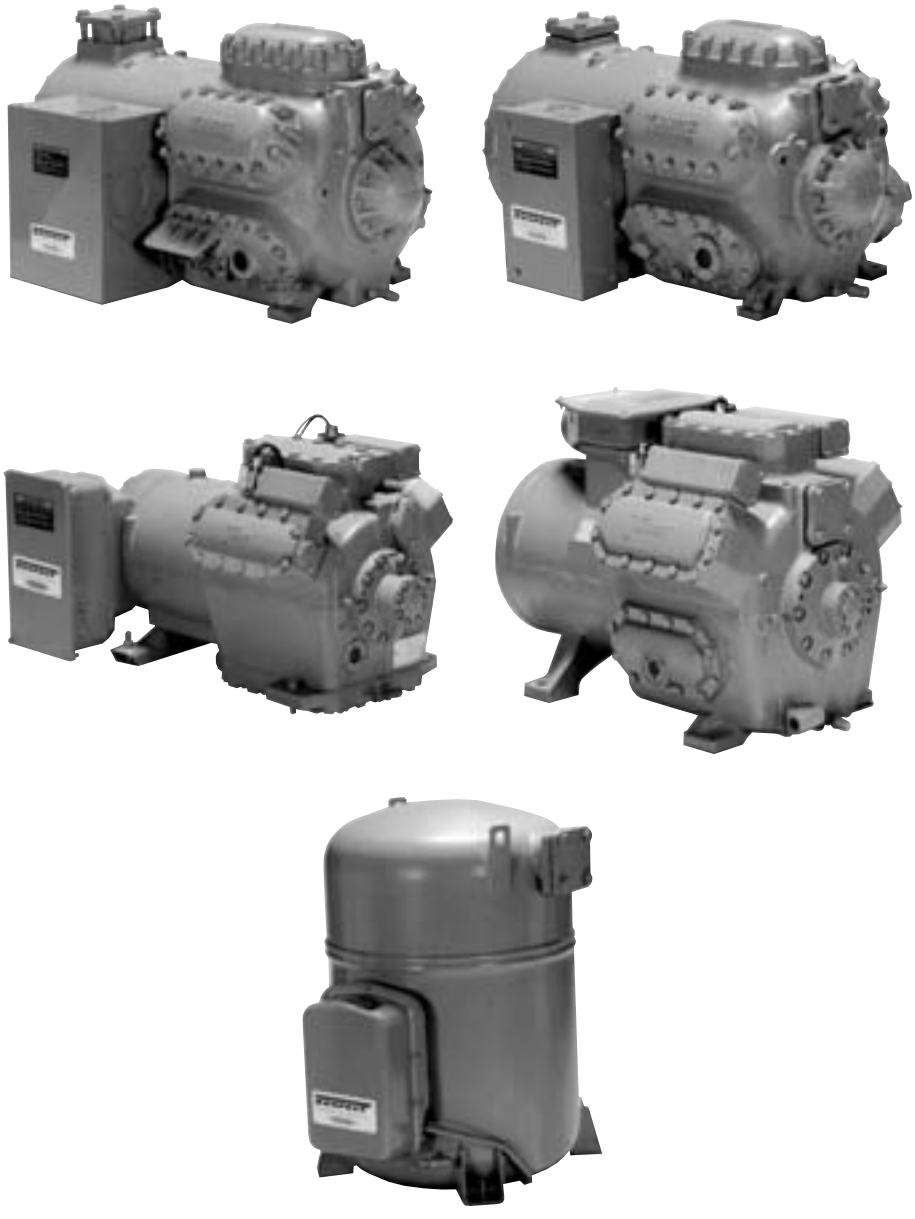
TRANE®

Reciprocating Service Compressors



January 2004

RSP-PRC028-EN

Contents

NOTICE

Warnings and Cautions appear at appropriate locations throughout this manual.
Read these carefully.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices and where property-damage-only accidents could occur.

General Information

Model A and B
Open Drive Compressors

NOTE: The Model A and B compressors are offered only in the Series 6000 product line.

Description

The Trane Model A and B compressors are unloading, cast iron open drive accessible compressors. The compressor oil pump is reversible for operation in either direction. The compressor unloading is suction pressure actuated.

Basic Variations

There is one optional basic variation to the A and B compressors: it is standard compressor-right hand. This variation moves the unloader handhole cover, which also houses the sightglass, to the right hand side of the compressor, as viewed from the discharge valve end of the compressor. This option is for convenience of viewing the oil sightglass or access to the unloader handhole cover. It was also used on units that had two compressors that were driven from a double extended shaft motor. These units typically used a standard compressor and a right hand compressor.

This variation will also allow the oil sight glass to be on the same side of the unit, should the compressor be applied with a double extended shaft motor.

Lifting and Handling

Both the A and B compressors have tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one hour before trying to start the compressor.

Storage

The compressors are shipped with a nitrogen charge and the connections are sealed with closure plates; unless the optional service valves have been ordered for factory installation. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 140 F and 95% RH non condensing.

Mounting and Vibration Isolation

Mounting

Since the Model A and B compressors are open drive units, the compressor must not be mounted on isolators. The compressor along with its prime driver should be mounted on a common base. The common base can then be isolated as an assembly from the rest of the unit if desired.

The mounting pads for the compressor and the prime mover must be flat to provide a surface for proper alignment and shimming of the compressor and prime driver. The base must also be rigid to prevent the compressor shaft and motor shaft from flexing during operation. If flexing occurs, coupling misalignment will occur and result in a failure of the crankshaft. Angular and parallel alignment should not exceed 0.010 inches total indicated reading. See the coupling section for the alignment of the coupling. The compressor mounting feet have .5625 inch diameter holes for mounting.

Refrigeration Connections

Service Valves

Both the A and B compressors are designed to accept optional service valves and are designed for sweat connection utilizing a brass connection. The service valves bolt directly to the compressor. The refrigerant connection size for the individual compressor model is listed on the compressor dimensional data sheets. Whenever brazing refrigerant piping, use a nitrogen purge to prevent the formation of copper oxides. The presence of copper oxides in the compressor is detrimental to the reliability of the compressor.

Pressure Testing

The maximum highside test pressure is 300 psig. The maximum lowside pressure is 200 psig. The differential between highside and lowside should not exceed 300 psig. Never exceed the pressure setting of any relief valves that may be installed in the system.

⚠ WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

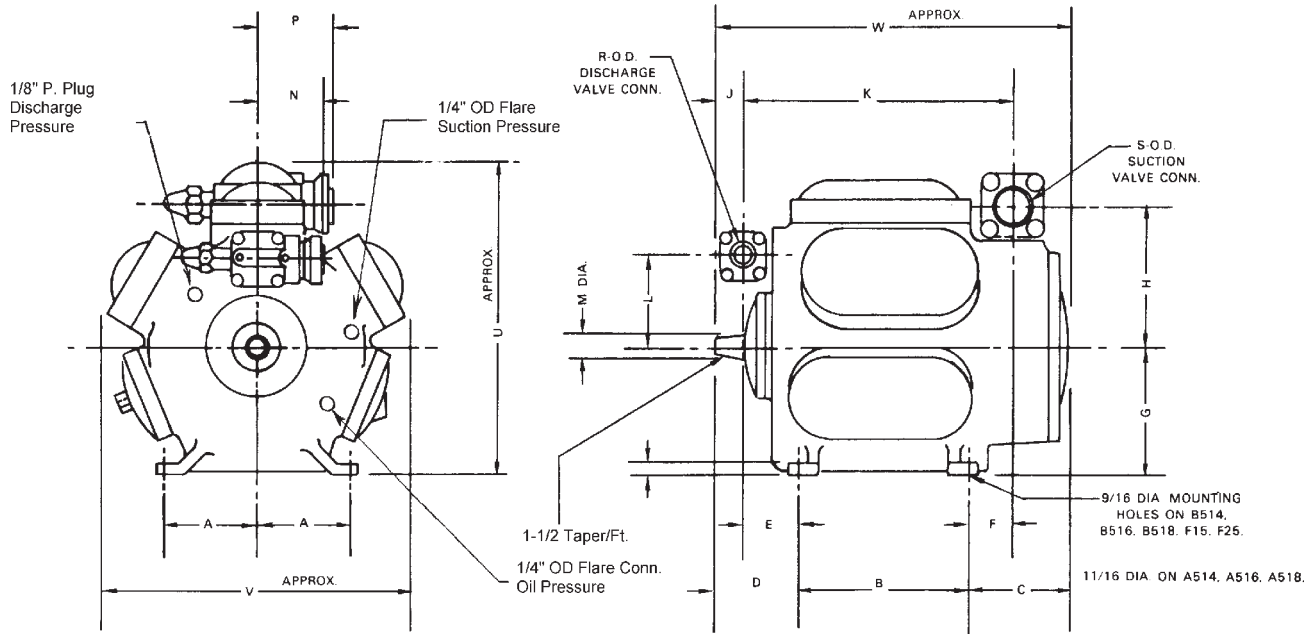
ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

SERIES 6000
Cast Iron Compressors

Model A and B
Open Drive Compressors (Cont.)

Model A and B Compressors

Compressor Model Number	Capacity (Tons) (Tons)	Current Rebuild COM Number	Old Remanufactured COM Number	Weight (Lbs.)
B514	10	COM06366	COM 0001	460
B516	15	COM06367	COM 0002	500
B518	20	COM06368	COM 0003	520
A514	25	COM06369	COM 0004	755
A516	40	COM06370	COM 0005	780
A518	50	COM06371	COM 0006	810
A518R	50	COM06372	COM 0008	810
2B514	15	COM06373	COM 0022	460
2B516	25	COM06374	COM 0023	500
2B518	30	COM06375	COM 0024	520
2A514	40	COM06000	COM 0025	755
2A516	60	COM06376	COM 0026	780
2A518	75	COM06001	COM 0027	810
2A516R	60	COM06377	COM 0028	780
2A518R	75	COM06378	COM 0029	810
A516R	40	-	COM 2492	780
2B514L	15	-	COM 2501	460



MODEL A AND B DIMENSION AND PRESSURE PORTS

Model A and B
Open Drive Compressors (Cont.)

Model A and B Compressor Dimensional Data

Compressor Model Number	Cap. Tons	Refr	No. Cylinders	A	B	C	D	E
A514	25	12	4	7.500	12.938	9.125	5.688	3.563
2A514	40	22	4	7.500	12.938	9.125	5.688	3.563
B514	10	12	4	6.250	10.750	6.688	4.813	3.125
2B514 (L)	15	22	4	6.250	10.750	6.688	4.813	3.125
A516 (R)	40	12	6	7.500	13.688	9.125	5.688	3.563
2A516 (R)	60	22	6	7.500	13.688	9.125	5.688	3.563
B516	15	12	6	6.250	11.375	6.688	4.813	3.438
2B516	25	22	6	6.250	11.375	6.688	4.813	3.438
A518 (R)	50	12	8	7.500	14.438	9.125	5.688	4.313
2A518 (R)	75	22	8	7.500	14.438	9.125	5.688	4.313
B516	20	12	8	6.250	12.000	6.688	4.813	3.438
2B516	30	22	8	6.250	12.000	6.688	4.813	3.438

Compressor Model Number	F	G	H	J	K	L	M	N
A514	3.875	10.000	11.688	2.375	20.375	6.938	2.000	5.125
2A514	3.875	10.000	11.688	2.375	20.375	6.938	2.000	5.125
B514	2.813	8.250	9.188	1.6875	16.6875	5.875	1.500	4.000
2B514 (L)	2.813	8.250	9.188	1.6875	16.6875	5.875	1.500	4.000
A516 (R)	3.875	10.000	12.250	2.500	21.125	6.938	2.000	5.125
2A516 (R)	3.875	10.000	12.250	2.500	21.125	6.938	2.000	5.125
B516	2.813	8.250	9.188	2.500	17.625	5.875	1.500	5.125
2B516	2.813	8.250	9.188	2.500	17.625	5.875	1.500	5.125
A518 (R)	3.875	10.000	12.250	3.125	22.500	6.938	2.000	5.813
2A518 (R)	3.875	10.000	12.250	3.125	22.500	6.938	2.000	5.813
B516	2.813	8.250	9.188	2.500	18.250	5.875	1.500	5.125
2B516	2.813	8.250	9.188	2.500	18.250	5.875	1.500	5.125

Compressor Model Number	P	T	U	V	W	R OD Disch	S OD Suct
A514	5.813	0.750	24.750	24.500	28.000	2.125	3.125
2A514	5.813	0.750	24.750	24.500	28.000	2.125	3.125
B514	5.125	0.750	19.813	20.125	22.438	1.625	2.125
2B514 (L)	5.125	0.750	19.813	20.125	22.438	1.625	2.125
A516 (R)	7.188	1.000	25.750	26.500	28.875	2.625	4.125
2A516 (R)	7.188	1.000	25.750	26.500	28.875	2.625	4.125
B516	5.813	0.750	20.031	21.875	24.000	2.125	2.125
2B516	5.813	0.750	20.031	21.875	24.000	2.125	2.125
A518 (R)	7.188	1.000	25.750	27.500	30.875	3.125	4.125
2A518 (R)	7.188	1.000	25.750	27.500	30.875	3.125	4.125
B516	5.813	0.750	19.938	22.375	24.625	2.125	2.625
2B516	5.813	0.750	19.938	22.375	24.625	2.125	2.625

Note: For information pertaining to the replacement of a Model A or B compressor with a Model E or F, reference service bulletin HCOM-SB-43.

Shaft diameters and tolerance:

A514, 2A514
A516, 2A516 — All 2.000 / 1.999
A518, 2A518

B514, 2B514
B516, 2B516 — All 1.500 / 1.499
B518, 2B518

All shafts center tapped for 5/8-18 screw

Model E Open Drive Compressors

Description

The Trane Model E compressor is an unloading, cast iron, open-drive accessible compressor. The compressor oil pump is reversible for operation in either direction. The compressor unloading options are suction pressure-actuated or electric solenoid-actuated, with electric-actuated available either compressor-mounted or remote mounted.

Basic Variations

There are three optional basic variations to the E compressors:
1) 100 percent unloaded start;
2) Standard compressor-right hand;
or 3) 100 percent unloaded start-right hand.

100 Percent Unloaded Start

This variation provides the capability to start the compressor 100 percent unloaded. This lowers the torque required to start the compressor. This variation is typically used on open compressors when it is desirable to reduce the starting torque because the electric motor or other prime mover device does not have sufficient torque to overcome the starting torque of the compressor. The standard non-unloaded starting torque's are listed on the compressor "Data Sheets".

The 100 percent unloaded start compressor has unloaders on all cylinders. The unloaders on the non-capacity controlled cylinders are piped directly to the oil lubrication system and load up as soon as the compressor develops oil pressure and remain so until the compressor is stopped.

Standard Compressor-Right Hand

This variation moves the unloader handhole cover, which also houses the sightglass, to the right hand side of the compressor as viewed from the discharge valve end of the compressor. This is the opposite side as shown on the compressor "Data Sheets".

This option is for convenience of viewing the oil sightglass or access to the unloader handhole cover. If the unit configuration dictates that the standard compressor cannot be mounted so the oil sightglass can be viewed or the unloader handhole cover is easily accessible, then a right hand compressor should be considered.

This variation will also allow the oil sightglass to be on the same side of the unit should the compressor be applied with a double extended shaft motor.

100 Percent Unloaded Start-Right Hand

This variation is a combination of the two previous variation.

Low Temperature Applications - (Low Lift Valves)

When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required. Low lift valves are required to prevent valve flutter which could result in broken suction valves and springs.

Lifting and Handling

The E compressor has tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one (1) hour before trying to start the compressor.

Pressure Testing

The maximum highside test pressure is 500 psig. The maximum lowside pressure is 350 psig. The differential between highside and lowside should not exceed 340 psig.

Oil Charge

The E compressor ships with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane compressor service bulletin; HCOM-SB-4F, "APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

Operation

The E compressor must be protected from direct exposure to rain and other weather. The operating ambient must not exceed 125 F. This is based on a maximum condensing temperature of 147 F.

⚠ WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® Compressors

Model E Open Drive Compressors (Cont.)

ReSpecT®

Model E - Open Drive Compressors

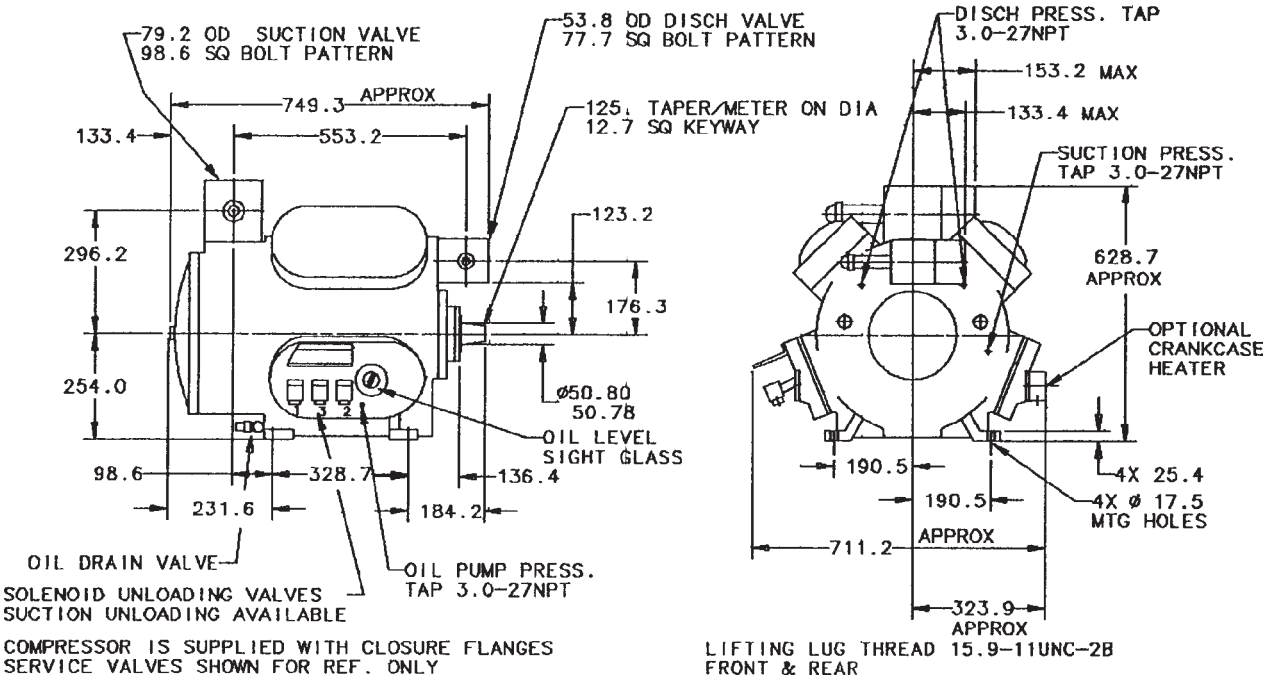
COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM01447	CROE500O3**P1R*****	CROE-500O-3*P1	3E5*40W	50	-	784
COM02431	CROE500O3**A1R*****	CROE-500O-3*A1	3E5*40WN 115 V	50	-	784
COM02432	CROE501O3**P1R*****	CROE-501O-3*P1	3E5*40LW	50	-	784
COM02658	CROE500O3**P2R*****	CROE-500O-3*P2	3E5*40R	50	-	784
COM02948	CROE500O3**B1R*****	CROE-500O-3*B1	3E5*40WN 230 V	50	-	784
COM01448	CROE600O3**P1R*****	CROE-600O-3*P1	3E5*50W	60	-	884
COM01817	CROE600O3**P2R*****	CROE-600O-3*P2	3E5*50R	60	-	884
COM02435	CROE600O3**A1R*****	CROE-600O-3*A1	3E5*50WN 115 V	60	-	884
COM02436	CROE601O3**P1R*****	CROE-601O-3*P1	3E5*50LW	60	-	884
COM02438	CROE600O3**A2R*****	CROE-600O-3*A2	3E5*50RN 115 V	60	-	884
COM02439	CROE600O3**P3R*****	CROE-600O-3*P3	3E5*50RW	60	-	884
COM02441	CROE601O3**A1R*****	CROE-601O-3*A1	3E5*50LWN 115 V	60	-	884
COM05564	CROE600O3**B1R*****	CROE-600O-3*B1	3E5*50WN 230 V	60	-	884
COM01449	CROE750O4**P1R*****	CROE-750O-4*P1	3E5*60W	75	-	916
COM02336	CROE750O4**P2R*****	CROE-750O-4*P2	3E5*60R	75	-	916
COM02344	CROE751O4**A1R*****	CROE-751O-4*A1	3E5*60LWN 115 V	75	-	916
COM02443	CROE750O4**A1R*****	CROE-750O-4*A1	3E5*60WN 115 V	75	-	916
COM02444	CROE751O4**P1R*****	CROE-751O-4*P1	3E5*60LW	75	-	916
COM02446	CROE750O4**A2R*****	CROE-750O-4*A2	3E5*60RN 115 V	75	-	916
COM02447	CROE750O4**P3R*****	CROE-750O-4*P3	3E5*60RW	75	-	916
COM04367	CROE750O4**B1R*****	CROE-750O-4*B1	3E5*60WN 230 V	75	-	916
COM05561	CROE750O4**B0R*****	CROE-750O-4*B0	3E5*60N 230 V	75	-	916
COM05563	CROE750O4**B1R*****	CROE-750O-4*B1	3E5*60WN 230 V	75	-	916
COM01450	CROE1C0O5**P0R*****	CROE-1C0O-5*P0	3E5*80	100	-	1005
COM02109	CROE1C0O5**P1R*****	CROE-1C0O-5*P1	3E5*80W	100	-	1005
COM02337	CROE1C0O5**A0R*****	CROE-1C0O-5*A0	3E5*80N 115 V	100	-	1005
COM02450	CROE1C0O5**A1R*****	CROE-1C0O-5*A1	3E5*80WN 115 V	100	-	1005
COM02451	CROE1C1O5**P1R*****	CROE-1C1O-5*P1	3E5*80LW	100	-	1005
COM02453	CROE1C0O5**A2R*****	CROE-1C0O-5*A2	3E5*80RN 115 V	100	-	1005
COM02454	CROE1C0O5**P3R*****	CROE-1C0O-5*P3	3E5*80RW	100	-	1005
COM02455	CROE1C1O5**A1R*****	CROE-1C1O-5*A1	3E5*80LWN 115 V	100	-	1005
COM05553	CROE1C0O5**B1R*****	CROE-1C0O-5*B1	3E5*80WN 230 V	100	-	1005

Series 6000

Model E - Open Drive Compressors

COM Number	Original Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM06002	3E5*40W	50	-	784
COM06003	3E5*50W	60	-	884
COM06004	3E5*60W	75	-	916
COM06005	3E5*80W	100	-	1005

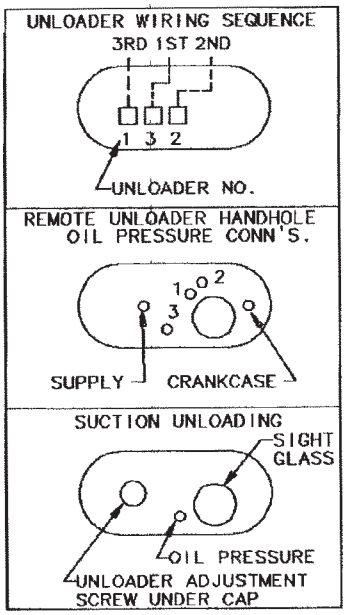
Model CROE500 - 50 Ton / R-22 / 50 Hz



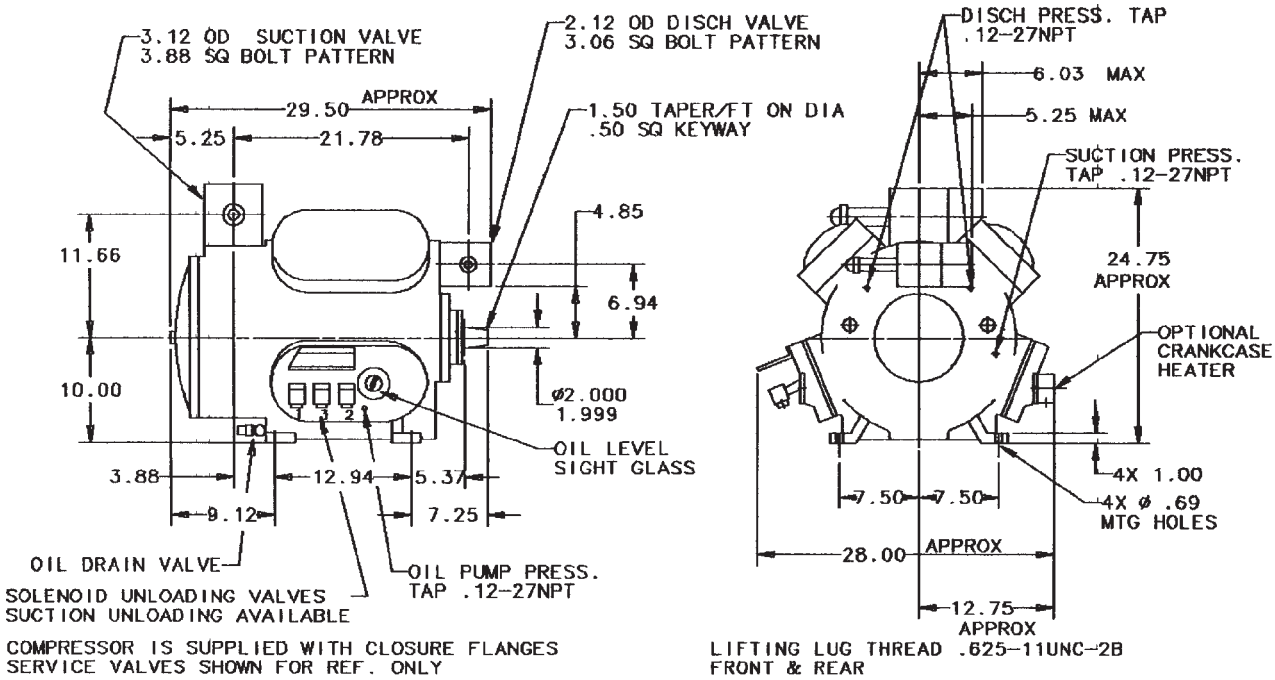
Application			
Internal Relief Valve Setting	25.9 BAR-D		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***50%***	***75%***	***100%***
Capacity (KW)	67.9	105.1	141.4
Shaft Power Input (KW)	24.3	32	39.3
Shaft Torque (N-M)	160.9	210.7	258.8
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11
Physical Data			
Bore (MM)	92.96		
Stroke (IN)	69.85		
No. of Cylinders	4		
Speed (RPM)	1450		
Start Torque (N-M)	271		
Pull-Up Torque (N-M)	178		

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 140 Watts, 115/230 VAC



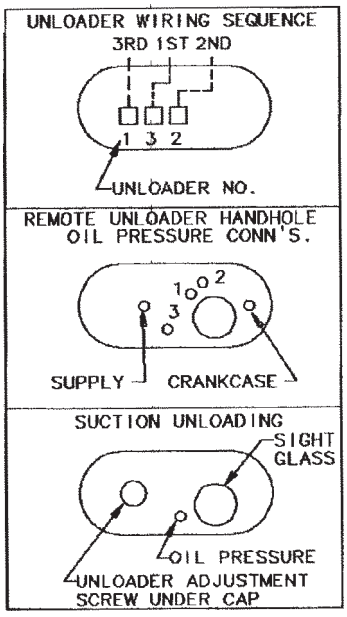
Model CROE500 - 50 Ton / R-22 / 60 Hz



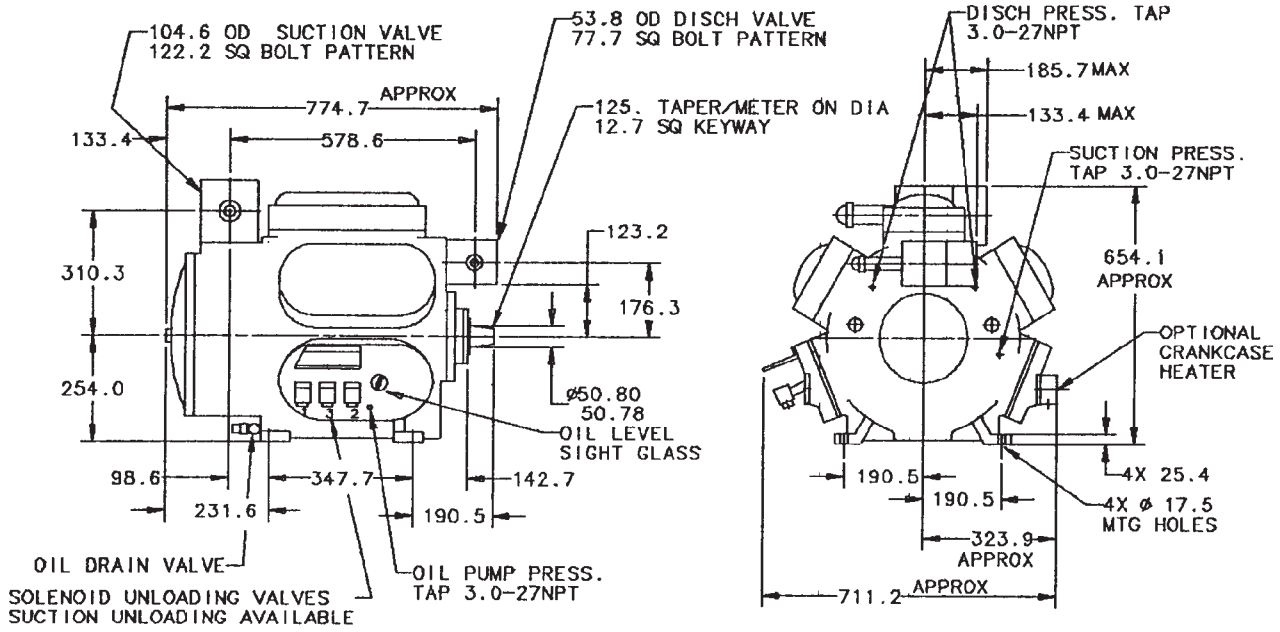
Application			
Internal Relief Valve Setting	375 PSID		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***50%***	***75%***	***100%***
Capacity (BTU/HR)	279,500	433,000	582,00
Shaft Power Input (BHP)	39.5	51.7	63.5
Shaft Torque (LB-FT)	118.7	155.4	190.9
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20
Physical Data			
Bore (IN)	3.66		
Stroke (IN)	2.75		
No. of Cylinders	4		
Speed (RPM)	1750		
Start Torque (LB-FT)	200		
Pull-Up Torque (LB-FT)	131		

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 140 Watts, 115/230 VAC



Model CROE600 - 60 Ton / R-22 / 50 Hz



COMPRESSOR IS SUPPLIED WITH CLOSURE FLANGES
SERVICE VALVES SHOWN FOR REF. ONLY

LIFTING LUG THREAD 15.9-11UNC-2B
FRONT & REAR

Application

Internal Relief Valve Setting	25.9 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***40%***	***80%***	***100%***
Capacity (KW)	65	139	176
Shaft Power Input (KW)	26.8	41.3	48.6
Shaft Torque (N-M)	176.5	253.5	320.8
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

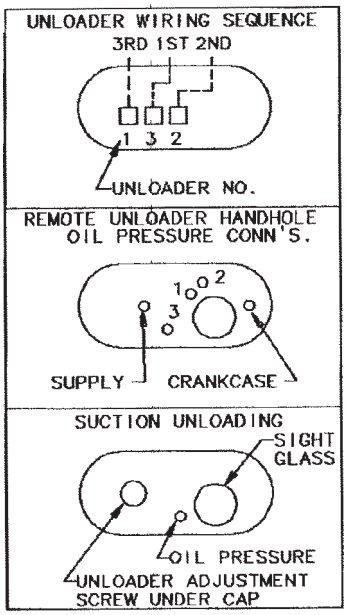
Bore (MM)	92.96
Stroke (IN)	69.85
No. of Cylinders	5
Speed (RPM)	1450
Start Torque (N-M)	305
Pull-Up Torque (N-M)	199

Oil Pressure Switch

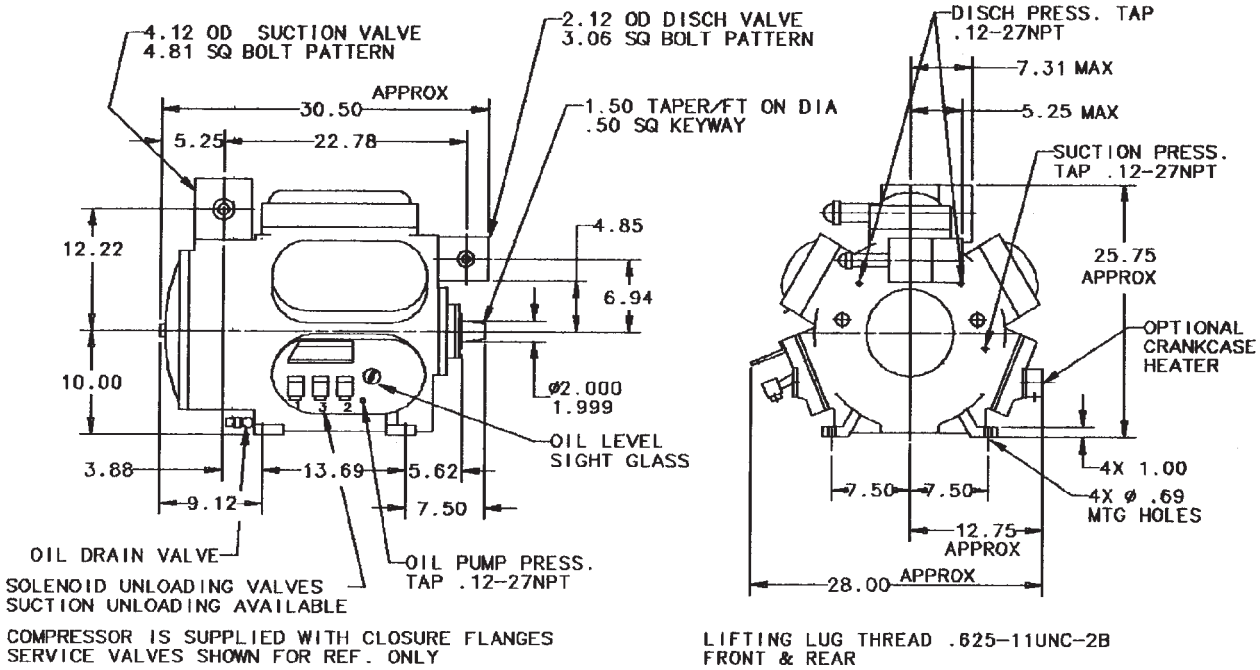
Differential Type, Pilot Duty

Crankcase Heater

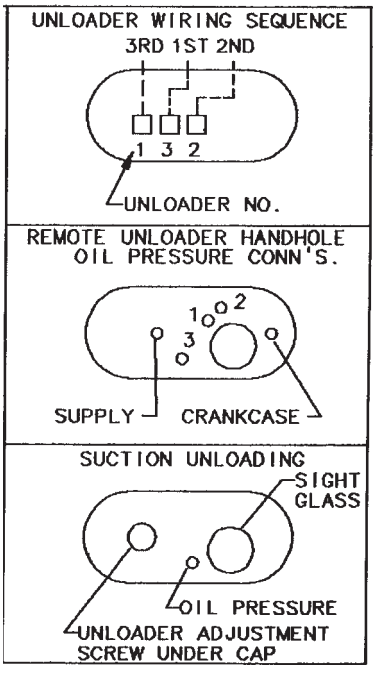
Immersion Type, Rating 140 Watts, 115/230 VAC



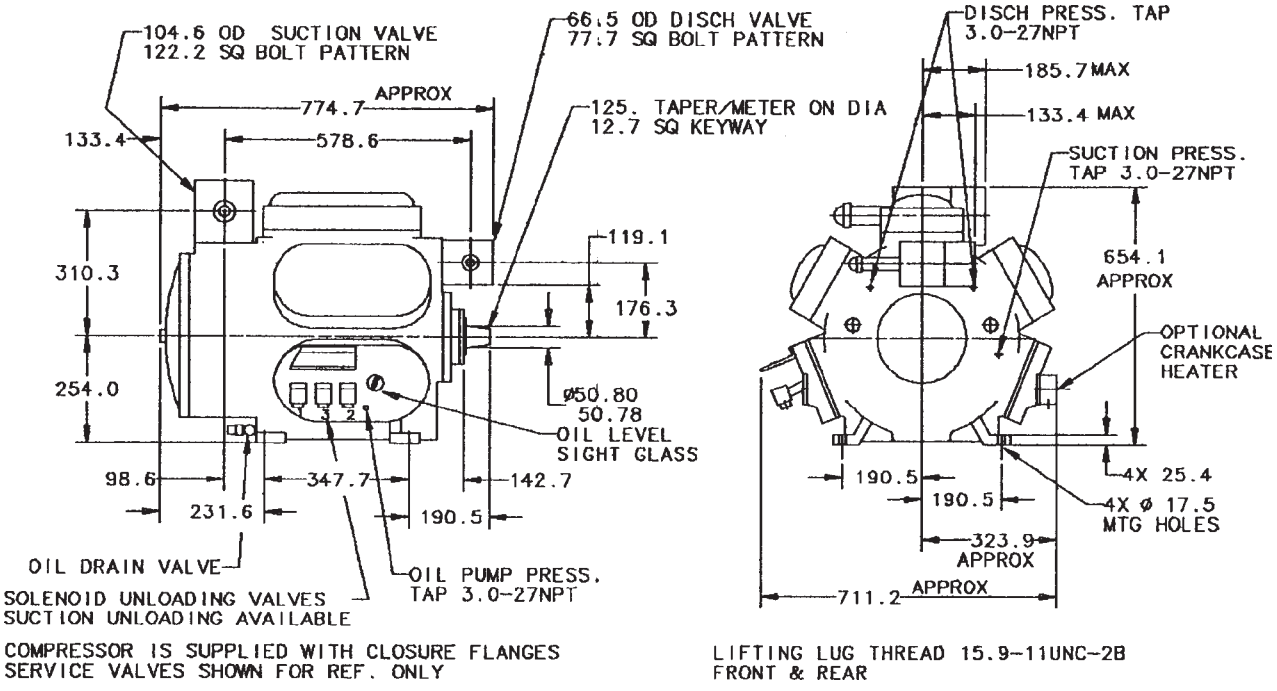
Model CROE600 - 60 Ton / R-22 / 60 Hz



Application			
Internal Relief Valve Setting	375 PSID		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***40%***	***80%***	***100%***
Capacity (BTU/HR)	268,000	572,700	724,600
Shaft Power Input (BHP)	43.3	66.9	78.7
Shaft Torque (LB-FT)	130.2	187.0	236.6
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20
Physical Data			
Bore (IN)	3.66		
Stroke (IN)	2.75		
No. of Cylinders	5		
Speed (RPM)	1750		
Start Torque (LB-FT)	225		
Pull-Up Torque (LB-FT)	147		
Oil Pressure Switch			
Differential Type, Pilot Duty			
Crankcase Heater			
Immersion Type, Rating 140 Watts, 115/230 VAC			



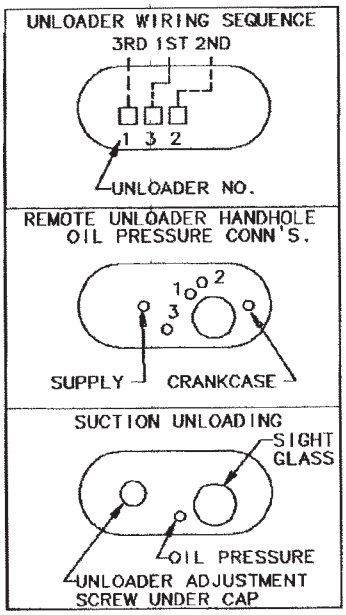
Model CROE750 - 75 Ton / R-22 / 50 Hz



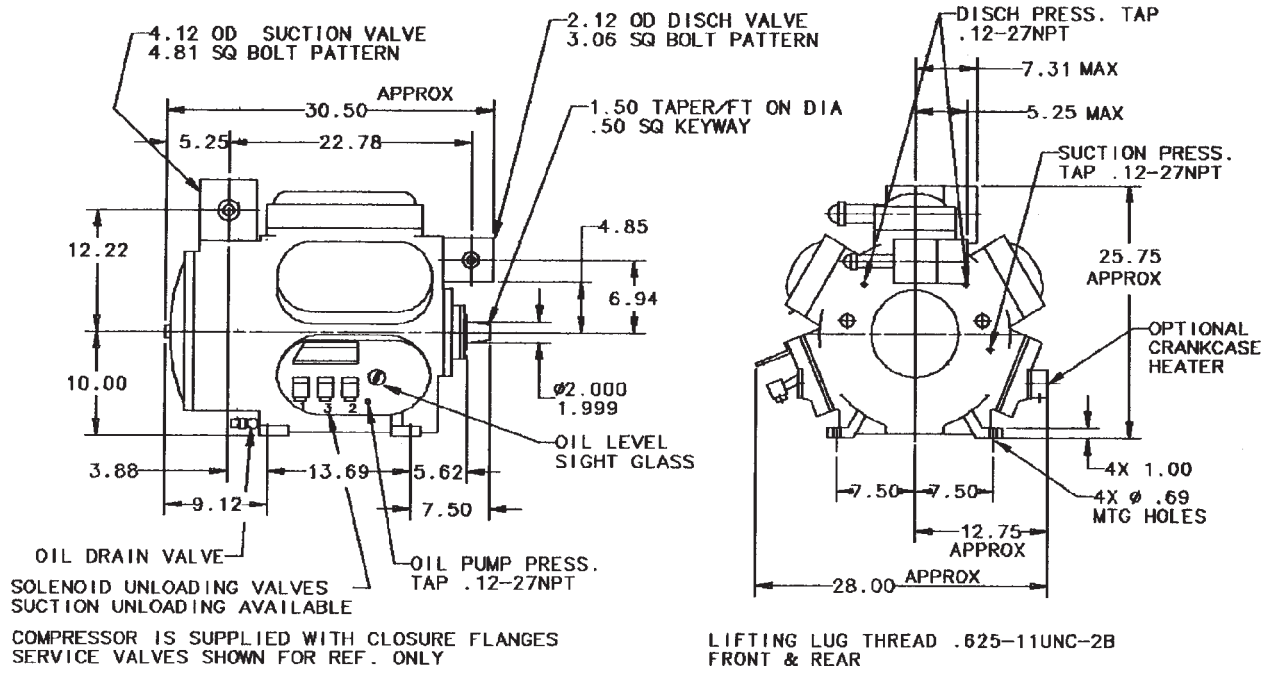
Application			
Internal Relief Valve Setting	25.9 BAR-D		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	62.4	140.0	212.0
Shaft Power Input (KW)	28.7	43.7	58.6
Shaft Torque (N-M)	189.1	288.1	386.4
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C)	11.11	11.11	11.11
(45F/130F/15F SC/20F SH-ARI)			
Physical Data			
Bore (MM)	92.96		
Stroke (IN)	69.85		
No. of Cylinders	6		
Speed (RPM)	1450		
Start Torque (N-M)	325		
Pull-Up Torque (N-M)	213		

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 140 Watts, 115/230 VAC



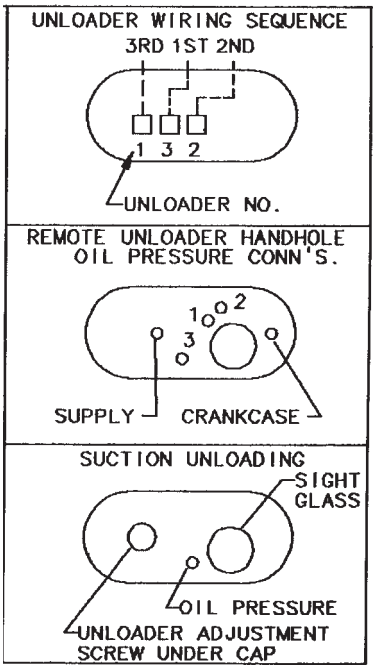
Model CROE750 - 75 Ton / R-22 / 60 Hz



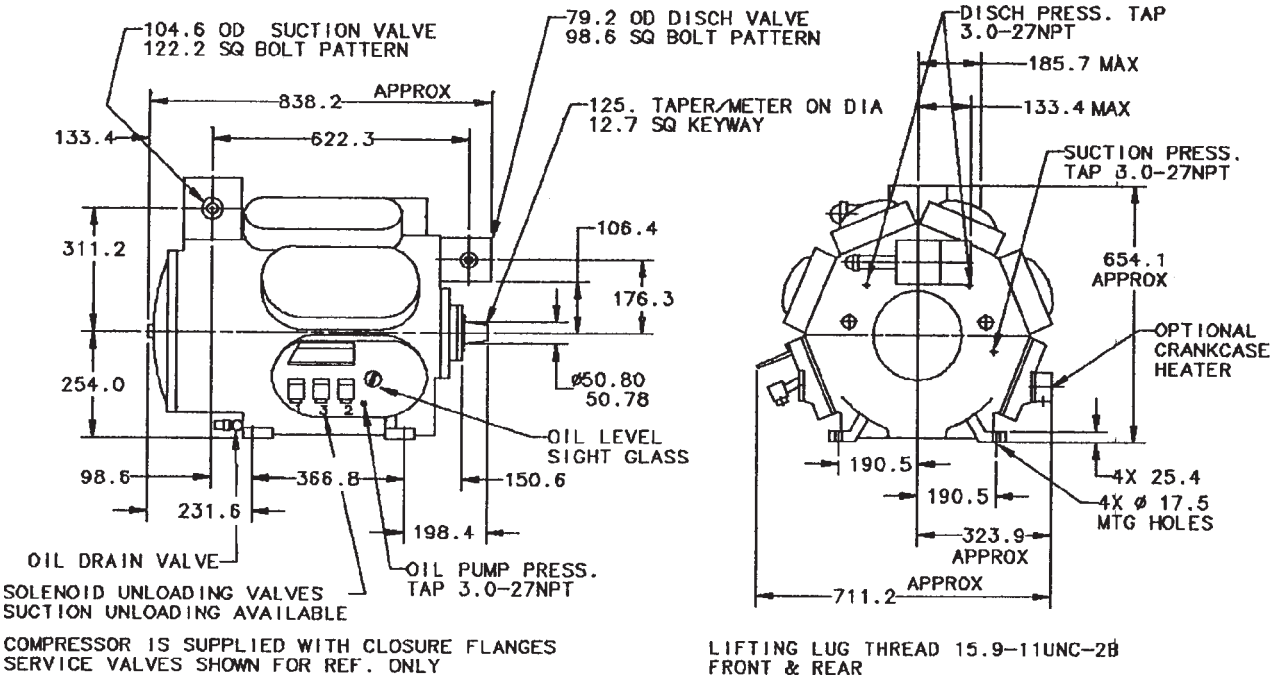
Application			
Internal Relief Valve Setting	375 PSID		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	257,000	576,200	873,000
Shaft Power Input (BHP)	46.4	70.7	94.8
Shaft Torque (LB-FT)	139.5	212.5	285.0
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20
Physical Data			
Bore (IN)	3.66		
Stroke (IN)	2.75		
No. of Cylinders	6		
Speed (RPM)	1750		
Start Torque (LB-FT)	240		
Pull-Up Torque (LB-FT)	157		

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 140 Watts, 115/230 VAC



Model CROE1C0 - 100 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	25.9 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***38%***	***50%***	***75%***	***100%***
Capacity (KW)	99.3	138.2	213.0	287.8
Shaft Power Input (KW)	42.0	49.6	64.3	79.2
Shaft Torque (N-M)	277	322	424	521.7
Evaporator Temp (C)	7.22	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11	11.11

Physical Data

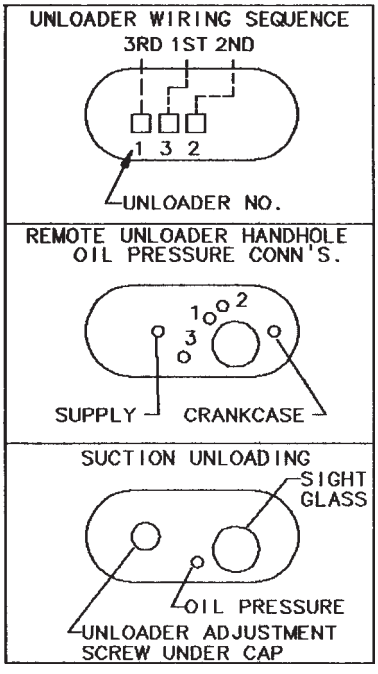
Bore (MM)	92.96
Stroke (MM)	69.85
No. of Cylinders	8
Speed (RPM)	1450
Start Torque (N-M)	373
Pull-Up Torque (N-M)	244

Oil Pressure Switch

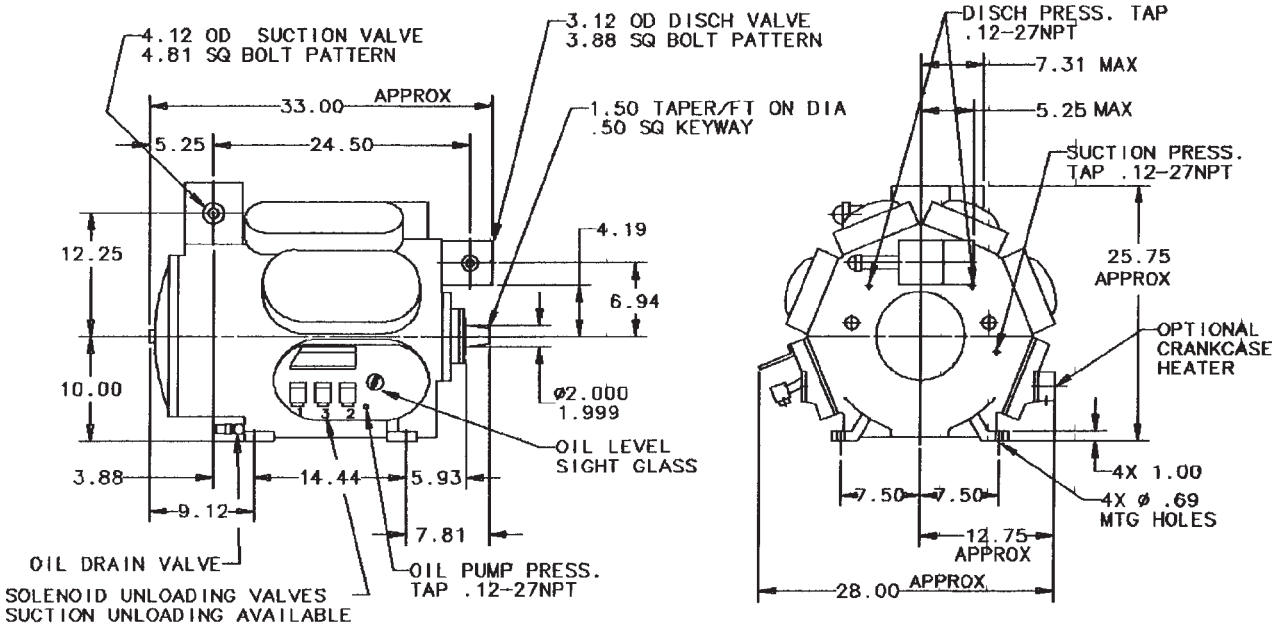
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 140 Watts, 115/230 VAC



Model CROE1C0 - 100 Ton / R-22 / 60 Hz



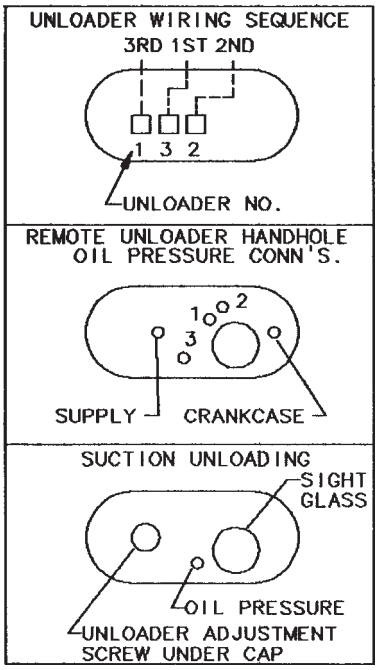
COMPRESSOR IS SUPPLIED WITH CLOSURE FLANGES
SERVICE VALVES SHOWN FOR REF. ONLY

LIFTING LUG THREAD .625-11UNC-2B
FRONT & REAR

Application				
Internal Relief Valve Setting	375 PSID			
Refrigerant	R-22			
UL Recognized				
Direct Coupled Only				
Rated Performance	***38%***	***50%***	***75%***	***100%***
Capacity (BTU/HR)	409,000	569,000	877,200	1,185,400
Shaft Power Input (BHP)	68	79	1040	128
Shaft Torque (LB-FT)	204.4	237.5	312.9	384.8
Evaporator Temp	45	45	45	45
Condenser Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20
Physical Data				
Bore (IN)	3.66			
Stroke (IN)	2.75			
No. of Cylinders	8			
Speed (RPM)	1750			
Start Torque (LB-FT)	275			
Pull-Up Torque (LB-FT)	180			

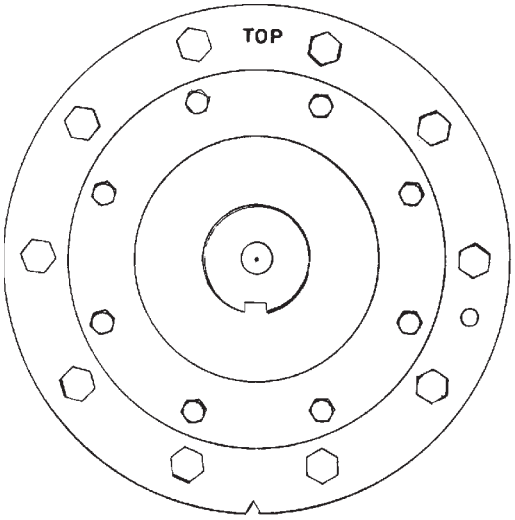
Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 140 Watts, 115/230 VAC

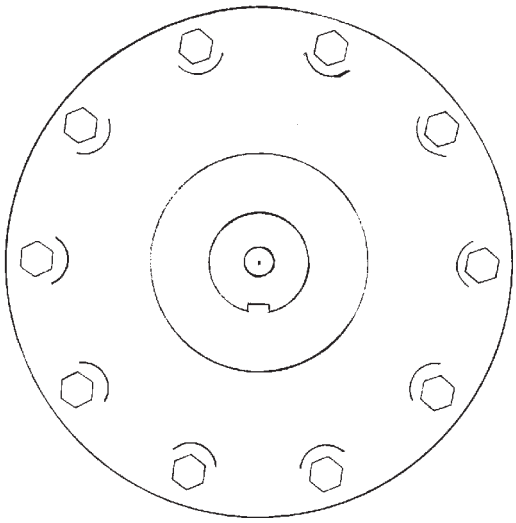


Model E - Compressor Shaft Seal Identification

The Model E Open compressors are produced with two different types of shaft seals. The following diagrams will serve as a guide to identifying which type was used.



