90-342
PR343	24	SPDT	Power	-	90-343
PR344	110/120	SPDT	Power	-	90-344
PR345	208/240	SPDT	Power	-	90-345

## Relay Overloads



### Features

- Replaces relay and overload combinations on 1/8 thru 1/3 HP compressors.

Item ID	Volts	H.P.	Hertz
<b>Packard</b>			
R015	115	1/8-1/5	50/60
R013	115	1/4 and 1/3	50/60

## Automatic Small Flush Mount - SPST - Limit Thermostats



### Features

- Used in gas fired furnaces, unit heater and rooftop units
- Automatic reset
- Wide temperature range for most heating applications



Item ID	Terminals	Cut In Temp.	Cut Out Temp.	Differential
<b>Packard</b>				
PLF130VA	Vertical 1/4"	115°F	130°F	15°F
PLF155VA	Vertical 1/4"	115°F	155°F	40°F
PLF158VB	Vertical 3/16"	118°F	158°F	40°F
PLF165VA	Vertical 1/4"	125°F	165°F	40°F
PLF170VA	Vertical 1/4"	130°F	170°F	40°F
PLF185VB	Vertical 3/16"	145°F	185°F	40°F
PLF190HA	Horizontal 1/4"	150°F	190°F	40°F
PLF194HB	Horizontal 3/16"	154°F	194°F	40°F
PLF200HA	Horizontal 1/4"	160°F	200°F	40°F
PLF200VA	Vertical 1/4"	160°F	200°F	40°F
PLF210HA	Horizontal 1/4"	170°F	210°F	40°F
PLF222VA	Vertical 1/4"	182°F	222°F	40°F
PLF230HA	Horizontal 1/4"	190°F	230°F	40°F
PLF230HB	Horizontal 3/16"	190°F	230°F	40°F
PLF250HA	Horizontal 1/4"	200°F	250°F	50°F
PLF252VB	Vertical 3/16"	202°F	252°F	50°F
PLF255VA	Vertical 1/4"	205°F	255°F	50°F
PLF260HA	Horizontal 1/4"	210°F	260°F	50°F
PLF275HB	Horizontal 3/16"	225°F	275°F	50°F
PLF275VB	Vertical 3/16"	225°F	275°F	50°F
PLF280HB	Horizontal 3/16"	230°F	280°F	50°F
PLF300HB	Horizontal 3/16"	250°F	300°F	50°F
PLF300VA	Vertical 1/4"	250°F	300°F	50°F
PLF330VA	Vertical 1/4"	280°F	330°F	50°F

## Manual - SPST - Limit Thermostats

### Features

- Used in gas fired furnaces, unit heater and rooftop units
- Manual reset
- Wide temperature range for most heating applications

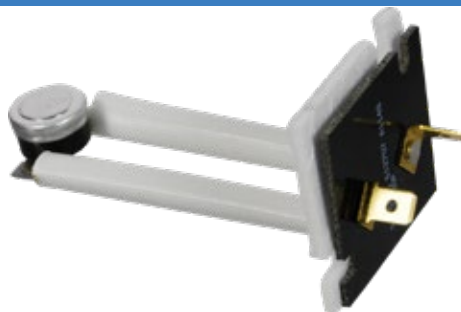


Item ID	Terminals	Switch Action	Switch Type	Cut In Temp.	Cut Out Temp.	Amps	Volts	Hertz	Replaces
<b>Packard</b>									
PRL130	Vertical 1/4"	Open On Rise	SPST	Manual Reset	130°F	16.0	250	50/60	Rheem 47-22453-01
PRL135	Vertical 1/4"	Open On Rise	SPST	Manual Reset	135°F	16.0	250	50/60	Rheem 47-22453-02
PRL220	Vertical 1/4"	Open On Rise	SPST	Manual Reset	220°F	16.0	250	50/60	Nordyne 626354
PRL230	Vertical 1/4"	Open On Rise	SPST	Manual Reset	230°F	16.0	250	50/60	Nordyne 626353
PRL240	Vertical 1/4"	Open On Rise	SPST	Manual Reset	240°F	16.0	250	50/60	Nordyne 626355
PRL250	Vertical 1/4"	Open On Rise	SPST	Manual Reset	250°F	16.0	250	50/60	Nordyne 626352
PRL260	Vertical 1/4"	Open On Rise	SPST	Manual Reset	260°F	16.0	250	50/60	Nordyne 626350
PRL300	Vertical 1/4"	Open On Rise	SPST	Manual Reset	300°F	16.0	250	50/60	Heil 1005549 York 026-34027-000
PRL350	Vertical 1/4"	Open On Rise	SPST	Manual Reset	350°F	16.0	250	50/60	Rheem 47-22861-01 Goodman B1370154

## Plenum Thermostats

### Features

- Opens when furnace plenum area temperature is too high
- Shuts furnace down until the temperature returns to normal



Item ID	Close Temp. °F	Open Temp. °F	Thermodisc	Carrier	Bryant	Goodman	Rheem	Trane	York
<b>Packard</b>									
PHL501	130	170	L170-40 SPST	P331-2203	HH12ZA174A HH12ZA176A		47-21711-06		025-29041-007
PHL502	150	180	L180-30 SPST		HH12ZA178A	B1370001			
PHL503	150	190	L190-40 SPST	P331-2205	HH12ZA189 HH12ZB190 HH12ZA193A		47-21711-03		025-29041-012
PHL504	200	240	L240-40 SPST	P331-2217	HH12ZA240 HH12ZA252A				
PHL505	100	140	L140-40 SPST		HH12ZB140			SWT1258	
PHL506	130	170	L170-40 SPST		HH12ZB170				
PHL507	110	140	L140-30 SPST		HH12ZA140				025-29041-005
PHL508	170	190	L150-20 SPST	P331-2005	HH12ZB190 HH12ZA193 HH12ZA189	B1370913		SWT1260	
PHL509	210	240	L240-30 SPST	P331-2217	HH12ZB240 HH12ZA252 HH12ZA240	B1370903			
PHL510	130	150	L150-20 SPST		HH12ZB150				
PHL511	140	160	L160-20 SPST		HH12ZB160				025-29041-004
PHL512	150	170	L170-20 SPST		HH12ZB170				
PHL513	130	170	L170-40 SPST						
PHL514	104	180	L180-40 SPST		HH12ZB180				025-29031-711
PHL515	160	200	L200-40 SPST		HH12ZB200 HH12ZA199 HH12ZA201				025-29041-006
PHL516	170	210	L210-40 SPST		HH12ZB210			SWT1263	
PHL517	180	220	L220-50 SPST	48NHT042	HH12ZB220 HH12ZA219 HH12ZA223			SWT1273	
PHL518	210	250	L250-40 SPST	P331-2208	HH12ZB250 HH12ZA251	B13700125		SWT1261 SWT1272	
PHL519	125	155	L155-30 SPST			B1370006			

## Adjustable Thermostats

### Applications

- Covers approximately 95% of the hundreds of different temperature ranges and styles used on dryers and heating applications

### Features

- Dial knob
- 1/4" quick connect terminals
- UL recognized



Item ID	Switch Action	Switch Type	Temp. Range	Differential	Volts	Amps	Hertz	Replaces
<b>Packard Limit Controls</b>								
PT012	Open On Rise	SPST	135°F to 175°F	40°F	250	25	50/60	AT012 39220 3L05-1
PT013	Open On Rise	SPST	175°F to 215°F	40°F	250	25	50/60	AT013 39225 3L05-2
PT014	Open On Rise	SPST	210°F to 250°F	40°F	250	25	50/60	AT014 39230 3L05-4
PT015	Open On Rise	SPST	250°F to 290°F	40°F	250	25	50/60	AT015 39235 3L05-13
<b>Packard Fan Controls</b>								
PT021	Close On Rise	SPST	90°F to 130°F	20°F	250	25	50/60	AT021 39205 3F05-1
PT022	Close On Rise	SPST	140°F to 180°F	20°F	250	25	50/60	AT022 39210 3F05-2

## Heat Sequencers

### Features

- Contact ratings: up to 25 Amps at 120 or 240 Volts
- Full-load rated auxiliary contacts
- Standard operating ambient between -50°F (-45.5°C) and 165°F (73.8°C)
- Shock and vibration resistant
- Solid state
- Quick-connect terminals
- Mounts in any position
- UL recognized



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A341</b>	1	1	1-20						40-110				SPST



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A342</b>	1	1			30-90					1-30			SPST



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A343</b>	1	2	1-20	1-20				40-110	40-110				DPDT



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A344</b>	1	2			30-90	30-90				1-30	1-30		DPDT



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A345</b>	2	3	1-110	1-110	1-110			1-110	1-110	1-110			DPDT-SPST



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A346</b>	2	4	1-110	1-110	1-110	1-110		1-110	1-110	1-110	1-110		2-DPDT



Item ID	Timings - On					Timings - Off					Type		
	Timings	Switches	M1-M2	M3-M4	M5-M6	M7-M8	M9-M10	M1-M2	M3-M4	M5-M6		M7-M8	M9-M10
<b>Packard</b>													
<b>HS24A3414</b>	4	5	1-160	1-160	1-160	1-160	1-160	1-160	1-160	1-160	1-160	1-160	2DPDT-SPST

Item ID	HS24A341	HS24A342	HS24A343	HS24A344	HS24A345	HS24A346	HS24A3414
<b>Replaces</b>							
<b>Gemline</b>	GS101	GS102	GS103	GS104	GS105	GS106	GS107
<b>Klixon</b>	60000AOM	A012	E017	51172-22	51172-32	51172-33	51172-131-5
<b>White-Rodgers</b>	24A34-1	24A34-2	24A34-3	24A34-4	24A34-5	24A34-6	24A34-14

## Direct Replacement For Goodman



Item ID	Type	Control Voltage	Delay On (Seconds)	Delay Off (Seconds)	Replaces
<b>Packard</b>					
<b>HS33247</b>	SPDT 1 & 3 N.O.	24	1-24	15-75	Goodman B1370738 Klixon COM-21



## Hard Starts

ICM Control Hard Starts	Features and Applications	Specifications	Replaces
	<b>ICM803</b> <ul style="list-style-type: none"> <li>Increases starting torque up to 500%</li> <li>Differential Current Relay (DCR)</li> <li>OEM Approved</li> <li>Self-adjusting to voltage fluctuation</li> <li>Easy to install</li> <li>A timed safety circuit is provided in the event the motor fails to start w/i 2 seconds</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 95-288 VAC</li> <li>Capacitor: 88-106/330V</li> <li>Range: 1/2 to 3 HP range</li> <li>Temperature Range: -40° to +65°C</li> </ul>	<ul style="list-style-type: none"> <li>5-2-1: CSR-V1</li> <li>Kickstart: T05, KS8</li> <li>Supco: SPP-8, SPP-8E</li> </ul>
	<b>ICM805</b> <ul style="list-style-type: none"> <li>Increases starting torque up to 500%</li> <li>Differential Current Relay (DCR)</li> <li>OEM Approved</li> <li>Self-adjusting to voltage fluctuation</li> <li>Easy to install</li> <li>A timed safety circuit is provided in the event the motor fails to start w/i 2 seconds</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 95-288 VAC</li> <li>Capacitor: 145-175/330V</li> <li>Range: 1/2 to 5 HP range</li> <li>Temperature Range: -40° to +65°C</li> </ul>	<ul style="list-style-type: none"> <li>5-2-1: CSR-U1, CSR-U2, CSR-U3</li> <li>Kickstart: KS1</li> <li>Supco: SPP-8, SPP-8E</li> </ul>
	<b>ICM855</b> <ul style="list-style-type: none"> <li>Increases starting torque up to 300%</li> <li>Positive Temperature Coefficient (PTC) Technology</li> <li>Quick recycling</li> <li>Self-adjusting to voltage fluctuation</li> <li>Easy to install: 2-wires, clips or screws</li> <li>Low cost motor starting device</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 115-288 VAC</li> <li>Capacitor: 43-52 Mfd., 330V</li> <li>Range: 1/2 to 10 HP range (up to 1.5 HP recommended)</li> </ul>	<ul style="list-style-type: none"> <li>A-1: WXS-5</li> <li>MARS: 32701, 35701</li> <li>Supco: SPP-5</li> <li>Wagner/DiversiTech: DST-5</li> </ul>
	<b>ICM856</b> <ul style="list-style-type: none"> <li>Increases starting torque up to 500%</li> <li>Positive Temperature Coefficient (PTC) Technology</li> <li>Easy to install</li> <li>Low cost motor starting device</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 115-288 VAC</li> <li>Capacitor: 88-106 Mfd., 330V</li> <li>Range: 1/2 to 10 HP range (up to 2-5 HP recommended)</li> </ul>	<ul style="list-style-type: none"> <li>A-1: WXS-6</li> <li>MARS: 32702, 35702</li> <li>Supco: SPP-6</li> <li>Wagner/DiversiTech: DST-6</li> </ul>
	<b>ICM857</b> <ul style="list-style-type: none"> <li>Electric motor starter for single-phase commercial and domestic capillary refrigeration systems and freezers</li> <li>Pre-wired for fast installation</li> <li>Overload: 12A</li> <li>145-175 mfd</li> <li>For 1/12 to 1/5 HP motors</li> </ul>	<ul style="list-style-type: none"> <li>Operating voltage: 120V</li> <li>Maximum voltage: 180V</li> <li>Maximum current: 12A</li> <li>Retry time: within 90 seconds</li> </ul>	<ul style="list-style-type: none"> <li>Mars: 32481</li> <li>Supco: RC0810</li> </ul>





## Hard Starts






ICM Control	Features and Applications	Specifications	Replaces
<b>Hard Starts</b> 	<b>ICM858</b> <ul style="list-style-type: none"> <li>• Electric motor starter for single-phase commercial and domestic capillary refrigeration systems and freezers</li> <li>• Pre-wired for fast installation</li> <li>• Overload: 22A</li> <li>• 243-292 mfd</li> <li>• For 1/4 to 1/3 HP motors</li> </ul>	<ul style="list-style-type: none"> <li>• Operating voltage: 120V</li> <li>• Maximum voltage: 180V</li> <li>• Maximum current: 12A</li> <li>• Retry time: within 90 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Mars: 32741</li> <li>• Supco: RCO410</li> </ul>
	<b>ICM859</b> <ul style="list-style-type: none"> <li>• Electric motor starter for single-phase commercial and domestic capillary refrigeration systems and freezers</li> <li>• Pre-wired for fast installation</li> <li>• Overload: 30A</li> <li>• 243-292 mfd</li> <li>• For 1/3 to 1/2 HP motors</li> </ul>	<ul style="list-style-type: none"> <li>• Operating voltage: 120V</li> <li>• Maximum voltage: 180V</li> <li>• Maximum current: 12A</li> <li>• Retry time: within 90 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: RCO210</li> </ul>
	<b>ICM860</b> <ul style="list-style-type: none"> <li>• Increases starting torque up to 500%</li> <li>• Ensures precise starts</li> <li>• Not affected by ambient temperature</li> <li>• Recycles instantly (less than one second)</li> <li>• For scroll or reciprocating compressors</li> <li>• For 115 or 230 VAC motors</li> <li>• Intrinsically safe, fuse protected</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 90-277 VAC</li> <li>• Maximum input voltage: 390 VAC</li> <li>• Recommended range: 1/12 to 5 HP</li> <li>• Operational temperature range: -40°C to +65°C</li> <li>• Capacitor: 88-106 Mfd., 330V</li> <li>• Fused (not user replaceable)</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: SPP-5E, SPP-6E</li> </ul>
	<b>ICM866U</b> <ul style="list-style-type: none"> <li>• The ICM866U combines the award-winning technology of ICM's Universal Motor Starting Relay with the patented circuitry of the ICM860 for the most precise and reliable hard start kit on the market!</li> <li>• Rated for 1/12 to 5HP applications.</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-voltage operation – 115 or 230 VAC motors</li> <li>• 145-175 <math>\mu</math>F @ 330V</li> <li>• Recommended Range: 1/12 to 5HP application</li> </ul>	<ul style="list-style-type: none"> <li>• Supco: SPP5, SPP6, SPP5E, SPP6E, SPP7E, SPP8E, SPP9E, SPP10E</li> <li>• Kickstart: KS1, TO-5, KS8</li> <li>• 5-2-1: CSR-U1, CSR-U2, CSR-U3</li> <li>• Watsco: WSX1</li> <li>• Mars: 32708, SS1, SS5, 32703, 32704, 32701, 32702</li> <li>• Diversitech: DST-5, DST-6</li> </ul>

# INCREASE STARTING TORQUE UP TO 500%










## Accessories

ICM Control	Features and Applications	Specifications
<b>Remote Sensors</b>		
	<p><b>ACC-OD103</b></p> <ul style="list-style-type: none"> <li>Outdoor sensor for SimpleComfort® PRO dual fuel thermostats (SC4812 and SC5812)</li> </ul>	<ul style="list-style-type: none"> <li>Length: 36"</li> <li>1.5 amps</li> <li>Weight: 0.05 lb.</li> </ul>
	<p><b>ACC-RT103</b></p> <ul style="list-style-type: none"> <li>Remote Sensor for SC4000 and SC5000 series (except SC4010 and SC5010)</li> <li>Ideal for tamper-prone areas or poor air-flow areas</li> <li>Mounts to standard 2" x 4" outlet box</li> <li>Foam gasket prevents drafts through wall opening</li> <li>For use with ICM's SC700, SC4000 and SC5000 series thermostats (except SC4010 and SC5010 models)</li> </ul>	<ul style="list-style-type: none"> <li>2.75" x 4.5"</li> </ul>
	<p><b>ACC-RT104</b></p> <ul style="list-style-type: none"> <li>Remote Sensor for SC1000, 2000 and 3000 series, and SC4010 and SC5010 models</li> <li>Ideal for tamper-prone areas or poor air-flow areas</li> <li>Mounts to standard 2" x 4" outlet box</li> <li>Foam gasket prevents drafts through wall opening</li> <li>For use with ICM's SC1000 series (model dependent) and the SC4010 and SC5010 dual powered thermostats</li> </ul>	<ul style="list-style-type: none"> <li>2.75" x 4.5"</li> </ul>
<b>Delay on Break Timers</b>		
	<p><b>ACC-OE-03 (Outdoor Enclosure)</b></p> <ul style="list-style-type: none"> <li>Rugged steel construction</li> <li>Easy to mount</li> <li>Helps to protect controls from harsh environmental conditions such as temperature, shock, humidity and vibration</li> <li>Ideal for use with ICM head pressure controls</li> </ul>	<ul style="list-style-type: none"> <li>NEMA 3R rated</li> <li>Dimensions: 4.25" x 6.25" x 6.25"</li> </ul>
<b>Transfer Cables</b>		
	<p><b>ACC-WIH21</b></p> <ul style="list-style-type: none"> <li>Transfers the program and/or configuration from one thermostat to another like model in seconds</li> <li>Saves valuable installation time</li> <li>For use with select SimpleComfort® thermostats featuring ICM's patented SimpleSet™ Target programming technology</li> <li>Use with Simple Comfort Non-Programmable Thermostats featured on pages 85-87</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>

## Accessories

ICM Control	Features and Applications	Specifications	Replaces
<b>Wall Plates</b>			
	<p><b>ACC-WP03</b></p> <ul style="list-style-type: none"> <li>Insulated foam backing prevents drafts</li> <li>Conceals wall imperfections</li> <li>Saves installation time</li> </ul>	<ul style="list-style-type: none"> <li>5 3/4" H x 7 1/2" W</li> </ul>	
	<p><b>ACC-WP04</b></p> <ul style="list-style-type: none"> <li>Insulated foam backing prevents drafts</li> <li>Conceals wall imperfections</li> <li>Saves installation time</li> </ul>	<ul style="list-style-type: none"> <li>Height : 0.25"</li> <li>Length: 5.84"</li> <li>Weight: 0.15 lb.</li> <li>Width: 5.94"</li> </ul>	
<b>Overflow Alarm</b>			
	<p><b>ACH55</b></p> <ul style="list-style-type: none"> <li>Optional overflow alarm LED kit</li> <li>For use with ICM340 or ICM342</li> </ul>	<ul style="list-style-type: none"> <li>6 ft. cable length</li> </ul>	
<b>Relay Socket</b>			
	<p><b>ACS-8</b></p> <ul style="list-style-type: none"> <li>8-pin octal plug-in base</li> <li>Locating key ensures proper orientation</li> <li>For use with ICM408 three-phase monitors and ICM500 Series multi-mode timers</li> </ul>	<ul style="list-style-type: none"> <li>10 amps up to 480 VAC</li> </ul>	Diversified: RB-08
	<p><b>ACS-11</b></p> <ul style="list-style-type: none"> <li>11-pin plug-in base</li> <li>Locating key ensures proper orientation</li> <li>For use with ICM408 three-phase monitors and ICM500 Series multi-mode timers</li> </ul>	<ul style="list-style-type: none"> <li>10 amps up to 480 VAC</li> </ul>	Diversified: RB-08





## Accessories

### ICM Control

### Features and Applications

### Specifications

#### Comfort Control Center



#### ICM CC750-115 and ICM CC750-230

- The multi award-winning Simple Systems™ CC750-115 Comfort Control Center enhances comfort and indoor air quality of your home or workplace by controlling the blower speed in your existing air conditioner or heat pump. By making your existing system more effective at removing and controlling excess air moisture, the CC750 creates drier, more comfortable living conditions. The CC750 can also protect your home from mold propagation by keeping humidity levels low. Best of all, the CC750 provides enhanced comfort and indoor air quality while saving on electricity.
- Multi award-winning variable frequency/variable voltage blower motor speed control
- Enhances comfort by more effectively removing moisture from the air
- Improves indoor air quality by allowing more efficient use of air cleaning devices
- Reduces energy costs by improving overall system efficiencies
- Also provides hot discharge air in heat pump installations
- Field programmable to maximize benefits/results regardless of environmental conditions present at each install
- Works with your existing A/C or heat pump system equipped with a standard or inverter grade PSC, or shaded pole motor
- Converts a PSC motor to a variable speed motor
- Field programmable
- Varies the air flow based on delta T
- May be mounted in/out of the air handler
- Motor lubrication algorithm
- Inverter bypass
- Over-current protection
- Standard thermostat interface programming features:
- Differential temperature setting
- Minimum frequency
- Maximum frequency
- "G" call frequency
- Skip frequency
- Maximum run time
- Power setting
- Repeat cycle function B or O active (for heat pumps)
- Discharge temperature
- Minimum coil temperature
- Maximum coil temperature Ratings:
- Nominal 24 VAC inputs (+/- 25%): 18-30 VAC RMS absolute
- Power consumption: 10 Watts typical line ratings- nominal 115 VAC RMS
- Inverter operation: 95-135 VAC RMS absolute
- Bypass operation: 85-145 VAC RMS absolute
- Maximum inverter amps: 10 amps RMS
- Maximum bypass amps: 20 amps (60 HZ)

#### • 115 Ratings:

- Nominal 24 VAC inputs (+/- 25%): 18-30 VAC RMS absolute
- Power consumption: 10 Watts typical line ratings- Nominal 115 VAC RMS
- Inverter operation: 95-135 VAC RMS absolute
- Bypass operation: 85-145 VAC RMS absolute
- Maximum inverter amps: 10 amps RMS
- Maximum bypass amps: 20 amps (60 HZ)

#### • 230 Ratings:

- Nominal 24 VAC inputs (+/- 25%): 18-30 VAC RMS absolute
- Power consumption: 10 Watts typical line ratings- Nominal 208-230 VAC RMS
- Inverter operation: 180-264 VAC RMS absolute
- Bypass operation: 170-264 VAC RMS absolute
- Maximum inverter amps: 8.5 amps RMS
- Maximum bypass amps: 10 amps (60 HZ)



**Packard**

**WELCOME TO YOUR NEW HOME!**

*Customer Focused · Employee Owned*

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Supplying HVACR solutions with your needs in mind.

***Packard's dedicated  
team is ready to  
serve you!***



TITAN HD<sup>®</sup> TITANICE TITAN MAX<sup>™</sup> TITAN PRO<sup>®</sup>

# ELECTRICAL

Small products come with big performance. Designed to perform under stressful conditions these capacitors, relays and contactors pack a punch.



# What's inside matters comes to HVACR...

...that's why  
replacement



rs when it

y we offer the most innovative  
t parts for maximum durability.



## TITAN HD® Oval Motor Run Capacitors



### Features

- Manufactured to EIA-456A standards
- Up to 60,000 hours operational life
- Aluminum cans filled with soybean based oil
- UL-801 fault current protection
- RoHS compliant
- Approval certifications: UL, cUL, IEC 60252
- Made in USA



### Single Section - Oval

Item ID	MFD	Can Size
<b>Titan HD 370 Volt</b>		
POC2A	2	1
POC3A	3	1
POC4A	4	1
POC5A	5	1
POC6A	6	1
POC7.5A	7.5	1
POC10A	10	2
POC12.5A	12.5	2
POC15A	15	3
POC17.5A	17.5	3
POC20A	20	3
POC25A	25	3
POC30A	30	3
POC35A	35	3
POC40A	40	3
POC45A	45	3
POC50A	50	13
POC55A	55	13
POC60A	60	13
POC70A	70	13
POC80A	80	13
<b>Titan HD 440/370 Volt</b>		
POCF2A	2	1
POCF2.5A	2.5	1
POCF3A	3	1
POCF4A	4	1
POCF5A	5	1
POCF6A	6	1
POCF7.5A	7.5	2
POCF10A	10	3
POCF12.5A	12.5	3
POCF15A	15	3
POCF17.5A	17.5	3
POCF20A	20	3
POCF25B	25	3
POCF30A	30	4
POCF35A	35	4
POCF40A	40	13
POCF45A	45	13
POCF50A	50	13
POCF55A	55	13
POCF60A	60	14
POCF70A	70	14
POCF80A	80	14

### Dual Section - Oval

Item ID	MFD	Can Size
<b>Titan HD 370 Volt</b>		
POCD55A	5+5	5
POCD1010A	10+10	5
POCD153A	15+3	12
POCD154A	15+4	12
POCD155A	15+5	12
POCD1510A	15+10	12
POCD1755A	17.5+5	12
POCD203A	20+3	5
POCD204A	20+4	12
POCD205A	20+5	12
POCD2010A	20+10	12
POCD2015A	20+15	8
POCD253A	25+3	12
POCD254A	25+4	6
POCD255A	25+5	12
POCD2575A	25+7.5	12
POCD258A	25+8	8
POCD2510A	25+10	12
POCD2515A	25+15	8
POCD303A	30+3	13
POCD305A	30+5	13
POCD3075A	30+7.5	8
POCD3010A	30+10	13
POCD353A	35+3	13
POCD354A	35+4	13
POCD355A	35+5	13
POCD3575A	35+7.5	13
POCD3510A	35+10	13
POCD403A	40+3	13
POCD404A	40+4	9
POCD405A	40+5	13
POCD4075A	40+7.5	13
POCD4010A	40+10	13
POCD455A	45+5	13
POCD4575A	45+7.5	13
POCD4510A	45+10	13
POCD4515A	45+15	13
POCD505A	50+5	13
POCD555A	55+5	14
POCD5575A	55+7.5	14
POCD605A	60+5	14
POCD6075A	60+7.5	14
POCD6010A	60+10	14

Longevity you can count on; craftsmanship to be proud of.

Can Size	Depth (In.)	Width (In.)	Height (In.)
<b>Can Dimension</b>			
1	1.25	2.00	1.56
2	1.25	2.00	2.19
3	1.25	2.00	2.88
4	1.25	2.00	3.88
5	1.75	2.75	2.38
6	1.75	2.75	2.75
8	1.75	2.75	3.25
9	1.75	2.75	3.75
12	1.75	2.75	2.38
13	1.75	2.75	2.91
14	1.75	2.75	3.91
15	1.75	2.75	4.75
16	1.75	3.54	4.75

### Dual Section - Oval

Item ID	MFD	Can Size
<b>Titan HD 440/370 Volt</b>		
POCFD105A	10+5	5
POCFD154A	15+4	5
POCFD155A	15+5	12
POCFD1510A	15+10	6
POCFD205A	20+5	12
POCFD2015A	20+15	13
POCFD255A	25+5	13
POCFD2575A	25+7.5	13
POCFD2510A	25+10	13
POCFD2515A	25+15	9
POCFD304A	30+4	13
POCFD305A	30+5	13
POCFD3075A	30+7.5	13
POCFD3010A	30+10	13
POCFD353A	35+3	13
POCFD354A	35+4	9
POCFD355A	35+5	13
POCFD3575A	35+7.5	13
POCFD3510A	35+10	10
POCFD403A	40+3	11
POCFD405A	40+5	14
POCFD4075A	40+7.5	14
POCFD4010A	40+10	14
POCFD455A	45+5	14
POCFD4575A	45+7.5	14
POCFD505A	50+5	15
POCFD5075A	50+7.5	15
POCFD555A	55+5	15
POCFD5510A	55+10	15
POCFD605A	60+5	15
POCFD6510A	65+10	15
POCFD805A	80+5	16
POCFD8075A	80+7.5	16

#### Notes:

- Height dimension does not include terminals. Add 1/2" for terminals. Please call when dimensions are critical.

## TITAN HD® Round Motor Run Capacitors



### Single Section - Round

Item ID	MFD	Can Size
<b>Titan HD 370 Volt</b>		
PRC5A	5	1
PRC7.5A	7.5	1
PRC10A	10	1
PRC12.5A	12.5	1
PRC15A	15	1
PRC17.5A	17.5	1
PRC20A	20	1
PRC25A	25	1
PRC30A	30	1
PRC31.5A	31.5	5
PRC35A	35	3
PRC40A	40	3
PRC45A	45	3
PRC50A	50	4
PRC55A	55	4
PRC60A	60	4
PRC70A	70	8
PRC80A	80	8
PRC100A	100	12
<b>Titan HD 440/370 Volt</b>		
PRCF5A	5	1
PRCF7.5A	7.5	1
PRCF10A	10	1
PRCF12.5A	12.5	1
PRCF15A	15	1
PRCF17.5A	17.5	1
PRCF20A	20	1
PRCF25A	25	3
PRCF30A	30	3
PRCF35A	35	4
PRCF40A	40	4
PRCF45A	45	4
PRCF50A	50	8
PRCF55A	55	8
PRCF60A	60	8
PRCF65A	65	10
PRCF70A	70	10
PRCF75A	75	10
PRCF80A	80	10
PRCF90A	90	15

Can Size	Diameter (In.)	Height (In.)
<b>Can Dimension</b>		
1	1.75	2.38
2	1.75	2.75
3	1.75	2.84
4	1.75	3.84
6	2	2.91
8	2	3.84
10	2	4.75
12	2.5	2.91
15	2.5	3.91
16	2.5	4.25

### Dual Section - Round

Item ID	MFD	Can Size
<b>Titan HD 370 Volt</b>		
PRCD253A	25+3	6
PRCD254A	25+4	6
PRCD255A	25+5	6
PRCD303A	30+3	6
PRCD304A	30+4	6
PRCD305A	30+5	6
PRCD3075A	30+7.5	6
PRCD3010A	30+10	6
PRCD353A	35+3	6
PRCD354A	35+4	6
PRCD355A	35+5	6
PRCD3575A	35+7.5	6
PRCD3510A	35+10	6
PRCD403A	40+3	6
PRCD404A	40+4	6
PRCD405A	40+5	6
PRCD4075A	40+7.5	6
PRCD4010A	40+10	6
PRCD453A	45+3	6
PRCD455A	45+5	6
PRCD4575A	45+7.5	6
PRCD4510A	45+10	6
PRCD503A	50+3	6
PRCD505A	50+5	6
PRCD5075A	50+7.5	6
PRCD5010A	50+10	6
PRCD555A	55+5	8
PRCD5575A	55+7.5	8
PRCD5510A	55+10	8
PRCD605A	60+5	8
PRCD6075A	60+7.5	8
PRCD6010A	60+10	8
PRCD805A	80+5	12
PRCD8075A	80+7.5	12
PRCD8010A	80+10	12
PRCD80125A	80+12.5	16

### Features

- Manufactured to EIA-456A standards
- Up to 60,000 hours operational life
- Aluminum cans filled with soybean based oil
- UL-801 fault current protection
- RoHS compliant
- Approval certifications: UL, cUL, IEC 60252
- Made in USA

### Dual Section - Round

Item ID	MFD	Can Size
<b>Titan HD 440/370 Volt</b>		
PRCFD205A	20+5	6
PRCFD2015A	20+15	6
PRCFD253A	25+3	6
PRCFD255A	25+5	6
PRCFD2575A	25+7.5	6
PRCFD2510A	25+10	6
PRCFD2515A	25+15	6
PRCFD303A	30+3	6
PRCFD304A	30+4	6
PRCFD305A	30+5	6
PRCFD3075A	30+7.5	6
PRCFD353A	35+3	8
PRCFD354A	35+4	8
PRCFD355A	35+5	8
PRCFD356A	35+6	8
PRCFD3575A	35+7.5	8
PRCFD3510A	35+10	8
PRCFD403A	40+3	8
PRCFD404A	40+4	8
PRCFD405A	40+5	8
PRCFD406A	40+6	8
PRCFD4075A	40+7.5	8
PRCFD4010A	40+10	8
PRCFD453A	45+3	8
PRCFD455A	45+5	8
PRCFD456A	45+6	8
PRCFD4575A	45+7.5	8
PRCFD4510A	45+10	8
PRCFD505A	50+5	8
PRCFD5075A	50+7.5	8
PRCFD5010A	50+10	8
PRCFD555A	55+5	12
PRCFD5575A	55+7.5	12
PRCFD5510A	55+10	12
PRCFD605A	60+5	12
PRCFD6075A	60+7.5	12
PRCFD6010A	60+10	12
PRCFD60125A	60+12.5	17
PRCFD705A	70+5	15
PRCFD7075A	70+7.5	15
PRCFD7010A	70+10	15
PRCFD805A	80+5	15
PRCFD8075A	80+7.5	15
PRCFD8010A	80+10	15

### Notes:

- Height dimension does not include terminals. Add 1/2" for terminals.
- Please call when dimensions are critical.

## TITAN PRO® Motor Run Capacitors



At 60,000 hours of operational life, Titan Pro® Professional Grade Motor Run Capacitors get the job done by outperforming standard motor run capacitors of similar value in the toughest conditions.



