



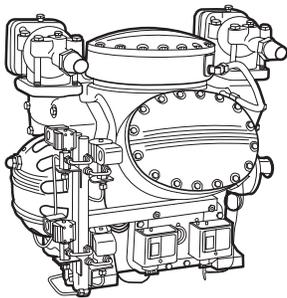
# Product Data

# 5F,H Compressors 05FY,HY Compressor Units 07FY,HY Condensing Units P701 Condensers

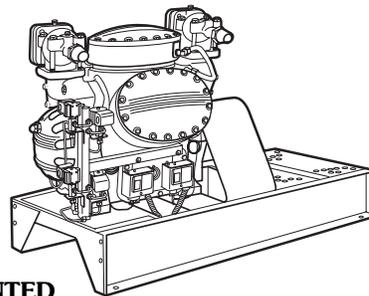
5 to 150 Nominal Tons



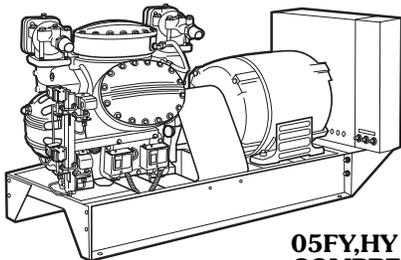
## 5F, 5H COMPRESSORS



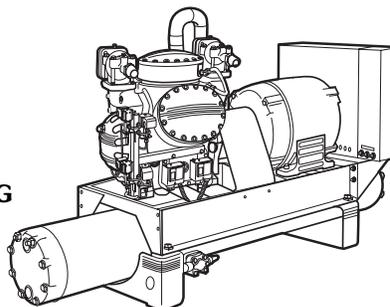
**5F,H BARE  
COMPRESSORS**



**5F,H  
BASE-MOUNTED  
COMPRESSORS**



**05FY,HY  
COMPRESSOR  
UNITS**



**07FY,HY  
CONDENSING  
UNITS**

Carlyle Series 5F and 5H open-drive compressors, used on Carrier compressor units and condensing units, have been the workhorses of the air conditioning and refrigeration industry for more than 50 years. Series 5F and 5H are offered as bare compressors and also as factory-assembled compressors, factory-assembled 05FY and 05HY compressor units, and factory-assembled 07FY and 07HY condensing units with P701 condensers. Complete systems include motor, drive arrangement, control panel, and condenser as required. Or, all components may be ordered as separate sale items for field assembly and installation.

## Features/Benefits

The traditionally high quality of Carlyle 5F and 5H compressors provide efficient, reliable operation with unsurpassed performance, whatever the application.

### Series 5F, 5H Standard Features

- 3-year compressor warranty
- used with most refrigerants
- 5 to 150-ton range
- high operating efficiency
- 50 years of proven reliability
- multi-drive application
- multi-speed range
- multi-motor/voltage combinations
- multi-condenser combinations
- multi-control-panel designs
- factory assembled system or separate components for field assembly
- 6-week maximum availability

## Custom-tailored systems

To fit your job requirements, Carrier compressor and condensing units and Carlyle open-drive compressors are available in any combination. Customized selection enables you to order one factory-assembled system that fits your application, regardless of strict specifications and special power needs. For field installation, you can also select bare or base-mounted compressors and order the balance of the system components as separate items or supply your own.

Select quality by ordering:

- 5F and 5H Bare Compressors
- 5F and 5H Base-Mounted Compressors
- 05FY and 05HY Compressor Units
- 07FY and 07HY Condenser Units

## The 5F,H compressors

Use the 5F,H line of open compressors to build a system tailored to your equipment needs. These compressors come in 12 sizes, ranging from 5 to 150 tons of cooling, so you can select just the configuration you need. The compressor's "building block" design lets you choose water-cooled, air-cooled, or evaporative condensers.

The 5F,H compressors can use Refrigerants 134a, 22 or 507/404A. The compressor base accommodates several motor sizes, with either belt or direct drive, to fill both refrigerant and job requirements.

Consider these additional advantages when choosing a 5F,H compressor:

### Save on first costs:

- With automatic, unloaded starting, expensive high-torque motors are unnecessary, reducing your initial expense.

### Save on operating costs:

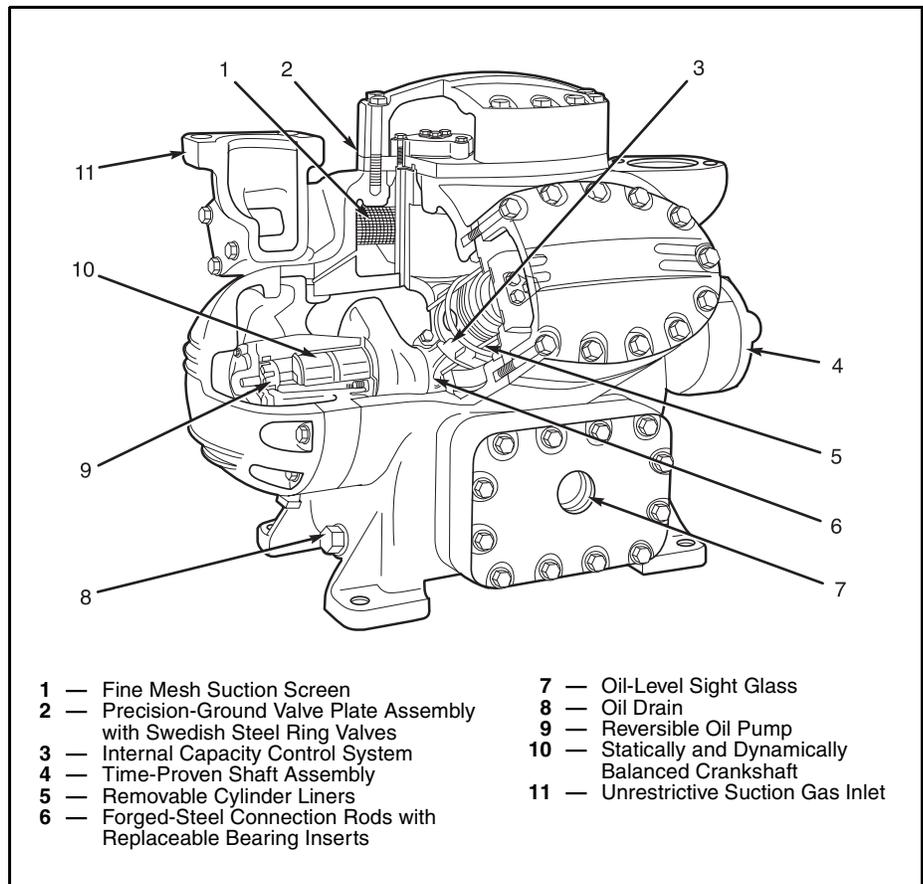
- The design of the crankcase casting cylinder heads and valve plates allows a smooth, unrestricted refrigerant flow through the compressor, resulting in greater operating efficiency.
- As suction pressure changes, capacity control automatically reduces compressor capacity to as low as 25% of full design load, reducing horsepower requirements and demand charges. This part-load

operation, in turn, increases energy efficiency and lowers utility bills.

Internal pressure capacity control is standard on 5F40-5H126 units. External unloading, either pneumatic or electric, can also be special ordered. The 5F20 and 5F30 units offer external pressure unloading as an accessory feature.

### Save on maintenance costs:

- A large-capacity, manually reversible oil pump, an automatic pressure regulator, and an oil-filtering system provide positive pressure lubrication for extended compressor life.
- On all units, the oil passes through a fine-mesh screen before reaching the oil pump. A full-flow filter, standard equipment on 5H120, 126 units, ensures clean flow of the large-volume oil charge in these compressors.
- Suction gases stay in contact with cylinder sleeve to keep oil cool and reduce cylinder wear.
- Simple field maintenance and replacement of components such as cylinder liners, pistons, and bearings minimize field service costs and equipment downtime.
- A refined, 2-piece shaft/seal assembly virtually eliminates seal leakage. Its carbon ring and neoprene bellows combine to provide a tight seal against a highly polished seat. An oil bath completely surrounds the seal assembly, yielding maximum reliability over a wide temperature range.
- Efficient crankcase heater design prevents both accumulation of liquid refrigerant in the crankcase during shutdown and the consequent dilution of the compressor's oil supply.