SEL00193 is used with the steel seal cover. Note the bearing head securing bolts are also visible. Two rows of bolts are visible with this type seal.



SEL00022 is used with the cast iron seal cover. Note one circle of bolts holds the cover in place.

Model E Semihermetic Compressors

Model E - Large Barrel

Description
The Trane Model E semihermetic compressor is an unloading, cast iron, semihermetic accessible compressor. The compressor oil pump is reversible for operation in either direction. The compressor unloading options are suction pressure-actuated or electric solenoid-actuated, with electric-actuated available either compressor-mounted or remote mounted.

Low Temperature Applications - (Low Lift Valves)
When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required. Low lift valves are required to prevent valve flutter which could result in broken suction valves and springs.

Lifting and Handling
The Model E compressor has tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one hour before trying to start the compressor.

Storage
The compressors are shipped with a nitrogen charge and the connections are sealed with closure plates; unless the optional service valves have been ordered for factory installation. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 140 F and 95% RH non-condensing.

Pressure Testing
The maximum highside test pressure is 500 psig. The maximum lowside pressure is 350 psig. The differential between highside and lowside should not exceed 340 psig. never pressure the system to a higher pressure that the system relief valve.

Oil Charge
The Model E compressor ships with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane compressor service bulletin; HCOM-SB-4F, "APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

Operation
The Model E compressor must be protected from direct exposure to rain and other weather. The operating ambient must not exceed 125 F. This is based on a maximum condensing temperature of 147 F.

Compressor Motor Starter Type
The Model E semihermetic, compressor is suitable for across the line start or part winding start only.

Part winding start systems require the use of 0.5 to 1.0 seconds between contactors.

⚠ *WARNING:*
NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® compressors

ReSpecT®

Model E - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number (1)	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM01813	CRHE300B3**P0R*****	NA	1E5*48	30	200-230-460/60/3	1298
COM02389	CRHE300B3**A0R*****	NA	1E5*48N 115 V	30	200-230-460/60/3	1298
COM02872	CRHE300B3**B0R*****	NA	1E5*48N 230 V	30	200-230-460/60/3	1298
COM02394	CRHE300K3**A0R*****	NA	1E5*41N 115 V	30	400-460/50-60/3	1298
COM02640	CRHE300K3**P0R*****	NA	1E5*41	30	400-460/50-60/3	1298
COM01878	CRHE300D3**P0R*****	NA	1E5*45	30	575/60/3	1406
COM01814	CRHE400B3**P0R*****	NA	1E5*58	40	200-230-460/60/3	1298
COM02390	CRHE400B3**A0R*****	NA	1E5*58N 115 V	40	200-230-460/60/3	1406
COM02395	CRHE400K3**A0R*****	NA	1E5*51N 115 V	40	400-460/50-60/3	1406
COM02641	CRHE400K3**P0R*****	NA	1E5*51	40	400-460/50-60/3	1406
COM01879	CRHE400D3**P0R*****	NA	1E5*55	40	575/60/3	1406
COM01443	CRHE500B3**P0R*****	CRHE-500B-3*P0	2E5*48	50	200-230-460/60/3	1298
COM01815	CRHE450B4**P0R*****	NA	1E5*68	50	200-230-460/60/3	1444
COM02088	CRHE500B3**P1R*****	CRHE-500B-3*P1	2E5*48W	50	200-230-460/60/3	1298
COM02092	CRHE500B3**A0R*****	CRHE-500B-3*A0	2E5*48N 115 V	50	200-230-460/60/3	1298
COM02381	CRHE501B3**P0R*****	CRHE-501B-3*P0	2E5*48L	50	200-230-460/60/3	1298
COM02382	CRHE501B3**A0R*****	CRHE-501B-3*A0	2E5*48LN 115 V	50	200-230-460/60/3	1298
COM02383	CRHE601B3**A0R*****	CRHE-601B-3*A0	2E5*58L 115 V	50	200-230-460/60/3	1298
COM02391	CRHE450B4**A0R*****	NA	1E5*68N 115 V	50	200-230-460/60/3	1444
COM02512	CRHE500B3**B0R*****	CRHE-500B-3*B0	2E5*48N 230 V	50	200-230-460/60/3	1298
COM02704	CRHE500B3**B0R*****	CRHE-500B-3*B1	2E5*48WN 230V	50	200-230-460/60/3	1298
COM02727	CRHE500B3**A0R*****	CRHE-500B-3*A1	2E5*48WN 115V	50	200-230-460/60/3	1298
COM02790	CRHE500B3**B2R*****	CRHE-500B-3*B2	2E5*48RN 230 V	50	200-230-460/60/3	1298
COM02615	CRHE500F3**P0R*****	CRHE-500F-3*P0	2E5*46	50	220/50/3	1298
COM03905	CRHE500X3**A0R*E***	CRHE-500X-3*A0	2E5*49N 115 V	50	380/60/3	1298
COM02072	CRHE500K3**P0R*****	CRHE-500K-3*P0	2E5*41	50	400-460/50-60/3	1298
COM02242	CRHE500K3**A0R*****	CRHE-500K-3*A0	2E5*41N 115 V	50	400-460/50-60/3	1298
COM02396	CRHE450K4**A0R*****	NA	1E5*61N 115 V	50	400-460/50-60/3	1444
COM02398	CRHE500K3**P1R*****	CRHE-500K-3*P1	2E5*41W	50	400-460/50-60/3	1298
COM02399	CRHE501K3**P0R*****	CRHE-501K-3*P0	2E5*41L	50	400-460/50-60/3	1298
COM02400	CRHE501K3**A0R*****	CRHE-501K-3*A0	2E5*41LN 115 V	50	400-460/50-60/3	1298
COM02508	CRHE500K3**B0R*****	CRHE-500K-3*B0	2E5*41N 230 V	50	400-460/50-60/3	1298
COM04270	CRHE751K4**A0R*****	CRHE-751K-4*A0	2E5*61LN 115V	50	400-460/50-60/3	1444
COM02678	CRHE450C4**P0R*****	NA	1E5*61	50	460/60/3	1298
COM01860	CRHE500D3**P0R*****	CRHE-500D-3*P0	2E5*45	50	575/60/3	1406
COM01880	CRHE450D4**P0R*****	NA	1E5*65	50	575/60/3	1444
COM02136	CRHE500D3**A0R*****	CRHE-500D-3*A0	2E5*45N 115 V	50	575/60/3	1298
COM01444	CRHE600B3**P0R*****	CRHE-600B-3*P0	2E5*58	60	200-230-460/60/3	1406
COM01816	CRHE550B5**P0R*****	NA	1E5*88	60	200-230-460/60/3	1704
COM02089	CRHE600B3**P1R*****	CRHE-600B-3*P1	2E5*58W	60	200-230-460/60/3	1406
COM02093	CRHE600B3**A0R*****	CRHE-600B-3*A0	2E5*58N 115 V	60	200-230-460/60/3	1406
COM02384	CRHE601B3**A0R*****	CRHE-601B-3*A0	2E5*58LN 115 V	60	200-230-460/60/3	1406
COM02513	CRHE600B3**B0R*****	CRHE-600B-3*B0	2E5*58N 230 V	60	200-230-460/60/3	1406
COM02959	CRHE600B3**P0R*****	CRHE-600B-3*P0	2E5*58Z	60	200-230-460/60/3	1406
COM03948	CRHE550B5**A0R*E***	NA	1E5*88N 220 V	60	200-230-460/60/3	1704
COM02073	CRHE600C3**P0R*****	CRHE-600C-3*P0	2E5*51	60	460/60/3	1406
COM02243	CRHE600C3**A0R*****	CRHE-600C-3*A0	2E5*51N 115 V	60	460/60/3	1406
COM02397	CRHE550C5**A0R*****	NA	1E5*81N 115 V	60	460/60/3	1704
COM02401	CRHE600C3**P1R*****	CRHE-600C-3*P1	2E5*81W	60	460/60/3	1406
COM02402	CRHE601C3**P0R*****	CRHE-601C-3*P0	2E5*51L	60	460/60/3	1406

ReSpecT®

Model E - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number (1)	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM02403	CRHE601C3**A0R*****	CRHE-601C-3*A0	2E5*51LN 115 V	60	460/60/3	1406
COM02509	CRHE600C3**B0R*****	CRHE-600C-3*B0	2E5*51N 230 V	60	460/60/3	1406
COM01861	CRHE600D3**P0R*****	CRHE-600D-3*P0	2E5*55	60	575/60/3	1406
COM01881	CRHE550D3**P0R*****	NA	1E5*85	60	575/60/3	1704
COM02135	CRHE600D3**A0R*****	CRHE-600D-3*A0	2E5*55N 115 V	60	575/60/3	1406
COM02393	CRHE601D3**P0R*****	CRHE-601D-3*P0	2E5*55L	60	575/60/3	1406
COM02392	CRHE550B5**A0R*****	NA	1E5*88N 115V	60	200-230-460/60/3	1704
COM01445	CRHE750B4**P0R*****	CRHE-750B-4*P0	2E5*68	75	200-230-460/60/3	1444
COM02090	CRHE750B4**P1R*****	CRHE-750B-4*P1	2E5*68W	75	200-230-460/60/3	1444
COM02094	CRHE750B4**A0R*****	CRHE-750B-4*A0	2E5*68N 115 V	75	200-230-460/60/3	1444
COM02385	CRHE751B4**P0R*****	CRHE-751B-4*P0	2E5*68L	75	200-230-460/60/3	1444
COM02386	CRHE751B4**A0R*****	CRHE-751B-4*A0	2E5*68LN 115 V	75	200-230-460/60/3	1444
COM02514	CRHE750B4**B0R*****	CRHE-750B-4*B0	2E5*68N 230 V	75	200-230-460/60/3	1444
COM02659	CRHE751B4**P1R*****	CRHE-751B-4*P1	2E5*68LW	75	200-230-460/60/3	1704
COM02933	CRHE750B4**P0R*****	CRHE-750B-4*P0	2E5*68U	75	200-230-460/60/3	1444
COM05556	CRHE750B4**R0R*****	CRHE-750B-4*R0	2E5*68 REMOTE	75	200-230-460/60/3	1444
COM03017	CRHE750A4**P0R*E***	CRHE-750A-4*P0	2E5*62	75	200/60/3	1444
COM03018	CRHE750A4**A0R*E***	CRHE-750A-4*A0	2E5*62N 115 V	75	200/60/3	1444
COM03019	CRHE750A4**R0R*E***	CRHE-750A-4*R0	2E5*62	75	200/60/3	1444
COM03013	CRHE750F4**A0R*E***	CRHE-750F-4*A0	2E5*66N 115 V	75	220/50/3	1444
COM03015	CRHE750F4**B0R*E***	CRHE-750F-4*B0	2E5*66N 230 V	75	220/50/3	1444
COM03002	CRHE750W4**P1R*E***	CRHE-750W-4*P0	2E5*63	75	230/60/3	1444
COM03003	CRHE750W4**A1R*E***	CRHE-750W-4*A0	2E5*63N 115 V	75	230/60/3	1444
COM03012	CRHE750W4**R0R*E***	CRHE-750W-4*R0	2E5*63	75	230/60/3	1444
COM03010	CRHE750Z4**A0R*E***	CRHE-750Z-4*A0	2E5*69N 115 V	75	363/50/3	1444
COM03009	CRHE750X4**A0R*E***	CRHE-750X-4*A0	2E5*69N 115 V	75	380/60/3	1444
COM03016	CRHE750X4**P0R*E***	CRHE-750X-4*P0	2E5*69	75	380/60/3	1444
COM02074	CRHE750K4**P0R*****	CRHE-750K-4*P0	2E5*61	75	400-460/50-60/3	1444
COM02244	CRHE750K4**A0R*****	CRHE-750K-4*A0	2E5*61N 115 V	75	400-460/50-60/3	1444
COM02404	CRHE750K4**P1R*****	CRHE-750K-4*P1	2E5*61W	75	400-460/50-60/3	1444
COM02405	CRHE751K4**P0R*****	CRHE-751K-4*P0	2E5*61L	75	400-460/50-60/3	1444
COM02406	CRHE751K4**A0R*****	CRHE-751K-4*A0	2E5*61LN 115 V	75	400-460/50-60/3	1444
COM02510	CRHE750K4**B0R*****	CRHE-750K-4*B0	2E5*61N 230 V	75	400-460/50-60/3	1444
COM03004	CRHE750K4**A0R*E***	CRHE-750K-4*A0	2E5*61N 115 V	75	400-460/50-60/3	1444
COM03005	CRHE750K4**P0R*E***	CRHE-750K-4*P0	2E5*61	75	400-460/50-60/3	1444
COM03011	CRHE750K4**R0R*E***	CRHE-750K-4*R0	2E5*61	75	400-460/50-60/3	1444
COM03014	CRHE750K4**B0R*E***	CRHE-750K-4*B0	2E5*61N 230 V	75	400-460/50-60/3	1444
COM02650	CRHE750C4**P0R*****	CRHE-750C-4*P0	2E5*61Z	75	460/60/3	1444
COM01862	CRHE750D4**P0R*****	CRHE-750D-4*P0	2E5*65	75	575/60/3	1444
COM02134	CRHE750D4**A0R*****	CRHE-750D-4*A0	2E5*65N 115 V	75	575/60/3	1444
COM03006	CRHE750D4**A0R*E***	CRHE-750D-4*A0	2E5*65N 115 V	75	575/60/3	1444
COM03007	CRHE750D4**R0R*E***	CRHE-750D-4*R0	2E5*65	75	575/60/3	1444
COM03008	CRHE750D4**P0R*E***	CRHE-750D-4*P0	2E5*65	75	575/60/3	1444
COM01446	CRHE1C0B5**P0R*****	CRHE-1C0B-5*P0	2E5*88	100	200-230-460/60/3	1704
COM02091	CRHE1C0B5**P1R*****	CRHE-1C0B-5*P1	2E5*88W	100	200-230-460/60/3	1704
COM02095	CRHE1C0B5**A0R*****	CRHE-1C0B-5*A0	2E5*88N 115 V	100	200-230-460/60/3	1704
COM02387	CRHE1C1B5**P0R*****	CRHE-1C1B-5*P0	2E5*88L	100	200-230-460/60/3	1704
COM02388	CRHE1C1B5**A0R*****	CRHE-1C1B-5*A0	2E5*88LN 115 V	100	200-230-460/60/3	1704
COM02515	CRHE1C0B5**B0R*****	CRHE-1C0B-5*B0	2E5*88N 230 V	100	200-230-460/60/3	1704
COM03036	CRHE1C0A5**P0R*E***	CRHE-1C0A-5*P0	2E5*82	100	200/60/3	1704

ReSpecT®

Model E - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number (1)	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM03037	CRHE1C0A5**A0R*E***	CRHE-1C0A-5*A0	2E5*82N 115 V	100	200/60/3	1704
COM03038	CRHE1C0A5**R0R*E***	CRHE-1C0A-5*R0	2E5*82	100	200/60/3	1704
COM03031	CRHE1C0F5**A0R*E***	CRHE-1C0F-5*A0	L2E5*86N 115V	100	220/50/3	1704
COM03034	CRHE1C0F5**B0R*E***	CRHE-1C0F-5*B0	L2E5*86N 230V	100	220/50/3	1704
COM03021	CRHE1C0W5**P0R*E***	CRHE-1C0W-5*P0	2E5*83	100	230/60/3	1704
COM03022	CRHE1C0W5**A0R*E***	CRHE-1C0W-5*A0	2E5*83N 115 V	100	230/60/3	1704
COM03030	CRHE1C0W5**R0R*E***	CRHE-1C0W-5*R0	2E5*83	100	230/60/3	1704
COM03028	CRHE1C0Z5**A0R*E***	CRHE-1C0Z-5*A0	L2E5*89N 115V	100	363/50/3	1704
COM03027	CRHE1C0X5**A0R*E***	CRHE-1C0X-5*A0	2E5*89N 115 V	100	380/60/3	1704
COM03035	CRHE1C0X5**P0R*E***	CRHE-1C0X-5*P0	2E5*89	100	380/60/3	1704
COM03915	CRHE1C0X5**A0R*E***	CRHE-1C0X-5*A0	2E5*89N 115 V	100	380/60/3	1704
COM02075	CRHE1C0K5**P0R*****	CRHE-1C0K-5*P0	2E5*81	100	400-460/50-60/3	1704
COM02245	CRHE1C0K5**A0R*****	CRHE-1C0K-5*A0	2E5*81N 115 V	100	400-460/50-60/3	1704
COM02407	CRHE1C0K5**P1R*****	CRHE-1C0K-5*P1	2E5*81W	100	400-460/50-60/3	1704
COM02408	CRHE1C1K5**P0R*****	CRHE-1C1K-5*P0	2E5*81L	100	400-460/50-60/3	1704
COM02409	CRHE1C1K5**A0R*****	CRHE-1C1K-5*A0	2E5*81LN 115 V	100	400-460/50-60/3	1704
COM02511	CRHE1C0K5**B0R*****	CRHE-1C0K-5*B0	2E5*81N 230 V	100	400-460/50-60/3	1704
COM02931	CRHE1C1K5**P0R*****	CRHE-1C1K-5*P0	2E5*81LZ	100	400-460/50-60/3	1704
COM03023	CRHE1C0K5**A0R*E***	CRHE-1C0K-5*A0	2E5*81N 115 V	100	400-460/50-60/3	1704
COM03024	CRHE1C0K5**P0R*E***	CRHE-1C0K-5*P0	2E5*81	100	400-460/50-60/3	1704
COM03029	CRHE1C0K5**R0R*E***	CRHE-1C0K-5*R0	2E5*81	100	400-460/50-60/3	1704
COM03033	CRHE1C0K5**B0R*E***	CRHE-1C0K-5*B0	2E5*81N 230 V	100	400-460/50-60/3	1704
COM03800	CRHE1C1K5**A0R*E***	CRHE-1C1K-5*A0	2E5*81LN 115V	100	400-460/50-60/3	1704
COM05562	CRHE1C0K5**P0R*****	CRHE-1C0K-5*P0	2E5*81Z	100	400-460/50-60/3	1704
COM01863	CRHE1C0D5**P0R*****	CRHE-1C0D-5*P0	2E5*85	100	575/60/3	1704
COM02133	CRHE1C0D5**A0R*****	CRHE-1C0D-5*A0	2E5*85N 115 V	100	575/60/3	1704
COM03025	CRHE1C0D5**A0R*E***	CRHE-1C0D-5*A0	2E5*85N 115 V	100	575/60/3	1704
COM03026	CRHE1C0D5**R0R*E***	CRHE-1C0D-5*R0	2E5*85	100	575/60/3	1704
COM03032	CRHE1C0D5**P0R*E***	CRHE-1C0D-5*P0	2E5*85	100	575/60/3	1704
COM03931	CRHE1C1D5**A0R*****	CRHE-1C1D-5*A0	2E5*85LN 115V	100	575/60/3	1704
COM03937	CRHE1C1D5**A0R*E***	CRHE-1C1D-5*A0	2E5*85LN 115V	100	575/60/3	1704
COM04323	CRHE1C1D0**O0R*****	CRHE-1C1D-0*00	2E5*85LX	100	575/60/3	1704

Series 6000

Model E - Semihermetic Compressors

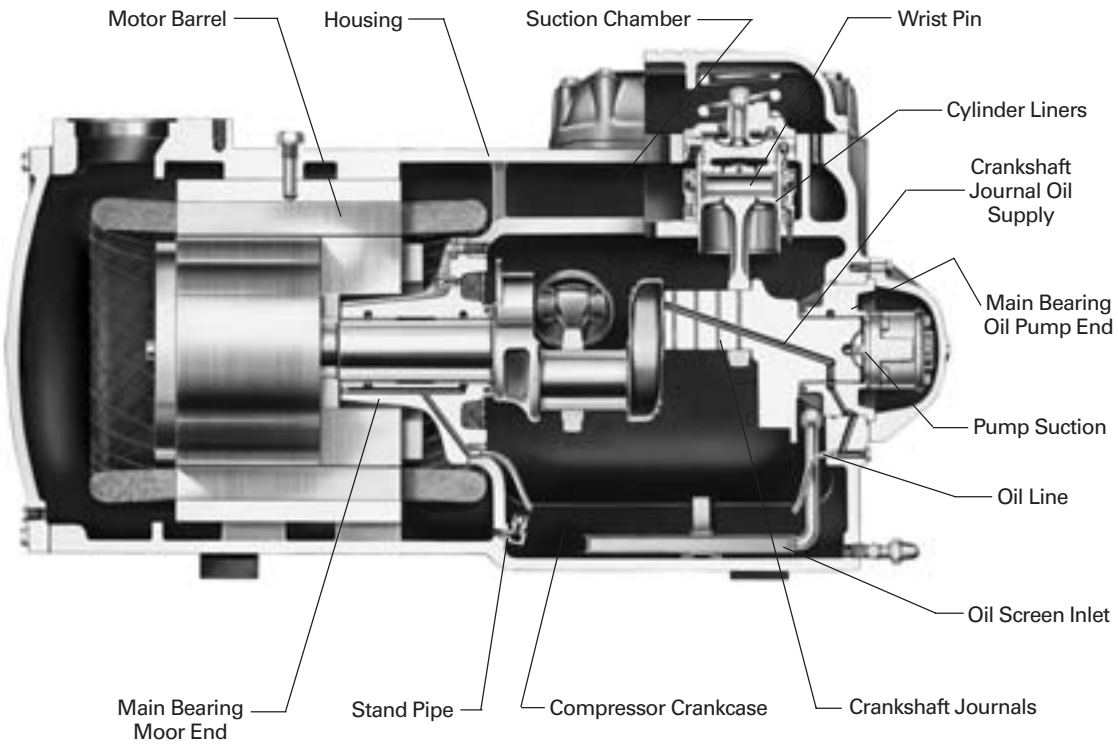
COM Number	Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM06006	2E5*48	50	200-230-460/60/3	1298
COM06007	2E5*48N 115 V	50	200-230-460/60/3	1298
COM06139	2E5*45	50	575/60/3	1298
COM06008	2E5*58	60	200-230-460/60/3	1406
COM06010	2E5*58N 115 V	60	200-230-460/60/3	1704
COM06009	2E5*51	60	460/60/3	1406
COM06140	2E5*55	60	575/60/3	1406
COM06011	2E5*68	75	200-230-460/60/3	1444
COM06012	2E5*68N 115 V	75	200-230-460/60/3	1444
COM06013	2E5*61N 115 V	75	460/60/3	1444

Model E Semihermetic Compressors (Cont.)

Series 6000

Model E - Semihermetic Compressors

COM Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM06141	2E5*65	75	575/60/3	1444
COM06014	2E5*88	100	200-230-460/60/3	1704
COM06015	2E5*88N 115 V	100	200-230-460/60/3	1704
COM06016	2E5*81	100	460/60/3	1704
COM06017	2E5*81N 115 V	100	460/60/3	1704
COM06142	2E5*85	100	575/60/3	1704

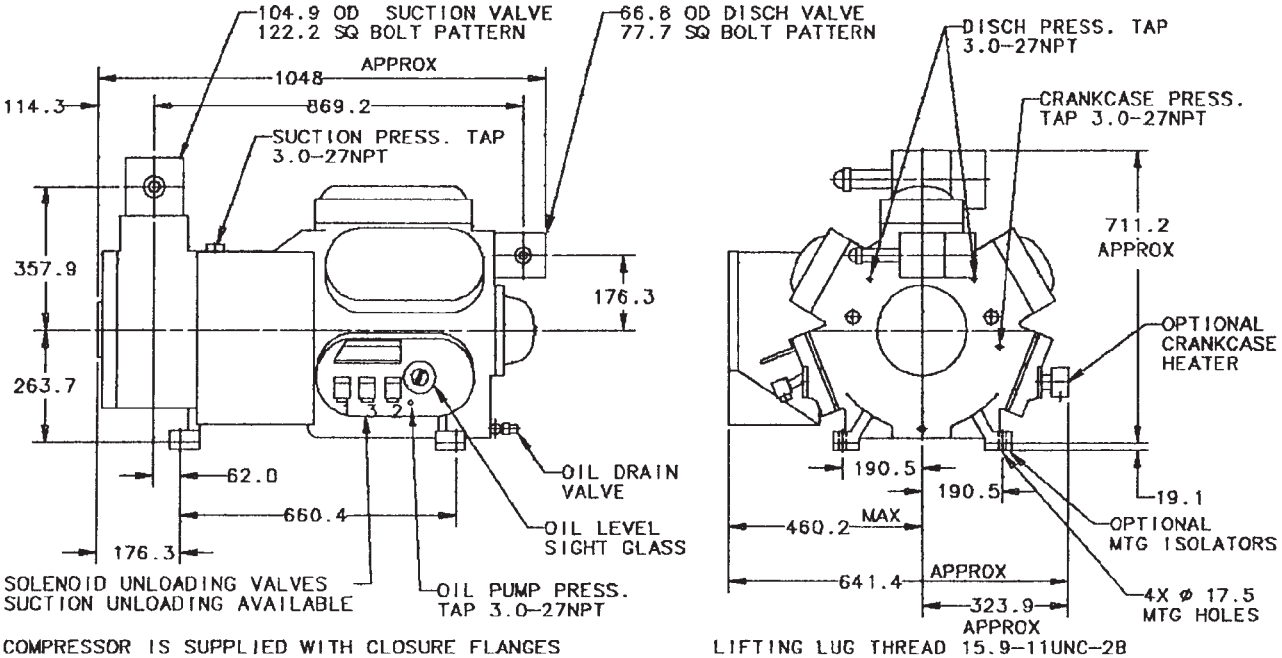


Model E Semihermetic Interchangeability Chart

12.375″ Motor Model Number	Voltage	12.375″ Motor Reman COM NBR	15″ Motor Reman COM NBR	Voltage	Buss Bars
2E5M61 CRHE-750K-40*PO	6 lead 460-60-3/400-50-3	COM 3005	COM 2074	6 Lead 460/60-3/400/50-3	(3) BAR 6**
2E5M6IN-115V CRHE-705K-4*AO	6 Lead 460-60-3/400-50-3	COM 3004	COM 2244	6 Lead 460-60-3/440-50-3	(3) BAR 6**
2E5M6IN-230V CRHE-750K-4*BO	6 Lead 460-60-3/400-50-3	COM 3014	COM 2510	6 Lead 460-60-3/440-50-3	(3) bar 6**
2E5M62 CRHE-750A-4*PO	6 Lead 200-60-3	COM 3017	COM 1445	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M62N-115V CRHE-750A-4*AO	6 Lead 200-60-3	COM 3018	COM 2094	9 Lead 200-230/40-60-3	(3) BAR 6** (2) BAR 7
2E5M63 CRHE-750W-4*PO	6 Lead 230-60-3	COM 3002	COM 1445	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M63N-115V CRHE-750W-4*AO	6 Lead 230-60-3	COM 3003	COM 2094	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M65 CRHE-750D-4*PO	6 Lead 575-60-3	COM 3008	COM 1862	6 Lead 575-60-3	(3) BAR 6**
2E5M65N-115V CRHE-750D-4*AO	6 Lead 575-60-3	COM 3006	COM 2134	6 Lead 575-60-3	(3) BAR 6**
2E5M81 CRHE-1COK-5*PO	6 Lead 460-60-3/400-50-3	COM 3024	COM 2075	6 Lead 460-60-3/400-50-3	(3) BAR 6**
2E5M81N-115V CRHE-1COK-5*AO	6 Lead 460-60-3/400-50-3	COM 3023	COM 2245	6 Lead 460-60-3/400-50-3	(3) BAR 6**
2E5M81N-230V CRHE-1COK-5*BO	6 Lead 460-60-3/400-50-3	COM 3033	COM 2511	6 Lead 460-60-3/400-50-3	(3) BAR 6**
2E5M82 CRHE-1COA-5*PO	6 Lead 200-60-3	COM 3036	COM 1446	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M82N-115V CRHE-1COA-5*AO	6 Lead 200-60-3	COM 3037	COM 2095	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M82 CRHE-1COW-5*PO	6 Lead 230-60-3	COM 3021	COM 1446	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR 7
2E5M83N-115V CRHE-1COW-5*AO	6 Lead 230-60-3	COM 3022	COM 2095	9 Lead 200-230/460-60-3	(3) BAR 6** (2) BAR
2E5M85 CRHE-1COD-5*PO	6 Lead 575-60-3	COM 3032	COM 1863	6 Lead 575-60-3	(3) BAR 6**
2E5M85N-115 CRHE-1COD-5*AO	6 Lead 575-60-3	COM 3025	COM 2133	6 Lead 575-60-3	(3) BAR 6**

**Not needed if operating part wind start
*Design sequence letter - may be any letter

Model CRHE750 - 75 Ton / R-22 / 50 Hz



COMPRESSOR IS SUPPLIED WITH CLOSURE FLANGES
SERVICE VALVES SHOWN FOR REF. ONLY

LIFTING LUG THREAD 15.9-11UNC-2B
FRONT & REAR

Application

Internal Relief Valve Setting	25.9 BAR-D
Refrigerant	R-22
UL Recognized	

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	68.2	149.2	226.2
Power Input (KW)	32.9	49.6	65.5
Current (400V) (Amps)	61.8	87.5	106.5
C.O.P.	20.8	30.1	34.5
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI	11.11	11.11	11.11

Physical Data

Bore (MM)	92.96
Stroke (MM)	69.85
No. of Cylinders (MM)	6
Speed (RPM)	1450

Motor Protection

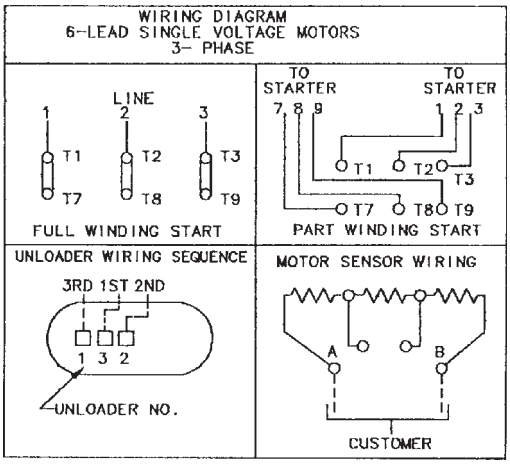
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon
External Overcurrent Protection Required	

Crankcase Heater

Immersion Type, Rating 100 Watts

Oil Pressure Switch

Differential Type, Pilot Duty



Motor Data

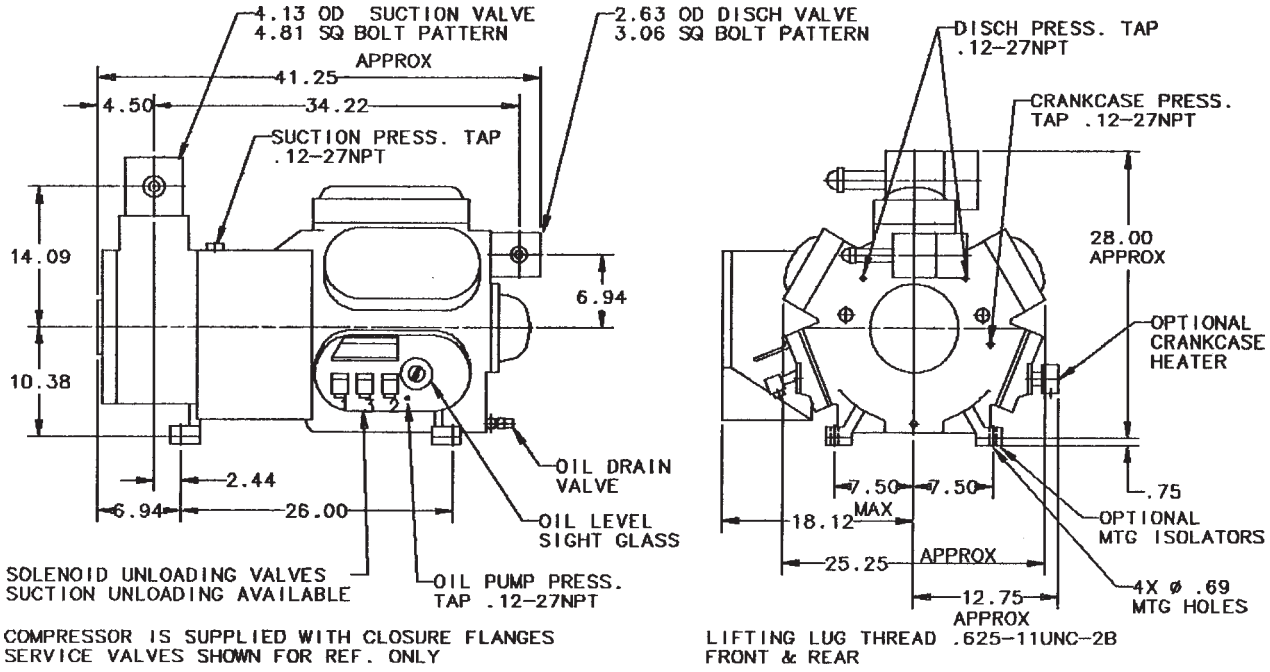
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-200	256	210	1141
230-60-3	207-253	222	182	1054
380-60-3	342-418	137	114	631
460-60-3	414-506	112	90	521
575-60-3	517-633	88	73	426
220-50-3	198-242	197	166	953
346-50-3	311-381	124	103	605
363-50-3	327-399	118	98	577
400-50-3	342-456	108	90	524

At Minimum Utilization Voltage

*At 8.3 C Sat. Suction, 63.9 C Sat. Condensing, 8.3 C Superheat, Full Load
**At 4.4 C Sat. Suction, 51.7 C Sat. Condensing, 8.3 C Superheat, Full Load

Model CRHE750 - 75 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	375 PSID
Refrigerant	R-22
UL Recognized	

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	276,700	598,800	907,400
Power Input (KW)	39.8	59.8	78.7
Current (460V) (Amps)	64.4	91.1	110.9
EER (BTU/W-HR)	6.9	10	11.5
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20

Physical Data

Bore	3.66
Stroke	2.75
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

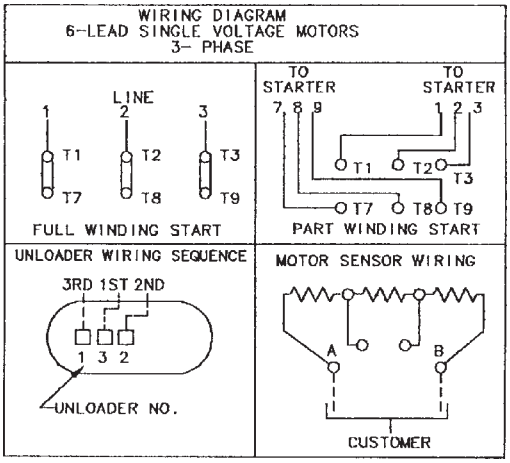
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon
External Overcurrent Protection	Required

Crankcase Heater

Immersion Type, Rating 100 Watts

Oil Pressure Switch

Differential Type, Pilot Duty



Motor Data

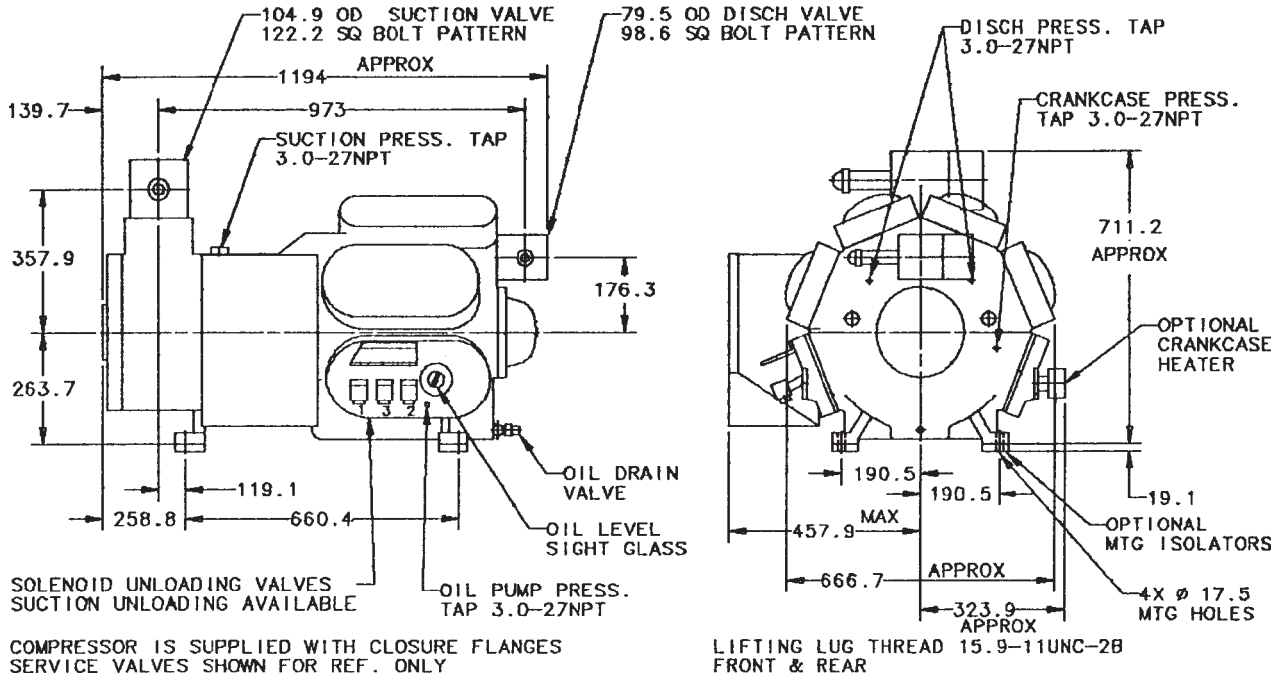
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-200	256	210	1141
230-60-3	207-253	222	182	1054
380-60-3	342-418	137	114	631
460-60-3	414-506	112	90	521
575-60-3	517-633	88	73	426
220-50-3	198-242	197	166	953
346-50-3	311-381	124	103	605
363-50-3	327-399	115	98	577
400-50-3	342-456	108	90	524

At Minimum Utilization Voltage

*At 47 F Sat. Suction, 147 F Sat. Condensing, 15F Superheat, Full Load
**At 40 F Sat. Suction, 125 F Sat. Condensing, 15F Superheat, Full Load

Model CRHE1C0 - 100 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	25.9 BAR-D
Refrigerant	R-22
UL Recognized	

Rated Performance	***37.5%***	***50%***	***75%***	***100%***
Capacity (KW)	102.6	141.6	223.3	301.8
Power Input (KW)	47.2	55.2	72.3	87.9
Current (400V) (Amps)	94.9	104.5	123.5	142.6
C.O.P.	2.17	2.56	3.09	3.43
Evaporator Temp (C)	7.22	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33	8.33
Superheat (C)	11.11	11.11	11.11	11.11

Physical Data

Bore (MM)	92.96
Stroke (MM)	69.85
No. of Cylinders	8
Speed (RPM)	1450

Motor Protection

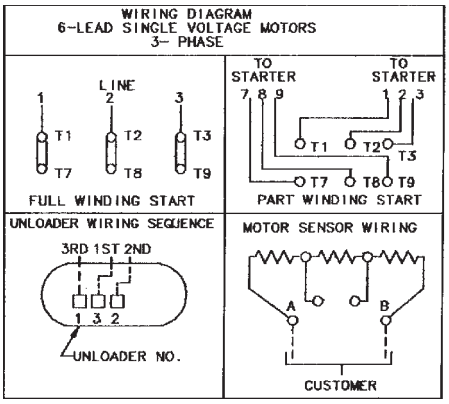
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon
External Overcurrent Protection Required	

Crankcase Heater

Immersion Type, Rating 100 Watts

Oil Pressure Switch

Differential Type, Pilot Duty



Motor Data

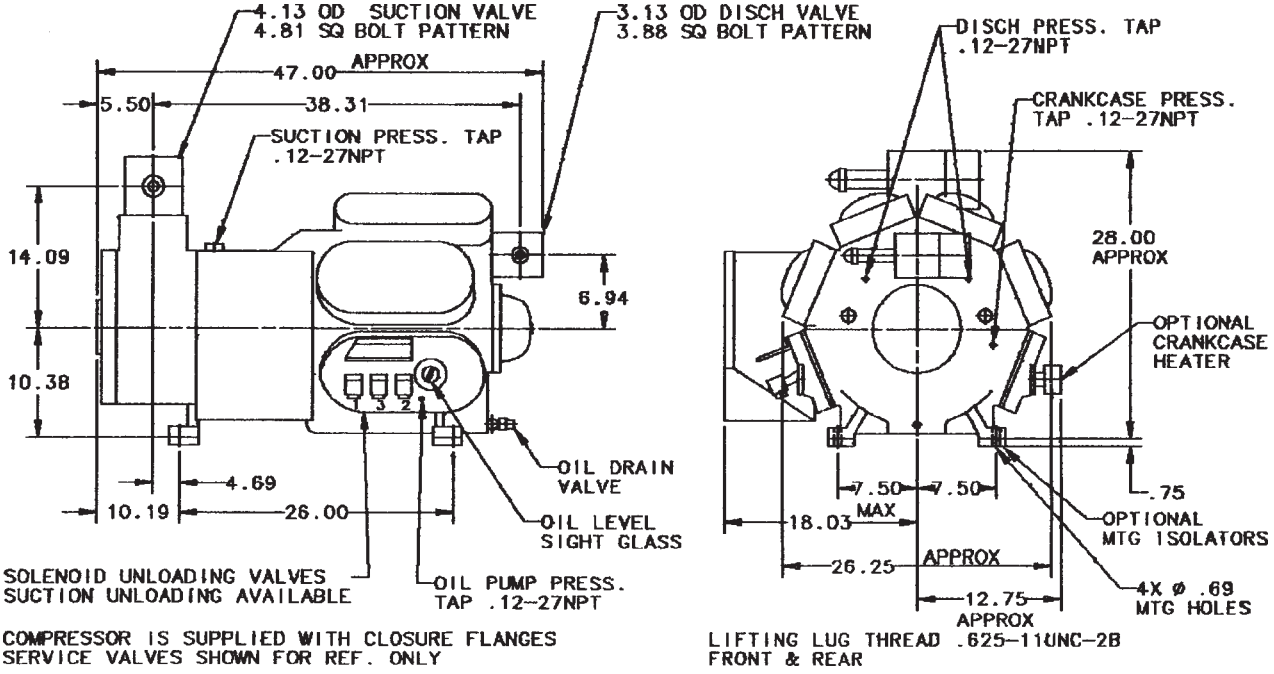
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-200	344	282	1600
230-60-3	207-253	299	244	1390
380-60-3	342-418	178	141	841
460-60-3	414-506	148	118	695
575-60-3	517-633	118	94	556
220-50-3	198-242	265	212	1253
346-50-3	311-381	166	132	796
363-50-3	327-399	159	126	759
400-50-3	342-456	144	114	689

At Minimum Utilization Voltage

* At 8.3 C Sat. Suction, 63.9 C Sat. Condensing, 8.3 C Superheat, Full Load
** At 4.4 C Sat. Suction, 51.7 C Sat. Condensing, 8.3 C Superheat, Full Load

Model CRHE1C0 - 100 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	375 PSID
Refrigerant	R-22
UL Recognized	

Rated Performance	***37.5%***	***50%***	***75%***	***100%***
Capacity (BTU/HR)	412,000	568,600	885,800	1,196,900
Power Input (KW)	56.7	66.3	86.6	106
Current (460V) (Amps)	99	109	128.7	148.5
EER (BTU/W-HR)	7.3	8.6	10.2	11.3
Evaporator Temp	45	45	45	45
Condenser Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20

Physical Data

Bore	3.66
Stroke	2.75
No. of Cylinders	8
Speed	1750 RPM

Motor Protection

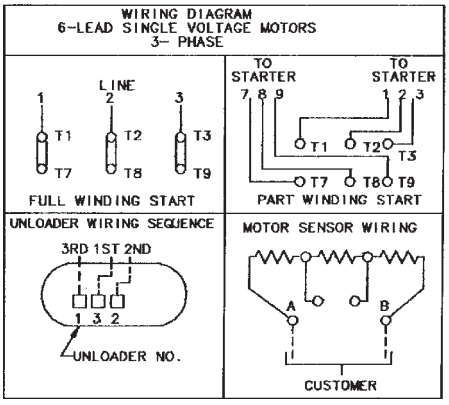
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon
External Overcurrent Protection Required	

Crankcase Heater

Immersion Type, Rating 100 Watts

Oil Pressure Switch

Differential Type, Pilot Duty



Motor Data

Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-200	344	282	1600
230-60-3	207-253	299	244	1390
380-60-3	342-418	178	141	841
460-60-3	414-506	148	118	695
575-60-3	517-633	118	94	556
220-50-3	198-242	265	212	1253
346-50-3	311-381	166	132	796
363-50-3	327-399	159	126	759
400-50-3	342-456	144	114	689

At Minimum Utilization Voltage

*At 47 F Sat. Suction, 147 F Sat. Condensing, 15F Superheat, Full Load
**At 40 F Sat. Suction, 125 F Sat. Condensing, 15F Superheat, Full Load

Model E
Oil Pressure

***NOTE:* Information Obtained from HCOM-SB-59A**

Introduction:

There is a lot of confusion concerning the proper oil pressure for a Model E (2E5***, CRHE) compressor. The purpose of this service bulletin is to clear up the confusion and state the actual minimum required oil pressure.

Discussion:

Over the years, there have been several design changes that have resulted in reduced measured net oil pressure for the Model E compressor. The design changes involved the crankshaft and connecting rods, which resulted in higher oil flow rates and lower oil pressures.

Compressors built prior to 1978 normally had 80 psig or above net oil pressures. Then in 1978 the Model E compressor had its first major change to the lubrication system. The bearing clearances, both connecting rods and main bearings, were increased, the oil passages in the crankshaft were enlarged and the crankshaft journals were drilled through to allow oil to flow out of the crankshaft in two locations 180 degrees apart from each other. The result of this change was a drop in oil pressure from 80 to 60 psig.

In 1982, the offset connecting rod was introduced into the Model E compressor. The clearances were again increased and the oil pressure again was reduced slightly due to the increased oil flow rate caused by the increased oil clearances.

In 1985, changes were made to the compressor to improve its ability to handle dirt and improve oil return. Included in these changes were modifications to the crankshaft. The oil passages were enlarged again and the oil feed holes increased in size, but they were not drilled through the journal.

In addition to these changes, oil bleed ports with orifices were drilled into the transfer sections of the crankshaft to act as a contamination and liquid refrigerant bleed. Again the oil flow was increased and the oil pressure reduced to the 40 to 50 psig range.

All the above changes were implemented on both the semihermetic and open compressors. The changes were all designed to improve reliability by increasing the quantity and quality of the oil being fed to the bearings.

Now the question becomes how much oil pressure is actually required to properly lubricate the compressor and operate the hydraulic unloader system.

The net oil pressure that is measured is the supply pressure of the oil to the bearings of the compressor and not the oil pressure inside the bearing. This is important to understand because the actual oil pressure that supports the shaft in the bearing is created by the hydrodynamic forces in the bearing and this pressure is in the thousands of psi. The oil pressure needs only to be high enough to supply the proper amount of oil to the bearings.

Examples of compressors with lower oil pressures are the Model R (CRHR) and the Model M (CRHM), which have normal oil pressures of 20 to 30 psig net. Hermetic compressors which use centrifugal oil pumps, such as the Model H (CRHH), Model L (CRHL), Climatuff™, the scroll compressor, have oil pressure measured in the range of 1 to 2 psi.

The minimum oil supply pressure for the Model E compressor is 25 psig net. Oil pressure is also required to actuate the hydraulic unloaders. The oil pressure required to operate the unloaders is approximately 10 to 15 psig.

Adding the minimum oil supply pressure and the minimum oil pressure to operate the unloaders yields 35 psig net oil pressure, which is the minimum allowable oil pressure for the Model E compressor to operate the unloaders and properly lubricate the compressor.

If the oil pressure is below 35 psig net oil pressure, the compressor should be disassembled and inspected for the cause of the low oil pressure. Refer to Service Bulletin HCOM-SB-39A "Diagnosis of Model E and F Compressor Low Oil Pressure and Oil Loss Problems."

Model F Open Drive Compressors

Description

The Trane Model F compressor is an unloading, cast iron, open-drive accessible compressor. The compressor oil pump is reversible for operation in either direction. The compressor unloading options are suction pressure-actuated or electric solenoid-actuated, with electric-actuated available either compressor-mounted or remote mounted.

Basic Variations

There are three optional basic variations to the Model F compressor: 1) 100 percent unloaded start; 2) Standard compressor-right hand; or 3) 100 percent unloaded start-right hand.