Scan to learn more

### Oval

Item ID	MFD	Depth (In.)	Width (In.)	Height (In.)	Industry Nos.	
<b>Titan Pro 440/370 Volt - Single Section</b>						
TOCF2	2	1.24	2.03	2.17	12026	12002
TOCF2.5	2.5	1.24	2.03	2.17	12019	—
TOCF3	3	1.24	2.03	2.17	12027	12003
TOCF4	4	1.24	2.03	2.17	12028	12004
TOCF5	5	1.24	2.03	2.17	12029	12005
TOCF6	6	1.24	2.03	2.56	12030	12006
TOCF7.5	7.5	1.24	2.03	2.17	12031	12007
TOCF10	10	1.24	2.03	2.56	12032	12008
TOCF12.5	12.5	1.24	2.03	2.95	12033	12009
TOCF15	15	1.24	2.03	2.95	12034	12010
TOCF17.5	17.5	1.24	2.03	3.74	12036	12012
TOCF20	20	1.77	2.80	2.68	12037	12014
TOCF25	25	1.77	2.80	3.07	12040	12015
TOCF30	30	1.77	2.80	3.46	12041	12017
TOCF35	35	1.77	2.80	3.86	12043	12018
TOCF40	40	1.77	2.80	4.06	12045	12021
TOCF45	45	1.77	2.80	4.45	12048	12023
TOCF50	50	1.77	2.80	4.84	12049	12025
TOCF55	55	1.77	2.80	5.04	12050	12024
TOCF60	60	1.87	3.54	3.78	12051	12087
TOCF65	65	1.87	3.54	3.98	—	—

### Titan Pro 480 Volt - Single Section

TOCF25A	25	1.77	2.80	3.66	—	—
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### Titan Pro 440/370 Volt - Dual Section

TOCFD154	15+4	1.77	2.68	2.36	12270	12056
TOCFD155	15+5	1.77	2.68	2.68	12271	12057
TOCFD2015	20+15	1.77	2.80	3.86	12083	12164
TOCFD255	25+5	1.77	2.80	3.46	12184	12066
TOCFD2575	25+7.5	1.77	2.80	3.46	12182	12143
TOCFD2510	25+10	1.77	2.80	3.86	12183	12167
TOCFD304	30+4	1.77	2.80	3.86	12181	12145
TOCFD305	30+5	1.77	2.80	3.86	12187	12069
TOCFD3075	30+7.5	1.77	2.80	3.86	12038	12146
TOCFD353	35+3	1.77	2.80	4.25	12085	12148
TOCFD354	35+4	1.77	2.80	4.25	12179	12071
TOCFD355	35+5	1.77	2.80	4.25	12185	12072
TOCFD3575	35+7.5	1.77	2.80	4.25	12188	12149
TOCFD405	40+5	1.77	2.80	4.65	12086	12171
TOCFD4075	40+7.5	1.87	3.54	3.78	12189	12152
TOCFD455	45+5	1.77	2.80	5.04	12190	12174
TOCFD505	50+5	1.87	3.54	4.37	12108	12138
TOCFD555	55+5	1.87	3.54	4.57	12275	12154
TOCFD5510	55+10	1.87	3.54	5.16	12276	—
TOCFD605	60+5	1.87	3.54	5.55	12109	12139

## 440/370 volt

Reduce your inventory costs with a Dual Voltage capacitor

### Round

Item ID	MFD	Diameter (In.)	Height (In.)	Industry Nos.	
<b>Titan Pro 440/370 Volt - Single Section</b>					
TRCF3	3	1.77	2.17	12103	12803
TRCF5	5	1.77	2.17	12105	12095
TRCF7.5	7.5	1.77	2.17	12107	12097
TRCF10	10	1.77	2.17	12232	12098
TRCF12.5	12.5	1.77	2.17	12233	12099
TRCF15	15	1.77	2.56	12234	12210
TRCF17.5	17.5	1.77	2.76	12236	12212
TRCF20	20	1.77	2.95	12237	12214
TRCF25	25	1.97	2.95	12240	12215
TRCF30	30	1.97	3.35	12241	12217
TRCF35	35	1.97	3.54	12243	12218
TRCF40	40	1.97	3.94	12245	12221
TRCF45	45	1.97	4.33	12248	12223
TRCF50	50	1.97	4.72	12251	12225
TRCF55	55	1.97	4.92	12252	12226
TRCF60	60	2.17	4.53	12254	12227
TRCF70	70	2.17	4.92	12258	12229
TRCF80	80	2.50	4.72	12259	12199
TRCF100	100	2.50	5.31	—	—

### Titan Pro 440/370 Volt - Dual Section

TRCFD205	20+5	1.97	3.74	12115	12260
TRCFD2015	20+15	1.97	3.94	12112	12209
TRCFD255	25+5	1.97	3.54	12278	12261
TRCFD2575	25+7.5	1.97	3.74	12279	12262
TRCFD2515	25+15	1.97	4.33	12114	—
TRCFD303	30+3	1.97	4.33	12126	12244
TRCFD305	30+5	1.97	3.94	12281	12264
TRCFD3075	30+7.5	1.97	4.13	12282	12224
TRCFD353	35+3	2.50	3.74	12077	12082
TRCFD354	35+4	1.97	4.53	12070	12231
TRCFD355	35+5	1.97	4.13	12283	12266
TRCFD3575	35+7.5	2.36	3.54	12284	12235
TRCFD403	40+3	2.50	3.74	12078	12074
TRCFD405	40+5	2.36	3.54	12286	12178
TRCFD4075	40+7.5	2.50	3.74	12287	12268
TRCFD453	45+3	2.50	3.74	12079	12073
TRCFD455	45+5	2.50	3.74	12288	12269
TRCFD4575	45+7.5	2.50	3.74	12289	12249
TRCFD505	50+5	2.50	3.94	12290	12191
TRCFD5075	50+7.5	2.50	3.94	12291	12192
TRCFD50125	50+12.5	2.50	4.16	12253	—
TRCFD555	55+5	2.50	4.13	12292	12193
TRCFD5575	55+7.5	2.36	4.33	12293	12194
TRCFD603	60+3	2.50	4.33	12160	—
TRCFD605	60+5	2.36	4.33	12294	12195
TRCFD6075	60+7.5	2.36	4.53	12295	12196
TRCFD6010	60+10	2.50	4.53	12296	12265
TRCFD705	70+5	2.50	4.92	12255	12053
TRCFD7075	70+7.5	2.50	4.92	12166	12054
TRCFD805	80+5	2.50	5.31	12257	12197
TRCFD8075	80+7.5	2.50	5.12	12216	12198
TRCFD8010	80+10	2.50	5.31	12117	12201

#### Notes:

- Height dimension does not include terminals. Add 1/2" for terminals.
- Please call when dimensions are critical.



## TITAN Pro 370<sup>®</sup> Motor Run Capacitors

### PRO - series: Features & Benefits

- RELIABLE.** Tested to 60,000 hours
- COMPLIANT.** Built to EIA-456A industry standard for endurance
- CERTIFIED.** Meets UL 810 safety standards
- TESTED.** 100% electrical testing
- ROBUST.** Heat tolerant, high-grade metallized polypropylene film and proprietary Epoxidized Soybean Oil (ESO)



### Oval

Item ID	MFD	Depth (In.)	Width (In.)	Height (In.)	Industry No
<b>Titan Pro 370 Volt - Single Section</b>					
TOC2	2	1.24	2.03	2.17	12902
TOC3	3	1.24	2.03	2.17	12903
TOC4	4	1.24	2.03	2.17	12904
TOC5	5	1.24	2.03	2.17	12905
TOC5B*	5	1.24	2.03	2.17	12905
TOC6	6	1.24	2.03	2.17	12906
TOC7.5	7.5	1.24	2.03	2.17	12907
TOC7.5B*	7.5	1.24	2.03	2.17	12907
TOC10	10	1.24	2.03	2.56	12908
TOC10B*	10	1.24	2.03	2.56	12908
TOC12.5	12.5	1.24	2.03	2.95	12909
TOC15	15	1.24	2.03	2.95	12910
TOC17.5	17.5	1.24	2.03	3.35	12912
TOC20	20	1.77	2.80	2.68	12914
TOC25	25	1.77	2.80	2.68	12915
TOC30	30	1.77	2.80	2.87	12917
TOC35	35	1.77	2.80	3.27	12918
TOC40	40	1.77	2.80	3.46	12921
TOC45	45	1.77	2.80	3.66	12923
TOC50	50	1.77	2.80	3.86	12925
TOC55	55	1.87	3.54	2.99	12924
TOC60	60	1.77	2.80	4.45	12987
TOC70	70	1.87	3.54	3.39	12989
TOC80	80	1.87	3.54	3.78	12990
<b>Titan Pro 370 Volt - Dual Section</b>					
TOCD55	5+5	1.77	2.80	2.09	—
TOCD1010	10+10	1.77	2.80	2.87	—
TOCD153	15+3	1.77	2.80	2.87	12841
TOCD155	15+5	1.77	2.80	2.68	12957
TOCD255	25+5	1.77	2.80	3.07	12966
TOCD305	30+5	1.77	2.80	3.27	12969
TOCD353	35+3	1.77	2.80	3.46	12848
TOCD355	35+5	1.77	2.80	3.46	12972
TOCD405	40+5	1.77	2.80	3.86	12871
TOCD455	45+5	1.77	2.80	4.25	12874

#### Notes:

- Height dimension does not include terminals. Add 1/2" for terminals.
- Please call when dimensions are critical.
- \* Bulk - in multiples of 100

**370 volt offers**  
best value in class



Capacitor Accessories  
See page 419



### Round

Item ID	MFD	Diameter (In.)	Height (In.)	Industry No
<b>Titan Pro 370 Volt - Single Section</b>				
TRC5	5	1.77	2.17	12995
TRC7.5	7.5	1.77	2.17	12997
TRC10	10	1.77	2.17	12998
TRC12.5	12.5	1.77	2.76	12999
TRC15	15	1.77	2.76	12710
TRC17.5	17.5	1.77	2.36	12712
TRC20	20	1.77	2.95	12714
TRC25	25	1.77	2.95	12715
TRC30	30	1.97	2.76	12717
TRC35	35	1.97	2.95	12718
TRC40	40	1.97	3.35	12721
TRC45	45	1.97	3.54	12723
TRC50	50	1.97	3.74	12725
TRC55	55	1.97	3.94	12726
TRC60	60	1.97	4.33	12727
TRC65	65	1.97	4.33	12128
TRC70	70	2.50	3.74	12729
TRC80	80	1.97	5.31	12899
TRC100	100	2.50	4.33	—
<b>Titan Pro 370 Volt - Dual Section</b>				
TRCD1010	10+10	1.97	2.56	—
TRCD154	15+4	1.97	2.95	12702
TRCD155	15+5	1.97	2.95	12703
TRCD205	20+5	1.97	3.35	12760
TRCD253	25+3	1.97	2.95	12711
TRCD254	25+4	1.97	2.95	12875
TRCD255	25+5	1.97	3.35	12761
TRCD303	30+3	1.97	3.54	12720
TRCD304	30+4	1.97	3.15	12763
TRCD305	30+5	1.97	3.54	12764
TRCD3075	30+7.5	1.97	3.94	12724
TRCD353	35+3	1.97	3.94	12730
TRCD355	35+5	1.97	3.94	12766
TRCD3575	35+7.5	1.97	4.33	12735
TRCD403	40+3	1.97	4.13	12739
TRCD405	40+5	1.97	4.13	12878
TRCD4075	40+7.5	1.97	4.53	12768
TRCD455	45+5	1.97	3.94	12769
TRCD4575	45+7.5	1.97	4.33	12749
TRCD505	50+5	1.97	4.72	12755
TRCD5075	50+7.5	1.97	4.92	—
TRCD5010	50+10	1.97	4.53	12757
TRCD555	55+5	2.50	3.74	12893
TRCD5575	55+7.5	2.50	3.74	12894
TRCD605	60+5	2.50	4.13	12895
TRCD6075	60+7.5	2.50	4.13	12896
TRCD705	70+5	2.50	4.33	—
TRCD7075	70+7.5	2.50	4.33	—
TRCD7010	70+10	2.50	4.72	12055
TRCD805	80+5	2.50	4.72	12897
TRCD8075	80+7.5	2.50	4.72	—
TRCD8010	80+10	2.50	4.92	—

## Packard Start Capacitors



Item ID	MFD	Case Size	Industry No.
<b>Packard 110-125 VAC</b>			
PMJ21	21-25	1	11002
PMJ25	25-30	1	11003
PMJ30	30-36	1	11004
PMJ36	36-43	1	11005
PMJ43	43-53	1	11006
PMJ47	47-56	1	
PMJ56	56-75	1	11007
PMJ64	64-77	1	
PMJ72	72-88	1	11008
PMJ88	88-108	1	11009
PMJ108	108-130	1	11010
PMJ124	124-149	1	11112
PMJ130	130-156	1	11112
PMJ145	145-174	1	11013
PMJ161	161-193	1	11014
PMJ189	189-227	1	11015
PMJ200	200-240	1	11016
PMJ216	216-259	1	11017
PMJ216A	216-259	2	11017
PMJ233	233-280	1	10018
PMJ233A	233-280	2	10018
PMJ243	243-292	1	
PMJ243A	243-292	2	
PMJ270	270-324	1	11019
PMJ270A	270-324	2	11019
PMJ295	295-354	1	
PMJ300	300-360	3	11020
PMJ324	324-388	1	11021
PMJ324A	324-388	4	11021
PMJ324B	324-388	2	11021
PMJ340	340-408	2	11022
PMJ340A	340-408	4	11022
PMJ378	378-455	2	11023
PMJ378A	378-455	4	11023
PMJ400	400-480	2	11024
PMJ400A	400-480	4	11024
PMJ430	430-516	2	
PMJ430A	430-516	4	
PMJ430B	430-516	6	
PMJ460	460-552	2	11025
PMJ460A	460-552	4	11025
PMJ460B	460-552	5	11025
PMJ540	540-648	5	11026
PMJ540A	540-648	4	11026
PMJ590	590-708	5	11027
PMJ590A	590-708	4	11027
PMJ645	645-774	5	
PMJ708	708-850	5	11028
PMJ708A	708-850	7	11028
PMJ708B	708-850	4	11028
PMJ800	800-960	4	
PMJ815	815-978	5	
PMJ829	829-995	5	11029
PMJ829A	829-995	7	11029
PMJ850	850-1020	7	
PMJ860	860-1032	4	
PMJ1000	1000-1200	7	11030
PMJ1290	1290-1548	7	

Notes:  
• Please call when dimensions are critical.

Case Size	Diameter (In.)	Height (In.)
<b>Case Dimension</b>		
1	1 7/16	2 3/4
2	1 7/16	3 3/8
3	1 7/16	4 3/8
4	1 13/16	3 3/8
5	1 13/16	4 3/8
6	2 1/16	3 3/8
7	2 1/16	4 3/8
8	2 9/16	4 3/8

Item ID	MFD	Case Size	Industry No.
<b>Packard 165 VAC</b>			
PSMJ72	72-88	1	
PSMJ88	88-108	1	
PSMJ108	108-130	1	
PSMJ124	124-149	1	11031
PSMJ130	130-156	2	
PSMJ145	145-174	2	11032
PSMJ161	161-193	2	11033
PSMJ189	189-227	2	11034
PSMJ216	216-259	4	
PSMJ233	233-280	4	11035
PSMJ243	243-292	4	
PSMJ270	270-324	4	11036
PSMJ340	340-408	4	
PSMJ378A	378-455	5	
PSMJ400	400-480	4	11037
PSMJ540	540-648	4	
PSMJ710	710-850	6	
PSMJ710A	710-850	7	
PSMJ810A	810-972	7	

Item ID	MFD	Case Size	Industry No.
<b>Packard 330 VAC</b>			
PRMJ21	21-25	2	11055
PRMJ25	25-30	2	11056
PRMJ30	30-36	2	11057
PRMJ36	36-43	2	11058
PRMJ43	43-53	4	11059
PRMJ47	47-56	4	
PRMJ56	53-64	4	11060
PRMJ64	64-77	4	
PRMJ72	72-88	4	11061
PRMJ72A	72-88	6	11061
PRMJ72R	72-88	4	
PRMJ88	88-108	6	11062
PRMJ108	108-130	7	11063
PRMJ108A	108-130	6	11063
PRMJ124	124-149	7	11165
PRMJ130	130-158	7	11064
PRMJ135	135-162	7	
PRMJ145	145-174	7	11066
PRMJ145A	145-174	8	11066
PRMJ161	161-193	7	10067
PRMJ189	189-227	7	11068
PRMJ189A	189-227	8	11068
PRMJ216	216-259	8	11069
PRMJ216A	216-259	7	11069
PRMJ243	243-292	6	
PRMJ270	270-324	8	11070
PRMJ300	300-360	8	

### Features

- Dry, electrolytic, non polarized capacitors for intermittent duty in AC motor starting circuits
- Cases are made of moisture and oil resistant molded phenolic resin or plastic
- Standard dual blade terminals
- Operating temperature range: -40°C to 65°C (-40°F to 149°F)
- UL and cUL recognized
- Rated 3-second start
- 20 Starts per hour
- 50/60 Hertz

Item ID	MFD	Case Size	Industry No.
<b>Packard 220-250 VAC</b>			
PTMJ21	21-25	1	11038
PTMJ25	25-30	1	11039
PTMJ30	30-36	1	11040
PTMJ36	36-43	1	11041
PTMJ43	43-53	1	11042
PTMJ43A	43-53	2	11042
PTMJ47	47-56	1	
PTMJ53	53-64	2	
PTMJ56	53-64	1	11043
PTMJ56A	56-72	1	11043
PTMJ59	59-71	6	
PTMJ64	64-77	1	
PTMJ64A	64-77	2	
PTMJ72	72-88	4	11044
PTMJ86	86-108	6	
PTMJ88	88-108	4	11045
PTMJ105	105-126	6	
PTMJ108	108-130	4	11046
PTMJ124	124-149	5	11148
PTMJ124A	124-149	4	11148
PTMJ130	130-158	4	
PTMJ130A	130-158	5	
PTMJ145	145-174	4	11049
PTMJ145A	145-174	6	11049
PTMJ161	161-193	6	11050
PTMJ161A	161-193	5	11050
PTMJ189	189-227	6	11051
PTMJ189A	189-227	7	11051
PTMJ216	216-259	6	11052
PTMJ216A	216-259	7	11052
PTMJ233	233-280	6	11053
PTMJ233A	233-280	7	10053
PTMJ243	243-292	6	
PTMJ270	270-324	6	11054
PTMJ270A	270-324	7	11054
PTMJ280	280-336	7	
PTMJ284	284-333	8	
PTMJ320	320-384	7	
PTMJ340	340-408	7	
PTMJ378	378-455	8	
PTMJ400	400-480	7	
PTMJ400A	400-480	8	
PTMJ430	430-516	8	
PTMJ630	630-750	8	

## Packard Start Capacitors With Resistors



### Features

- Most popular Start Capacitor with resistors to use in Compressor applications
- Includes 15,000 OHM resistor
- Dry, electrolytic, non polarized capacitors for intermittent duty in AC motor starting circuits
- Cases are made of moisture and oil resistant molded phenolic resin or plastic
- Standard dual blade terminals
- Operating temperature range: -40°C to 65°C (-40°F to 149°F)
- UL and cUL recognized
- Rated 3-second start
- 20 Starts per hour
- 50/60 Hertz

Item ID	MFD	Voltage	Case Size
<b>Packard</b>			
PSMJ243R	243-292	165	4
PSMJ270R	270-324	165	4
PTMJ88R	88-108	220-250	4
PTMJ145R	145-174	220-250	4
PTMJ161R	161-193	220-250	6
PTMJ189R	189-227	220-250	6
PRMJ72R	72-88	330	4
PRMJ88R	88-108	330	6
PRMJ108R	108-130	330	4
PRMJ145R	145-174	330	7
PRMJ216R	216-259	330	8
PRMJ270R	270-324	330	8

**Notes:**  
• Please call when dimensions are critical.

## Packard Dry AC Motor Run Capacitors



### Features

- Commonly used on motors in fans, pumps and blowers
- Constructed with Self-Healing Dielectric Metalized Polypropylene Film
- 1/4 inch blade quick connect terminals; Metal tab mounting bracket
- Operating temperature range: -40°C to 85°C (-40°F to 185°F)
- Capacitance tolerance: +/-5%
- Protected 10,000 AFC
- Available in 370 and 440 Volt
- 50/60 Hertz
- Plastic ABS case
- RoHS compliant

Item ID	MFD	VAC	Hertz	Shape	Height (In.)	Length (In.)	Width (In.)	Weight (Lbs)	Terminals	Temp. Range (C)	Construction	For Use With
<b>Packard</b>												
PDC2	2	370	50/60	Rectangle	1.80	0.79	1.50	0.05	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC3	3	370	50/60	Rectangle	1.80	0.79	1.50	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC4	4	370	50/60	Rectangle	2.00	0.94	2.00	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC5	5	370	50/60	Rectangle	2.00	0.94	2.00	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC7.5	7.5	370	50/60	Rectangle	2.20	1.10	1.92	0.09	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC8	8	370	50/60	Rectangle	2.20	1.10	1.92	0.09	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC10	10	370	50/60	Rectangle	2.44	1.25	2.36	0.10	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC12.5	12.5	370	50/60	Rectangle	2.44	1.25	2.36	0.12	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDC15	15	370	50/60	Rectangle	2.44	1.25	2.36	0.13	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF2	2	440	50/60	Rectangle	1.80	0.79	1.50	0.05	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF3	3	440	50/60	Rectangle	1.80	0.79	1.50	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF4	4	440	50/60	Rectangle	2.00	0.94	2.00	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF5	5	440	50/60	Rectangle	2.00	0.94	2.00	0.06	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF7.5	7.5	440	50/60	Rectangle	2.20	1.10	1.92	0.09	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF8	8	440	50/60	Rectangle	2.20	1.10	1.92	0.09	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF10	10	440	50/60	Rectangle	2.44	1.25	2.36	0.11	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF12.5	12.5	440	50/60	Rectangle	2.44	1.25	2.36	0.12	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors
PDCF15	15	440	50/60	Rectangle	2.44	1.25	2.36	0.14	2 Blade quick connect	-40 to 85	Plastic ABS case	Electric motors

## Packard Mini-Split Dry Cell Capacitors

### Features

- Specifically designed for Mini-Splits and other equipment with confined space
- Constructed with Self-Healing Dielectric Metallized Polypropylene Film
- 2 - 1/4 inch QC terminals
- Plastic mounting foot
- Temperature range: -40°C to 85°C (-40°F to 185°F)
- Capacitance tolerance: +/- 5%
- Protected 10,000 AFC
- RoHS compliant



Item ID	MFD	VAC	Hertz	Height (In.)	Length (In.)	Width (In.)	Weight (Lbs.)
<b>Packard</b>							
PMSCF1	1	450	50/60	1.10	1.46	0.55	0.06
PMSCF1.5	1.5	450	50/60	1.10	1.46	0.55	0.06
PMSCF2	2	450	50/60	1.22	1.50	0.75	0.07
PMSCF2.5	2.5	450	50/60	1.22	1.50	0.75	0.07
PMSCF3	3	450	50/60	1.22	1.50	0.75	0.08
PMSCF3.5	3.5	450	50/60	1.34	1.46	0.87	0.10
PMSCF4	4	450	50/60	1.34	1.46	0.87	0.11
PMSCF5	5	450	50/60	1.34	1.85	0.87	0.12
PMSCF6	6	450	50/60	1.34	1.85	0.87	0.13

## Lighting Capacitors: Oil-Filled And Dry AC Film For HID Lighting Applications

### Applications

- High Intensity Discharge (HID) lighting applications
- Other high voltage ballast applications

### Features - Oil-filled AC Film Capacitor

- Constructed with specially formulated metallized polypropylene film
- Designed to operate in the high temperature environments found in typical HID lighting fixtures
- Endsprayed with zinc
- Manufactured to EIA-456A
- ROHS compliant
- Epoxidized Soybean Oil (ESO) filled
- Round and oval metal case
- Voltage ranges from 330 VAC to 525 VAC
- Operating temperature to 90°C



Oil-Filled AC Film

Item ID	MFD	Volts	Hertz	Shape	Diameter (In.)	Height (In.)	Width (In.)	Depth (In.)
<b>Packard Oil-Filled AC Film</b>								
PLC024400W	24	400	50/60	Oval	—	3.13	2.75	1.75
PLCR24400W	24	400	50/60	Round	1.75	3.75	—	—
PLC024480W	24	480	50/60	Oval	—	3.88	2.75	1.75
PLC026525W	26	525	50/60	Oval	—	4.25	2.75	1.75

### Applications

- High Intensity Discharge (HID) lighting applications
- Other high voltage ballast applications

### Features - Dry AC Film Capacitor

- Constructed with specially formulated metallized polypropylene film
- Designed to operate in the high temperature environments found in typical HID lighting fixtures
- Endsprayed with zinc
- Manufactured to EIA-456A
- ROHS compliant
- Filled with epoxy
- Round plastic case
- Voltage ranges from 240 VAC to 400 VAC
- Operating temperature to 105°C
- 8 inch, 18 AWG standard copper wire leads



Dry AC Film

Item ID	MFD	Volts	Hertz	Shape	Diameter (In.)	Height (In.)	Width (In.)	Depth (In.)
<b>Packard Dry AC Film</b>								
PLCR10330D	10	330	50/60	Round	1.58	2.68	—	—
PLCR10400D	10	400	50/60	Round	1.58	3.62	—	—
PLCR15400D	15	400	50/60	Round	1.58	3.62	—	—
PLCR24400D	24	400	50/60	Round	1.77	4.61	—	—

## Two Wire Electro-mechanical Voltage Sensing Relay



### Features

- Potential relay and start capacitor for compressor hard start applications
- More reliable than PTC type hard starts
- Two wire connection
- For use with Hermetic or Scroll compressors
- Quick connect terminals
- Bleed down resistor to safely discharge the capacitor

Item ID	Capacitor Size (µF)	Tons	Compressor	Pick-Up Voltage (VAC)	Maximum Coil Voltage (VAC)	Replaces
<b>TorQstart</b>						
TQS1	189-227	1.5 - 3	Recip and Scroll	239-268	502	TO-5, SK3W3
TQS2	270-324	3.5 - 5	Recip and Scroll	280-315	502	KS1, SK3W6S

## Hard Start Kits And All In One Hard Start Packs



### Standard PTC Relay and Hard Start Capacitor



### Features

- Increases compressor starting torque for faster recycling
- For all permanent split capacitor, single phase air conditioning and heat pump systems
- Wired with "Piggy-Back" terminals for easy installation on run capacitors
- Designed for 115 volt thru 277 volt systems
- Mounts easily with either screw or clip

Item ID	Operating Voltage (VAC)	Recommended range (HP)	Increase in Torque (%)	Replaces
<b>TorQstart Hard Start</b>				
TQS5	115-277	1/2 to 10	300%	32701 600-057 SPP5
TQS6	115-277	1/2 to 10	500%	32702 600-052 SPP6
TQS8	115-277	1/2 to 10	600%	32708 SPP7S



### All Purpose 3-N-1 Kit



### Features

- Combination relay, overload and capacitor
- Pre-wired for easy installation
- Extra long compressor leads for mounting flexibility
- All models adapt to 115 volt compressors with external overload protector

Item ID	Compressor Sizes	Volts	Replaces
<b>TorQstart 3-N-1 Kit</b>			
TQS21	1/2 HP	115	600-210 RC0210
TQS41	1/4 and 1/3 HP	115	600-410 RC0410
TQS81	1/12 thru 1/5 HP	115	600-810 RC0810

# ARC SUPPRESSION TECHNOLOGIES

## NEW NOsparc® ARC SUPPRESSION TECHNOLOGY!

Knock out 99.9% of the damaging arc energy that occurs in contactors!

### NOsparc® Arc Suppressors virtually eliminate:

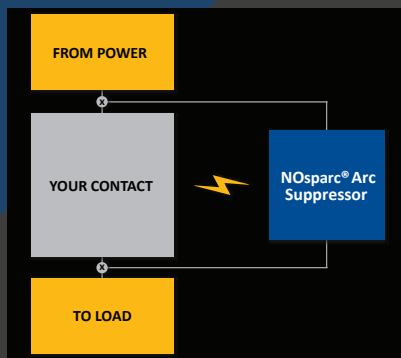
- Contact point scarring
- Single phasing compressor motors
- Tripped breakers in air conditioning racks



MGXDC1F250 | 12-250V  
DC NOsparc® Arc Suppressor

Single Phase: GGXAC1F480 | 110-480V  
AC NOsparc® Arc Suppressor

Three Phase: 3P-GGXAC1F480 | 110-480V  
AC NOsparc® Arc Suppressor



### NOsparc® AC | DC Arc Suppressors support the following AC | DC power load categories

#### AC POWER LOAD

Ballast • Capacitive • General Purpose  
Heater • Inductive • Motor  
Pilot Duty • Resistive • Tungsten

#### DC POWER LOAD

General Purpose • Inductive  
Resistive • Motor • Capacitive • Tungsten



## NOsparc Arc Suppressors

### Features

#### Extends Contact Life 10X or More

- Reduced maintenance, repair and replacement costs
- Dramatic reduction in total cost of ownership

#### Small Footprint

- Easily adapted to existing infrastructure
- Quick and simple panel mount retrofit process
- Minimal impact to design due to size of the hardware solution

#### Green

- RoHS compliant
- Reduced carbon footprint and greenhouse gasses

#### Low Power

- Improves contact switching transition efficiency 20x

#### Only 2 Wires

- No external power required
- No special or complicated assembly requirements or associated connections to auxiliary equipment

#### Lower EMI

- Average 30dB reduction of EMI over 30MHz to 1GHz range



### Features

- Up to 480 Vac
- Circuit fuse rating of 100 A (resistive) and absolute maximum current rating of 235 A(rms)\*
- Panel mount
- UL recognized component

Item ID	Volts (AC)	Hertz	Phase
<b>AC NOsparc Arc Suppressor</b>			
<b>GGXAC1F480</b>	110-480	50/60	Single



### Features

- Up to 480 Vac
- Circuit fuse rating of 100 A (resistive) and absolute maximum current rating of 235 A(rms)\*
- Panel mount
- 3-phase configuration pre-assembled on DIN clips
- UL recognized component

Item ID	Volts (AC)	Hertz	Phase
<b>AC NOsparc Arc Suppressor</b>			
<b>3P-GGXAC1F480</b>	110-480	50/60	Three



### Features

- Up to 250 Vac
- Circuit fuse rating of 50 A (resistive) and absolute maximum current rating of 75 A(rms)\*
- Panel mount
- UL recognized component

Item ID	Volts (DC)	Hertz	Phase
<b>DC NOsparc Arc Suppressor</b>			
<b>MGXDC1F250</b>	12-250	50/60	Single

**IMPORTANT:** The absolute maximum current rating for NOsparc arc suppressors also represents the maximum allowable Locked Rotor Amperage (LRA) for motor loads and the cold filament inrush current for tungsten loads.

## Definite Purpose Contactors



### Features

Contactors meet UL508 specifications for devices up to 600 Vac.

- 50/60 Hertz •
- Coils have class B insulation
- Includes lugs, spade terminals and covers
- All single pole include shunt



Item ID	Poles	F/L Inductive Amps	Locked Rotor Amps 240/480/600	Resistive Amps	Coil Voltage
<b>Packard 1 Pole</b>					
C125A	1+	25	150/125/100	30	24
C125B	1+	25	150/125/100	30	120
C125C	1+	25	150/125/100	30	208/240
C130A	1+	30	180/150/120	40	24
C130B	1+	30	180/150/120	40	120
C130C	1+	30	180/150/120	40	208/240
C140A	1+	40	240/200/160	50	24
C140B	1+	40	240/200/160	50	120
C140C	1+	40	240/200/160	50	208/240
<b>Packard 2 Pole</b>					
C220A	2	20	120/100/80	30	24
C220B	2	20	120/100/80	30	120
C220C	2	20	120/100/80	30	208/240
C225A	2	25	150/125/100	35	24
C225B	2	25	150/125/100	35	120
C225C	2	25	150/125/100	35	208/240
C230A	2	30	180/150/120	40	24
C230B	2	30	180/150/120	40	120
C230C	2	30	180/150/120	40	208/240
C230D*	2	30	180/150/120	40	208/240
C230E	2	30	180/150/120	40	277
C240A	2	40	240/200/160	50	24
C240B	2	40	240/200/160	50	120
C240C	2	40	240/200/160	50	208/240
C240E	2	40	240/200/160	50	277

Item ID	Poles	F/L Inductive Amps	Locked Rotor Amps 240/480/600	Resistive Amps	Coil Voltage	Aux. Switch
<b>Packard 3 Pole</b>						
C325A	3	25	150/125/100	35	24	AC3
C325B	3	25	150/125/100	35	120	AC3
C325C	3	25	150/125/100	35	208/240	AC3
C330A	3	30	180/150/120	40	24	AC3, P6S, P7S
C330B	3	30	180/150/120	40	120	AC3, P6S, P7S
C330C	3	30	180/150/120	40	208/240	AC3, P6S, P7S
C330E	3	30	180/150/120	40	277	AC3, P6S, P7S
C330F	3	30	180/150/120	40	480	AC3, P6S, P7S
C340A	3	40	240/200/160	50	24	AC3, P6S, P7S
C340B	3	40	240/200/160	50	120	AC3, P6S, P7S
C340C	3	40	240/200/160	50	208/240	AC3, P6S, P7S
C340E	3	40	240/200/160	50	277	AC3, P6S, P7S
C340F	3	40	240/200/160	50	480	AC3, P6S, P7S
C350A	3	50	300/250/200	65	24	P8S, P38K
C350B	3	50	300/250/200	65	120	P8S, P38K
C350C	3	50	300/250/200	65	208/240	P8S, P38K
C350F	3	50	300/250/200	65	480	P8S, P38K
C360A	3	60	360/300/240	75	24	P8S, P38K
C360B	3	60	360/300/240	75	120	P8S, P38K
C360C	3	60	360/300/240	75	208/240	P8S, P38K
C360F	3	60	360/300/240	75	480	P8S, P38K
C375A	3	75	450/375/300	90	24	P9S
C375B	3	75	450/375/300	90	120	P9S
C375C	3	75	450/375/300	90	208/240	P9S
C390A	3	90	540/450/360	120	24	P9S
C390B	3	90	540/450/360	120	120	P9S
C390C	3	90	540/450/360	120	208/240	P9S
<b>Packard 4 Pole</b>						
C430A	4	30	180/150/120	40	24	AC3, P6S, P7S
C430B	4	30	180/150/120	40	120	AC3, P6S, P7S
C430C	4	30	180/150/120	40	208/240	AC3, P6S, P7S
C430F	4	30	180/150/120	40	480	AC3, P6S, P7S
C440A	4	40	240/200/160	50	24	AC3, P6S, P7S
C440B	4	40	240/200/160	50	120	AC3, P6S, P7S
C440C	4	40	240/200/160	50	208/240	AC3, P6S, P7S
C440F	4	40	240/200/160	50	480	AC3, P6S, P7S

Notes:  
 \* Spade terminals and cover only.  
 Auxiliary Switches sold separately. See page 226.

## Magnetic Contactor



Item ID	C18001
Type	DPST N.O.
Resistive Amps	30
Full Load Amps	30
Locked Rotor Amps	120
Coil Voltage	24
Hertz	50/60
Max. Surrounding Air Temp.	40°C
Phase	Single

### Replaces

3ARR8E4	MC11	18001
90-230	R850B1146	

## DP Contactor



Item ID	PR4013
F/L Inductive Amps	30
Poles	1
Resistive Amps	40
Coil Voltage	24

### Replaces

DP1030A5013



Maximum dependability in a "one for one" replacement for the Furnas DP contactor and many more.