- |  |   |
|--|---|
| 1 — Fine Mesh Suction Screen   | 7 — Oil-Level Sight Glass                           |
| 2 — Precision-Ground Valve Plate Assembly with Swedish Steel Ring Valves | 8 — Oil Drain                                       |
| 3 — Internal Capacity Control System                                     | 9 — Reversible Oil Pump                             |
| 4 — Time-Proven Shaft Assembly   | 10 — Statically and Dynamically Balanced Crankshaft |
| 5 — Removable Cylinder Liners  | 11 — Unrestrictive Suction Gas Inlet                |
| 6 — Forged-Steel Connection Rods with Replaceable Bearing Inserts        |   |

# Features/Benefits (cont)



## The P701 water-cooled condensers

Totaline P701 water-cooled condensers are specifically designed for applications where high efficiency is desired and economy is a prime consideration. These condensers offer you maximum adaptability in most comfort and process cooling applications. Available sizes range in capacity from 5 to 400 tons of heat rejection and are all shell-and-tube type condensers. Each can be custom-matched with compressors charged with your choice of Refrigerants 134a, 22, or 507/404A.

The P701 condensers serve as refrigerant reservoirs when a system is not operating, eliminating the need for separate receivers.

### P701 CX condensers offer the following features:

- Small condenser models for fresh water applications
- Tubes made of high performance copper with enhanced design, roller expanded into multiple-grooved tube sheet
- Flange quality steel tube sheet precision machined for superior sealing
- Condenser heads constructed of nodular iron offer multi-pass design for controlled cooling water velocity
- All water side connections are female pipe thread
- The refrigerant side is constructed to the latest edition of the ASME Section VIII Div 1 code and stamped accordingly
- Refrigerant side pressure is designed for 350 PSI minimum at 250 F
- Water side design pressure is 300 PSI minimum at 150 F

### P701 AX condensers offer the following features:

- Large condenser models for fresh water applications
- Tubes made of high performance copper with enhanced design, roller expanded into multiple-grooved tube sheet
- Flange quality steel tube sheet precision machined for superior sealing
- Condenser heads are cast iron or fabricated steel
- All water side connections are female pipe thread except 12 in., 14 in. and 16 in. which have flanges
- Adjustable nozzles for ease of packaging
- The refrigerant side is constructed to the latest edition of the ASME Section VIII Div 1 code and stamped accordingly
- Refrigerant side pressure is designed for 350 PSI at 250 F
- Water side design pressure is 150 PSI at 150 F

### Marine condensers offer the following features:

- Special order condensers for sea water or brackish water applications
- Tubes made of 90% copper, 10% nickel with high performance enhanced design, roller expanded into grooved tube sheet
- Tube sheet made of 90% copper, 10% nickel and precision machined for superior sealing
- Condenser heads constructed of cast bronze to withstand corrosive effects of sea water
- Single pass 14 in. and 16 in. heads are fabricated from steel and are epoxy coated

- All water side connections are female pipe thread except 12 in., 14 in. and 16 in. which have flanges
- The refrigerant side is constructed to the latest edition of the ASME Section VIII Div 1 code and stamped accordingly
- Refrigerant side is dual rated for 450 PSI at 150 F or 350 PSI at 250 F
- Water side design pressure is 150 PSI at 150 F

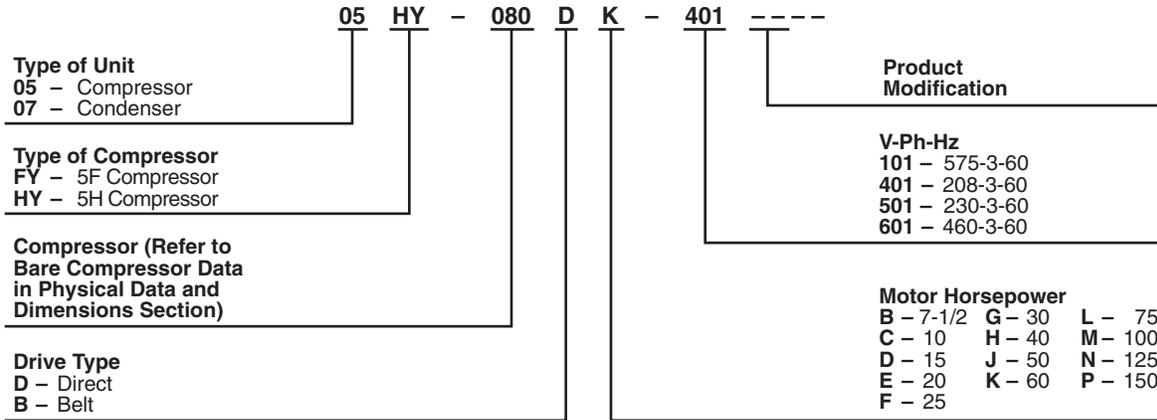
## Compressor and condensing units

From a wide selection of compressors, condensers, and accessories, Carrier now provides a completely factory-assembled compressor unit that you can combine with either a remote condenser or a factory-assembled condensing unit. Included in the factory-assembled compressor units (05FY, 05HY) are the compressor, steel base, motor, control panel, and accessories. The factory-assembled condensing units (07FY,07HY) consist of all features of the compressor unit above plus a condenser. On both the factory-assembled compressor unit and the condensing unit, the required interconnecting wiring is included to minimize field start-up time and costs. The factory-assembled condensing units also include the interconnecting piping.

## Table of contents

	Page
Features/Benefits . . . . .	1-3
Model Number Nomenclature . . . . .	4
Physical Data and Dimensions . . . . .	5-10
Field-Installed Accessories . . . . .	11
Selection Procedure . . . . .	12,13
Performance Data . . . . .	13-24
Typical Piping and Wiring . . . . .	25
Guide Specifications . . . . .	26,27