100 Percent Unloaded Start

This variation provides the capability to start the compressor 100 percent unloaded. This lowers the torque required to start the compressor. This variation is typically used on open compressors when it is desirable to reduce the starting torque because the electric motor or other prime mover device does not have sufficient torque to overcome the starting torque of the compressor. The standard non-unloaded starting torques are listed on the compressor Data Sheets.

The 100 percent unloaded start compressor has unloaders on all cylinders. The unloaders on the non-capacity controlled cylinders are piped directly to the oil lubrication system and load up as soon as the compressor develops oil pressure and remain so until the compressor is stopped.

Standard Compressor-Right Hand

This variation moves the unloader handhole cover, which also houses the sightglass, to the right hand side of the compressor as viewed from the discharge valve end of the compressor. This is the opposite side as shown on the compressor "Data Sheets".

This option is for convenience of viewing the oil sightglass or access to the unloader handhole cover. If the unit configuration dictates that the standard compressor cannot be mounted so the oil sightglass can be viewed or the unloader handhole cover is easily accessible, then a right hand compressor should be considered.

This variation will also allow the oil sightglass to be on the same side of the unit should the compressor be applied with a double extended shaft motor.

100 Percent Unloaded Start-Right Hand

This variation is a combination of the two previous variation.

Low Temperature Applications - (Low Lift Valves)

When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required. Low lift valves are required to prevent valve flutter which could result in broken suction valves and springs.

Lifting and Handling

The Model F compressor has tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one (1) hour before trying to start the compressor.

Pressure Testing

The maximum highside test pressure is 500 psig. The maximum lowside pressure is 350 psig. The differential between highside and lowside should not exceed 340 psig.

Oil Charge

The Model F compressor ships with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane compressor service bulletin; HCOM-SB-4F, "APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

Operation

The Model F compressor must be protected from direct exposure to rain and other weather. The operating ambient must not exceed 125 F. This is based on a maximum condensing temperature of 147 F.

⚠ *WARNING:*

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT®
Compressors

Model F Open Drive Compressors (Cont.)

ReSpecT®

Model F - Open Drive Compressors

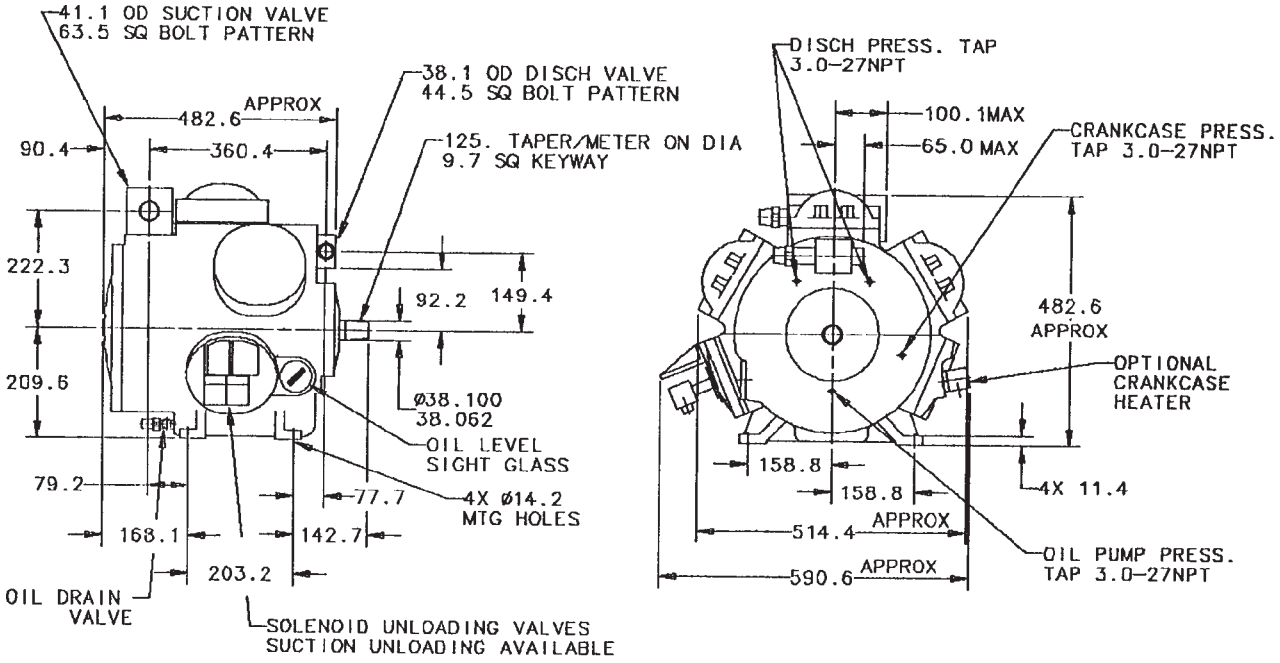
COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM01456	CROF150O2**P1R*****	CROF-150O-2*P1	3F5*30W	15	-	424
COM02457	CROF151O2**P0R*****	CROF-151O-2*P0	3F5*30L	15	-	424
COM02459	CROF150O2**A1R*****	CROF-150O-2*A1	3F5*30WN 115 V	15	-	424
COM02622	CROF150O2**B0R*****	CROF-150O-2*B0	3F5*30N 220 V	15	-	424
COM02707	CROF150O2**B1R*****	CROF-150O-2*B1	3F5*30WN 220 V	15	-	424
COM04468	CROF151O2**A1R*****	CROF-151O-2*A1	3F5*30LWN 115 V	15	-	424
COM01457	CROF200O3**P1R*****	CROF-200O-3*P1	3F5*40W	20	-	476
COM02460	CROF201O3**P0R*****	CROF-201O-3*P0	3F5*40L	20	-	476
COM02462	CROF200O3**A1R*****	CROF-200O-3*A1	3F5*40WN 115 V	20	-	476
COM02463	CROF200O3**P2R*****	CROF-200O-3*P2	3F5*40R	20	-	476
COM02558	CROF200O3**B1R*****	CROF-200O-3*B1	3F5*40WN 220V	20	-	476
COM02623	CROF200O3**B0R*****	CROF-200O-3*B0	3F5*40N 220 V	20	-	476
COM04373	CROF201O3**A1R*****	CROF-201O-3*A1	3F5*40LWN 115 V	20	-	476
COM02110	CROF250O3**P1R*****	CROF-250O-3*P1	3F5*50W	25	-	532
COM02345	CROF250O3**A0R*****	CROF-250O-3*A0	3F5*50N 115V	25	-	532
COM02464	CROF251O3**P0R*****	CROF-251O-3*P0	3F5*50L	25	-	532
COM02465	CROF251O3**A0R*****	CROF-251O-3*A0	3F5*50LN 115V	25	-	532
COM02466	CROF250O3**P2R*****	CROF-250O-3*P2	3F5*50R	25	-	532
COM02624	CROF250O3**B0R*****	CROF-250O-3*B0	3F5*50N 220 V	25	-	532
COM02932	CROF250O3**A1R*****	CROF-250O-3*A1	3F5*50WN 115 V	25	-	532
COM03984	CROF250O3**B1R*****	CROF-250O-3*B1	3F5*50WN 220 V	25	-	532
COM02111	CROF300O4**P1R*****	CROF-300O-4*P1	3F5*60W	30	-	568
COM02467	CROF301O4**P0R*****	CROF-301O-4*P0	3F5*60L	30	-	568
COM02468	CROF300O4**A0R*****	CROF-300O-4*A0	3F5*60N 115 V	30	-	424
COM02654	CROF300O4**B1R*****	CROF-300O-4*B1	3F5*60WN 220 V	30	-	568
COM02718	CROF300O4**A1R*****	CROF-300O-4*A1	3F5*60WN 115 V	30	-	568
COM02112	CROF400O6**P1R*****	CROF-400O-6*P1	3F5*80W	40	-	592
COM02469	CROF401O6**P0R*****	CROF-401O-6*P0	3F5*80L	40	-	592
COM02626	CROF400O6**A1R*****	CROF-400O-6*A1	3F5*80WN 115 V	40	-	592
COM02639	CROF400O6**B0R*****	CROF-400O-6*B0	3F5*80N 220V	40	-	592
COM03858	CROF400O6**B1R*****	CROF-400O-6*B1	3F5*80WN 220 V	40	-	592

Series 6000

Model F - Open Drive Compressors

COM Number	Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM06028	3F5*30W	15	-	424
COM06029	3F5*40W	20	-	476
COM06030	3F5*50W	25	-	532
COM06031	3F5*60W	30	-	568
COM06032	3F5*80W	30	-	592

Model CROF150 - 15 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

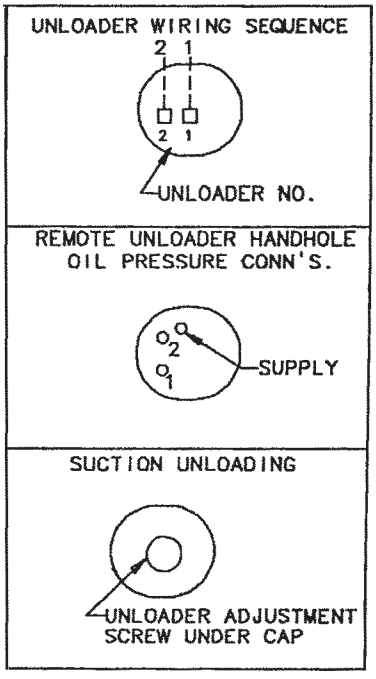
Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	12.5	27.9	42.3
Shaft Power Input (KW)	5.7	8.8	11.8
Shaft Torque (N-M)	38.0	57.9	77.8
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

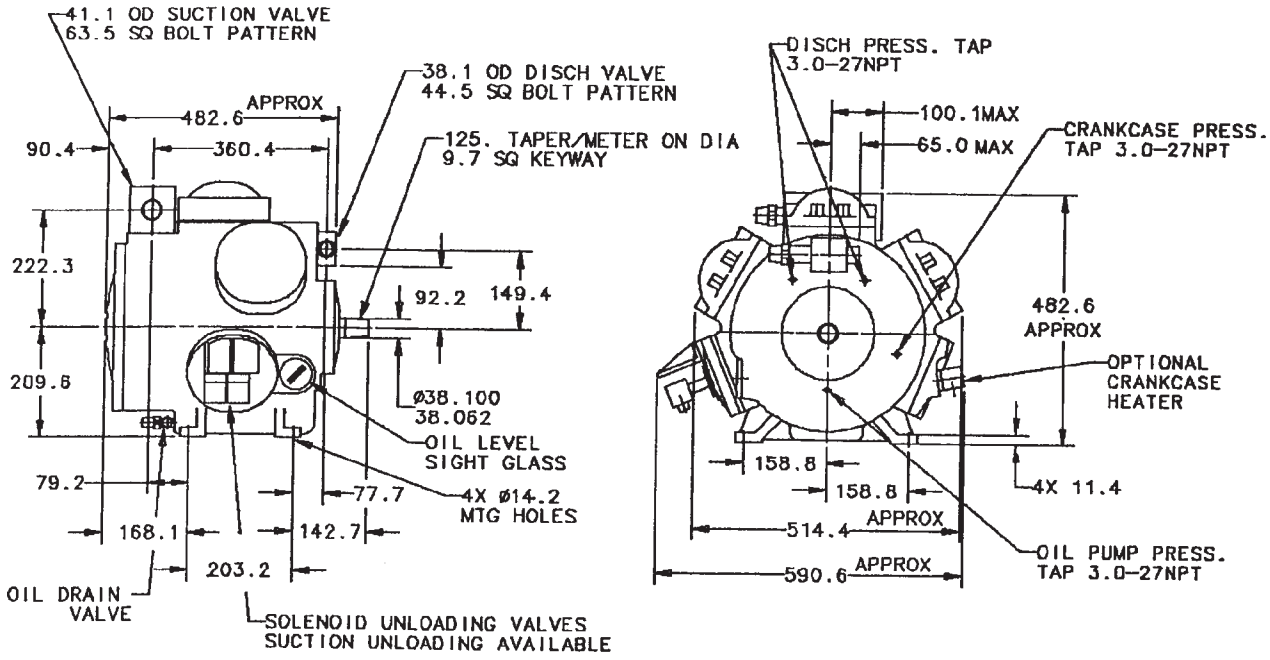
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	3
Speed (RPM)	1450
Start Torque (N-M)	94
Pull-Up Torque (N-M)	80

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 100 Watts



Model CROF150 - 15 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	15.1	33.7	51
Shaft Power Input (KW)	6.9	10.6	14.2
Shaft Torque (N-M)	38.0	57.9	77.8
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

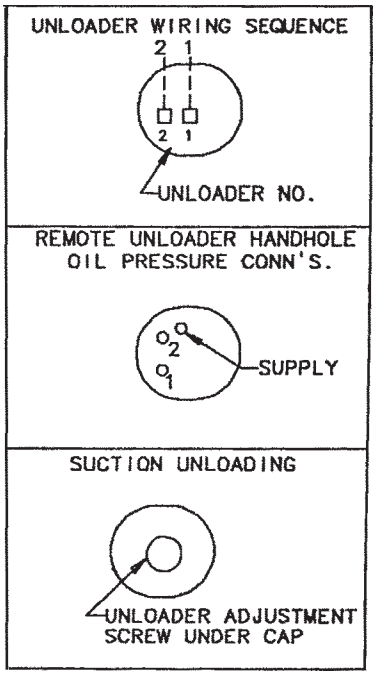
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	3
Speed (RPM)	1750
Start Torque (N-M)	94
Pull-Up Torque (N-M)	80

Oil Pressure Switch

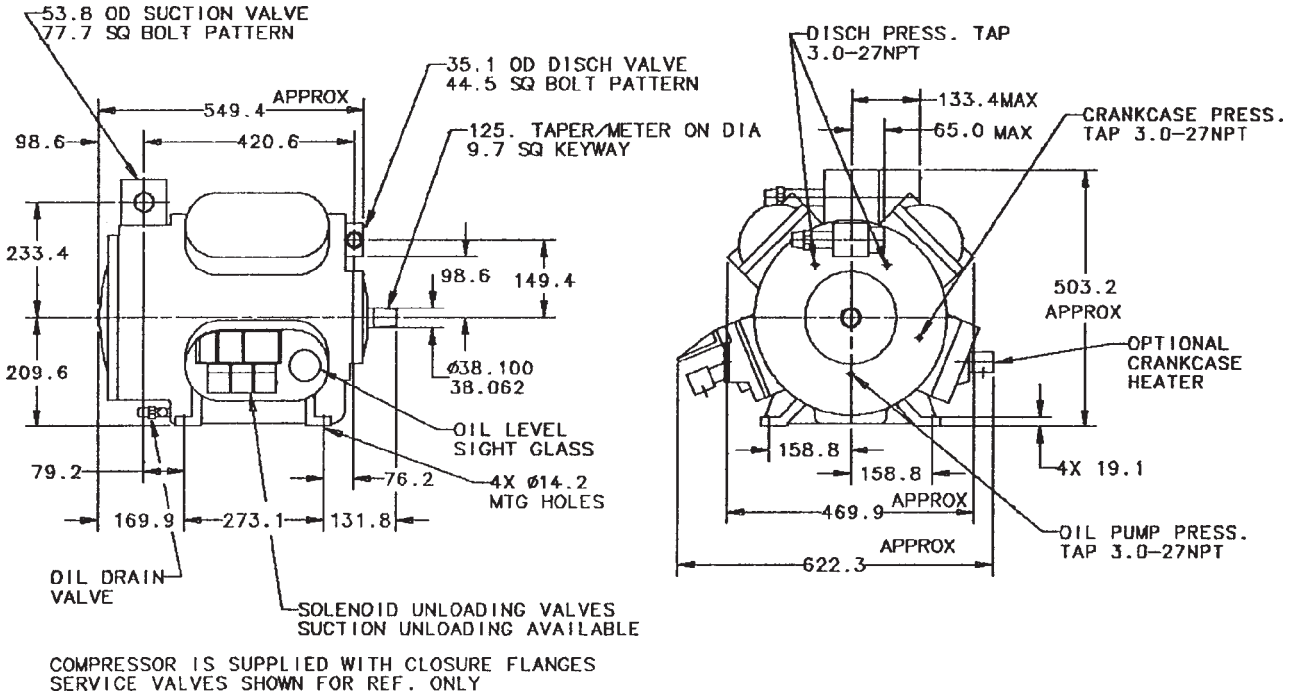
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts



Model CROF200 - 20 Ton / R-22 / 50 Hz



COMPRESSOR IS SUPPLIED WITH CLOSURE FLANGES
SERVICE VALVES SHOWN FOR REF. ONLY

Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***50%***	***75%***	***100%***
Capacity (KW)	27.7	42.8	57.6
Shaft Power Input (KW)	9.4	12.3	15
Shaft Torque (N-M)	61.6	80.7	99
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

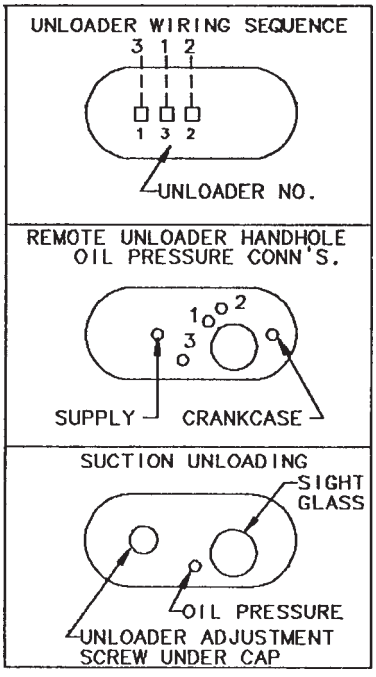
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	4
Speed (RPM)	1450
Start Torque (N-M)	98
Pull-Up Torque (N-M)	85

Oil Pressure Switch

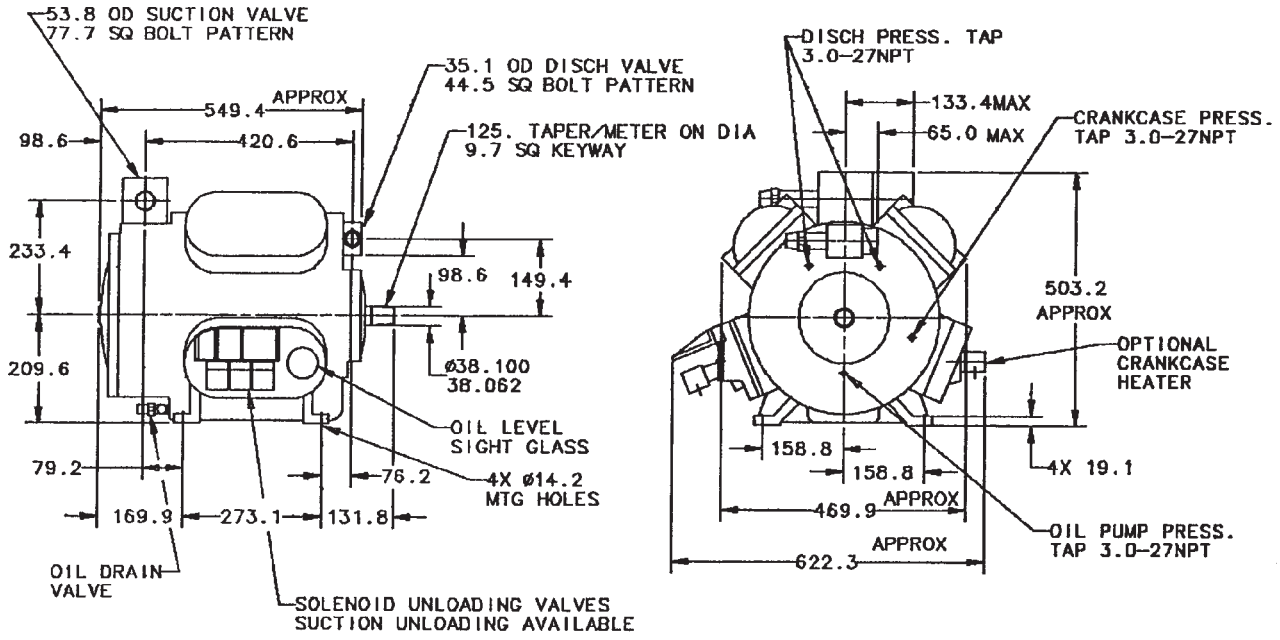
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts



Model CROF200 - 20 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***50%***	***75%***	***100%***
Capacity (KW)	33.4	51.7	69.5
Shaft Power Input (KW)	11.3	14.8	18.1
Shaft Torque (N-M)	61.6	80.7	99
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

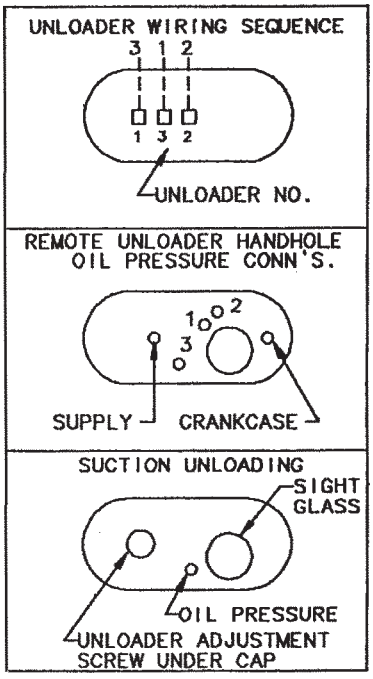
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	4
Speed (RPM)	1750
Start Torque (N-M)	98
Pull-Up Torque (N-M)	85

Oil Pressure Switch

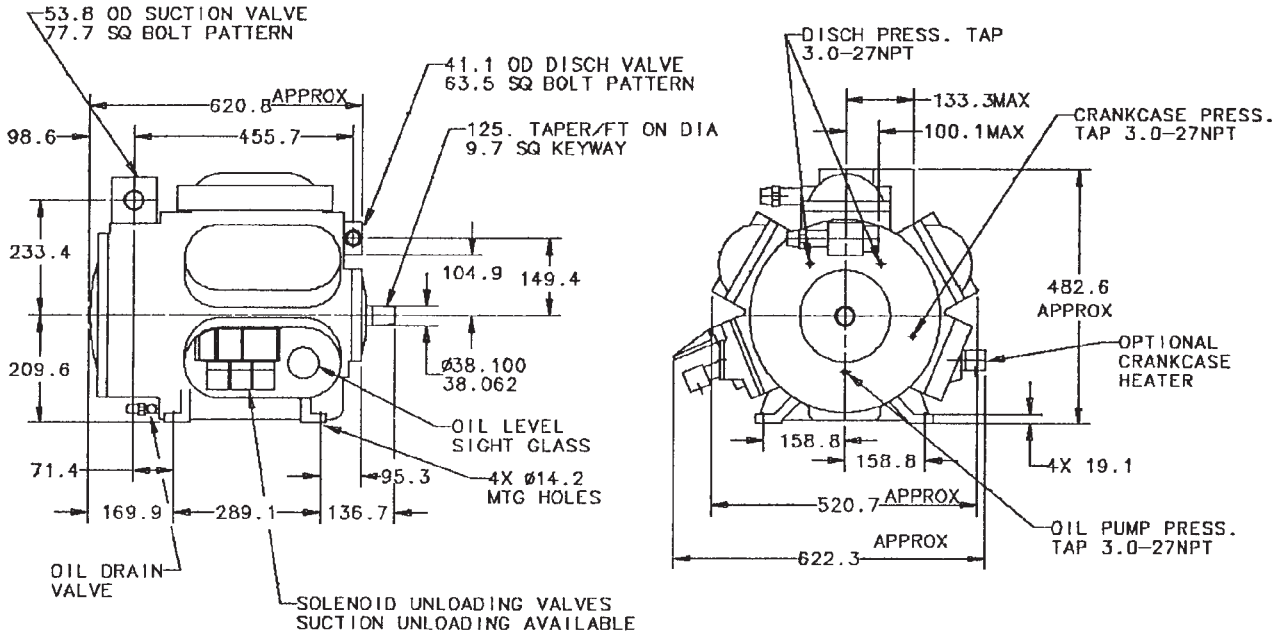
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts



Model CROF250 - 25 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

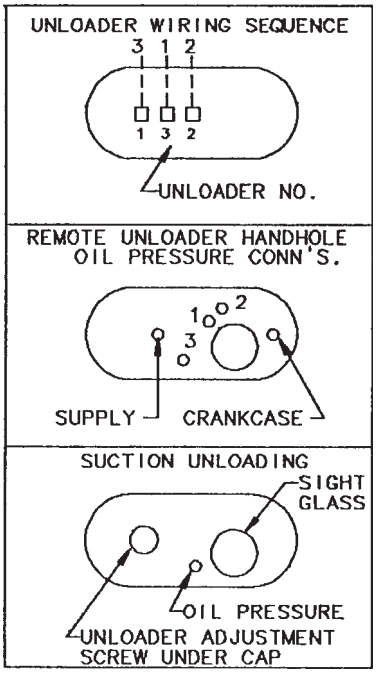
Rated Performance	***40%***	***80%***	***100%***
Capacity (KW)	27.0	57.6	72.9
Shaft Power Input (KW)	10.9	16.8	19.8
Shaft Torque (N-M)	71.7	110.9	130.4
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

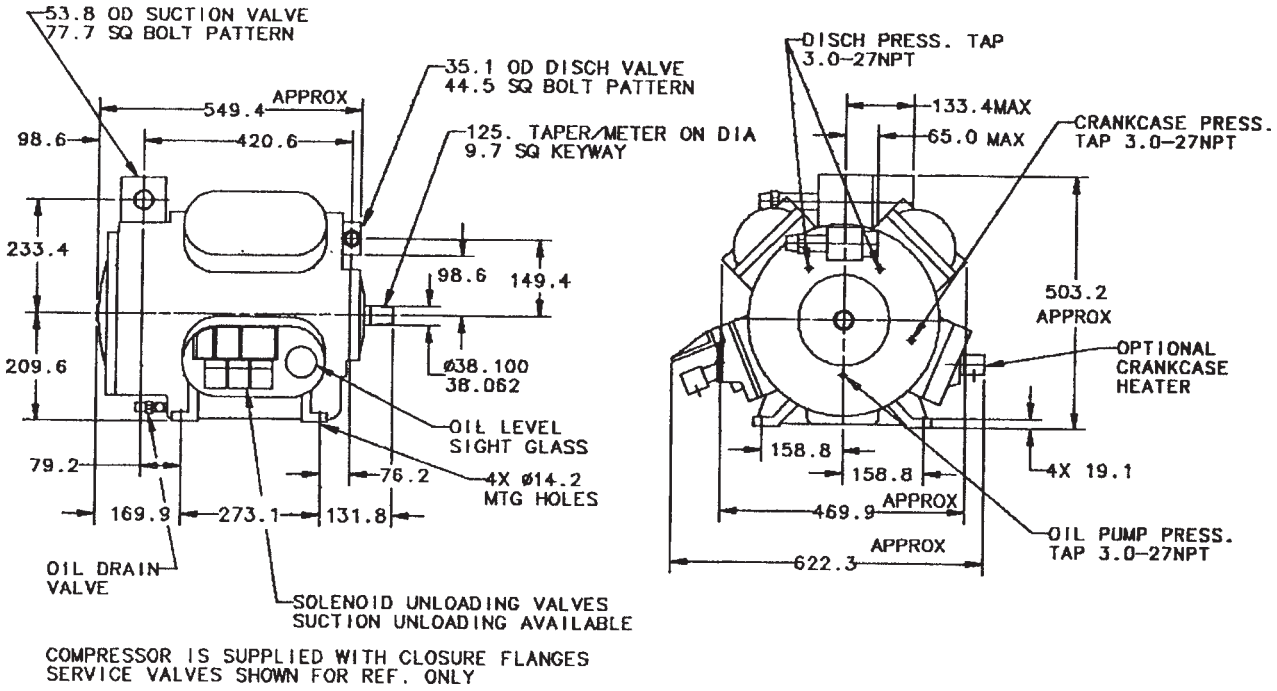
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	5
Speed (RPM)	1450
Start Torque (N-M)	109
Pull-Up Torque (N-M)	95

Oil Pressure Switch
Differential Type, Pilot Duty

Crankcase Heater
Immersion Type, Rating 100 Watts



Model CROF250 - 25 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***40%***	***80%***	***100%***
Capacity (KW)	32.6	69.5	88
Shaft Power Input (KW)	13.1	20.3	23.9
Shaft Torque (N-M)	71.7	110.9	130.4
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C)	11.11	11.11	11.11
(45F/130F/15F SC/20F SH-ARI)			

Physical Data

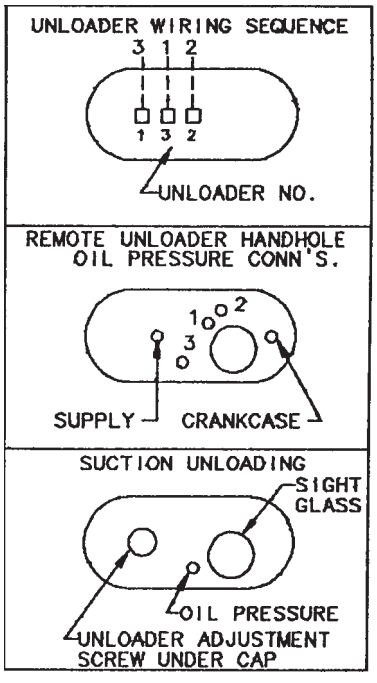
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	5
Speed (RPM)	1750
Start Torque (N-M)	109
Pull-Up Torque (N-M)	95

Oil Pressure Switch

Differential Type, Pilot Duty

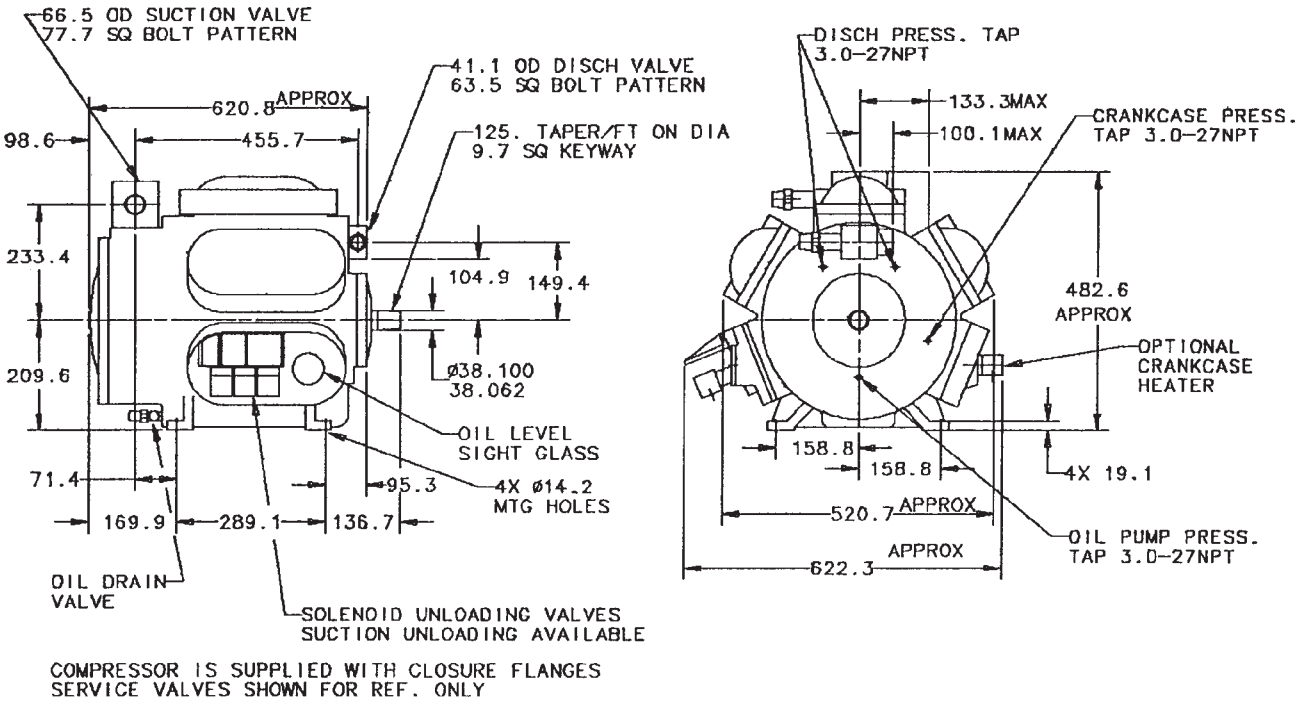
Crankcase Heater

Immersion Type, Rating 100 Watts



Model F Open Drive Compressors (Cont.)

Model CROF300 - 30 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	25.5	57	86.4
Shaft Power Input (KW)	11.4	17.5	23.4
Shaft Torque (N-M)	75.4	115.4	154.4
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C)	11.11	11.11	11.11
(45F/130F/15F SC/20F SH-ARI)			

Physical Data

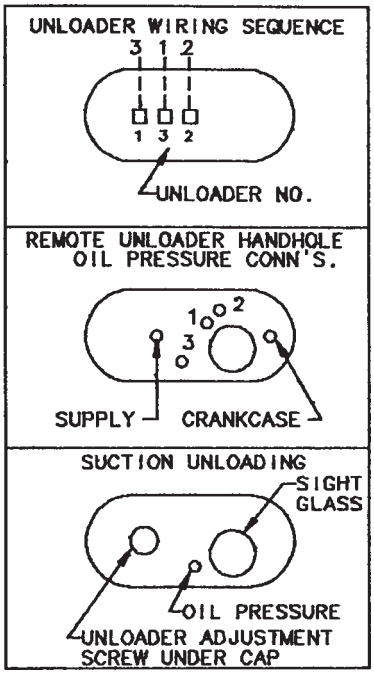
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	6
Speed (RPM)	1450
Start Torque (N-M)	118
Pull-Up Torque (N-M)	102

Oil Pressure Switch

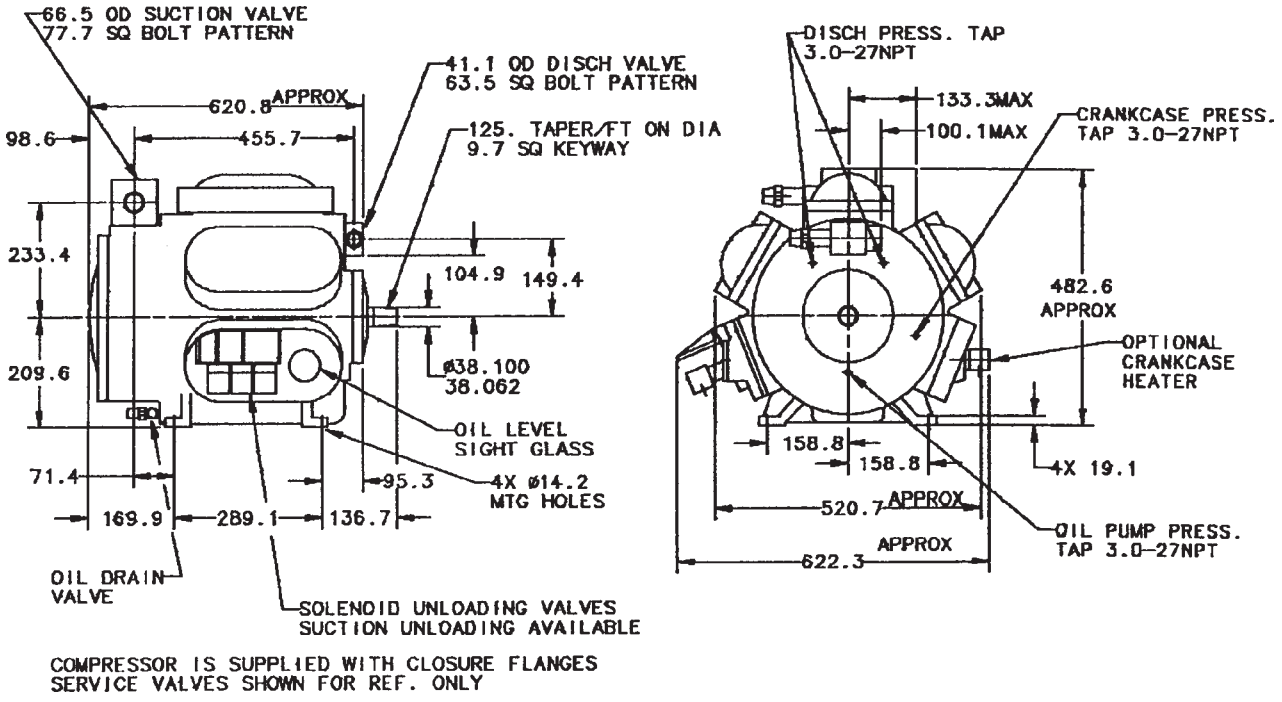
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts

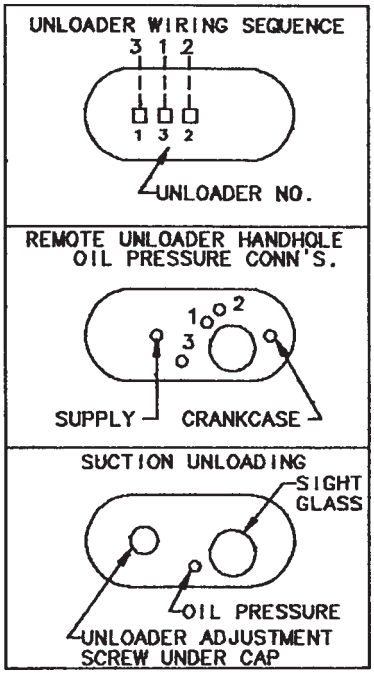


Model CROF300 - 30 Ton / R-22 / 60 Hz

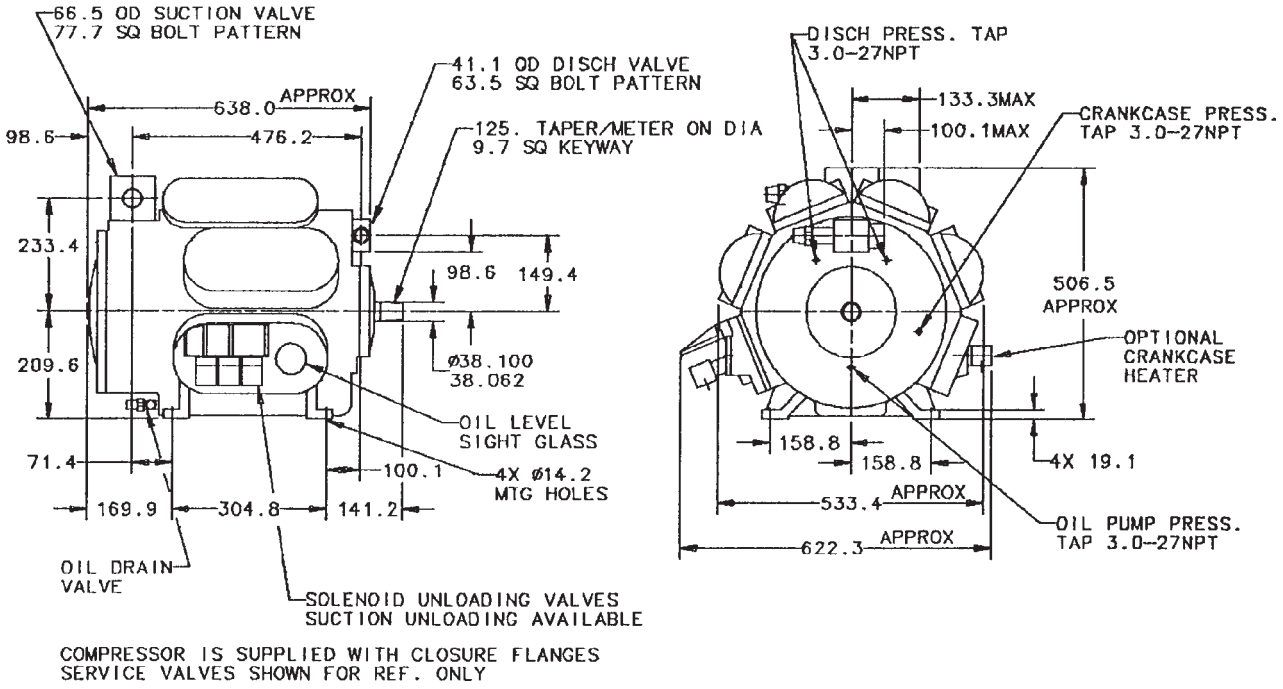


COMPRESSOR IS SUPPLIED WITH CLOSURE FLANGES
SERVICE VALVES SHOWN FOR REF. ONLY

Application			
Internal Relief Valve Setting	26.5 BAR-D		
Refrigerant	R-22		
UL Recognized			
Direct Coupled Only			
Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	30.8	68.8	104.3
Shaft Power Input (KW)	13.8	21.1	28.3
Shaft Torque (N-M)	75.4	115.4	154.4
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C)	11.11	11.11	11.11
(45F/130F/15F SC/20F SH-ARI)			
Physical Data			
Bore (MM)	69.85		
Stroke (MM)	50.8		
No. of Cylinders	6		
Speed (RPM)	1750		
Start Torque (N-M)	118		
Pull-Up Torque (N-M)	102		
Oil Pressure Switch			
Differential Type, Pilot Duty			
Crankcase Heater			
Immersion Type, Rating 100 Watts			



Model CROF400 - 40 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***37.5%***	***50%***	***75%***	***100%***
Capacity (KW)	37.7	51.9	80.8	109.2
Shaft Power Input (KW)	16.7	19.3	25.6	31.4
Shaft Torque (N-M)	108.7	127.6	168.7	207
Evaporator Temp (C)	7.22	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11	11.11

Physical Data

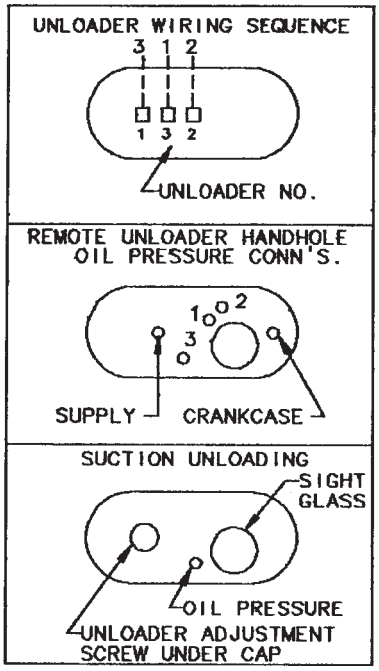
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	8
Speed (RPM)	1450
Start Torque (N-M)	149
Pull-Up Torque (N-M)	117

Oil Pressure Switch

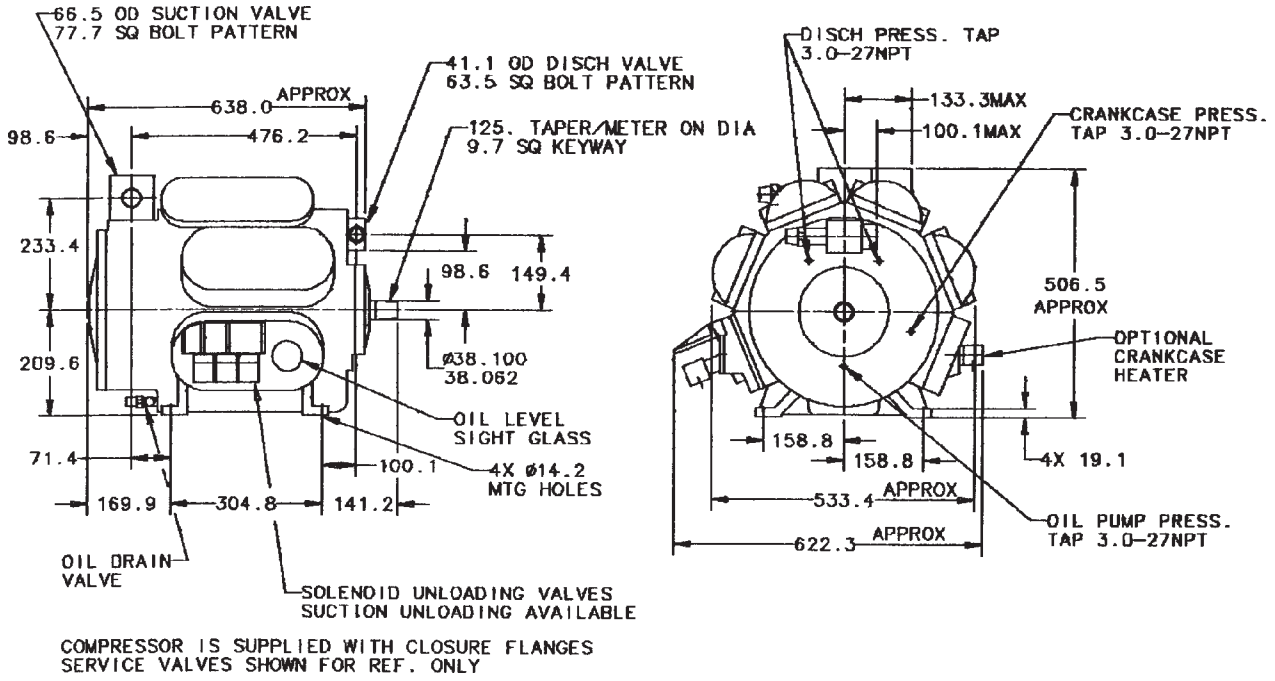
Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts



Model CROF400 - 40 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D
Refrigerant	R-22
UL Recognized	
Direct Coupled Only	

Rated Performance	***37.5%***	***50%***	***75%***	***100%***
Capacity (KW)	45.5	62.6	97.5	131.8
Shaft Power Input (KW)	20.1	23.3	30.9	37.9
Shaft Torque (N-M)	108.7	127.6	168.7	207
Evaporator Temp (C)	7.22	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44	54.44
Liquid Temp (C)	8.33	8.33	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11	11.11

Physical Data

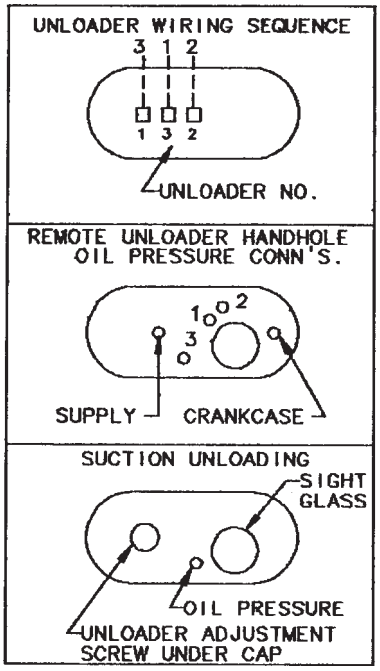
Bore (MM)	69.85
Stroke (MM)	50.8
No. of Cylinders	8
Speed (RPM)	1750
Start Torque (N-M)	149
Pull-Up Torque (N-M)	117

Oil Pressure Switch

Differential Type, Pilot Duty

Crankcase Heater

Immersion Type, Rating 100 Watts



Model F Semihermetic Compressors

Model F - Small Barrel

Model F - Large Barrel

Description

The Trane Model F semihermetic compressor is an unloading, cast iron, open-drive accessible compressor. The compressor oil pump is reversible for operation in either direction. The compressor unloading options are suction pressure-actuated or electric solenoid-actuated, with electric-actuated available either compressor-mounted or remote mounted.

Low Temperature Applications - (Low Lift Valves)

When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required. Low lift valves are required to prevent valve flutter which could result in broken suction valves and springs.

Lifting and Handling

The Model F compressor has tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one hour before trying to start the compressor.

Storage

The Model F compressor is shipped with a nitrogen charge and the connections are sealed with closure plates; unless the optional service valves have been ordered for factory installation. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 165 F and 95% RH non condensing.

Pressure Testing

The maximum highside test pressure is 500 psig. The maximum lowside pressure is 350 psig. The differential between highside and lowside should not exceed 340 psig. Never pressure the system to a higher pressure that the system relief valve.

Oil Charge

The Model E compressor ships with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane compressor service bulletin; HCOM-SB-4F, "APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

Operation

The Model F compressor must be protected from direct exposure to rain and other weather. The operating ambient must not exceed 125 F. This is based on a maximum condensing temperature of 147 F.