### Features

- **MEETS THE ARI 780/790 STANDARD**
- **Universal metal mounting plate allows for complete ease of replacement**
- **Long electrical life; tested to 250,000 cycles**
- **Reliable mechanical life; tested to 1,000,000 cycles**
- **EE magnet assembly assures optimal performance without sacrificing power consumption**
- **Superior copper coil**
- **Performance unaffected by mounting position**
- **Flexible termination options suitable for various applications**
- **Dust-free internal construction**
- **Removable contact inspection plate**

Item ID	F/L Inductive Amps	Locked Rotor Amps 240/480/600	Resistive Amps	Coil Voltage	Industry No.	Furnas Replacement	Accepts Aux. Switch
<b>Titan Max 1 Pole</b>							
TMX125A2	25	150/125/100	35	24	61315	45DG10AJA	
TMX125B2	25	150/125/100	35	120	61316	45DG10AFA	
TMX125C2	25	150/125/100	35	208/240	61317	45DG10AGA	
TMX130A2	30	180/150/120	40	24	61320	45EG10AJA	45EG10AJAL
TMX130B2	30	180/150/120	40	120	61321	45EG10AFA	45EG10AFAL
TMX130C2	30	180/150/120	40	208/240	61322	45EG10AGA	45EG10AGAL
TMX140A2	40	240/200/160	50	24	61330	45GG10AJA	45GG10AJAL
TMX140B2	40	240/200/160	50	120	—	45GG10AFA	45GG10AFAL
TMX140C2	40	240/200/160	50	208/240	—	45GG10AGA	45GG10AGAL
<b>Titan Max 2 Pole</b>							
TMX225A2	25	150/125/100	35	24	61410	42AF15AJ	45DG20AJ
TMX225B2	25	150/125/100	35	120	61411	42AF15AF	45DG20AF
TMX225C2	25	150/125/100	35	208/240	61412	42AF15AG	45DG20AG
TMX230A2	30	180/150/120	40	24	61425	42BF15AJ	45EG20AJ 45EG20AJL
TMX230B2	30	180/150/120	40	120	61426	42BF15AF	45EG20AF 45EG20AFL
TMX230C2	30	180/150/120	40	208/240	61427	42BF15AG	45EG20AG 45EG20AGL
TMX240A2	40	240/200/160	50	24	61440	42CF15AJ	45GG20AJ 45GG20AJL
TMX240B2	40	240/200/160	50	120	61441	42CF15AF	45GG20AFL
TMX240C2	40	240/200/160	50	208/240	61442	42CF15AG	45GG20AG 45GG20AGL
<b>Titan Max 3 Pole</b>							
TMX330A2	30	180/150/120	40	24	61430	42BF35AJ	Yes
TMX330B2	30	180/150/120	40	120	61431	42BF35AF	Yes
TMX330C2	30	180/150/120	40	208/240	61432	42BF35AG	Yes
TMX340A2	40	240/200/160	50	24	61445	42CF35AJ	Yes
TMX340B2	40	240/200/160	50	120	61446	42CF35AF	Yes
TMX340C2	40	240/200/160	50	208/240	61447	42CF35AG	Yes
TMX350A2	50	300/250/200	65	24	61460	42DF35AJ	Yes
TMX350B2	50	300/250/200	65	120	61461	42DF35AF	Yes
TMX350C2	50	300/250/200	65	208/240	61462	42DF35AG	Yes
TMX360A2	60	360/300/240	75	24	61470	42EF35AJ	Yes
TMX360B2	60	360/300/240	75	120	61471	42EF35AF	Yes
TMX360C2	60	360/300/240	75	208/240	61472	42EF35AG	Yes
TMX375A2	75	450/375/300	90	24	61480	42FE35AJ106	Yes
TMX375B2	75	450/375/300	90	120	61481	42FE35AF106	Yes
TMX375C2	75	450/375/300	90	208/240	61482	42FE35AG106	Yes
TMX390A2	90	540/450/360	120	24	61490	42GE35AJ106	Yes
TMX390B2	90	540/450/360	120	120	61491	42GE35AF106	Yes
TMX390C2	90	540/450/360	120	208/240	61492	42GE35AG106	Yes

## TITAN MAX 4 Pole

Maximum dependability in a “one for one” replacement for the Furnas DP contactor and many more.



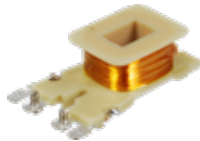
### Features

- **MEETS THE ARI 780/790 STANDARD**
- Universal metal mounting plate allows for complete ease of replacement
- Long electrical life; tested to 250,000 cycles
- Reliable mechanical life; tested to 1,000,000 cycles
- EE magnet assembly assures optimal performance without sacrificing power consumption
- Superior copper coil
- Performance unaffected by mounting position
- Flexible termination options suitable for various applications
- Dust-free internal construction
- Removable contact inspection plate

Item ID	F/L Inductive Amps	Locked Rotor Amps 240/480/600	Resistive Amps	Coil Voltage	Furnas Replacement
<b>TITAN MAX</b>					
TMX430A2	30	180/150/120	40	24	42BF25AJ
TMX430B2	30	180/150/120	40	120	42BF25AF
TMX430C2	30	180/150/120	40	208-240	42BF25AG
TMX440A2	40	240/200/160	50	24	42CF25AJ
TMX440B2	40	240/200/160	50	120	42CF25AF
TMX440C2	40	240/200/160	50	208-240	42CF25AG

## Replacement Coils For Packard Contactors

### 3 Pole Contactor Replacement Coils



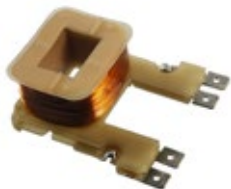
Item ID	Poles	Coil Voltage	Full Load Amps
<b>Packard 3 Pole</b>			
C32040A	3	24	20-40
C32040B	3	120	20-40
C32040C	3	208/240	20-40
C32040D	3	277	20-40
C32040E	3	480	20-40

Item ID	Poles	Coil Voltage	Full Load Amps
<b>Packard 3 Pole</b>			
C35060A	3	24	50-60
C35060B	3	120	50-60
C35060C	3	208/240	50-60
C35060D	3	277	50-60
C35060E	3	480	50-60



Item ID	Poles	Coil Voltage	Full Load Amps
<b>Packard 3 Pole</b>			
C37590B	3	120	75-90
C37590C	3	208/240	75-90

### 4 Pole Contactor Replacement Coils



Item ID	Poles	Coil Voltage	Full Load Amps
<b>Packard 4 Pole</b>			
C42040A	4	24	20-40
C42040B	4	120	20-40
C42040C	4	208/240	20-40
C42040D	4	277	20-40

## Replacement Coils For TITAN MAX Contactors

### 3 Pole Contactor Replacement Coils



Item ID	Poles	Coil Voltage	Full Load Amps
<b>TITAN MAX 3 Pole</b>			
TMXC32040A	3	24	20-40
TMXC32040B	3	120	20-40
TMXC32040C	3	208/240	20-40
TMXC35060A	3	24	50-60
TMXC35060B	3	120	50-60
TMXC35060C	3	208/240	50-60



Item ID	Poles	Coil Voltage	Full Load Amps
<b>TITAN MAX 3 Pole</b>			
TMXC37590B	3	120	75-90
TMXC37590C	3	208/240	75-90

## Auxiliary Switches For Packard Contactors



Item ID	Type	Use With
<b>Packard</b> P6S	SPDT	25-40 Amp 3 & 4 Pole



Item ID	Type	Use With
<b>Packard</b> P8S	SPDT	50-60 Amp 3 & 4 Pole
P9S	SPDT	70-90 Amp 3 & 4 Pole



Item ID	Type	Use With
<b>Packard</b> MI1	Mechanical Interlock	25-40 Amp 3 & 4 Pole



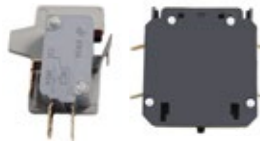
Item ID	Type	Use With
<b>Packard</b> P7S	DPDT	25-40 Amp 3 & 4 Pole



Item ID	Type	Use With
<b>Packard</b> AC4	1 SPDT	50-60 Amp 3 & 4 Pole



Item ID	Type	Use With
<b>Packard</b> AC3	NO/NC	25-40 Amp 3 & 4 Pole



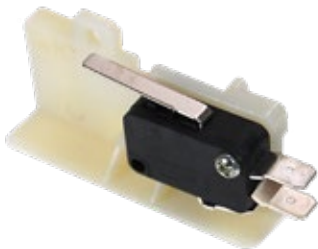
Item ID	Type
<b>Packard</b> P38K	Includes P8S and AC3

## Auxiliary Switches and Contacts For TITAN MAX Contactors



### Features

- Mounts on 75 & 90 Amp Titan Max brand contactors
- Single screw mounting
- Switches when contactor coil is energized
- Choice of NC, NO, or SPDT



Item ID	Type
<b>TITAN MAX Auxiliary Switch</b> TMX7590SPDT	Single Pole Double Throw



Item ID	Type
<b>TITAN MAX Auxiliary Contacts</b> TMX7590NC	Normally Closed
TMX7590NO	Normally Open

### Features

- For use on Titan Max 3 and 4 pole contactors 30-60 amp.



Item ID	Type
<b>TITAN MAX Auxiliary Contact Blocks with Quick Connect</b>	
TMX1NC	SPST NC
TMX1NO	SPST NO
TMX2NC	DPST NC
TMX2NO	DPST NO
TMX1NC/1NO	DPST 1NC + 1NO



Item ID	Type
<b>TITAN MAX Microswitch Blocks</b>	
TMXSPDT1	SPDT at left position
TMXSPDT2	SPDT at right position
TMX2SPDT	DPDT

## DISCONNECTS - METALLIC

### Features

- Non-Fused Pullout
- Rated NEMA 3R for outdoor use
- Line, load, and ground terminals aligned for easy hook up with heavy wires
- Full dead front
- Knockouts accommodate three sizes (1/2", 3/4", and 1")

- Rear, bottom and side entry knockouts
- Heavy gage steel case
- Large internal wiring space
- Individually wrapped in boxes of 6
- Folding pivot locking tab

Item ID	Description	Fused
<b>PACKARD</b>		
<b>PD60NF</b>	60 Amp Non Fused Metal	NO
<b>PD30F</b>	30 Amp Fused Metal	YES
<b>PD60F</b>	30 Amp Fused Metal	YES

Dimensions (LxWxH): 8.77 x 5.45 x 3.18



## DISCONNECTS - NON-METALLIC

### Features

- Amperage Rating: 30 and 60A
- Rated NEMA 3R for outdoor use
- Non-fused pullout
- Standard 1/4" head screw on dead front
- Great for salt air regions
- Plastic non-metallic enclosures have a single unit door and protective shield for installer convenience

- Plastic non-metallic enclosures are durable and provide excellent weather resistance
- Rear, bottom and side entry knockouts
- Individually wrapped in boxes of 6

Item ID	Description	Fused
<b>PACKARD</b>		
<b>PD-NM-60NF</b>	60 Amp Non Fused Plastic	NO
<b>PD-NM-30F</b>	30 Amp Fused Plastic	YES
<b>PD-NM-60F</b>	30 Amp Fused Plastic	YES

Dimensions (LxWxH): 8.81 x 6.26 x 4.39



## Air Conditioning Disconnect

### Features

- 60 amp A/C disconnect box
- Outdoor enclosure
- Metal
- Non-fused
- 240 VAC
- Single phase
- Flip top door
- Nema type 3R

Item ID	Description	Fused	Replaces
<b>PACKARD</b>			
<b>PDB60NF</b>	60 Amp A/C disconnect box	NO	DDS-60U MA-Line MA-NFD60A 83315 Square D 755-60NF



## Mini-Split Kit

### Features

- Non-metallic electrical whip ½" x 4'
- Disconnect 60 Amp non-fused metallic
  - Non-fused pullout
  - Rated NEMA 3R for outdoor use
  - Line, load, and ground terminals aligned for easy hook up with heavy wires
  - Full dead front
  - Rear, bottom and side entry knockouts
  - Heavy gage steel case
  - Large internal wiring space
- Surge protector ICM516
  - Type 2 surge protective device
  - Easy installation
  - Protects against: lightning power surges, voltage surges from A/C, generators, motors
  - Limited lifetime protection warranty service voltage: 120-240 VAC, single-phase
  - Maximum surge current: 100,000 Amps
  - Maximum energy dissipation: 1,020 Joules
  - Installation point: electrical panel, electrical disconnect
  - AC protection modes: line-line, line-ground
- Wall sleeve and fitting



**QUICK START KIT!**

**NEW**

Item ID	Description
Packard MSK001	Mini Split Kit

## Packard Whips

### Applications

- Commonly used for connecting air conditioners, pumps, motors, compressors, swimming pool equipment and similar equipment

### Features

- 600 volt; Intended for 208/240/480 volt single phase circuits
- 12" conductor leads with 1/2" insulation stripped
- Stranded copper THHN/THWN insulated singles; Green insulated copper grounding conductor
- Highly flexible non-metallic conduit with factory installed conductors
- Liquid tight flexible non-metallic conduit type B (LFNC-B) fittings for easy and hassle-free hook-ups
- Straight connector on one end and 90 degree connector on the other end
- Non-metallic raceway is non-conducting and resistant to rust, cracks, and separation
- Completely assembled delivered from the factory ready to install



For information on connections contact Packard Customer Service.

Item ID	Trade Size (In.)	Conduit Length (feet)	Wire Size # of Cond.	Amps
<b>Packard</b>				
PW1204	1/2	4	#10 GA	30
PW1206	1/2	6	#10 AWG	30
PW3484	3/4	4	#8 GA	40
PW3486	3/4	6	#8 AWG	40

Color Coding	
No. of conductors	Color sequence 120/208Y
2	black, red
Grounding Conductor	green

## Class CC - CCMR Series



### Description

The CCMR series is ideal for space saving protection of motors up to 40 hp\*. It was designed specifically to withstand sustained starting currents of small motors. The CCMR 60 fuse is the smallest 60 A fuse available rated at 600 V. Compared to other UL Listed fuses, Class CC fuses are the most current-limiting, rating for rating.

### Features

- POWR-PRO® Performance
- Extremely current-limiting
- Ratings up to 60 Amps
- 300 kA interrupting rating (self-certified)

### Applications

- Motor and motor branch circuit protection

### Specifications

#### Voltage Rating

AC: 600 V  
 DC: 250 V (CCMR 2/10 – 2 A)  
 (CCMR 4 1/2 – 10 A)  
 (CCMR 35– 60 A)  
 300 V (CCMR 2 1/4 – 4 A)  
 500 V (CCMR 12– 30 A)

#### Amperage Rating

2/10 – 60 A

#### Interrupting Rating

AC: 200 kA rms symmetrical  
 300 kA Littelfuse self-certified

DC: 20kA

### Approvals

AC: Standard 248-4, Class CC  
 UL Listed 2/10-30 A (File: E81895)  
 Standard 248, Class CD  
 UL Listed 35-60 A (File: E81895)  
 CSA Certified (File: LR29862)

DC: Littelfuse self-certified

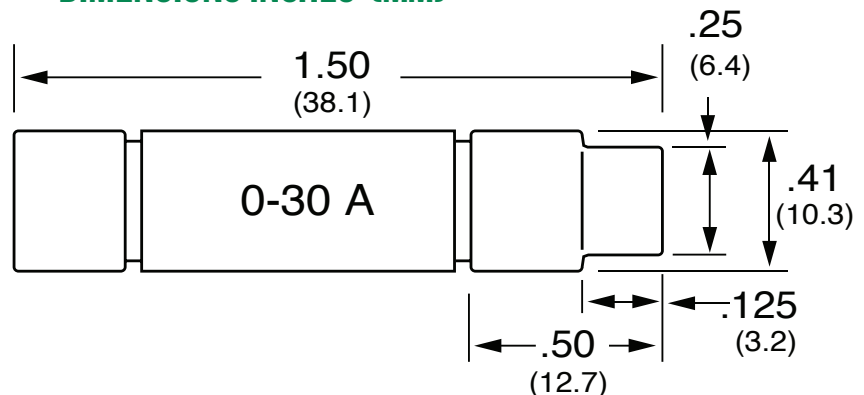
RoHS compliant (except 35-60 A)

### Environmental

Item ID	Supplier Part ID	Type	Volts	Amps	Mersen-Gould Shawmut	Bussman- Fusetron	Bussman- Edison
<b>Littelfuse</b>							
CCMR001TXP	CCMR001.TXP	Class CC Time Delay Fuse	600V	1	ATDR1	LP-CC-1	EDCC1
CCMR003TXP	CCMR003.TXP	Class CC Time Delay Fuse	600V	3	ATDR3	LP-CC-3	EDCC3
CCMR010TXP	CCMR010.TXP	Class CC Time Delay Fuse	600V	10	ATDR10	LP-CC-10	EDCC10
CCMR015TXP	CCMR015.TXP	Class CC Time Delay Fuse	600V	15	ATDR15	LP-CC-15	EDCC15
CCMR020TXP	CCMR020.TXP	Class CC Time Delay Fuse	600V	20	ATDR20	LP-CC-20	EDCC20
CCMR025TXP							
CCMR030TXP	CCMR030.TXP	Class CC Time Delay Fuse	600V	30	ATDR30	LP-CC-30	EDCC30



### DIMENSIONS INCHES (MM)





## Class RK5-FLNR • FLSR Series

### Description

The FLNR/FLSR series of fuses set the standard for general purpose fuses. The dual-element design provides advanced short circuit and overload protection. FLSR series fuses provide excellent protection for all types of circuits especially those containing motors.



### Applications

- Service entrance switches
- Transformers
- Switchboard mains and feeders
- Motor control central mains and motor branch circuits
- All general purpose circuits

### Features

- Dual-element design
- Current limiting

\*Indicating available on special request

### Specifications

#### Voltage Rating

AC: 250 V (FLNR\_ID); 600 V (FLSR\_ID)  
 DC: 125 V (FLNR 1/10 – 30 A);  
 125 V (FLNR\_ID 35 – 600 A);  
 300 V (FLSR\_ID)

#### Interrupting Rating

AC: 200 kA rms symmetrical  
 300 kA rms symmetrical  
 (Littelfuse self-certified)

#### Amperage Range

DC: 20kA

1/10 - 600 A

#### Approvals

Standard 248-12, Class RK5

UL Listed (File: E81895)

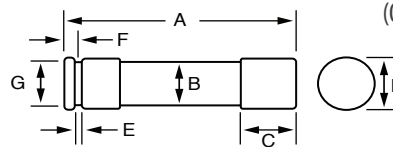
CSA Certified (File: LR29862)

Federal Specification WF-1814

(QPL- W-F-1814)

AMPS	SERIES	DIMENSIONS INCHES (mm)						
		A	B	C	D	E	F	G
1/10-30	FLNR	2 (50.8)	1/2 (12.7)	1/2 (12.7)	3/16 (14.3)	3/16 (2.0)	3/16 (4.0)	3/8 (9.5)
	FLSR	5 (127.0)	3/4 (19.1)	3/4 (15.9)	7/16 (20.6)	3/16 (2.4)	3/16 (4.8)	3/4 (15.9)
35-60	FLNR	3 (76.2)	3/4 (19.1)	3/4 (15.9)	7/16 (20.6)	3/16 (2.4)	3/16 (4.8)	3/4 (15.9)
	FLSR	5 1/2 (139.7)	1 (25.4)	3/4 (15.9)	1 1/16 (27.0)	3/16 (2.4)	3/4 (6.4)	3/4 (22.2)
70-100	FLNR	5 1/2 (149.2)	1 (25.4)	1 1/16 (27.0)	1 1/16 (27.0)	3/4 (3.2)	3/4 (19.1)	—
	FLSR	7 1/4 (200.0)	1 1/4 (31.8)	1 1/4 (27.0)	1 1/4 (33.3)	3/4 (3.2)	3/4 (19.1)	—

### DIMENSIONS












Item ID	Supplier Part ID	Type	Volts	Amps	MARS No. w/o Indicator	Mersen-Gould Shawmut	Bussman- Fusetron	Bussman- Edison
<b>Littelfuse</b>								
FLNR010T	FLNR010.T	Class RK5 Time Delay Fuse	250V	10	81032	TR10R	FRN-R-10	ECNR10
FLNR015T	FLNR015.T	Class RK5 Time Delay Fuse	250V	15	81034	TR15R	FRN-R-15	ECNR15
FLNR020T	FLNR020.T	Class RK5 Time Delay Fuse	250V	20	81036	TR20R	FRN-R-20	ECNR20
FLNR025T	FLNR025.T	Class RK5 Time Delay Fuse	250V	25	81037	TR25R	FRN-R-25	ECNR25
FLNR030T	FLNR030.T	Class RK5 Time Delay Fuse	250V	30	81038	TR30R	FRN-R-30	ECNR30
FLNR035T	FLNR035.T	Class RK5 Time Delay Fuse	250V	35	81039	TR35R	FRN-R-35	ECNR35
FLNR040T	FLNR040.T	Class RK5 Time Delay Fuse	250V	40	81040	TR40R	FRN-R-40	ECNR40
FLNR045T	FLNR045.T	Class RK5 Time Delay Fuse	250V	45	81041	TR45R	FRN-R-45	ECNR45
FLNR050T	FLNR050.T	Class RK5 Time Delay Fuse	250V	50	81042	TR50R	FRN-R-50	ECNR50
FLNR060T	FLNR060.T	Class RK5 Time Delay Fuse	250V	60	81043	TR60R	FRN-R-60	ECNR60
FLNR100V	FLNR100.V	Class RK5 Time Delay Fuse	250V	100	81047	TR100R	FRN-R-100	ECNR100
<b>FLSR</b>								
FLSR010T	FLSR010.T	Class RK5 Time Delay Fuse	600V	10	81132	TRS10R	FRS-R-10	ECSR10
FLSR015T	FLSR015.T	Class RK5 Time Delay Fuse	600V	15	81134	TRS15R	FRS-R-15	ECSR15
FLSR020T	FLSR020.T	Class RK5 Time Delay Fuse	600V	20	81136	TRS20R	FRS-R-20	ECSR20
FLSR025T	FLSR025.T	Class RK5 Time Delay Fuse	600V	25	81137	TRS25R	FRS-R-25	ECSR25
FLSR030T	FLSR030.T	Class RK5 Time Delay Fuse	600V	30	81138	TRS30R	FRS-R-30	ECSR30
FLSR035T	FLSR035.T	Class RK5 Time Delay Fuse	600V	35	81139	TRS35R	FRS-R-35	ECSR35
FLSR040T	FLSR040.T	Class RK5 Time Delay Fuse	600V	40	81140	TRS40R	FRS-R-40	ECSR40
FLSR045T	FLSR045.T	Class RK5 Time Delay Fuse	600V	45	81147	TRS45R	FRS-R-45	ECSR45
FLSR050T	FLSR050.T	Class RK5 Time Delay Fuse	600V	50	81141	TRS50R	FRS-R-50	ECSR50
FLSR060T	FLSR060.T	Class RK5 Time Delay Fuse	600V	60	81142	TRS60R	FRS-R-60	ECSR60
FLSR070V	FLSR070.V	Class RK5 Time Delay Fuse	600V	70	81143	TRS70R	FRS-R-70	ECSR70
FLSR080V	FLSR080.V	Class RK5 Time Delay Fuse	600V	80	81144	TRS80R	FRS-R-80	ECSR80
FLSR090V	FLSR090.V	Class RK5 Time Delay Fuse	600V	90	81145	TRS90R	FRS-R-90	ECSR90
FLSR100V	FLSR100.V	Class RK5 Time Delay Fuse	600V	100	81146	TRS100R	FRS-R-100	ECSR100

## Packard Round Silicon Nitride Igniters

### Features

- Round
- Made of durable Silicon Nitride
- OEM direct replacements



	<p><b>IG1121N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with connector</li> <li>• Mounting bracket included</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Goodman B1401015</p>	<p>Modine 5H075032B</p>
	<p><b>IG1401N</b></p> <ul style="list-style-type: none"> <li>• Gasket included</li> <li>• 5.5" Leads with connector</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Amana 10041601 Starlite 11120-100-1401</p>	<p>Amana D99182 Amana B1336102 Trianco-Heatermaker 2600-359</p>
	<p><b>IG1402N</b></p> <ul style="list-style-type: none"> <li>• 19" Leads with wire nuts</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Amana 10755002 DMO 20834 / 26789 Rheem 62-22441-01</p>	<p>Armstrong 38322B001 Clare C-238 / C-242 Dornback 271W Goodman B11726-06 Trane 340039P01, IGN23 Williamson 09050</p>
	<p><b>IG1403N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with wire nuts</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Amana B138196P01 Trane B138196P01 Weil McLain 511-330-193</p>	<p>Raypak 600915 Snyder General 1380654 Trane IGN26 Trane IGN30</p>
	<p><b>IG1405N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with wire nuts</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Heil Quaker 1001344 York 025-29043-000</p>	<p>York 025-27766-00 York 025-27774-000</p>
	<p><b>IG1408N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with connector</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Amana 340039P01 Rheem 62-2241-01</p>	<p>Lennox 98P78 Rheem 62-2268-92 Rheem 62-22868-93 Trane B340039P01 Starlite 11120-100-1408 Trane IGN-0034 Whirlpool 99794328</p>
	<p><b>IG1409N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with connector</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Carrier LH33ZS001 Carrier LH33ZS004 Snyder General 1380680</p>	<p>Carrier LH33ZS002 Carrier LH33ZS003 Ducane 20015201 Snyder General 1380672 Trane IGN26 Weil McLain 511-330-139</p>
	<p><b>IG1410N</b></p> <ul style="list-style-type: none"> <li>• 5.5" Leads with connector</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Amana B144676P01</p>	<p>Trane B144676P01</p>
	<p><b>IG1411N</b></p> <ul style="list-style-type: none"> <li>• Includes bracket &amp; connector</li> <li>• 120 Volt</li> </ul>	<p>Replaces: Norton 271N</p>	<p>Rheem 62-22868-82</p>



## Packard Round Silicon Nitride Igniters

### Features

- Round
- Made of durable Silicon Nitride
- OEM direct replacements



### IG1412N

- 5.5" Leads with connector
- 120 Volt

### Replaces:

Goodman B1401009      Heil Quaker 1009604      ICP 1009604  
Norton 271NM



### IG1414N

- 5.5" Leads with connector
- Includes brackets and wire nuts
- 120 Volts

### Replaces:

767A-384      Norton 271NM      Goodman B14010-155  
Norton MB457025

## Packard Silicon Carbide Igniters

### Features

- Silicon Carbide Igniters
- OEM direct replacements



### IG3033

- Used on many Trane package models beginning with YCD15, YCD17 and YCD18
- Includes igniter, gasket, clip, mounting screws and installation instructions
- 120 Volt

### Replaces:

Trane KIT03033



### IG1121

- 5.5" Leads with connector
- Mounting bracket included
- 120 Volt

### Replaces:

Goodman B1401015      Modine 5H075032B



### IG1401

- Gasket included
- 5.5" Leads with connector
- 120 Volt

### Replaces:

Amana 10041601      Amana B1336102      Amana D99182  
Starlite 11120-100-1401      Trianco-Heatermaker 2600-359



### IG1402

- 19" Leads with wire nuts
- 120 Volt

### Replaces:

Amana 10755002      Armstrong 38322B001      Clare C-238 / C-242  
DMO 20834 / 26789      Dornback 271W      Goodman B11726-06  
IGN23      Rheem 62-22441-01      Trane 340039P01  
Williamson 09050



### IG1403

- 5.5" Leads with wire nuts
- 120 Volt

### Replaces:

Amana B138196P01      Raypak 600915      Snyder General 1380654  
Trane B138196P01      Trane IGN26      Trane IGN30  
Weil McLain 511-330-193



### IG1404

- 5" Leads with connector
- 120 Volt

### Replaces:

Norton 271M      Rheem 1096048      Robertshaw 41-404  
Weil McLain MB478265      White Rodgers 767A382

## Packard Silicon Carbide Igniters

### Features

- Silicon Carbide Igniters
- OEM direct replacements



#### IG1405

- 5.5" Leads with wire nuts
- 120 Volt

Replaces:

Heil Quaker 1001344  
York 025-27774-000

Heil Quaker 1148145  
York 025-29043-000

York 025-27766-00



#### IG1406

- Gasket included
- 11" Leads with wire nuts
- 120 Volt

Replaces:

Glowcore HSRK-7  
Weil McLain 511-330-188

Lochinvar PLT2400

Spiral Igniter FY009



#### IG1407

- 5.5" Leads with connector
- 120 Volt

Replaces:

Trane B144676P02

Trane IGN30



#### IG1408

- 5.5" Leads with connector
- 120 Volt

Replaces:

Amana 340039P01  
Rheem 62-2268-93  
Trane B340039P01

Lennox 98P78  
Rheem 62-22868-92  
Trane IGN-0034

Rheem 62-2241-01  
Starlite 11120-100-1408  
Whirlpool 99794328



#### IG1409

- 5.5" Leads with connector
- 120 Volt

Replaces:

Carrier LH33ZS001  
Carrier LH33ZS004  
Snyder General 1380680

Carrier LH33ZS002  
Ducane 20015201  
Trane IGN26

Carrier LH33ZS003  
Snyder General 1380672  
Weil McLain 511-330-139



#### IG1410

- 5.5" Leads with connector
- 120 Volt

Replaces:

Amana B144676P01

Trane B144676P01



#### IG1411

- Includes bracket & connector
- 120 Volt

Replaces:

Norton 271N

Rheem 62-22868-82



#### IG1412

- 5.5" Leads with connector
- 120 Volt

Replaces:

Goodman B1401009  
Norton 271NM

Heil Quaker 1009604

ICP 1009604



#### IG1414

- 5.5" Leads with connector
- Includes brackets and wire nuts
- 120 Volt

Replaces:

767A-384  
Norton MB457025

Goodman B14010-155

Norton 271NM



#### IG2300

- 24" Leads with 1/4" quick connects
- Gasket included
- 120 Volt

Replaces:

Laars RW2002300

## Packard Silicon Carbide Igniters

### Features

- Silicon Carbide Igniters
- OEM direct replacements



#### IG0148

- For Weil Mclain AHE, GV, and HE II Boilers
- 5.5" leads with connector
- 120v

Replaces:  
Weil Mclain  
511330148



#### IG0184

- For Weil Mclain HE and VHE Boilers
- 5" leads with connector
- 120v
- Wire nuts and bracket included

Replaces:  
Weil Mclain  
511330184

Norton  
201N



#### IG0286

- 5.5" Leads with connector
- Gasket included
- 120 Volt

Replaces:  
Laars 2400-286



#### IG1100

- Includes brackets, screw and wire nuts
- 120 Volt
- Universal round carbide igniter

Replaces:

Robertshaw/Uniline		White-Rodgers		
41-238	41-242	767A-301	767A-365	767A-353
41-402	41-403	767A-310	767A-370	767A-357
41-404	41-405	767A-350	767A-372	767A-364
41-407	41-408	767A-354	767A-303	767A-366
41-409	41-410	767A-361	767A-311	767A-371
41-1090				



#### IG4000

- Includes brackets, screw and wire nuts
- 120 Volt
- Replaces hundreds of OEM Igniters

Replaces:

Robertshaw/Uniline		White-Rodgers		
41-238	41-242	767A-301	767A-365	767A-353
41-402	41-403	767A-310	767A-370	767A-357
41-404	41-405	767A-350	767A-372	767A-364
41-407	41-408	767A-354	767A-303	767A-366
41-409	41-410	767A-361	767A-311	767A-371
41-412	41-414			
41-1090				



#### IG1114

- An exact replacement kit for Nordyne series G6 (and earlier models G3, G4, G5) and M2 furnaces
- The kit includes complete installation instructions along with an adapter bracket and screws for G3RC, G4 (all), G5 (all), G3RA, G6 (all) and M2 (all) Nordyne furnaces
- 120 Volts

Replaces:

Nordyne 632354	Nordyne 632363	Nordyne 903597
Nordyne 903758		

## Universal And Specialty Silicon Nitride Hot Surface Igniter Kits

### Features

- Silicon Nitride has high fracture toughness and chemical resistance abilities and can be handled with the greasiest of hands
- For furnaces, boilers, pool and water heaters



#### IG80V

- 80 Volt / 120 watts
- Direct universal replacement

Replaces:

Amana 11111701	CAR768A845	CARIGN00117
HS100117A	Lennox 41K5601	Thermo Products 768A-143
Trane B340970P01	Trane IGN00033	Trane IGN00059
Trane IGN00104	Trane IGN00117	Trane IGN0104
Trane IGN033	Trane IGN059	

## Universal And Specialty Silicon Nitride Hot Surface Igniter Kits

### Features

- Silicon Nitride has high fracture toughness and chemical resistance abilities and can be handled with the greasiest of hands
- For furnaces, boilers, pool and water heaters



#### IG0001

- Includes mini igniter, flat mounting plate, screw, instruction sheet and adapter harness; Manufactured using silicon nitride
- 120 Volt

Replaces:

Goodman 023K00000S

Goodman B1401015S

Goodman B1401018S



#### IG0004N

- Silicone nitride igniter
- 120 Volt

Replaces:

Carrier LH33Z5004



#### IG1000N

- 120 Volt
- Universal round glo-stix

Replaces:

Honeywell Q3200U1000\$

Honeywell Q3200U1000\$

Norton 201

Norton 201D

Norton 201J

Norton 201K

Norton 201L

Norton 201M

Norton 201N

Norton 201R

Norton 201W

Norton 201Y

Norton 271

Norton 271D

Norton 271M

Norton 271N

Norton 271NM

Norton 271P

Norton 271W

Norton 271Y



#### IG9500

- 24 Volt
- Silicon nitride design

Replaces:

Honeywell Q3400A1016

Honeywell Q3400A1024

Honeywell Q3400A1040

Honeywell Q3450

Honeywell Q3480

Honeywell Q3620

ICP 1009524

ICP 1149856

Igniters Direct "SMART LITE"



**I OWN  
PACKARD!**

Bill Campbell Jr.  
Warehouse

*I love Packard because...*

“ of the people. Woody Hayes once said “You win with people,” and that’s what Packard does with our GREAT people. ”

## Flame Sensors

### Features

- For use with Spark ignition, Flame sensing and Hot Surface Ignition (H.S.I.) systems
- High quality alumina ceramic insulator
- High temperature kanthal flame rod material that can withstand 1800° F
- Flame rod can be trimmed down to match the application



### PFS010

Single screw, plated steel mounting bracket

- Single rod
- 1/4" male connection
- Overall length 3 3/4"
- Probe length 2 1/2"

Replaces:

Goodman/Amana/Janitrol 20488501, B1172606, Goodman 0130F00010



### PFS053

Single screw, plated steel mounting bracket

- Single rod
- 1/4" male connection

Replaces:

York S1-SCP-9007053



### PFS081

90 Degree

- Length of mounting flange to sensor tip 2 1/4"
- Length of sensor offset 3 1/4"
- Termination 1/4" male quick connect
- Bracket included

Replaces:

Lennox 40L81



### PFS114

75 Degree

- Single screw, plated steel mounting bracket
- Termination 1/4" male quick connect

Replaces:

Trane SEN01114

## TechTip >>>>

from Packard Academy

A defective or dirty flame sensor can prevent the burners in a gas furnace from remaining lit. The furnace may repeatedly attempt to ignite the burners but unsuccessfully. When installing or cleaning the flame sensor avoid touching the rod. If the oil present in our fingers is absorbed by the rod, it may result in improper operation and premature failure.