# Model number nomenclature



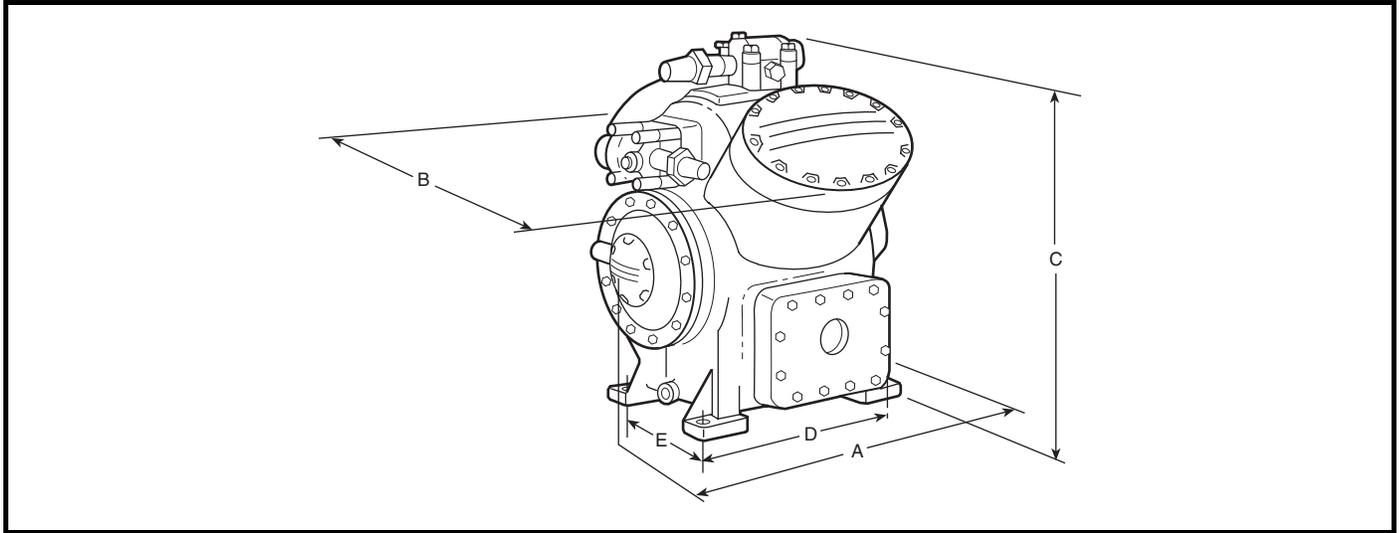
## COMPONENT PARTS

		Compressor	Steel base	Condenser	Compressor motor	Motor starter	Control panel	Shutoff valves	Water-cooled heads	Water-cooled oil cooler	Capacity control	Crankcase equalizers	Equalizer coverplates	Crankcase heaters	Crankcase heater relay	Compr internal relief valve	Oil safety switch	Dual pressure switch	Full-flow oil filter	Partial-flow oil filter	Mufflers	Belt guard	Motor pulley and belts	Compressor flywheel	Coupling	Coupling guard	Motor fastening set	Vibration isolators	
BARE COMPRESSOR		5F20, 5F30																											
		5F40																											
		5F60																											
		5H40-5H86																											
		5H120, 5H126																											
BASE-MOUNTED COMPRESSOR	Direct Drive	5F40																											
		5F60																											
		5H40-5H86																											
		5H120, 5H126																											
		5F20, 5F30																											
	Belt Drive	5F40																											
		5F60																											
		5H40-5H80																											
		5H120																											
		05FY040																											
COMPRESSOR UNITS	Direct Drive	05FY060																											
		05HY040-05HY086																											
		05HY120-05HY126																											
		05FY020, 05FY030																											
	Belt Drive	05FY040																											
		05FY060																											
		05HY040-05HY080																											
		05HY120																											
		07FY040																											
		07FY060																											
CONDENSING UNITS	Direct Drive	07HY040-07HY086																											
		07HY120, 07HY126																											
		07FY020, 07FY030																											
		07FY040																											
	Belt Drive	07FY060																											
		07HY040-07HY080																											
		07HY120																											
		07HY120																											

- Included with units.
- Available as accessories.
- Not included.

- NOTES:
1. All units operate at 1750 rpm.
  2. All components require final alignment in the field (at job site).
  3. Electrical panel control voltage 115-1-60. Transformer not supplied.
  4. All units are supplied with across-the-line starting.

# Physical data and dimensions



## BARE COMPRESSORS

COMPRESSOR	5F				5H				5H			
	20	30	40	60	40	60	80	120	46	66	86	126
OPER WT (lb)	175	215	355	400	610	795	1115	1580	610	795	1115	1580
COMPRESSOR												
Nom Hp	3-10	5-15	7.5-20	10-30	20-50	30-75	40-100	60-150	40-60	60-100	75-125	125-200
Displ Cfm at 1750 Rpm	19.0	29.8	39.8	59.6	92.4	138.4	184.7	276.8	115.5	173.0	231.0	346.0
Cylinders	2	3	4	6	4	6	8	12	4	6	8	12
Oil (pt)	5	5.5	12	13	18	21	41	61	18	21	41	61
Bore (in.)	2 <sup>1</sup> / <sub>2</sub>				3 <sup>1</sup> / <sub>4</sub>							
Stroke (in.)	2				2 <sup>3</sup> / <sub>4</sub>				3 <sup>7</sup> / <sub>16</sub>			
Max Rpm	1750											
Min Rpm	400 (Required for proper lubrication)											
Min Rpm, Cap. Control	600	700	800	900	800	900	1100	900	800	900	1100	900
High-Side Max Pressure	400 psig											
Low-Side Max Pressure	245 psig											
DIMENSIONS (in.)												
A	15 <sup>7</sup> / <sub>8</sub>	18	21 <sup>1</sup> / <sub>2</sub>	23 <sup>1</sup> / <sub>2</sub>	30 <sup>1</sup> / <sub>2</sub>	31 <sup>1</sup> / <sub>2</sub>	43 <sup>7</sup> / <sub>8</sub>	47	30 <sup>1</sup> / <sub>2</sub>	31 <sup>1</sup> / <sub>2</sub>	43 <sup>7</sup> / <sub>8</sub>	47
B	18 <sup>3</sup> / <sub>4</sub>	20 <sup>7</sup> / <sub>8</sub>	19	21	24 <sup>1</sup> / <sub>2</sub>	27 <sup>1</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>2</sub>	27 <sup>3</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>2</sub>	27 <sup>1</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>2</sub>	27 <sup>3</sup> / <sub>8</sub>
C	18 <sup>3</sup> / <sub>4</sub>	18	20 <sup>1</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>2</sub>	29	29 <sup>7</sup> / <sub>8</sub>	32	34 <sup>7</sup> / <sub>8</sub>	29	29 <sup>7</sup> / <sub>8</sub>	32	34 <sup>7</sup> / <sub>8</sub>
Between Mtg Hole C	5 <sup>3</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	12	13 <sup>7</sup> / <sub>16</sub>	15 <sup>1</sup> / <sub>2</sub>	17	29	29	15 <sup>1</sup> / <sub>2</sub>	17	29	29
E	10	10	8	8	11	11	11	11	11	11	11	11
CONNECTIONS (in.)												
Suction (ODF)	1 <sup>1</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>
Discharge (ODF)	7 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>