⚠WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® Compressors

ReSpecT®

Model F - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number	Original Model Number (1)	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM02410	CRHF100B2**A0R*G***	CRHF-100B-2*A0	1F5*38N 115V	10	200-230-460/60/3	522
COM02411	CRHF101B2**A0R*G***	CRHF-101B-2*A0	1F5*38LN 115V	10	200-230-460/60/3	522
COM02412	CRHF100C2**A0R*G***	CRHF-100C-2*A0	1F5*31N 115V	10	460/60/3	522
COM02984	CRHF100C2**P0R*G***	CRHF-100C-2*P0	1F5*31	10	460/60/3	522
COM01873	CRHF100D2**P0R*G***	CRHF-100D-2*P0	1F5*35	10	575/60/3	790
COM02164	CRHF130B3**P0R*F***	CRHF-130B-3*P0	1F5*48	12.5	200-230-460/60/3	710
COM02166	CRHF130B3**P0R*G***	CRHF-130B-3*P0	1F5*48	12.5	200-230-460/60/3	626
COM01451	CRHF150B2**P0R*G***	CRHF-150B-2*P0	2F5*38	15	200-230-460/60/3	522
COM02100	CRHF150B2**A0R*G***	CRHF-150B-2*A0	2F5*38N 115V	15	200-230-460/60/3	522
COM02165	CRHF160B3**P0R*F***	CRHF-160B-3*P0	1F5*58	15	200-230-460/60/3	790
COM02167	CRHF160B3**P0R*G***	CRHF-160B-3*P0	1F5*58	15	200-230-460/60/3	694
COM02520	CRHF150B2**B0R*G***	CRHF-150B-2*B0	2F5*38N 220V	15	200-230-460/60/3	522
COM02173	CRHF150C2**P0R*G***	CRHF-150C-2*P0	2F5*31	15	460/60/3	522
COM02174	CRHF150C2**A0R*G***	CRHF-150C-2*A0	2F5*31N 115V	15	460/60/3	522
COM02413	CRHF151C2**A0R*G***	CRHF-151C-2*A0	2F5*38L	15	460/60/3	522
COM01864	CRHF150D2**P0R*G***	CRHF-150D-2*P0	2F5*35	15	575/60/3	522
COM02132	CRHF150D2**A0R*G***	CRHF-150D-2*A0	2F5*35N 115V	15	575/60/3	522
COM01054	CRHF200B3**P0R*****	CRHF-200B-3*P0	S2F5*43	20	200-230-460/60/3	522
COM01452	CRHF200B3**P0R*G***	CRHF-200B-3*P0	2F5*48	20	200-230-460/60/3	626
COM01662	CRHF200B3**P0R*F***	CRHF-200B-3*P0	2F5*48	20	200-230-460/60/3	710
COM01809	CRHF190B4**P0R*F***	CRHF-190B-4*P0	1F5*68	20	200-230-460/60/3	810
COM01810	CRHF190B4**P0R*G***	CRHF-190B-4*P0	1F5*68	20	200-230-460/60/3	690
COM02101	CRHF200B3**A0R*F***	CRHF-200B-3*A0	2F5*48N 115V	20	200-230-460/60/3	710
COM02105	CRHF200B3**A0R*G***	CRHF-200B-3*A0	2F5*48N 115V	20	200-230-460/60/3	626
COM02421	CRHF201B3**P0R*G***	CRHF-201B-3*P0	2F5*48L	20	200-230-460/60/3	626
COM02493	CRHF200B3**P0R*G***	CRHF-200B-3*P0	2F5*48U	20	200-230-460/60/3	626
COM02516	CRHF200B3**B0R*G***	CRHF-200B-3*B0	2F5*48N 220V	20	200-230-460/60/3	626
COM02521	CRHF200B3**B0R*F***	CRHF-200B-3*B0	2F5*48N 220V	20	200-230-460/60/3	710
COM02076	CRHF200C3**P0R*G***	CRHF-200C-3*P0	2F5*41	20	460/60/3	626
COM02096	CRHF200C3**P0R*F***	CRHF-200C-3*P0	2F5*41	20	460/60/3	710
COM02416	CRHF200C3**A0R*F***	CRHF-200C-3*A0	2F5*41N 115V	20	460/60/3	710
COM02424	CRHF201C3**P0R*G***	CRHF-201C-3*P0	2F5*41L	20	460/60/3	626
COM02425	CRHF200C3**A0R*G***	CRHF-200C-3*A0	2F5*41N 115V	20	460/60/3	626
COM01865	CRHF200D3**P0R*F***	CRHF-200D-3*P0	2F5*45	20	575/60/3	710
COM01869	CRHF200D3**P0R*G***	CRHF-200D-3*P0	2F5*45	20	575/60/3	626
COM01874	CRHF190D4**P0R*F***	CRHF-190D-4*P0	1F5*65	20	575/60/3	790
COM01875	CRHF190D4**P0R*G***	CRHF-190D-4*P0	1F5*65	20	575/60/3	694
COM02940	CRHF200D3**A0R*F***	CRHF-200D-3*A0	2F5*45N 115V	20	575/60/3	710
COM01453	CRHF250B3**P0R*G***	CRHF-250B-3*P0	2F5*58	25	200-230-460/60/3	694
COM01663	CRHF250B3**P0R*F***	CRHF-250B-3*P0	2F5*58	25	200-230-460/60/3	790
COM01811	CRHF260B6**P0R*F***	CRHF-260B-6*P0	1F5*88	25	200-230-460/60/3	922
COM01812	CRHF260B6**P0R*G***	CRHF-260B-6*P0	1F5*88	25	200-230-460/60/3	776
COM02102	CRHF250B3**A0R*F***	CRHF-250B-3*A0	2F5*58N 115V	25	200-230-460/60/3	790
COM02106	CRHF250B3**A0R*G***	CRHF-250B-3*A0	2F5*58N 115V	25	200-230-460/60/3	694
COM02422	CRHF251B3**P0R*G***	CRHF-251B-3*P0	2F5*58L	25	200-230-460/60/3	694
COM02502	CRHF251B3**A0R*G***	CRHF-251B-3*A0	2F5*58LN 115V	25	200-230-460/60/3	694
COM02517	CRHF250B3**B0R*G***	CRHF-250B-3*B0	2F5*58N 220V	25	200-230-460/60/3	694
COM02522	CRHF250B3**B0R*F***	CRHF-250B-3*B0	2F5*58N 220V	25	200-230-460/60/3	790
COM01870	CRHF250C3**P0R*G***	CRHF-250C-3*P0	2F5*55	25	460/60/3	694
COM02077	CRHF250C3**P0R*G***	CRHF-250C-3*P0	2F5*51	25	460/60/3	694

ReSpecT®

Model F - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number	Original Model Number (1)	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM02097	CRHF250C3**P0R*F***	CRHF-250C-3*P0	2F5*51	25	460/60/3	790
COM02182	CRHF250C3**A0R*G***	CRHF-250C-3*A0	2F5*51N 115V	25	460/60/3	694
COM02417	CRHF250C3**A0R*F***	CRHF-250C-3*A0	2F5*51N 115V	25	460/60/3	790
COM02426	CRHF251C3**P0R*G***	CRHF-251C-3*P0	2F5*51L	25	460/60/3	694
COM01866	CRHF250D3**P0R*F***	CRHF-250D-3*P0	2F5*55	25	575/60/3	790
COM01876	CRHF260D6**P0R*F***	CRHF-260D-6*P0	1F5*85	25	575/60/3	922
COM01877	CRHF260D6**P0R*G***	CRHF-260D-6*P0	1F5*85	25	575/60/3	776
COM01454	CRHF300B4**P0R*G***	CRHF-300B-4*P0	2F5*68	30	200-230-460/60/3	690
COM01664	CRHF300B4**P0R*F***	CRHF-300B-4*P0	2F5*68	30	200-230-460/60/3	810
COM02103	CRHF300B4**A0R*F***	CRHF-300B-4*A0	2F5*68N 115V	30	200-230-460/60/3	810
COM02107	CRHF300B4**A0R*G***	CRHF-300B-4*A0	2F5*68N 115V	30	200-230-460/60/3	690
COM02371	CRHF301B4**P0R*G***	CRHF-301B-4*P0	2F5*68L	30	200-230-460/60/3	690
COM02523	CRHF300B4**B0R*F***	CRHF-300B-4*B0	2F5*68N 220V	30	200-230-460/60/3	810
COM02078	CRHF300C4**P0R*G***	CRHF-300C-4*P0	2F5*61	30	460/60/3	690
COM02098	CRHF300C4**P0R*F***	CRHF-300C-4*P0	2F5*61	30	460/60/3	810
COM02181	CRHF300C4**A0R*G***	CRHF-300C-4*A0	2F5*61N 115V	30	460/60/3	690
COM02418	CRHF300C4**A0R*F***	CRHF-300C-4*A0	2F5*61N 115V	30	460/60/3	790
COM02427	CRHF301C4**P0R*G***	CRHF-301C-4*P0	2F5*61L	30	460/60/3	690
COM03125	CRHF300C4**B0R*G***	CRHF-300C-4*B0	2F5*61N 220V	30	460/60/3	690
COM01867	CRHF300D4**P0R*F***	CRHF-300D-4*P0	2F5*65	30	575/60/3	810
COM01871	CRHF300D4**P0R*G***	CRHF-300D-4*P0	2F5*55	30	575/60/3	690
COM01455	CRHF400B6**P0R*G***	CRHF-400B-6*P0	2F5*88	40	200-230-460/60/3	776
COM01665	CRHF400B6**P0R*F***	CRHF-400B-6*P0	2F5*88	40	200-230-460/60/3	922
COM02104	CRHF400B6**A0R*F***	CRHF-400B-6*A0	2F5*88N 115V	40	200-230-460/60/3	922
COM02108	CRHF400B6**A0R*G***	CRHF-400B-6*A0	2F5*88N 115V	40	200-230-460/60/3	776
COM02423	CRHF401B6**P0R*G***	CRHF-401B-6*P0	2F5*88L	40	200-230-460/60/3	776
COM02519	CRHF400B6**B0R*G***	CRHF-400B-6*B0	2F5*88N 220V	40	200-230-460/60/3	776
COM02524	CRHF400B6**B0R*F***	CRHF-400B-6*B0	2F5*88N 220V	40	200-230-460/60/3	922
COM02557	CRHF400B6**B1R*F***	CRHF-400B-6*B1	2F5*88W	40	200-230-460/60/3	922
COM05080	CRHF400B6**PSR*F***	CRHF-400B-6*P0	2F5*88U	40	200-230-460/60/3	922
COM05625	CRHF400B6**R0R*F***	CRHF-400B-6*R0	2F5*88	40	200-230-460/60/3	922
COM02634	CRHF400F6**B0R*G***	CRHF-400F-6*B0	2F5*86N 220V	40	220/50/3	776
COM02657	CRHF400F6**A0R*G***	CRHF-400F-6*A0	2F5*86N 115V	40	220/50/3	776
COM02071	CRHF400C6**P0R*G***	CRHF-400C-6*P0	2F5*81	40	460/60/3	776
COM02099	CRHF400C6**P0R*F***	CRHF-400C-6*P0	2F5*81	40	460/60/3	922
COM02180	CRHF400C6**A0R*G***	CRHF-400C-6*A0	2F5*81N 115V	40	460/60/3	776
COM02420	CRHF400C6**A0R*F***	CRHF-400C-6*A0	2F5*81N 115V	40	460/60/3	922
COM02428	CRHF401C6**P0R*G***	CRHF-401C-6*P0	2F5*81L	40	460/60/3	776
COM02717	CRHF400C**B0R*F***	CRHF-400C-6*B0	2F5*81N 220V	40	460/60/3	922
COM01868	CRHF400D6**P0R*F***	CRHF-400D-6*P0	2F5*85	40	575/60/3	922
COM01872	CRHF400D6**P0R*G***	CRHF-400D-6*P0	2F5*85	40	575/60/3	694
COM03360	CRHF400D6**A0R*G***	CRHF-400D-6*A0	2F5*85N 115V	40	575/60/3	776

Model F Semihermetic Compressors (Cont.)

Series 6000

Model F - Semihermetic Compressors

COM Number	Model Number (1)	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM06023	2F5*38	15	200-230-460/60/3	522
COM06130	2F5*35	15	575/60/3	522
COM06018	2F5*48	20	200-230-460/60/3	626
COM06024	2F5*48	20	200-230-460/60/3	710
COM06131	2F5*45	20	575/60/3	710
COM06135	2F5*45	20	575/60/3	626
COM06019	2F5*58	25	200-230-460/60/3	694
COM06025	2F5*58	25	200-230-460/60/3	790
COM06132	2F5*55	25	575/60/3	790
COM06136	2F5*55	25	575/60/3	694
COM06020	2F5*68	30	200-230-460/60/3	690
COM06026	2F5*68	30	200-230-460/60/3	810
COM06133	2F5*65	30	575/60/3	810
COM06137	2F5*65	30	575/60/3	690
COM06021	2F5*88	40	200-230-460/60/3	776
COM06022	2F5*88N 115V	40	200-230-460/60/3	776
COM06027	2F5*88	40	200-230-460/60/3	922
COM06134	2F5*85	40	575/60/3	922
COM06138	2F5*85	40	575/60/3	776

NOTES: (1) Motor barrel size: All 3 cylinder, Model F, Semihermetic compressors utilize a small barrel motor, 8.77" in diameter. Using the "Original Model Number" ("Model Number" for the Series 6000) the compressor may be identified as design sequences A through C. All other Model F, Semihermetic compressors with a design sequence of A through B, utilize a large barrel motor, 12.375" in diameter. Design sequences C through E, utilize a small barrel motor, 8.77" in diameter.

Model F <u>Approximate</u> Electrical and Capacity Information

15 Ton

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	51,400	114,900	174,100
Power Input (KW)	9.0	14.4	17.7
Current (460V) (Amps)	16.3	21.0	25.0
Evaporator Temp	45	45	45
Condensor Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20

20 Ton

Rated Performance	***25%***	***50%***	***75%***	***100%***
Capacity (BTU/HR)	42,660	106,650	170,640	237,000
Power Input (KW)	10.5	15.0	20.1	23.4
Current (460V) (Amps)	20.1	24.4	29.0	33.0
Evaporator Temp	45	45	45	45
Condensor Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20

Model F Semihermetic Compressors (Cont.)

25 Ton

Rated Performance	***40%***	***60%***	***80%***	***100%***
Capacity (BTU/HR)	102,068	168,112	234,156	300,200
Power Input (KW)	15.9	21.0	25.5	28.4
Current (460V) (Amps)	27.2	31.6	36.0	40.0
Evaporator Temp	45	45	45	45
Condensor Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20

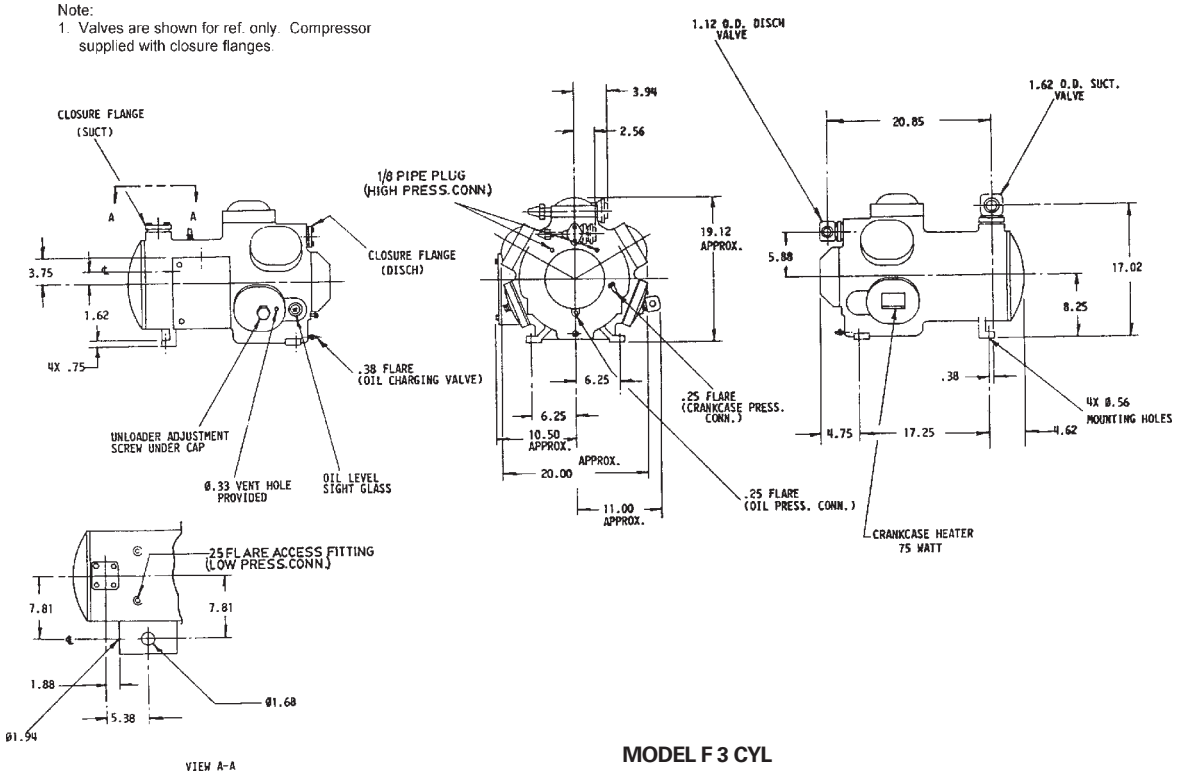
30 Ton

Rated Performance	***33%***	***50%***	***75%***	***100%***
Capacity (BTU/HR)	116,896	202,320	368,672	449,600
Power Input (KW)	17.0	21.8	29.3	34.0
Current (460V) (Amps)	31.2	35.5	42.2	48.0
Evaporator Temp	45	45	45	45
Condensor Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20

40 Ton

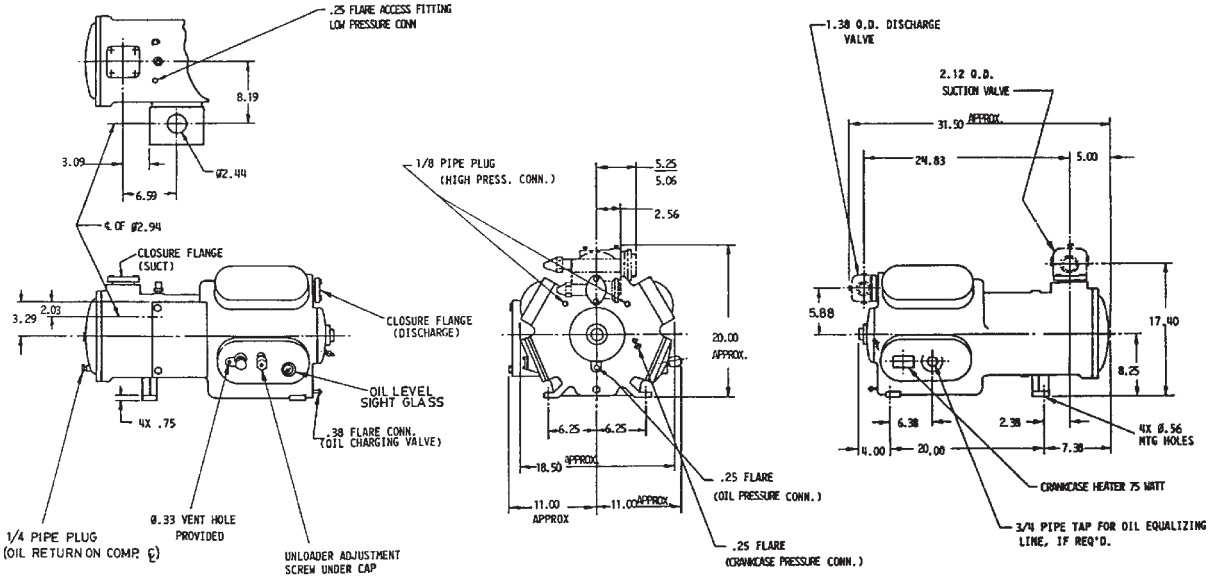
Rated Performance	***25%***	***50%***	***75%***	***100%***
Capacity (BTU/HR)	64,044	160,110	291,756	355,800
Power Input (KW)	20.7	29.5	39.6	46.1
Current (460V) (Amps)	39.7	48.1	57.2	65.0
Evaporator Temp	45	45	45	45
Condensor Temp	130	130	130	130
Liquid Temp	115	115	115	115
Superheat	20	20	20	20

Note:
1. Valves are shown for ref. only. Compressor supplied with closure flanges.



MODEL F 3 CYL

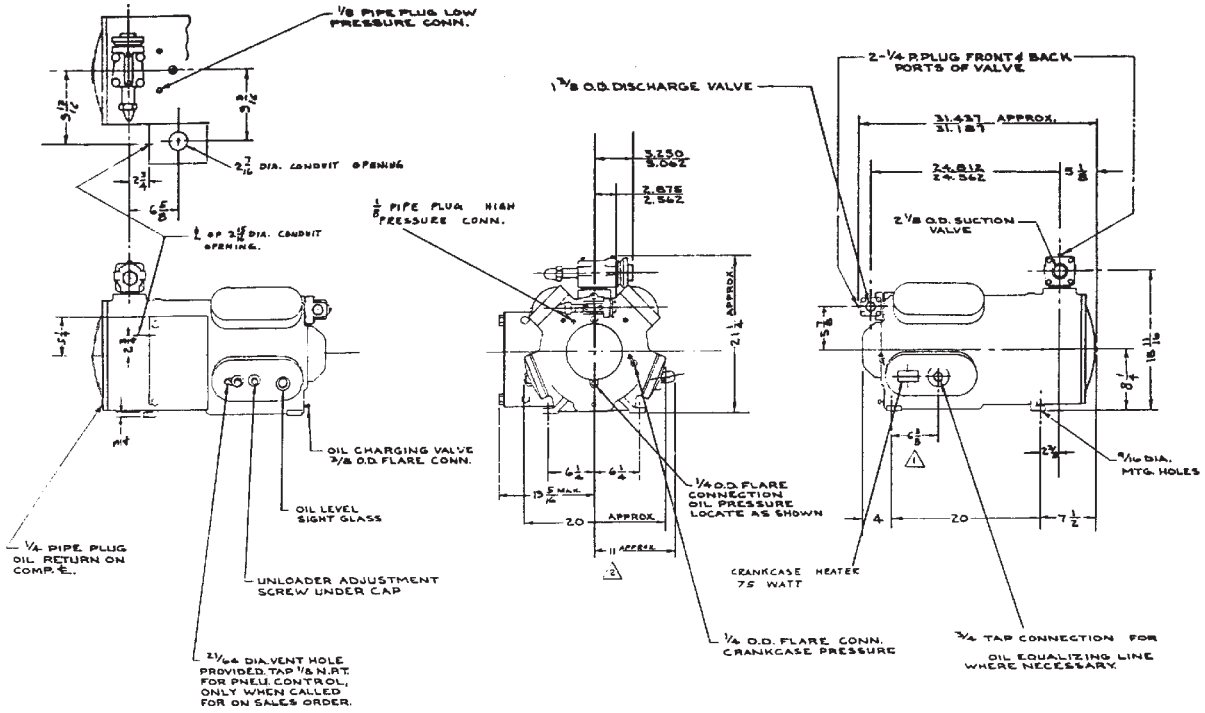
Model F Semihermetic Compressors (Cont.)



NOTE:

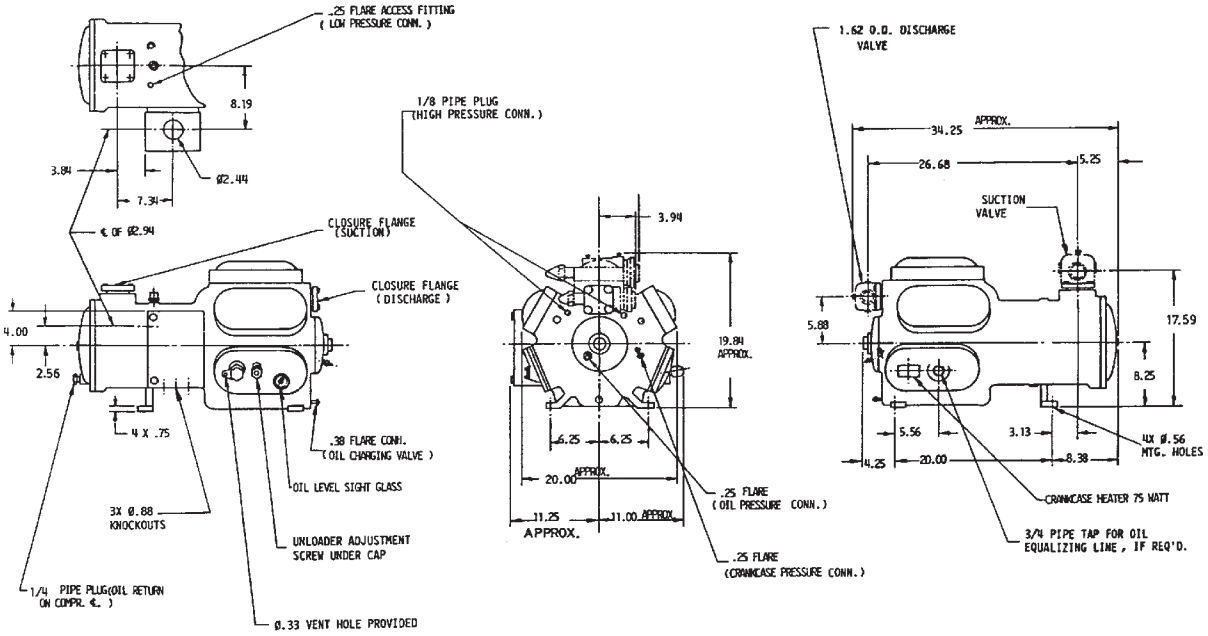
1. VALVES ARE SHOWN FOR REF. ONLY. COMP SUPPLIED WITH CLOSURE FLANGES.

MODEL F 4 CYL - SMALL DIA. MOTOR



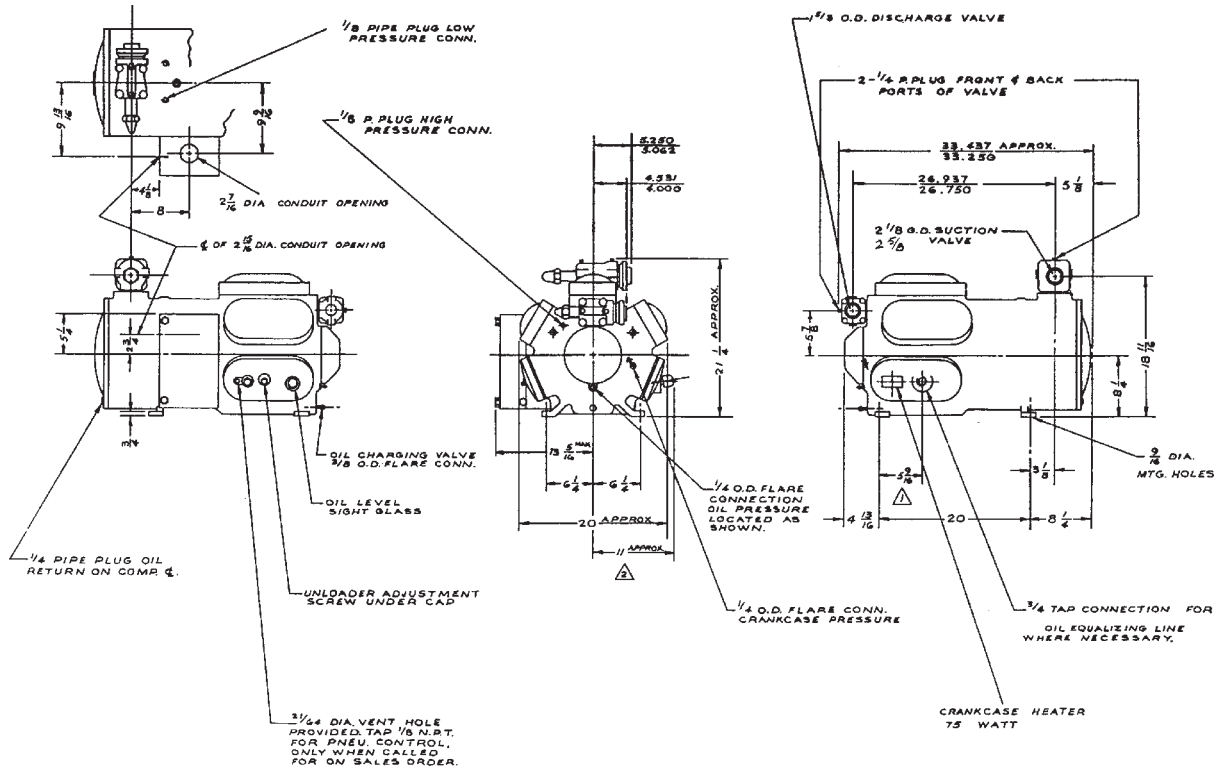
MODEL F 4 CYL - LARGE DIA. MOTOR

Model F Semihermetic Compressors (Cont.)

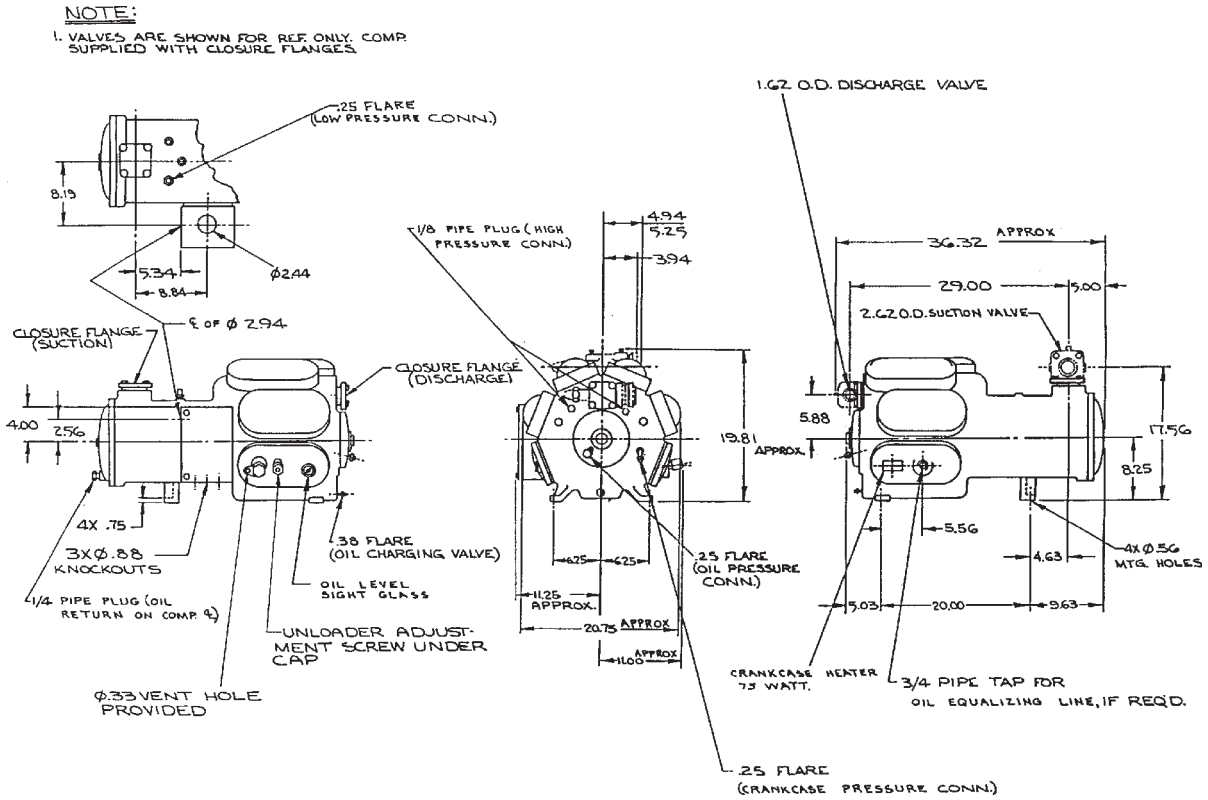


NOTE:
1. VALVES ARE SHOWN FOR REF. ONLY. COMP. SUPPLIED WITH CLOSURE FLANGES.

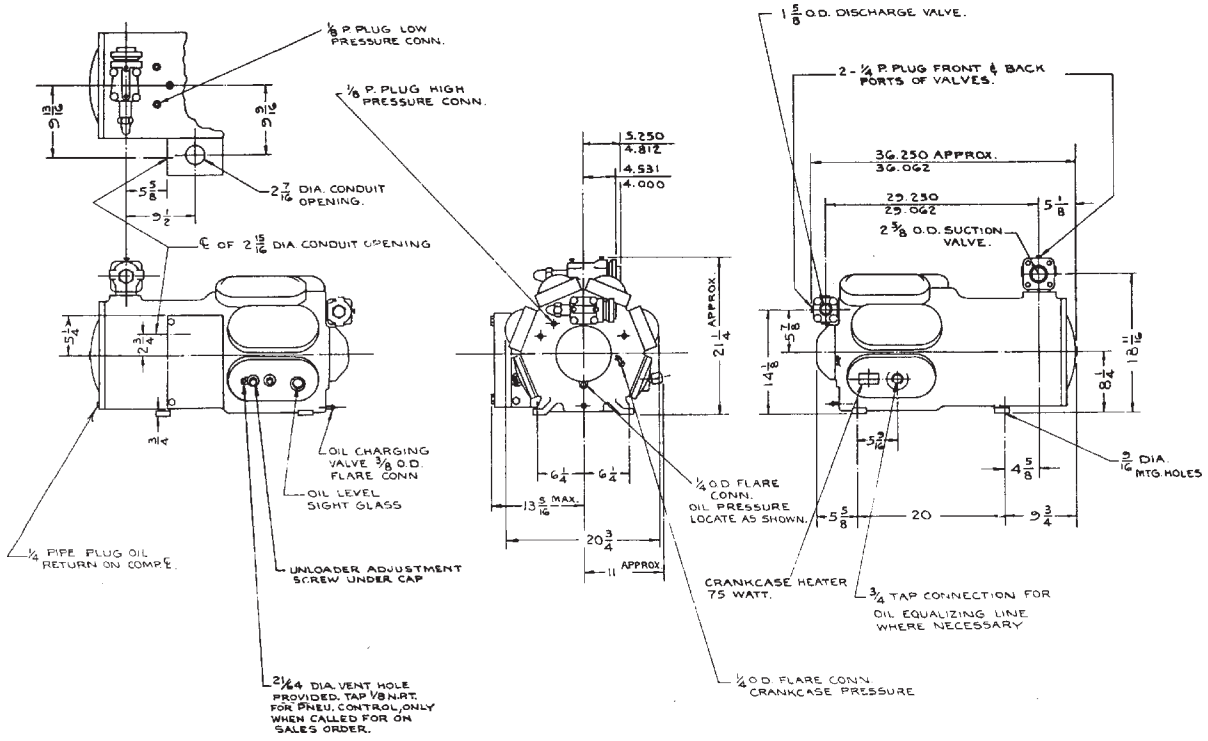
MODEL F 5 & 6 CYL - SMALL DIA. MOTOR



MODEL F 5 & 6 CYL - LARGE DIA. MOTOR



MODEL F 8 CYL - SMALL DIA. MOTOR



MODEL F 8 CYL - LARGE DIA. MOTOR

Model M Semihermetic Compressors

Description
The Trane Model M compressor is an unloading, cast iron semihermetic accessible compressor. The compressor motor and oil pump are reversible for operation in either direction. The compressor unloading is electric solenoid actuated.

Basic Variations
There is only one basic variation available on the Model M compressor. The Model M is available with a side mounted junction box. See the outline drawings for dimensions of compressors with the side terminal box.

Low Temperature Applications (Low Lift Valves)
When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required.

Lifting and Handling
The Model M has topped holes in the housing that will accommodate a lifting lug for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinder heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one hour before trying to start the compressor.

Storage
Model M compressor are shipped with a nitrogen charge and the connections sealed with closure plates unless the optional service valves have been ordered for factory installation. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 140 F and 95% RH non-condensing.

Oil Charge
Model M compressors ship with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane service bulletin; HCOM-SB-4F, APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

Pressure Testing
The maximum high side test pressure is 500 psig. The maximum low side pressure is 350 psig. The differential between the high side and low side should not exceed 340 psig. Never pressure the system to a pressure higher than the system relief valve.

⚠ WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® Compressors

ReSpecT®

Model M - Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM02334	CRHM100A2**A0R*****	CRHM-100A-2*AT	M10C-1E2A-*	10	200/60/3	454
COM02470	CRHM100W2**A0R*****	CRHM-100W-2*AT	M10G-1E2A-*	10	230/60/3	454
COM02335	CRHM100C2**A0R*****	CRHM-100C-2*AT	M10E-1E2A-*	10	460/60/3	454
COM02369	CRHM100D1**A0R*****	CRHM-100D-1*AT	M10F-1E1A-*	10	575/60/3	454
COM02370	CRHM100D2**A0R*****	CRHM-100D-2*AT	M10F-1E2A-*	10	575/60/3	454
COM01421	CRHM130C3**A0R*****	CRHM-130C-3*AT	M13E-1E3A-*	13	460/60/3	466
COM03799	CRHM130C2**A0R*****	CRHM-130C-2*AT	M13E-1E2A-*	13	460/60/3	466
COM02716	CRHM130D2**A0R*****	CRHM-130D-2*AT	M13F-1E2A-*	13	575/60/3	466
COM01461	CRHM150A2**A0R*****	CRHM-150A-2*AT	M15C-2E2A-*	15	200/60/3	454
COM01786	CRHM150A2**A4R*****	CRHM-150A-2*AS	M15E-2E4A-*	15	200/60/3	454
COM01462	*COM01507 or COM1508*	CRHM-150B-2*AT	-	15	230-460/60/3	454
COM01507	CRHM150W2**A0R*****	CRHM-150W-2*AT	M15D-2E2A-*	15	230/60/3	454
COM01788	CRHM150W2**A4R*****	CRHM-150W-2*AS	M15D-2E2A-*	15	230/60/3	454
COM04470	CRHM150G1**B0R*****	CRHM-150G-1*BT	M15H-2E1B-*	15	400/50/3	454
COM01508	CRHM150C2**A0R*****	CRHM-150C-2*AT	M15E-2E2A-*	15	460/60/3	454
COM01787	CRHM150C2**A4R*****	CRHM-150C-2*AS	M15E-2E2A-*	15	460/60/3	454
COM01789	CRHM150D2**A4R*****	CRHM-150D-2*AS	M15F-2E2A-*	15	575/60/3	454
COM01849	CRHM150D2**A0R*****	CRHM-150D-2*AT	M15F-2E2A-*	15	575/60/3	454
COM02471	CRHM160A2**A4R*****	CRHM-160A-2*AS	M16C-1E2A-*	16	200/60/3	466
COM02472	CRHM160W2**A0R*****	CRHM-160W-2*AT	M16D-1E2A-*	16	230/60/3	466
COM02473	CRHM160W2**A4R*****	CRHM-160W-2*AS	M16D-1E2A-*	16	230/60/3	466
COM01406	CRHM160C2**A4R*****	CRHM-160C-2*AS	M16E-2E2A-*	16	460/60/3	466
COM02500	CRHM160C2**A0R*****	CRHM-160C-2*AT	M16D-1E2A-*	16	460/60/3	466
COM02596	CRHM170A4**A0R*****	CRHM-170A-4*AT	M17C-1E4B-*	17	200/60/3	548
COM03761	CRHM170C4**A0R*****	CRHM-170C-4*AT	M17E-1E4A-*	17	460/60/3	548
COM02597	CRHM190C4**A0R*****	CRHM-190C-4*AT	M19E-1E4A-*	19	460/60/3	548
COM01464	*COM01509 or COM1465*	CRHM-200B-3*AT	-	20	230-460-60/3	466
COM01463	CRHM200A3**A0R*****	CRHM-200A-3*AT	M20C-2E3A-*	20	200/60/3	466
COM01466	*USE COM02120*	CRHM-200A-2*AS	-	20	200/60/3	-
COM02119	CRHM200A0**A2R*****	CRHM-200A-2*AT	M20C-2E2A-*	20	200/60/3	466
COM02120	CRHM200A3**A4R*****	CRHM-200A-3*AS	M20C-2E3A-*	20	200/60/3	466
COM02503	CRHM200A3**B0R*****	CRHM-200A-3*BT	M20C-2E3B-*	20	200/60/3	466
COM01509	CRHM200W3**A0R*****	CRHM-200W-3*AT	M20D-2E3A-*	20	230/60/3	466
COM01510	*USE COM02125*	CRHM-200W-2*AS	M20D-2E2A-*	20	230/60/3	466
COM02124	*USE COM01509*	CRHM-200W-2*AT	-	20	230/60/3	466
COM02125	CRHM200W3**A4R*****	CRHM-200W-3*AS	M20D-2E3A-*	20	230/60/3	466
COM02930	CRHM200W3**B4R*****	CRHM-200W-3*BS	M20G-2E3B-*	20	230/60/3	466
COM03695	CRHM200X2**A0R*****	CRHM-200X-2*AT	M20*-2E2A-*	20	380/60/3	466
COM03903	CRHM200X2**A4R*****	CRHM-200X-2*AS	M20*-2E2A-*	20	380/60/3	466
COM01465	CRHM200C3**A0R*****	CRHM-200C-3*AT	M20E-2E3A-*	20	460/60/3	466
COM01468	*USE COM02123*	CRHM-200C-2*AS	-	20	460/60/3	-
COM02122	*USE COM01465*	CRHM-200C-2*AT	-	20	460/60/3	466
COM02123	CRHM200C3**A4R*****	CRHM-200C-3*AS	M20E-2E3A-*	20	460/60/3	466
COM02504	CRHM200C3**B0R*****	CRHM-200C-3*BT	M20E-2E3B-*	20	460/60/3	466
COM03969	CRHM200G3**B0R*****	CRHM-200G-3*BT	M20H-2E3B-*	20	400/50/3	466
COM04271	CRHM200G2**B0R*****	CRHM-200G-2*BT	M20H-2E2B-*	20	400/50/3	466
COM01850	CRHM200D3**A0R*****	CRHM-200D-3*AT	M15F-2E2A-*	20	575/60/3	466
COM01851	*USE COM02127*	CRHM-200D-2*AS	-	20	575/60/3	466
COM02127	CRHM200D3**A4R*****	CRHM-200D-3*AS	M20F-2E2A-*	20	575/60/3	466

ReSpecT®

Model M - Semihermetic Compressors

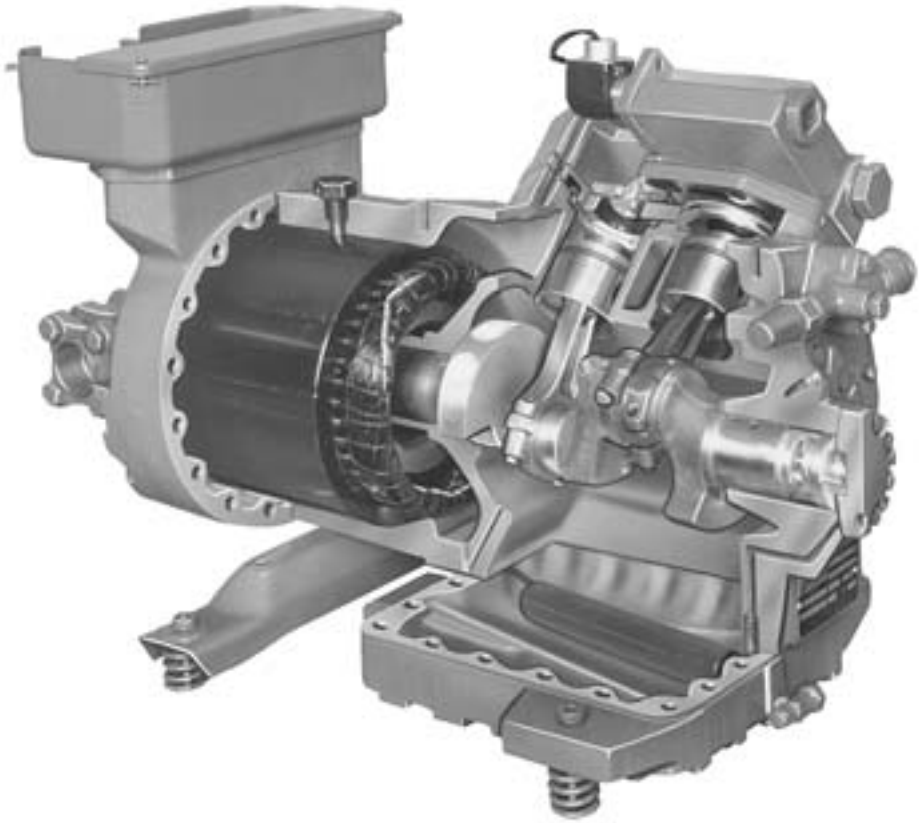
COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM01469	CRHM250A4**A0R*****	CRHM-250A-4*AT	M25C-2E4A-*	25	200/60/3	548
COM01473	CRHM250A4**A4R*****	CRHM-250A-4*AS	M25E-2E4A-*	25	200/60/3	548
COM02023	CRHM250A0**O4R*****	CRHM-250A-0*NS	M25C-2E0N-*	25	200/60/3	548
COM02137	*USE COM01469*	CRHM-250A-2*AT	-	25	200/60/3	548
COM02138	*USE COM01473*	CRHM-250A-2*AS	-	25	200/60/3	548
COM02474	CRHM250A0**O4R*****	CRHM-250A-0*NS	M25C-2E0N-*	25	200/60/3	548
COM02505	CRHM250A4**B0R*****	CRHM-250A-4*BT	M25C-2E4B-*	25	200/60/3	548
COM05077	CRHM250F4**B0R*****	CRHM-250F-4*BT	M25*-2E4B-*	25	220/50/3	548
COM01470	*COM01511 or COM1471*	CRHM-250B-4*AT	M25M-2E4A-*	25	230-460/60/3	548
COM02139	*COM01511 or COM1471*	CRHM-250B-2*AT	-	25	230-460/60/3	548
COM01511	CRHM250W4**A0R*****	CRHM-250W-4*AT	M25D-2E4A-*	25	230/60/3	548
COM01512	CRHM250W4**A4R*****	CRHM-250W-4*AS	M25D-2E4A-*	25	230/60/3	548
COM02142	*USE COM01511*	CRHM-250W-2*AT	-	25	230/60/3	548
COM03904	CRHM250X4**A4R*****	CRHM-250X-4*AS	M25*-2E4A-*	25	380/60/3	548
COM02926	CRHM250G4**B0R*****	CRHM-250G-4*BT	M25H-2E4B-*	25	400/50/3	548
COM01471	CRHM250C4**A0R*****	CRHM-250C-4*AT	M25E-2E4A-*	25	460/60/3	548
COM01472	CRHM250C4**A4R*****	CRHM-250C-4*AS	M25E-2E4A-*	25	460/60/3	548
COM02024	CRHM250C0**O4R*****	CRHM-250C-0*NS	M25E-2E0N-*	25	460/60/3	548
COM02140	*USE COM01471*	CRHM-250C-2*AT	-	25	460/60/3	548
COM02141	*USE COM01472*	CRHM-250C-2*AS	-	25	460/60/3	548
COM02475	CRHM250C4**B0R*****	CRHM-250C-4*BT	M25E-2E4B-*	25	460/60/3	548
COM01852	CRHM250D4**A0R*****	CRHM-250D-4*AT	M25F-2E4A-*	25	575/60/3	548
COM01853	CRHM250D4**A4R*****	CRHM-250D-4*AS	M25F-2E4A-*	25	575/60/3	548
COM01475	CRHM300A4**A0R*****	CRHM-300A-4*AT	M30C-2E4A-*	30	200/60/3	548
COM01479	CRHM300A4**A4R*****	CRHM-300A-4*AS	M30C-2E4A-*	30	200/60/3	548
COM02025	CRHM300A0**O4R*****	CRHM-300A-0*NS	M30C-2E0N-*	30	200/60/3	548
COM02143	*USE COM01475*	CRHM-300A-2*AT	-	30	200/60/3	548
COM02144	*USE COM01479*	CRHM-300A-2*AS	-	30	200/60/3	548
COM02506	CRHM300A4**B0R*****	CRHM-300A-4*BT	M30C-2E4B-*	30	200/60/3	548
COM01476	*COM01513 or COM1477*	CRHM-300B-4*AT	M30M-2E4A-*	30	230-460/60/3	548
COM01480	*COM01514 or COM1478*	CRHM-300B-4*AS	M30M-2E4A-*	30	230-460/60/3	548
COM01513	CRHM300W4**A0R*****	CRHM-300W-4*AT	M30D-2E4A-*	30	230/60/3	548
COM01514	CRHM300W4**A4R*****	CRHM-300W-4*AS	M30D-2E4A-*	30	230/60/3	548
COM02150	*USE COM01513*	CRHM-300W-2*AT	-	30	230/60/3	548
COM02151	*USE COM01514*	CRHM-300W-2*AS	-	30	230/60/3	548
COM02476	CRHM300W4**B0R*****	CRHM-300W-4*BT	M30D-2E4B-*	30	230/60/3	548
COM04014	CRHM300X4**A4R*****	CRHM-300X-4*AS	M30*-2E4A-*	30	380/60/3	548
COM04375	CRHM300X2**A0R*****	CRHM-300X-2*AT	M30*-2E2A-*	30	380/60/3	548
COM02927	CRHM300G4**B0R*****	CRHM-300G-4*BT	M30H-2E4B-*	30	400/50/3	548
COM03840	CRHM300G2**A0R*****	CRHM-300G-2*AT	M30H-2E2A-*	30	400/50/3	548
COM04471	CRHM300G2**B0R*****	CRHM-300G-2*BT	M30H-2E2B-*	30	400/50/3	548
COM01477	CRHM300C4**A0R*****	CRHM-300C-4*AT	M30E-2E4A-*	30	460/60/3	548
COM01478	CRHM300C4**A4R*****	CRHM-300C-4*AS	M30E-2E4A-*	30	460/60/3	548
COM02026	CRHM300C0**O4R*****	CRHM-300C-0*NS	M30E-2E0N-*	30	460/60/3	548
COM02147	*USE COM01477*	CRHM-300C-2*AT	-	30	460/60/3	548
COM02148	*USE COM01478*	CRHM-300C-2*AS	-	30	460/60/3	548
COM02507	CRHM300C4**B0R*****	CRHM-300C-4*BT	M30E-2E4B-*	30	460/60/3	548
COM01854	CRHM300D4**A0R*****	CRHM-300D-4*AT	M30F-2E4A-*	30	575/60/3	548
COM01855	CRHM300D4**A4R*****	CRHM-300D-4*AS	M30F-2E4A-*	30	575/60/3	548

Model M Semihermetic Compressors (Cont.)