### RICK'S TIP

Rick Streaker  
National Training Coordinator



## Flame Sensors

### Features

- Flame sensors for Hot Surface Ignition (H.S.I.) systems
- Can be mounted remotely on multiple burners or adjacent to igniter on other applications
- For use with spark ignition and flame sensing
- High quality alumina ceramic insulator
- High temperature kanthal flame rod material that can withstand up to 1800°F



#### PFS013

- Teflon insulated (250°C rating) lead wire
- Used on these Bryant & Carrier models: 355MAV, 345MAV, 340MAV, 350MAV, 373LAV, 58MXA, 58MVP and 58MCA

#### Replaces:

Carrier 340MAV  
Carrier 355MAV  
Carrier LH680013

Carrier 345MAV  
Carrier LH33WZ514

Carrier 350MAV  
Carrier LH33WZ516



#### PFS014

- Teflon insulated (250°C rating) lead wire
- 45 Degree
- For use with Carrier LH33Z5004 igniter
- Used on these Bryant & Carrier models: 330AAV, 330JAV, 333BAV, 333JAV, 398AAV, 58DHC, 58DXC, 58PAV, 58SSC, 58SXC, 58TUA and 58WAV

#### Replaces:

6-62442-18179-4  
Carrier LH680012

Carrier LH33WZ511  
Carrier LH680014

Carrier LH33WZ515



#### PFS301

- 90 Degree
- Length - mounting flange to sensor tip: 2 1/2"
- Length - sensor offset: 1 9/16"
- Angle - sensor offset: 90 degree
- Termination: 1/4" male quick connect
- Commonly found on the Following Models: UGDG VGDG UGDG VGDG UGDG VGDG UGDJ UGFD UGLG UGLH UGLH UGLJ UGLK UGLL UGLN UGLQ UGLR UGPH UGPJ UGPK UGPL UGPN UGPP UGPQ UGPR UGRA UGRB UGRJ UGRK UGRL UGRM UGSA UGTA UGTJ UGVG UGVH UGVJ 80LJ 80LS 80PJ 80PS 90RJ 90RS 90RT 90TJ 90TS RGEF RGLS RGPS URGRM RGRS RGRT RGTS SGPG SGPN

#### Replaces:

Rheem 62-23543-01



#### PFS401

- Teflon insulated (250°C rating lead wire
- Single screw, plated steel mounting bracket
- Single rod
- 30 Inch lead with a female connection
- Probe length 3 inch

#### Replaces:

31380679



#### PFS700

- Single screw, plated steel mounting bracket
- Single rod
- Probe length 4 inch
- Can be mounted remotely on multiple burners or adjacent to igniter on other applications
- For use with spark ignition and flame sensing
- High quality alumina ceramic insulator
- High temperature kanthal flame rod material that can withstand 1800°F

#### Replaces:

Coleman 025-30788-700

York 025-25434-700

York 025-30788-700



#### PFS802

- Single screw, plated steel mounting bracket
- Single rod
- 1/4 Inch male connection
- Probe length 3 inch

#### Replaces:

ICP 1380687

York 025-27773-700

## Ditek Surge Protector



### PSP72KA Features

- Weatherproof enclosure
- Parallel connection for easy installation
- Diagnostic LED provides positive indication of power, ground presence, and surge protection
- Automatically resets to handle multiple surge events
- Typical Applications: A/C disconnect, small electrical panels, pool/well pumps
- Half the response time as similar models



### PSP38VDC Features

- Voice, Data and Signaling circuit surge protection
- Adds no resistance to loop circuits
- #22-#16 AWG screw terminal connections
- For 24 volt service

Item ID	Service Wiring	Peak Surge Current	MCOV	UL 1449, 3rd Ed. V.P.R.	Short Circuit Current Rating	UL1449, 3rd Ed. In Rating	Replaces
<b>Ditek Surge Protector</b>							
PSP38VDC	Screw Term	2,000 Amps/Pair	38VDC	UL497A & B	—	—	SYCST027B
PSP72KA	Split $\Phi$ (2W + G), 120/240VAC	72,000A/Phase 36,000A/Mode	130/260V	500V L-G, 900V L-L	10,000A	10,000A	SMC60 SMC150

## Electric Heating Restring Coil Kits



### General Purpose Restring Coil Kits

#### Features

- Restring kits are complete with terminal insulators, screws, washers and nuts
- Tight coil wire with 11/32" maximum outer diameter
- Packaged in a poly bag

Item ID	Watts at 240 Volt	Watts at 208 Volt
<b>Packard</b>		
PH500	5000	3750
PH501	3500	2625
PH502	2000	1500
PH503	2500	1875
PH505	4500	3375
PH506	4000	3000
PH507	3000	2250
PH520	6600	4950

### 5/8" O.D. General Purpose Coil Kits

#### Features

- Large open coil heaters for wall furnaces, duct heaters, electric furnaces, bathroom heaters and combination units
- Coil is terminated with 1/4" spade terminal
- Butt screws, bushings, nuts and instructions are included

Item ID	Connector	Watts at 240 Volt	Watts at 208 Volt
<b>Packard</b>			
PH500FC	1/4" Spade	5000	3750
PH500FCB	Bolt	5000	3750
PH501FC	1/4" Spade	3500	2625
PH501FCB	Bolt	3500	2625



**WE OWN  
PACKARD!**

*I'm proud to be a Packard employee owner...*



...because everyone yearns to be part of the big picture and this is the greatest way to have that feeling. »

Bill Campbell

Customer Service and Technical advisor



*Customer Focused...*



... means listening to the customers and getting them the right parts at just the right time with just the right price to all the customer to prosper. When our customers prosper we at Packard prosper. »

Jeff Jordan  
District Sales Manager



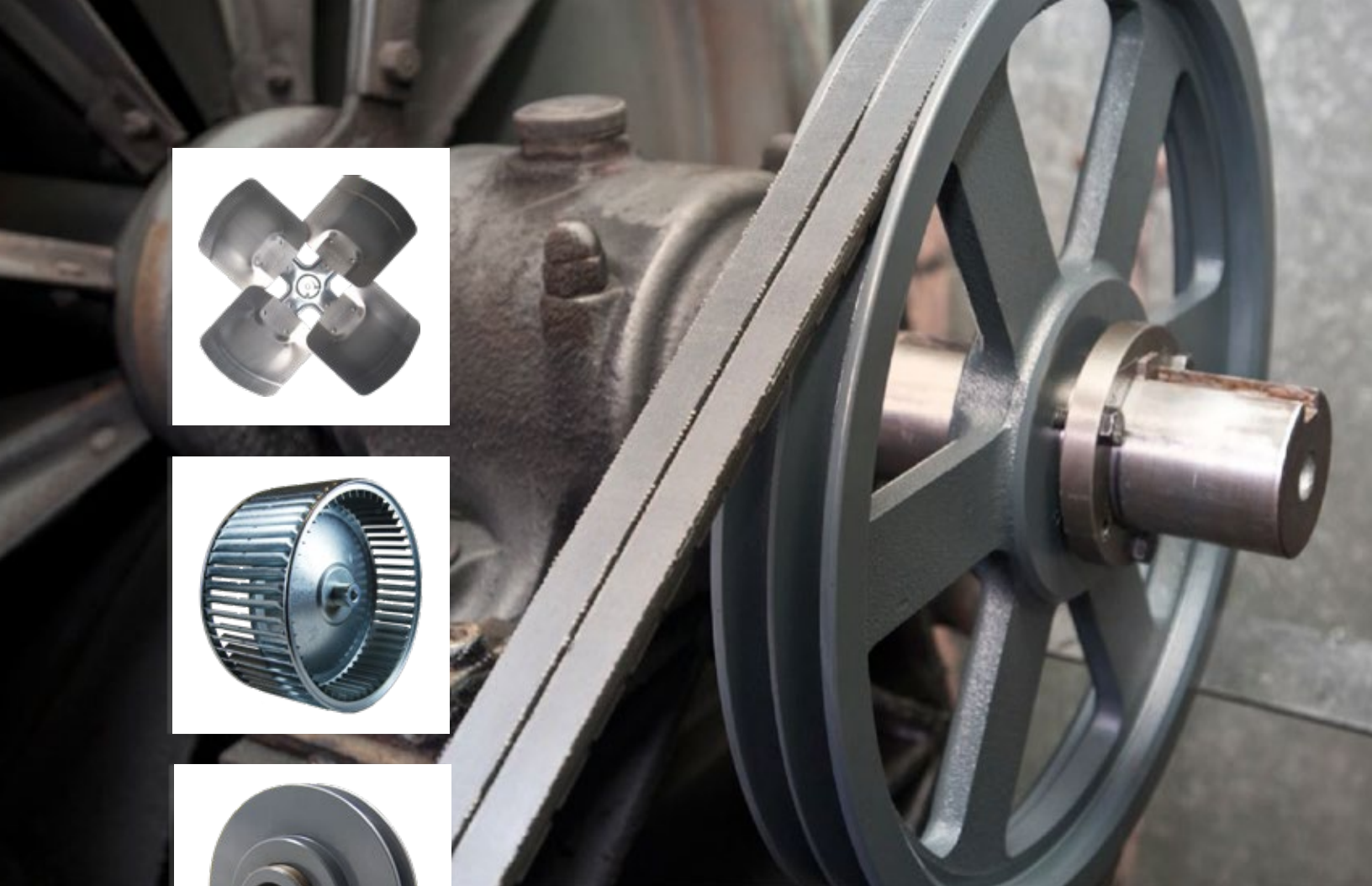
*I love Packard because...*



it's an awesome work environment, great benefits, and the fact that we own the company. »

AMY LARGO  
Warehouse - Shipping





# AIR HANDLING

Finding pieces that work together in quiet agreement is the key to a successful system. Blower wheels and fan blades are no different. Let us help you pick items that maximize efficiency and minimize failure.



## OEM Direct Replacements

OEM Brand	OEM Part number	Item ID
<b>Revcor</b>		
<b>CARRIER</b>	LA01EA025	R32213
<b>CARRIER</b>	LA01EA026	R21801
<b>CARRIER</b>	LA01EA037	R32205
<b>CARRIER</b>	LA01EA038 / LA01EA037	R32206
<b>CARRIER</b>	LA01EC018	R31821
<b>CARRIER</b>	LA01EW051	R31404
<b>CARRIER</b>	LA01RA004	R32603
<b>CARRIER</b>	LA01RA005	R32607
<b>CARRIER</b>	LA01RA006	R32610
<b>CARRIER</b>	LA01RA015	R31811
<b>CARRIER</b>	LA01RA027	R32202
<b>CARRIER</b>	LA01RA028B	R32208
<b>CARRIER</b>	LA01RA033	R32017
<b>CARRIER</b>	LA01RA038A	R32215
<b>CARRIER</b>	LA01RA220	R22001
<b>CARRIER</b>	LA01RA221	R22002
<b>CARRIER</b>	LA01RA222	R22401
<b>CARRIER</b>	LA01RA225	R22402
<b>CARRIER</b>	LA01RA312	R32402
<b>CARRIER</b>	LA01RA320	R32004
<b>CARRIER</b>	LA01RA321	R32008
<b>CARRIER</b>	LA01RA323	R32409
<b>CARRIER</b>	LA01RA324	R32406
<b>CARRIER</b>	LA01RA325	R32401
<b>CARRIER</b>	LA01RA326	R32602
<b>CARRIER</b>	LA01RA327	R32605
<b>CARRIER</b>	LA01RA329	R32606
<b>CARRIER</b>	LA01RA334	R32601
<b>GOODMAN</b>	10625738	R32604
<b>GOODMAN</b>	0150M00001P	R32009
<b>GOODMAN</b>	0150M00016	R32204
<b>GOODMAN</b>	B1086756	R31815
<b>GOODMAN</b>	B1086764	R42201
<b>GOODMAN</b>	B1086765	R42209
<b>GOODMAN</b>	B1086770	R32201

OEM Brand	OEM Part number	Item ID
<b>Revcor</b>		
<b>GOODMAN</b>	B1086771	R31816
<b>GOODMAN</b>	B1086773	R32209
<b>GOODMAN</b>	B1086775 / 0150M00006	R32216
<b>GREENHECK</b>	335629	R31270
<b>GREENHECK</b>	335650	R31272
<b>HC DUKE</b>	HC159037	R31268
<b>HUSSMAN</b>	E316580	R31267
<b>HUSSMAN</b>	E410387001	R31266
<b>LENNOX</b>	100060-09 / 68J2801	R41812
<b>LENNOX</b>	100060-10	R42210
<b>LENNOX</b>	100060-13	R42204
<b>LENNOX</b>	37L4801	R31604
<b>LENNOX/ALLIED AIR</b>	68J2601 / 100060-07	R31807
<b>LENNOX/ALLIED AIR</b>	68J2701 / 100060-08	R41805
<b>LENNOX/EXCEL</b>	100060-18	R32204
<b>LENNOX/EXCEL</b>	20391102	R31817
<b>LENNOX/EXCEL</b>	100060-03	R31810
<b>LENNOX/EXCEL</b>	100060-19	R32212
<b>NORDYNE</b>	667303	R32406
<b>NORDYNE</b>	6672790	R32003
<b>NORDYNE</b>	667261C	R31801
<b>NORDYNE</b>	667262B	R31814
<b>NORDYNE</b>	667316A	R32403
<b>NORDYNE</b>	667319A	R22405
<b>RHEEM</b>	702185906	R22201
<b>RHEEM</b>	7010132314	R31781
<b>RHEEM</b>	7010132315	R21781
<b>RHEEM</b>	7010201106	R32010
<b>RHEEM</b>	7010201107	R22204
<b>RHEEM</b>	70-102011-04	R22406
<b>SCOTTSMAN</b>	18888201	R31271
<b>TAYLOR</b>	63397	R31269
<b>TRANE</b>	D154218P38 / D154218P37	R22701
<b>TRANE</b>	D154229P01	R31901
<b>TRANE</b>	D154229P02	R31902

**TechTip**  
from Packard Academy

THE POSITION OF A FAN BLADE IS CRITICAL FOR PROPER SYSTEM PERFORMANCE. WHEN REMOVING AN OLD FAN BLADE, ALWAYS MEASURE THE LOCATION OF THE ORIFICE.

Learn more from the Packard Academy





## KH/KC Fans



### Applications

- Commercial air conditioning and ventilation
- Air handlers
- Cooling towers
- Large unit heaters
- Agricultural applications
- Bushings can be found on page 406

### Features

- 24 to 48 inch diameters
- Heavy-Gauge for added strength
- Steel spiders
- Rotation determined by viewing air-discharge side of fan
- Individually boxed
- 6 blade available
- Made in USA

Item ID	No. of Blades	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Location	Material	Max RPM	Industry No.
<b>Revcor KH/KC Fans Hubless</b>									
R42408	4	24	28	CW	—	Hubless	GALV	1140	40200
R42407	4	24	34	CW	—	Hubless	GALV	1140	40201
R42603	4	26	28	CW	—	Hubless	GALV	1140	40202
R42606	4	26	38	CW	—	Hubless	GALV	1140	40203
R42801	4	28	34	CW	5/8	Discharge	GALV	1140	40396
R43002	4	30	22	CW	—	Hubless	GALV	1140	40205
R43003	4	30	30	CW	5/8	Discharge	GALV	1140	40397
R43004	4	30	30	CW	—	Hubless	GALV	1140	40206
R43601	4	36	32	CW	—	Hubless	GALV	850	40208
R43602	4	36	34	CW	—	Hubless	GALV	850	40209
R43603	4	36	38	CW	—	Hubless	GALV	850	40211
R44202	4	42	38	CW	—	Hubless	GALV	850	40213
R44801	4	48	38	CW	—	Hubless	GALV	700	40216

\* Fan should be guarded before operating.

\* Tighten cap screws securely before operating.

## Swept Fans

### Applications

- Commercial and residential condensers

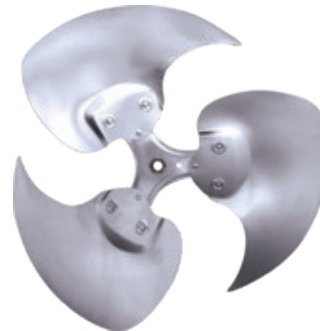


Item ID	No. of Blades	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position
<b>Revcor 2-Blade</b>						
R22405	2	24	27	CW	1/2	Intake
R22701	2	27	28	CCW	1/2	Intake

### Features

- Carrier Replacements
- Up to 50% reduction in noise level
- Rotation is determined by viewing the discharge side of fan
- Made in USA

Additional models available upon request



Item ID	No. of Blades	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position
<b>Revcor 3-Blade</b>						
R32017	3	20	34	CW	1/2	Intake
R32603	3	26	19	CW	1/2	Intake
R32607	3	26	24	CW	1/2	Intake
R32610	3	26	28	CW	1/2	Intake

## Propellers With Fixed Hub - 3-Blade



### Applications

- Unitary condensing units, heat pumps, unit heaters, ventilators and exhaust fans

### Features

- 14 to 30 inch diameters
- Embossed for added strength
- Factory balanced
- Steel spiders with 1/2 and 5/8 inch bores
- Individually boxed
- Aluminum fan blades unless otherwise specified
- Made in USA

Additional blade options available upon request

Item ID	No. of Blades	Diam. (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Replaces
<b>Revcor 3-Blade</b>							
R31403	3	14	32	CW	1/2	Discharge	40328
R31404*	3	14	38	CW	1/2	Intake	LA01EW051
R31602	3	16	28	CW	1/2	Intake	40331
R31603	3	16	30	CW	1/2	Intake	40332
R31604	3	16	32	CCW	1/2	Intake	37L4801
R31781*	3	17.8	34	CCW	1/2	Intake	7010132314
R31801*	3	18	19	CW	1/2	Intake	667261C
R31804	3	18	26	CW	1/2	Discharge	40338
R31805	3	18	26	CCW	1/2	Intake	40339
R31809	3	18	27	CW	1/2	Discharge	40340
R31807*	3	18	27	CCW	1/2	Intake	68J2601
R31810*	3	18	27	CCW	1/2	Intake	100060-03
R31811	3	18	27	CW	1/2	Intake	LA01RA015
R31814*	3	18	30	CW	1/2	Intake	667262B
R31815*	3	18	31	CCW	1/2	Intake	B1086756
R31816	3	18	32	CCW	1/2	Intake	B1086771
R31817	3	18	32	CW	1/2	Intake	20391102
R31820	3	18	33	CW	1/2	Discharge	40343
R31821	3	18	35	CW	1/2	Intake	LA01EC018
R31901	3	19	30	CCW	1/2	Intake	D154229P01
R31902	3	19	32	CCW	1/2	Intake	D154229P02
R32001	3	20	23	CW	1/2	Discharge	F20233
R32003*	3	20	26	CW	1/2	Intake	6672790
R32004	3	20	26	CW	1/2	Intake	LA01RA320
R32008	3	20	28	CW	1/2	Intake	LA01RA321
R32009*	3	20	28	CCW	1/2	Intake	0150M00001P
R32010*	3	20	29	CCW	1/2	Intake	7010201106
R32014	3	20	31	CW	1/2	Discharge	L6130630001
R32201	3	22	19	CCW	1/2	Intake	B1086770
R32202*	3	22	20	CW	1/2	Intake	LA01RA027
R32203	3	22	20	CW	1/2	Intake	L6129570001

\*Note - Galvanized Fan Blades

Item ID	No. of Blades	Diam. (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Replaces
<b>Revcor 3-Blade</b>							
R32204	3	22	22	CCW	1/2	Intake	100060-18
R32207*	3	22	24	CW	1/2	Discharge	40352
R32205*	3	22	24	CW	1/2	Intake	L6130640001
R32206	3	22	24	CW	1/2	Intake	LA01EA038, 40353
R32208*	3	22	24	CW	1/2	Intake	LA01RA028B
R32209	3	22	24	CCW	1/2	Intake	B1086773
R32212	3	22	27	CW	1/2	Intake	100060-19
R32213	3	22	28	CW	1/2	Intake	LA01EA025
R32214	3	22	28	CW	1/2	Intake	40355
R32215*	3	22	28	CW	1/2	Intake	LA01RA038A
R32216	3	22	28	CCW	1/2	Intake	B1086775
R32221	3	22	33	CW	1/2	Intake	40356
R32401*	3	24	18	CW	1/2	Intake	LA01RA325
R32402*	3	24	19	CW	1/2	Intake	LA01RA312
R32403*	3	24	20	CW	1/2	Intake	667316A
R32404	3	24	22	CW	1/2	Intake	L6131430001
R32405	3	24	22	CCW	1/2	Intake	40323
R32406*	3	24	24	CW	1/2	Intake	LA01RA324
R32409*	3	24	26	CW	1/2	Intake	LA01RA323
R32410	3	24	30	CW	1/2	Intake	40359
R32601*	3	26	15	CW	1/2	Intake	LA01RA334
R32602	3	26	18	CW	1/2	Intake	LA01RA326
R32604	3	26	20	CCW	1/2	Intake	10625738
R32605*	3	26	21	CW	1/2	Intake	LA01RA327
R32606*	3	26	24	CW	1/2	Intake	LA01RA329
R32608	3	26	26	CW	1/2	Discharge	40362
R32609	3	26	27	CW	1/2	Intake	40363
R33001	3	30	30	CW	5/8	Discharge	

\*Note - Galvanized Fan Blades



## Propellers With Fixed Hub - 2, 4 And 5-Blade



### Applications

- Unitary condensing units, heat pumps, unit heaters, ventilators and exhaust fans

### Features

- 14 to 30 inch diameters
- Embossed for added strength
- Factory balanced
- Steel spiders
- Individually boxed
- Aluminum fan blades unless otherwise specified
- Made in USA

Additional blade options available upon request

### Pitch Gauge



See page 417

Item ID	No. of Blades	Diam. (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Replaces
<b>Revcor 2-Blade</b>							
R21402	2	14	36	CW	1/2	Discharge	L60743401
R21401	2	14	36	CCW	1/2	Intake	40301
R21781*	2	17.8	31	CCW	1/2	Intake	7010132315
R21801	2	18	20	CW	1/2	Intake	LA01EA026
R21802	2	18	24	CW	1/2	Intake	40305
R21803	2	18	29	CCW	1/2	Intake	40308
R21804	2	18	29	CW	1/2	Intake	40307
R21805	2	18	33	CCW	1/2	Intake	40408
R22001	2	20	20	CW	1/2	Intake	LA01RA220
R22002	2	20	24	CW	1/2	Intake	LA01RA221
R22003	2	20	29	CCW	1/2	Intake	40315
R22201*	2	22	22	CCW	1/2	Intake	40319
R22202	2	22	27	CCW	1/2	Intake	F22272
R22203*	2	22	29	CCW	1/2	Intake	40321
R22204*	2	22	35	CCW	1/2	Intake	7010201107
R22401*	2	24	16	CW	1/2	Intake	LA01RA222
R22402*	2	24	18	CW	1/2	Intake	LA01RA225
R22403	2	24	24	CCW	1/2	Intake	40324
R22404	2	24	27	CCW	1/2	Intake	L60772801
R22406*	2	24	31	CCW	1/2	Intake	70-102011-04

\*Note - Galvanized Fan Blades

Item ID	No. of Blades	Diam. (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Replaces
<b>Revcor 4-Blade</b>							
R41607	4	16	33	CW	1/2	Discharge	40372
R41805*	4	18	27	CCW	1/2	Intake	68J2701
R41808	4	18	30	CW	1/2	Intake	40375
R41811	4	18	33	CW	1/2	Discharge	40376
R41812	4	18	34	CCW	1/2	Intake	68J2801
R42009	4	20	33	CW	1/2	Intake	40378
R42010	4	20	36	CW	1/2	Intake	40379
R42201*	4	22	22	CCW	1/2	Intake	B1086764
R42205	4	22	24	CW	1/2	Discharge	40380
R42204	4	22	24	CCW	1/2	Intake	100060-13
R42206	4	22	26	CW	1/2	Intake	40381
R42209*	4	22	28	CCW	1/2	Intake	B1086765
R42210	4	22	32	CCW	1/2	Intake	100060-10
R42212	4	22	33	CCW	1/2	Intake	40382
R42404	4	24	27	CCW	1/2	Discharge	F24278
R42604	4	26	30	CW	5/8	Discharge	L6130720001
R43001	4	30	22	CW	5/8	Intake	40392
<b>Revcor 5 Blade</b>							
R51803	5	18	33	CW	1/2	Discharge	40404

\*Note - Galvanized Fan Blades

## Hubless Propellers



### Applications

- Air conditioning condensing units, power roof ventilators, heat pumps, heat exchangers, unit heaters, commercial and industrial equipment
- 10 to 24 inch diameter available
- Steel spiders
- Embossed for added strength
- Max motor speed for blades up to 16" is 1725 Rpm.
- Max motor speed for blades 18" to 26" is 1140 Rpm.
- Use with interchangeable hubs
- Individually boxed
- Aluminum fan blades
- Made in USA

Additional blade options available upon request

Item ID	No. of Blades	Diameter (In.)	Pitch (°)	Rotation	Replaces
<b>Revcor 3-Blade</b>					
R31201	3	12	19	CW	40061
R31202	3	12	27	CW	L6129790001
R31401	3	14	23	CW	L60716501
R31402	3	14	27	CW	L60716701
R31601	3	16	23	CW	
R31802	3	18	23	CCW	L60556001
R31803	3	18	23	CW	40041
R31806	3	18	27	CCW	40044
R31808	3	18	27	CW	40043
R31812	3	18	30	CCW	18307
R31813	3	18	30	CW	L60556301
R31818	3	18	33	CCW	40046
R31819	3	18	33	CW	40045
R32002	3	20	24	CW	L6129830001
R32005	3	20	27	CW	
R32006	3	20	28	CCW	L60556801
R32007	3	20	28	CW	40049
R32011	3	20	30	CW	40067
R32012	3	20	31	CCW	L60557001
R32013	3	20	31	CW	
R32015	3	20	33	CCW	40052
R32016	3	20	33	CW	40051
R32210	3	22	27	CCW	40054
R32211	3	22	27	CW	40053
R32217	3	22	30	CCW	40024
R32218	3	22	30	CW	40069
R32219	3	22	33	CCW	40056
R32220	3	22	33	CW	40055
R32407	3	24	26	CCW	40058
R32408	3	24	26	CW	40057
R32411	3	24	33	CW	

## Hubs With Set Screws & Mtg Screws



Item ID	Bore (In.)	No. of Set Screws
<b>Packard</b>		
H60765801	1/4	1
H60765802	5/16	1
H60765803	3/8	1
H60765804	1/2	2
H60765805	5/8	2
H60765806	3/4	2

## Shafts

### 1018 Cold Rolled Steel Ground & Polished



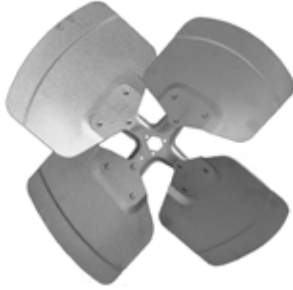
Item ID	Diameter (In.)	Length (In.)
<b>Packard</b>		
S38220501	5/8	20
S38209601	3/4	20
S38269301	3/4	35
S38209501	1	25
S38249201	1	35

Scan to view our training video on the difference between fan blades and blower wheels.





## Hubless Propellers



### Applications

- Air conditioning condensing units, power roof ventilators, heat pumps, heat exchangers, unit heaters, commercial and industrial equipment

### Features

- 10 to 26 inch diameter
- Steel spiders
- Embossed for added strength
- For motor speeds up to 1625 RPM
- Use with interchangeable hubs
- Individually boxed
- Aluminum fan blades
- Made in USA

Additional blade options available upon request



Item ID	No. of Blades	Diam. (In.)	Pitch (°)	Rotation	Replaces
<b>Revcor 4-Blade</b>					
R41001	4	10	27	CW	L60717701
R41201	4	12	23	CCW	40077
R41202	4	12	23	CW	40076
R41203	4	12	27	CCW	40079
R41204	4	12	27	CW	40078
R41205	4	12	33	CW	40080
R41401	4	14	23	CCW	L60718801
R41403	4	14	23	CW	40082
R41405	4	14	27	CCW	40085
R41406	4	14	27	CW	40084
R41407	4	14	33	CW	40086
R41601	4	16	23	CCW	L60719401
R41602	4	16	23	CW	40088
R41603	4	16	27	CCW	40091
R41604	4	16	27	CW	40090
R41605	4	16	33	CCW	16338
R41606	4	16	33	CW	40092
R41801	4	18	19	CW	18194
R41802	4	18	23	CCW	40095
R41803	4	18	23	CW	L60800201
R41804	4	18	27	CCW	40097
R41806	4	18	27	CW	18274
R41807	4	18	30	CCW	L60558401
R41809	4	18	33	CCW	18338
R41810	4	18	33	CW	18334
R42001	4	20	23	CCW	L60800501
R42002	4	20	23	CW	L60800401
R42003	4	20	27	CCW	40103
R42004	4	20	27	CW	40102
R42005	4	20	29	CCW	L60559001
R42006	4	20	29	CW	L60558901
R42007	4	20	33	CCW	40105
R42008	4	20	33	CW	40104
R42202	4	22	23	CCW	40107
R42203	4	22	23	CW	40106
R42207	4	22	27	CCW	40109
R42208	4	22	27	CW	40108
R42211	4	22	33	CW	40110
R42213	4	22	35	CW	40139
R42401	4	24	23	CCW	40113
R42402	4	24	23	CW	40112
R42403	4	24	27	CCW	40115
R42405	4	24	27	CW	40114
R42406	4	24	33	CW	40116
R42601	4	26	24	CW	L60760701
R42602	4	26	27	CW	40118
R42605	4	26	33	CW	L60761101

Item ID	No. of Blades	Diameter (In.)	Pitch (°)	Rotation	Replaces
<b>Revcor 5-Blade</b>					
R51601	5	16	27	CCW	40151
R51602	5	16	33	CW	40402
R51801	5	18	27	CCW	L60560601
R51802	5	18	27	CW	L60560501
R52201	5	22	33	CW	40164
R52401	5	24	27	CW	L60561701
R52402	5	24	33	CW	40168



Scan for Durability Demonstration

## 3-Blade Propellers Heavy Duty Condenser Style



### Applications

- Air conditioning condensing units
- Power roof ventilators
- Heat pumps
- Heat exchangers
- Roof top air conditioners
- Commercial and industrial equipment
- Unit heaters
- Agricultural ventilating equipment
- Walk-in refrigeration units
- General cooling/heating applications

### Features

- 3-blade configuration is normally used in low pressure applications
- Square pressure-type blades are required for most condenser applications
- High quality aluminum blades
- Interchangeable hubs available from 1/4" through 3/4" bore, may be attached on either intake or discharge side
- Pitches available for most common horsepower and motor speeds up to 1725 RPM in both CW and CCW rotations

See page 374 for hubs

Item ID	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Pack
<b>Lau 3-Blade Heavy Duty Condenser Style</b>						
L60716101	12	19	CW		Interchangeable	2
L60716201	12	19	CCW		Interchangeable	2
L60716301	12	23	CW		Interchangeable	2
L60716401	12	23	CCW		Interchangeable	2
L60716501	14	23	CW		Interchangeable	2
L60716601	14	23	CCW		Interchangeable	2
L60716701	14	27	CW		Interchangeable	2
L60716801	14	27	CCW		Interchangeable	2
L60716901	16	19	CW		Interchangeable	2
L60717001	16	19	CCW		Interchangeable	2
L60717101	16	23	CW		Interchangeable	2
L60717201	16	23	CCW		Interchangeable	2
L6129800001	16	27	CCW		Interchangeable	2
L60556001	18	23	CCW		Interchangeable	2
L6130610001	18	26	CW	1/2	Discharge	2
L60556101	18	27	CW		Interchangeable	2
L60556201	18	27	CCW		Interchangeable	2
L60556301	18	33	CW		Interchangeable	2
L60556401	18	30	CCW		Interchangeable	2
L60556501	18	33	CW		Interchangeable	2
L60556601	18	33	CCW		Interchangeable	2
L6130620001	18	35	CCW	1/2	Intake	2
L6129820001	20	24	CCW		Interchangeable	2
L60999001	20	25	CCW	1/2	Intake	2
L60556701	20	27	CW		Interchangeable	2
L60556801	20	27	CCW		Interchangeable	2
L60556901	20	30	CW		Interchangeable	2
L60557001	20	30	CCW		Interchangeable	2
L6130630001	20	31	CW	1/2	Discharge	2
L60557101	20	33	CW		Interchangeable	2
L60557201	20	33	CCW		Interchangeable	2
L6130640001	22	24	CW	1/2	Intake	2
L60557301	22	27	CW		Interchangeable	2
L60557401	22	27	CCW		Interchangeable	2
L6130650001	22	28	CW	1/2	Intake	2
L60557501	22	33	CW		Interchangeable	2
L60557601	22	33	CCW		Interchangeable	2
L6131430001	24	22	CW	1/2	Intake	2
L60557701	24	27	CW		Interchangeable	2
L60557801	24	27	CCW		Interchangeable	2
L60557901	24	33	CW		Interchangeable	2
L60558001	24	33	CCW		Interchangeable	2
L6129910001	26	33	CW		Interchangeable	1
L6130660001	26	37	CW	1/2	Intake	1
L6129930001	30	27	CW		Interchangeable	1



## 4-Blade Propellers Heavy Duty Condenser Style



### Applications

- Condensing units, general building and agricultural ventilation fans

### Features

- High strength aluminum blades with corrosion resistant center spiders

Item ID	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Pack
<b>Lau 4-Blade Heavy Duty Condenser Style</b>						
L60717301	10	19	CW		Interchangeable	2
L60717401	10	19	CCW		Interchangeable	2
L60717501	10	23	CW		Interchangeable	2
L60717601	10	23	CCW		Interchangeable	2
L60717701	10	27	CW		Interchangeable	2
L60717801	10	27	CCW		Interchangeable	2
L60759901	10	33	CW		Interchangeable	2
L60760001	10	33	CCW		Interchangeable	2
L60717901	12	19	CW		Interchangeable	2
L60718001	12	19	CCW		Interchangeable	2
L60718101	12	23	CW		Interchangeable	2
L60718201	12	23	CCW		Interchangeable	2
L60718301	12	27	CW		Interchangeable	2
L60718401	12	27	CCW		Interchangeable	2
L60760101	12	33	CW		Interchangeable	2
L60760201	12	33	CCW		Interchangeable	2
L6130000001	14	16	CCW		Interchangeable	2
L60718501	14	19	CW		Interchangeable	2
L60718601	14	19	CCW		Interchangeable	2
L60718701	14	23	CW		Interchangeable	2
L60718801	14	23	CCW		Interchangeable	2
L60718901	14	27	CW		Interchangeable	2
L60719001	14	27	CCW		Interchangeable	2
L60760301	14	33	CW		Interchangeable	2
L60760401	14	33	CCW		Interchangeable	2
L60719101	16	19	CW		Interchangeable	2
L60719201	16	19	CCW		Interchangeable	2
L60719401	16	23	CCW		Interchangeable	2
L60719501	16	27	CW		Interchangeable	2
L60719601	16	27	CCW		Interchangeable	2
L60760501	16	33	CW		Interchangeable	2
L60760601	16	33	CCW		Interchangeable	2
L60800201	18	23	CW		Interchangeable	2
L60800301	18	23	CCW		Interchangeable	2
L60558101	18	27	CW		Interchangeable	2
L60558201	18	27	CCW		Interchangeable	2
L60558301	18	30	CW		Interchangeable	2

Item ID	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Pack
<b>Lau 4-Blade Heavy Duty Condenser Style</b>						
L60558401	18	30	CCW		Interchangeable	2
L60558501	18	33	CW		Interchangeable	2
L60558601	18	33	CCW		Interchangeable	2
L60800401	20	23	CW		Interchangeable	2
L60800501	20	23	CCW		Interchangeable	2
L60558701	20	27	CW		Interchangeable	2
L60558801	20	27	CCW		Interchangeable	2
L60558901	20	30	CW		Interchangeable	2
L60559001	20	30	CCW		Interchangeable	2
L60559101	20	33	CW		Interchangeable	2
L60559201	20	33	CCW		Interchangeable	2
L60804101	22	23	CW		Interchangeable	2
L60804201	22	23	CCW		Interchangeable	2
L60559301	22	27	CW		Interchangeable	2
L60559401	22	27	CCW		Interchangeable	2
L60841201	22	30	CW	1/2	Discharge	2
L60559501	22	33	CW		Interchangeable	2
L60559601	22	33	CCW		Interchangeable	2
L6130190001	24	18	CW		Interchangeable	2
L60804301	24	23	CW		Interchangeable	2
L60804401	24	23	CCW		Interchangeable	2
L60841701	24	23	CCW	1/2	Intake	2
L60559701	24	27	CW		Interchangeable	2
L60559801	24	27	CCW		Interchangeable	2
L60559901	24	33	CW		Interchangeable	2
L60560001	24	33	CCW		Interchangeable	2
L60760701	26	24	CW		Interchangeable	1
L60760801	26	24	CCW		Interchangeable	1
L60760901	26	27	CW		Interchangeable	1
L60761001	26	27	CCW		Interchangeable	1
L60997201	26	32	CW	5/8	Discharge	1
L60761101	26	33	CW		Interchangeable	1
L60761201	26	33	CCW		Interchangeable	1
L61017601	28	25	CW	5/8	Discharge	1
L6131250001	30	27	CW		Interchangeable	1
L6127290001	30	30	CW	5/8	Discharge	1
L6131260001	30	33	CCW		Interchangeable	1
L6131270001	30	33	CW		Interchangeable	1

## 2-Blade Propellers OEM Style With Fixed Hub



### Applications

- For lower static pressure condensing units.
- Replacements for G.E., Rheem-Rudd, Singer-Climate Control, Trane, etc.