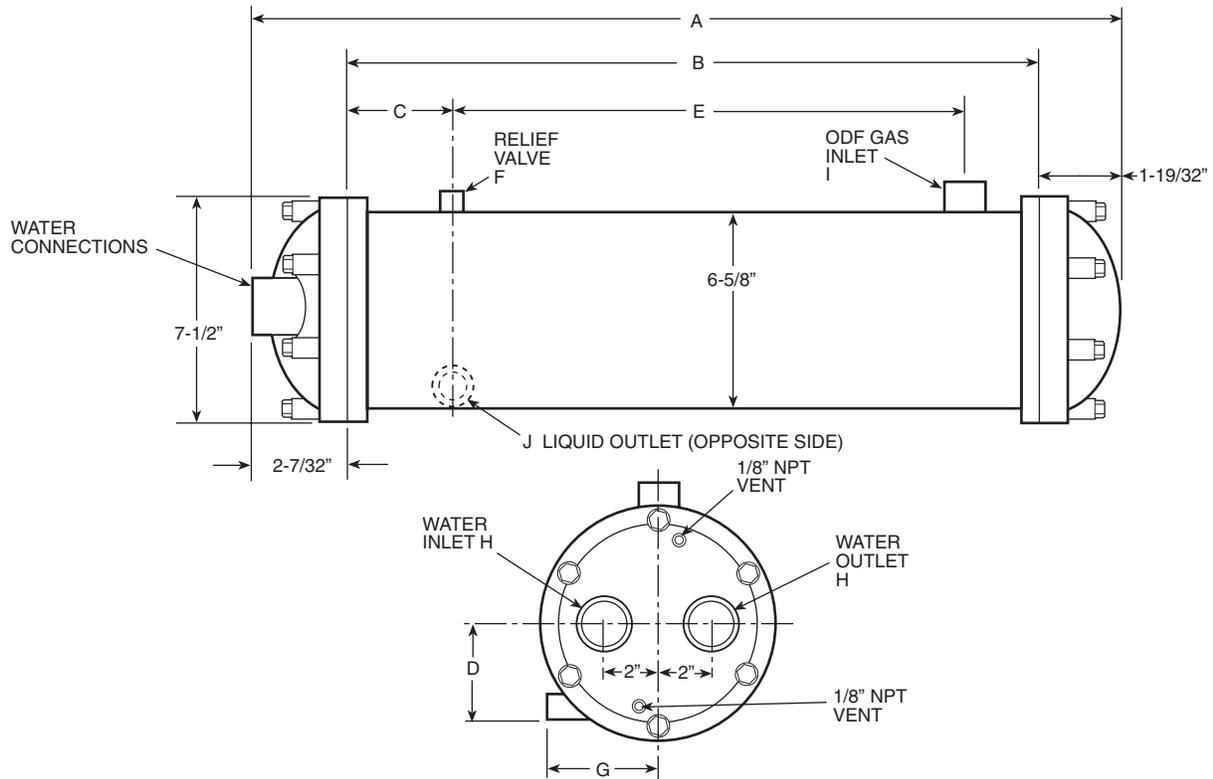
### LEGEND

Hp — Horsepower  
ODF — Outside Diameter Female

# Physical data and dimensions (cont)



## P701 CX FRESH WATER CONDENSERS



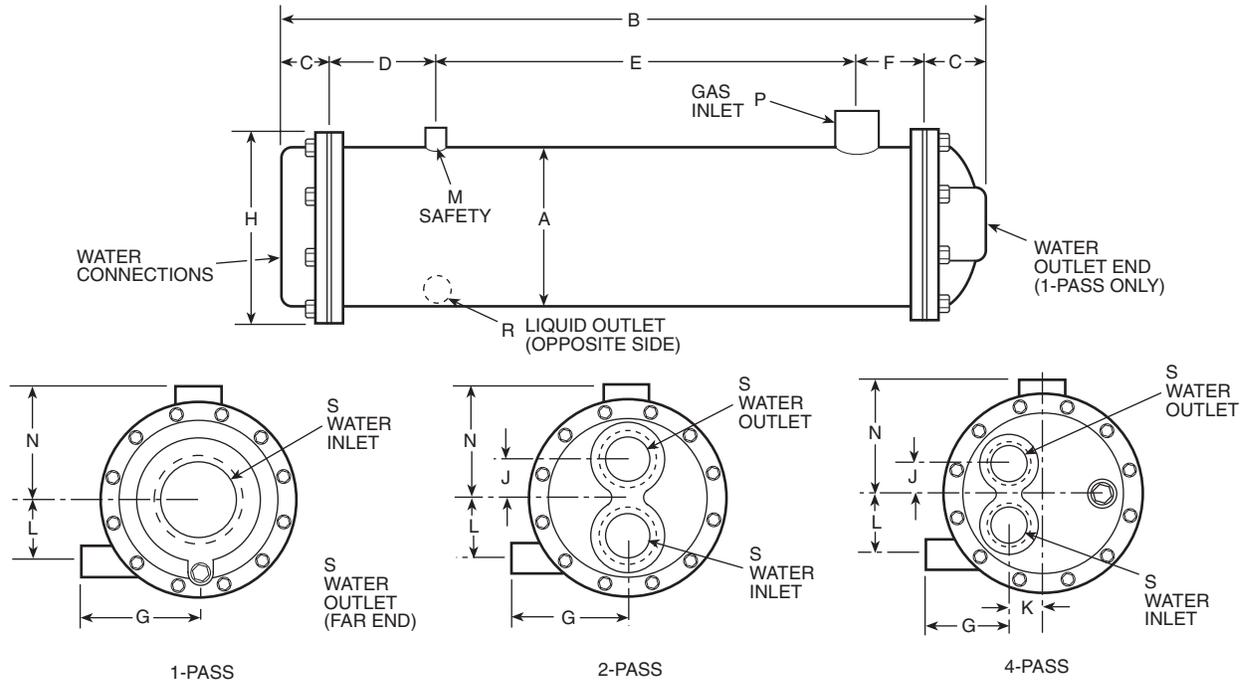
### PHYSICAL DATA AND DIMENSIONS (in.)

UNIT P701-	A	B	C	D	E	F FPT	G	H FPT	I ODF	J ODF	WEIGHT (lb)
0605CX	27 <sup>9</sup> / <sub>16</sub>	23 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2	16 <sup>3</sup> / <sub>8</sub>	1/2	4 <sup>13</sup> / <sub>16</sub>	1	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	100
0607CX	27 <sup>9</sup> / <sub>16</sub>	23 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2	16 <sup>3</sup> / <sub>8</sub>	1/2	4 <sup>13</sup> / <sub>16</sub>	1	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	105
0610CX	39 <sup>9</sup> / <sub>16</sub>	35 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2	28 <sup>3</sup> / <sub>8</sub>	1/2	4 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	130
0615CX	51 <sup>9</sup> / <sub>16</sub>	47 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2	40 <sup>3</sup> / <sub>8</sub>	1/2	4 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	160
0620CX	51 <sup>9</sup> / <sub>16</sub>	47 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	2	40 <sup>3</sup> / <sub>8</sub>	1/2	4 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	170

#### LEGEND

- FPT — Female Pipe Thread
- NPT — National Pipe Thread
- ODF — Outside Diameter Female

### P701 AX FRESH WATER CONDENSERS



NOTE: Water inlet is on opposite end.

### PHYSICAL DATA AND DIMENSIONS (in.)

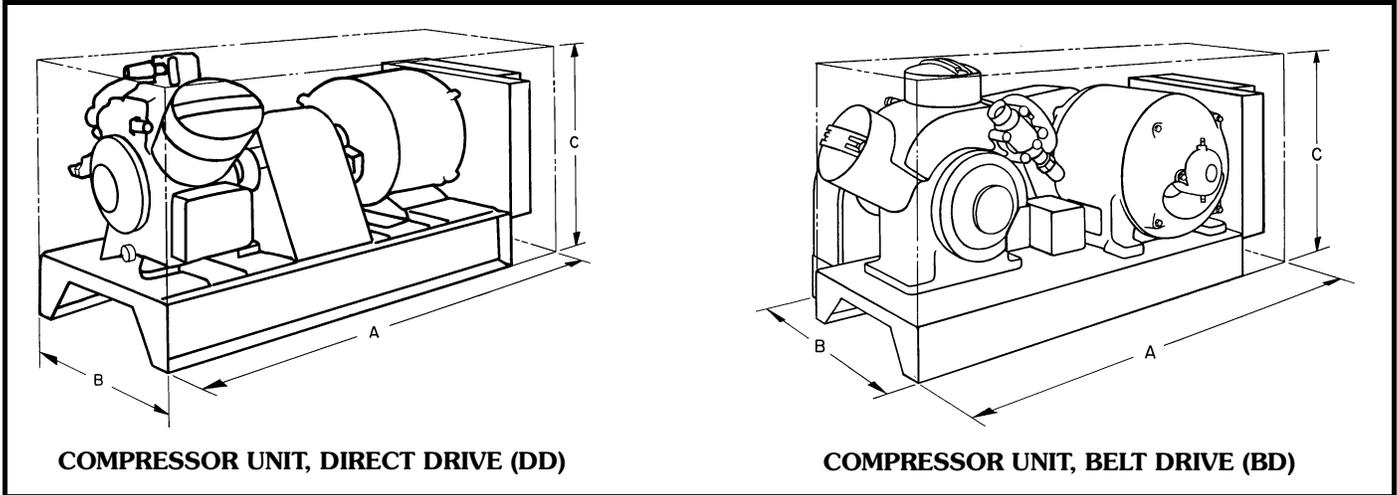
UNIT P701-	A DIA	B	C	D	E	F	G	H	J	L	M FPT	N	P ODF	R ODF	S	WEIGHT (lb)
0625AX	6 <sup>5</sup> / <sub>8</sub>	63 <sup>13</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>2</sub>	52 <sup>3</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>8</sub>	4 <sup>13</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	6 <sup>5</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2	170
0630AX	6 <sup>5</sup> / <sub>8</sub>	63 <sup>13</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>2</sub>	52 <sup>3</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>8</sub>	4 <sup>13</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	6 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	2	195
0840AX	8 <sup>5</sup> / <sub>8</sub>	66	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	52 <sup>3</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>8</sub>	5 <sup>13</sup> / <sub>16</sub>	9 <sup>11</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>8</sub>	3 <sup>13</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>2</sub>	7 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	300
0850AX	8 <sup>5</sup> / <sub>8</sub>	78	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	64 <sup>3</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>8</sub>	5 <sup>13</sup> / <sub>16</sub>	9 <sup>11</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>8</sub>	3 <sup>13</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>2</sub>	7 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	340
1065AX	10 <sup>3</sup> / <sub>4</sub>	69 <sup>1</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	52	4	6 <sup>7</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	8 <sup>3</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	3	460
1075AX	10 <sup>3</sup> / <sub>4</sub>	81 <sup>1</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	64	4	6 <sup>7</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	8 <sup>3</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	3	475
1290AX	12 <sup>3</sup> / <sub>4</sub>	69	4 <sup>5</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>16</sub>	50 <sup>15</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	7 <sup>7</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>8</sub>	4	590
12110AX	12 <sup>3</sup> / <sub>4</sub>	81	4 <sup>5</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	62 <sup>7</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	4	665
12140AX	12 <sup>3</sup> / <sub>4</sub>	108	6 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	86 <sup>7</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	—	5 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	6*	855
12150AX	12 <sup>3</sup> / <sub>4</sub>	108	6 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	86 <sup>7</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	—	5 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	6*	890
12200AX	12 <sup>3</sup> / <sub>4</sub>	132	6 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	110 <sup>3</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>	15 <sup>3</sup> / <sub>4</sub>	—	5 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>8</sub>	3 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	6*	1060
14140AX	14	69	5 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	50 <sup>7</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	17 <sup>7</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	10	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	4*	895
14165AX	14	81	5 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	62 <sup>7</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	17 <sup>7</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	10	3 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	4*	1410
14210AX	14	115 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	85 <sup>11</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	17 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	10	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	6†	1240
14270AX	14	139 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	109 <sup>11</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	17 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	10	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	6†	1420
14290AX	14	139 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	109 <sup>11</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	17 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	10	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	6†	1480
16200AX	16	69	5 <sup>1</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	49 <sup>11</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	5	6 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	11	3 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	5*	1220
16210AX	16	81	5 <sup>1</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	61 <sup>3</sup> / <sub>16</sub>	5 <sup>11</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	5	6 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	5*	1190
16230AX	16	81	5 <sup>1</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	61 <sup>3</sup> / <sub>16</sub>	5 <sup>11</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	5	6 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11	4 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	5*	1360
16300AX	16	120 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	84 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11	5 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	8†	1723
16360AX	16	144 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	108 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11	5 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	8†	1825
16400AX	16	144 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>8</sub>	4 <sup>7</sup> / <sub>8</sub>	108 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	19 <sup>7</sup> / <sub>8</sub>	—	5 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	11	5 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>8</sub>	8†	2085