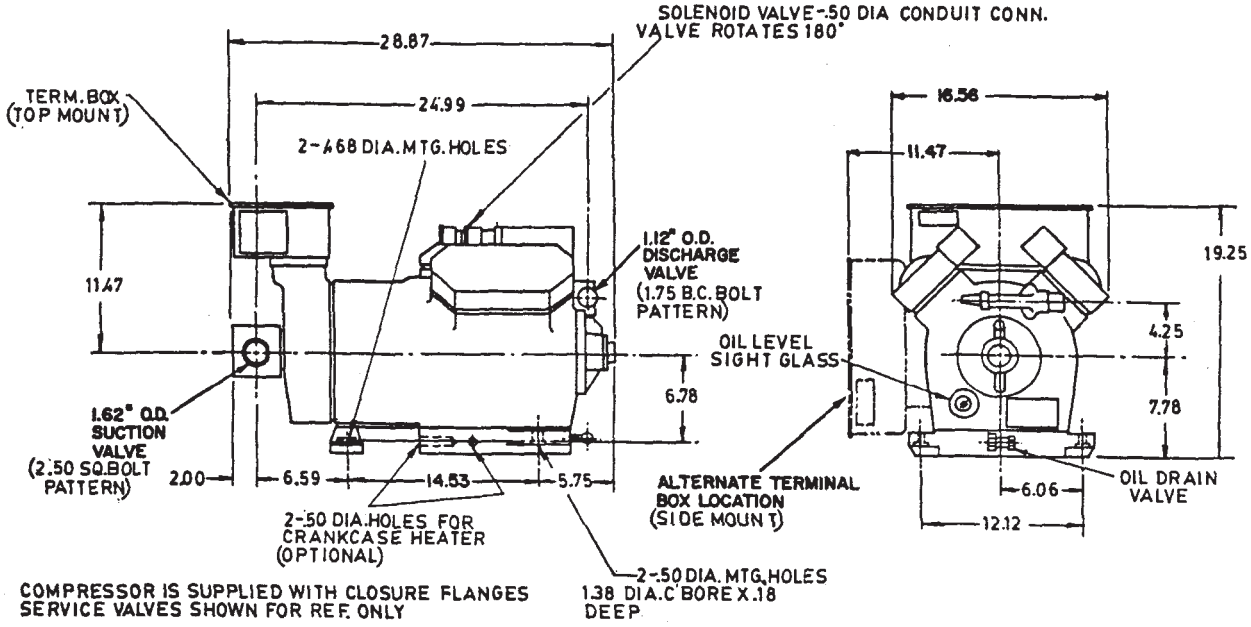
Series 6000

Model M - Semihermetic Compressors

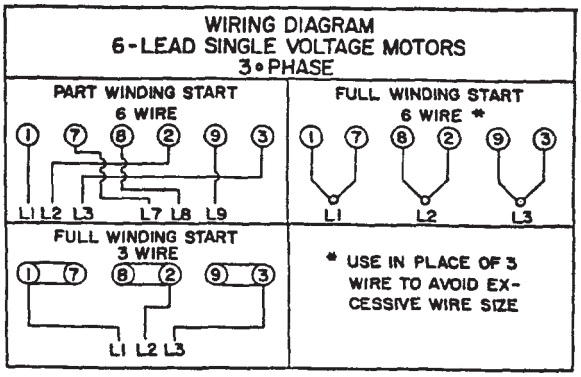
COM Number	Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM06033	CRHM-150C-2*AT	M15E-2E2A-*	15	460/60/3	454
COM06034	CRHM-200A-3*AT	M20C-2E3A-*	20	200/60/3	466
COM06035	CRHM-200C-3*AT	M20E-2E3A-*	20	460/60/3	466
COM06037	CRHM-200C-3*AS	M20E-2E3A-*	20	460/60/3	466
COM06124	CRHM-200D-3*AT	M20F-2E3A-*	20	575/60/3	466
COM06038	CRHM-250A-4*AT	M25C-2E4A-*	25	200/60/3	548
COM06041	CRHM-250A-4*AS	M25C-2E4A-*	25	200/60/3	548
COM06039	CRHM-250C-4*AT	M25E-2E4A-*	25	460/60/3	548
COM06040	CRHM-250C-4*AS	M25E-2E4A-*	25	460/60/3	548
COM06125	CRHM-250D-4*AT	M25F-2E4A-*	25	575/60/3	548
COM06042	CRHM-300A-4*AT	M30C-2E4A-*	30	200/60/3	548
COM06045	CRHM-300A-4*AS	M30C-2E4A-*	30	200/60/3	548
COM06046	CRHM-300W-4*AT	M30D-2E4A-*	30	230/60/3	548
COM06043	CRHM-300C-4*AT	M30E-2E4A-*	30	460/60/3	548
COM06044	CRHM-300C-4*AS	M30E-2E4A-*	30	460/60/3	548



Model CRHM150 - 15 Ton / R-22 / 60 Hz



Application	
Internal Relief Valve Setting	385 PSIG
Refrigerant	R-22
Rated Performance	***100%***
Capacity (BTU/HR)	185,700
Power Input (KW)	20
Current (230V) (Amps)	64
EER (BTU/W-HR)	9.3
Evaporator Temp	45F
Condenser Temp	130F
Liquid Temp	115F
Superheat	20F
Physical Data	
Bore	2.688 In.
Stroke	2.250 In.
No. of Cylinders	3
Speed	1750 RPM
Motor Protection	
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw



Motor Data

Max Load Current (Amp)±

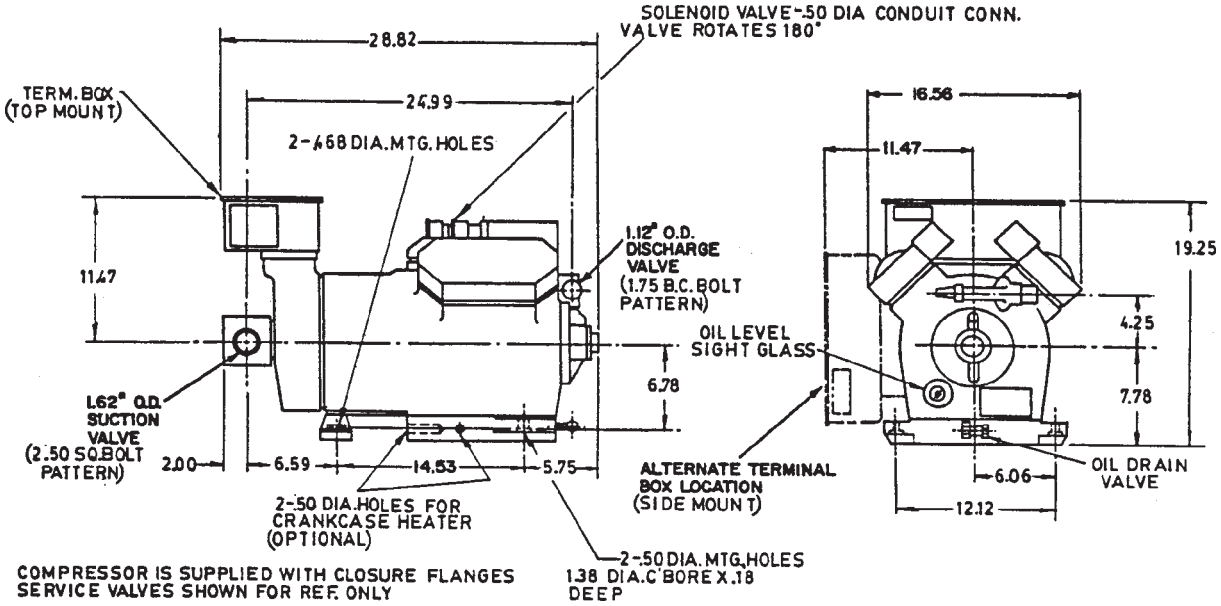
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**
200-60-3	180-220	95	78
230-60-3	208-254	83	68
460-60-3	416-508	42	34
575-60-3	520-635	33	27
200-50-3	180-220	83	68
230-50-3	198-264	75	62
363-50-3	311-381	44	36
400-50-3	343-456	43	36

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150 F Sat. Condensing, 15F Superheat, Full Load

** At 40 F Sat. Suction, 125 F Sat. Condensing, 15F Superheat, Full Load

Model CRHM200 - 20Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSIG
Refrigerant	R-22

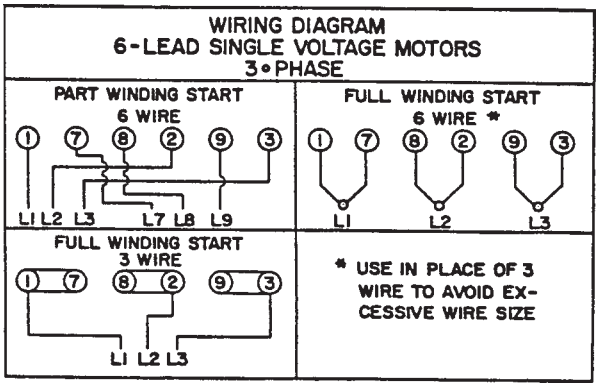
Rated Performance	***50%***	***100%***
Capacity (BTU/HR)	118,100	251,300
Power Input (KW)	16.1	25.5
Current (230V) (Amps)	51	81
EER (BTU/W-HR)	7.4	9.9
Evaporator Temp	45F	45F
Condenser Temp	130F	130F
Liquid Temp	115F	115F
Superheat	20F	20F

Physical Data

Bore	2.688 In.
Stroke	2.250 In.
No. of Cylinders	4
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw



Motor Data

Max Load Current (Amp)±

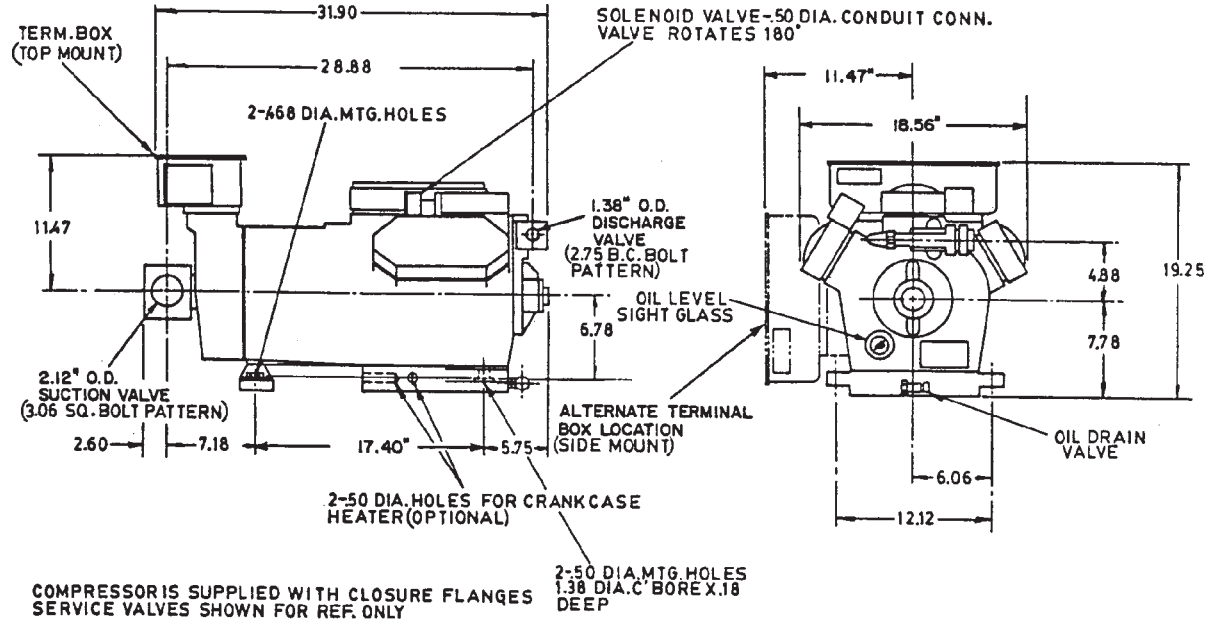
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**
200-60-3	180-220	106	86
230-60-3	208-254	92	75
460-60-3	416-508	46	38
575-60-3	520-635	42	34
200-50-3	180-220	104	85
230-50-3	198-264	94	77
346-50-3	311-381	57	47
400-50-3	343-456	54	44
363-50-3	327-399	54	43

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model CRHM250 - 25 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSIG
Refrigerant	R-22

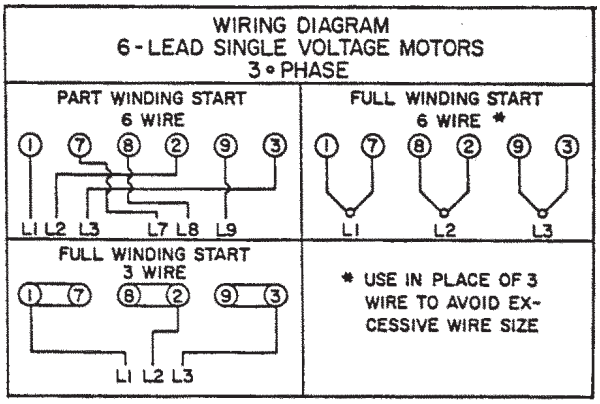
Rated Performance	***33%***	***66%***	***100%***
Capacity (BTU/HR)	92,100	199,600	303,309
Power Input (KW)	14.6	22.4	30
Current (230V) (Amps)	51	67	95
EER (BTU/W-HR)	6.3	8.9	10.1
Evaporator Temp	45F	45F	45F
Condenser Temp	130F	130F	130F
Liquid Temp	115F	115F	115F
Superheat	20F	20F	20F

Physical Data

Bore	2.688 In.
Stroke	1.880 In.
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw



Motor Data

Max Load Current (Amp)±

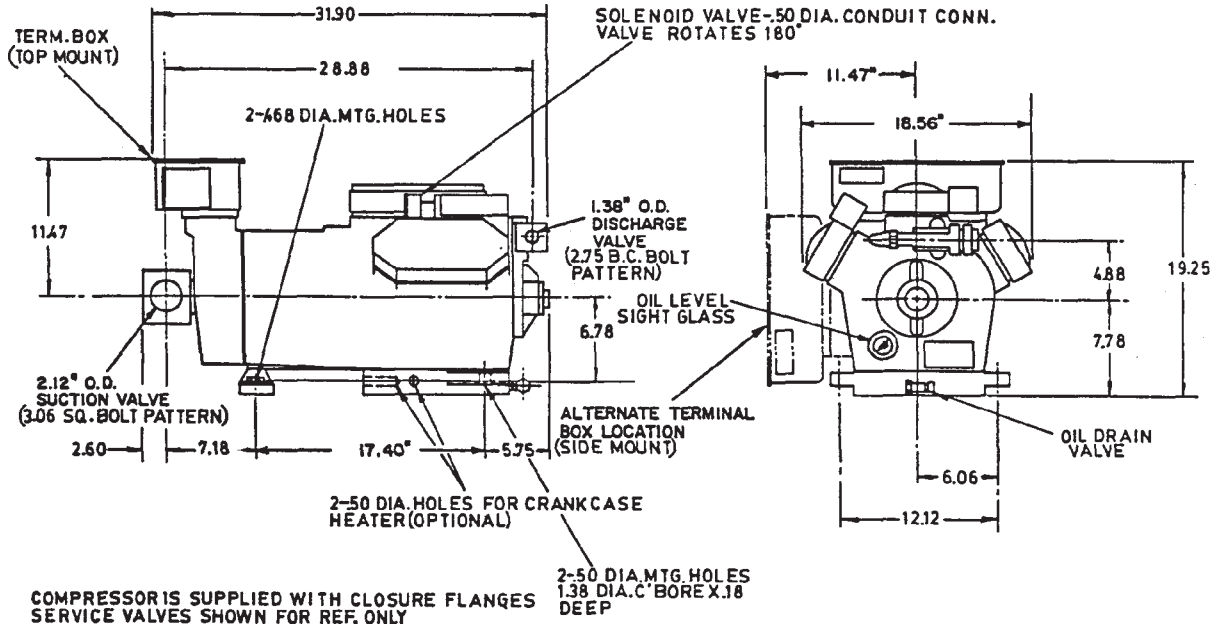
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**
200-60-3	180-220	158	129
230-60-3	208-254	137	112
460-60-3	416-508	69	56
575-60-3	520-635	55	45
200-50-3	180-220	137	112
230-50-3	198-264	124	101
346-50-3	311-381	73	60
400-50-3	343-456	72	58
363-50-3	327-399	70	57

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load
** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model M Semihermetic Compressors (Cont.)

Model CRHM300 - 30 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSIG
Refrigerant	R-22

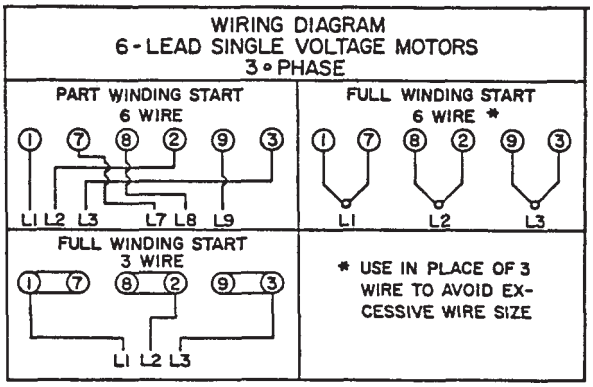
Rated Performance	***33%***	***66%***	***100%***
Capacity (BTU/HR)	112,700	243,000	360,100
Power Input (KW)	18.1	27.7	37.2
Current (230V) (Amps)	59	81	115
EER (BTU/W-HR)	6.2	8.8	9.7
Evaporator Temp	45F	45F	45F
Condenser Temp	130F	130F	130F
Liquid Temp	115F	115F	115F
Superheat	20F	20F	20F

Physical Data

Bore	2.688 In.
Stroke	2.250 In.
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw



Motor Data

Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**
200-60-3	180-220	179	147
230-60-3	208-254	156	128
460-60-3	416-508	78	64
575-60-3	520-635	62	51
200-50-3	180-220	156	128
230-50-3	198-264	141	116
346-50-3	311-381	85	70
400-50-3	343-456	81	67
363-50-3	327-399	81	67

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model R Semihermetic Compressors

Description
The Trane Model R compressor is an unloading, cast iron, Semihermetic accessible compressor. The compressor motor and oil pump are reversible for operation in either direction. The compressor unloading is electric solenoid-actuated.

Basic Variations
There is only one basic variation available on the Model CRHR compressor. The CRHR 350 and 400 are available with a side mounted junction box. See Figure 1 for dimensions on the CRHR 350 and 400 with the side mounted terminal box.

Low Temperature Applications - (Low Lift Valves)
When low temperature applications are encountered where the saturated suction temperature design point is below 10 F, the low lift valve option is required. Low lift valves are required to prevent valve flutter which could result in broken suction valves and springs.

Lifting and Handling
The Model R compressor has tapped holes in the housing that will accommodate lifting lugs for handling of the compressor. During handling it is recommended that the compressor be kept horizontal with the cylinders heads facing up. This will prevent oil from getting into the upper cylinder and causing potential damage when the compressor is started. If tilted from horizontal, it is recommended that the compressor be allowed to set in the horizontal position a minimum of one (1) hour before trying to start the compressor.

Storage
The Model R compressor is shipped with a nitrogen charge and the connections are sealed with closure plates; unless the optional service valves have been ordered for factory installation. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 140 F and 95% RH non condensing.

Pressure Testing
The maximum highside test pressure is 500 psig. The maximum lowside pressure is 350 psig. The differential between highside and lowside should not exceed 340 psig. never pressure the system to a higher pressure that the system relief valve.

Oil Charge
The Model R compressor ships with a full oil charge. The compressor data sheet lists the oil charge for each compressor. See the Trane compressor service bulletin; HCOM-SB-4F, "APPLICATION FIELD REPLACEMENT OILS" See pages 97-99 for the replacement oil type.

⚠WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® compressors

ReSpecT®

Model R Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM03950	CRHR350A2**A0R*****	CRHR-350A-2*A0	CRHR-350A-2*AT	35	200/60/3	860
COM03967	CRHR350A2**A4R*****	CRHR-350A-2*A4	CRHR-350A-2*AS	35	200/60/3	860
COM04376	CRHR350A3**A0R*****	CRHR-350A-3*A4	CRHR-350A-3*AS	35	200/60/3	860
COM05066	*USE COM03950*	CRHR-350A-2*A0	CRHR-350A-2*AT	35	200/60/3	860
COM05067	CRHR350A2**A4R*****	CRHR-350A-2*A4	CRHR-350A-2*AS	35	200/60/3	860
COM05554	CRHR350D2**A0R*****	CRHR-350D-2*A0	CRHR-350D-2*AT	35	575/60/3	860
COM05555	CRHR350Q2**A0R*****	CRHR-350W-2*A0	CRHR-350W-2*AT	35	200-230/50-60/3	860
COM03939	CRHR350K2**A0R*****	CRHR-350C-2*A0	CRHR-350C-2*AT	35	400-460/50-60/3	860
COM03960	CRHR350K2**A4R*****	CRHR-350C-2*A4	CRHR-350C-2*AS	35	400-460/50-60/3	860
COM04012	CRHR350K2**A0R*****	CRHR-350K-2*A0	CRHR-350C-2*AT	35	400-460/50-60/3	860
COM05079	CRHR350K3**A0R*****	CRHR-350C-3*A0	CRHR-350C-3*AT	35	400-460/50-60/3	860
COM02986	CRHR380A4**A4R*****	-	CRHR-380A-4*AT	38	200/60/3	860
COM01619	CRHR400A3**A0R*****	CRHR-400A-3*A0	CRHR-400A-3*AT	40	200/60/3	860
COM01622	CRHR400A3**A4R*****	CRHR-400A-3*A4	CRHR-400A-3*AS	40	200/60/3	860
COM02152	*USE COM01619*	CRHR-400A-2*A0	CRHR-400A-2*AT	40	200/60/3	-
COM02153	*USE COM01622*	CRHR-400A-2*A4	CRHR-400A-2*AS	40	200/60/3	-
COM02171	CRHR400A0**O0R*****	CRHR-400A-0*O0	CRHR-400A-0*NT	40	200/60/3	860
COM05558	CRHR401A3**A0R*****	CRHR-401A-3*A0	CRHR-401A-3*AT	40	200/60/3	860
COM02157	*USE COM01630*	CRHR-400W-2*A0	CRHR-400W-2*AT	40	230/60/3	-
COM02170	*USE COM01623*	CRHR-400W-2*A4	CRHR-400W-2*AS	40	230/60/3	-
COM03934	CRHR400X3**A4R*****	CRHR-400X-3*A4	-	40	380/60/3	860
COM03947	CRHR400X3**A0R*****	CRHR-400X-3*A0	-	40	380/60/3	860
COM02155	*USE COM01621*	CRHR-400C-2*A0	CRHR-400C-2*AT	40	460/60/3	-
COM02156	*USE COM01624*	CRHR-400C-2*A4	CRHR-400C-2*AS	40	460/60/3	-
COM01856	CRHR400D3**A0R*****	CRHR-400D-3*A0	CRHR-400D-3*AT	40	575/60/3	860
COM01857	CRHR400D3**A4R*****	CRHR-400D-3*A4	CRHR-400D-3*AS	40	575/60/3	860
COM02168	*USE COM01856*	CRHR-400D-2*A0	CRHR-400D-2*AT	40	575/60/3	-
COM02169	*USE COM01857*	CRHR-400D-2*A4	CRHR-400D-2*AS	40	575/60/3	-
COM01620	CRHR400Q3**A0R*****	CRHR-400Q-3*A0	CRHR-400W-3*AT	40	200-230/50-60/3	860
COM01623	CRHR400Q3**A4R*****	CRHR-400W-3*A4	CRHR-400W-3*AS	40	200-230/50-60/3	860
COM02172	CRHR400Q0**O0R*****	CRHR-400W-0*O0	CRHR-400W-0*NT	40	200-230/50-60/3	860
COM05070	CRHR400Q2**B0R*****	CRHR-400W-2*B0	CRHR-400W-2*BT	40	200-230/50-60/3	860
COM01621	CRHR400K3**A0R*****	CRHR-400K-3*A0	CRHR-400C-3*AT	40	400-460/50-60/3	860
COM01624	CRHR400K3**A4R*****	CRHR-400C-3*A4	CRHR-400C-3*AS	40	400-460/50-60/3	860
COM02477	CRHR400K3**B0R*****	CRHR-400C-3*B0	CRHR-400C-3*BT	40	400-460/50-60/3	860
COM02478	CRHR400K2**B0R*****	CRHR-400G-2*B0	CRHR-400G-2*BT	40	400-460/50-60/3	860
COM02928	CRHR400K2**A4R*****	CRHR-400G-2*A4	CRHR-400G-2*AS	40	400-460/50-60/3	860
COM05557	CRHR401K3**A4R*****	CRHR-401C-3*A4	CRHR-401C-3*AS	40	400-460/50-60/3	860
COM01625	CRHR500A4**A0R*****	CRHR-500A-4*A0	CRHR-500A-4*AT	50	200/60/3	1070
COM02178	CRHR500A0**O0R*****	CRHR-500A-0*O0	CRHR-500A-0*NT	50	200/60/3	1070
COM02176	*USE COM01626*	CRHR-500W-2*A0	CRHR-500W-2*AT	50	230/60/3	-
COM04015	CRHR350K2**A0R*****	CRHR-500X-4*B0	-	50	380/60/3	1080
COM05566	CRHR500X4**A0R*****	CRHR-500X-4*A0	-	50	380/60/3	1070
COM01858	CRHR500D4**A0R*****	CRHR-500D-4*A0	CRHR-500D-4*AT	50	575/60/3	1070
COM02177	*USE COM01858*	CRHR-500D-2*A0	CRHR-500D-2*AT	50	575/60/3	-
COM01626	CRHR500Q4**A0R*****	CRHR-500Q-4*A0	CRHR-500W-4*AT	50	200-230/50-60/3	1070
COM02179	CRHR500Q0**A0R*****	CRHR-500W-0*O0	CRHR-500W-0*NT	50	200-230/50-60/3	1070
COM01627	CRHR500K4**A0R*****	CRHR-500C-4*A0	CRHR-500C-4*AT	50	400-460/50-60/3	1070
COM02479	CRHR500K4**B0R*****	CRHR-500C-4*B0	CRHR-500C-4*BT	50	400-460/50-60/3	1070
COM03040	CRHR500K0**O0R*****	CRHR-500C-0*O0	CRHR-500C-0*NT	50	400-460/50-60/3	1070

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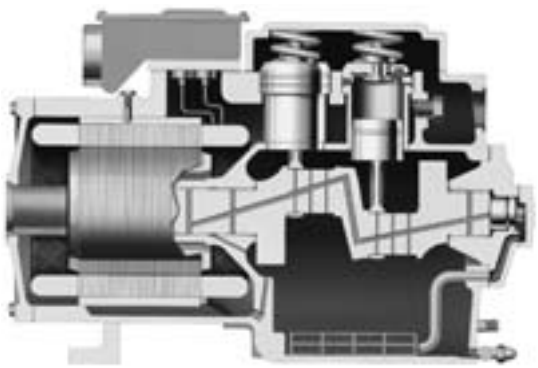
Model R Semihermetic Compressors

COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM03198	CRHR500K2**B0R*****	CRHR-500G-2*B0	CRHR-500G-2*BT	50	400-460/50-60/3	1070
COM05078	CRHR501K4**A0R*****	CRHR-501C-4*A0	CRHR-501C-4*AT	50	400-460/50-60/3	1084
COM05565	CRHR500K4**A0R*****	CRHR-500G-4*A0	CRHR-500G-4*AT	50	400-460/50-60/3	1070
COM05623	CRHR500K2**A0R*****	CRHR-500C-2*A0	CRHR-500C-2*AT	50	400-460/50-60/3	1070
COM01628	CRHR600A4**A0R*****	CRHR-600A-4*A0	CRHR-600A-4*AT	60	200/60/3	1084
COM02130	CRHR600A0**O0R*****	CRHR-600A-0*O0	CRHR-600A-0*NT	60	200/60/3	1084
COM02128	*USE COM01629*	CRHR-600W-2*A0	CRHR-600W-2*AT	60	230/60/3	-
COM02131	CRHR600Q0**O0R*****	CRHR-600W-0*O0	CRHR-600W-0*NT	60	230/60/3	1084
COM03199	CRHR600X4**A0R*****	CRHR-600X-4*A0	CRHR-600X-4*AT	60	380/60/3	1084
COM05075	CRHR600X2**A0R*****	CRHR-600X-2*A0	-	60	380/60/3	1084
COM01859	CRHR600D4**A0R*****	CRHR-600D-4*A0	CRHR-600D-4*AT	60	575/60/3	1084
COM02129	*USE COM01859*	CRHR-600D-2*A0	CRHR-600D-2*AT	60	575/60/3	-
COM01629	CRHR600Q4**A0R*****	CRHR-600Q-4*A0	CRHR-600W-4*AT	60	200-230/50-60/3	1084
COM02480	CRHR600Q4**B0R*****	CRHR-600W-4*B0	CRHR-600W-4*BT	60	200-230/50-60/3	1084
COM01630	CRHR600K4**A0R*****	CRHR-600K-4*A0	CRHR-600C-4*AT	60	400-460/50-60/3	1084
COM02999	CRHR600K2**A0R*****	CRHR-600G-2*A0	CRHR-600G-2*AT	60	400-460/50-60/3	1084
COM03952	CRHR600K0**O0R*****	CRHR-600C-0*O0	CRHR-600C-0*OT	60	400-460/50-60/3	1084

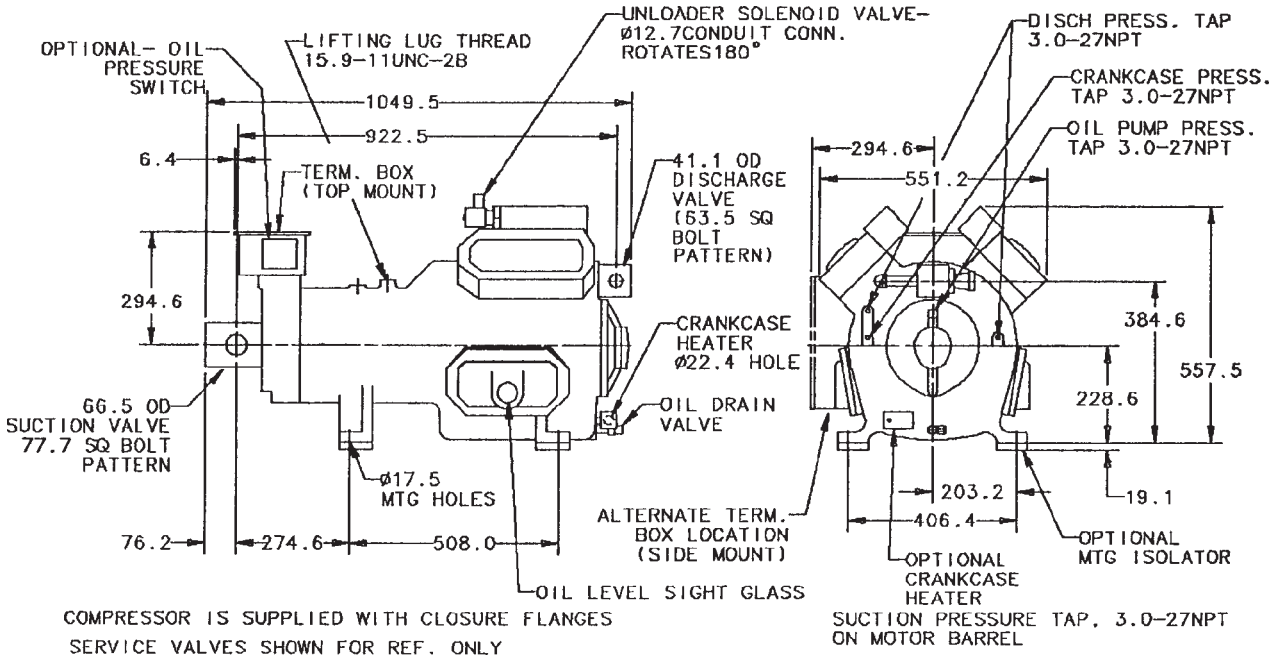
Series 6000

Model R Semihermetic Compressors

COM Number	Model Number	Capacity (Tons)	Voltage	Shipping Weight (Lbs.)
COM06047	CRHR-400A-3*AT	40	200/60/3	860
COM06049	CRHR-400A-3*AS	40	200/60/3	860
COM06127	CRHR-400D-4*AT	40	575/60/3	860
COM06048	CRHR-400C-3*AT	40	400-460/50-60/3	860
COM06050	CRHR-400C-3*AS	40	400-460/50-60/3	860
COM06066	CRHR-400W-3*AT	40	200-230/50-60/3	860
COM06069	CRHR-400C-2*AT	40	400-460/50-60/3	860
COM06051	CRHR-500A-4*AT	50	200/60/3	1070
COM06128	CRHR-500D-4*AT	50	575/60/3	1070
COM06052	CRHR-500C-4*AT	50	400-460/50-60/3	1070
COM06053	CRHR-600A-4*AT	60	200/60/3	1084
COM06129	CRHR-600D-4*AT	60	575/60/3	1084
COM06054	CRHR-600C-4*AT	60	400-460/50-60/3	1084



Model CRHR350 - 35 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D	
Refrigerant	R-22 &	R502
UL Recognized & CSA Accepted		

Rated Performance	***50%***	***100%***
Capacity (KW) (R-22)	50.1	103.3
Power Input (KW)	19.1	21.4
Current (400V) (Amps)	39.0	55.1
C.O.P.	2.62	3.3
Evaporator Temp (C)	7.22	7.22
Condenser Temp (C)	54.44	54.44
Liquid Temp (C)	8.33	8.33
Superheat (C)	11.11	11.11

Physical Data

Bore (MM)	87.5
Stroke (MM)	58.42
No. of Cylinders	4
Speed (RPM)	1450

Motor Protection

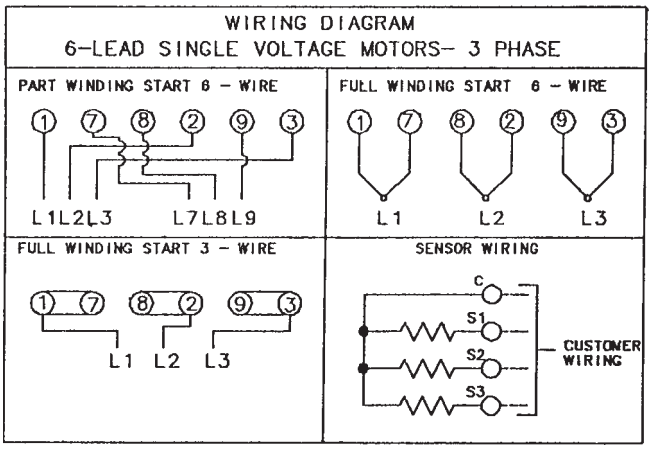
Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw
External Overcurrent Protection Required	

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

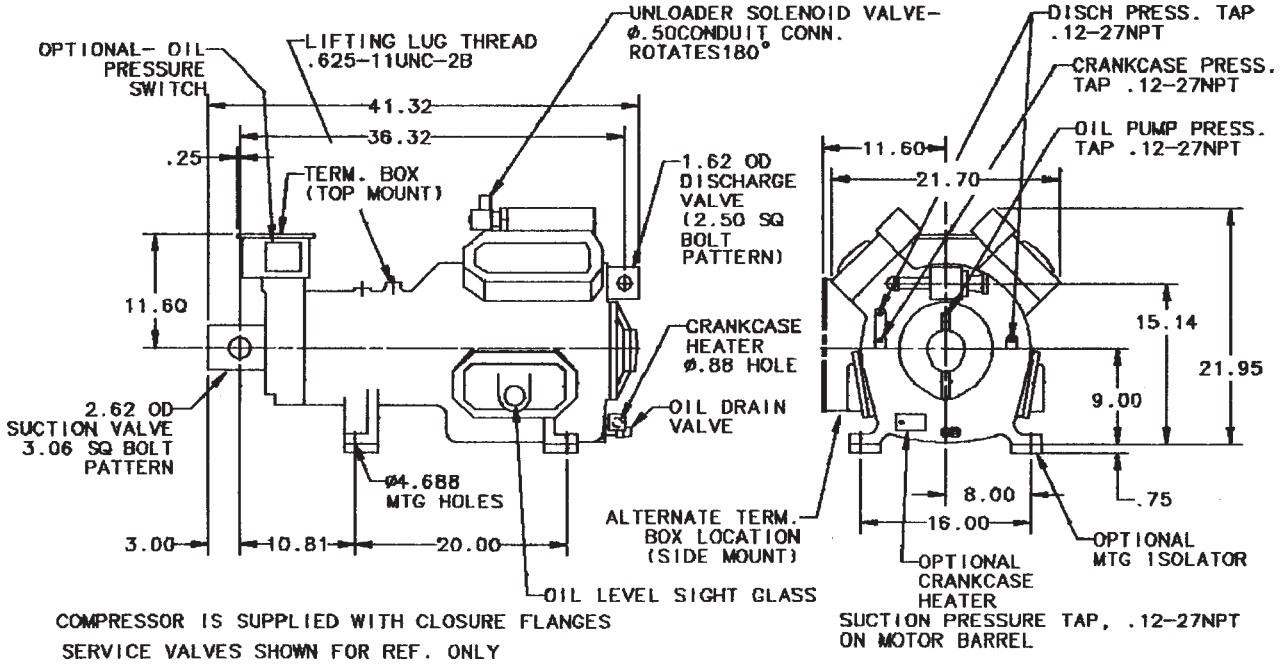
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	175	140	729
230-60-3	208-254	148	125	631
460-60-3	416-508	74	61	315
575-60-3	520-635	60	48	245
200-50-3	180-220	150	115	605
230-50-3	207-253	130	100	525
363-50-3	327-399	85	66	330
400-50-3	340-440	75	60	315

± At Minimum Utilization Voltage At 10C

* Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load

** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHR350 - 35 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSID	
Refrigerant	R-22 &	R502
UL Recognized & CSA Accepted		

Rated Performance	***50%***	***100%***
Capacity (BTU/HR)	203,400	419,600
Power Input (KW)	22.8	37.7
Current (230) (Amps)	40.6	57.4
EER (BTU/W-HR)	8.8	11.1
Evaporator Temp	45F	45F
Condenser Temp	130F	130F
Liquid Temp	115F	115F
Superheat	20F	20F

Physical Data

Bore	3.445 In.
Stroke	2.300 In.
No. of Cylinders	4
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw

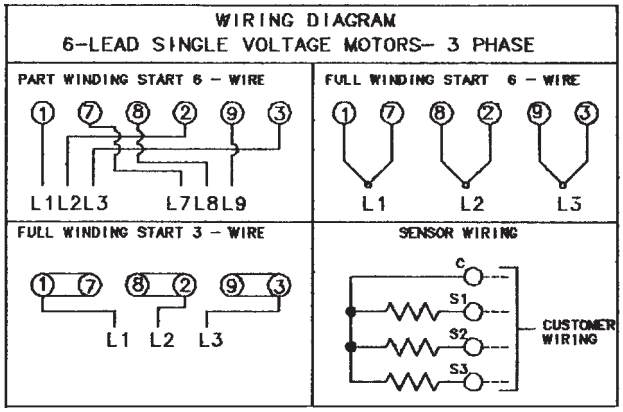
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	175	140	729
230-60-3	208-254	148	125	631
460-60-3	416-508	74	61	315
575-60-3	520-635	60	48	245
200-50-3	180-220	150	115	605
230-50-3	207-253	130	100	525
363-50-3	327-399	85	66	330
400-50-3	340-440	75	60	315

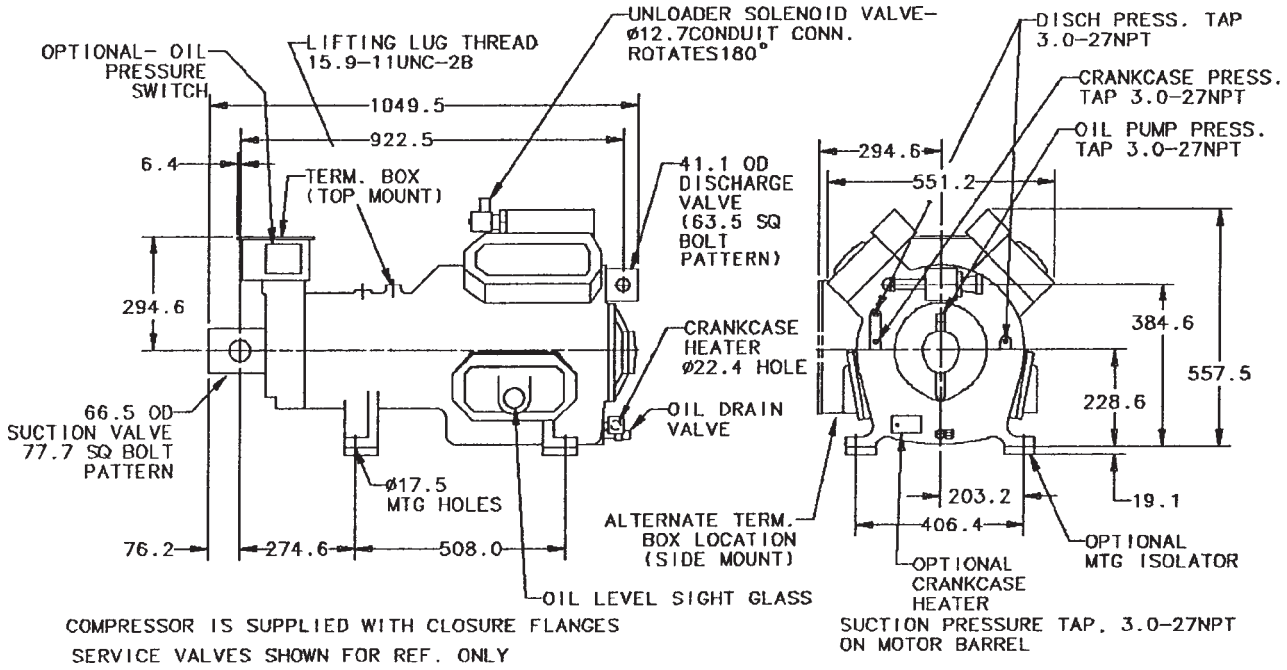
± At Minimum Utilization Voltage At 50F

* Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125FSat. Condensing, 15F Superheat, Full Load

Model R Semihermetic Compressors (Cont.)

Model CRHR400 - 40 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D	
Refrigerant	R-22 &	R502
UL Recognized & CSA Accepted		

Rated Performance	***50%***	***100%***
Capacity (KW) (R-22)	62.2	124.3
Power Input (KW)	24.5	38.2
Current (400V) (Amps)	48.5	67.5
C.O.P.	2.54	3.25
Evaporator Temp (C)	7.22	7.22
Condenser Temp (C)	54.44	54.44
Liquid Temp (C)	8.33	8.33
Superheat (C)	11.11	11.11

Physical Data

Bore (MM)	87.5
Stroke (MM)	69.85
No. of Cylinders	4
Speed (RPM)	1450

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw

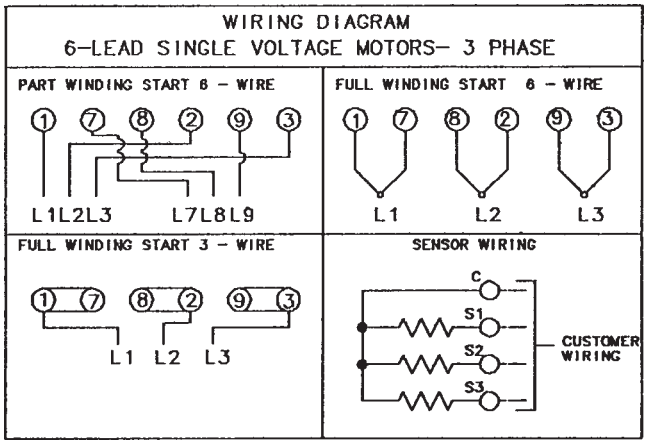
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

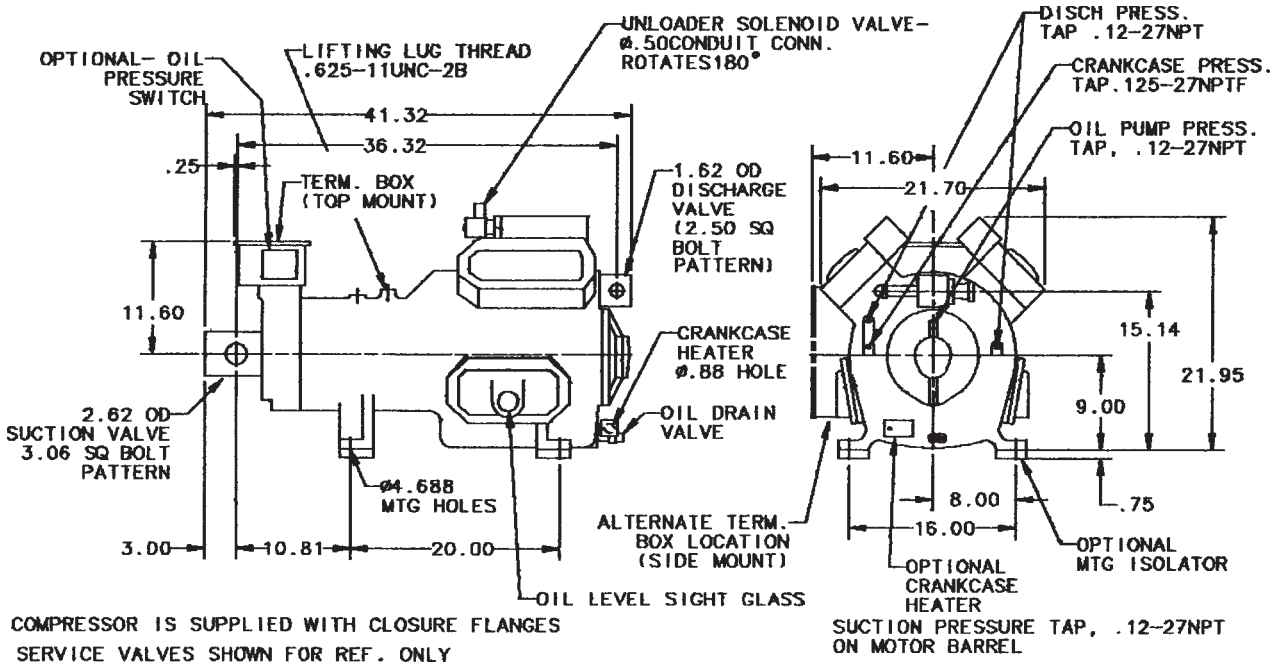
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	230	187	729
230-60-3	208-254	195	170	631
460-60-3	416-508	100	85	315
575-60-3	520-635	80	68	245
200-50-3	180-220	200	170	605
230-50-3	198-264	174	148	525
363-50-3	327-399	125	93	330
400-50-3	343-456	100	85	315

± At Minimum Utilization Voltage At 10C

* Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load

** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHR400 - 40 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSID	
Refrigerant	R-22 &	R502
UL Recognized & CSA Accepted		

Rated Performance	***50%***	***100%***
Capacity (BTU/HR)	252,600	505,300
Power Input (KW)	29.8	45.8
Current (230) (Amps)	50.5	70.3
EER (BTU/W-HR)	8.5	11.0
Evaporator Temp	45F	45F
Condenser Temp	130F	130F
Liquid Temp	115F	115F
Superheat	20F	20F

Physical Data

Bore	3.445 In.
Stroke	2.750 In.
No. of Cylinders	4
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw

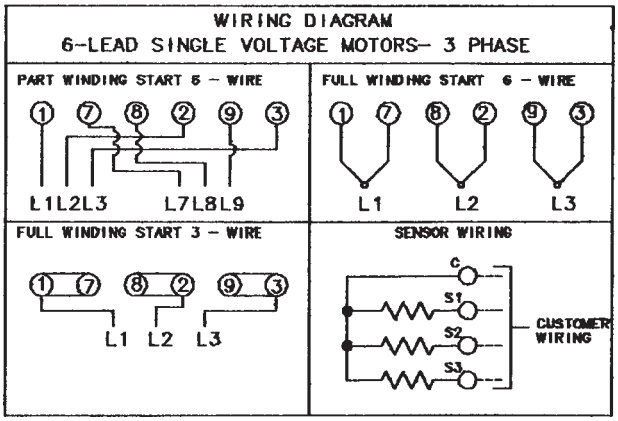
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

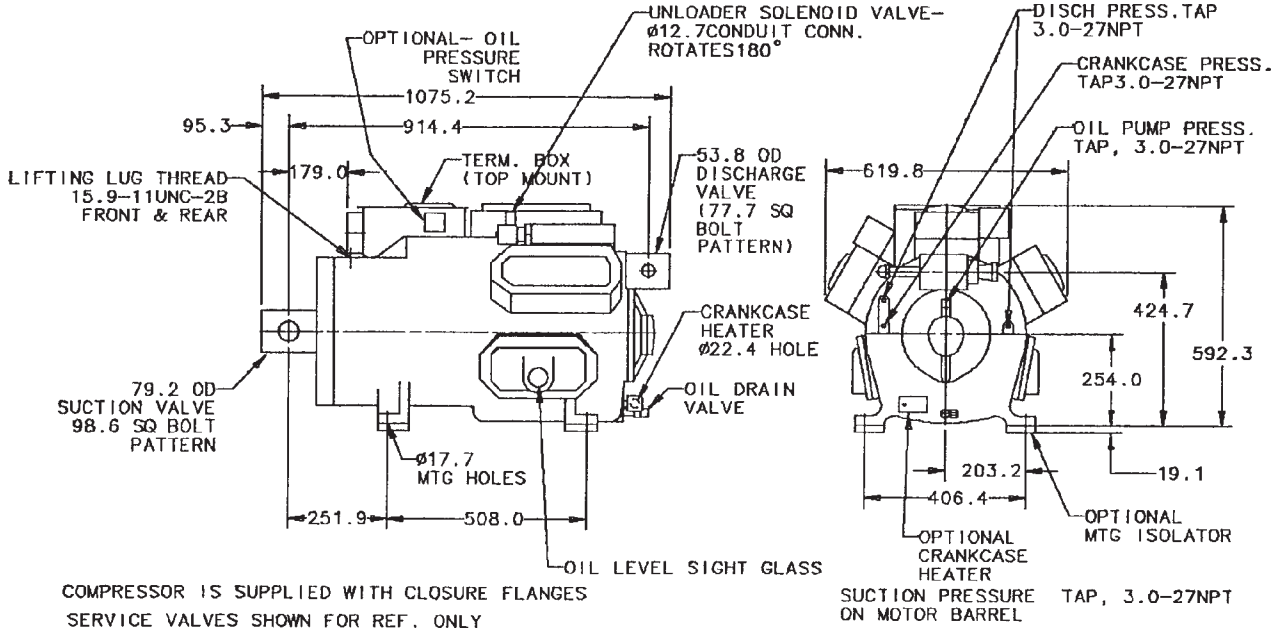
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	230	187	729
230-60-3	208-254	195	170	631
460-60-3	416-508	100	85	315
575-60-3	520-635	80	68	245
200-50-3	180-220	200	170	605
230-50-3	198-264	174	148	525
363-50-3	327-399	125	93	330
400-50-3	343-456	100	85	315

± At Minimum Utilization Voltage At 50F

* Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125FSat. Condensing, 15F Superheat, Full Load

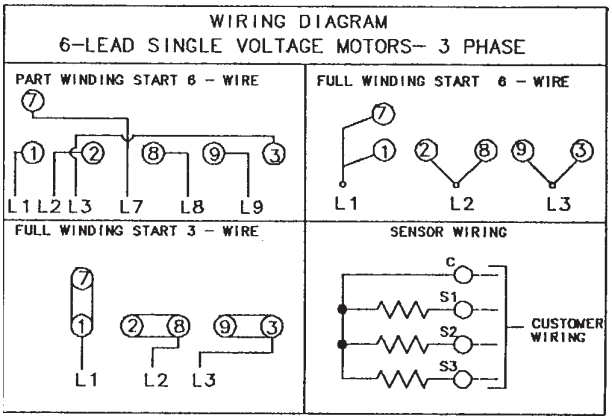
Model CRHR500 - 50 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D	
Refrigerant	R-22 &	R502
UL Recognized & CSA Accepted		

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW) (R-22)	51.0	101.9	154.4
Power Input (KW)	23.4	34.1	44.2
Current (400V) (Amps)	43.7	58	73.2
C.O.P.	2.17	2.99	3.49
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	554.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130/15F SC/20F SH-ARI)	11.11	11.11	11.11



Physical Data

Bore (MM)	87.5
Stroke (MM)	58.4
No. of Cylinders	6
Speed (RPM)	1450

Motor Protection

Type (Pilot Duty) Internal Thermostat
Manufacturer Robertshaw
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts

Motor Data

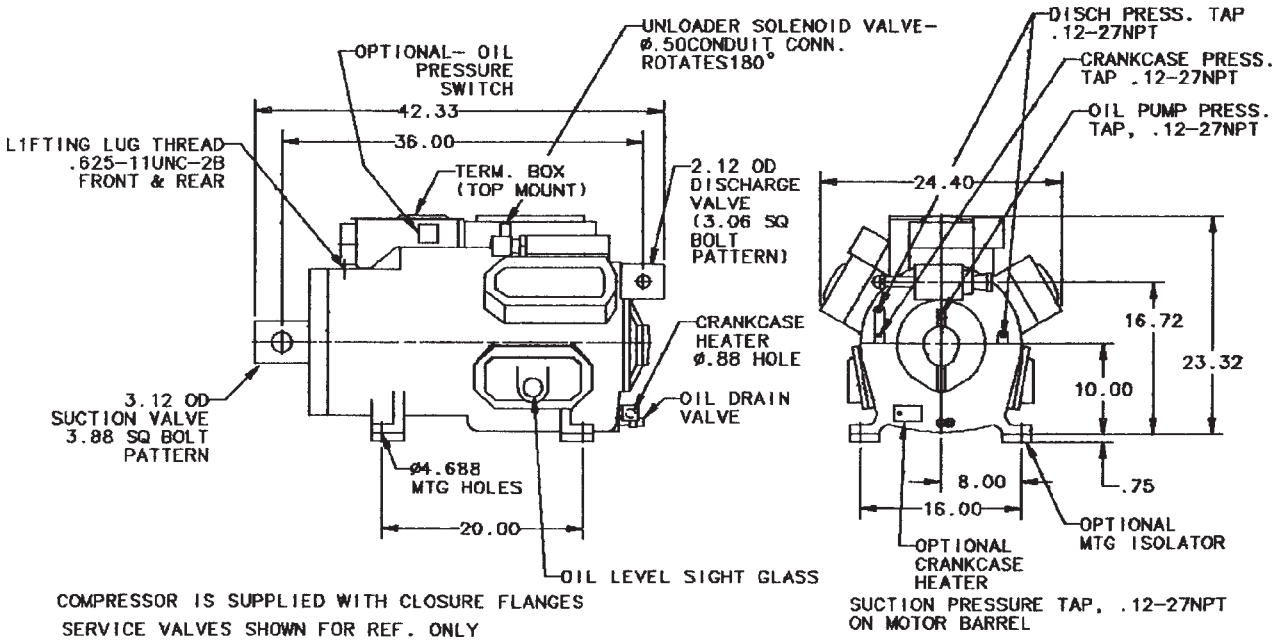
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	258	234	910
230-60-3	208-254	226	212	792
460-60-3	416-508	113	106	396
575-60-3	520-635	90	85	315
200-50-3	180-220	226	212	755
230-50-3	198-264	196	184	660
363-50-3	327-399	149	120	420
400-50-3	343-456	113	106	395

± At Minimum Utilization Voltage At 10C

* Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load
** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHR500 - 50 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSID
Refrigerant	R-22 & R502
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	206,900	413,200	627,000
Power Input (KW)	28.3	41.1	53.4
Current (230) (Amps)	45.5	60.4	76.3
EER (BTU/W-HR)	7.3	10.1	11.7
Evaporator Temp	45F	45F	45F
Condenser Temp	130F	130F	130F
Liquid Temp	115F	115F	115F
Superheat	20F	20F	20F

Physical Data

Bore	3.445 In.
Stroke	2.300 In.
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw

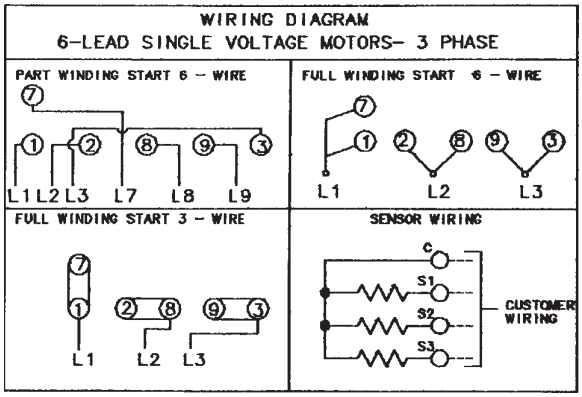
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