### Features

- 14 to 24 inch diameter
- High strength aluminum blades
- Each blade clearly labeled as to Pitch, Diameter, Rotation, and Maximum RPM
- Top quality, epoxy painted spiders with high salt spray characteristics
- Steel fixed hub - 1/2" bore - exact propellers as supplied to OEMs

Item ID	Diameter (In.)	Pitch (°)	Rotation	Bore (In.)	Hub Position	Pack
<b>Lau 2-Blade OEM-Style with Fixed Hub</b>						
L6130470001	14	32	CW	1/2	Discharge	2
L6130500001	18	24	CW	1/2	Intake	2
L60772501	18	28	CCW	1/2	Intake	2
L6130510001	18	29	CW	1/2	Intake	2
L60652101	18	32	CCW	1/2	Intake	2
L6130520001	18	36	CW	1/2	Intake	2
L60772601	20	28	CCW	1/2	Intake	2
L6130560001	20	28	CW	1/2	Intake	2
L60772701	22	16	CCW	1/2	Intake	2
L60814201	22	27	CCW	1/2	Intake	2
L6130570001	24	19	CCW	1/2	Intake	2
L61040201	24	22	CCW	1/2	Intake	2
L6130580001	24	24	CCW	1/2	Intake	2
L60772801	24	27	CCW	1/2	Intake	2

## 5-Blade Propellers Heavy Duty Condenser Style



### Applications

- Industrial air circulators, exhaust fan units and large condensing units

### Features

- High quality aluminum blades with corrosion resistant center spiders

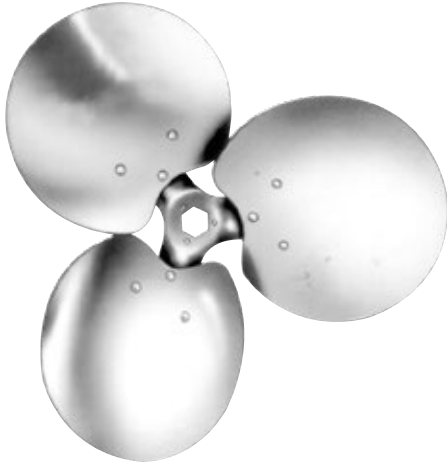
See page 374 for hubs

Item ID	Diameter (In.)	Pitch (°)	Rotation	Hub Position	Pack
<b>Lau 5-Blade Heavy Duty Condenser Style</b>					
L60720101	10	27	CW	Interchangeable	2
L60720201	10	27	CCW	Interchangeable	2
L60720401	12	19	CW	Interchangeable	2
L60720501	12	23	CW	Interchangeable	2
L60720601	12	23	CCW	Interchangeable	2
L60720701	12	27	CW	Interchangeable	2
L60720801	12	27	CCW	Interchangeable	2
L60721101	14	23	CW	Interchangeable	2
L60721201	14	23	CCW	Interchangeable	2
L60721301	14	27	CW	Interchangeable	2
L60721401	14	27	CCW	Interchangeable	2
L60560101	16	27	CW	Interchangeable	2
L60560201	16	27	CCW	Interchangeable	2
L60560301	16	33	CW	Interchangeable	2
L60560401	16	33	CCW	Interchangeable	2
L60560501	18	27	CW	Interchangeable	2
L60560601	18	27	CCW	Interchangeable	2
L60560901	20	27	CW	Interchangeable	2
L60561001	20	27	CCW	Interchangeable	2
L60561101	20	33	CW	Interchangeable	2
L60561201	20	33	CCW	Interchangeable	2
L60561301	22	27	CW	Interchangeable	2
L60561401	22	27	CCW	Interchangeable	2
L60561501	22	33	CW	Interchangeable	2
L60561601	22	33	CCW	Interchangeable	2
L60561701	24	27	CW	Interchangeable	2
L60561801	24	27	CCW	Interchangeable	2
L60561901	24	33	CW	Interchangeable	2
L60562001	24	33	CCW	Interchangeable	2
L60761301	26	27	CW	Interchangeable	1
L60761401	26	27	CCW	Interchangeable	1
L60761501	26	33	CW	Interchangeable	1
L60761601	26	33	CCW	Interchangeable	1
L6130420001	30	29	CCW	Interchangeable	1

## 3-Blade And 4-Blade Propellers Free Air Style

### Applications

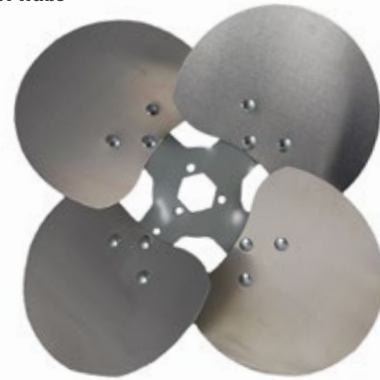
- Pedestal and window fans, air circulators



Item ID	Diameter (In.)	Pitch (°)	Rotation	Hub Position	Pack
<b>Lau 3-Blade Free Air Style</b>					
L60265201	10	27	CW	Interchangeable	2
L60265301	10	27	CCW	Interchangeable	2
L60265401	12	23	CW	Interchangeable	2
L60265501	12	23	CCW	Interchangeable	2
L60265801	14	23	CW	Interchangeable	2
L60265901	14	23	CCW	Interchangeable	2
L60266201	16	23	CW	Interchangeable	2
L60266301	16	23	CCW	Interchangeable	2
L60555901	18	23	CW	Interchangeable	2
L60556001	18	23	CCW	Interchangeable	2
L60267001	20	23	CW	Interchangeable	2
L60267101	20	23	CCW	Interchangeable	2
L60267601	24	18	CW	Interchangeable	2

### Features

- Designed for free air, low pressure applications
- High quality, rounded aluminum blades for maximum free air delivery with minimum noise levels
- Pitches available for most common HP and motor speeds
- Hubs attached on either the intake or discharge side  
See page 374 for hubs



Item ID	Diameter (In.)	Pitch (°)	Rotation	Hub Position	Pack
<b>Lau 4-Blade Free Air Style</b>					
L60269301	10	23	CW	Interchangeable	2
L60269401	10	23	CCW	Interchangeable	2
L60262201	12	23	CW	Interchangeable	2
L60262301	12	23	CCW	Interchangeable	2
L60262801	14	27	CW	Interchangeable	2
L60262901	14	27	CCW	Interchangeable	2
L60555301	18	23	CW	Interchangeable	2
L60555401	18	23	CCW	Interchangeable	2
L60555501	18	27	CW	Interchangeable	2
L60555601	18	27	CCW	Interchangeable	2
L60263801	20	23	CW	Interchangeable	2
L60263901	20	23	CCW	Interchangeable	2
L60264001	20	27	CW	Interchangeable	2
L60264101	20	27	CCW	Interchangeable	2
L60285301	20	33	CW	Interchangeable	2
L60285401	20	33	CCW	Interchangeable	2
L60562101	24	18	CW	Interchangeable	2
L60562201	24	18	CCW	Interchangeable	2
L60562301	24	23	CW	Interchangeable	2
L60562401	24	23	CCW	Interchangeable	2
L60562501	24	27	CW	Interchangeable	2
L60562601	24	27	CCW	Interchangeable	2

## Small Aluminum Fan Blades With Hubs



4-Blade



5-Blade



10-Blade



FB99100

Item ID	Diameter (In.)	Blades	Hub Location	Bore	Pitch (°)	Rotation
<b>Packard</b>						
A61948	2	10	Intake	3/16	12	CW
A61949	2 1/2	10	Intake	3/16	20	CW
A61950	3	10	Intake	3/16	24	CW
A61954	3	10	Intake	1/4	30	CW
A61951	3 1/2	10	Intake	3/16	27	CW
A61955	3 1/2	10	Intake	1/4	40	CW
A61952	4	10	Intake	3/16	28	CW
A61956	4	10	Intake	1/4	30	CW
A61465	4 1/2	10	Intake	3/16	30	CW
A61467	5	10	Intake	3/16	35	CW
A61468	5	10	Intake	1/4	40	CW
A61473	5 1/2	4	Intake	1/4	19	CW
A61474	5 1/2	4	Intake	3/16	19	CW
A61476	5 1/2	4	Intake	3/16	19	CCW
A64550	5 1/2	4	Intake	3/16	19	CW
A64455	5 1/2	4	Intake	3/16	24	CCW
A65503	5 1/2	5	Intake	5/16	27	CW
A65504	5 1/2	5	Intake	1/4	27	CW
A65513	5 1/2	5	Intake	5/16	27	CCW
A65515	5 1/2	5	Intake	1/4	27	CCW
A61469	6	4	Intake	3/16	19	CW
A61470	6	4	Intake	1/4	19	CW
A60604	6	5	Intake	1/4	27	CW
A60614	6	5	Intake	1/4	27	CCW
A65632	6	5	Intake	5/16	27	CW
A65633	6	5	Intake	5/16	27	CCW
A65131	6	5	Intake	5/16	30	CW
A65225	6	5	Discharge	1/4	30	CCW
A65231	6	5	Discharge	5/16	30	CCW
A61471	6 1/2	4	Intake	3/16	19	CW
A64650	6 1/2	4	Intake	1/4	19	CW
A66504	6 1/2	5	Intake	1/4	27	CW
A63473	7	5	Intake	1/4	21	CW
A60704	7	5	Intake	1/4	27	CW
A60714	7	5	Intake	1/4	27	CCW
A65732	7	5	Intake	5/16	27	CW
A75131	7	5	Intake	5/16	40	CW
A75225	7	5	Discharge	1/4	40	CCW
A75231	7	5	Discharge	5/16	40	CCW

Item ID	Diameter (In.)	Blades	Hub Location	Bore	Pitch (°)	Rotation
<b>Packard</b>						
A63475	8	5	Intake	1/4	23	CW
A63841	8	5	Discharge	1/4	24	CW
A65825	8	5	Intake	1/4	27	CW
A65826	8	5	Intake	1/4	27	CCW
A65832	8	5	Intake	5/16	27	CW
A65833	8	5	Intake	5/16	27	CCW
A85131	8	5	Intake	5/16	30	CW
A60804	8	5	Intake	1/4	36	CW
A60805	8	5	Intake	5/16	36	CW
A60814	8	5	Intake	1/4	36	CCW
A60815	8	5	Intake	5/16	36	CCW
A85225	8	5	Discharge	1/4	40	CCW
A85231	8	5	Discharge	5/16	40	CCW
A63477	9	5	Intake	1/4	25	CW
A65925	9	5	Intake	1/4	26	CW
A65926	9	5	Intake	1/4	26	CCW
A65932	9	5	Intake	5/16	26	CW
A65933	9	5	Intake	5/16	26	CCW
A95131	9	5	Intake	5/16	30	CW
A95225	9	5	Discharge	1/4	30	CCW
A95231	9	5	Discharge	5/16	30	CCW
A65105	10	5	Intake	1/4	20	CCW
A65104	10	5	Intake	1/4	20	CW
A65133	10	5	Intake	5/16	20	CCW
A65132	10	5	Intake	5/16	20	CW
A63479	10	5	Intake	1/4	28	CW
A15225	10	5	Discharge	1/4	30	CCW
A61322	10	5	Intake	5/16	30	CCW
A61323	10	5	Discharge	5/16	30	CCW
A61312	10	5	Intake	5/16	30	CW
A61015	10	5	Intake	5/16	40	CCW
A61005	10	5	Intake	5/16	40	CW
A65123	12	5	Discharge	5/16	23	CW
A61215	12	5	Intake	5/16	24	CCW
A61216	12	5	Discharge	5/16	24	CCW
A61205	12	5	Intake	5/16	24	CW
FB99100	12	5	Discharge	1/2	33	CW
A61405	14	5	Intake	5/16	19	CW
A65145	14	5	Intake	1/2	32	CW

## Small Aluminum Fan Blades - Hubless



5-Blade



6-Blade

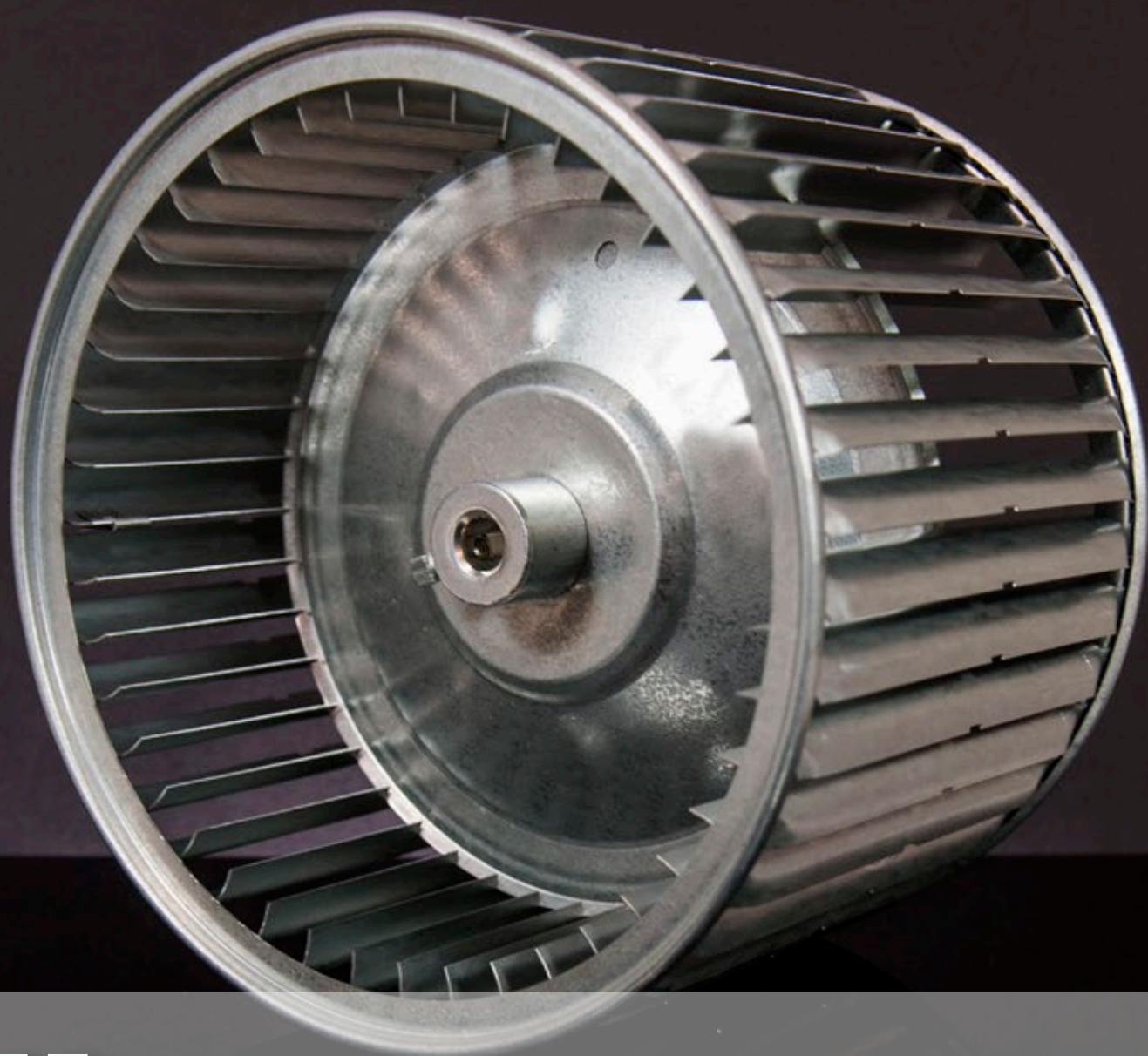
Item ID	Diameter (In.)	Blades	Pitch (°)	Rotation
<b>Packard</b>				
A61101	6	5	21	CW
A61102	6	5	21	CCW
A63607	6	5	30	CW
A63617	6	5	30	CCW
A61608	6 3/4	5	21	CW
A61618	6 3/4	5	21	CCW
A67513	6 3/4	5	30	CW
A67523	6 3/4	5	30	CCW
A63474	7	5	21	CW
A61103	7	5	25	CW
A61104	7	5	25	CCW
A63707	7	5	31	CW
A63717	7	5	31	CCW
A75221	7	5	40	CCW
A63100	7 3/4	5	22	CW
A65751	7 3/4	5	22	CCW
A77551	7 3/4	5	40	CW
A77552	7 3/4	5	40	CCW
A63806	8	5	22	CW
A63816	8	5	22	CCW
A63476	8	5	30	CW
A63817	8	5	30	CCW
A61831	8	5	31	CW
A61835	8	5	35	CW
A61837	8	5	37	CCW
A85223	8	5	40	CCW
A85150	8	6	50	CW
A85250	8	6	50	CCW
A61807	8 3/4	5	30	CW
A61817	8 3/4	5	30	CCW
A87513	8 3/4	5	30	CW
A87523	8 3/4	5	30	CCW
A63906	9	5	25	CW
A63916	9	5	25	CCW
A63917	9	5	30	CCW
A63907	9	5	31	CW
A63116	10	5	25	CCW
A63126	10	5	25	CW
A61480	10	5	28	CW
A61108	10	5	30	CW
A61481	10	5	30	CCW
A63117	10	5	30	CCW

## Plastic Fan Blades



Item ID	Diameter (In.)	Number of Blades	Rotation	Bore (In.)	Replaces Notes
<b>Packard</b>					
A61299	2 1/2	4	CW	3/16	
A61300	3	4	CW	1/8	
A61301	3	4	CW	3/16	
A61302	3 1/2	4	CCW	3/16	
A61353	4	4	CCW	Hub	
A61406	4	4	CW	1/8	
A61408	4	4	CW	3/16	
A61401	4	5	CW	1/8	
A61402	4	5	CW	3/16	
A61403	4	5	CCW	1/8	
A61404	4	5	CCW	3/16	
A61501	5	5	CW	3/16	
A61502	5	5	CW	1/4	
A61503	5	5	CW	5/16	
A61504	5	5	CCW	3/16	
A61505	5	5	CCW	1/4	
A61506	5	5	CCW	5/16	
A61550	5 1/2	4	CCW	3/16	
A61551	5 1/2	4	CW	3/16	
A61455	5 9/16	5	CCW	3/16	
A61602	6	4	CW	1/4	
A61603	6	4	CW	5/16	
A61604	6	4	CCW	3/16	
A61605	6	4	CCW	1/4	
A61606	6	4	CCW	5/16	
A61601	6	6	CW	3/16	
A61650	6 1/2	5	CW	3/16	
A61651	6 1/2	5	CW	1/4	
A61652	6 1/2	5	CW	5/16	
A61660	6 5/8	5	CW	7/32	D-STYLE BORE
A61665	6 5/8	5	CW	7/32	D-STYLE BORE
A61701	7	5	CW	1/4	
A61703	7	5	CCW	1/4	
A61718	7	5	CW	Hub	Gemline FB718
A61801	8	5	CW	1/4	
A61802	8	5	CW	5/16	

\*Note - Additional blades available upon request.



# **W**hat's inside matters when it comes to HVACR...

...from universal to OEM direct replacements, your choice of reliable replacement parts is important to us.



## Universal Single Inlet Blower Wheels



Strip Wheels



Tab Lock

### Applications

- Draft inducers, power venting, small appliances, heating, ventilation, air conditioning, convectors, appliances, kitchen and bath exhaust

### Features

- 5 1/4" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Made in USA
- Additional blower wheels available upon request

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Lock Type	Replaces
<b>Revcor</b>								
RBW30100	3	1	CW	5/16	Aluminum	Inside	Strip Wheels	
RBW30101	3	1 7/8	CW	5/16	Alum. Steel	Inside	Strip Wheels	
RBW30102	3	1 7/8	CCW	5/16	Alum. Steel	Inside	Strip Wheels	
RBW30103	3 13/16	1 1/8	CCW	1/4	Alum. Steel	Inside	Tab Lock	
RBW30104	3 13/16	1 1/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW30105	3 13/16	1 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW30106	3 13/16	1 1/2	CW	5/16	Alum. Steel	Inside	Strip Wheels	
RBW30107	3 13/16	1 1/2	CCW	5/16	Alum. Steel	Inside	Strip Wheels	
RBW30109	3 13/16	1 7/8	CW	5/16	Galvanized	Inside	Strip Wheels	40556
RBW30110	3 13/16	1 7/8	CCW	5/16	Galvanized	Inside	Strip Wheels	40557
RBW30111	3 13/16	2 1/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW30112	3 13/16	2 1/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW30108	3 13/16	1 5/8	CCW	5/16	Galvanized	Inside	Tab Lock	
RBW30115	3 13/16	2 1/4	CW	5/16	Alum. Steel	Inside	Tab Lock	
RBW30116	3 13/16	2 1/4	CCW	5/16	Alum. Steel	Inside	Tab Lock	
RBW30117	3 13/16	2 1/2	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW30118	3 13/16	2 1/2	CCW	5/16	Galvanized	Inside	Strip Wheels	40559
RBW40101*	4	1 1/2	CCW	5/16	Alum. Steel	Inside	Tab Lock	40564
RBW40102*	4	2 1/2	CCW	1/4	Galvanized	Inside	Tab Lock	40563, 40601
RBW40103	4 1/4	2 1/2	CW	3/8	Alum. Steel	Inside	Strip Wheels	
RBW40104	4 1/4	2 1/2	CCW	3/8	Alum. Steel	Inside	Strip Wheels	
RBW40105	4 1/4	2 15/16	CCW	1/4	Galvanized	Inside	Strip Wheels	40565
RBW40106	4 1/4	2 15/16	CW	1/4	Galvanized	Inside	Strip Wheels	
RBW40107	4 1/4	2 15/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW40108	4 1/4	2 15/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW40109	4 3/4	2 1/16	CCW	1/2	Galvanized	Inside	Strip Wheels	40603
RBW40110	4 3/4	2 1/16	CW	1/2	Galvanized	Inside	Strip Wheels	40602
RBW40111	4 3/4	2 1/2	CCW	1/2	Alum. Steel	Inside	Strip Wheels	
RBW40112	4 3/4	2 1/2	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW40113	4 3/4	2 1/2	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW40114	4 3/4	2 1/2	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW40115	4 3/4	2 1/2	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW40117	4 3/4	2 15/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW40118	4 3/4	2 15/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW40119	4 3/4	2 15/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW40120	4 3/4	2 15/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW40121	4 3/4	3 7/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW40122	4 3/4	3 7/16	CW	1/2	Galvanized	Inside	Strip Wheels	40605, 40606
RBW40123	4 13/16	1 1/8	CW	5/16	Galvanized	Inside	Tab Lock	
RBW40124	4 13/16	1 1/8	CCW	5/16	Galvanized	Inside	Tab Lock	
RBW50100	5 1/16	2 1/2	CW	1/2	Galvanized	Inside	Tab Lock	
RBW50101	5 1/16	2 7/8	CW	1/2	Galvanized	Inside	Tab Lock	
RBW50102	5 1/16	3	CW	5/16	Alum. Steel	Inside	Tab Lock	
RBW50103	5 1/4	2 1/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50104	5 1/4	2 1/16	CCW	1/2	Galvanized	Inside	Strip Wheels	

\*1/2" Deep conic back plate

## Universal Single Inlet Blower Wheels



Strip Wheels



Tab Lock

### Applications

- Draft inducers, power venting, small appliances, heating, ventilation, air conditioning, convectors, appliances, kitchen and bath exhaust

### Features

- 5 1/4" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Made in USA
- Additional blower wheels available upon request

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Lock Type	Replaces
<b>Revcor</b>								
RBW50105	5 1/4	2 1/2	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50106	5 1/4	2 1/2	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW50107	5 1/4	2 1/2	CW	5/16	Galvanized	Inside	Strip Wheels	40609
RBW50108	5 1/4	2 1/2	CCW	5/16	Galvanized	Inside	Strip Wheels	40608
RBW50109	5 1/4	2 15/16	CW	5/16	Galvanized	Inside	Strip Wheels	40611
RBW50110	5 1/4	2 15/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW50111	5 1/4	2 15/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50112	5 1/4	2 15/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW50113	5 1/4	3 7/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW50114	5 1/4	3 7/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW50115	5 1/4	3 7/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50116	5 1/4	3 7/16	CCW	1/2	Galvanized	Inside	Strip Wheels	40607
RBW50117	5 1/2	1	CW	5/16	Galvanized	Inside	Tab Lock	
RBW50118	5 1/2	1 3/4	CW	1/2	Alum. Steel	Inside	Tab Lock	
RBW50119	5 3/4	1 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW50120	5 3/4	2	CW	1/2	Galvanized	Inside	Tab Lock	
RBW50121	5 3/4	2	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW50122	5 3/4	2 1/2	CW	1/2	Galvanized	Inside	Tab Lock	
RBW50123	5 3/4	2 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW50124	5 3/4	2 1/2	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW50125	5 3/4	2 1/2	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW50126	5 3/4	2 3/4	CW	5/16	Galvanized	Inside	Tab Lock	
RBW50127	5 3/4	2 3/4	CCW	5/16	Galvanized	Inside	Tab Lock	
RBW50128	5 3/4	2 15/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50129	5 3/4	2 15/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW50130	5 3/4	3	CW	5/16	Galvanized	Inside	Tab Lock	
RBW50131	5 3/4	3	CCW	5/16	Galvanized	Inside	Tab Lock	
RBW50132	5 3/4	3 7/16	CW	3/8	Galv. Ring and Back / Alum. Blades	Inside	Strip Wheels	
RBW50133	5 3/4	3 7/16	CCW	3/8	Galv. Ring and Back / Alum. Blades	Inside	Strip Wheels	
RBW50134	5 3/4	3 7/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW50135	5 3/4	3 7/16	CCW	5/16	Galvanized	Inside	Strip Wheels	
RBW50136	5 3/4	3 13/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW50137	5 3/4	3 13/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW50139	5 3/4	4	CW	1/2	Galvanized	Inside	Strip Wheels	40615
RBW50140	5 3/4	4	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW60100	6 5/16	1 1/2	CW	5/16	Aluminum	Inside	Tab Lock	
RBW60102	6 5/16	2	CW	1/2	Galvanized	Inside	Tab Lock	40617
RBW60103	6 5/16	2	CCW	1/2	Galvanized	Inside	Tab Lock	40618
RBW60104	6 5/16	2 1/2	CW	1/2	Galvanized	Inside	Tab Lock	40619
RBW60105	6 5/16	2 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	40620
RBW60108	6 5/16	2 15/16	CCW	5/16	Galvanized	Inside	Strip Wheels	





## Universal Single Inlet Blower Wheels



Strip Wheels



Tab Lock

### Applications

- Draft inducers, power venting, small appliances, heating, ventilation, air conditioning, convectors, appliances, kitchen and bath exhaust

### Features

- 5 1/4" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Made in USA
- Additional blower wheels available upon request

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Lock Type	Replaces
<b>Revcor</b>								
RBW60109	6 5/16	2 15/16	CW	5/16	Galvanized	Inside	Strip Wheels	
RBW60110	6 5/16	3	CW	1/2	Galvanized	Inside	Tab Lock	40623
RBW60111	6 5/16	3	CCW	1/2	Galvanized	Inside	Tab Lock	40624
RBW60112	6 5/16	3 1/4	CW	5/8	Alum. Steel	Inside	Tab Lock	
RBW60113	6 5/16	3 1/4	CCW	5/8	Alum. Steel	Inside	Tab Lock	
RBW60114	6 5/16	3 7/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW60115	6 5/16	3 7/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW60116	6 5/16	3 13/16	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW60117	6 5/16	3 13/16	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW60118	6 5/16	4	CW	1/2	Galvanized	Inside	Strip Wheels	
RBW60119	6 5/16	4	CCW	1/2	Galvanized	Inside	Strip Wheels	
RBW60121	6 5/16	1 1/32	CW	5/16	Aluminum	Inside	Strip Wheels	
RBW60122	6 5/16	1 1/32	CCW	5/16	Aluminum	Inside	Strip Wheels	
RBW60123	6 3/4	4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW60124	6 3/4	4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70100	7 1/8	1	CW	5/8	Galvanized	Inside	Tab Lock	
RBW70101	7 1/8	1	CCW	5/8	Galvanized	Inside	Tab Lock	
RBW70102	7 1/8	1 7/8	CCW	1/2	Galvanized	Inside	Tab Lock	41204
RBW70103	7 1/8	1 7/8	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70104	7 1/8	1 7/8	CW	5/16	Galvanized	Inside	Tab Lock	
RBW70105	7 1/8	2	CCW	5/16	Galvanized	Inside	Tab Lock	
RBW70106	7 1/8	2 1/2	CW	1/2	Galvanized	Inside	Tab Lock	
RBW70107	7 1/8	4	CCW	3/8	Galvanized	Inside	Tab Lock	
RBW70108	7 1/8	4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70109	7 1/8	4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW70110	7 7/16	1 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70111	7 7/16	2 1/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW70112	7 7/16	2 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70113	7 7/16	2 1/2	CW	1/2	Aluminum	Inside	Tab Lock	
RBW70114	7 7/16	2 1/2	CCW	1/2	Aluminum	Inside	Tab Lock	
RBW70115	7 7/16	2 3/4	CW	1/2	Galvanized	Inside	Tab Lock	40632
RBW70116	7 7/16	2 3/4	CCW	1/2	Galvanized	Inside	Tab Lock	40633
RBW70117	7 7/16	3 1/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW70118	7 7/16	3 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW70119	7 7/16	4	CW	1/2	Aluminum	Inside	Tab Lock	
RBW70120	7 7/16	4	CCW	1/2	Aluminum	Inside	Tab Lock	
RBW70121	7 5/8	4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80101	8	1 1/2	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80102	8	1 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW80103	8	1 3/4	CCW	1/2	Alum. Steel	Inside	Tab Lock	
RBW80104	8	1 7/8	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80105	8	2	CW	3/8	Alum. Steel	Inside	Tab Lock	
RBW80106	8	2 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW80108	8	2 3/8	CCW	1/2	Galvanized	Inside	Tab Lock	41205
RBW80110	8	2 1/2	CCW	1/2	Galvanized	Inside	Tab Lock	

## Universal Single Inlet Blower Wheels



Strip Wheels



Tab Lock

### Applications

- Draft inducers, power venting, small appliances, heating, ventilation, air conditioning, convectors, appliances, kitchen and bath exhaust

### Features

- 5 1/4" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Made in USA
- Additional blower wheels available upon request

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Lock Type	Replaces
<b>Revcor</b>								
RBW80111	8	4	CCW	1/2	Aluminum	Inside	Tab Lock	
RBW80112	8	4	CW	1/2	Aluminum	Inside	Tab Lock	
RBW80113	8 1/2	1.5	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW80116	8 1/2	2	CCW	5/8	Alum. Steel	Inside	Tab Lock	41212
RBW80117	8 1/2	2 3/4	CW	1/2	Galvanized	Outside	Tab Lock	40615
RBW80118	8 1/2	2 3/4	CCW	1/2	Galvanized	Outside	Tab Lock	
RBW80119	8 1/2	3 3/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80120	8 1/2	3 3/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW80121	8 1/2	4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80122	8 1/2	4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW80123	8 1/2	4 1/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW80124	8 1/2	4 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW90102	9 1/8	1 3/4	CCW	5/8	Alum. Steel	Inside	Tab Lock	41208
RBW90103	9 1/8	2	CW	1/2	Galvanized	Outside	Tab Lock	
RBW90104	9 1/8	3	CW	5/16	Aluminum	Outside	Tab Lock	
RBW90105	9 1/8	3 3/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW90106	9 1/8	3 3/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW90107	9 1/8	4 1/4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW90108	9 1/8	4 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW90109	9 1/8	4 1/2	CW	5/8	Aluminum	Inside	Tab Lock	
RBW90110	9 1/8	4 1/2	CCW	5/8	Aluminum	Inside	Tab Lock	
RBW90111	9 1/2	2	CCW	5/8	Alum. Steel	Inside	Tab Lock	
RBW90112	9 7/8	1 1/2	CCW	5/8	Galvanized	Inside	Tab Lock	41213
RBW90114	9 7/8	1 1/2	CCW	5/8	Alum. Steel	Inside	Tab Lock	41241
RBW90116	9 7/8	1 7/8	CW	5/8	Galvanized	Inside	Tab Lock	
RBW90117	9 7/8	1 7/8	CCW	5/8	Galvanized	Inside	Tab Lock	40642
RBW90123	9 7/8	2	CCW	5/8	Galvanized	Inside	Tab Lock	41202
RBW90124	9 7/8	2	CCW	5/8	Alum. Steel	Inside	Tab Lock	41201
RBW90126	9 7/8	2 1/8	CCW	1/2	Galvanized	Inside	Tab Lock	41242
RBW90128	9 7/8	2 1/4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW90130	9 7/8	2 1/2	CCW	5/8	Alum. Steel	Inside	Tab Lock	
RBW90131	9 7/8	6	CW	1/2	Galvanized	Inside	Tab Lock	
RBW10100	10 3/4	1 3/8	CCW	5/8	Galvanized	Inside	Tab Lock	
RBW10101	10 3/4	3	CW	1/2	Galvanized	Outside	Tab Lock	
RBW10102	10 3/4	3	CCW	1/2	Galvanized	Outside	Tab Lock	
RBW10103	10 3/4	4	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW10104	10 3/4	4	CW	1/2	Galvanized	Inside	Tab Lock	
RBW10105	10 3/4	4 7/8	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW10106	10 3/4	5	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW10107	10 3/4	6	CW	1/2	Galvanized	Inside	Tab Lock	
RBW10108	10 3/4	6	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW11100	11 5/8	2 1/2	CW	1/2	Galvanized	Outside	Tab Lock	
RBW12100	12 5/8	5	CW	1/2	Galvanized	Inside	Tab Lock	
RBW12101	12 5/8	5	CCW	1/2	Galvanized	Inside	Tab Lock	
RBW12102	12 5/8	6	CCW	3/4	Galvanized	Inside	Tab Lock	



## Universal Double Inlet Blower Wheels



### Applications

- Power venting, small appliances, heating, ventilation, air conditioning, PTAC, fan coils, and mini split systems

### Features

- 4 3/4" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Variety of materials available
- Made in USA
- Additional blower wheels available upon request

Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Type	Replaces
<b>Revcor</b>								
RBW40200	4 3/4	6 7/8	CW	1/2	Aluminum	Center	Strip Wheels	41102
RBW50200	5 1/4	6 7/8	CW	1/2	Aluminum	Center	Strip Wheels	41134
RBW50201	5 1/4	6 7/8	CCW	1/2	Galvanized	Center	Strip Wheels	41108
RBW50202	5 1/4	6 7/8	CW	1/2	Galvanized	Center	Strip Wheels	41107
RBW50203	5 1/4	6	CW	1/2	Galvanized	Center	Tab Lock	
RBW50204	5 1/4	6 3/4	CCW	1/2	Galvanized	Center	Tab Lock	
RBW50205	5 1/4	8	CCW	1/2	Galvanized	Center	Strip Wheels	
RBW50206	5 1/2	5	CW	1/2	Galvanized	Center	Tab Lock	
RBW50207	5 1/2	6 1/2	CCW	1/2	Galvanized	Center	Tab Lock	41110
RBW50208	5 3/4	5	CW	1/2	Galvanized	Center	Strip Wheels	41111
RBW50209	5 3/4	5 7/8	CW	1/2	Galvanized	Center	Strip Wheels	41112
RBW50215	5 3/4	6	CCW	1/2	Galvanized	Center	Tab Lock	
RBW50216	5 3/4	6 1/2	CCW	1/2	Aluminum	Center	Tab Lock	
RBW50210	5 3/4	6 7/8	CW	1/2	Galvanized	Center	Strip Wheels	41113
RBW50218	5 3/4	7 1/4	CCW	3/8	Aluminum	Center	Tab Lock	
RBW50211	5 3/4	7 5/8	CCW	1/2	Galvanized	Center	Strip Wheels	41115
RBW50212	5 3/4	7 5/8	CW	1/2	Galvanized	Center	Strip Wheels	41114
RBW50214	5 3/4	8	CW	1/2	Galvanized	Center	Strip Wheels	41116
RBW50219	5 3/4	8	CCW	1/2	Galvanized	Center	Strip Wheels	41117
RBW50220	5 3/4	9	CW	3/8	Aluminum	Center	Tab Lock	
RBW60200	6 1/8	7 1/4	CW	1/2	Galvanized	Center	Tab Lock	
RBW60204	6 5/16	4	CW	1/2	Galvanized	Center	Tab Lock	
RBW60205	6 5/16	5	CW	1/2	Galvanized	Center	Tab Lock	
RBW60206	6 5/16	5 7/16	CW	1/2	Galvanized	Off Center	Strip Wheels	
RBW60207	6 5/16	6	CCW	3/8	Galvanized	Center	Tab Lock	
RBW60208	6 5/16	6 3/8	CW	1 1/4	Aluminum	Center	Tab Lock	
RBW60201	6 5/16	6 7/8	CW	1/2	Galvanized	Center	Strip Wheels	41123
RBW60209	6 5/16	6 7/8	CCW	1/2	Galvanized	Center	Strip Wheels	
RBW60210	6 5/16	7	CCW	1/2	Galvanized	Center	Tab Lock	41127
RBW60211	6 5/16	7	CW	1/2	Galvanized	Center	Tab Lock	41126
RBW60212	6 5/16	7 1/2	CCW	1/2	Aluminum	Center	Tab Lock	
RBW60202	6 5/16	7 5/8	CCW	1/2	Aluminum	Center	Strip Wheels	41124
RBW60213	6 5/16	7 5/8	CW	1/2	Galvanized	Center	Tab Lock	41130
RBW60214	6 5/16	7 7/8	CW	1/2	Aluminum	Center	Tab Lock	
RBW60203	6 5/16	8	CW	1/2	Galvanized	Center	Strip Wheels	41125
RBW60215	6 5/16	8 1/8	CW	1/2	Galvanized	Center	Tab Lock	
RBW60216	6 5/16	8 1/8	CCW	1/2	Galvanized	Center	Tab Lock	
RBW60217	6 5/16	8 1/4	CW	1/2	Galvanized	Center	Tab Lock	
RBW60218	6 3/4	7 1/4	CW	1/2	Galvanized	Center	Tab Lock	
RBW60219	6 3/4	8 1/4	CW	1/2	Galvanized	Center	Tab Lock	
RBW70203	7 7/16	7	CCW	1/2	Galvanized	Center	Tab Lock	
RBW70204	7 7/16	9	CW	1/2	Galvanized	Center	Tab Lock	41132
RBW70205	7 5/8	5 3/8	CCW	3/8	Galvanized	Center	Tab Lock	
RBW70206	7 5/8	7	CW	1/2	Galvanized	Center	Tab Lock	
RBW80200*	8 1/2	7	CW	1/2	Galvanized	Center	Tab Lock	
RBW90200*	9 1/2	5 3/4	CW	1/2	Galvanized	Center	Tab Lock	