#### LEGEND

FPT — Female Pipe Thread  
ODF — Outside Diameter Female

\*125 lb flat face flange.  
†150 lb raised face flange.

# Physical data and dimensions (cont)



## COMPRESSOR UNITS

COMPRESSOR	5F				5H				5H			
	20	30	40	60	40	60	80	120	46	66	86	126
OPER WT (lb)												
BD	390	430	645	730	1045	1225	1780	2345	—	—	—	—
DD	—	—	610	695	1010	1195	1840	2340	1010	1195	1840	2340
COMPRESSOR												
Nom Hp	3-10	5-15	7.5-20	10-30	20-50	30-75	40-100	60-150	40-60	60-100	75-125	125-200
Displ Cfm at 1750 Rpm	19.0	29.8	39.8	59.6	92.4	138.4	184.7	276.8	115.5	173.0	231.0	346.0
Cylinders	2	3	4	6	4	6	8	12	4	6	8	12
Oil (pt)	5	5.5	12	13	18	21	41	61	18	21	41	61
Bore (in.)	2 <sup>1</sup> / <sub>2</sub>				3 <sup>1</sup> / <sub>4</sub>				3 <sup>7</sup> / <sub>16</sub>			
Stroke (in.)	2				2 <sup>3</sup> / <sub>4</sub>				3 <sup>7</sup> / <sub>16</sub>			
Max Rpm	1750											
Min Rpm	400 (Required for proper lubrication)											
Min Rpm, Cap. Control	600	700	800	900	800	900	1100	900	800	900	1100	900
High-Side Max Pressure	400 psig											
Low-Side Max Pressure	245 psig											
DIMENSIONS (in.)												
BD	A	45 <sup>5</sup> / <sub>8</sub>	45 <sup>5</sup> / <sub>8</sub>	61	61	70 <sup>3</sup> / <sub>8</sub>	71 <sup>15</sup> / <sub>16</sub>	78	80	—	—	—
	B	23	23	29	29	31 <sup>3</sup> / <sub>4</sub>	32 <sup>3</sup> / <sub>4</sub>	45 <sup>1</sup> / <sub>8</sub>	49	—	—	—
	C	31	31	30	30 <sup>3</sup> / <sub>4</sub>	37 <sup>1</sup> / <sub>4</sub>	38	57 <sup>7</sup> / <sub>8</sub>	46	—	—	—
DD	A	—	—	60 <sup>3</sup> / <sub>4</sub>	61 <sup>1</sup> / <sub>8</sub>	72 <sup>13</sup> / <sub>16</sub>	77 <sup>1</sup> / <sub>4</sub> *	94 <sup>3</sup> / <sub>4</sub>	97 <sup>5</sup> / <sub>8</sub>	72 <sup>13</sup> / <sub>16</sub>	77 <sup>1</sup> / <sub>4</sub>	94 <sup>3</sup> / <sub>4</sub>
	B	—	—	29	29	29	29	35	35	29	29	35
	C	—	—	30	30 <sup>3</sup> / <sub>4</sub>	37 <sup>7</sup> / <sub>8</sub>	34 <sup>1</sup> / <sub>2</sub>	46	45 <sup>7</sup> / <sub>8</sub>	37 <sup>7</sup> / <sub>8</sub>	35 <sup>9</sup> / <sub>16</sub>	46

### LEGEND

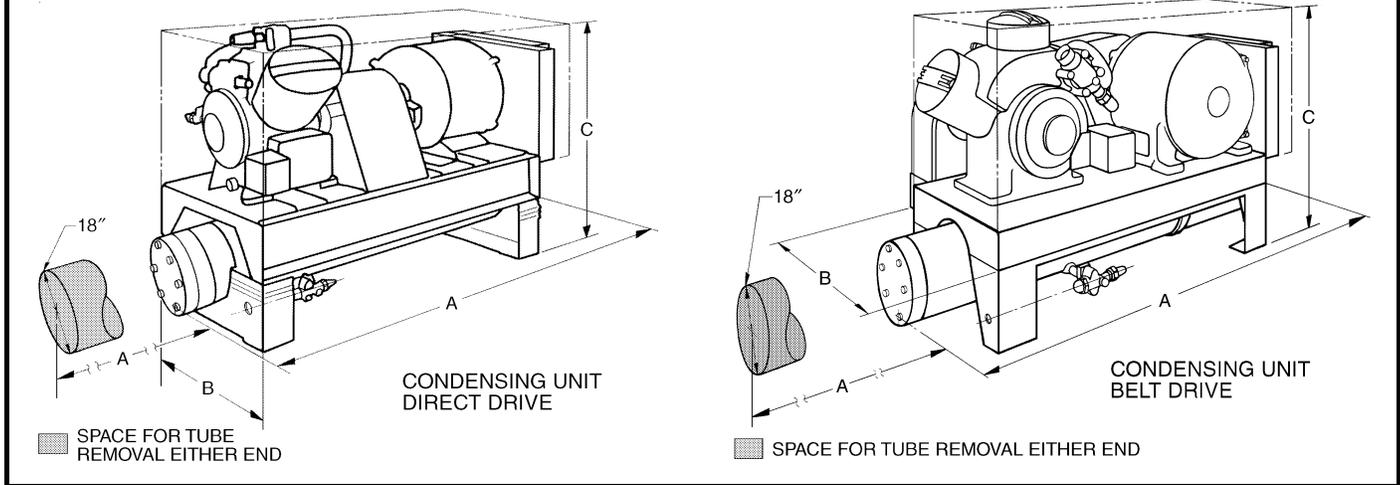
BD — Belt Drive  
DD — Direct Drive

\*Length is 73<sup>5</sup>/<sub>8</sub> in. when using a 326T Frame or smaller motor.

### NOTES:

1. Operating weights include water and refrigerant. Unit is not factory charged. Weights do *NOT* include motor.
2. Dimensions shown are ±1 in. and are shown with the largest control box. Actual height and width may be less based on hp and voltage of control box. Full dimensional drawings available on request for standard units. Certified drawings, which are specific to a unit model number and show in depth detail, are available at an additional charge.
3. Base-mounted compressor dimensions are in the table on page 10.