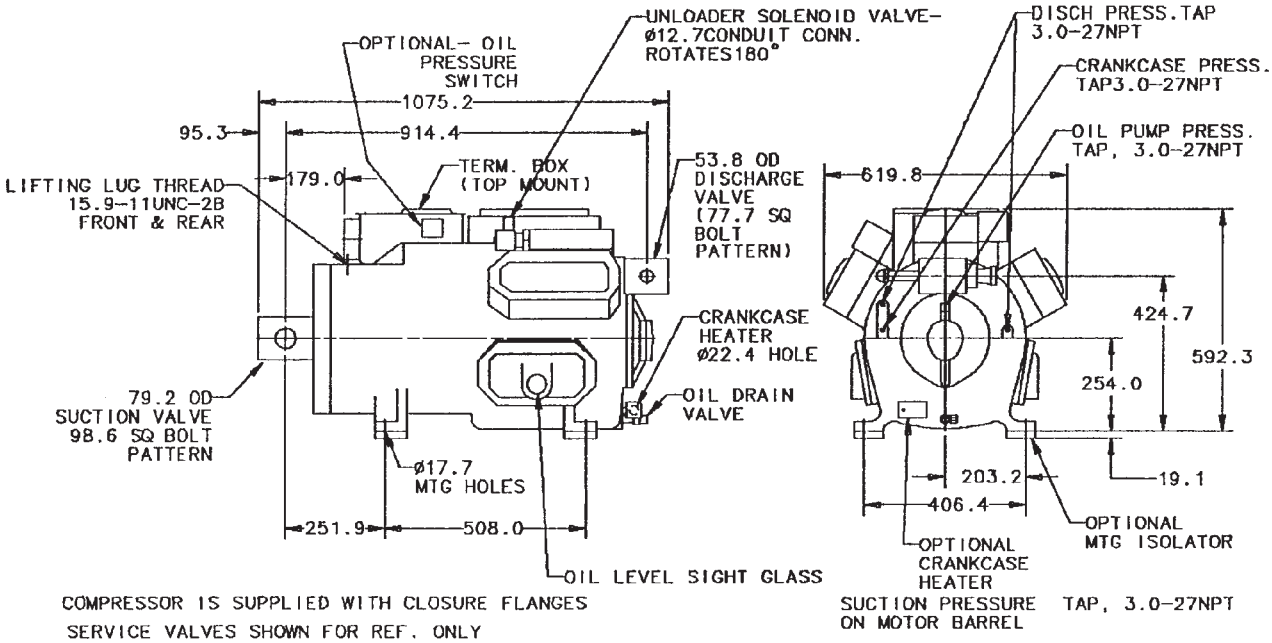
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	258	234	910
230-60-3	208-254	226	212	792
460-60-3	416-508	113	106	396
575-60-3	520-635	90	85	315
200-50-3	180-220	226	212	755
230-50-3	198-264	196	184	660
363-50-3	327-399	149	120	420
400-50-3	343-456	113	106	395

± At Minimum Utilization Voltage At 50F

* Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125FSat. Condensing, 15F Superheat, Full Load

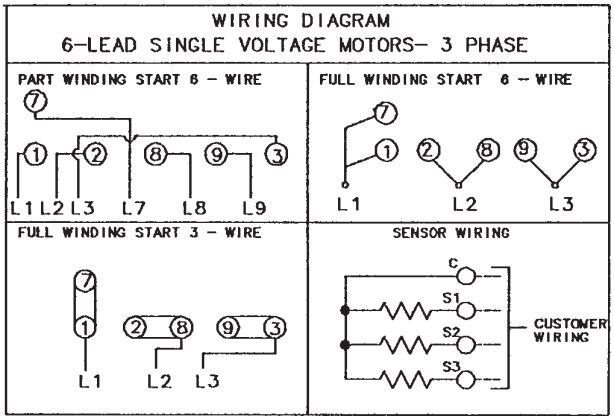
Model CRHR600 - 60 Ton / R-22 / 50 Hz



Application

Internal Relief Valve Setting	26.5 BAR-D		
Refrigerant	R-22 &	R502	
UL Recognized & CSA Accepted			

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW) (R-22)	61.7	123.4	187.0
Power Input (KW)	28.8	41.8	55.2
Current (400V) (Amps)	55.1	74.1	93
C.O.P.	2.15	2.94	3.39
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	554.44
Liquid Temp (C)	8.33	8.33	8.33
Superheat (C) (45F/130/15F SC/20F SH-ARI)	11.11	11.11	11.11



Physical Data

Bore (MM)	87.5
Stroke (MM)	69.85
No. of Cylinders	6
Speed (RPM)	1450

Motor Protection

Type (Pilot Duty) Internal Thermostat
Manufacturer Robertshaw
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts

Motor Data

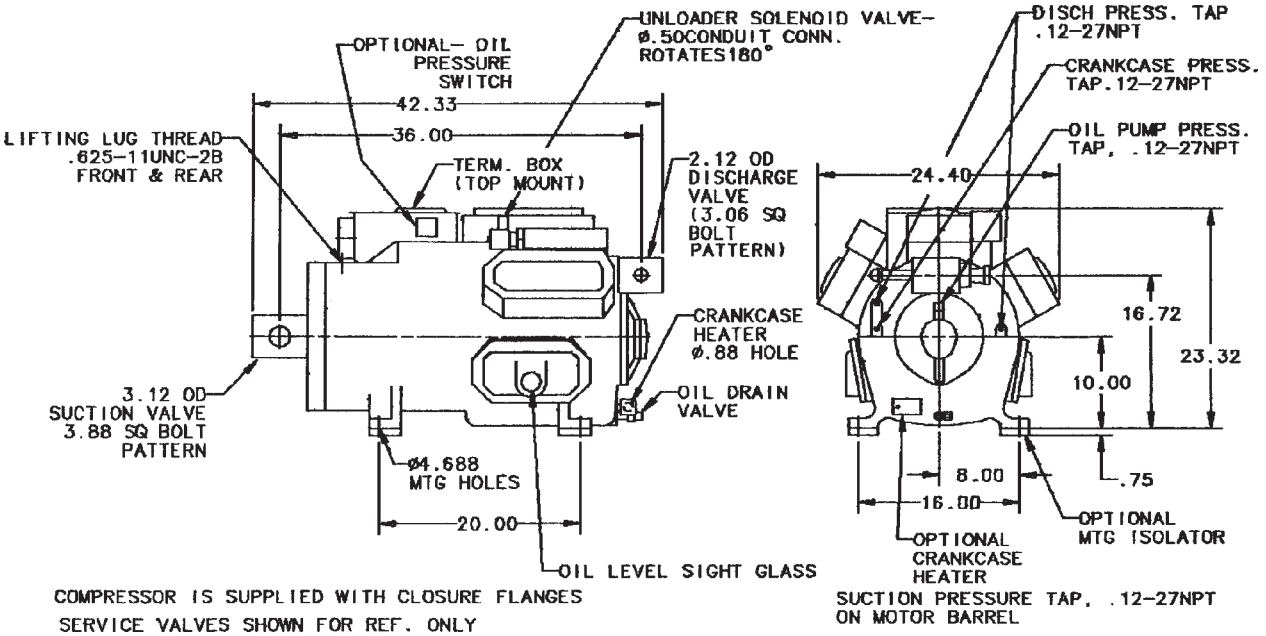
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	316	280	990
230-60-3	208-254	275	252	860
460-60-3	416-508	138	126	430
575-60-3	520-635	110	101	346
200-50-3	180-220	275	252	825
230-50-3	198-264	239	220	720
363-50-3	327-399	152	139	455
400-50-3	343-456	138	126	430

± At Minimum Utilization Voltage At 10C

* Sat. Suction, 65.5C Sat. Condensing, 8.3C Superheat, Full Load
** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHR600 - 60 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	385 PSID
Refrigerant	R-22 & R502
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	250,500	501,100	759,300
Power Input (KW)	35.0	51.0	66.2
Current (230) (Amps)	57.4	77.2	98.0
EER (BTU/W-HR)	7.1	9.8	11.5
Evaporator Temp	45F	45F	45F
Condenser Temp	130F	130F	130F
Liquid Temp	115F	115F	115F
Superheat	20F	20F	20F

Physical Data

Bore	3.445 In.
Stroke	2.750 In.
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Robertshaw

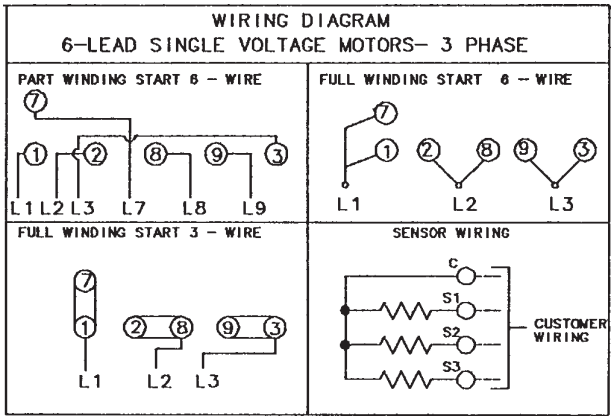
External Overcurrent Protection Required

Crankcase Heater

Immersion Type - 140 Watts, 120 or 240 Volts

Oil Pressure Switch

Differential Type, Pilot Duty, 24 VAC Contacts



Motor Data

Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	316	280	990
230-60-3	208-254	275	252	860
460-60-3	416-508	138	126	430
575-60-3	520-635	110	101	346
200-50-3	180-220	275	252	825
230-50-3	198-264	239	220	720
363-50-3	327-399	152	139	455
400-50-3	343-456	138	126	430

± At Minimum Utilization Voltage At 50F

* Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load

** At 40F Sat. Suction, 125FSat. Condensing, 15F Superheat, Full Load

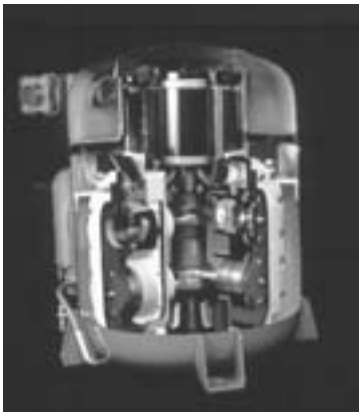
Model K Hermetic Compressors

Description
The Trane Model K is an unloading, industrial designed hermetic compressor designed to operate on R-22. The compressor utilizes a reversible centrifugal oil pump for operation in either direction. The compressor also has an integral suction accumulator to enhance the compressors ability to handle liquid flood back to the compressor. The Model K compressor also has an oil sightglass and oil charging valve for ease of servicing the compressor.

Lifting and Handling
The Model K compressor has two lifting straps mounted on the upper shell. During handling it is recommended that the compressor be kept with the top of the shell above horizontal to prevent the oil from running into the compressor cylinders and causing potential damage to the compressor when it is started. If the top of the compressor is tilted below horizontal it is recommended that the compressor be allowed to set in the vertical position for a minimum of one (1) hour before trying to start the compressor.

Storage
The Model K compressor is shipped with a nitrogen holding charge and the connections are sealed tight with closure plates or service valves. The storage of the compressor must be in an enclosed dry space with the temperature and humidity not to exceed 140 F and 95% RH non-condensing.

The Model K compressor ships with a full oil charge. The amount and type is listed in the section on compressor oils.



Mounting
It is recommended that the Model K compressor be mounted on the rubber isolators as listed in the compressor mounting hardware section.

Pressure Testing
The maximum high side test pressure is 500 psig. The maximum lowside test pressure is 350 psig. The differential between high side and low side should never exceed 340 psig. When pressure testing never exceeds the pressure on the safety relief valves that are on the system

⚠WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.

RESPECT® Compressors

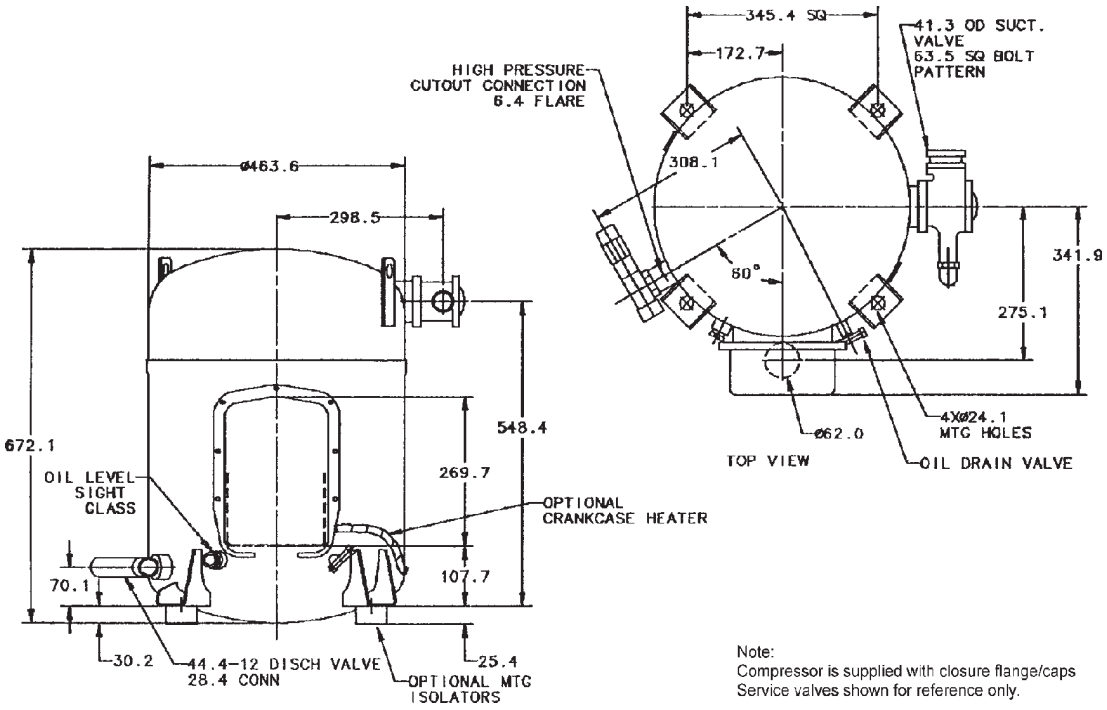
ReSpecT®

Model K - Hermetic Compressors

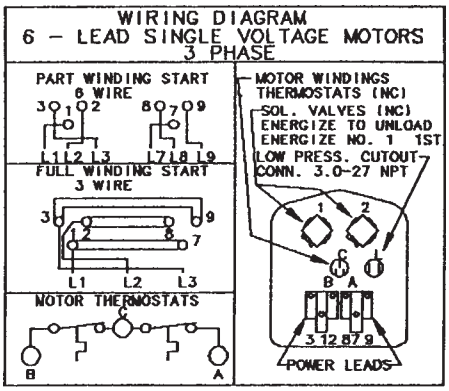
COM Number	Remanufactured Model Number	Old Model Number	Original Model Number	Cap. (Tons)	Voltage	Shipping Weight (Lbs.)
COM01790	CRHK200A2**A0R0K0*0	CRHK-200A-2*A0	CRHK200A2*A	20	200/60/3	500
	USE COM01790	CRHK-200A-0*A0				
COM01791	CRHK200W2**A0R0K0*0	CRHK-200W-2*A0	CRHK200W2*A	20	230/60/3	500
	USE COM01791	CRHK-200W-A*A0				
COM02497	CRHK200X2**A0R0K0*0	CRHK-200X-2*A0	CRHK200S2*A	20	380/60/3	550
COM01793	*CRHK200W2**A0R0K0*0*	CRHK-200D-2*A0	CRHK200D2*A	20	575/60/3	500
	USE COM01793	CRHK-200D-0*A0				
COM01792	CRHK200K2**A0R0K0*0	CRHK-200T-2*A0	CRHK200T2*A	20	400-460/50-60/3	500
	USE COM01792	CRHK-200T-0*A0				
COM01795	CRHK250A4**A0R0K0*0	CRHK-250A-4*A0	CRHK250A4*A	25	200/60/3	550
	USE COM01795	CRHK-250A-2*A0				
	USE COM01795	CRHK-250A-0*A0				
COM01796	CRHK250W4**A0R0K0*0	CRHK-250W-4*A0	CRHK250W4*A	25	230/60/3	550
	USE COM01796	CRHK-250W-2*A0				
	USE COM01796	CRHK-250W-0*A0				
COM02498	CRHK250X4**A0R0K0*0	CRHK-250X-4*A0	CRHK250S4*A	25	380/60/3	550
COM04388	CRHK250X4**A0R0K0*0	CRHK-250X-4*A0	CRHK250S4*A	25	380/60/3	550
COM03188	CRHK250V4**A0R0K0*0	CRHK-250V-4*A0	CRHK250V4*A	25	346/50/3	550
COM01798	CRHK250D4**A0R0K0*0	CRHK-250D-4*A0	CRHK250D4*A	25	575/60/3	550
	USE COM01798	CRHK-250D-2*A0				
	USE COM01798	CRHK-250D-0*A0				
COM01797	CRHK250K4**A0R0K0*0	CRHK-250T-4*A0	CRHK250T4*A	25	400-460/50-60/3	550
	USE COM01797	CRHK-250T-2*A0				
	USE COM01797	CRHK-250T-0*A0				
COM01800	CRHK300A4**A0R0K0*0	CRHK-300A-4*A0	CRHK300A4*A	30	200/60/3	550
	USE COM01800	CRHK-300A-2*A0				
	USE COM01800	CRHK-300A-0*A0				
COM01801	CRHK300W4**A0R0K0*0	CRHK-300W-4*A0	CRHK300W4*A	30	230/60/3	550
	USE COM01801	CRHK-300W-2*A0				
	USE COM01801	CRHK-300W-0*A0				
COM02499	CRHK300X4**A0R0K0*0	CRHK-300X-4*A0	CRHK300S4*A	30	380/60/3	550
COM03132	CRHK300V4**A0R0K0*0	CRHK-300V-4*A0	CRHK300S4*A	30	346/50/3	550
COM04387	CRHK300Z4**A0R0K0*0	CRHK-300Z-4*A0	CRHK300S4*A	30	363/50/3	550
COM01803	CRHK300D4**A0R0K0*0	CRHK-300D-4*A0	CRHK300D4*A	30	575/60/3	550
	USE COM01803	CRHK-300D-2*A0				
	USE COM01803	CRHK-300D-0*A0				
COM01802	CRHK300K4**A0R0K0*0	CRHK-300T-4*A0	CRHK300T4*A	30	400-460/50-60/3	550
	USE COM01802	CRHK-300T-2*A0				
	USE COM01802	CRHK-300T-0*A0				

NOTE: If requirements are such that compressor unloading is required other than the standard configuration, connect only the appropriate number of terminals. See connection diagram pages 72-77 (Included with the Model K compressor submittals.)

Model CRHK200 - 20 Ton / R-22 / 50 Hz



Note:
Compressor is supplied with closure flange/caps
Service valves shown for reference only.



Application

Internal Relief Valve Setting	31 BAR-D
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***50%***	***100%***
Capacity (KW)	27.9	57.2
Power Input (KW)	9.6	17.3
Current (220) (Amps)	36.5	54
C.O.P	2.9	3.31
Evaporator Temp (C)	7.22	7.22
Condenser Temp (C)	54.44	54.44
Liquid Temp (C)	8.3	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11

Physical Data

Bore (MM)	69.85
Stroke (MM)	53.98
No. of Cylinders	4
Speed (RPM)	1450

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon

External Overcurrent Protection Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts

Motor Data

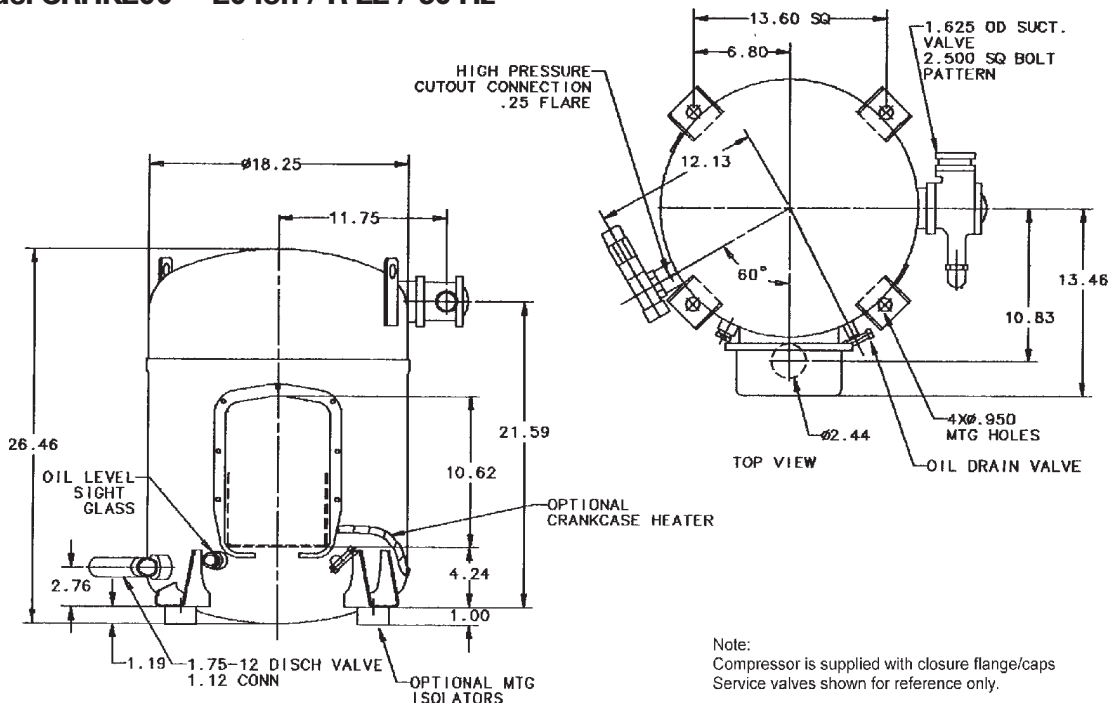
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	96	80	394
230-60-3	208-254	83	70	343
380-60-3	342-418	50	42	208
460-60-3	416-508	42	35	172
575-60-3	520-635	33	28	138
230-50-3	198-253	68	57	285
346-50-3	311-381	46	38	190
363-50-3	327-399	43	37	185
400-50-3	340-460	39	33	175

± At Minimum Utilization Voltage

* At 10C Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load
** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHK200 - 20 Ton / R-22 / 60 Hz



Note:
Compressor is supplied with closure flange/caps
Service valves shown for reference only.

Application

Internal Relief Valve Setting	450 PSID
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***50%***	***100%***
Capacity (BTU/HR)	113,400	232,500
Power Input (KW)	11.5	20.7
Current (230) (Amps)	42	62
EER (BTU/W-HR)	9.8	11.2
Evaporator Temp	45	45
Condenser Temp	130	130
Liquid Temp	115	115
Superheat	20	20

Physical Data

Bore	2.75
Stroke	2.125
No. of Cylinders	4
Speed	1750 RPM

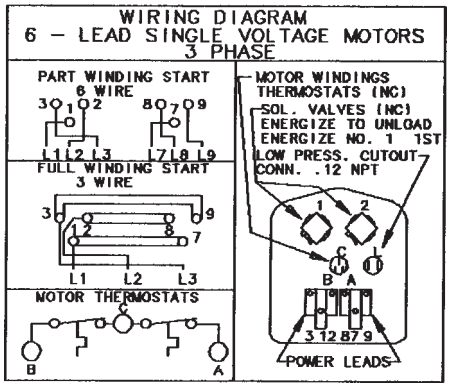
Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon

External Overcurrent Protection Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts



Motor Data

Max Load Current (Amp)±

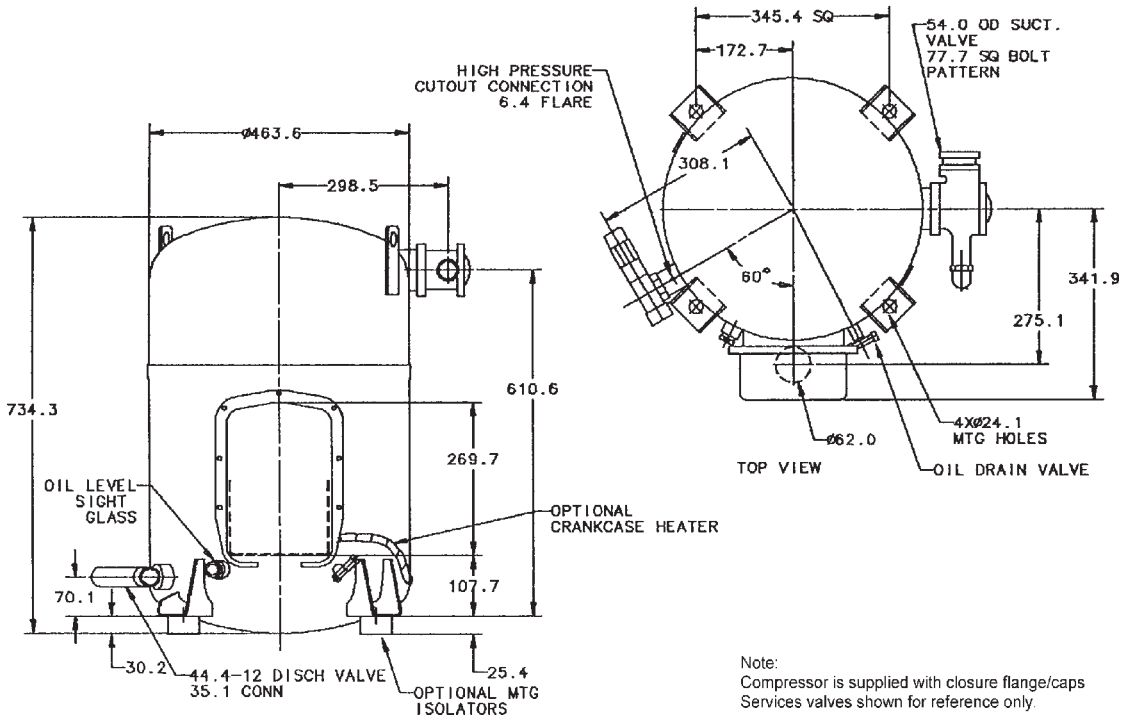
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	96	80	394
230-60-3	208-254	83	70	343
380-60-3	342-418	50	42	208
460-60-3	416-508	42	35	172
575-60-3	520-635	33	28	138
230-50-3	198-253	68	57	285
346-50-3	311-381	46	38	190
363-50-3	327-399	43	37	185
400-50-3	340-460	39	33	175

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load
** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model K Hermetic Compressors (Cont.)

Model CRHK250 - 25 Ton / R-22 / 50 Hz



Note:
Compressor is supplied with closure flange/caps
Services valves shown for reference only.

Application

Internal Relief Valve Setting	31 BAR-D
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	23.4	46.4	68.4
Power Input (KW)	8.5	14.5	20.7
Current (220) (Amps)	37	49	64
C.O.P	2.75	3.2	3.31
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.3	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

Bore (MM)	69.85
Stroke (MM)	45.97
No. of Cylinders	6
Speed (RPM)	1450

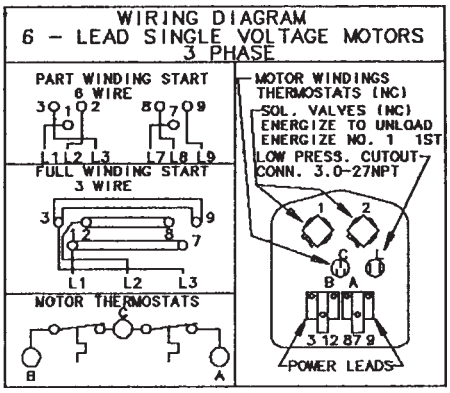
Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon

External Overcurrent Protection Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts



Motor Data

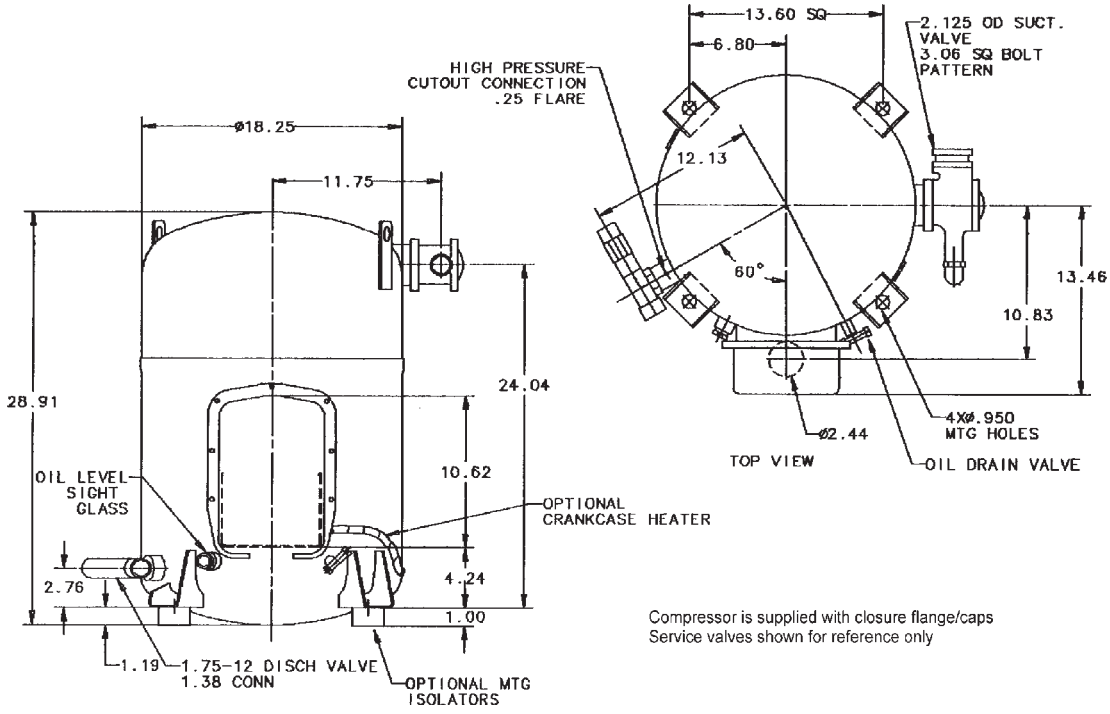
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	115	96	426
230-60-3	208-254	100	83	370
380-60-3	342-418	61	50	224
460-60-3	416-508	50	42	185
575-60-3	520-635	40	33	148
230-50-3	198-253	83	70	310
346-50-3	311-381	56	47	205
363-50-3	327-399	53	44	195
400-50-3	340-460	48	40	185

± At Minimum Utilization Voltage

* At 10C Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load
** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

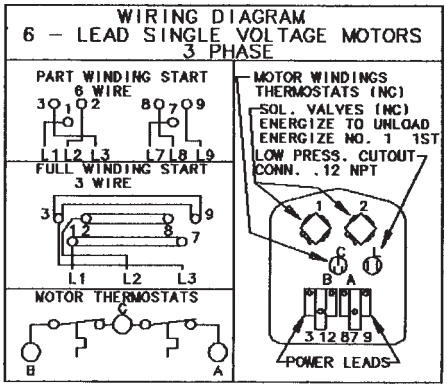
Model CRHK250 - 25 Ton / R-22 / 60 Hz



Application

Internal Relief Valve Setting	450 PSID
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	95,200	188,700	278,000
Power Input (KW)	10.2	17.5	24.9
Current (230) (Amps)	42	56	74
EER (BTU/W-HR)	9.3	10.8	11.2
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20



Physical Data

Bore	2.75
Stroke	1.81
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon

External Overcurrent Protection Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts

Motor Data

Max Load Current (Amp)±

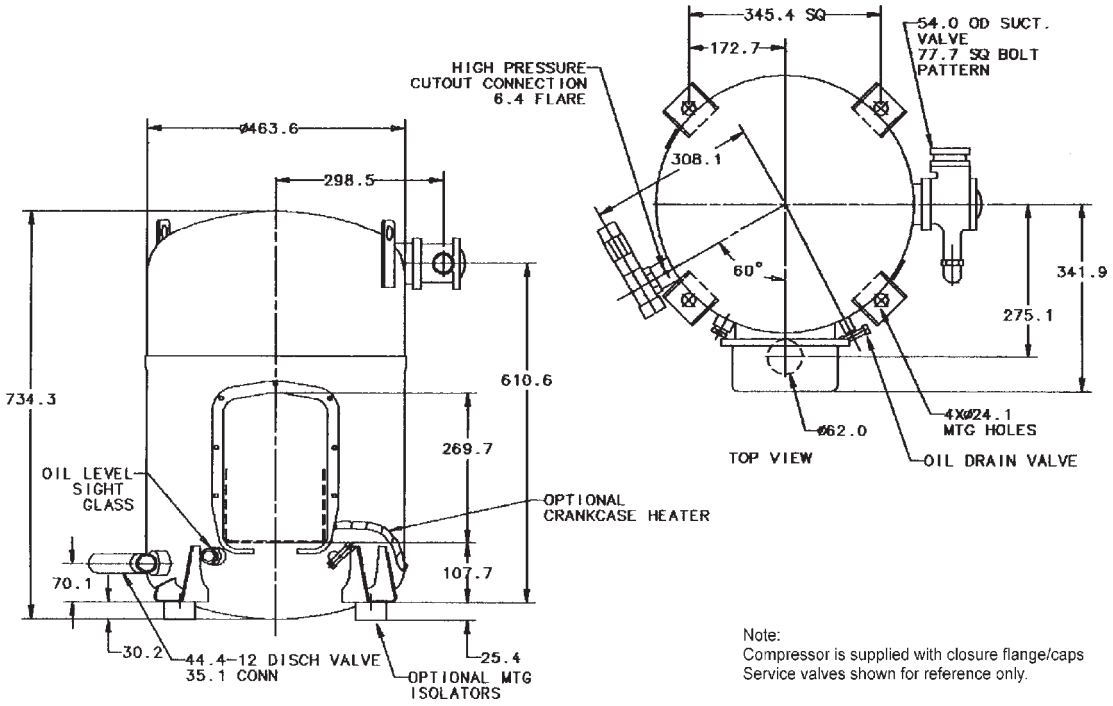
Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	115	96	426
230-60-3	208-254	100	83	370
380-60-3	342-418	61	50	224
460-60-3	416-508	50	42	185
575-60-3	520-635	40	33	148
230-50-3	198-253	83	70	310
346-50-3	311-381	56	47	205
363-50-3	327-399	53	44	195
400-50-3	340-460	48	40	185

± At Minimum Utilization Voltage

* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load
** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model K Hermetic Compressors (Cont.)

Model CRHK300 - 30 Ton / R-22 / 50 Hz



Note:
Compressor is supplied with closure flange/caps
Service valves shown for reference only.

Application

Internal Relief Valve Setting	31 BAR-D
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (KW)	28.9	57.2	83.6
Power Input (KW)	10.3	18.3	25.9
Current (220) (Amps)	42	59	80
C.O.P	2.8	3.13	3.23
Evaporator Temp (C)	7.22	7.22	7.22
Condenser Temp (C)	54.44	54.44	54.44
Liquid Temp (C)	8.3	8.33	8.33
Superheat (C) (45F/130F/15F SC/20F SH-ARI)	11.11	11.11	11.11

Physical Data

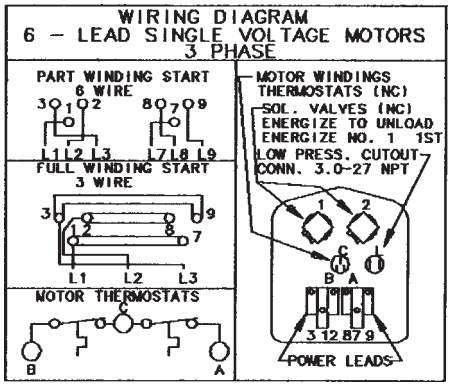
Bore (MM)	69.85
Stroke (MM)	53.98
No. of Cylinders	6
Speed (RPM)	1450

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon
External Overcurrent Protection	Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts



Motor Data

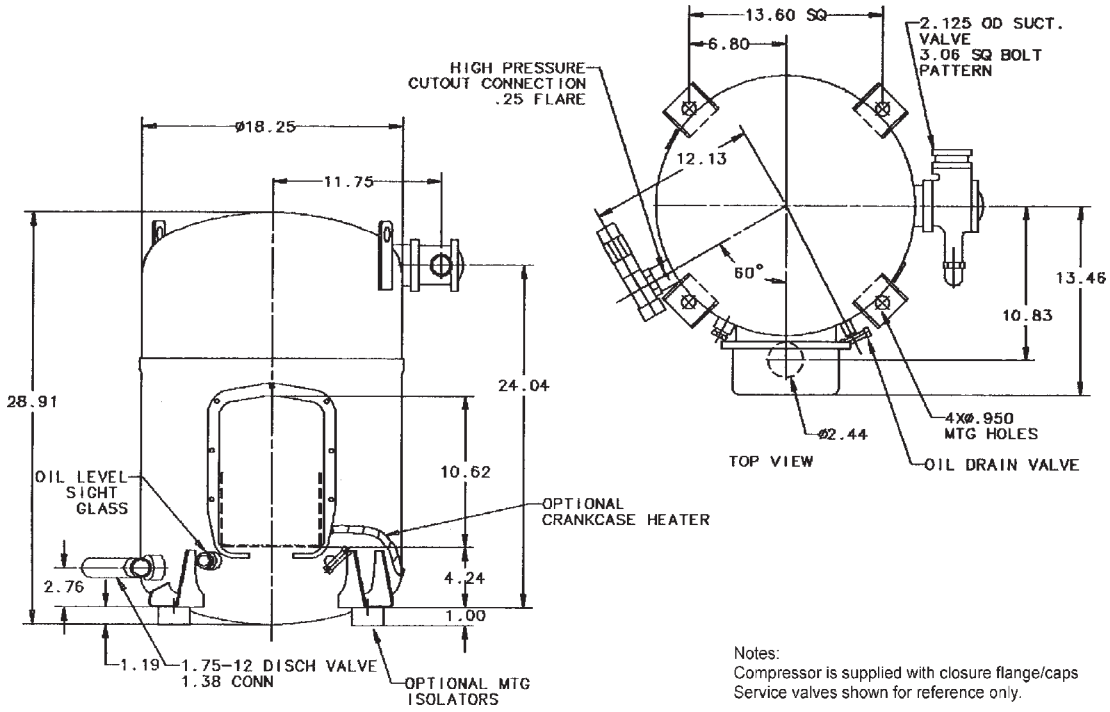
Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	141	114	488
230-60-3	208-254	122	100	424
380-60-3	342-418	74	60	257
460-60-3	416-508	61	50	212
575-60-3	520-635	49	40	170
230-50-3	198-253	101	83	355
346-50-3	311-381	68	56	235
363-50-3	327-399	64	53	225
400-50-3	340-460	58	48	215

± At Minimum Utilization Voltage

* At 10C Sat. Suction, 65.6C Sat. Condensing, 8.3C Superheat, Full Load
** At 4.4C Sat. Suction, 51.7C Sat. Condensing, 8.3C Superheat, Full Load

Model CRHK300 - 30 Ton / R-22 / 60 Hz

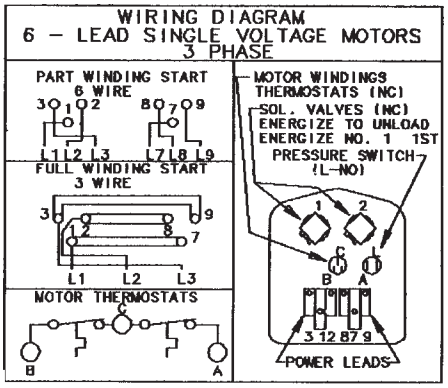


Notes:
Compressor is supplied with closure flange/caps
Service valves shown for reference only.

Application

Internal Relief Valve Setting	450 PSID
Refrigerant	R-22
UL Recognized & CSA Accepted	

Rated Performance	***33%***	***67%***	***100%***
Capacity (BTU/HR)	117,500	232,500	339,500
Power Input (KW)	12.4	21.9	31.1
Current (230) (Amps)	48	68	92
EER (BTU/W-HR)	9.5	10.6	10.9
Evaporator Temp	45	45	45
Condenser Temp	130	130	130
Liquid Temp	115	115	115
Superheat	20	20	20



Physical Data

Bore	2.75
Stroke	1.25
No. of Cylinders	6
Speed	1750 RPM

Motor Protection

Type (Pilot Duty)	Internal Thermostat
Manufacturer	Klixon

External Overcurrent Protection Required

Crankcase Heater

Insert Type - Accessible Inside Terminal Box
Rating - 150 Watts, 120 Volts

Motor Data

Max Load Current (Amp)±

Voltage	Utilization Range	Air-Cooled*	Water-Cooled**	LRA
200-60-3	180-220	141	114	488
230-60-3	208-254	122	100	424
380-60-3	342-418	74	60	257
460-60-3	416-508	61	50	212
575-60-3	520-635	49	40	170
230-50-3	198-253	101	83	355
346-50-3	311-381	68	56	235
363-50-3	327-399	64	53	225
400-50-3	340-460	58	48	215

± At Minimum Utilization Voltage

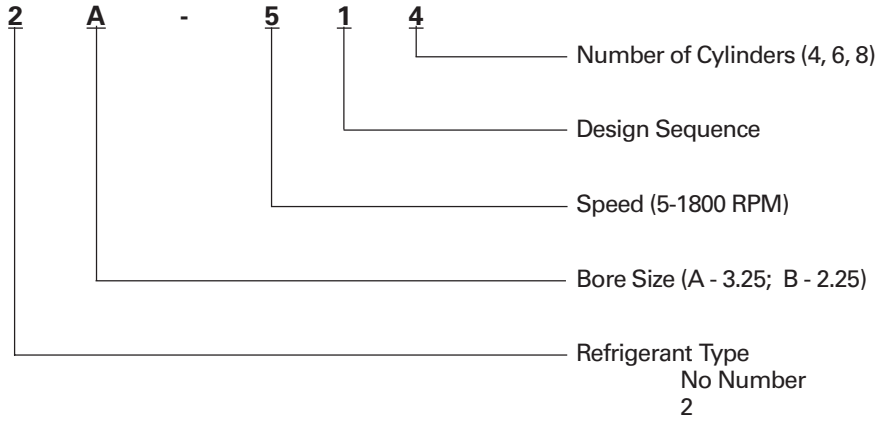
* At 50F Sat. Suction, 150F Sat. Condensing, 15F Superheat, Full Load
** At 40F Sat. Suction, 125F Sat. Condensing, 15F Superheat, Full Load

Model Identification

Nomenclature Charts

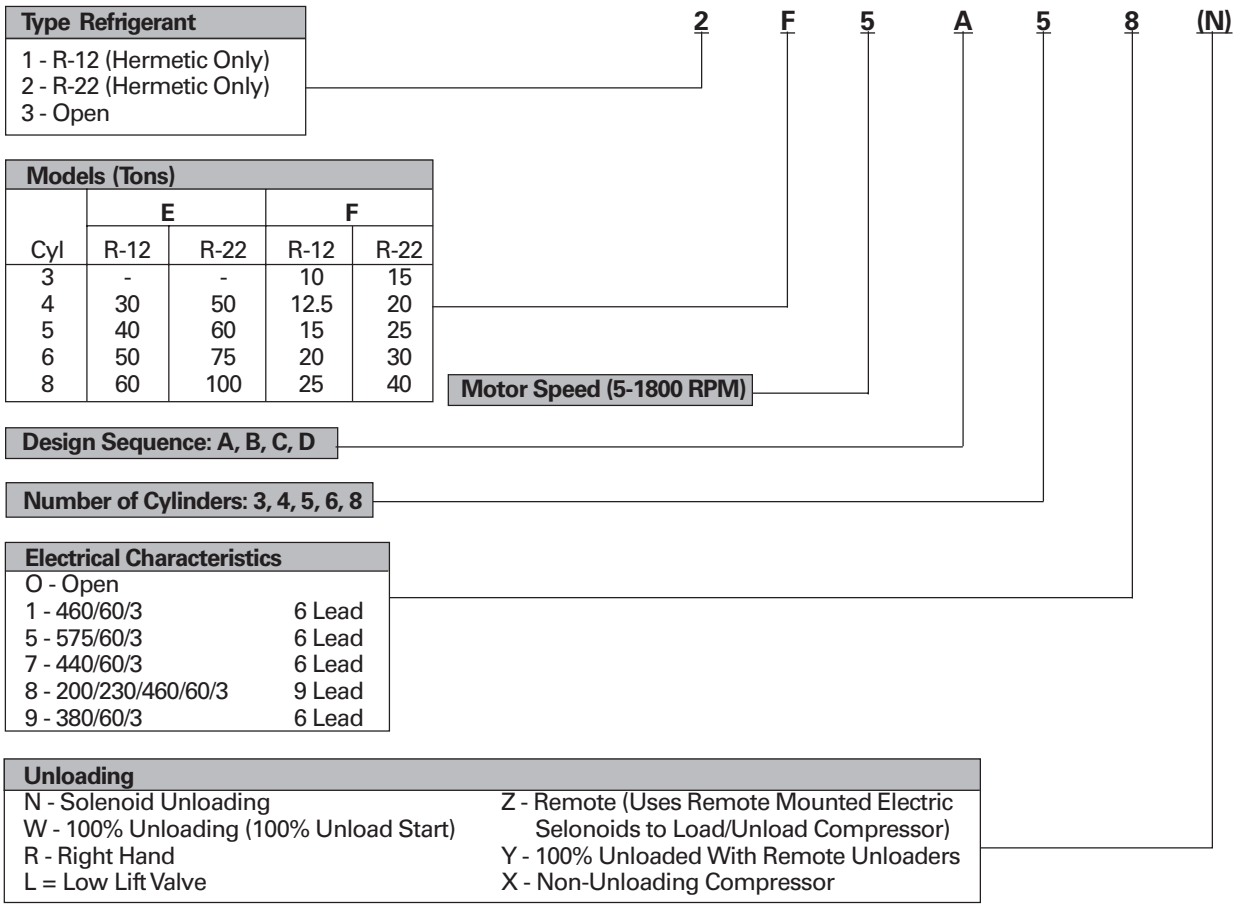
Models A and B

"Original Model Number" Nomenclature



Models E and F

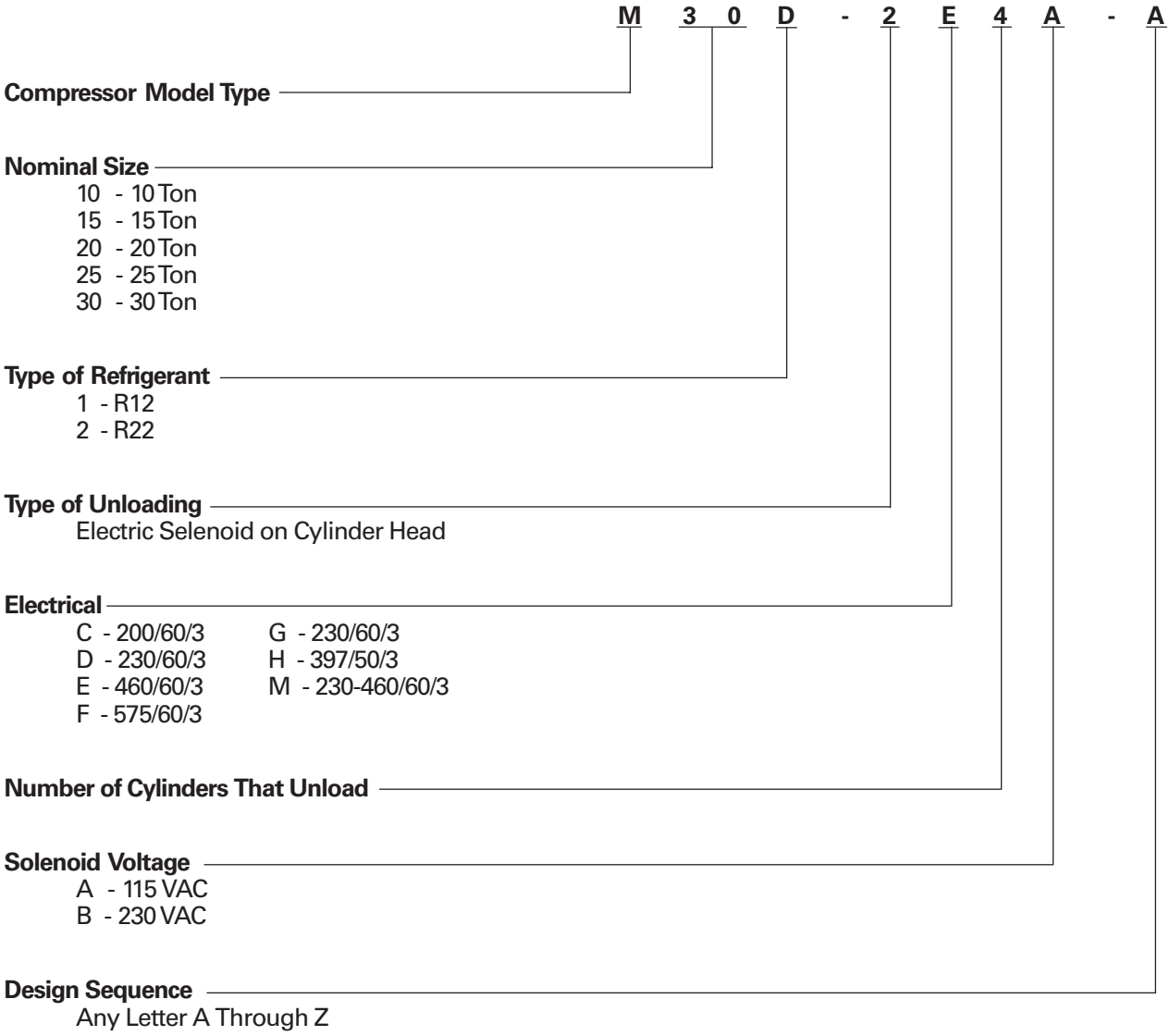
"Original Model Number" Nomenclature



Nomenclature Charts (Cont.)

Model M

"*Original Model Number*" Nomenclature



Nomenclature Charts (Cont.)

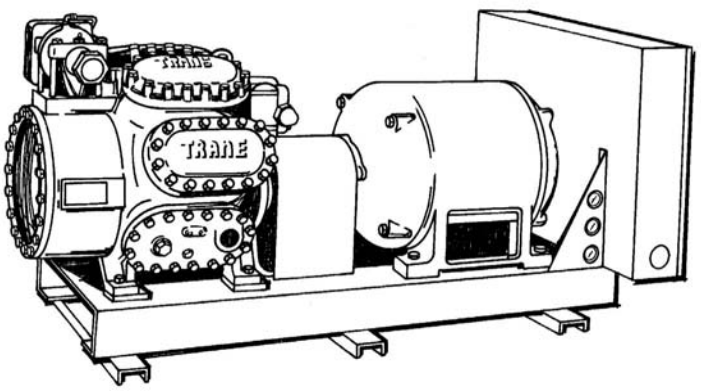
Models M and R

"Original Model Number" Nomenclature

C R H M - 1 5 0 A - 2 * A T

- **Refrigerant Compressor**
- **Reciprocating Piston**
- **Hermetic Motor**
- **Development Sequence (M, R)**
- **Capacity**
- **Electrical Characteristics**
  - A = 200
  - B = 230/460/60/3
  - C = 460/60/3
  - D = 575/60/3
  - E = 200/50/3
  - F = 230/50/3
  - G = 397/50/3
  - W = 230/60/3
- **Number of Cylinders That Unload**
- **Design Sequence**
- **Control Voltage**
  - A - 115 VAC
  - B - 230 VAC
- **Junction Box**
  - S - Side
  - T - Top

Model M	
100 =	NOM 10 Ton R-12, 3 Cyl.
130 =	NOM 13 Ton R-12, 4 Cyl.
170 =	NOM 17 Ton R-12, 5 Cyl. (Design Sequence A, B, C)
170 =	NOM 17 Ton R-12, 6 Cyl. (Design Sequence D, E, F, G)
190 =	NOM 19 Ton R-12, 6 Cyl.
150 =	NOM 15 Ton R-22, 3 Cyl.
160 =	NOM 16 Ton R-22, 4 Cyl.
200 =	NOM 20 Ton R-22, 4 Cyl.
250 =	NOM 25 Ton R-22, 5 Cyl. (Design Sequence A, B, C)
250 =	Nom 25 Ton R-22, 6 Cyl. (Design Sequence D, E, F, G)
300 =	NOM 30 Ton R-22, 6 Cyl.
Model R	
260 =	NOM 26 Ton R-12, 4 Cyl.
320 =	NOM 32 Ton R-12, 6 Cyl.
380 =	NOM 38 Ton R-12, 6 Cyl.
400 =	NOM 40 Ton R-22, 4 Cyl.
500 =	NOM 50 Ton R-22, 6 Cyl.
600 =	NOM 60 Ton R-22, 6 Cyl.