## Circulation Double Inlet Blower Wheels



### Applications

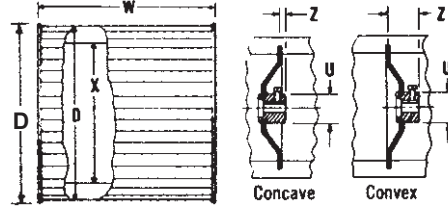
- Furnaces, ventilation, air conditioning, mini split systems, evaporative coolers, commercial A/C, and fan coils

### Features

- 9 1/2" to 12 5/8" diameters
- Embossed backs for added strength
- Factory balanced
- Individually boxed
- Made in USA
- Additional blower wheels available upon request

Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Material	Hub Location	Back Plate	Replaces
<b>Revcor</b>								
RBW90201	9 1/2	4 1/2	CW	1/2	Galvanized	Center	Convex	41360
RBW90202	9 1/2	6 1/16	CW	1/2	Galvanized	Center	Convex	41303
RBW90203	9 1/2	7 1/8	CCW	1/2	Galvanized	Center	Convex	41306
RBW90204	9 1/2	7 1/8	CW	1/2	Galvanized	Center	Convex	41307
RBW90205	9 1/2	8 1/16	CCW	1/2	Galvanized	Center	Convex	41310
RBW90206	9 1/2	8 1/16	CW	1/2	Galvanized	Center	Convex	41311
RBW90207	9 1/2	9 1/2	CW	1/2	Galvanized	Center	Concave	41312
RBW90208	9 1/2	9 1/2	CCW	1/2	Galvanized	Center	Concave	41361
RBW90209	9 7/8	7	CCW	1/2	Galvanized	Center	Convex	
RBW90210	9 7/8	9 1/4	CCW	1/2	Galvanized	Center	Convex	
RBW90211	9 7/8	10 1/2	CCW	1/2	Galvanized	Center	Convex	
RBW10201	10 5/8	4 1/2	CW	1/2	Galvanized	Center	Convex	41314
RBW10202	10 5/8	6 1/16	CCW	1/2	Galvanized	Center	Convex	41317
RBW10203	10 5/8	6 1/16	CW	1/2	Galvanized	Center	Convex	41318
RBW10204	10 5/8	6 1/16	CW	5/8	Galvanized	Center	Convex	41321
RBW10205	10 5/8	7 1/8	CW	1/2	Galvanized	Center	Convex	41323
RBW10206	10 5/8	7 1/8	CCW	1/2	Galvanized	Center	Convex	41362
RBW10207	10 5/8	8 1/16	CCW	1/2	Galvanized	Center	Convex	41326
RBW10208	10 5/8	8 1/16	CW	1/2	Galvanized	Center	Concave	41327
RBW10209	10 5/8	9 1/2	CCW	1/2	Galvanized	Center	Concave	41328
RBW10210	10 5/8	9 1/2	CW	1/2	Galvanized	Center	Concave	41329
RBW10211	10 5/8	9 1/2	CW	1/2	Galvanized	Center	Convex	41331
RBW10212	10 5/8	10 11/16	CCW	1/2	Galvanized	Center	Concave	41332
RBW10213	10 5/8	10 11/16	CW	1/2	Galvanized	Center	Concave	41333
RBW10214	10 5/8	10 11/16	CW	1/2	Galvanized	Center	Convex	
RBW10215	10 3/4	10 1/2	CW	1/2	Galvanized	Center	Convex	41335
RBW11200	11 15/16	6 1/6	CW	1/2	Galvanized	Center	Convex	41339
RBW11201	11 15/16	7 1/8	CW	1/2	Galvanized	Center	Convex	41341
RBW11202	11 15/16	8 1/16	CW	1/2	Galvanized	Center	Convex	41345
RBW11203	11 15/16	8 1/16	CW	1/2	Galvanized	Center	Concave	41343
RBW11204	11 15/16	8 1/16	CCW	1/2	Galvanized	Center	Convex	41344
RBW11205	11 15/16	9 1/2	CCW	1/2	Galvanized	Center	Convex	41348
RBW11206	11 15/16	9 1/2	CW	1/2	Galvanized	Center	Convex	41349
RBW11207	11 15/16	10 11/16	CCW	1/2	Galvanized	Center	Concave	41350
RBW11208	11 15/16	10 11/16	CW	1/2	Galvanized	Center	Concave	41351
RBW12200	12 7/8	9 1/2	CW	5/8	Galvanized	Center	Convex	41354
RBW12201	12 7/8	9 1/2	CW	1/2	Galvanized	Center	Convex	41363
RBW12202	12 7/8	12 5/8	CW	1/2	Galvanized	Center	Concave	41355
RBW12203	12 7/8	12 5/8	CW	5/8	Galvanized	Center	Concave	41356

## Double Inlet Blower Wheels



### Fan Blade & Blower Wheel Puller



A89000

See page 417

### Features

- Universal replacement wheels for direct drive blowers
- Galvanized, cold rolled steel
- Recommended for application temperatures that do not exceed 135°F (60°C)

Item ID	Bore	Rotation	Center Disc	Dimensions (In.)					
				D	W	X	U	Z	
<b>Lau</b>									
L01333501	1/2	CW	Convex	9 1/2	6	7 11/16	1 1/4	1 25/32	
L01333602	1/2	CW	Convex	9 1/2	7 1/8	7 11/16	1 1/4	1 25/32	
L01333603	1/2	CCW	Convex	9 1/2	7 1/8	7 11/16	1 1/4	1 25/32	
L01333701	1/2	CW	Convex	9 1/2	8	7 11/16	1 1/4	1 25/32	
L01333703	1/2	CCW	Convex	9 1/2	8	7 11/16	1 1/4	1 25/32	
L01333201	1/2	CW	Concave	9 1/2	9 1/2	7 11/16	1 1/4	7/32	
L01333203	1/2	CCW	Concave	9 1/2	9 1/2	7 11/16	1 1/4	7/32	
L01332701	1/2	CW	Convex	10 5/8	4 1/2	8 7/8	1 1/4	1 15/16	
L01332601	1/2	CW	Convex	10 5/8	6	8 7/8	1 1/4	1 15/16	
L01332602	1/2	CCW	Convex	10 5/8	6	8 7/8	1 1/4	1 15/16	
L01332614	5/8	CW	Convex	10 5/8	6	8 7/8	1 1/4	1 15/16	
L01332501	1/2	CW	Convex	10 5/8	7 1/8	8 7/8	1 1/4	1 15/16	
L02710204	1/2	CCW	Convex	10 5/8	7 1/8	8 7/8	1 1/4	1 15/16	
L01332401	1/2	CW	Convex	10 5/8	8	8 7/8	1 1/4	1 15/16	
L01332402	1/2	CCW	Convex	10 5/8	8	8 7/8	1 1/4	1 15/16	
L01331701	1/2	CW	Concave	10 5/8	9 1/2	8 7/8	1 1/4	1/16	
L01331704	1/2	CCW	Concave	10 5/8	9 1/2	8 7/8	1 1/4	1/16	
L01332301	1/2	CW	Convex	10 5/8	9 1/2	8 7/8	1 1/4	1/16	
L01331602	1/2	CW	Concave	10 5/8	10 5/8	8 7/8	1 1/4	1/16	
L01332203	1/2	CW	Convex	10 5/8	10 5/8	8 7/8	1 1/4	1/16	
L01331606	1/2	CCW	Concave	10 5/8	10 5/8	8 7/8	1 1/4	1/16	
L02694003	1/2	CW	Convex	11 3/4	6	10	1 1/4	—	
L02694005	1/2	CW	Convex	11 3/4	7 1/8	10	1 1/4	—	
L02694007	1/2	CW	Convex	11 3/4	8	10	1 1/4	—	
L02694107	1/2	CW	Concave	11 3/4	8	10	1 1/4	—	
L02694008	1/2	CCW	Convex	11 3/4	8	10	1 1/4	—	
L02694009	1/2	CW	Convex	11 3/4	9 1/2	10	1 1/4	—	
L02694010	1/2	CCW	Convex	11 3/4	9 1/2	10	1 1/4	—	
L02694111	1/2	CW	Concave	11 3/4	10 5/8	10	1 1/4	—	
L02694112	1/2	CCW	Concave	11 3/4	10 5/8	10	1 1/4	—	
L01369325	1/2	CW	Convex	12 5/8	9 1/2	10 5/16	1 1/4	2	
L01369315	5/8	CW	Convex	12 5/8	9 1/2	10 5/16	1 1/4	2	
L01556507	1/2	CW	Concave	12 5/8	12 5/8	10 5/16	1 1/4	1/16	
L01556504	5/8	CW	Concave	12 5/8	12 5/8	10 5/16	1 1/4	1/16	

## Galvanized Steel Blower Wheels



### Applications

- Condensers, draft boosters, flue exhaust, small appliances, furnaces

### Features

- Rotation viewed side opposite hub

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM
<b>Packard</b>					
BW16039	3	1 7/8	CCW	1/4	5000
BW16038	3	1 7/8	CW	1/4	5000
BW43425*	3.75	3.5	CCW Hub End	5.16	
BW16044	3 13/16	2 1/2	CW	5/16	5000
BW16043	3 13/16	1 7/8	CW	5/16	5000
BW16042	3 13/16	1 7/8	CCW	5/16	5000
BW16045	3 13/16	2 1/2	CCW	5/16	5000
BW16041	3 13/16	1 7/8	CW	1/4	5000
BW16040	3 13/16	1 7/8	CCW	1/4	5000
BW16114	3 27/32	1 1/4	CW	1/4	5600
BW16113	3 27/32	1	CW	1/4	5800
BW16051	3 27/32	1 13/64	CCW	1/4	5640
A65048BW*	3.82	1.65	CW Hub End	5/16	
BW16623*	4	1	CCW	1/4	
BW16626*	4	2	CW	3/8	
BW16141	4	1 1/2	CCW	5/16	3600
A65569BW*	4	1 1/2	CCW	5/16	
BW16133	4	2 1/2	CCW	1/4	3600
BW16123	4	7/8	CW	5/16	3600
BW16046	4 1/4	2	CCW	1/4	4500
BW16052	4 1/4	2 15/16	CCW	1/4	4500
BW16047	4 1/4	2	CCW	5/16	4500
BW11046*	4 1/2	1.65	CCW	1/4	
BW16160	4 17/32	1 1/4	CW	5/16	6300
BW16161	4 17/32	1 1/4	CCW	5/16	6300
BW16048	4 23/32	2 15/16	CW	5/16	3600
BW16054	5 13/64	2 29/32	CCW	5/16	3600
BW16025	5 13/64	2 1/2	CCW	5/16	3600

Item ID	Dia. (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM
<b>Packard</b>					
BW16053	5 13/64	2 29/32	CW	5/16	3600
BW16024	5 13/64	2 1/2	CW	5/16	3600
BW16549*	5 1/4	1	CW	5/16	
BW16548*	5 3/4	1	CW	5/16	
BW16026	5 45/64	2 15/16	CCW	5/16	3000
BW16002	5 45/64	4	CW	1/2	2800
BW16057	5 45/64	4	CCW	1/2	2800
BW16143	5 3/4	1 1/2	CCW	5/16	3600
BW16058	6	3 1/4	CW	1/2	2400
BW16010	6	3 1/4	CCW	1/2	2400
BW16060	6 3/16	2 15/16	CCW	3/8	3000
BW16064	6 25/64	4	CCW	1/2	1700
BW16063	6 25/64	4	CW	1/2	1700
BW16005	7 1/8	4	CCW	1/2	1500
BW16066	7 1/8	2	CCW	5/16	2900
BW16070	7 31/64	3 1/2	CW	1/2	1800
BW16071	7 31/64	3 1/2	CCW	1/2	1800
A60200BW*	7 11/16	8	CW	1/2	
BW16006	8 5/64	4	CW	1/2	1650
BW16074	8 5/64	4	CCW	1/2	1650
BW16077	8 35/64	3	CCW	1/2	2050
BW16008	9 1/8	5	CW	1/2	1350
BW16007	9 1/8	4 1/4	CW	1/2	1475
BW16009	9 1/8	5	CCW	1/2	1350
BW16079	9 31/32	4	CW	1/2	1350
BW16080	9 31/32	4	CCW	1/2	1350
BW16027	9 31/32	6	CW	1/2	1100
BW16028	9 31/32	6	CCW	1/2	1100

- \* BW43425 replaces Reznor 43525
- A65048BW replaces Carrier LA11XA048
- BW16623 replaces York 026-32623-700 | Stainless Steel
- BW16626 replaces York 026-32626-700 | Stainless Steel
- A65569BW replaces Carrier LA11AA005
- BW11046 replaces Carrier LAXA046

- \* BW16549 replaces Carrier LA21RB549
- BW16548 replaces Carrier LA21RB548
- A60200BW replaces First Company W200

## Plastic Blower Wheels And Impellers



Item ID	Bore (In.)	Diameter (In.)	Width (In.)	Bore	Replaces
<b>Packard</b>					
A65900	1/4	5 3/4	2	D Shape	Nutone 59000A000



Item ID	Bore (In.)	Diameter (In.)	Width (In.)	Bore	Replaces
<b>Packard</b>					
A65100FB	7/32	4 9/16	—	D Shape	Nutone 68920
A65216FB	3/16	4 1/2	—	D Shape	
A64031FB	0.181	4 1/2	—	Round	



## Galvanized Blower Wheels - Double Inlet



### Applications

Furnaces, Air Handlers, Package Units

### Features

- 9" to 12" diameter
- Dynamically balanced
- Individually boxed
- Made in USA
- Additional models available on request



Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Type	Material	Hub Location	Back Plate
<b>Morrison</b>									
BW31018	9.62	6.06	CW	1/2	2600	Strip	Galvanized	Center	Convex
BW32019	9.58	7.12	CW	1/2	2400	Strip	Galvanized	Center	Convex
BW33002	9.53	8.06	CW	1/2	2300	Strip	Galvanized	Center	Convex
BW34207	9.53	9.5	CW	1/2	2000	Strip	Galvanized	Center	Concave



Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Type	Material	Hub Location	Back Plate
<b>Morrison</b>									
BW43016	10.62	8.06	CW	1/2	2100	Strip	Galvanized	Center	Convex
BW44005	10.62	9.5	CW	1/2	2000	Strip	Galvanized	Center	Convex
BW45015	10.62	10.68	CW	1/2	1700	Strip	Galvanized	Center	Convex



Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Type	Material	Hub Location	Back Plate
<b>Morrison</b>									
BW51013	12.15	6.06	CW	1/2	2300	Strip	Galvanized	Center	Convex
BW52004	11.98	7.12	CW	1/2	2200	Strip	Galvanized	Center	Convex
BW53018	11.96	8.06	CW	1/2	2100	Strip	Galvanized	Center	Convex
BW54010	11.95	9.5	CW	1/2	1800	Strip	Galvanized	Center	Convex
BW54202	11.95	9.5	CW	1/2	1800	Strip	Galvanized	Center	Concave
BW55017	11.95	10.68	CW	1/2	1500	Strip	Galvanized	Center	Convex

## Direct OEM Replacement Blower Wheels



### Applications

Furnaces, Air Handlers, Package Units

### Features

- 9" to 13" diameter
- Dynamically balanced
- Individually boxed
- Made in USA
- Additional models available on request

Item ID	Diameter (In.)	Width (In.)	Rotation	Bore (In.)	Max RPM	Type	Material	Hub Location	Back Plate	Replaces
<b>Morrison</b>										
BW55204	11.95	10.68	CW	1/2	1500	Strip	Galvanized	Center	Concave	03-55294
BW55303	11.95	10.68	CW	1/2	1500	Strip	Galvanized	Center	Concave	03-55320
BW64208	12.81	9.5	CW	1/2	1900	Strip	Galvanized	Center	Concave	03-64222

## HVAC Belt Options

- GripNotch™ Belts
- Super GripBelt™
- Browning Classical V-Belts: Super Gripbelt & Gripnotch
- Notched/Cogged Raw Edge V-Belts
- Browning 358 Belts: 358 Gripbelts & 358 Gripnotch
- Browning FHP Belts: Wrapped



**PACKARD STOCKS OVER 250 DIFFERENT BROWNING BELTS  
LET PACKARD BE THE FIRST STOP FOR YOUR REPLACEMENT NEEDS!**

### 358 Gripnotch Belts



#### Features

- Precision molded raw edge construction
- More horsepower in less space
- Notches are molded extra deep

### Wrapped FHP Belts



#### Features

- Wrapped construction provides smooth, quiet operation
- Formulated for maximum flexibility for use with smaller diameter sheaves
- Oil and heat resistant — static conducting

Item ID	Type	Height (In.)	Top Width (In.)	Outside Length (In.)
<b>Browning</b>				
3VX335	Gripnotch	15/16	3/8	33.5
3VX530	Gripnotch	15/16	3/8	53
5VX1120	Gripnotch	17/32	5/8	112
5VX1180	Gripnotch	17/32	5/8	118
5VX1230	Gripnotch	17/32	5/8	123
5VX1500	Gripnotch	5/8	17/32	150
5VX450	Gripnotch	17/32	5/8	45
5VX470	Gripnotch	5/8	17/32	47
5VX500	Gripnotch	17/32	5/8	50
5VX510	Gripnotch	17/32	5/8	51
5VX530	Gripnotch	35/64	5/8	53
5VX550	Gripnotch	17/32	5/8	55
5VX560	Gripnotch	17/32	5/8	56
5VX580	Gripnotch	17/32	5/8	58
5VX590	Gripnotch	17/32	5/8	59
5VX600	Gripnotch	17/32	5/8	60
5VX650	Gripnotch	17/32	5/8	65
5VX660	Gripnotch	5/8	17/32	66
5VX690	Gripnotch	17/32	5/8	69
5VX710	Gripnotch	17/32	5/8	71
5VX780	Gripnotch	17/32	5/8	78
5VX800	Gripnotch	17/32	5/8	80
5VX810	Gripnotch	17/32	5/8	81
5VX840	Gripnotch	17/32	5/8	84
5VX930	Gripnotch	17/32	5/8	93

Item ID	Type	Pitch Length (In.)	Top Width (In.)
<b>Browning</b>			
3L170	3L Belt Section	16.3	3/8
3L180	3L Belt Section	17.3	3/8
3L190	3L Belt Section	18.3	3/8
3L200	3L Belt Section	19.3	3/8
3L210	3L Belt Section	20.3	3/8
3L220	3L Belt Section	21.3	3/8
3L230	3L Belt Section	22.3	3/8
3L240	3L Belt Section	23.3	3/8
3L250	3L Belt Section	24.3	3/8
4L170	4L Belt Section	16	1/2
4L180	4L Belt Section	17	1/2
4L190	4L Belt Section	18	1/2
4L200	4L Belt Section	19	1/2
4L210	4L Belt Section	20	1/2
4L220	4L Belt Section	21	1/2
4L240	4L Belt Section	23	1/2
4L270	4L Belt Section	26	1/2
4L340	4L Belt Section	33	1/2
4L440B	4L Belt Section	43	1/2
4L550	4L Belt Section	54	1/2
4L740	4L Belt Section	73	1/2
4L770	4L Belt Section	76	1/2
5L280	L Belt Section	26.8	5/8
5L330	L Belt Section	31.8	5/8





## Super Grip Classic A Section Belts

### Features

- Wrapped construction provides smooth, quiet operation
- More tolerant of slip and misalignment than raw edge belts
- Oil and heat resistant — static conducting



Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
A20	A Belt Section	21.3	1/2	5/16
A21	A Belt Section	22.3	1/2	5/16
A22	A Belt Section	23.3	1/2	5/16
A23	A Belt Section	24.3	1/2	5/16
A24	A Belt Section	25.3	1/2	5/16
A25	A Belt Section	26.3	1/2	5/16
A26	A Belt Section	27.3	1/2	5/16
A27	A Belt Section	28.3	1/2	5/16
A28	A Belt Section	29.3	1/2	5/16
A29	A Belt Section	30.3	1/2	5/16
A30	A Belt Section	31.3	1/2	5/16
A31	A Belt Section	32.3	1/2	5/16
A32	A Belt Section	33.3	1/2	5/16
A33	A Belt Section	34.3	1/2	5/16
A34	A Belt Section	35.3	1/2	5/16
A35	A Belt Section	36.3	1/2	5/16
A36	A Belt Section	37.3	1/2	5/16
A37	A Belt Section	38.3	1/2	5/16
A38	A Belt Section	39.3	1/2	5/16
A39	A Belt Section	40.3	1/2	5/16
A40	A Belt Section	41.3	1/2	5/16
A41	A Belt Section	42.3	1/2	5/16
A42	A Belt Section	43.3	1/2	5/16
A43	A Belt Section	44.3	1/2	5/16
A44	A Belt Section	45.3	1/2	5/16
A45	A Belt Section	46.3	1/2	5/16
A46	A Belt Section	47.3	1/2	5/16

Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
A47	A Belt Section	48.3	1/2	5/16
A48	A Belt Section	49.3	1/2	5/16
A49	A Belt Section	50.3	1/2	5/16
A50	A Belt Section	51.3	1/2	5/16
A51	A Belt Section	52.3	1/2	5/16
A52	A Belt Section	53.3	1/2	5/16
A53	A Belt Section	54.3	1/2	5/16
A54	A Belt Section	55.3	1/2	5/16
A55	A Belt Section	56.3	1/2	5/16
A56	A Belt Section	57.3	1/2	5/16
A57	A Belt Section	58.3	1/2	5/16
A58	A Belt Section	59.3	1/2	5/16
A59	A Belt Section	60.3	1/2	5/16
A60	A Belt Section	61.3	1/2	5/16
A61	A Belt Section	62.3	1/2	5/16
A62	A Belt Section	63.3	1/2	5/16
A64	A Belt Section	65.3	1/2	5/16
A65	A Belt Section	66.3	1/2	5/16
A66	A Belt Section	67.3	1/2	5/16
A67	Super Gripbelt	68.3	1/2	5/16
A68	A Belt Section	69.3	1/2	5/16
A72	A Belt Section	74.2	1/2	5/16
A73	A Belt Section	75.2	1/2	5/16
A75	A Belt Section	77.2	1/2	5/16
A76	Super Gripbelt	78.2	1/2	5/16
A77	A Belt Section	79.2	1/2	5/16
A82	Super Gripbelt	84.2	1/2	5/16
A87	A Belt Section	88.3	1/2	5/16
BA100	A Belt Section	101.3	1/2	5/16

## Griptwist Section Link Belts



### Features

- Perfect for emergency replacements
- Available for either traditional A or B section belts
- Adjustable to length
- Operating temperature range is -40°F to 240°F (-40°C to 116°C)



Item ID	Type	Pitch Length
<b>Browning</b>		
AP GRIPTWIST 5FT	A Belt Section	5 Ft. long stocked size. Belt length can be shortened
BP GRIPTWIST 5FT	B Belt Section	5 Ft. long stocked size. Belt length can be shortened



## Gripnotch Cogged A Section V Belts



### Features

- Precision molded raw edge construction
- More horsepower in less space
- Notches are molded extra deep



Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
AX20	AX Belt Section	21.3	1/2	5/16
AX21	AX Belt Section	22.3	1/2	5/16
AX22	AX Belt Section	23.3	1/2	5/16
AX23	AX Belt Section	24.3	1/2	5/16
AX24	AX Belt Section	25.3	1/2	5/16
AX25	AX Belt Section	26.3	1/2	5/16
AX26	AX Belt Section	27.3	1/2	5/16
AX27	AX Belt Section	28.3	1/2	5/16
AX28	AX Belt Section	29.3	1/2	5/16
AX29	AX Belt Section	30.3	1/2	5/16
AX30	AX Belt Section	31.3	1/2	5/16
AX31	AX Belt Section	32.3	1/2	5/16
AX32	AX Belt Section	33.3	1/2	5/16
AX33	AX Belt Section	34.3	1/2	5/16
AX34	AX Belt Section	35.3	1/2	5/16
AX35	AX Belt Section	36.3	1/2	5/16
AX36	AX Belt Section	37.3	1/2	5/16
AX37	AX Belt Section	38.3	1/2	5/16
AX38	AX Belt Section	39.3	1/2	5/16
AX39	AX Belt Section	40.3	1/2	5/16
AX40	AX Belt Section	41.3	1/2	5/16

Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
AX41	AX Belt Section	42.3	1/2	5/16
AX42	AX Belt Section	43.3	1/2	5/16
AX43	AX Belt Section	44.3	1/2	5/16
AX44	AX Belt Section	45.3	1/2	5/16
AX45	AX Belt Section	46.3	1/2	5/16
AX46	AX Belt Section	47.3	1/2	5/16
AX47	AX Belt Section	48.3	1/2	5/16
AX48	AX Belt Section	49.3	1/2	5/16
AX49	AX Belt Section	50.3	1/2	5/16
AX50	AX Belt Section	51.3	1/2	5/16
AX51	AX Belt Section	52.3	1/2	5/16
AX52	AX Belt Section	53.3	1/2	5/16
AX53	AX Belt Section	54.3	1/2	5/16
AX54	AX Belt Section	55.3	1/2	5/16
AX55	AX Belt Section	56.3	1/2	5/16
AX56	AX Belt Section	57.3	1/2	5/16
AX57	AX Belt Section	58.3	1/2	5/16
AX58	AX Belt Section	59.3	1/2	5/16
AX60	AX Belt Section	61.3	1/2	5/16
AX62	AX Belt Section	63.3	1/2	5/16
AX64	AX Belt Section	65.3	1/2	5/16
AX71	AX Belt Section	72.3	1/2	5/16
AX73	AX Belt Section	75.2	1/2	5/16
AX75	AX Belt Section	77.2	1/2	5/16
AX76	AX Belt Section	78.2	1/2	5/16
AX93	AX Belt Section	95.2	1/2	5/16
AX95	AX Belt Section	97.2	1/2	5/16

## Browning Bearings

### Features

- Seal: Contact
- Housing: Cast Iron

Item ID	Lock Type	Shaft Diameter (In.)	Temperature Range °F	Bolt Size (In.)
<b>Pillow Block</b>				
765473	Set Screw	3/4	-20°F to 200°F	3/8
765476	Set Screw	1	-20°F to 200°F	3/8
765478	Set Screw	1-3/16	-20°F to 200°F	2-1/2
<b>Rubber Mounted Bearing</b>				
766551	Set Screw	1	-20°F to 200°F	N/A
766553	Set Screw	3/4	-20°F to 200°F	N/A





**NEW**

## Browning Tenso-set Series

### Features

- Fast belt change
- Save up to 80% in labor cost
- Reduce energy usage
- Decrease downtime

Item ID	Base Type	Frame	Type
<b>Browning Tenso-set Series</b>			
BSAMBI605	605	90S-90L	IEC SELF ADJUSTING
BSAMBI605QR	601	90S-90L	IEC QR SELF-ADJUSTING
BSAMBI607	607	112S-112M	IEC SELF ADJUSTING
BSAMBI607QR	607	112S-112M	IEC QR SELF-ADJUSTING
BSAMBI613	613	132S-132M	IEC SELF ADJUSTING
BSAMBI613QR	613	132S-132M	IEC QR SELF-ADJUSTING
BSAMBN601QR	601	48-56	NEMA OR SELF ADJUSTING
BSAMBN605	605	143-145	NEMA SELF ADJUSTING
BSAMBN605QR	605	143-145	NEMA QR SELF ADJUSTING
BSAMBN607	607	182-184	NEMA SELF ADJUSTING
BSAMBN607QR	607	182-184	NEMA QR SELF ADJUSTING
BSAMBN613	613	213-215	NEMA SELF ADJUSTING
BSAMBN613QR	613	213-215	NEMA QR SELF ADJUSTING



## Browning Tension Checker



Item # BTC1

### Features

- Adjusts for a 10" to 170" belt span and up to 35 lb. of tension
- Helps extend the belt life

Now Available!

Browning Belt  
**Tenso-set** reduces time to  
 change v-belts, maintain  
 superior drive alignment  
 and improve  
 overall safety.

*Browning*



## Super Grip Classic B Section V Belts



### Features

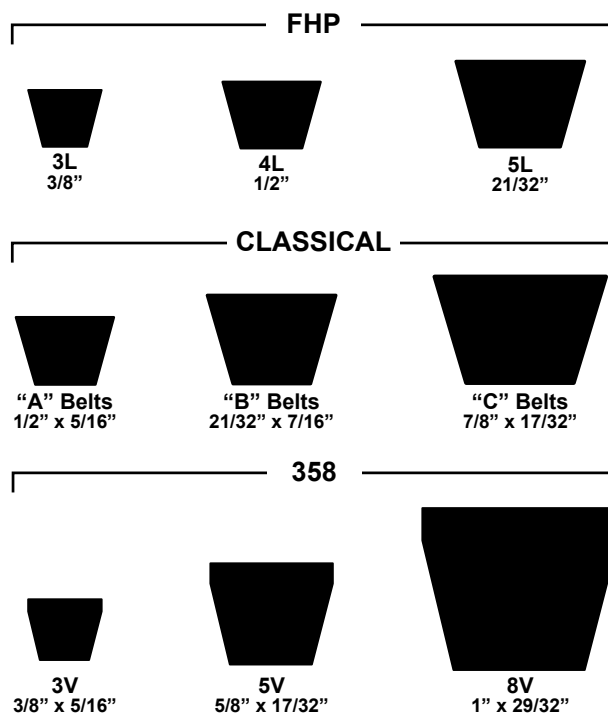
- Wrapped construction provides smooth, quiet operation
- More tolerant of slip and misalignment than raw edge belts
- Oil and heat resistant — static conducting



Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
B108	B Belt Section	109.8	21/32	7/16
B112	B Belt Section	113.8	21/32	7/16
B128	B Belt Section	129.8	21/32	7/16
B144	B Belt Section	145.8	21/32	7/16
B34	B Belt Section	35.8	21/32	7/16
B33	B Belt Section	34.8	21/32	7/16
B35	B Belt Section	36.8	21/32	7/16
B36	B Belt Section	37.8	21/32	7/16
B38	B Belt Section	39.8	21/32	7/16
B39	B Belt Section	40.8	21/32	7/16
B40	B Belt Section	41.8	21/32	7/16
B41	B Belt Section	42.8	21/32	7/16
B42	B Belt Section	43.8	21/32	7/16
B43	B Belt Section	44.8	21/32	7/16
B44	B Belt Section	45.8	21/32	7/16
B45	B Belt Section	46.8	21/32	7/16
B46	B Belt Section	47.8	21/32	7/16
B47	B Belt Section	48.8	21/32	7/16
B48	B Belt Section	49.8	21/32	7/16
B49	B Belt Section	50.8	21/32	7/16
B50	B Belt Section	51.8	21/32	7/16
B51	B Belt Section	52.8	21/32	7/16
B52	B Belt Section	53.8	21/32	7/16
B53	B Belt Section	54.8	21/32	7/16
B54	B Belt Section	55.8	21/32	7/16
B55	B Belt Section	56.8	21/32	7/16
B56	B Belt Section	57.8	21/32	7/16
B57	B Belt Section	58.8	21/32	7/16
B58	B Belt Section	59.8	21/32	7/16
B59	B Belt Section	60.8	21/32	7/16
B60	B Belt Section	61.8	21/32	7/16
B61	B Belt Section	62.8	21/32	7/16
B62	B Belt Section	63.8	21/32	7/16
B63	B Belt Section	64.8	21/32	7/16
B64	B Belt Section	65.8	21/32	7/16
B65	B Belt Section	66.8	21/32	7/16
B66	B Belt Section	67.8	21/32	7/16
B67	B Belt Section	68.8	21/32	7/16
B68	B Belt Section	69.8	21/32	7/16
B70	B Belt Section	71.8	21/32	7/16
B71	B Belt Section	72.8	21/32	7/16

Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
B72	B Belt Section	73.8	21/32	7/16
B77	B Belt Section	78.8	21/32	7/16
B78	B Belt Section	79.8	21/32	7/16
B81	B Belt Section	82.8	21/32	7/16
B83	B Belt Section	84.8	21/32	7/16
B85	B Belt Section	86.8	21/32	7/16
B86	B Belt Section	87.8	21/32	7/16
B87	B Belt Section	88.8	21/32	7/16
B90	B Belt Section	91.8	21/32	7/16
B93	B Belt Section	94.8	21/32	7/16
B94	B Belt Section	95.8	21/32	7/16
B98	B Belt Section	99.8	21/32	7/16

## Standard Belt Widths





## Gripnotch Cogged B Section V Belts



### Features

- Precision molded raw edge construction
- More horsepower in less space
- Notches are molded extra deep



Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
BX103	BX Belt Section	104.8	21/32	7/16
BX106	BX Belt Section	107.8	21/32	7/16
BX108	BX Belt Section	109.8	21/32	7/16
BX112	BX Belt Section	113.8	21/32	7/16
BX120	BX Belt Section	121.8	21/32	7/16
BX136	BX Belt Section	137.8	21/32	7/16
BX28	BX Belt Section	29.8	21/32	7/16
BX32	BX Belt Section	33.8	21/32	7/16
BX34	BX Belt Section	35.8	21/32	7/16
BX35	BX Belt Section	36.8	21/32	7/16
BX36	BX Belt Section	37.8	21/32	7/16
BX38	BX Belt Section	39.8	21/32	7/16
BX39	Gripnotch	40.8	21/32	7/16
BX40	BX Belt Section	41.8	21/32	7/16
BX41	BX Belt Section	42.8	21/32	7/16
BX42	BX Belt Section	43.8	21/32	7/16
BX43	BX Belt Section	44.8	21/32	7/16
BX44	BX Belt Section	45.8	21/32	7/16
BX45	BX Belt Section	46.8	21/32	7/16
BX46	BX Belt Section	47.8	21/32	7/16
BX47	BX Belt Section	48.8	21/32	7/16
BX48	BX Belt Section	49.8	21/32	7/16
BX49	BX Belt Section	50.8	21/32	7/16
BX50	BX Belt Section	51.8	21/32	7/16
BX51	BX Belt Section	52.8	21/32	7/16
BX52	BX Belt Section	53.8	21/32	7/16
BX53	BX Belt Section	54.8	21/32	7/16
BX54	BX Belt Section	55.8	21/32	7/16
BX55	BX Belt Section	56.8	21/32	7/16
BX56	BX Belt Section	57.8	21/32	7/16
BX57	BX Belt Section	58.8	21/32	7/16
BX58	BX Belt Section	59.8	21/32	7/16
BX76	BX Belt Section	77.8	21/32	7/16
BX79	BX Belt Section	80.8	21/32	7/16
BX84	BX Belt Section	85.8	21/32	7/16
BX88	BX Belt Section	89.8	21/32	7/16
BX94	BX Belt Section	95.8	21/32	7/16

Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
BX59	BX Belt Section	60.8	21/32	7/16
BX60	BX Belt Section	61.8	21/32	7/16
BX61	BX Belt Section	62.8	21/32	7/16
BX62	BX Belt Section	63.8	21/32	7/16
BX63	BX Belt Section	64.8	21/32	7/16
BX64	BX Belt Section	65.8	21/32	7/16
BX65	BX Belt Section	66.8	21/32	7/16
BX66	BX Belt Section	67.8	21/32	7/16
BX67	BX Belt Section	68.8	21/32	7/16
BX68	BX Belt Section	69.8	21/32	7/16
BX70	BX Belt Section	71.8	21/32	7/16
BX71	BX Belt Section	72.8	21/32	7/16
BX73	BX Belt Section	74.8	21/32	7/16
BX74	BX Belt Section	75.8	21/32	7/16
BX75	BX Belt Section	76.8	21/32	7/16
BX77	BX Belt Section	78.8	21/32	7/16
BX78	BX Belt Section	79.8	21/32	7/16
BX80	BX Belt Section	81.8	21/32	7/16
BX81	BX Belt Section	82.8	21/32	7/16
BX83	BX Belt Section	84.8	21/32	7/16
BX85	BX Belt Section	86.8	21/32	7/16
BX90	BX Belt Section	91.8	21/32	7/16
BX93	BX Belt Section	94.8	21/32	7/16
BX95	BX Belt Section	96.8	21/32	7/16
BX96	BX Belt Section	97.8	21/32	7/16
BX97	BX Belt Section	98.8	21/32	7/16
BX99	Gripnotch	100.8	21/32	7/16

Item ID	Type	Pitch Length (In.)	Top Width (In.)	Height (In.)
<b>Browning</b>				
C122	Super Gripbelt	124.9	7/8	17/32
C124	Super Gripbelt	126.9	7/8	17/32
CX55	Gripnotch	57.9	7/8	17/32
CX60	Gripnotch	62.9	7/8	17/32
CX68	Gripnotch	70.9	7/8	17/32

## TechTip

from Packard Academy

A replacement belt should be selected based upon:

- The top/outside length of the belt
- The top/outside width of the belt
- The construction characteristics of the belt

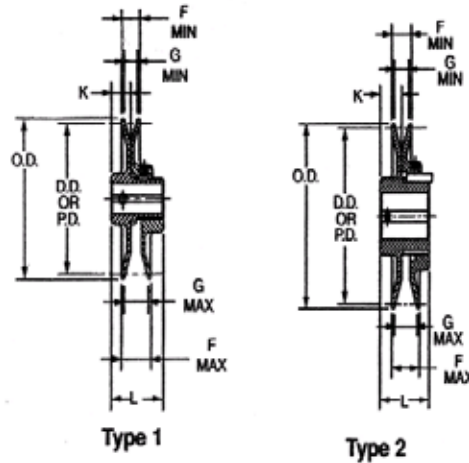




# **W**hat's inside matters when it comes to HVACR...

...down to the essentials, we know  
the importance of each replacement part.