### CONDENSING UNIT DIMENSIONS



### CONDENSING UNITS

DRIVE	BELT (07FY, HY)													
COMPR	5F20		5F30	5F40	5F60	5H40		5H60			5H80			
COND P701	0610CX	0620CX	0620CX	0625CX	0840AX	0850AX	1065AX	0850AX	1065AX	1290AX	1290AX	12110AX	12140AX	14210AX
OPER WT (lb)	515	555	590	1090	1360	1845	2085	2055	2295	2520	3120	3180	3515	3820
A	46	52	52	69	69 <sup>5</sup> / <sub>8</sub>	81	76 <sup>1</sup> / <sub>2</sub>	81 <sup>1</sup> / <sub>8</sub>	76 <sup>5</sup> / <sub>8</sub>	76 <sup>5</sup> / <sub>8</sub>	79	85	115 <sup>3</sup> / <sub>8</sub>	108
B	26	26	26	26 <sup>7</sup> / <sub>8</sub>	26 <sup>7</sup> / <sub>8</sub>	31 <sup>1</sup> / <sub>2</sub>	31 <sup>1</sup> / <sub>2</sub>	32 <sup>7</sup> / <sub>16</sub>	32 <sup>7</sup> / <sub>16</sub>	32 <sup>7</sup> / <sub>16</sub>	44 <sup>1</sup> / <sub>4</sub>	44 <sup>1</sup> / <sub>4</sub>	44 <sup>1</sup> / <sub>4</sub>	44 <sup>1</sup> / <sub>4</sub>
C	31	31	31	42 <sup>3</sup> / <sub>8</sub>	49	66 <sup>1</sup> / <sub>2</sub>	66 <sup>1</sup> / <sub>2</sub>	72 <sup>5</sup> / <sub>8</sub>	72 <sup>5</sup> / <sub>8</sub>	72 <sup>5</sup> / <sub>8</sub>	73 <sup>7</sup> / <sub>8</sub>	73 <sup>7</sup> / <sub>8</sub>	73 <sup>7</sup> / <sub>8</sub>	73 <sup>7</sup> / <sub>8</sub>

DRIVE	BELT (07FY, HY) (cont)			
COMPR	5H120			
COND P701	1290AX	12110AX	12140AX	14210AX
OPER WT (lb)	3720	3795	4085	4370
A	79	85	108	115 <sup>3</sup> / <sub>8</sub>
B	48	48	48	48
C	74 <sup>1</sup> / <sub>8</sub>	74 <sup>1</sup> / <sub>8</sub>	74 <sup>1</sup> / <sub>4</sub>	74 <sup>1</sup> / <sub>4</sub>

DRIVE	DIRECT (07FY, HY)											
COMPR	5F40	5F60		5H40		5H46			5H60			
COND P701	0625CX	0840AX	0850AX	0850AX	1065AX	1065AX	1290AX	12110AX	1065AX	1290AX	12110AX	12140AX
OPER WT (lb)	1010	1190	1515	1735	2020	2020	2155	2225	2155	2320	2870	2930
A	69	70	78	83 <sup>7</sup> / <sub>8</sub>	79 <sup>3</sup> / <sub>8</sub>	79 <sup>3</sup> / <sub>8</sub>	79 <sup>1</sup> / <sub>4</sub>	85 <sup>1</sup> / <sub>4</sub>	79 <sup>3</sup> / <sub>8</sub>	79 <sup>1</sup> / <sub>4</sub>	85 <sup>1</sup> / <sub>4</sub>	108
B	25	25	25	30 <sup>1</sup> / <sub>2</sub>								
C	41 <sup>1</sup> / <sub>4</sub>	47 <sup>1</sup> / <sub>4</sub>	47 <sup>1</sup> / <sub>4</sub>	73	73	73	73	73	73	73	73	73

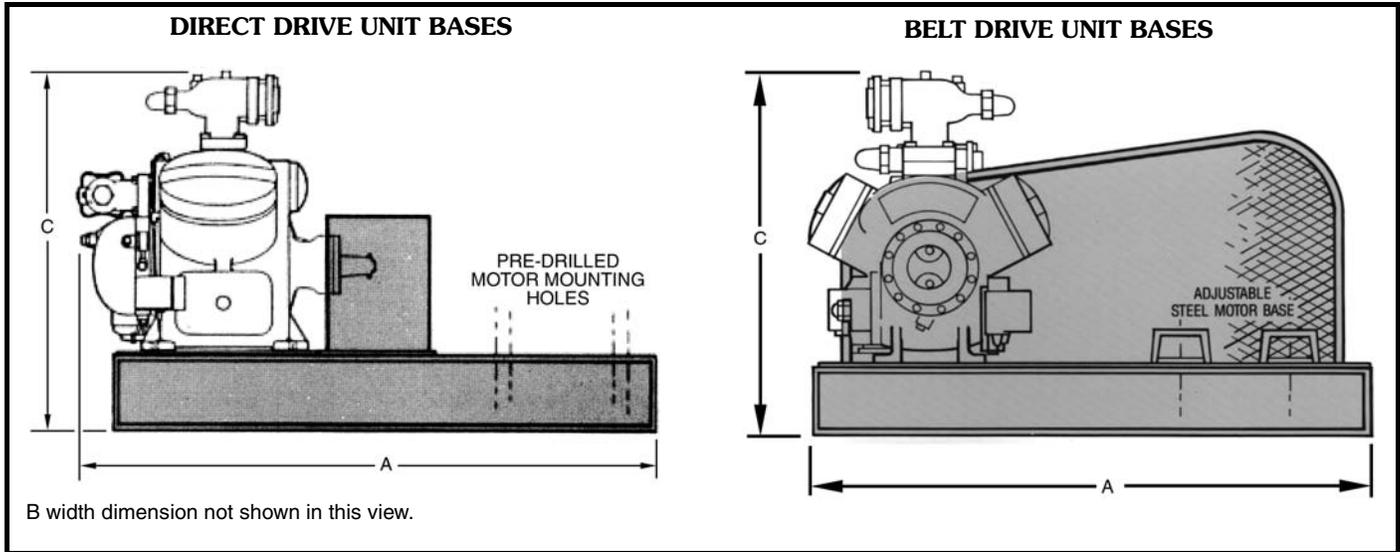
DRIVE	DIRECT (07FY, HY) (cont)											
COMPR	5H66				5H80				5H86			
COND P701	1290AX	12110AX	12140AX	14210AX	1290AX	12110AX	12140AX	14210AX	12110AX	12140AX	14210AX	16230AX
OPER WT (lb)	2320	2870	2930	3235	3060	3120	3445	3950	3120	3445	3750	4360
A	79 <sup>1</sup> / <sub>4</sub>	85 <sup>1</sup> / <sub>4</sub>	108	116	94	94	108	115 <sup>3</sup> / <sub>8</sub>	94	108	115 <sup>3</sup> / <sub>8</sub>	94
B	30 <sup>1</sup> / <sub>2</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>						
C	73	73	73	73	76 <sup>7</sup> / <sub>8</sub>	76 <sup>7</sup> / <sub>8</sub>	74 <sup>7</sup> / <sub>8</sub>	74 <sup>7</sup> / <sub>8</sub>	76 <sup>7</sup> / <sub>8</sub>	74 <sup>7</sup> / <sub>8</sub>	74 <sup>7</sup> / <sub>8</sub>	76 <sup>7</sup> / <sub>8</sub>

DRIVE	DIRECT (07FY, HY) (cont)					
COMPR	5H120				5H126	
COND P701	12110AX	12140AX	14210AX	16230AX	14210AX	16230AX
OPER WT (lb)	3700	4000	4260	4870	4260	4870
A	97 <sup>5</sup> / <sub>8</sub>	97 <sup>5</sup> / <sub>8</sub>	115 <sup>3</sup> / <sub>8</sub>	97 <sup>5</sup> / <sub>8</sub>	115 <sup>3</sup> / <sub>8</sub>	97 <sup>5</sup> / <sub>8</sub>
B	41	41	41	41	41	41
C	84	84	84	84	84	84

**NOTES:**

- Operating weights include water and refrigerant. Unit is not factory charged. Weights do NOT include motor.
- Dimensions shown are ±1 and are shown with the largest control box. Actual height and width may be less based on hp and voltage of control box. Full dimensional drawings available on request for standard units. Certified drawings, which are specific to a unit model number and show in depth detail, are available at an additional charge.