Trane Model E, F, M, R and K Compressors
"Old Model Number" Nomenclature Chart

C R H R - 4 0 0 K - 2 R A 0

- **C** — Positive Displacement Refrigerant Compressor
- **R** — R = Reciprocating; S = Scroll; H = Helical Rotary
- **H** — H = Hermetic, Internal Motor; O = Open, External Drive
- **R** — Compressor Model and Development Sequence
  - E = 1750 RPM Horizontal Serviceable, Cast Iron
  - F = 1750 RPM Horizontal Serviceable, Cast Iron
  - M = 1750 RPM Horizontal Serviceable, Cast Iron
  - R = 1750 RPM Horizontal Serviceable, Cast Iron
  - K = 1750 RPM Vertical Welded Steel Shell
- **4 0 0** — Nominal Compressor Size, Suction Valve Lift, Refrigerant Compatibility (see table below)
- **K** — Compressor Motor Frequency and Voltage (see table below)
- **2** — Compressor Unloading Number of Cylinders That Unload at Capacity
  - 0 = No Unloading
  - 1 = Models E, F, K, R
  - 2 = Models E, F, K, R
  - 3 = Models E, F, K, R
  - 4 = Models E, F, K, R
  - 5 = Models E, F
  - 6 = Models E, F
- **R** — Design Sequence - Factory Assigned Digit
  - Remanufactured Compressors Will Have a "R" as the 10th Digit.
- **A** — Unloader Control and Unloading Method
  - 0 = No Unloading
  - A = 115 VAC, Electric, Models E,F,K,R
  - B = 230 VAC, Electric, Models E,F,K,R
  - C = 12 VDC, Electric, Models E,F,K,R
  - E = 32 VDC, Electric, Models E,F,K,R
  - F = 64 VDC, Electric, Models E,F,K,R
  - G = 187 VDC, Electric, Models E,F,K,R
  - H = 24 VAC, Electric, Models E,F,K,R
  - R = Remote Electric, Compressor Hand Hole Cover Only, Models E & F Only
  - P = Suction Pressure Unloading, Models E & F Only
  - U = 2-Speed Motor, Model S Only
  - S = Special
- **0** — Basic Compressor Variation
  - 0 = Standard Compressor
  - 1 = 100% Unloaded Start - Models E and F Only
  - 2 = Standard Compressor Right hand, Models E & F
  - 3 = 100% Unloaded Start - Right Hand, Models E & F
  - 4 = Side Junction Box Location, Model R, 4-Cylinder Only

Nominal Compressor Size, Suction Valve Lift, Refrigerant Compatibility

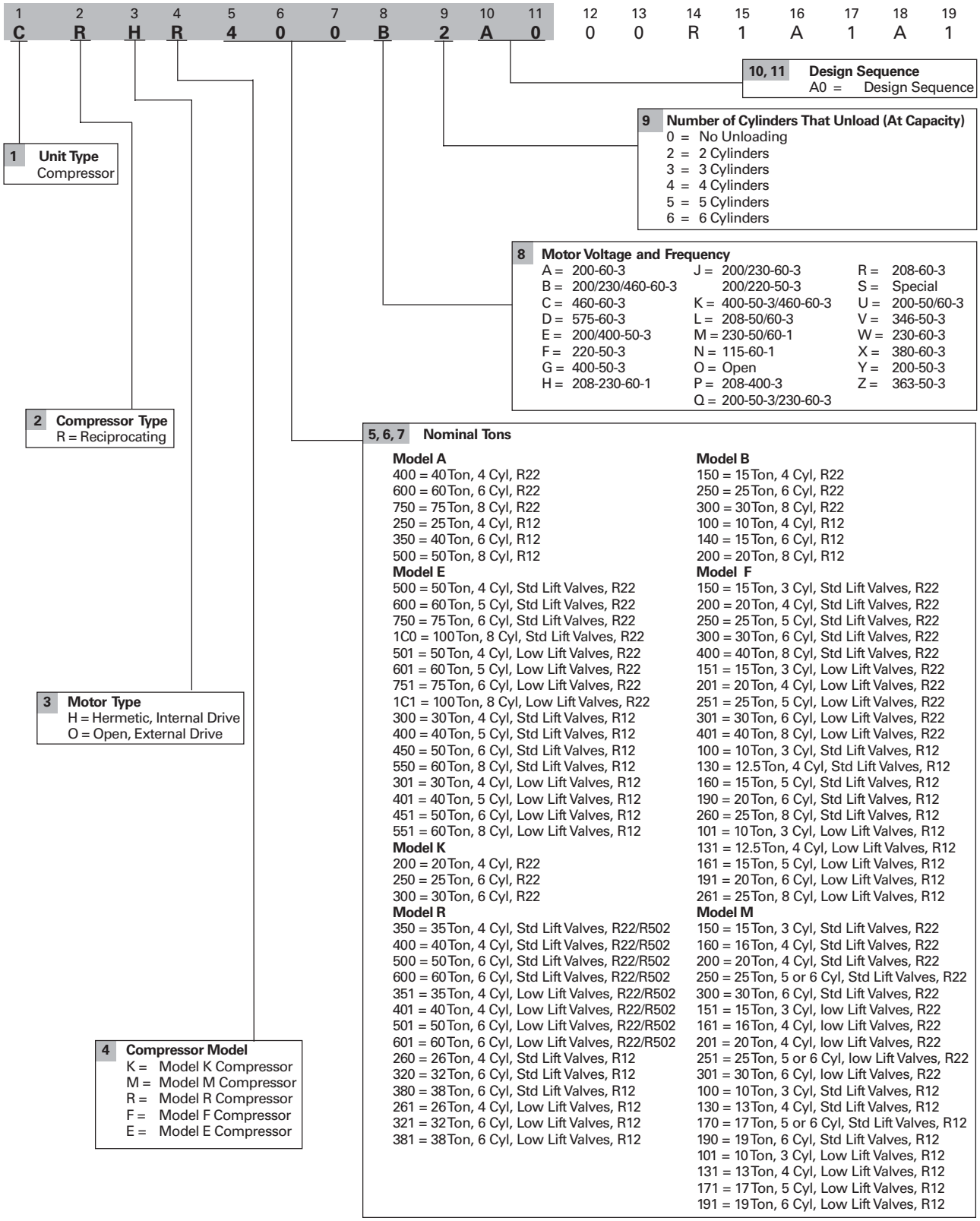
Comp. Model	Digits 5,6,7 Size	Refrigerant	Cu. In. Per Rev.	No. Cyl.	Special Feature
E	500	R-22	115.5	4	Std. Lift Valves
	600	R-22	144.5	5	Std. Lift Valves
	750	R-22	173.3	6	Std. Lift Valves
	1C0	R-22	231.0	8	Std. Lift Valves
	501	R-22	115.5	4	Low Lift Valves
	601	R-22	144.5	5	Low Lift Valves
	751	R-22	173.3	6	Low Lift Valves
	1C1	R-22	231.0	8	Low Lift Valves
F	150	R-22	35.6	3	Std. Lift Valves
	200	R-22	47.5	4	Std. Lift Valves
	250	R-22	59.4	5	Std. Lift Valves
	300	R-22	71.4	6	Std. Lift Valves
	400	R-22	95.0	8	Std. Lift Valves
	151	R-22	35.6	3	Low Lift Valves
	201	R-22	47.5	4	Low Lift Valves
	251	R-22	59.4	5	Low Lift Valves
	301	R-22	71.4	6	Low Lift Valves
	401	R-22	95.0	8	Low Lift Valves
	100	R-12	35.6	3	Std. Lift Valves
	130	R-12	47.5	4	Std. Lift Valves
	160	R-12	59.4	5	Std. Lift Valves
	190	R-12	71.4	6	Std. Lift Valves
	260	R-12	95.0	8	Std. Lift Valves
	101	R-12	35.0	3	Low Lift Valves
	131	R-12	47.5	4	Low Lift Valves
	161	R-12	59.4	5	Low Lift Valves
	191	R-12	71.4	6	Low Lift Valves
	261	R-12	95.0	8	Low Lift Valves
M	150	R-22/502		3	
	160	R-22/502		4	
	200	R-22/502		4	
	250	R-22/502		6	
	300	R-22/502		6	
	100	R-12		3	
	130	R-12		4	
	170	R-12		6	
	190	R-12		6	
R	350	R-22 / R-502	85.46	4	Std. Lift Valves
	400	R-22 / R-502	102.08	4	Std. Lift Valves
	500	R-22 / R-502	128.19	6	Std. Lift Valves
	600	R-22 / R-502	153.12	6	Std. Lift Valves
	351	R-22 / R-502	85.46	4	Low Lift Valves
	401	R-22 / R-502	102.08	4	Low Lift Valves
	501	R-22 / R-502	128.19	6	Low Lift Valves
	601	R-22 / R-502	153.12	6	Low Lift Valves
K	200	R-22	50.61	4	
	250	R-22	64.50	6	
	300	R-22	75.91	6	

Compressor Motor Frequency and Voltage

Nominal	Min. Volts	Max. Volts
A = 200-60-3	180	220
B = 230/460-60-3	207/414	254/506
C = 460-60-3	414	508
D = 575- 60-3	518	635
E = 200/400-50-3	180/343	220/456
F = 220-50-3	198	254 (242 on Model E)
G = 400-50-3	343	456
H = 208/230-60-1	197	254
J = 200/230-60-3	180	254
200/220-50-3	180	254
K = 400-50-3/460-60-3	340/414	460/508
L = 208-50/60-3	198	229
M = 230-50/60-3	215	254
N = 115-60-1	109	128
O = Open		
P = 208-400-3	198	229
Q = 200-50-3/230-60-3	180/207	220/254
R = 208-60-3	187	254
S = Special		
U = 200-50/60-3	180	220
V = 346-50-3	308	381
W = 230-60-3	208	254
X = 380-60-3	342	418
Y = 200-50-3	180	220
Z = 363-50-3	327	399

Trane Cast Iron Compressors Nomenclature Charts (Cont.)

Trane Compressor Nomenclature Chart



Trane Cast Iron Compressors
Nomenclature Charts (Cont.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
C	R	H	R	4	0	0	B	2	A	0	**0**	**0**	**R**	**1**	**A**	**1**	**A**	**1**

12 Unloader Control and Method
- 0 = No Unloading
- A = 115 VAC Electric, Models E, F, K, R
- B = 230 VAC Electric, Models E, F, K, R
- C = 12 VDC Electric, Models E, F, K, R
- E = 32 VDC Electric, Models E, F, K, R
- F = 64 VDC Electric, Models E, F, K, R
- G = 187 VDC Electric, Models E, F, K, R
- H = 24 VAC Electric, Models E, F, K, R
- R = Remote Electric, Comp Hand Hole Cover Only, Models E & F Only
- P = Suction Pressure Unloading, Models A, B, E, & F Only
- S = Special

13 Basic Compressor Variation
- 0 = Standard Compressor (Top Locaton Model M Only)
- 1 = 100% Unloaded Start, Model E & F Only
- 2 = Standard Comp - Right Hand, Models A, B, E, & F
- 3 = 100% Unloaded Start - Right Hand, Models E & F
- 4 = Side Junction Box Location Model M & R, 4 Cyl Only
- S = Special

14 R = Remanufactured

15 Crankshaft
- 1 (STD) = Standard Size
- 2 (UNDR) = .020 Undersize
- 3 (NSEL) = No Selection Available

16 Housing
- A = Old Style (E Open)
- B = New Style (E Open)
- C = Old Style, Large Barrel Motor (E Hermetic)
- D = New Style, Large Barrel Motor (E Hermetic)
- E = New Style, Small Barrel Motor (E Hermetic)
- F = Old Style, Large Barrel (F Hermetic)
- G = New Style, Small Barrel Motor (F Hermetic)
- H = Old Style (Model R)
- J = New Style (Model R)
- K = No Selection Available
- L = Old Style (F Open, 3 Cylinder)
- M = New Style (F Open, 3 Cylinder)

17 Valve Cage or Plate
- 1 (OLDC) = Old Style Valve Cage (Model E & F)
- 2 (NEWC) = New Style Valve Cage (Model E & F)
- 3 (OLDP) = Old Style Valve Plate (Model M)
- 4 (NEWP) = New Style Valve Plate (Model M)
- 0 (NSEL) = No Selection Available

18 Sight Glass
- A (SCRW) = Screw-In
- B (BOLT) = Bolt On
- C (NSEL) = No Selection Available
- D (SMAL) = Small 3/4" MPT (Model K)
- E (LRGE) = Large 1" MPT (Model K)

19 Seal Type
- 1 (OLD) = Old Style (Model E Open Only
- 2 (NEW) = New Style (Model E Open Only
- 0 (NSEL) = No Selection Available

Technical Data

Models A, B, E and F

Unloading

The Model A, B, E and F compressor families use internal hydraulic unloaders. They may be internally activated in response to suction pressure changes or externally from the control system. The unloaders are activated to load. The sequence is shown in the following tables and figures.

Model E Open and Hermetic

	Cylinder Number Loading Sequence			
Loading Sequence	**4 Cyl**	**5 Cyl**	**6 Cyl**	**8 Cyl**
Unloaded	2	3, 4	3, 4	1, 2, 7
1st Stage	2, 1	3, 4, 5	3, 4, 5	1, 2, 7, 8
2nd Stage	2, 1, 3	3, 4, 5, 6	3, 4, 5, 6	1, 2, 7, 8, 5, 6
3rd Stage	ALL	ALL	ALL	ALL

Model F Open and Hermetic

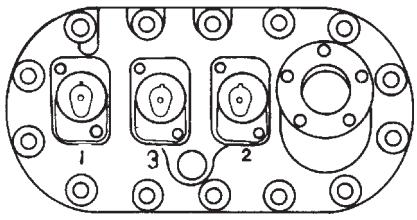
	Cylinder Number Loading Sequence				
Loading Sequence	**3 Cyl**	**4 Cyl**	**5 Cyl**	**6 Cyl**	**8 Cyl**
Unloaded	2	2	3, 4	3, 4	1, 2
1st Stage	2, 1	2, 1	3, 4, 5	3, 4, 5	1, 2, 5, 6
2nd Stage	2, 1, 3	2, 1, 3	3, 4, 5, 6	3, 4, 5, 6	1, 2, 5, 6, 7, 8
3rd Stage	NA	ALL	ALL	ALL	ALL

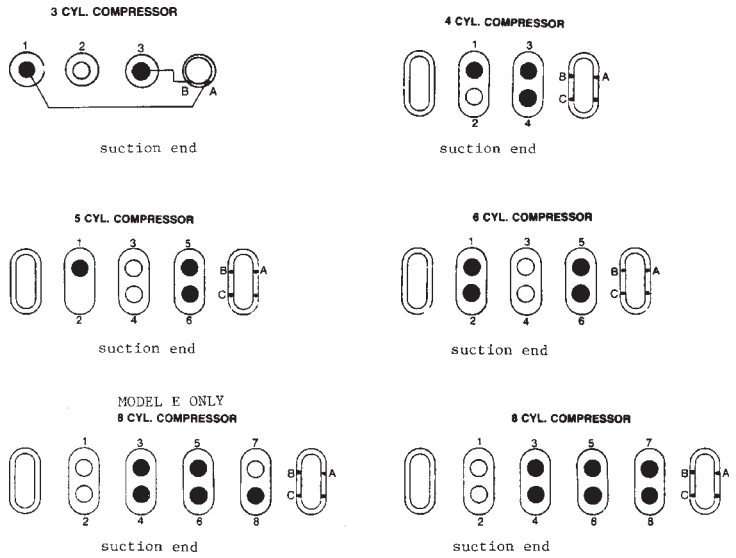
Model A and B Open

	Cylinder Number Loading Sequence		
Loading Sequence	**4 Cyl**	**6 Cyl**	**8 Cyl**
Unloaded	2	3, 4	1, 2
1st Stage	2, 1	3, 4, 5	1, 2, 5, 6
2nd Stage	2, 1, 3	3, 4, 5, 6	1, 2, 5, 6, 7, 8
3rd Stage	ALL	ALL	ALL

Note: Cylinder numbers are cast into the housing on most compressors. The following diagram shows the location of cylinders.

Power is applied on electric unloaders to load the cylinders.





Compressor Unloading (Cont.)
Models E and F

Model E and F Unloading Types

There are three types of unloading available on the Model E and Model F, open and semihermetic compressors. 1. Suction unloading, 2. Electric unloading, 3. Electric unloading with remote mounted unloaders.

The compressor unloading sequence and the corresponding cylinders which are unloaded are shown in Figure 1.

Suction Unloading (See Figure 2)
The suction unloading option utilizes an internally mounted control device which provides automatic capacity control and permits the compressor to start unloaded. Loading and unloading of the compressor is actuated by variations in the suction pressure, but the unloader mechanism operates hydraulically from the pressure developed by the lubrication system oil pump. The capacity control device will operate over a 9 to 10 psi range with three capacity modulation steps. The setting at which the unloading starts can be adjusted, but the differential between steps cannot be adjusted.

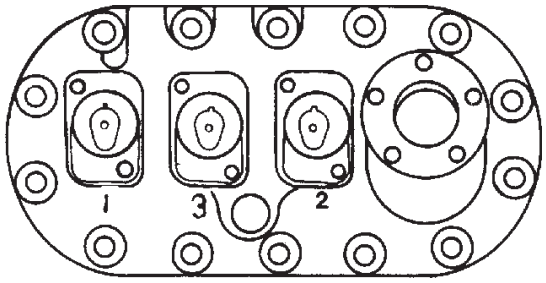
To adjust the suction pressure actuated unloader, remove the hexagon head cover and gasket shown in Figure 2. Turn the adjusting screw shown in Figure 3. Turning the adjustment screw clockwise will raise the setting at which unloading will start. If the suction pressure is being held constant by the system, turning the adjustment screw clockwise will cause the compressor to unload.

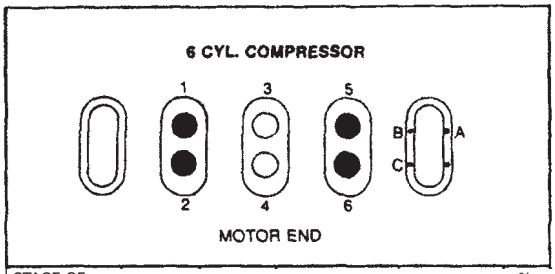
The loading or unloading of the compressor can be detected audibly or by measuring a change in amperage.

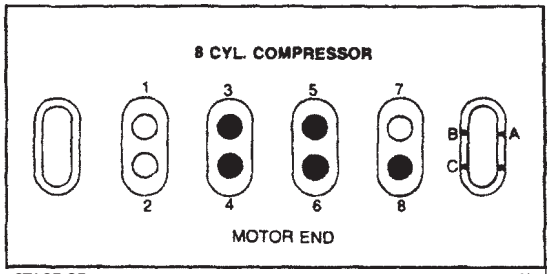
Electric Unloading (See Figures 4 and 5)
The electric unloading solenoid valves, either handhole mounted or remote mounted solenoid valves, are actuated by an electrical signal to the unloader solenoid valve. The solenoid operates the valve to supply lubrication system oil pressure to the hydraulic unloader mechanisms to load or unload the compressor.

The electric unloaders are intended to be used with systems which use a temperature control device to electrically load and unload the compressor.

Figure 1 - Model E and F Compressor Capacity Control Sequence and Cylinder Loading and Unloading







STAGE OF LOADING OR UNLOADING	UNLOADER	CONTROL LINE	LOADED CYLINDER CYLINDER NO.	UNLOADED CYLINDER CYLINDER NO.	% CAPACITY
			LOADING		
UNLOADED	-	-	3 & 4	1, 2, 6 & 5	33
1st	3	A	3, 4, & 5	1, 2, & 6	50
2nd	2	A & B	3, 4, 5 & 6	1 & 2	66
LOADED	1	A, B & C	3, 4, 5, 6, 1 & 2	-	100
			UNLOADING		
LOADED	1	A, B & C	3, 4, 5, 6, 1 & 2	-	100
1st	2	A & B	3, 4, 5 & 6	1 & 2	66
2nd	3	A	3, 4 & 5	1, 2 & 6	50
UNLOADED	-	-	3 & 4	1, 2, 6 & 5	33

STAGE OF LOADING OR UNLOADING	UNLOADER	CONTROL LINE	LOADED CYLINDER CYLINDER NO.	UNLOADED CYLINDER CYLINDER NO.	% CAPACITY
			LOADING		
UNLOADED	-	-	1, 2 & 7	3, 4, 5, 6 & 8	37 ½
1st	3	A	1, 2, 7 & 8	3, 4, 5 & 6	50
2nd	2	A & B	1, 2, 5, 6, 7 & 8	3 & 4	75
LOADED	1	A, B & C	1, 2, 3, 4, 5, 6, 7 & 8	-	100
			UNLOADING		
LOADED	1	A, B & C	1, 2, 3, 4, 5, 6, 7 & 8	-	100
2nd	2	A & B	1, 2, 5, 6, 7 & 8	3 & 4	75
1st	3	A	1, 2, 7 & 8	3, 4, 5 & 6	50
UNLOADED	-	-	1, 2 & 7	3, 4, 5, 6 & 8	37 ½

Compressor Unloading (Cont.)
Models E and F

Figure 2 - Suction Unloading Handhole Cover

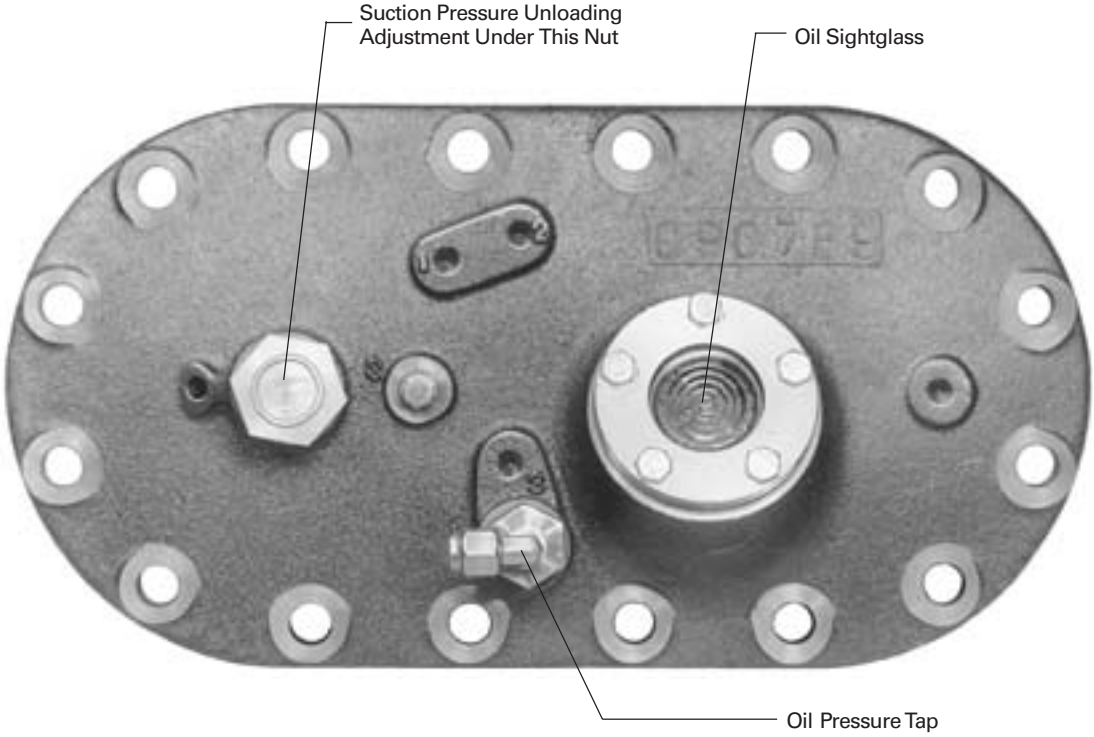


Figure 3 - Suction Unloading Handhole Cover

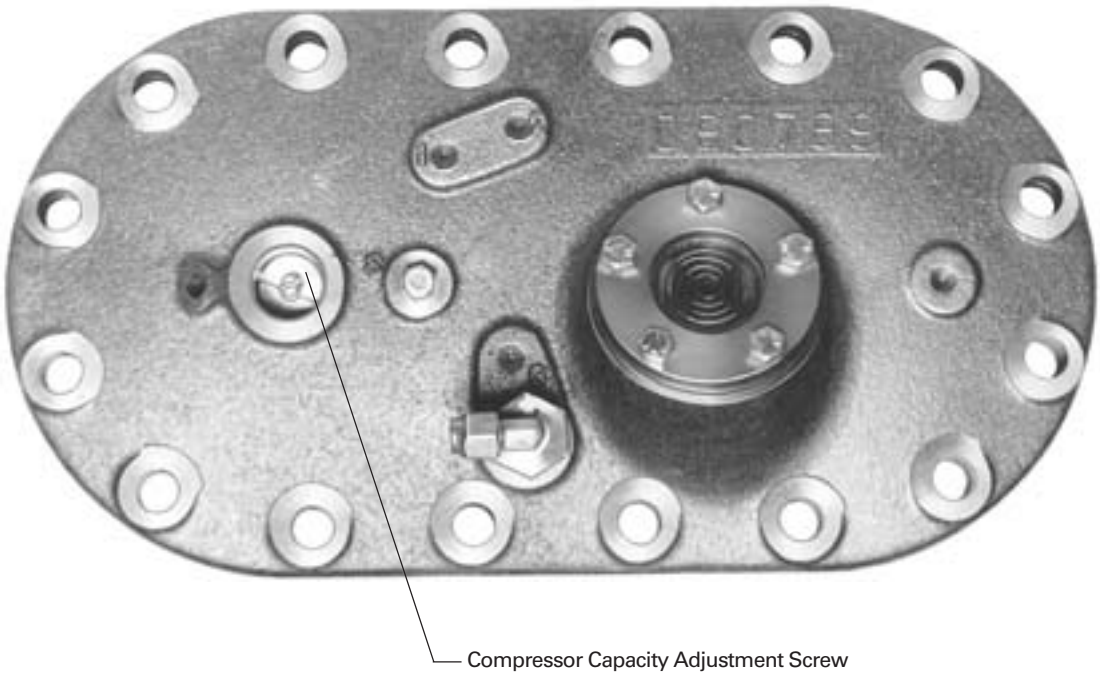


Figure 4 - Electric Handhole Mounted Unloading

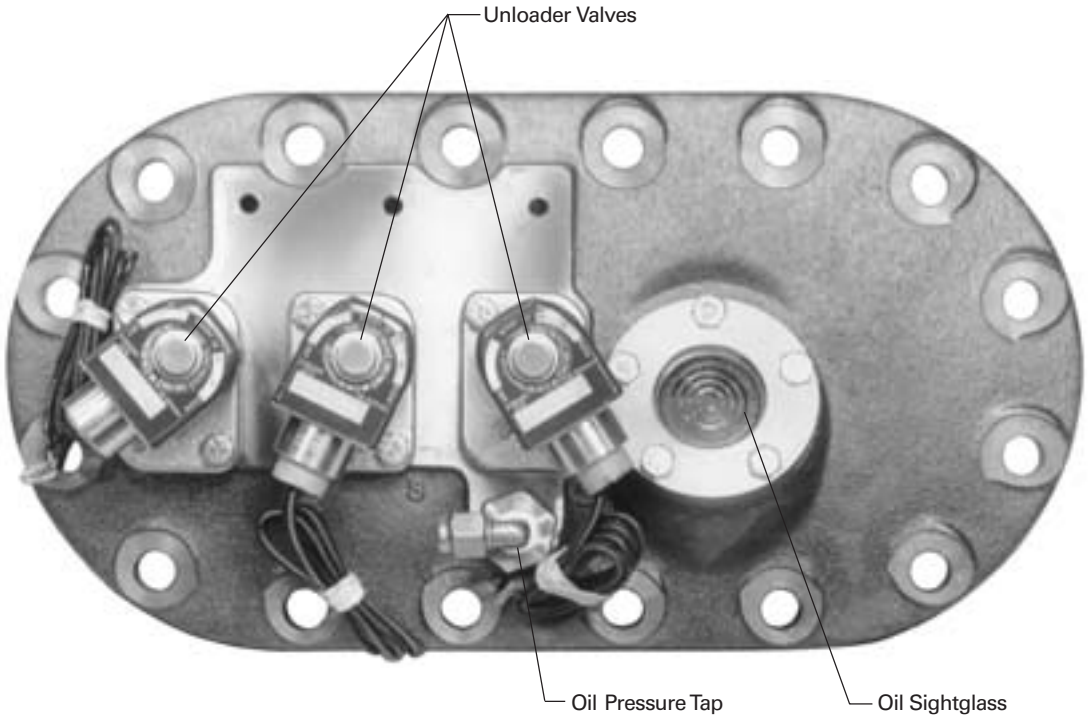
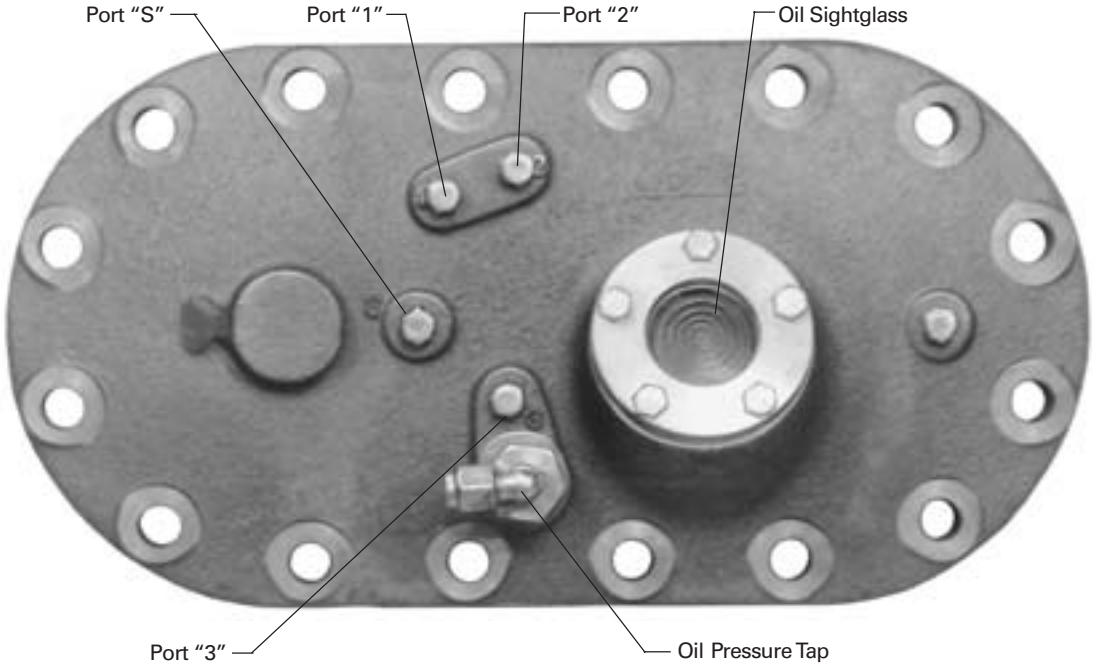


Figure 5 - Electric Unloading with Remote Mounted Solenoid



Compressor Unloading (Cont.)
Models M and R

Model M and R Compressor Unloading

Unloading

The Model M and R compressor families use cylinder head unloaders activated by an electrical signal from the control system. The unloader solenoid valves are energized to unload the cylinders.

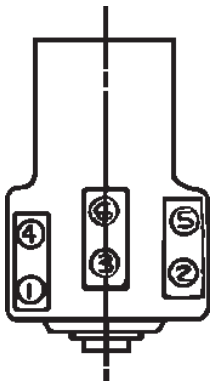
Two-Step Unloading: These compressors have two unloader heads. Only one head is active, Cylinders 1 and 3.

Number of Cylinders	% Loaded	Cylinders Loaded
3	100	1, 2, 4 (Cyl 3 is blank)
	66	2, 4
4	100	1, 2, 3, 4
	50	2, 4
6	100	1, 2, 3, 4, 5, 6
	66	1, 2, 4, 5

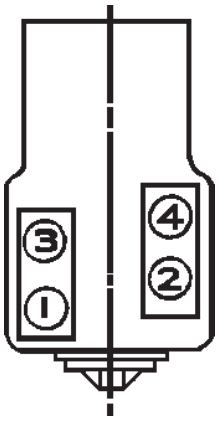
Three-Step Unloading: These compressors have two unloader heads.

Number of Cylinders	% Loaded	Cylinders Loaded
3	100	1, 2, 4 (Cyl 3 is blank)
	66	2, 4
	33	2
4	100	1, 2, 3, 4
	50	2, 4
	25	2
6	100	1, 2, 3, 4, 5, 6
	66	1, 2, 4, 5
	33	2, 5

Cylinder position for these compressor families is shown below.



Schematic View of Cylinders



Schematic View of Cylinders (Cylinder No. 3 is Removed for the 3-Cylinder Compressors)

Compressor Unloading (Cont.)
Models M and R

Model M and R Unloading Types

The Model M and R compressors utilize electric solenoid actuated unloading. Energizing the unloader solenoid valve unloads the compressor.

Figure 1 shows the cylinder head in both the loaded and unloaded position.

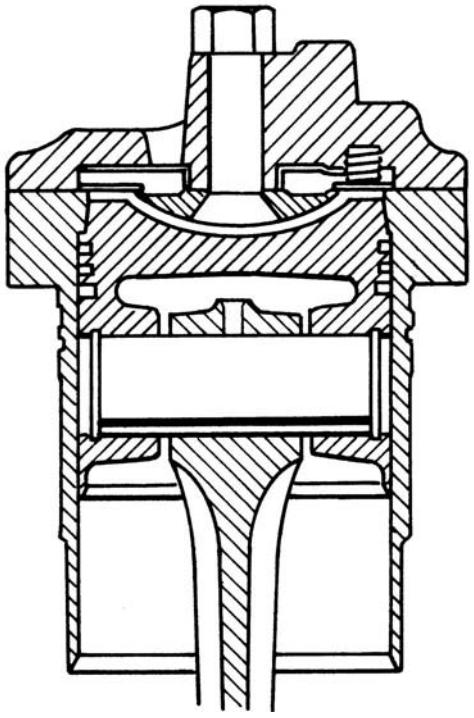
The Model M and R compressors utilize discharge gas pressure to unload the compressor. The following is a description of how the unloading system operates.

Unloading

When the unloader solenoid valve is energized, high pressure gas from Chamber "C" flows through passage "D" and, with the solenoid valve open, into passage "E". Equal force is not applied to both the unloader piston and the unloader valve seal. The pressure on the larger area of the unloader piston forces the loader valve open. High pressure from Chamber "C" is dumped into the suction side of the compressor through Chamber "B". Pressure in Chamber "C" drops to a point slightly above that of suction Chamber "B". The check valve closes, preventing other cylinders from unloading since Chamber "A" is common to all cylinders. The discharge gas from cylinders entering Chamber "C" will not be compressed as long as the solenoid valve remains open and gas is dumped back into the suction side of the compressor.

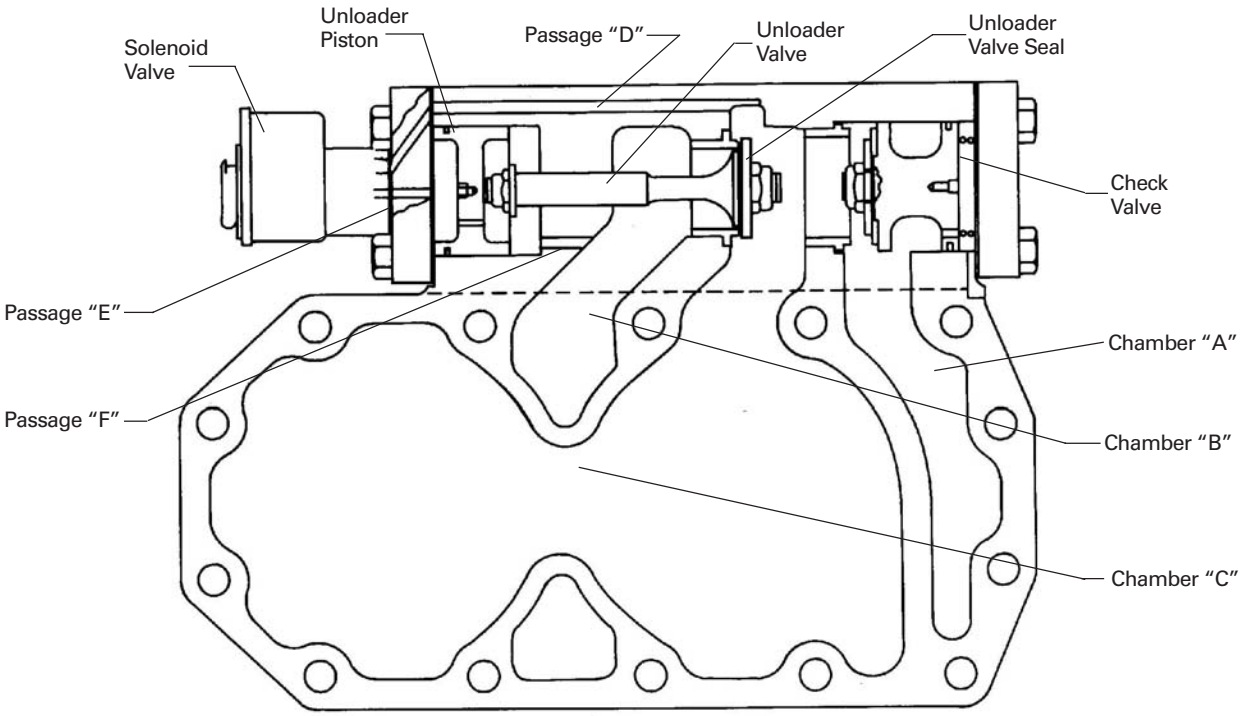
Loading

When the unloader solenoid valve is de-energized the discharge gas from the cylinders enters Chamber "C" as a pressured gas. High pressure gas in Chamber "C" holds the unloader valve closed preventing compressed gas from flowing into the suction side of the compressor which is represented by Chamber "B". As the gas pressure in Chamber "C" reaches the discharge pressure the check valve opens and compressed gas enters discharge Chamber "A" and flows out to the common discharge line.

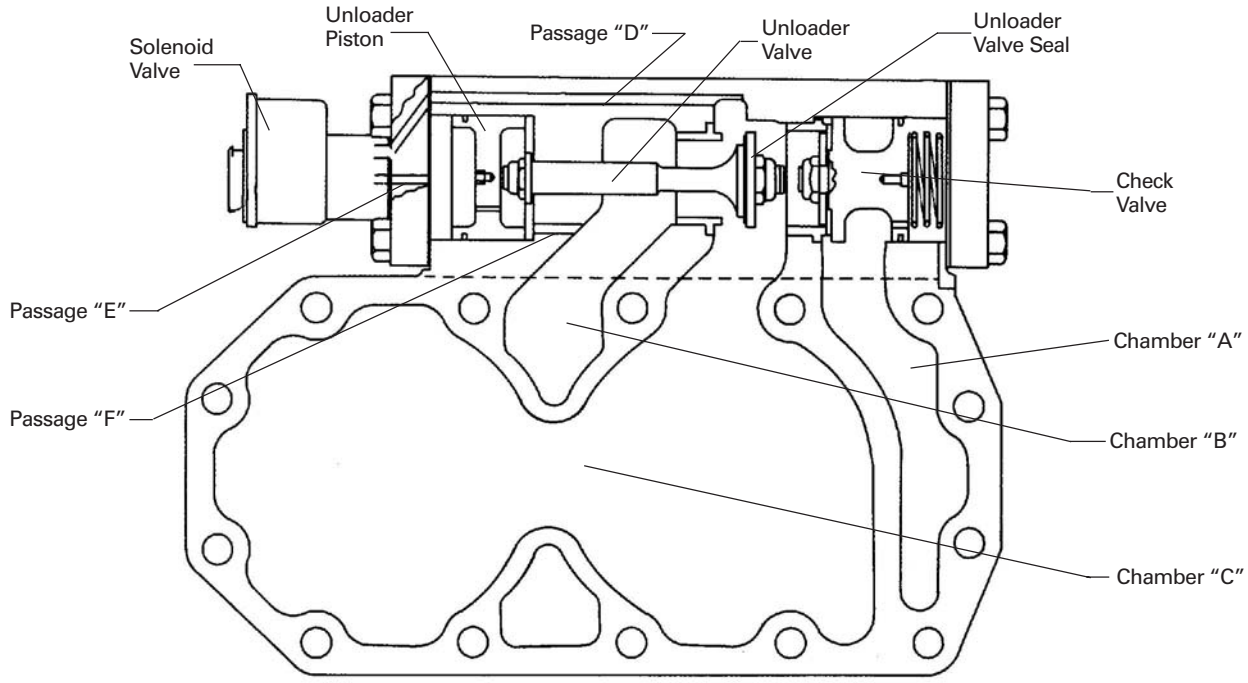


Compressor Unloading (Cont.)
Models M and R

Figure 1 - Capacity Control Operation



Cylinder head in Loaded Position



Cylinder head in Unloaded Position

Compressor Service Bulletin Listing

Subject	Service Bulletin Number
Model “M” Compressor: 9-Lead Hermetic Motor Phaseout	HCOM-SB-1A
Model “M” Compressor: Cylinder Head Identification and Unloading Sequence	HCOM-SB-2
Model “M” Compressor: Motor Stator Pin Design Change	HCOM-SB-3A
Approved Oils and Oil Changes for Reciprocating Compressors	HCOM-SB-4F
Model “E” and “F” Compressor: Hermetic Motor Ordering Information	HCOM-SB-7A
Hermetic Model “M” and “R” Compressor: Robertshaw MC-20 Motor Protector Terminal Size Change	HCOM-SB-8
Model “M” and “R” Compressor Oil Pump	HCOM-SB-11A
Overload Relay (Furnas) Settings for Reciprocating Compressors	HCOM-SB-14
Reciprocating Compressor Oil Line kit Ordering Information	HCOM-SB-16
Model “E” Compressor Suction Valve Plate and Spring	HCOM-SB-17A
Model “F” Compressor Discharge Valve Cage Assembly Design Change	HCOM-SB-19A
Operation and Troubleshooting: Robertshaw MP13, MP23 and MC20 Solid-State Motor Protectors	HCOM-SB-20A
Model “M” and “R” Compressor: Robertshaw Motor Winding Sensor Ordering Information	HCOM-SB-21
Reciprocating Compressor: Service Valve Parts Identification and Repair	HCOM-SB-22D
Reciprocating Compressor: Klixon Motor Winding Sensor Ordering Information	HCOM-SB-23
Model “R” Compressor: Main Bearing Replacement Procedure	HCOM-SB-24B
Robertshaw Motor Protector Relay Design Change	HCOM-SB-25
Model “M” Compressor: Unloader Valve Rattle	HCOM-SB-26
Model “R” Compressor: Check Valve Assembly	HCOM-SB-27
Model “E” Open and Hermetic Compressor: Lubrication Design Change	HCOM-SB-28A
Unloader Solenoid Mounting Arrangement For Model “M” and “R” Compressors	HCOM-SB-29A
Robertshaw MC-20 Motor Protector: Nuisance Lockout if Reset Relay Circuit	HCOM-SB-30
Robertshaw Motor Protector Model MP23: Nuisance Lockouts	HCOM-SB-31
Model “E” and “F” hermetic Compressor: Motor Thermostat Wiring	HCOM-SB-32
Model “R” Thrust Bearing Replacement	HCOM-SB-35
Fusite Terminal Safety Hazard	HCOM-SB-37
Reciprocating Compressor Gasket Material	HCOM-SB-38
Diagnosis of Model “E” and “F” Compressor Low Oil Pressure and Oil Loss	HCOM-SB-39A
Replacement Compressors for Trane Model “J” Compressors in Mid-Range Units, Computer Room Units and Air-Cooled Cold Generators	HCOM-SB-40
Replacement Compressors For Mid-Range Equipment	HCOM-SB-41A
Compressor Changeout Procedure	HCOM-SB-42
Replacement Model “A” or “B” Open Compressors with Model “E” or “F” Open Compressors	HCOM-SB-43
Reciprocating Hermetic and Open Compressors: Oil Line Replacement	HCOM-SB-44A
System Cleanup After Hermetic Motor Burnout: Suction Line Filter Method	HCOM-SB-45
Model “F” Compressor: Rotor Bolt Torque Change	HCOM-SB-46
8-Cylinder Model “E” Open and hermetic Compressors: Minimum Unloading Change	HCOM-SB-47
Hermetic Compressor Motors: Packaging For Shipment	HCOM-SB-48
Reciprocating Compressors: All Models: Operating Oil Level	HCOM-SB-49
Model “M” Compressor: 5 to 6 Cylinder Conversion	HCOM-SB-50
Model “F” Compressor: Stator Bolt Breakage	HCOM-SB-51
Model “M” Valve Plate	HCOM-SB-52
Model “A” Compressor: Bolt Torque Changes	HCOM-SB-53
Model “E” Open and Hermetic Compressors: Oil Pressure Sensing Modification and Kit	HCOM-SB-56
Model “K” Compressor Removal Kit	HCOM-SB-58A
Trane ServiceFirst Remanufactured Hermetic Compressors with Undersized Crankshafts and Bearings	HCOM-SB-59A

Compressor Service Bulletin Listing (Cont.)

Subject	Service Bulletin Number
Model "K" Compressor Oil Overcharge	HCOM-SB-60
Reciprocating Compressor Identification: Model, Design Sequences and Serial Numbers	HCOM-SB-61
Model "K" Compressor Redesign: High Pressure Control Port Location	HCOM-SB-62
Model "E" and "F" Compressor Connecting Rod Redesign	HCOM-SB-63
Model "H" Compressor Crankcase Heater Change	HCOM-SB-64
Model "K" Compressors: Loss of Charge Protection	HCOM-SB-67
Hermetic Reciprocating Compressors: Motor Insulation Resistance Testing	HCOM-SB-68
Model "K" Replacement Compressors: Pressure Control Replacement	HCOM-SB-69
Model "E" Open Compressor Parts Interchangability	HCOM-SB-70A
Model "E" Open Compressor Terminal Board Retaining Ring Cap Screw Replacement	HCOM-SB-71A
Model "E" Open Compressor Terminal Plate Retaining Ring and Cap Screw Changes	HCOM-SB-72A
Model "E" Open Compressor Crankcase Heater (Trane Part No.: HTR00211)	HCOM-SB-73
Standardization of Model "H" Service Compressors	HCOM-SB-74
Model "K" Compressor Pre-Start Isolator Sleeve Removal	HCOM-SB-75
Model "E" Reciprocating Compressor Discharge Valve-Seat Failure	HCOM-SB-76
Model "E" Oil Pressure	HCOM-SB-81
Model "E" Open Compressor: John Crane Seal Change	OCOM-SB-1
Flexible Couplings for Model "A, B, E and F" Open Reciprocating Compressors	OCOM-SB-6E
Model "A" and "B" Compressors: Suction Discharge Valves	OCOM-SB-7

Recommended Oils and Oil Charges For Reciprocating Compressors

***NOTE:* Information Obtained From: HCOM-SB-4F**

Introduction:

This information specifies the appropriate oil charges and recommended oils to be used in all Trane reciprocating compressors.

Note that any oil charges indicated in this bulletin are for the compressor only and do not take into account any system requirements.

Discussion:

Reciprocating compressors do not require oil changes unless there is evidence of oil breakdown (resulting from motor burnout), operation at excessive temperatures, or mechanical failure.

Note: If a motor burnout occurs in a hermetic compressor, be sure to perform the special cleanup procedures described in the current edition of Trane Service Bulletin: HCOM-SB-45.

Tables 1 and 2 indicate the recommended oils and oil charges for the various compressors contained in this book; the specific compressor models covered by each table are listed below.

A. For compressor Models "A", "B", "E", "F", "M" and "R", use Table 1
B. For compressor Model "K", use Table 2.

Requirements used to recommend the specific oils listed in Tables 1 and 2 are itemized in Tables 3 and 4.

Any negative effects resulting from the use of refrigeration oils other than those listed here are the responsibility of the owner.

The Trane Company does not recommend the use of commercially available oil additives which are advertised to increase oil lubricity and/or improve heat transfer efficiency when added to the system. The possible effects that such oil additives may have an oil breakdown, acid formation and their long-term impact on elastomers and motor insulation materials has not been substantiated by laboratory tests or field-usage history. Normal product design life and efficiency can be assured only by using Trane-recommended products and by following all recommended maintenance procedures. Liability for any detrimental effects that the use of non-approved products may have on equipment performance or longevity must be assumed by the equipment owner, equipment servicer, or the oil additive manufacturer.

Table 1 — Recommended Oil Types and Charges for Model A, B, E, F, M, and R Compressors

Reciprocating Compressor			Recommended Oil	
Model	Type	No. Of Cylinders	Oil Charge	Oil Code
A	Open	4	27.0 Pints	Code 1 (Oil-15)
		6 and 8	28.0 Pints	Code 1 (Oil-15)
B	Open	4	15.0 Pints	Code 1 (Oil-15)
		6	17.0 Pints	Code 1 (Oil-15)
		8	17.5 Pints	Code 1 (Oil-15)
	Hermetic	3	12.0 Pints	Code 1 (Oil-15)
E	Open	4	29.0 Pints	Code 1 (Oil-15)
		5 and 6	31.0 Pints	Code 1 (Oil-15)
		8	33.0 Pints	Code 1 (Oil-15)
	Hermetic	4	32.0 Pints	Code 1 (Oil-15)
		5 and 6	34.0 Pints	Code 1 (Oil-15)
		8	36.0 Pints	Code 1 (Oil-15)
F	Open	3	13.5 Pints	Code 1 (Oil-15)
		4	18.0 Pints	Code 1 (Oil-15)
		5 and 6	19.0 Pints	Code 1 (Oil-15)
		8	20.5 Pints	Code 1 (Oil-15)
	Hermetic	3	13.5 Pints	Code 1 (Oil-15)
		4	18.0 Pints	Code 1 (Oil-15)
		5 and 6	19.0 Pints	Code 1 (Oil-15)
		8	20.5 Pints	Code 1 (Oil-15)
M	Hermetic	3 and 4	11.0 Pints	Code 2 (Oil-43)
		5 and 6	13.0 Pints	Code 2 (Oil-43)
R	Hermetic	4	20.0 Pints	Code 2 (Oil-43)
		6	27.0 Pints	Code 2 (Oil-43)

Recommended Oils and Oil Charges For Reciprocating Compressors (Cont.)