# Stock PVP Variable Pitch Single Groove Pulleys



**Features**

- Fitted with hollow head set screws
- Any standard double groove Packard Drive Sheave can be used as a companion sheave

Item ID	Type	O.D. (In.)	3L Belts				4L or A Belts				5L or B Belts				5V Belts				Stock Bore (In.)	Replaces Browning	
			Min. Pitch	Min. Turns Open	Max. Turns	Max. Pitch	Min. Datum	Min. Turns Open	Max. Turns	Max. Datum	Min. Datum	Min. Turns Open	Max. Turns	Max. Datum	Min. Pitch	Min. Turns Open	Max. Turns	Max. Pitch			
<b>Packard</b>																					
PVP3012	1	2.87	1.8	4	2.7	0	—	—	—	—	—	—	—	—	—	—	—	—	—	1/2	1VP30 X 1/2
PVP3412	1	3.15	1.7	4	2.5	0	1.9	5	2.9	0	2.4	5	3.2	1	—	—	—	—	—	1/2	1VP34 X 1/2
PVP3458	1	3.15	1.7	4	2.5	0	1.9	5	2.9	0	2.4	5	3.2	1	—	—	—	—	—	5/8	1VP34 X 5/8
PVP3478	1	3.15	1.7	4	2.5	0	1.9	5	2.9	0	2.4	5	3.2	1	—	—	—	—	—	7/8	1VP34 X 7/8
PVP4012	1	3.75	2.3	4	3.1	0	2.4	5	3.4	0	2.7	6	3.7	1	—	—	—	—	—	1/2	1VP40 X 1/2
PVP4034	1	3.75	2.3	4	3.1	0	2.4	5	3.4	0	2.7	6	3.7	1	—	—	—	—	—	3/4	1VP40 X 3/4
PVP4058	1	3.75	2.3	4	3.1	0	2.4	5	3.4	0	2.7	6	3.7	1	—	—	—	—	—	5/8	1VP40 X 5/8
PVP4078	1	3.75	2.3	4	3.1	0	2.4	5	3.4	0	2.7	6	3.7	1	—	—	—	—	—	7/8	1VP40 X 7/8
PVP4412	1	4.15	2.7	4	3.5	0	2.8	5	3.8	0	3.1	6	4.1	1	—	—	—	—	—	1/2	1VP44 X 1/2
PVP4458	1	4.15	2.7	4	3.5	0	2.8	5	3.8	0	3.1	6	4.1	1	—	—	—	—	—	5/8	1VP44 X 5/8
PVP4478	2	4.15	2.7	4	3.5	0	2.8	5	3.8	0	3.1	6	4.1	1	—	—	—	—	—	7/8	1VP44 X 7/8
PVP44118	2	4.15	2.7	4	3.5	0	2.8	5	3.8	0	3.1	6	4.1	1	—	—	—	—	—	1 1/8	1VP44 X 1 1/8
PVP5012	1	4.75	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—	—	1/2	1VP50 X 1/2
PVP5058	1	4.75	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—	—	5/8	1VP50 X 5/8
PVP5078	2	4.75	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—	—	7/8	1VP50 X 7/8
PVP50118	2	4.75	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—	—	1 1/8	1VP50 X 1 1/8
PVP5658	1	5.35	3.9	4	4.7	0	4	5	5.0	0	4.3	6	5.3	1	—	—	—	—	—	5/8	1VP56 X 5/8
PVP5678	2	5.35	3.9	4	4.7	0	4	5	5.0	0	4.3	6	5.3	1	—	—	—	—	—	7/8	1VP56 X 7/8
PVP56118	2	5.35	3.9	4	4.7	0	4	5	5.0	0	4.3	6	5.3	1	—	—	—	—	—	1 1/8	1VP56 X 1 1/8
PVP6078	2	6.00	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—	—	7/8	1VP60 X 7/8
PVP60118	2	6.00	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—	—	1 1/8	1VP60 X 1 1/8
PVP60138	2	6.00	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—	—	1 3/8	1VP60 X 1 3/8
PVP65118	2	6.5	—	—	—	—	4.7	5	5.7	0	4.8	6	6.0	0	5.2	6	6.4	0	—	1 1/8	1VP65 X 1 1/8
PVP68118	2	6.55	5.1	4	5.9	0	5.2	5	6.2	0	5.5	6	6.5	1	5.9	6	6.9	1	—	1 1/8	1VP68 X 1 3/8
PVP75138	2	7.5	—	—	—	—	5.7	5	6.7	0	5.8	6	7.0	0	6.2	6	7.4	0	—	1 3/8	1VP75 X 1 3/8

## Stock P2VP Variable Pitch Double Groove Pulleys

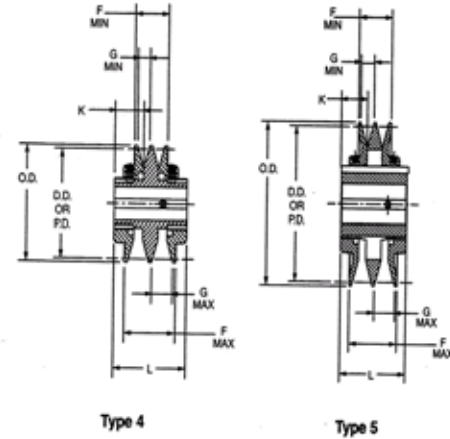


### Features

- Fitted with hollow head set screws
- Any standard double groove Packard Drive Sheave can be used as a companion sheave



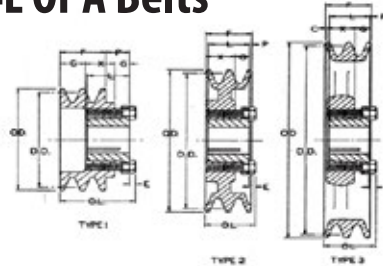
Item ID	Type	Diameter (In.)		Replaces Browning
		O.D.	Stock Bore (In.)	
<b>Packard</b>				
P2VP3658	4	3.35	5/8	2VP36 X 5/8
P2VP3678	4	3.35	7/8	2VP36 X 7/8
P2VP4258	4	3.95	5/8	2VP42 X 5/8
P2VP4278	4	3.95	7/8	2VP42 X 7/8
P2VP42118	4	3.95	1 1/8	2VP42 X 1 1/8
P2VP5058	5	4.75	5/8	2VP50 X 5/8
P2VP5078	5	4.75	7/8	2VP50 X 7/8
P2VP50118	5	4.75	1 1/8	2VP50 X 1 1/8
P2VP5678	5	5.35	7/8	2VP56 X 7/8
P2VP56118	5	5.35	1 1/8	2VP56 X 1 1/8
P2VP60118	5	6	1 1/8	2VP60 X 1 1/8
P2VP60138	5	6	1 3/8	2VP60 X 1 3/8
P2VP60158	5	6	1-5/8	2VP60 X 1 5/8
P2VP62118	5	6	1 1/8	2VP62 X 1 1/8
P2VP65118	5	5.95	1 1/8	2VP65 X 1 1/8
P2VP68118	5	6.50	1 1/8	2VP68 X 1 1/8
P2VP71158	5	7.1	1-5/8	2VP71 X 1 5/8



Item ID	3L Belts				4L or A Belts				5L or B Belts				5V Belts			
	Min. Pitch	Min. Turns Open	Max. Pitch	Max. Turns Open	Min. Datum	Min. Turns Open	Max. Datum	Max. Turns Open	Min. Datum	Min. Turns Open	Max. Datum	Max. Turns Open	Min. Pitch	Min. Turns Open	Max. Pitch	Max. Turns Open
<b>Packard</b>																
P2VP3658	1.9	4	2.7	0	2	5	3	0	2.5	5	3.3	1	—	—	—	—
P2VP3678	1.9	4	2.7	0	2	5	3	0	2.5	5	3.3	1	—	—	—	—
P2VP4258	2.5	4	3.3	0	2.6	5	3.6	0	2.9	6	3.9	1	—	—	—	—
P2VP4278	2.5	4	3.3	0	2.6	5	3.6	0	2.9	6	3.9	1	—	—	—	—
P2VP42118	2.5	4	3.3	0	2.6	5	3.6	0	2.9	6	3.9	1	—	—	—	—
P2VP5058	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—
P2VP5078	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—
P2VP50118	3.3	4	4.1	0	3.4	5	4.4	0	3.7	6	4.7	1	—	—	—	—
P2VP5678	3.9	4	4.7	0	4	5	5	0	4.3	6	5.3	1	—	—	—	—
P2VP56118	3.9	4	4.7	0	4	5	5	0	4.3	6	5.3	1	—	—	—	—
P2VP60118	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—
P2VP60138	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—
P2VP60158	—	—	—	—	4.2	5	5.2	0	4.3	6	5.5	0	—	—	—	—
P2VP62118	4.5	4	5.3	0	4.6	5	5.6	0	4.9	6	5.9	1	5.3	6	6.3	1
P2VP65118	—	—	—	—	4.7	5	5.7	0	4.8	6	6	0	5.2	6	6.4	0
P2VP68118	5.1	4	5.9	0	5.2	5	6.2	0	5.5	6	6.5	1	5.9	6	6.9	1
P2VP71158	—	—	—	—	5.5	5	6.5	0	5.8	6	7	0	5.8	6	7	0



## Two Groove Pulleys For 4L Or A Belts

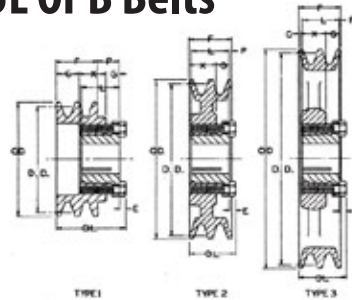


### Features

- 3L belts may be used with these pulleys

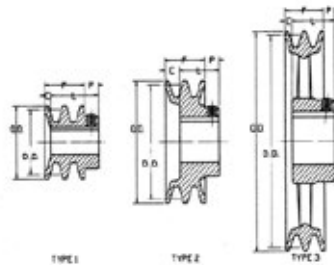
Item ID	Diameter (In.)			Type	Dimensions (In.)								Replaces Browning
	O.D.	Datum A	Pitch 3L		O.L.	F	L	P	C	X	G	E	
<b>Packard</b>													
P2AK30H	3.05	2.8	2.46	1	27/16	13/8	1 1/4	7/8	15/16	7/8	7/16	3/16	2AK30H
P2AK39H	3.75	3.5	3.16	1	2	13/8	1 1/4	7/16	1/2	7/8	7/16	3/16	2AK39H
P2AK46H	4.45	4.2	3.86	2	1 1/2	13/8	1 1/4	1/16	—	7/8	7/16	3/16	2AK46H
P2AK54H	5.25	5.0	4.66	2	1 1/2	13/8	1 1/4	1/16	—	7/8	7/16	3/16	2AK54H
P2AK56H	5.45	5.2	4.86	2	1 1/2	13/8	1 1/4	1/16	—	7/8	7/16	3/16	2AK56H

## Two Groove Pulleys For 4L Or A Belts And 5L Or B Belts



Item ID	Diameter (In.)			Type	Dimensions (In.)								Replaces Browning
	O.D.	Datum A	Datum B		O.L.	F	L	P	C	X	G	E	
<b>Packard</b>													
P2BK32H	3.35	2.6	3	1	2 13/16	1 3/4	1 1/4	7/8	5/16	7/8	7/16	3/16	2BK32H
P2BK80H	7.75	7.0	7.4	3	1 3/4	1 3/4	1 1/4	7/16	7/8	7/8	7/16	3/16	2BK80H
P2BK100H	9.75	9.0	9.4	3	1 3/4	1 3/4	1 1/4	7/16	7/8	7/8	7/16	3/16	2BK100H

## Two Groove Pulleys For 4L Or A Belts And 5L Or B Belts

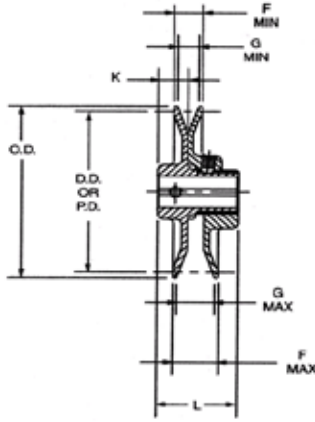


### Features

- Packard drive "P2BK" sheaves accurately machined from grained cast iron, statically balanced, painted and individually packaged
- Furnished with standard keyway and hollow head set screws

Item ID	Diameter (In.)			Type	Stock Bore (In.)	Dimensions (In.)			Replaces Browning	
	O.D.	Datum A	Datum B			F	L	P		C
<b>Packard</b>										
P2BK2558	2.6	2	2.4	1	5/8	1 3/4	1 31/32	15/32	1/4	2BK2558
P2BK3058	3.15	2.4	2.8	1	5/8	1 3/4	1 31/32	15/32	1/4	2BK3058
P2BK34118	3.55	2.8	3.2	1	1 1/8	1 3/4	1 31/32	15/32	1/4	2BK34118
P2BK3658	3.75	3	3.4	1	5/8	1 3/4	1 31/32	15/32	1/4	2BK3658
P2BK4058	3.95	3.2	3.6	2	5/8	1 3/4	1 15/32	15/32	3/4	2BK4058
P2BK4558	4.25	3.5	3.9	2	5/8	1 3/4	1 15/32	15/32	3/4	2BK4558
P2BK5058	4.75	4	4.4	2	5/8	1 3/4	1 15/32	15/32	3/4	2BK5058

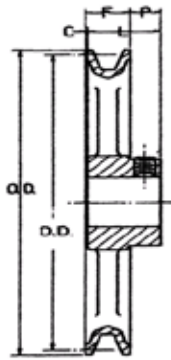
## PVL Variable Pitch Pulleys



Bore Range (In.)	Keyway (In.)
1/2	None
5/8 - 7/8	3/16 x 3/32
1 5/16 - 1 1/4	1/4 x 1/8
1 7/16	3/8 x 3/16

Item ID	3L Belts					4L or A Belts				5L or B Belts				Stock Bore (In.)	Replaces Browning
	O.D. (In.)	Min. Pitch	Min. Turns Open	Max. Turns Max. Pitch	Max. Turns Open	Min. Datum	Min. Turns Open	Max. Datum	Max. Turns Open	Min. Turns Open	Min. Datum	Max. Datum	Max. Turns Open		
<b>Packard</b>															
PVL2512	2.5	1.6	4	2.4	0	—	—	—	—	—	—	—	—	1/2	1VL25 X 1/2
PVL2558	2.5	1.6	4	2.4	0	—	—	—	—	—	—	—	—	5/8	1VL25 X 5/8
PVL3012	2.87	1.8	4	2.7	0	—	—	—	—	—	—	—	—	1/2	1VL30 X 1/2
PVL3058	2.87	1.8	4	2.7	0	—	—	—	—	—	—	—	—	5/8	1VL30 X 5/8
PVL3412	3.15	1.7	4	2.5	0	1.9	5	2.9	0	5	2.4	3.2	1	1/2	1VL34 X 1/2
PVL3434	3.15	1.7	4	2.5	0	1.9	5	2.9	0	5	2.4	3.2	1	3/4	1VL34 X 3/4
PVL3458	3.15	1.7	4	2.5	0	1.9	5	2.9	0	5	2.4	3.2	1	5/8	1VL34 X 5/8
PVL4012	3.75	2.3	4	3.1	0	2.4	5	3.4	0	6	2.7	4.1	1	1/2	1VL40 X 1/2
PVL4034	3.75	2.3	4	3.1	0	2.4	5	3.4	0	6	2.7	4.1	1	3/4	1VL40 X 3/4
PVL4058	3.75	2.3	4	3.1	0	2.4	5	3.4	0	6	2.7	4.1	1	5/8	1VL40 X 5/8
PVL4078	3.75	2.3	4	3.1	0	2.4	5	3.4	0	6	2.7	4.1	1	7/8	1VL40 X 7/8
PVL4412	4.15	2.7	4	3.5	0	2.8	5	3.8	0	6	3.1	4.1	1	1/2	1VL44 X 1/2
PVL4434	4.15	2.7	4	3.5	0	2.8	5	3.8	0	6	3.1	4.1	1	3/4	1VL44 X 3/4
PVL4458	4.15	2.7	4	3.5	0	2.8	5	3.8	0	6	3.1	4.1	1	5/8	1VL44 X 5/8
PVL4478	4.15	2.7	4	3.5	0	2.8	5	3.8	0	6	3.1	4.1	1	7/8	1VL44 X 7/8

## PAL Pulleys For 4L Or A Belts

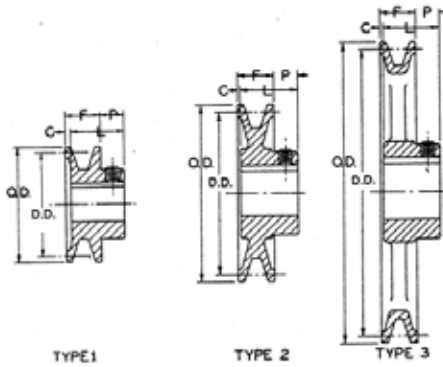


Bore Range (In.)	Keyway (In.)
1/2	None
5/8 - 7/8	3/16 x 3/32
1 5/16 - 1 1/4	1/4 x 1/8
1 7/16	3/8 x 3/16

Item ID	Diameter (In.)		Stock Bore (In.)	Dimensions (In.)			Replaces Browning
	O.D.	Pitch		F	P	L	
<b>Packard</b>							
PAL5434	4.93	4.78	3/4	19/32	15/32	1 1/16	AL5434
PAL5458	4.93	4.78	5/8	19/32	15/32	1 1/16	AL5458
PAL6434	5.93	5.78	3/4	19/32	15/32	1 1/16	AL6434
PAL6458	5.93	5.78	5/8	19/32	15/32	1 1/16	AL6458
PAL641	5.93	5.78	1	19/32	15/32	1 1/16	AL641
PAL7434	6.93	6.78	3/4	19/32	15/32	1 1/16	AL7434
PAL741	6.93	6.78	1	19/32	15/32	1 1/16	AL741
PAL8434	7.93	7.78	3/4	19/32	15/32	1 1/16	AL8434
PAL841	7.93	7.78	1	19/32	15/32	1 1/16	AL841
PAL9434	8.93	8.78	3/4	19/32	15/32	1 1/16	AL9434
PAL941	8.93	8.78	1	19/32	15/32	1 1/16	AL941
PAL1041	9.93	9.78	1	19/32	15/32	1 1/16	AL1041
PAL11434	10.93	10.78	3/4	19/32	15/32	1 1/16	AL11434
PAL1141	10.93	10.78	1	19/32	15/32	1 1/16	AL1141
PAL12434	11.93	11.78	3/4	19/32	15/32	1 1/16	AL12434
PAL1241	11.93	11.78	1	19/32	15/32	1 1/16	AL1241

• Do not use "A" Gripnotch Belt Ratings with "AL" or "AM" sheaves.

## Single Groove Pulleys For 4L Or A Belts



### Features

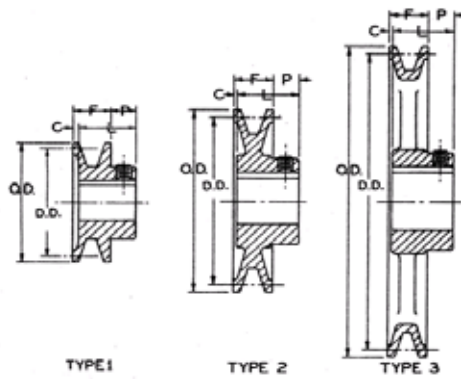
- PACKARD DRIVE "PAK" pulleys accurately machined from grained cast iron, statically balanced, painted and individually packaged
- Furnished with standard keyway and hollow head set screws
- 3L belts may be used with these pulleys

Bore Range (In.)	Keyway (In.)
1/2	None
5/8 - 7/8	3/16 x 3/32
1 5/16 - 1 1/4	1/4 x 1/8
1 7/16	3/8 x 3/16

Item ID	Diameter (In.)			Type	Stock Bore (In.)	Dimensions (In.)				Replaces Browning
	O.D.	Datum A	Pitch 3L			F	L	P	C	
<b>Packard</b>										
PAK1712	1.75	1.5	1.16	1	1/2	21/32	15/16	7/16	5/32	AK1712
PAK1758	1.75	1.5	1.16	1	5/8	21/32	15/16	7/16	5/32	AK1758
PAK2012	2	1.8	1.46	1	1/2	21/32	15/16	7/16	5/32	AK2012
PAK2058	2	1.8	1.46	1	5/8	21/32	15/16	7/16	5/32	AK2058
PAK2212	2.2	2	1.66	1	1/2	21/32	15/16	7/16	5/32	AK2212
PAK2258	2.2	2	1.66	1	5/8	21/32	15/16	7/16	5/32	AK2258
PAK2312	2.3	2.1	1.76	1	1/2	21/32	15/16	7/16	5/32	AK2312
PAK2358	2.3	2.1	1.76	1	5/8	21/32	15/16	7/16	5/32	AK2358
PAK2512	2.5	2.3	1.96	2	1/2	21/32	15/16	7/16	5/32	AK2512
PAK2558	2.5	2.3	1.96	2	5/8	21/32	15/16	7/16	5/32	AK2558
PAK2712	2.7	2.5	2.16	2	1/2	21/32	15/16	7/16	5/32	AK2712
PAK2758	2.7	2.5	2.16	2	5/8	21/32	15/16	7/16	5/32	AK2758
PAK3012	3.05	2.8	2.46	2	1/2	21/32	15/16	7/16	5/32	AK3012
PAK3058	3.05	2.8	2.46	2	5/8	21/32	15/16	7/16	5/32	AK3058
PAK3034	3.05	2.8	2.46	2	3/4	21/32	15/16	7/16	5/32	AK3034
PAK3258	3.25	3	2.66	2	5/8	21/32	15/16	7/16	5/32	AK3258
PAK3412	3.45	3.2	2.86	2	1/2	21/32	15/16	7/16	5/32	AK3412
PAK3458	3.45	3.2	2.86	2	5/8	21/32	15/16	7/16	5/32	AK3458
PAK3478	3.45	3.2	2.86	2	7/8	21/32	15/16	7/16	5/32	AK3478
PAK3958	3.75	3.5	3.16	2	5/8	3/4	1 5/32	1 5/32	1/16	AK3958
PAK4158	3.95	3.7	3.36	2	5/8	3/4	1 5/32	1 5/32	1/16	AK4158
PAK4178	3.95	3.7	3.36	2	7/8	3/4	1 5/32	1 5/32	1/16	AK4178
PAK4458	4.25	4	3.66	3	5/8	3/4	1 5/32	1 5/32	1/16	AK4458
PAK4658	4.45	4.2	3.86	3	5/8	3/4	1 5/32	1 5/32	1/16	AK4658
PAK5158	4.95	4.7	4.36	3	5/8	3/4	1 5/32	1 5/32	1/16	AK5158
PAK5178	4.95	4.7	4.36	3	7/8	3/4	1 5/32	1 5/32	1/16	AK5178
PAK5634	5.45	5.2	4.86	3	3/4	3/4	1 5/32	1 5/32	1/16	AK5634
PAK5978	5.75	5.5	5.16	3	7/8	3/4	1 5/32	1 5/32	1/16	AK5978
PAK6158	5.95	5.7	5.36	3	5/8	3/4	1 5/32	1 5/32	1/16	AK6158
PAK8934	8.75	8.5	8.16	3	3/4	3/4	1 15/32	2 3/32	0	AK8934

• Do not use PAK sheaves with bores 1" and under with cogged belt ratings.

## Single Groove Pulleys For 4L Or A Belts And 5L Or B Belts



### Features

- PACKARD DRIVE "PBK" pulleys accurately machined from grained cast iron, statically balanced, painted and individually packaged
- Furnished with standard keyway and hollow head set screws

Bore Range (In.)	Keyway (In.)
1/2	None
5/8 - 7/8	3/16 x 3/32
1 5/16 - 1 1/4	1/4 x 1/8
1 7/16	3/8 x 3/16

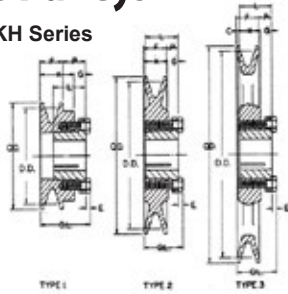
Item ID	Diameter (In.)			Type	Stock Bore (In.)	Dimensions (In.)				Replaces Browning
	O.D.	Datum A	Datum B			F	L	P	C	
<b>Packard</b>										
PBK2558	2.5	1.9	2.3	1	5/8	13/16	1 1/16	13/32	5/32	BK2558
PBK2758	2.7	2.1	2.5	2	5/8	13/16	1 1/16	13/32	5/32	BK2758
PBK2812	2.95	2.2	2.6	2	1/2	13/16	1 1/16	13/32	5/32	BK2812
PBK2858	2.95	2.2	2.6	2	5/8	13/16	1 1/16	13/32	5/32	BK2858
PBK2878	2.95	2.2	2.6	2	7/8	13/16	1 1/16	13/32	5/32	BK2878
PBK3012	3.15	2.4	2.8	2	1/2	13/16	1 1/16	13/32	5/32	BK3012
PBK3058	3.15	2.4	2.8	2	5/8	13/16	1 1/16	13/32	5/32	BK3058
PBK3258	3.35	2.6	3	2	5/8	13/16	1 1/16	13/32	5/32	BK3258
PBK3234	3.35	2.6	3	2	3/4	13/16	1 1/16	13/32	5/32	BK3234
PBK3278	3.35	2.6	3	2	7/8	13/16	1 1/16	13/32	5/32	BK3278
PBK3412	3.55	2.8	3.2	2	1/2	7/8	1 5/32	13/32	1/8	BK3412
PBK3458	3.55	2.8	3.2	2	5/8	7/8	1 5/32	13/32	1/8	BK3458
PBK3658	3.75	3	3.4	2	5/8	7/8	1 5/32	13/32	1/8	BK3658
PBK4058	3.95	3.2	3.6	2	5/8	7/8	1 5/32	13/32	1/8	BK4058
PBK4078	3.95	3.2	3.6	2	7/8	7/8	1 5/32	13/32	1/8	BK4078
PBK4758	4.45	3.7	4.1	2	5/8	7/8	1 5/32	13/32	1/8	BK4758
PBK5278	4.95	4.2	4.6	3	7/8	7/8	1 5/32	13/32	1/8	BK5278
PBK6058	5.75	5	5.4	3	5/8	7/8	1 5/32	13/32	1/8	BK6058
PBK6034	5.75	5	5.4	3	3/4	7/8	1 5/32	13/32	1/8	BK6034
PBK6078	5.75	5	5.4	3	7/8	7/8	1 5/32	13/32	1/8	BK6078
PBK6234	5.95	5.2	5.6	3	3/4	7/8	1 5/32	13/32	1/8	BK6234
PBK6534	6.25	5.5	5.9	3	3/4	7/8	1 5/32	13/32	1/8	BK6534
PBK7534	7.25	6.5	6.9	3	3/4	7/8	1 15/32	21/32	1/16	BK7534

• Do not use PBK sheaves with bores 1" and under with cogged belt ratings.

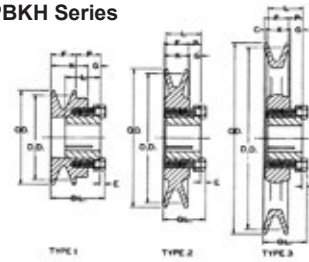
## Single Groove Pulleys



PAKH Series



PBKH Series



### Features

- 3L belts may be used with these pulleys

Item ID	Diameter (In.)			Type	Dimensions (In.)								Replaces Browning
	O.D.	Datum A	Pitch 3L		O.L.	F	L	P	C	X	G	E	
<b>Packard Single Groove Pulleys For 4L Or A Belts</b>													
PAK30H	3.05	2.8	2.46	1	1 13/16	3/4	1 1/4	7/8	—	1 3/16	7/16	3/16	AK30H
PAK39H	3.75	3.5	3.16	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK39H
PAK41H	3.95	3.7	3.36	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK41H
PAK44H	4.25	4	3.66	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK44H
PAK49H	4.75	4.5	4.16	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK49H
PAK51H	4.95	4.7	4.36	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK51H
PAK54H	5.25	5	4.66	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK54H
PAK56H	5.45	5.2	4.86	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK56H
PAK59H	5.75	5.5	5.16	2	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK59H
PAK61H	5.95	5.7	5.36	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK61H
PAK64H	6.25	6	5.66	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK64H
PAK66H	6.45	6.2	5.86	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK66H
PAK71H	6.95	6.7	6.36	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK71H
PAK74H	7.25	7	6.66	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK74H
PAK79H	7.75	7.5	7.16	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK79H
PAK84H	8.25	8	7.66	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK84H
PAK114H	11.25	11	10.66	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK114H
PAK124H	12.25	12	11.66	3	1 1/2	3/4	1 1/4	9/16	—	7/8	7/16	3/16	AK124H

Item ID	Diameter (In.)			Type	Dimensions (In.)								Replaces Browning
	O.D.	Datum A	Datum B		O.L.	F	L	P	C	X	G	E	
<b>Packard Single Groove Pulleys For 4L Or A Belts And 5L Or B Belts</b>													
PBK30H	3.15	2.4	2.8	1	1 15/16	7/8	1 1/4	7/8	—	1 5/16	7/16	3/16	BK30H
PBK32H	3.35	2.6	3	1	1 15/16	7/8	1 1/4	7/8	—	1 5/16	7/16	3/16	BK32H
PBK34H	3.55	2.8	3.2	1	1 15/16	7/8	1 1/4	7/16	—	1 5/16	7/16	3/16	BK34H
PBK36H	3.75	3	3.4	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK36H
PBK40H	3.95	3.2	3.6	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK40H
PBK45H	4.25	3.5	3.9	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK45H
PBK47H	4.45	3.7	4.1	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK47H
PBK50H	4.75	4	4.4	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK50H
PBK52H	4.95	4.2	4.6	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK52H
PBK55H	5.25	4.5	4.9	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK55H
PBK57H	5.45	4.7	5.1	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK57H
PBK60H	5.75	5	5.4	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK60H
PBK62H	5.95	5.2	5.6	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK62H
PBK65H	6.25	5.5	5.9	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK65H
PBK67H	6.45	5.7	6.1	2	1 1/2	7/8	1 1/4	7/16	—	7/8	7/16	3/16	BK67H
PBK70H	6.75	6	6.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK70H
PBK72H	6.95	6.2	6.6	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK72H
PBK75H	7.25	6.5	6.9	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK75H
PBK77H	7.45	6.7	7.1	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK77H
PBK80H	7.75	7	7.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK80H
PBK85H	8.25	7.5	7.9	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK85H
PBK90H	8.75	8	8.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK90H
PBK100H	9.75	9	9.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK100H
PBK120H	11.75	11	11.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK120H
PBK130H	12.75	12	12.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK130H
PBK140H	13.75	13	13.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK140H
PBK150H	14.75	14	14.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK150H
PBK160H	15.75	15	15.4	3	1 9/16	7/8	1 1/4	1/2	1/16	7/8	7/16	3/16	BK160H

## Stock Bushings



### Uses

- Sheaves
- Sprockets
- Pulleys

### Stock Spline Bores

0.978 - 10 Inv

1 1/8 - 6B

1 3/8 - 6B

1 3/8 - 21 Inv

Item ID	Stock Bore (In.)	Key Way
<b>Packard "H" Style Bushing</b>		
PH12	1/2	1/8 x 1/16
PH58	5/8	3/16 x 3/32
PH34	3/4	3/16 x 3/32
PH1316	13/16	3/16 x 3/32
PH78	7/8	3/16 x 3/32
PH1	1	1/4 x 1/8
PH118	1 1/8	1/4 x 1/8
PH114	1 1/4	1/4 x 1/16
PH138	1 3/8	5/16 x 1/16

Item ID	Stock Bore (In.)	Key Way
<b>Packard "P" Style Bushing</b>		
PP11	1	1/4 x 1/8
PP1118	1-1/8	1/4 x 1/8
PP11316	1-3/16	1/4 x 1/8
PP1138	1-3/8	5/16 x 5/32
PP11716	1-7/16	3/8 x 3/16
PP134	3/4	3/16 x 3/32
PP178	7/8	3/16 x 3/32

Item ID	Stock Bore (In.)	Key Way
<b>Packard "Q" Style Bushing</b>		
PQ11	1	1/4 x 1/8
PQ1118	1-1/8	1/4 x 1/8
PQ11316	1-3/16	1/4 x 1/8
PQ1138	1-3/8	3/8 x 3/16
PQ11716	1-7/16	3/8 x 3/16

Item ID	Stock Bore (In.)	Key Way
<b>Packard "SH" Style Bushing</b>		
PSH1316	1-3/16	1/4 x 1/8
PSH1716	1-7/16	3/8 x 3/16



BRIAN KOMOREK  
VP of Sales

*I'm proud to be a Packard employee owner...*

“ because all employees are entrusted as team members with an essential role in driving Packard's future success. ”



# ACCESSORIES

Completing a job means adding all the finishing touches. Packard is your all-inclusive resource for the comprehensive repair packages your technicians need to wrap-up jobs on time and on budget.