# Physical data and dimensions (cont)



## BASE-MOUNTED COMPRESSOR

COMPRESSOR	5F				5H				5H			
	20	30	40	60	40	60	80	120	46	66	86	126
<b>DIMENSIONS (in.)</b>												
<b>BD</b>												
<b>A</b>	38 <sup>1</sup> / <sub>4</sub>	38 <sup>1</sup> / <sub>4</sub>	48 <sup>1</sup> / <sub>8</sub>	48 <sup>1</sup> / <sub>8</sub>	57 <sup>3</sup> / <sub>4</sub>	59 <sup>1</sup> / <sub>4</sub>	65 <sup>1</sup> / <sub>4</sub>	67 <sup>1</sup> / <sub>8</sub>	—	—	—	—
<b>B</b>	20 <sup>5</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>8</sub>	25 <sup>1</sup> / <sub>8</sub>	26 <sup>1</sup> / <sub>4</sub>	31 <sup>1</sup> / <sub>4</sub>	24 <sup>3</sup> / <sub>8</sub>	45 <sup>1</sup> / <sub>8</sub>	48	—	—	—	—
<b>C</b>	28 <sup>1</sup> / <sub>2</sub>	28 <sup>1</sup> / <sub>2</sub>	25 <sup>5</sup> / <sub>8</sub>	30 <sup>3</sup> / <sub>4</sub>	37 <sup>1</sup> / <sub>4</sub>	34 <sup>1</sup> / <sub>16</sub>	42 <sup>1</sup> / <sub>4</sub>	43 <sup>1</sup> / <sub>2</sub>	—	—	—	—
<b>DD</b>												
<b>A</b>	—	—	48 <sup>1</sup> / <sub>8</sub>	48 <sup>1</sup> / <sub>4</sub>	59 <sup>3</sup> / <sub>8</sub>	60 <sup>7</sup> / <sub>8</sub>	81 <sup>1</sup> / <sub>2</sub>	84 <sup>7</sup> / <sub>8</sub>	59 <sup>3</sup> / <sub>8</sub>	60 <sup>7</sup> / <sub>8</sub>	81 <sup>1</sup> / <sub>2</sub>	84 <sup>7</sup> / <sub>8</sub>
<b>B</b>	—	—	21 <sup>1</sup> / <sub>2</sub>	21 <sup>1</sup> / <sub>2</sub>	24 <sup>1</sup> / <sub>2</sub>	27 <sup>3</sup> / <sub>8</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>2</sub>	27 <sup>3</sup> / <sub>8</sub>	31 <sup>3</sup> / <sub>4</sub>	31 <sup>3</sup> / <sub>4</sub>
<b>C</b>	—	—	24 <sup>1</sup> / <sub>2</sub>	30 <sup>3</sup> / <sub>4</sub>	37 <sup>1</sup> / <sub>4</sub>	33 <sup>15</sup> / <sub>16</sub>	42 <sup>1</sup> / <sub>4</sub>	43 <sup>1</sup> / <sub>2</sub>	37 <sup>1</sup> / <sub>4</sub>	33 <sup>15</sup> / <sub>16</sub>	42 <sup>1</sup> / <sub>4</sub>	43 <sup>1</sup> / <sub>2</sub>

### LEGEND

- BD** — Belt Drive
- DD** — Direct Drive

NOTE: Dimensions shown are ± 1-inch.

# Field-installed accessories



Enhance your system's capabilities and performance with the many quality accessories available for the 5F,H line.

**Carrier control panel (32C)** for 05FY, 05HY, 07FY, or 07HY compressor and condensing units allows precision monitoring and control of compressor functions such as start-up and operation, oil pressure, and short-cycle protection. Eliminates time-consuming and costly field fabrication. All control panels meet NEMA (National Electrical Manufacturing Association) requirements for enclosures (see current literature for details).

**Water-cooled heads** protect compressor by keeping heads cool when compression ratios or discharge gas temperatures are high (see ratings).

**Partial-flow oil filter** (available for 5H40 through 5H86 compressors) helps prolong service life of the equipment. This filter supplements filtration provided by the fine-mesh screen furnished as standard equipment on all compressors.

**Water-cooled oil cooler** removes excessive heat resulting from highly super-heated suction gas or high compression ratios to prevent oil breakdown and increase life expectancy of compressor and its components.

**Crankcase equalizer coverplate** provides easy points for interconnecting gas and oil equalizer lines, for equalizing pressures in compressor crankcases on the same circuit.

**Couplings** connect ends of drive shaft and driven unit, transmit torque, and allow for a small amount of shaft misalignment. Couplings prevent damage to bearings and seals and absorb compressor vibrations to prolong service life.

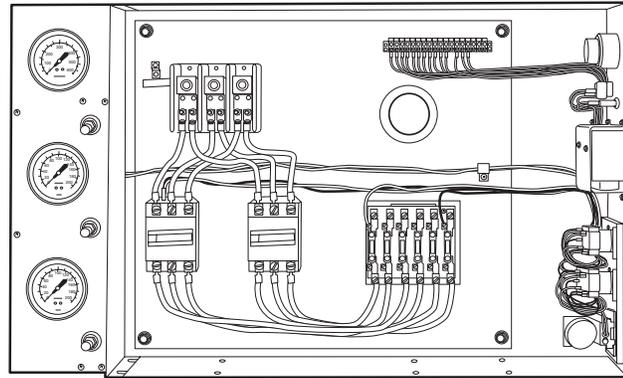
**Belt-drive package** (motor pulley, belts, and compressor flywheel) is available for compressor operation at 1750 rpm or at 1450 rpm with 1750 rpm motors. All components are precision matched to provide optimum compressor performance with minimum wear.

**Crankcase heater and relay** (separate items) prevent refrigerant from diluting oil during shutdown to ensure proper compressor lubrication.

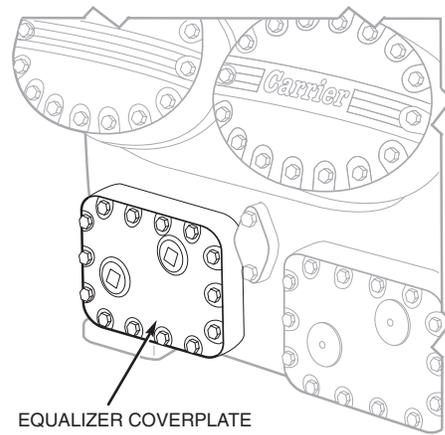
**Muffler** attenuates sound and gas pulsations, resulting in low sound levels.

**Vibration isolators** prevent transmission of vibration to building structure and provide unobtrusive operation.

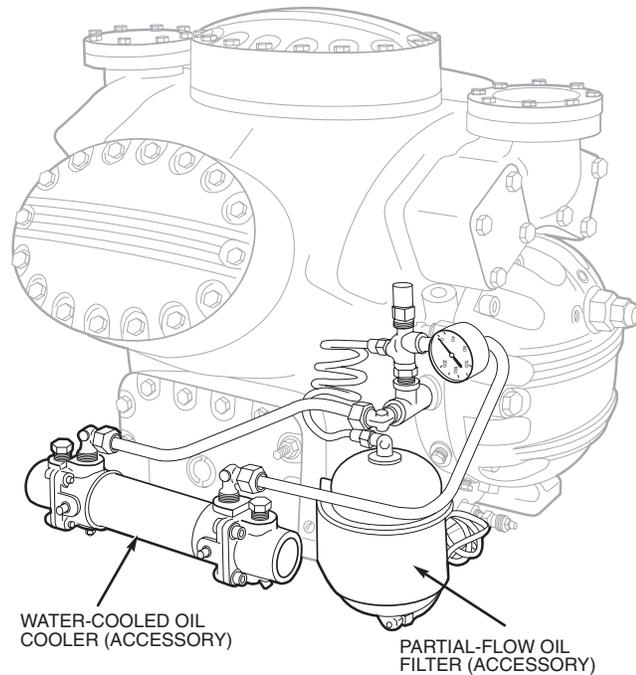
**Motor fastening** set to mount motor to compressor base.