Table 2 — Recommended Oil Types and Charges for Model K Compressors

Compressor		Recommended Oil	
Model	Capacity	Oil Charge	Oil Code
K	20, 25 and 30 Tons	21.0 Pints	Code 2(Oil-43)

Table 3 — Code 1 Oil Requirements

Approved Oil	Characteristics	Specifications
Trane Oil-15	Viscosity:	
	. . . . . at 100 F	F290 to 332 SSU
	. . . . . at 210 F	47 to 53 SSU
	Pour Point	-25 F or Below
	Floc Point	-40 F or Below
	Moisture Content	30 PPM
	Aniline Point	190 to 220 F
	Neutralization	0.04 mg Maximum KOH Per Gram

Table 4 — Code 2 Oil Requirements

Approved Oil	Characteristics	Specifications
Trane Oil-43	Viscosity:	
	. . . . . at 100 F	150 to 160 SSU
	. . . . . at 210 F	40 to 42 SSU
	Pour Point	-45 F or Below
	Floc Point	-40 F or Below
	Moisture Content	30 PPM Maximum
	Aniline Point	170 to 185 F
	API Gravity	23 to 27
	Maximum Operating Temperature in Refrigerant:	
	. . . . . Continuous	200 F
	. . . . . Intermittent	300 F

Compressor Evacuation and Dehydration

Evacuation and Dehydration

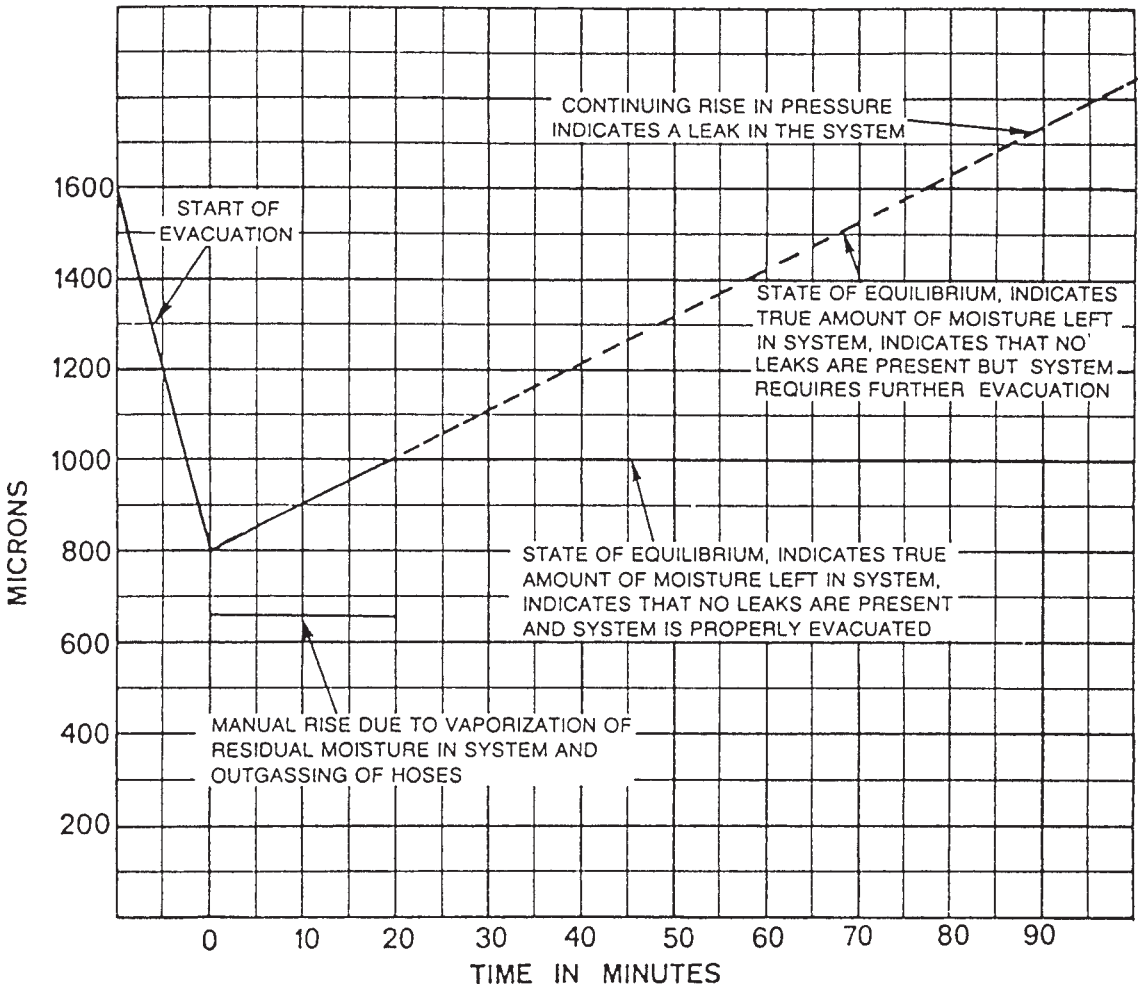
For the refrigeration system to work properly, it must be free of air and moisture. The process by which air and moisture are removed is known as evacuation and dehydration. Moisture and air are harmful to the system because they increase the condensing temperature, cause oil breakdown and the formation of acids. Acids are corrosive to the components in the refrigeration system, including the piping, refrigerant specialties and the compressor mechanical and electrical components. The elevated temperatures can lead to copper plating, which can cause mechanical failure of the compressor.

The recommended method for evacuation and dehydration is to evacuate the system from both the high and low sides to 800 microns or less. To establish that the unit is leak-free and moisture-free, a standing vacuum test is recommended. The maximum allowable rise over a 15 minute period is 200 microns. If the rise exceeds this, either there is still moisture in the system or a leak is present in the system.

⚠ WARNING:

NEVER USE OXYGEN OR ACETYLENE IN PLACE OF REFRIGERANT AND DRY NITROGEN FOR LEAK TESTING. A VIOLENT EXPLOSION MAY RESULT CAUSING PERSONAL INJURY OR DEATH.

ALWAYS USE A PRESSURE REGULATOR WHEN USING NITROGEN TO PRESSURE TEST. FAILURE TO DO SO WILL RESULT IN EXTREMELY HIGH PRESSURE WHICH COULD EXCEED THE BURST PRESSURE OF THE COMPRESSOR OR OTHER SYSTEM COMPONENTS AND RESULT IN PERSONAL INJURY OR DEATH.



System Cleanliness

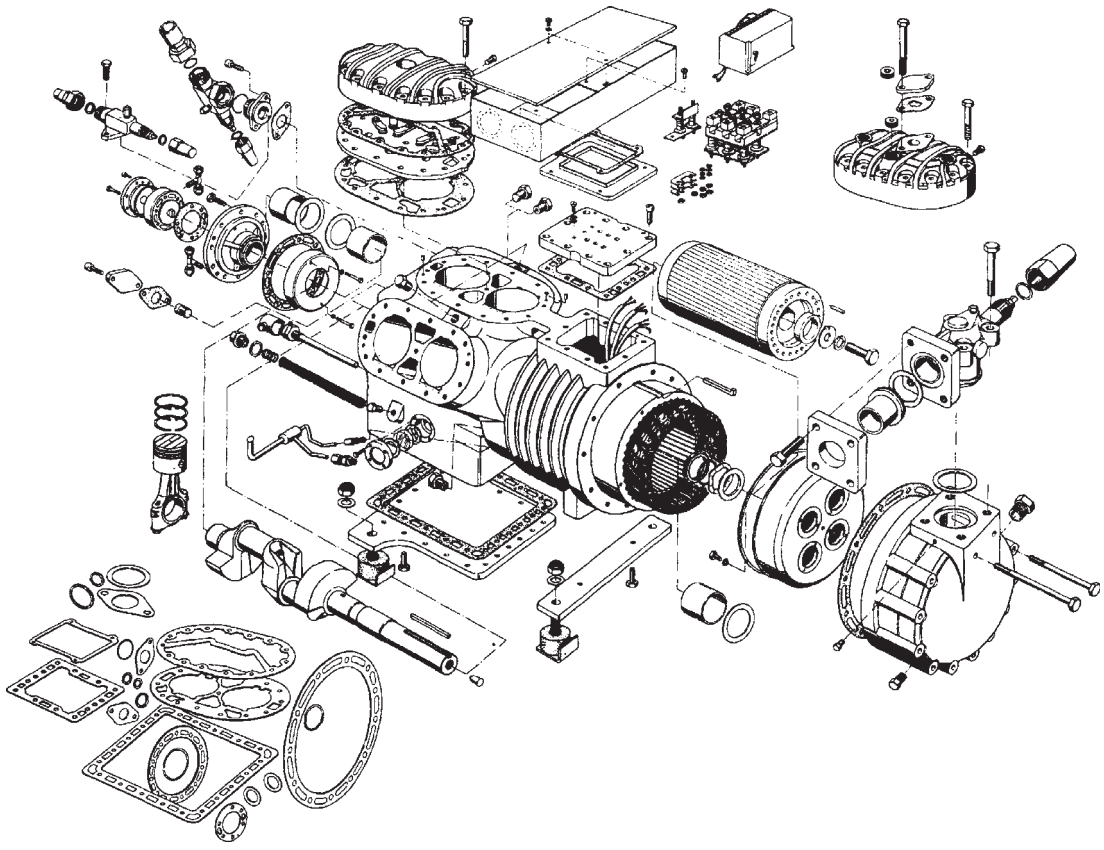
System Cleanliness

System cleanliness is one of the most important factors that affect system and compressor reliability. System contamination can cause both mechanical and electrical failures. There are several sources of system contamination. Some of these are:

1. Copper Oxides from system refrigerant piping brazing.
2. Refrigerant piping chips and burrs and brazing flux.
3. Processing residue and metal chips from evaporators and condensers.
4. Metal chips and wire brush strands from processing of other system components.
5. Contamination in refrigeration tubing which is left uncapped during assembly.
6. Moisture and air.

In addition, field erected systems are subject to all the dirt and system contamination of the typical jobsite.

It is recommended that a suction line filter be installed in the system to prevent contaminants from entering the compressor.



Undersized Crankshafts and Bearings

NOTE: Information Obtained from HCOM-SB-59A

Introduction:

The purpose of this Service Bulletin is to provide component parts identification and ordering information for the undersized parts used in some Trane remanufactured, Models E, F, M and R compressors.

Discussion:

Undersized connecting rods and main bearings may be used in remanufactured hermetic compressors of all design sequences. All of these parts are undersized to .020" from standard and must be used in conjunction with an undersized crankshaft that includes main and rod journals that are undersized to .020" from standard.

Trane remanufactured compressors built with undersized crankshafts and bearings are identified by an indicator in the *new* model number, or by an indicator in the *old* serial number (prior to 1993).

Parts Ordering Information:

The mnemonic part numbers for undersized components used on Trane Remanufactured compressors are shown in Table 1.

When ordering an undersized crankshaft, the compressor model number is required. A standard-sized crankshaft may only be ordered if the standard bearings and rods are also ordered for the compressor.

Table 1 — Part Numbers for Undersized Compressor Components (Hermetic Only)

Description of Compressor Component	Trane Part No.	Quantity Required 3 Cyl	4 Cyl	5 Cyl	6 Cyl	8 Cyl		
Model F								
Main Bearing	BRG00501	1						
Main Bearing	BRG00500	2	3	3	3	3		
Connecting Rod	ROD00260	3	4	5	6	8		
Model E								
Main Bearing	BRG00502		3	3	3	3		
Connecting Rod	ROD00261		4	5	6	8		
Description of Compressor Component	**Trane Part No.**	**Quantity Required 15 Ton**	**20 Ton**	**25 Ton**	**30 Ton**	**40 Ton**	**50 Ton**	**60 Ton**
Model M								
Main Bearing	BRG00537	3	3	3	3			
Connecting Rod	ROD00314	3	4		6			
Connecting Rod	ROD00315			6		1		
Model R						2	3	3
Main Bearing	BRG00537					4		6
Main Bearing	BRG00538						6	
Connecting Rod	ROD00316							
Connecting Rod	ROD00317							

Flexible Couplings For Model A, B, E and F Open Reciprocating Compressors

NOTE: Information Obtained From: OCOM-SB-6E

Introduction:

This service bulletin provides a listing of flexible coupling assemblies for use with Model A, B, E and F open reciprocating compressors. Replacement disc pack assemblies for the couplings are also listed along with information for field-boring couplings that have solid motor flanges.

Discussion:

All flexible couplings have the compressor flange bored to fit Trane compressors. Table 1 lists couplings stocked with motor flanges bored to fit most standard frame motors. Table 2 lists additional couplings stocked by Trane or direct shipped, but with a "blank" or solid motor flange. Couplings with a pilot bore are no longer available. Motor flanges on the latter couplings are to be bored to fit by the customer. Refer to Table 3 and Figures 1 and 2 for flange machining and keyway information.

Note: The Trane Company will not bore the motor flange.

The following information is required to select a replacement flexible coupling:

1. Compressor shaft size:
   Note: Model A and E compressors have a 2.00" diameter shaft.
   Model B and F compressors have a 1-1/2" diameter shaft.
2. Motor shaft size and horsepower.
3. Vendor's flexible coupling part number, if available.

Notes for Tables 1 and 2:

1. Couplings not stocked by Trane are to be ordered on a "DS" type of order.
2. Replacement couplings are furnished with disc packs. When replacing disc packs on existing couplings, two are required.
3. Replacement couplings and disc pack assemblies are furnished with stainless steel or "tomaloy" discs, depending on availability.
4. Component parts of couplings, other than disc pack assemblies, are not stocked by Trane.
5. Trane mnemonic part numbers for the compressor crankshaft screws and washers needed to install the couplings are as follows:
   A. Screws (A, B, E and F Compressors) = SCR00007
   B. Washers (A & E Compressors) = WAS00007
   (B & F Compressors) = WAS00006
6. CPL00001, CPL00038 and CPL00154 were originally Thomas Coupling Part No.: 162MT-B, with a 6-hole bolt pattern. The current coupling (Thomas Part No.: 163DBZ-B) has a 8-hole pattern. Replacement disc pack assemblies for the 162MT-B style couplings are RNG00920.
7. CPL00002, CPL00003, CPL00039 and CPL00151 were originally Thomas Coupling Part No.: 200MT-B, with a 6-hole bolt pattern. The current coupling (Thomas Part No.: 201DBZ-B) has a 8-hole pattern. Replacement disc pack assemblies for the 200MT-B style couplings are RNG00111.

Flexible Couplings For Model A, B, E and F Open Reciprocating Compressors (Cont.)

Table 1 — Flexible Couplings with Finished Motor Bores

Coupling Part No. (Trane Mnemonic)	Coupling HP Rating 1450 RPM	Coupling HP Rating 1750 RPM	Thomas Coupling No.	Compressor End Bore	Motor End Bore	Replacement Disc Pack Assemblies (Trane Mnemonic)
CPL00001	15	15	163DBZ-B *	1.485″	1.625″	RNG00110
CPL00002	30	30	201DBZ-B **	1.500″	1.875″	RNG00113
CPL00003	30	30	201DBZ-B **	2.000″	1.875″	RNG00113
CPL00004	60	75	226DBZ-B	2.000″	2.125″	RNG00112
CPL00038	15	15	163DBZ-B *	1.485″	1.375″	RNG00110
CPL00039	30	30	201DBZ-B **	1.500″	1.625″	RNG00113
CPL00050	40	40	201DBZ-B	2.000″	2.125″	RNG00113
CPL00051	40	40	201DBZ-B	2.000″	1.875″	RNG00113
CPL00052	125	150	262AMR	2.000″	2.125″	RNG00518
CPL00053	40	40	201DBZ-B	1.500″	2.125″	RNG00113
CPL00058	40	40	201DBZ-B	1.500″	1.875″	RNG00113
CPL00156	60	75	226DBZ-B	2.000″	1.875″	RNG00112

Table 2 — Flexible Couplings with Solid Motor Bores

Coupling Part No. (Trane Mnemonic)	Coupling HP Rating 1450 RPM	Coupling HP Rating 1750 RPM	Thomas Coupling No.	Compressor End Bore	Motor End Bore	Replacement Disc Pack Assemblies (Trane Mnemonic)
CPL00145 +	40	40	201DBZ-B	2.000″	2.125″	RNG00113
CPL00151	30	30	201DBZ-B *	1.500″	2.000″	RNG00113
CPL00152	60	75	226DBZ-B	2.000″	2.250″	RNG00112
CPL00153 +	40	40	201DBZ-B	1.500″	2.125″	RNG00113
CPL00154 +	15	15	163DBZ-B **	1.485″	1.625″	RNG00110
CPL00155	100	120	263DBZ-B	2.000″	2.625″	RNG00519

** Coupling was part number 162MT-B; see note 6
* Coupling was part number 200MT-B; see note 7
+ No longer stocked, see note 1

Flexible Couplings For Model A, B, E and F Open Reciprocating Compressors (Cont.)

Coupling Bore Instructions:

A coupling is a rotating member used to connect two shafts. It is important that proper centering of the hub bores be maintained to help minimize unbalance in the coupling. The recommended procedure and set up readings at indicator locations are given for each size of coupling as listed. All finished bores are to have a surface finish of 125 RMS or better.

DBZ-B coupling hubs are bored using set up procedures as shown in Figure 1. Figure 1 shows the proper method for checking that the hub is square in the chuck of the lathe. Once the hub is square it can properly be bored.

Be certain that when setting up the dial indicator for indicating the flange face surface (B) that it is placed as far out on the back face diameter as possible to get the best overall indication of total indicated runout (TIR). Dial indicator run-out on bored surfaces (flange O.D. and flange face) should be within the tolerances provided in Table 3.

Table 3 — DBZ-B Coupling Hub Runout Readings

Coupling Size	Flange O.D. (Note 1)	Flange Back Face (Note 2)
163	.0010 TIR (3)	.0015 TIR
201, 226, 263	.0015 TIR	.0020 TIR

Notes:
1. Refer to dial indicator "A" in Figure 1
2. Refer to dial indicator "B" in Figure 1
3. TIR = Total Indicator Readings in inches

Figure 1
Proper Set-up Procedure for Boring DBZ Hub

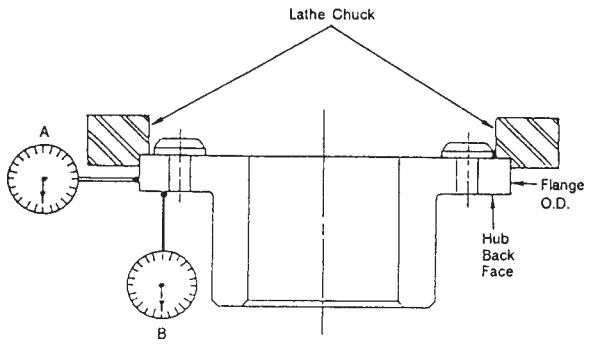
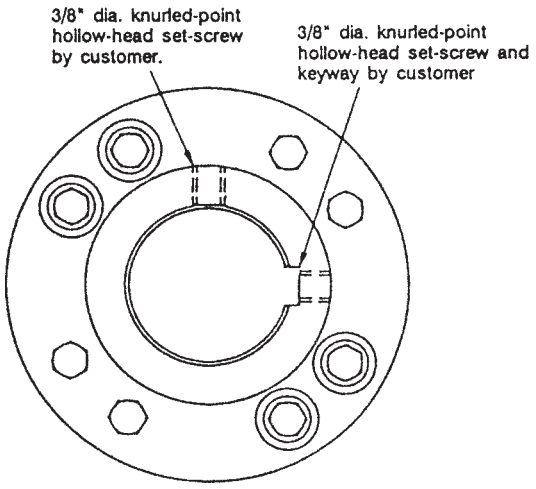


Figure 2
Typical Keyway and Set-Screw Information



Model E, F, M, R and K Motor Winding Sensors

Motor Winding Sensors

The Trane Models E, F and K compressors utilize two (2) thermostat type, bimetallic switches imbedded in the windings to sense temperature. When checking theses sensors, they will be either continuous or open. When the compressor is cool they should be closed. Use a standard ohmmeter to check.

Current flow through these devices must not exceed 5 amps. The part number for the Model E, F and K winding sensor is SEN00014.

Model M and R compressors use three thermistors imbedded in the windings to sense motor winding temperature. The resistance of the thermistors increases as the motor temperature increases.

When checking the resistance use an ohmmeter with **no more** than 3 volt batteries**.**

The part number for the Model M and R winding sensor is SEN00011.

The following information provides application and trouble shooting data and can also be found in service bulletin: HCOM-SB-32.

<u>NOTE:</u> Information Obtained From: HCOM-SB-32

Subject:

Model "E" and "F" Hermetic Compressor, Motor Thermostat Wiring.

Introduction:

The purpose of this bulletin is to outline proper procedures for field wiring of the motor thermostat for Model E and F hermetic compressors. The compressors have been manufactured with a 3-lead motor thermostat (MT) since January 1963.

Discussion:

The motor thermostat consists of two bimetallic thermosensitive switches. These two switches are wired in series so that either can interrupt the circuit. These switches are normally closed and open on a temperature rise. They are factory set and cannot be field adjusted.

Installation - New Compressors:

The two control circuit leads from the control panel are to be connected to spade connectors below the compressor terminal block and designated as "A" and "B" on the attached sketches. In this way, both switches are in series with the control circuit. The spade connector designated "C" on the switch is common to both switches.

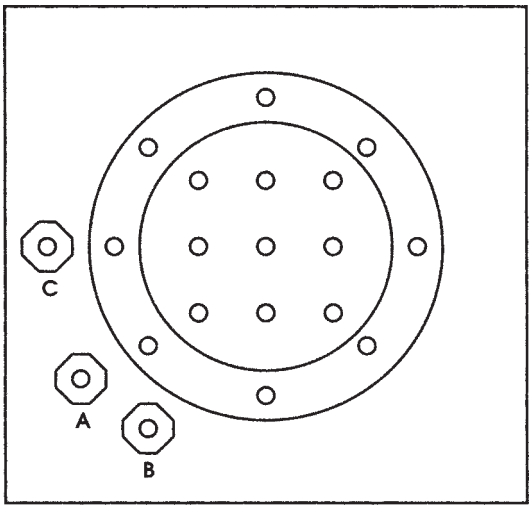
If the motor terminal circuit should malfunction for any reason, check continuity between "A" and "C" and "B" and "C". Connect the leads from the control panel to the set of points which show continuity. In this way one of the thermostat switches will be operable and will protect the motor from overheating.

Model E, F, M, R and K
Motor Winding Sensors (Cont.)

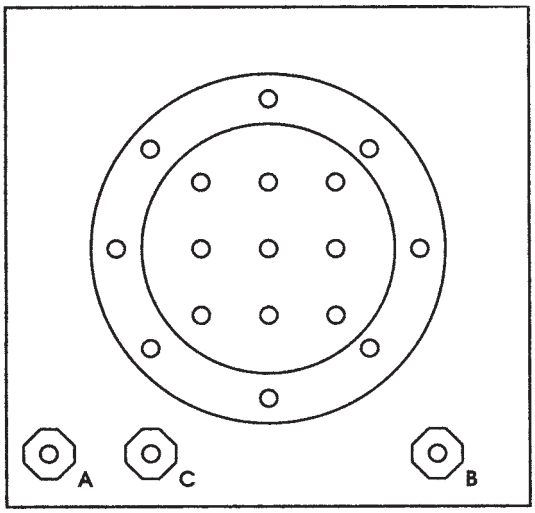
Installation - Replacement Motors:

If it becomes necessary to make terminal connections inside a new compressor (motor change) the common lead should be connected to the spade connector designated "C". The common lead is a different color than the other two leads. The other two leads can be connected interchangeably at points "A" and "B".

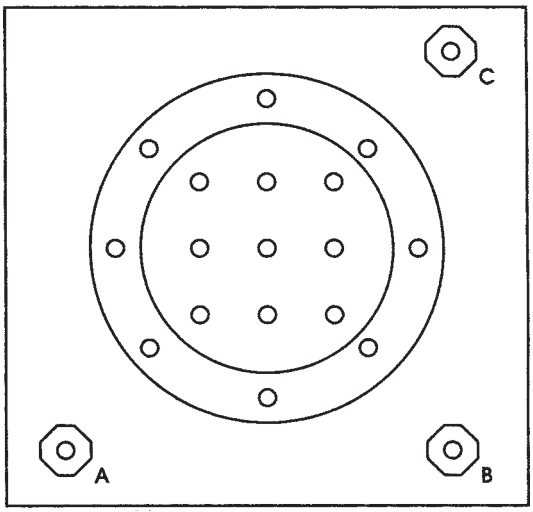
If a motor is replaced in an older compressor, there will be only two spade connectors on the terminal board. Insulate the common lead to prevent shorting the control circuit. Connect the other two leads to the spade connectors.



Model "E" Compressor

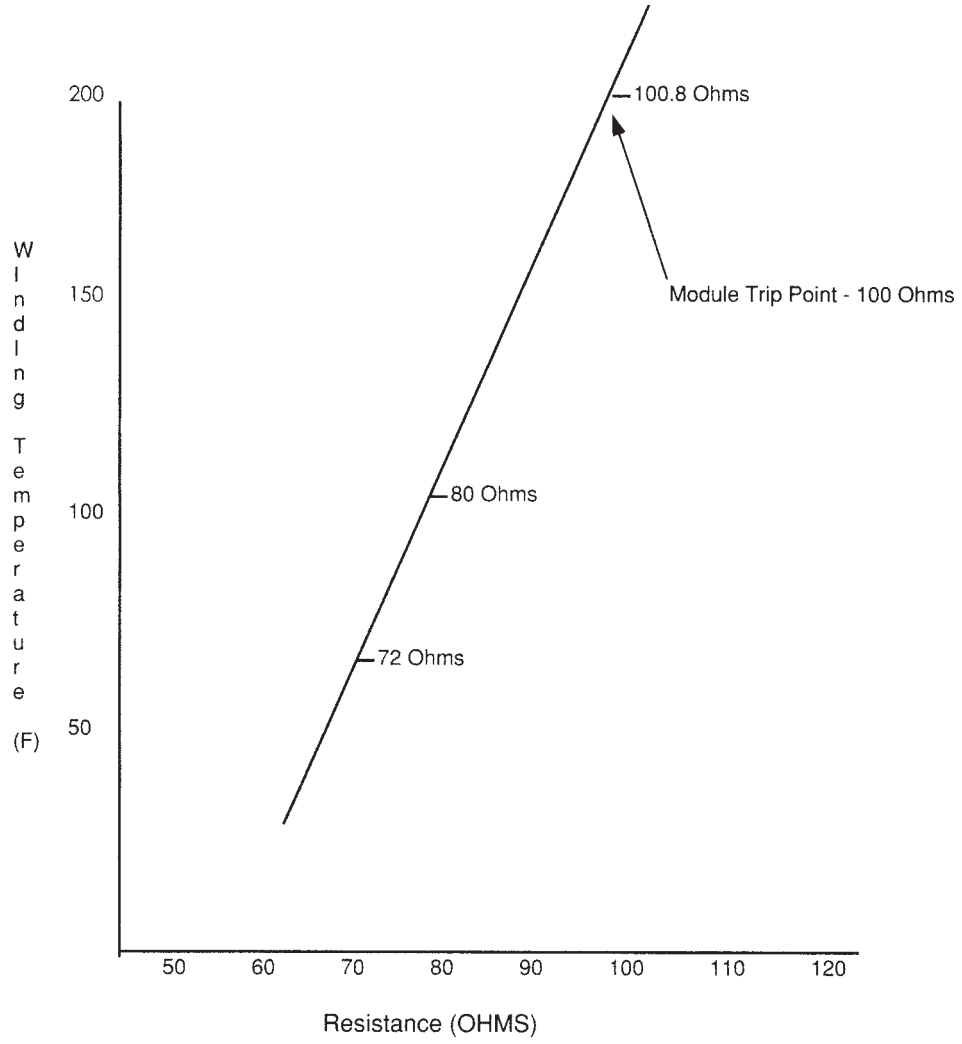


Model "F" Compressor
(With 12.375" Motor)



Model "F" Compressor
(With 8.77" Motor)

Approximate Resistance Values of Winding Sensors Versus Temperature



Testing Procedure

Remove leads from sensor terminals at the compressor. Using an ohmmeter with no more than three volt batteries, check resistance of the common terminal to each of the three other terminals. The readings should agree with the temperature resistance curve and be equal within ± 2 ohms.

Motor Winding Sensors for Model "M" and "R" Reciprocating Compressors

The sensor is part number SEN00011. This sensor is used on Model "M" and "R" reciprocating compressor motors regardless of size, electrical characteristics, or motor vendor.

Electrical Characteristics

Description

The following charts show the electrical characteristics, utilization range, amp draw and locked rotor amps for Trane compressors. The amp draw data was derived at operating conditions that duplicate the normal maximum full load conditions for the compressor. However, the application of the compressor in Trane equipment will determine the actual full load amp draw of the compressor and that data will be displayed on the **unit** nameplate.

The data displayed on the unit nameplate will **always** take precedence over the data in these charts.

Model E - Electrical Characteristics (Small Diameter Motor)

75 Ton

Electrical Characteristics	L.R.A. Full Wind	Utilization Range	Overload - Must Hold W/C	Overload - Must Hold A/C	Full Load Amps W/C	Full Load Amps A/C
230-60-3	1054	207-253	227	277	182	222
400-50-3/460-60-3	524	342-456/414-506	112/112	135/140	90/90	108/112
575-60-3	426	517-633	91	110	73	88
380-60-3	631	342-418	142	171	114	137
363-50-3	577	327-399	123	148	98	118
220-50-3	953	198-242	208	246	166	197
200-60-3	1141	180-220	262	320	210	256
346-50-3	605	311-381	129	155	103	124

100 Ton

Electrical Characteristics	L.R.A. Full Wind	Utilization Range	Overload - Must Hold W/C	Overload - Must Hold A/C	Full Load Amps W/C	Full Load Amps A/C
230-60-3	1390	207-253	305	374	244	299
400-50-3/460-60-3	695	342-456/414-506	142/152	180/185	114/118	144/148
575-60-3	556	517-633	122	148	94	118
380-60-3	841	342-418	176	223	141	178
363-50-3	759	327-399	157	199	126	159
220-50-3	1253	198-242	265	331	212	265
200-60-3	1600	180-220	352	430	282	344
346-50-3	796	311-381	165	208	132	166

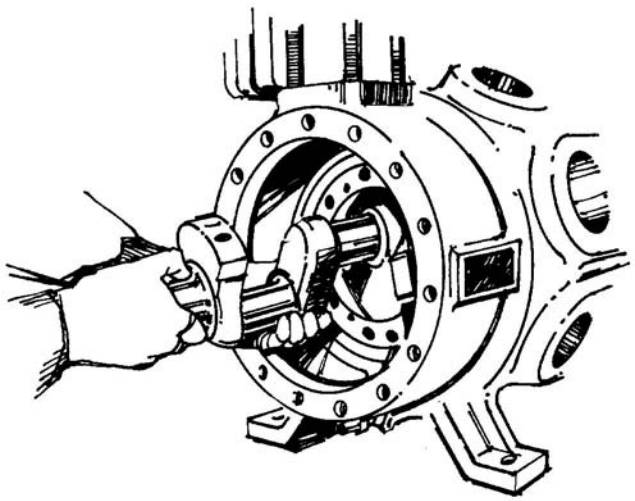
Electrical Characteristics (Cont.)

Model E - Electrical Data
(Large Diameter Motor)

Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw*		L.R.A.
			Air Cooled	Water Cooled	
	200-60-3	180-220	129	-	495
	200-60-3«	187-220	-	-	-
30	230-60-3«	207-256	-	-	-
	460-60-3	414-506	48	44	228
	575-60-3	517-633	41	36	168
	200-60-3	180-220		178	645
	200-60-3«	187-220	144	126	533
40	230-60-3«	207-256	130	114	614
	460-60-3	414-506	65	57	307
	575-60-3	517-633	55	48	226
	200-60-3	180-220	187	161	790
	200-60-3«	187-220	171	147	652
50	230-60-3«	207-253	155	133	750
	460-60-3	414-506	78	67	375
	575-60-3	517-633	65	56	274
	200-60-3	180-220	231	207	955
	200-60-3«	187-220	211	188	791
60	230-60-3«	207-253	191	170	910
	460-60-3	414-506	96	85	455
	575-60-3	517-633	80	72	333
	200-60-3	180-220	290	246	1160
	200-60-3«	187-220	264	224	956
75	230-60-3«	207-253	248	202	1100
	460-60-3	414-506	124	101	550
	575-60-3	517-633	101	86	400
	200-60-3	180-220	378	324	1660
	200-60-3«	187-220	342	294	1320
100	230-60-3«	207-253	310	266	1520
	460-60-3	414-506	155	133	760
	575-60-3	517-633	131	113	555

« = 9 Lead Dual Voltage

* = Approximate - May vary slightly by application



Electrical Characteristics (Cont.)

Model F - Electrical Data (Small Diameter Motor)

Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw* Air Cooled	AMP Draw* Water Cooled	L.R.A.
	200/60/3	180-220	-	-	240
	200/60/3«	187-230	36	32	136
10	230/60/3«	207-253	32.5	29	157
	460/60/3	414-506	16.5	14.5	79
	575/60/3	517-633	13.8	12.3	57
	200/60/3	180-220	-	-	-
	200/60/3«	187-230		-	-
15	230/60/3«	207-253	50.5	-	-
	460/60/3	414-506	25.3	22.5	-
	575/60/3	517-633	21.4	19.2	-
	200/60/3	180-220	-	-	-
	200/60/3«	187-230	-	-	256
20	230/60/3«	207-253	-	-	295
	460/60/3	414-506	-	-	148
	575/60/3	517-633	-	-	108
	200/60/3	180-220	-	-	-
	200/60/3«	187-230	-	-	256
25	230/60/3«	207-253	-	-	295
	460/60/3	414-506	-	-	148
	575/60/3	517-633	-	-	108
	200/60/3	180-220	-	-	-
	200/60/3«	187-230	-	96	285
30	230/60/3«	207-253	-	-	328
	460/60/3	414-506	-	-	164
	575/60/3	517-633	-	-	121
	200/60/3	180-220	178		645
	200/60/3«	187-230	144	126	533
40	230/60/3«	207-253	130	114	614
	460/60/3	414-506	65	57	307
	575/60/3	517-633	55	48	226

« = 9 Lead Dual Voltage

* = Approximate - May vary slightly by application

Model F - Electrical Data (Large Diameter Motor)

Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw* Air Cooled	AMP Draw* Water Cooled	L.R.A.
	200/60/3«	187-230	-	-	-
12.5	230/60/3«	207-253	47	42	200
	460/60/3	414-506	23.5	21	100
	575/60/3	517-633	-	-	-
	200/60/3«	187-230	-	-	-
15	230/60/3«	207-253	56	50	220
	460/60/3	414-506	28	25	110
	575/60/3	517-633	21.4	19.2	84
	200/60/3«	187-230	-	-	-
20	230/60/3«	207-253	72	64	290
	460/60/3	414-506	36	32	145
	575/60/3	517-633	27	24	111
	200/60/3«	187-230	-	-	-
25	230/60/3«	207-253	88	80	365
	460/60/3	414-506	44	40	182
	575/60/3	517-633	34	31	140
	200/60/3«	187-230	-	-	-
30	230/60/3«	207-253	106	96	435
	460/60/3	414-506	53	48	218
	575/60/3	517-633	41	36	168
	200/60/3«	187-230	-	-	-
40	230/60/3«	207-253	140	126	580
	460/60/3	414-506	70	63	290
	575/60/3	517-633	54	48	222

« = 9 Lead Dual Voltage

* = Approximate - May vary slightly by application

Electrical Characteristics (Cont.)

Model M
Electrical Data

Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw*		L.R.A.
			Air Cooled	Water Cooled	
	200/60/3	180-220	95	78	310
15	230/60/3	207-253	83	68	270
	460/60/3	414-506	42	34	135
	575/60/3	517-633	33	27	108
	200/60/3	180-220	106	86	350
16	230/60/3	207-253	92	75	305
	460/60/3	414-506	46	38	153
	575/60/3	517-633	37	30	125
	200/60/3	180-220	120	98	396
20	230/60/3	207-253	104	85	345
	460/60/3	414-506	52	43	173
	575/60/3	517-633	42	34	138
	200/60/3	180-220	158	129	483
25	230/60/3	207-253	137	112	420
	460/60/3	414-506	69	56	210
	575/60/3	517-633	55	45	168
	200/60/3	180-220	179	147	551
30	230/60/3	207-253	156	128	480
	460/60/3	414-506	78	64	240
	575/60/3	517-633	62	50	192

* = Approximate - May vary slightly by application

Model R
Electrical Data

Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw*		L.R.A.
			Air Cooled	Water Cooled	
	200-60-3	180-220	230	187	729
40	230-60-3	208-254	195	170	631
	460-60-3	416-508	100	85	315
	575-60-3	520-635	80	68	245
	200-60-3	180-220	258	234	910
50	200-60-3	208-254	226	212	792
	460-60-3	416-508	113	106	396
	575-60-3	520-635	90	85	315
	200-60-3	180-220	316	280	990
60	200-60-3	208-254	275	252	860
	460-60-3	416-508	138	126	430
	575-60-3	520-635	110	101	346

* = Approximate - May vary slightly by application

Model K
Electrical Data

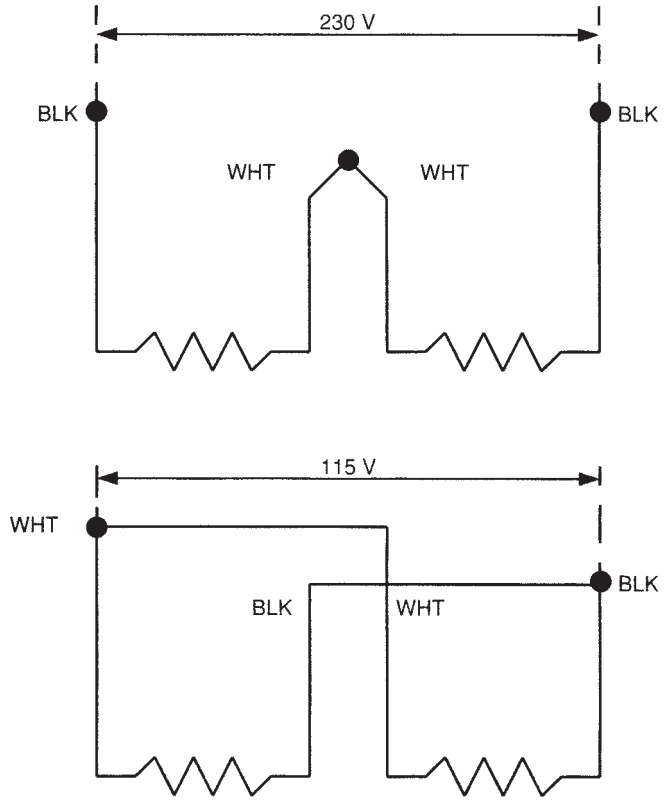
Nominal HP	Electrical Characteristics	Utilization Range	AMP Draw*		L.R.A.
			Air Cooled	Water Cooled	
	200-60-3	180-220	96	80	394
20	230-60-3	208-254	83	70	343
	460-60-3	416-508	42	35	172
	575-60-3	520-635	33	28	138
	200-60-3	180-220	115	96	426
25	200-60-3	208-254	100	83	370
	460-60-3	416-508	50	42	185
	575-60-3	520-635	40	33	148
	200-60-3	180-220	141	114	488
30	200-60-3	208-254	122	100	424
	460-60-3	416-508	61	50	212
	575-60-3	520-635	49	40	170

Accessories

Compressor Crankcase Heaters

Compressor Model	Heater Number	Voltage	Watts
A	HTR00212	USE HTR01566	-
	HTR01566	110/220	140
B	HTR00210	110/230	75
E	HTR01566	110/220	140
F	HTR00006	USE HTR00210	-
	HTR00210	110/230	75
K	HTR01103	120	75
M	HTR00201	120	75
	HTR00202	240	75
R	HTR00244	120	100
	HTR01566	120	140

Dual Voltage Crankcase Wiring



⚠ WARNING!

Disconnect electrical power supply to prevent injury or death due to electrical shock.

⚠ CAUTION!

Unless otherwise specified, use only copper conductors to prevent equipment damage.

Compressor Mounting Assemblies

E Compressor Mounting Assemblies

4, 5 and 6 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00219	1
Consists of:		
Isolator-Pads	PAD00051	8
Isolator-Spacers	SPC00046	4
Spacer-Angles	SPC00083	4
Screws	SCR00111	4
Nuts	NUT00347	4

8 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00266	1
Consists of:		
Isolator-Pads	PAD00059	8
Isolator-Spacers	SPC00069	4
Spacer-Angles	SPC00083	4
Screws	SCR00111	4
Nuts	NUT00347	4

F Compressor Mounting Assemblies

3, 4, 5 and 6 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00653	1
Consists of:		
Isolator-Pads	PAD00049	8
Isolator-Spacers	SPC00044	4
Spacer-Angles	SPC00083	4
Screws	SCR00013	4
Nuts	NUT00570	4

8 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00654	1
Consists of:		
Isolator-Pads	PAD00050	8
Isolator-Spacers	SPC00045	4
Spacer-Angles	SPC00083	4
Screws	SCR00013	4
Nuts	NUT00570	4

R Compressor Mounting Assemblies (R-I-S Only No Spring)

4 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00218	1
Consists of:		
Isolator-Pads	PAD00068	8
Isolator-Spacers	SPC00125	4
Spacer-Angles	SPC00083	4
Screws	SCR00134	4

5 and 6 Cylinder

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00217	1
Consists of:		
Isolator-Pads	PAD00067	8
Isolator-Spacers	SPC00126	4
Spacer-Angles	SPC00083	4
Screws	SCR00134	4

K Compressor Mounting Assemblies

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00382	4*

*4 Req. Per Compressor

Compressor Mounting Assemblies (Cont.)

M Compressor Mounting Assemblies (Spring Only No R-I-S)

10, 15, 20 Ton - Old Style (Fits Under The Base)

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00652	1
Consists of:		
Screws	SCR00067	2
Lockwashers	WAS00019	8
Spring	MNT00193	4
Channel-Spacers	CNL00210	2
Angle-Spacers	ANG00505	2
Screws	SCR00173	6
Plugs	PLU00446	4

10, 15, 20 Ton - New Style (Fits Under The Comp. Feet)

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00166	1
Consists of:		
Screws	SCR00067	2
Lockwashers	WAS00019	8
Springs	MNT00193	4
Screws	SCR00173	6
Plugs	PLU00446	4

25, 30 Ton - Old Style (Fits Under The Base)

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00655	1
Consists of:		
Screws	SCR00067	2
Lockwashers	WAS00019	8
Springs	MNT00194	4
Channel-Spacers	CNL00210	2
Angle-Spacers	ANG00505	2
Screws	SCR00173	6
Plugs	PLU00446	4

25, 30 Ton - New Style (Fits Under The Comp. Feet)

Description	Part No.	Qty
Mounting Assembly, Complete	MNT00169	1
Consists of:		
Screws	SCR00067	2
Lockwashers	WAS00019	8
Springs	MNT00194	4
Screws	SCR00173	6
Plugs	PLU00446	4

Discharge Mufflers

Discharge Mufflers

Discharge mufflers are available as an option to reduce noise and pulsation in the discharge line of the compressor. The 8" muffler with 2-1/8" connections is recommended for the "E" 50 and 60 and the 10" muffler with the 2-5/8" connections is recommended for the "E" 75 and 1C compressors.

Muffler Installation

The muffler has an arrow indicating the proper direction of flow. The mufflers may be mounted either vertically or horizontally. To prevent the muffler from becoming an oil trap when the muffler is mounted horizontally, the muffler must be mounted with the large part of the shell above the pipe connection.

The muffler is an all-steel ASME-approved welded design with steel pipe connections.

Table 1 - Replacement Discharge Mufflers

If the line size is known, use to select the correct Replacement Muffler. If the line size is unknown, see Table 2 and select by the Compressor Model Number.

Connection Size	Diameter (Inches)	Length (Inches)	Mnemonic Number
1-1/8	4	12-1/8	MFL00027
1-3/8	5	12-15/16	MFL00028
1-5/8	6	11-3/16	MFL00029
2-1/8	8	15-3/8	MFL00030
2-5/8	10	15-3/8	MFL00031

Table 2 - Replacement Discharge Mufflers

If the line size is unknown, use the Compressor Model Number to select the replacement Discharge Muffler. If the line size is known, see Table 1 and select the correct service replacement.

Compressor Tonnage	Connection Size	Diameter (Inches)	Length (Inches)	Mnemonic Number
10 Ton M	1-1/8	4	12-1/8	MFL00027
13 Ton M	1-1/8	4	12-1/8	MFL00027
15 Ton M	1-1/8	4	12-1/8	MFL00027
17 Ton M	1-3/8	5	12-15/16	MFL00028
19 Ton M	1-3/8	5	12-15/16	MFL00028
20 Ton M	1-1/8	4	12-1/8	MFL00027
25 Ton M	1-3/8	5	12-15/16	MFL00028
30 Ton M	1-3/8	5	12-15/16	MFL00028
26 Ton R	1-5/8	6	11-3/16	MFL00029
32 Ton R	1-5/8	6	11-3/16	MFL00029
38 Ton R	2-1/8	8	15-3/8	MFL00030
40 Ton R	1-5/8	6	11-3/16	MFL00029
50 Ton R	1-5/8	6	11-3/16	MFL00029
60 Ton R	2-1/8	8	15-3/8	MFL00030
48 Ton E	2-1/8	8	15-3/8	MFL00030
75 Ton E	2-1/8	8	15-3/8	MFL00030
62 Ton E	2-5/8	10	15-3/8	MFL00031
100 Ton E	2-5/8	10	15-3/8	MFL00031
10 Ton F	1-1/8	4	12-1/8	MFL00027
15 Ton F	1-1/8	4	12-1/8	MFL00027
20 Ton F	1-1/8	4	12-1/8	MFL00027
25 Ton F	1-3/8	5	12-15/16	MFL00028
30 Ton F	1-3/8	5	12-15/16	MFL00028
40 Ton F	1-3/8	5	12-15/16	MFL00028

Valve Part Number	Where Used Compressor Model	O.D.F. Nominal	Compressor Connect Nominal	Figure
VAL00008	B, F, K, M, R	1-5/8	2-3/4 OD	2
VAL00009	A, B, E, F, K, M, R	2-1/8	3-7/32 OD	2
VAL00035	A, B, E, F, R	2-5/8	3-7/32 OD	2
VAL00036	-	VAL00009	-	-
VAL00037	-	VAL00008	-	-
VAL00042	A, E	4-1/8	5-1/8 OD	2
VAL00043	A, E, R	3-1/8	4-5/32 OD	2
VAL00059	-	VAL04230	-	-
VAL00076	-	VAL04163	-	-
VAL00095	-	VAL04230	-	-
VAL00975	M	1-1/4	1-1/8 OD	1
VAL04163	F, M	1-3/8	2.00 OD	1
VAL04230	F	1-1/8	2.00 OD	1

Figure 1

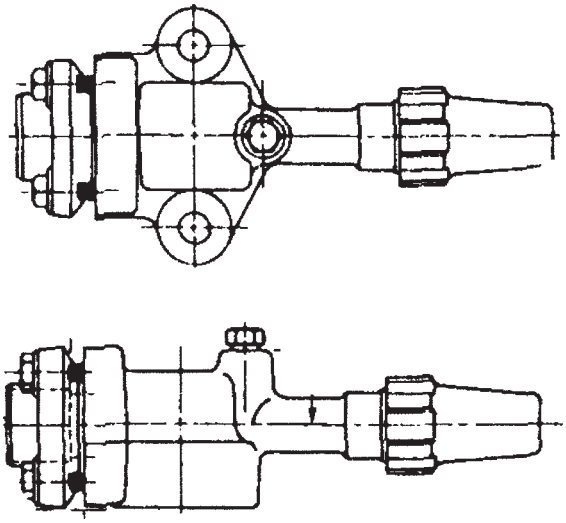
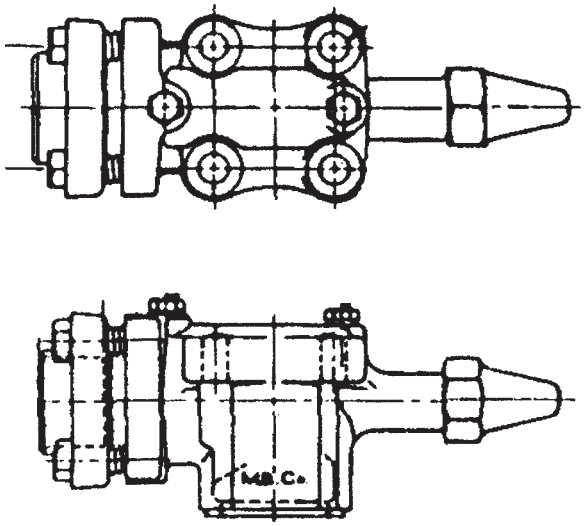


Figure 2



Rotolock To Sweat (ODF) Valves

Part Number	ODF Number	Rotolock Size	
VAL01957	1-1/4	1-3/4 - 12	Model K Discharge Valve
VAL01958	1-3/8	1-3/4 - 12	Model K Discharge Valve

NOTE: Replacement of individual valve components and the replacement procedures are detailed in service bulletin HCOM-SB-22D.

Miscellaneous

Compressor Changeout Considerations

Compressor Changeout Considerations

Compressor changeout involves replacing other components besides the compressor. The information provided below is in two sections: electrical failure and mechanical failure.

- **Electrical Failure**
  When an electrical failure occurs, often the refrigerant system is contaminated. The service technician must consider what is needed to clean up the contamination and what other electrical components may require replacement. To perform a changeout, the following components are **required**:
  1
  Suction filter with acid removal cores
  2
  Liquid line filter drier with acid removal cores
  3
  Suction filter
  4
  Liquid line drier cores — standard capacity
  5
  Acid test kits to test the oil for acidity
  6
  Manufacturer's approved oil
  7
  Motor electrical terminals and wiring, if damaged due to the electrical failure.

  Trane service bulletin HCOM-SB-45B gives guidelines for selecting the proper suction and liquid line driers. Trane service bulletin HCOM-SB-4F specifies the appropriate oil charges and approved oils for Trane compressors. Both of these service bulletins are available from your Trane Parts Center.

  After the system has been cleaned up, the suction filter shell should be removed. If left on the suction filter, the shell could trap oil, increase pressure drop and reduce system capacity. An alternative to removing the suction filter shell is to replace the acid removal cores with a suction filter.

  Liquid line cores also should be changed to the standard capacity moisture removal cores.

  Parts that are **highly recommended** for replacement after an electrical failure are:
  1
  Compressor motor contactor(s)
  2
  Compressor motor overcurrent protection device
  3
  Motor protection modules
  4
  Part winding start timer

  These components must be functional to assure proper operation and reliability of the compressor and protection of the motor. These components may have been damaged by the electrical failure or caused it to occur.

  For those situations where over- and under-voltage and single-phasing conditions are either suspected or known to exist, it would be **prudent to consider** adding a device that would protect the compressor motor against these conditions.

- **Mechanical Failure**
  The components that are **required** for a mechanical compressor changeout are:
  1
  Liquid line filter drier cores — standard capacity
  2
  Manufacturer's approved oil
  3
  Acid test kits

  A highly recommended component to replace is the oil pressure switch.

  Other parts **for consideration** include:
  1
  Vibration isolator pads (replace if compressed or oil-soaked)
  2
  Service valves — if they do not seal tightly
  3
  High pressure switch
  4
  Low pressure switch
  5
  Compressor motor contactor(s)
  6
  Compressor motor overcurrent protection device
  7
  Motor protection modules
  8
  Part winding start timer
  9
  Suction filter with moisture cores (if multiple repeat failures have occurred)

  Items 3 through 8 play a critical role in the electrical operation and protection of the compressor and must be functional to assure proper operation and reliability. It is not necessary to replace these items if they are functional and in good operating condition.

  To assure proper compressor replacement and repair, the service technician must perform a complete checkout of the entire unit and system. The unit and system checkout may reveal the cause of the failure and require the replacement or repair of other components.

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