## Bracket Adapter for Trane



### Application

Bracket to adapt 48 frame motors to Trane Cap-Can motor mounting

### Features

- Includes bracket and 8 bolts

Replace an OEM Cap-Can motor mount design



with a Standard 48 frame motor and TR001 bracket



Item ID	Brand
TR001	Packard

## Shaft Adapter



### Features

- Used on unit bearing motors

Item ID	I.D. (In.)	Length (In.)
A60098	1/4	1

## Shaft Adapters



### Features

- 5 per package

Item ID	Dimensions (In.)		
	I.D.	O.D.	Length
A80427K	1/4	5/16	1.00
A80513K	5/16	3/8	1.00
A80082K	3/8	1/2	1.00
A60097K *	1/2	5/8	1.50

\* Split bushing with key.



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## Brake Kits - Single and Three Phase Motors - Stearns 56000 Series Brake Kits

Selection Chart (used to select brake size)

### Features

- These kits include a brake mounted to an external cast aluminum fan guard
- Designed for easy field installation on Marathon's Four-In-One motors, 56, 143 and 145 frames only

Motor H.P.	Brake Motor Shaft RPM		
	lb-ft @3600	lb-ft @1800	lb-ft @1200
1/4	—	—	3
1/3	—	3	3
1/2	3	3	3
3/4	3	6	6
1	3	6	6
1 1/2	6	10	10
2	6	10	—

Non-stock items

Torque Rating (lb-ft)	115/208-230 Volt		208-230/460 Volt		575 Volt		Weight All
	Item ID	Kit No.	Item ID	Kit No.	Item ID	Kit No.	
3	<b>A306M</b>	KIT 3BRK1	<b>A301M</b>	KIT 3BRK3	<b>A297M</b>	KIT 3BRK3A	10
6	<b>A307M</b>	KIT 6BRK1	<b>A302M</b>	KIT 6BRK3	<b>A298M</b>	KIT 6BRK3A	11
10	—	—	<b>A303M</b>	KIT 10BRK	<b>A299M</b>	KIT 10BRKA	10

## Brake Kits - Single and Three Phase Motors - Dings Brake Kits

### Features

- These kits include a brake mounted to an external cast aluminum fan guard
- Designed for easy field installation on Marathon's Four-In-One motors, 56, 143 and 145 frames only

Non-stock items

Torque Rating (lb-ft)	115/230 Volt		208-230/460 Volt		575 Volt		Weight All
	Item ID	Kit No.	Item ID	Kit No.	Item ID	Kit No.	
3	<b>A1306M</b>	KIT BRK-3 115/230	<b>A1301M</b>	KIT BRK-3 208-230/460	<b>A1297M</b>	KIT BRK-3 575	3
6	<b>A1307M</b>	KIT BRK-6 115/230	<b>A1302M</b>	KIT BRK-6 208-230/460	<b>A1298M</b>	KIT BRK-6 575	10
10	—	—	<b>A1303M</b>	KIT BRK-10 208-230/460	<b>A1299M</b>	KIT BRK-10 575	10

## Stearns 56000 Series Brake Kits - Inverter Duty TENV Black Max® and Blue Max® Motors - E3

### Features

- These brake kits fit on both Black Max® and Blue Max® TENV motors
- These can also be used together with the double C-Face SL56 encoder to make a closed loop inverter brake motor

Non-stock items

Torque Rating (lb-ft)	115/230 Volt		208-230/460 Volt		575 Volt		Weight All
	Item ID	Kit No.	Item ID	Kit No.	Item ID	Kit No.	
6	<b>A317M</b>	KIT BM6BRK115	<b>A312M</b>	KIT BM6BRK	<b>A315M</b>	KIT BM6BRK575	7
10	<b>A318M</b>	KIT BM10BRK115	<b>A313M</b>	KIT BM10BRK	<b>A316M</b>	KIT BM10BRK575	7

For normal (140%) torque rating, do not apply on motors larger than 2 HP. Reduced braking torque and/or longer stopping times can result from applying an undersized brake on higher HP motors.

## Vertical Modification Kit (Stearns 87,000 series)

### Features

- Includes required hardware to accommodate vertical above (shaft down) or vertical below (shaft up) mounting

Non-stock items

Torque Rating (lb-ft)	Mounting			Item ID	Model No.	Weight
	Shaft Up	Shaft Down				
25, 35	Not req'd	Required		<b>A157M</b>	KIT VRT87BRK	3
50, 75, 105	Required	Required				

## Double C-Face Coupler Brakes - Includes a 5/8" sleeve

Non-stock items

Torque Rating (lb-ft)	Enclosure NEMA 2, IP-23 208-230/460V		Enclosure NEMA 4, IP-54 208-230/460V		Enclosure NEMA 4X, IP-55 208-230/460V		Weight All
	Item ID	Kit No.	Item ID	Kit No.	Item ID	Kit No.	
3	<b>A903M</b>	KIT 903	<b>A906M</b>	KIT 906	<b>A909M</b>	KIT 909	12
6	<b>A904M</b>	KIT 904	<b>A907M</b>	KIT 907	<b>A910M</b>	KIT 910	12
10	<b>A905M</b>	KIT 905	<b>A908M</b>	KIT 908	<b>A911M</b>	KIT 911	12



## Drip Cover Kits

### Features

- 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 and vertical shaft down applications
- Note: kit 234, the mounting holes have a 4.80 bolt circle

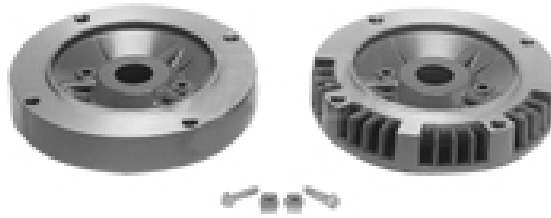


Non-stock items

Item ID	Frame	Kit No.	Enclosure	Weight
A234M	48-184T("629")	KIT 234	ODP OR TEFC	2
AG234M	48-56	161L528AAG1	5K MDLS ODP	2
A201M	182T-184T	KIT 201	ODP	3
A662M	182T-184T	KIT 175614	ODP (TTDW)	15
A197M	182T-184T	KIT 197	TEFC (4-IN-1)	3

## C-Face Kits

For information on Marathon C-Face Kits, please contact Packard at 800.334.1769.



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PACKARD!**

**CHARLIE SWETT**  
Strategic Account Manager

### Customer Focused...

“ means that we perform on a day to day basis with the understanding that we are here for the customer. Packard is one of those rare companies that truly puts the customer first knowing that when you do, sales and profits will follow. It has been part of our culture for 50 years and our standing today is testimony to the fact that being customer focused works.”

## EC Motor Tester



**Application**

For use with EC Motors

**Features**

- Analyzes GE EC motors independent of the HVAC system
- Test basic settings of Fan-only, Heating, Cooling, Dehumidify and Variable Speed
- Detect and isolate motor failures from HVAC system failures

Item ID	Brand
GA447	FASCO

## Conduit Box with Adjustable Bracket



**Applications**

- For use on 48 & 42 Frame Motors

**Features**

- Encloses Electrical Connections
- Includes Adjustable Bracket

Item ID	Brand
TACBB1	Packard

## Flex Mount Brackets



**Features**

- 3-Leg Torsion-Flex Brackets
- Designed to effectively isolate and prevent torsional vibrations from reaching blower housing and causing noise
- No preassembly; bracket clamps to motor shell. Includes 3 Grommets, 1 Bolt, 1 Nut, 3 Steel Washers

Item ID	Diameter (In.)
TFM50	5
TFM55	5 5/8

## Four Leg Torsion Flex Mount Bracket



**Application**

For use with 5 5/8" Diameter Motors

**Features**

- Helps isolate and prevent torsional vibrations from reaching blower housing and causing noise

Item ID	Diameter (In.)
TFM554	5 5/8

## Flex Mount Bracket Adjustable Diameter



**Application**

For use with 5" or 5 5/8" Diameter Motors

**Features**

- Plastic insert allows you to adjust for 5" or 5.5" diameter
- 3-Leg Torsion-Flex Brackets
- Designed to effectively isolate and prevent torsional vibrations from reaching blower housing and causing noise
- No preassembly; bracket clamps to motor shell. Plastic inserts supplied for adapting bracket to NEMA 42 frame.

Item ID	Diameter (In.)
TFM556	5 or 5 5/8

## Mounting Brackets



### Application

Used to mount motor to blower housing

### Features

- Kit includes: steel bracket with 3 welded legs, 3 steel sleeves, & 3 sets of rubber grommets

Item ID	Diameter (In.)	Frame
A60042	5	42
A60048	5 5/8	48

## Mounting Brackets



A80293, A80295



KIT50L



KIT55L

Item ID	Diameter (In.)	Bolt Circle	Brand
A80293	5.5	6 7/8 - 8 1/8	Packard
A80295*	5.5	8 1/8 - 12 1/8	Packard
KIT50L*	4.4 & 5	6 1/2 - 11 1/2	Fasco
KIT55L*	5.5	8 1/8 - 12 1/8	Fasco

Notes:

\*Has extended lugs

## Universal Lug Mounting Bracket



### Application

For use with 5 5/8" Diameter Motors

### Features

- Two mounting options. Small slots accepts 1/4" bolt. Large hole accepts 3/4" Rubber Grommet Kit (A60049K).

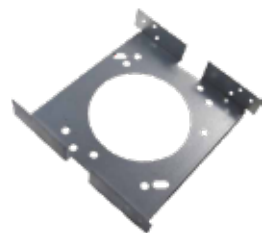
Item ID	Diameter (In.)
1410A	5 5/8

## Unit Bearing Mounting Bracket



Item ID	Shaft Height (In.)	Bracket Height (In.)
A11601	4 1/8	2 7/32
A11602	4 9/16	2 41/64
A11603	5 3/8	3 29/64
A11605	6 1/4	4 5/16

## Motor Mounting Bracket for Rheem



### Features

- Butt-Mount Bracket
- Galvanized stamped-steel bracket mounts 5-5/8" diameter motors in Rheem-Ruud condensing units
- For NEMA 48 frame motors

Item ID	Brand	Replaces
A60306K	Packard	Rheem AS-55306-02

## FLEX Mounting Bracket for Rheem



### Application

Replaces mounting bracket on direct-drive blowers in Rheem furnaces

### Features

- Torsion-Flex Bracket Kit
- Includes 4 brackets and 8 mounting screws

Item ID	Brand	Replaces
A61698K	Packard	Rheem AE-61698-01 AE-61698-02

## Mounting Kit



### Features

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

Item ID	Brand
KIT200	Fasco

## Unit Bearing Motor Bracket



### Features

- Adjustable for motor shaft height 4-1/8" to 5-3/8"
- Includes 2 studs and bracket

Item ID	Brand
A68004	Packard

## Motor Bracket



### Features

- Bracket for 48 Frame Motor in York Units
- 5.5 mounting bracket
- 11 bolt circle diameter
- Kit includes: bracket with 3 welded legs, rubber grommets and mounting hardware

Item ID	Brand	Replaces
A60459	Packard	York 326-31459-000 York 02626372000, York 37308073700, York 3730807300

## Evergreen Belly Band Mounting Kit



Item ID	Mounting I.D. (In.)
5K003	10
5K004	11
5K005	13

## Fasco Bases



- NOTE: The 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: B35417 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
- \*B dimension is the mounting dimension between mounting rings, center to center

Cradle Base "B" Dimension	3.54	3.86	4.08	4.17	4.35	4.61	4.79	4.92	5.17	5.42	5.58	5.95	7.05
3" Shaft Height	B30354	B30386	B30408	—	B30435	B30461	B30479	B30492	B30517	B30542	B30558	B30595	B30705
3 1/2" Shaft Height	B35354	B35386	B35408	B35417	B35435	B35461	B35479	B35492	B35517	B35542	B35558	B35595	B35705

## Condenser Fan Rainshield



### Features

- Fits NEMA 42, 48 or 56 frame motors
- Disc Type

Item ID	Dimensions (In.)	
	Bore Dia.	O.D.
A61000	1/2	6.88
A61056	5/8	6.88

## Condenser Fan Rainshield Deep Dish Style



### Features

- Made of phenolic with internal cooling fins for increased motor efficiency

Item ID	Dimensions (In.)	
	Bore Dia.	O.D.
A80105	1/2	7

## Rainshields - Plastic Deep Dish Style



### Application

Fits NEMA 42, 48 or 56 frame motors

Item ID	Dimensions (In.)	
	Bore Dia.	O.D.
1411A	1/2	7
1412A	5/8	7

## Shaft Extension Kits



### Features

- Includes shaft coupler & shaft

Item ID	Diameter	Length
A61308K	1/4"	4 1/2"
A61310K	5/16"	4 1/2"
A61475K	1/2"	4 1/2"

## Shafts

### Features

- SAE 1018 Cold Rolled Steel
- Ground and Polished



Item ID	Diameter (In.)	Length (In.)
S38220501	5/8	20
S38209601	3/4	20
S38269301	3/4	35
S38209501	1	25
S38249201	1	35

## Rubber Grommet Kit



### Features

- Used for 3/4 inch slots. Sheet metal screws and sleeves included. 3 per package.

Item ID	Brand
A60049K	Packard

## Rubber Grommet Kit



### Features

- Used for 1/2 inch slots. 6 per package.

Item ID	Brand
A60047K	Packard

## Resilient Mounting Rings

**Application**

For Mounting 48 Frame Motors in Rheem Condenser Units

**Features**

- 2 per package



Item ID	Hub Ring Diameter (in.)
1182A	2 1/2



Item ID	Hub Ring Diameter (in.)
1220A	2 1/4
1255A	1 3/4

## Rubber Vibration Insulators



**Application**

Eliminates noise and excessive vibration. Used for motors, compressors, fans, pumps, etc.

**Features**

- Used on Coleman motors
- 4 per package

Item ID	Stud Dimension (In.)
A61519K	3/8 x 8-32 x 3/8

## End Frame Length Adapter Kit



Item ID: 615059-001

**Features**

- Use on 5" & 5 1/2" Century-extended through bolt motors to gain additional length to fit in old base
- Kit contains adapter plate with mounting ring, 4 split rings, 8 nuts and 4 lock washers
- Fits 5" motors with a 90 degree bolt pattern and 5 1/2" motors with 60-120 degree and 90 degree bolt patterns

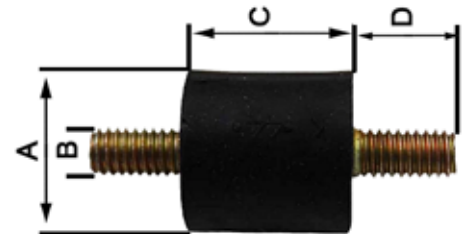
## Rubber Vibration Insulators

**Application**

Eliminates noise and excessive vibration. Used for motors, compressors, fans, pumps, etc.

**Features**

- 4 per package



Item ID	Dimension (In.)			
	A-Insulator Diameter	B-Screw Diameter	C-Insulator Width	D-Screw Length
A67804K	1	5/16	1	5/8
A67805K	1	1/4	3/4	1/2

## Rheem Mounting Cables

**Features**

- 4 per package



Item ID	Length (In.)	For Motor H.P.
A60325K	3 1/4	1/6
A60350K	3 1/2	1/4

## Speed Controls



### Features

- Solid State. Infinitely variable adjustment for single speed fan and blowers, kitchen appliances, etc.
- Use only with shaded pole and PSC motors
- UL Listed

Item ID	Max Amps	Volts	Mounting	Size (In.)
1233A	5	120	Wall	4 1/4 x 2
1234A	4	120	Panel	
1407A	5	240	Wall	4 1/4 x 2
1408A	10	120	Wall	4 1/2 x 4 1/2

## Conduit Box



### Application

For universal design motors with conduit connector holes only

### Features

- Mounts on one of the extended motor stud bolts

Item ID	Motor Diameter (In.)
KIT142	3.3
KIT144	4.4-5.0-5.6

## Conduit Kit



### Features

- 3/8" Conduit Connector
- Allen Stevens type, complete with mounting screws
- Packaged three per kit

Item ID	Brand
A60102	Packard

## Conduit Fitting



### Application

For 4 5/16" diameter motors

### Features

- Two-Piece—Stamped Steel 5 Pack

Item ID	Brand
1202A	Century



## 90 Degree Plug and Cord



### Features

- Used with unit bearing motors: plug and cord assembly
- UL recognized

Item ID

**PLUG018**

Length (In.)

25

## Straight Plug and Cord



### Features

- Used with unit bearing motors: plug and cord assembly
- UL recognized

Item ID

**PLUG119**

Length (In.)

25

## Anti-Wind Brakes



### Features

- Used to stop wind milling of rooftop motors

Item ID

**A60012**

Diameter (In.)

1/2

**A60058**

5/8

## Pitch Gauge



### Features

- To aid in determining pitch of the fan blade

Item ID

**PG5099801**

Brand

Packard

## Fan Blade & Blower Wheel Puller



### Features

- Max depth of 2.4 inches

### Application

Assists in the removal of a fan blade or blower wheel from a motor shaft

Item ID

**A89000**

Brand

Packard

## Hubs With Set & Mounting Screws



Item ID

Bore

Set Screws

**H60765801**

1/4"

1

**H60765803**

3/8"

1

**H60765804**

1/2"

2

**H60765805**

5/8"

2

**H60765806**

3/4"

2

## Capacitor Mounting Kit



### Features

- Bracket dimension: 2 1/8" x 1 1/4"
- Cover dimension: 1 5/8"

Item ID

**A60010**

Brand

Packard

## Cap Guard



### Features

- Weather proofs capacitor connections by simply sliding on to the capacitor
- Fits oval caps 2 thru 17.5MFD 370V and 2 thru 12.5MFD 440V
- Sheet metal screws included

### Item ID

A60000

### Brand

Packard

## Capacitor Brackets



### Features

- For motor start capacitors
- 5 per package

### Item ID

A76501

### Capacitor Length (In.)

4 3/8

A76502

3 3/8

A76503

2 3/4

## Capacitor Brackets



### Features

- For round motor run capacitors
- 5 per package

### Item ID

A75400

### Diameter (In.)

1 3/4

A75500

2

A75600

2 1/2



### Features

- For oval motor run capacitors
- 5 per package

### Item ID

A75100

### Dimensions (In.) Width x Depth

1 5/16 x 2 5/32

A75200

1 29/32 x 2 29/32

A75300

1 31/32 X 3 21/32

## Capacitor End Caps - Top Lead Hole



### Features

- For motor start capacitors
- Leads exit through bracket
- 5 per package

### Item ID

A76611

### Diameter (In.)

1 7/16

A76612

1 13/16

A76613

2 1/16

A76614

2 9/16

## Capacitor End Caps - Bottom Lead Hole



### Features

- For motor start capacitors
- Leads exit opposite bracket
- 5 per package

### Item ID

A76601

### Diameter (In.)

1 7/16

A76602

1 13/16

A76603

2 1/16

A76604

2 9/16

## Capacitor Jumpers



### Features

- With 1/4" female terminals
- 10 per package

### Item ID

A63004

### Length (In.)

4

A63006

6

## Capacitor Resistor With 1/4" Female Terminals



### Features

- With 1/4" female terminals
- 10 per package

Item ID	OHMS	Watts
A63106	15000	2

## Capacitor Resistor



### Features

- 10 per package

Item ID	OHMS	Watts
A63105	15000	2

## Rubber Boots



### Features

- Lead protectors for motor run capacitors
- 5 per package

Item ID	Hole Location
A76000	1 Hole on End
A76001	1 Hole on Top
A76002	2 Hole on Top
A76003	3 Hole on Side

## Digital Capacitor Tester



### Features

- Range 2 MFD to 2000 MFD
- Accuracy ±5%
- Color coded test leads
- Insulated rubber casing
- 9 Volt battery included
- Fuse protected

Item ID	Brand
CT1	Packard

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**GLEN GOLDREICH**  
Regional Sales Manager

*I'm proud to be a Packard employee owner...*

“ because I know that my contributions, and those of everyone at Packard, help our customers develop and maintain true partnerships with us. ”

## Fin Comb

### Application

Cleans and straightens fins

### Features

- Adjustable to 4 sizes per wrench
- Stainless steel teeth
- Cushioned handle
- Reversible

Item ID	Brand
PFC550	Packard



## Sand Screen



### Application

Used in preparation for brazing, soldering and epoxy repairs

Item ID	Roll Size
A52005	1 1/2" x 5 Yards
A52008	1 1/2" x 2 Yards
A52010	1 1/2" x 10 Yards
A52025	1 1/2" x 25 Yards

## Heat Gun



### Application

Used to defrost coils and frozen water pipes. To strip paint, remove adhesives, and many other uses.

### Features

- 120 Volt AC • 12 Amps • 4 tips included
- Double insulated • UL listed
- Low setting 750 Watts
- High setting 1500 Watts

Item ID	Brand
HG1000	Packard

## Hex Bit



Item ID	Length (In.)
PHB316	3/16

## Ratchet Wrench



### Features

- Reversible

Item ID	Square Size (In.)
PRW516	1/4-3/8-3/16-5/16



**What's inside matters  
when it comes to HVACR...**

...even the finishing touches.

## Caulk



### Features

- Sold in cases of 12

Item ID	Type
PS9980	Silicone, Aluminum Caulk in a 10.1 oz. tube
PS9981	Multipurpose Silicone, White in a 10.1 oz. tube
PS9982	Clear Silicone Caulk in a 10.1 Oz Tube
PS9983	High-Temp Red Caulk in a 10.1 Oz Tube

## TechTip >>>

from Packard Academy



**JOEY'S TIP**  
Joseph Laminack  
Product Engineer

To maximize air delivery, caulk should be used to seal joints and connections in air handling equipment and ductwork. Sealing joints and connections will also help to eliminate annoying air noise that can occur when air passes through a joint. The caulk will also help in keeping water out of the system.



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### Motor Data Request

\* REQUIRED

Company/Acct#	*	_____
Contact/Branch Location	*	_____
Phone/Email	*	_____
Motor Application <small>(EX. Blower, Evaporator, Condensing Fan, Ventilation Fan)</small>	*	_____
Manufacturer	*	_____
Model#	*	_____
Serial#		_____
Horsepower	*	_____
Voltage, Hertz and Phase <small>(EX. 208/230V 60Hz 1PH, 220/240V 50Hz 3PH)</small>	*	_____
RPM	*	_____
AMPS	*	_____
Speed Taps		_____
Frame		_____
Enclosure		_____
Shaft Dimension	*	_____
Mounting Type	*	_____
Bearing Type		_____
Capacitor Rating		_____
What equipment did it come out of? <small>(EX. Home refriger., Restaurant side-by-side refriger., Residential cond. unit, Refriger. condensing unit)</small>	*	_____

**Notes:**

## Kelvion Request Form

Confidential

To obtain a quotation for your replacement product, give as much data as possible and e-mail/fax the completed questionnaire to Packard. Fax 770-427-5140, email customerservice@packardonline.com

Company _____	Contact: _____
Address _____	Title: _____
_____	Phone: _____
City _____	Fax: _____
State, Zip _____	Email: _____

**Application:** \_\_\_\_\_  
 (Example: Evaporator, Condenser, Subcooler, ETC.)

Application Data (specify if °C)	Hot Side	Cold Side
Name of Fluid*		
Rate of Flow* (GPM)		
Entering Fluid Temp* (°F)		
Leaving Fluid Temp (°F)		
Maximum Permissible Pressure Drop (PSI)		
Target Evaporator Temp/Design Pressure* (°F/PSI)		
Superheat (°F)		
Load (Btu/H)*		
Maximum Working Pressure (PSI)		
Target Condensing Temperature* (°F)		
Gas Entering Temperature (°F)		
Subcooling (°F)		
Fluid Fouling Factor (h•ft <sup>2</sup> •°F/Btu)		

Need at least 5 data points. Items marked with \* must be filled in. (If applicable to application desired.)

<b>Preferred Plate Material (REQUIRED):</b>	<input type="checkbox"/> 304 SS	<input type="checkbox"/> 316 SS	<input type="checkbox"/> Titanium	<input type="checkbox"/> Other:
<b>Preferred Gasket Material:</b>	<input type="checkbox"/> NBR	<input type="checkbox"/> Viton	<input type="checkbox"/> EPDM	<input type="checkbox"/> Other:
<b>Certification:</b>	<input type="checkbox"/> ASME	<input type="checkbox"/> CRN	<input type="checkbox"/> ARI400	<input type="checkbox"/> Other:
<b>Product:</b>	<input type="checkbox"/> GPHE	<input type="checkbox"/> GEABloc	<input type="checkbox"/> GEABox	<input type="checkbox"/> GEAShell <input type="checkbox"/> BPHE:

<b>Comments:</b>

## Compressor/Condensing Unit Request From



### Compressor/Condensing Unit Data Request

**\*REQUIRED**

Company/Acct#	*	_____
Contact/Branch Location	*	_____
Phone/Email	*	_____
Compressor/Condenser	*	_____
Manufacturer:		_____
Model#	*	_____
Serial#		_____
Code/BOM#		_____
Voltage, Hertz and Phase (EX. 208/230V 60Hz 1PH, 220/240V 50Hz 3PH)	*	_____
Current Refrigerant	*	_____
Alternative Refrigerant (If changing refrigerant)		_____
Box Temperature (Low -10°F/0°F, Med 30°F/35°F, High 55°F +)	*	_____
<b>OR</b>		
Evaporator Temperature (Low -20°F/-10°F, Med 20°F/25°F, High 45°F +)		_____
What equipment did it come out of? (EX. Home refrig., Restaurant side-by-side refrig., Residential cond. unit, Refrig. condensing unit)	*	_____

**Notes:**

## Aftermarket Terms and Conditions

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1. Prices are those in effect at time of shipment. Prices are subject to change without notice.
2. Minimum order requirement is \$25.00.
3. All shipments are F.O.B. shipping point.
4. Wholesale single release orders of \$2000.00 or more receive prepaid freight to the first destination within the continental U.S. Method of shipment is at the discretion of Packard. Orders less than \$2000.00 will be shipped freight prepaid with the freight charge added to the invoice. If the customer specifies the carrier on a charge freight order, the order will be shipped freight collect.
5. Air shipment or other premium shipping method may be requested at the customer's expense.
6. Claims for shortages and damages must be reported within five business days following the date of delivery. Shortages and/or other visible damages to the exterior packaging must also be noted on the bill of lading. Claims are subject to count/inspection. Damaged product is to be kept for 90 days after claim is reported unless otherwise directed by Packard.
7. Terms: Net 30 to all customers having approved credit standing.
8. Return authorization must be obtained from Packard by the wholesaler before returning any products. Merchandise cannot be returned without a return authorization form.
9. Returnable items will receive a 20% - 50% restocking charge, depending on manufacturer. Customer pays return freight. All returns must be within 30 days from date of shipment and be new, in original packaging, clean and unmarked. Non-stock specialty items are not returnable.
10. Possession of this catalog does not constitute an offer to sell.

## Warranty Procedures

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1. All items sold by Packard, Inc. are warranted against defects in workmanship or materials under normal use for a period of one (1) year. Products are covered for up to a maximum of two (2) years from the manufacturer's date code on the product or one year after installation, whichever comes first.
2. No warranty is made as to the fitness of vendor's products for a purpose. Buyer acknowledges that it alone has determined that the goods purchased will suitably meet the requirements of their intended use. In no event will Packard be liable for consequential, incidental or other damages.
3. For products other than those listed below, please MAIL the original nameplate (label or sticker) for each item. Copies of labels will NOT be accepted. Please do NOT fax or email labels!
4. A reason for failure MUST be provided for each item on the warranty claim.
5. Credits are NOT to be taken by customer until merchandise or original nameplate has been received by Packard, Inc. and credit is issued.
6. Credit will be issued upon verification of purchase history for ORIGINAL labels dated within manufacturing date code requirements.
7. Do not field scrap products until credit has been issued.
8. In the event Packard or the manufacturer requires evaluation of warranty items, Packard will issue a return authorization form. Do not return warranty items unless requested.
9. Please contact Packard Warranty for these products prior to mailing claims.

\* Danfoss, Embraco, Bristol, LG and SECOP compressors and condensing units require a warranty request form (available on Packard's website).

\* ICM controls and Kelvion (formerly FlatPlate and GEA) heat exchangers must be returned to the factory for warranty evaluation, so please call Packard Warranty for return authorization.





# CREDIT APPLICATION FORM

Customer Number:



## Credit Application Business Account

Packard, Inc.  
2700 Barrett Lakes Blvd. NW  
Suite 100  
Kennesaw, GA 30144  
Phone: 770.427.5765  
Fax: 770.427.5140  
customerservice@packardonline.com

### BUSINESS CONTACT INFORMATION

Contact Name:		Title:	
Company Name:		Buying Group:	
Phone:	Fax:	E-mail:	
Physical Address:			
City:		State:	Zip Code:
Mailing Address:(If Different)			
City:		State:	Zip Code:
Shipping Address:(If Different)			
City:		State:	Zip Code:
Type of Business:		Date Business Commenced:	
<input type="checkbox"/> Sole Proprietorship:	<input type="checkbox"/> Partnership:	<input type="checkbox"/> Corporation:	<input type="checkbox"/> Other:
Purchasing Agent:		Email Address:	
Payables Contact:		Email Address:	
Sales Tax Exemption Number:		<i>(Please attach a copy of the Certificate)</i>	

### BANK INFORMATION

Bank Name:		Contact:	
Phone:	Fax:	Email:	
Checking Account Number:		Savings Account Number:	

### BUSINESS/TRADE REFERENCES

Company Name:			
Address:			
City:		State:	Zip Code:
Phone:	Fax:	E-mail:	
Type of Account:			
Company Name:			
Address:			
City:		State:	Zip Code:
Phone:	Fax:	E-mail:	
Type of Account:			
Company Name:			
Address:			
City:		State:	Zip Code:
Phone:	Fax:	E-mail:	
Type of Account:			

### AGREEMENT

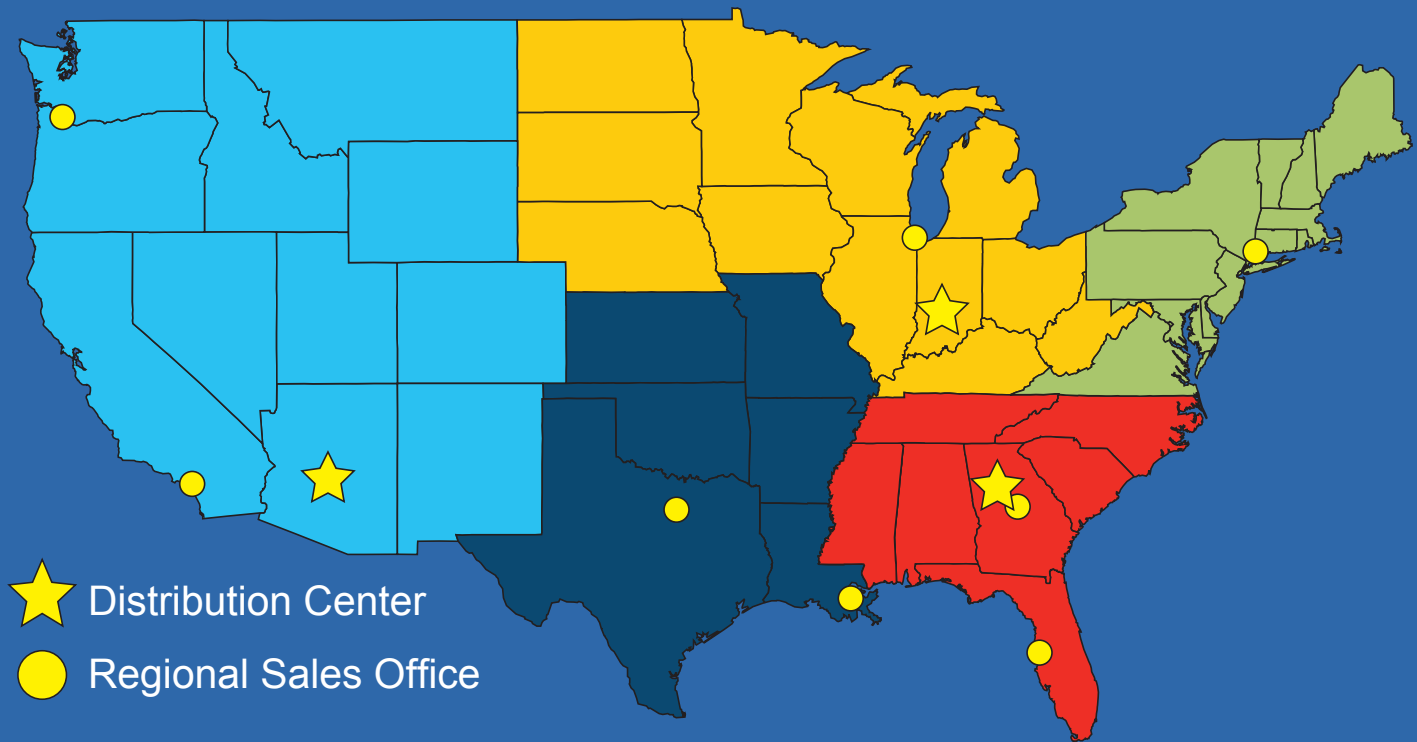
SHOULD YOU APPROVE THIS APPLICATION, I (WE) AGREE TO PAY FOR ALL GOODS PURCHASED WITHIN THE GIVEN NET 30 DAY TERMS ON EACH INVOICE. PACKARD INC. IS AUTHORIZED TO CONTACT ANY REFERENCES OR BANKS LISTED ABOVE. IT IS UNDERSTOOD THAT ANY INFORMATION SO OBTAINED WILL BE USED SOLELY FOR GRANTING CREDIT. SERVICE CHARGES AT THE HIGHEST RATE PERMITTED BY STATE LAW WILL BE APPLIED TO PAST DUE ACCOUNTS.

### SIGNATURES

Title:	Title:
Date:	Date:

*\*Please email application and attachments to customerservice@packardonline.com.*

# 3 locations nationwide!



With more locations, we continue to increase our stock availability creating even better fulfillment of your HVACR needs.

## Corporate Headquarters and Distribution Center

2700 Barrett Lakes Blvd. NW, Suite 100  
Kennesaw, GA 30144

## Midwest Distribution Center

2570 N. Shadeland Ave., Suite 103  
Indianapolis, IN 46219

## West Coast Distribution Center

6151 W. Erie St.  
Chandler, AZ 85226

Local: 770-427-5765

Toll Free: 800-334-1769

Fax: 770-427-5140

email: [customerservice@packardonline.com](mailto:customerservice@packardonline.com)

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With over 60 years of experience in compressor technologies, we have strengthened our position as a performance leader with the acquisition by Nidec Corporation. Under the Nidec Corporation, we will now be able to utilize the

synergies that exist between motor and advanced compressor technologies, further strengthening our commitment to be the leader in advanced compressor technologies around the world. Welcome to Nidec Global Appliance.

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Nidec Global Appliance is achieving the perfect balance between performances and cost in the development of its new families of environmentally friendly compressors.

Since the divestiture from Danfoss in 2010, Nidec Global Appliance has invested millions of dollars developing new products utilizing the environmentally friendly refrigerants, launching innovative variable speed technology, as well as upgrading the current portfolio. With a focus on single piston reciprocating compressors, we are delivering superior compressors to the market. This includes upgraded features such as copper tubes and mounted electrical components. These improvements were implemented to save you time and money.

SETTING THE STANDARD



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*Packard supplies to wholesale distribution only.*