CARRIER CONTROL PANEL



EQUALIZER COVERPLATE



WATER-COOLED OIL COOLER (ACCESSORY)

PARTIAL-FLOW OIL FILTER (ACCESSORY)

# Selection procedure (with example)



Performance data is given for Refrigerants 134a, 22, and 507/404A for all units.

## Compressor unit

### I Determine job requirements.

Example:

Given:

Refrigerant . . . . . R-22  
 Cooling Load . . . . . 38 Tons  
 Saturated Suction Temp (SST) . . . . . 40 F  
 Saturated Discharge Temp (SDT) . . . . . 120 F

### II Select compressor unit.

Enter ratings table for desired refrigerant at the required suction (SST) and discharge (SDT) temperatures.

Example:

Enter ratings table for R-22, page 16. Read down the table under 40 F SST and 120 F SDT to find a compressor with the capacity to meet the 38-ton load requirement. Select a 5H40 compressor.

### III Obtain complete compressor performance data from ratings table.

In this example, when selecting a condenser (air cooled or water cooled), it must be able to handle the Total Heat of Rejection (THR) of 47.5 tons. All THR ratings equal 12,000 Btuh/ton. The brake horsepower (BHP) of the motor required is 44.5 and a 50 horsepower motor or larger should be chosen.

COMPRESSOR PERFORMANCE 5H40				
SST	SDT	CAP.	BHP	THR
40	120	38.0	44.5	47.5

### IV Consult rating notes for capacity adjustment factors which may be required (pages 13, 23 and 24).

## Condensing unit selection

When selecting a condensing unit, the rated compressor capacity must be corrected to compensate for the available refrigerant subcooling. A P701 condenser nominally provides 2F of refrigerant subcooling while the compressor ratings are based on 15 F subcooling. The capacity rating should be adjusted by .5% for each degree of subcooling difference for R-22 and .6% for R-134a or R-507/404A. Since there is a 13 F difference, the capacity must be reduced by 6.5% for R-22 or 7.8% for R-134a or R-507/404A.

### I Determine job requirements.

Example:

Given:

Refrigerant . . . . . R-22  
 Cooling Load . . . . . 17 Tons  
 Saturated Suction Temp (SST) . . . . . 40 F  
 Saturated Discharge Temp (SDT) . . . . . 105 F

### II Select compressor unit.

The load requirement must be corrected to utilize the rating tables for unit selection.

$$\text{Corrected Required Capacity} = \text{Required Load} / .935$$

Example:

$$\begin{aligned} \text{Load Requirement} &= 17 \text{ Tons} \\ \text{Corrected Required Capacity} &= 17 \text{ Tons} / .935 \\ &= 18.2 \text{ Tons} \end{aligned}$$

Enter rating table for R-22. Under 40 F SST and 105 F SDT, select a 5F40 compressor. This selection meets the job requirements. Use direct interpolation where job requirements fall between the values shown.

### III Correct compressor unit rating for 2 F of refrigerant subcooling available from the P701 condenser.

$$\text{Actual Capacity} = \text{Rated Capacity} \times .935$$

$$\begin{aligned} \text{Actual THR} &= \text{Actual Capacity} \\ &+ (\text{Rated BHP} \times .212)^* \end{aligned}$$

\*The .212 multiplier is used to determine heat of compression (in tons) for an open drive compressor.

Example:

$$\begin{aligned} \text{Actual Capacity} &= 18.2 \times .935 \\ &= 17 \text{ Tons} \\ \text{Actual THR} &= 17 \text{ Tons} + (17.3 \times .212) \\ &= 17 + 3.7 \\ &= 20.7 \text{ Tons} \end{aligned}$$

NOTE: Brake horsepower requirements are not affected by variations in system subcooling.

### IV Corrected compressor unit performance.

COMPR	SST	SDT	CAP.	BHP	THR
5F40	40	105	17	17.3	20.7

### V Select condenser.

1. Determine the GTD (Greatest Temperature Difference), which is the temperature difference between the entering water temperature and the saturated discharge temperature. In this example, 20 F will be used which is typical.
2. Enter the condenser capacity and flow rate tables for the desired GTD and THR. Convert THR to Btuh by multiplying by 12,000. It is recommended to stay within the upper third of the condenser table selected. A P701-0625AX condenser meets the job requirements.

NOTE: See condenser selection recommendations on page 13.

3. The required gpm for this example is 37 and the pressure drop is 1.32 psid.

### VI Consult rating notes for capacity adjustment factors which may be required (pages 13, 23 and 24).



## Selection notes

### Compressor and condensing units

1. *Saturated Suction Temperature* — The saturated suction temperature used in selection of a compressor or condensing unit should be the saturated temperature at the compressor. To obtain proper unit selection, line losses should be considered (suction and/or discharge line loss).
2. R-22 applications require an oil cooler when (absolute) pressure ratio is greater than 5.0; oil cooler and water-cooled heads required when discharge temperature is greater than 250 F.

R-134a applications require an oil cooler and water-cooled heads when the discharge temperature is greater than 275 F.

R-507/404A applications require an oil cooler when the SST is less than -20 F and require an oil cooler

and water-cooled heads when the discharge temperature is greater than 275 F.

3. *Condensing Unit Selection* — There are a number of condensers that may be selected for each compressor for each refrigerant listed. Selection of the proper condenser may depend on several factors:
  - a. Water flow rate
  - b. Pumping head
  - c. Condensing unit efficiency
  - d. First cost

Selecting a larger condenser provides for better operation under adverse conditions such as high condenser fouling or high entering-water temperatures. Unit capacity and efficiency can also be increased at nominal flow rates over utilization of a smaller condenser. Final selection should be based on the present and future job requirements and individual job economics.

## Performance data

### Rating notes

#### Compressor and condensing units

1. Compressor ratings are based on 1750 rpm and 15° F subcooling.
2. Compressor performance must be adjusted for condensing units which provide a nominal 2° F of refrigerant subcooling (see Condensing Unit Selection).
3. Refrigerant temperatures shown are saturated temperatures corresponding to pressures indicated at compressor. Actual gas temperatures are higher because of superheat.
4. Capacities are based on actual suction gas temperatures to the compressor of 65 F for R-134a and R-507/404A (this assumes superheat is obtained from liquid-suction interchanger or in evaporator). Capacity corrections for other than rated suction gas temperatures may be obtained from Rating Basis and Capacity Multipliers table, page 23.
5. Capacities for R-22 are based on 15° F suction gas superheat, which normally occurs because of expansion valve operation and line losses. R-22 ratings can be used without adjustment.
6. The discharge line loss on all 07FY, 07HY condensing units is negligible. The saturated discharge temperature (SDT) is therefore equal to the saturated condensing temperature (SCT).
7. THR is in tons and equals 12,000 Btuh/ton.

### Base condensers

1. The capacities listed in the Condenser Capacity and Flow Rate tables are based on 105 SCT (Saturated Condensing Temperature). When operating at other SCTs between 90 F and 135 F, the change in condenser capacity is minimal. Contact your Carrier Factory Sales Representative for the exact capacity, if required. Also, all the data points available in hard copy format for R-22 are not available for R-134a and R-507/404A. You can either interpolate or contact your Carrier Factory Sales Representative.
2. GPM shown in Condenser Capacity and Flow Rate tables are based on .0005 total fouling factor. For other fouling factors contact your Carrier Factory Sales Representative.
3. Stay within the GPM shown in the tables. A GPM below those listed can cause tube fouling and above those listed can cause tube erosion.
4. Saturated Condensing Temperature (SCT) = Saturated Discharge Temperature (SDT) – Discharge Line Loss (F). Discharge line loss may occur when the condenser is remote from compressor.
5. Condenser nominal tons equals 14,400 Btuh. This equates to 12,000 Btuh/ton at the evaporator plus an additional 20% for heat of compression.

# Performance data (cont)



## CONDENSER CAPACITIES

UNIT P701-	NOMINAL TONS	LETTER CODE	THR (Btuh)	GPM	PRESSURE DROP (PSI)	NO. PASSES	SURFACE (sq ft)	PUMP DOWN (lb)
0605CX	5	—	87,846	15	4.8	6	6.1	17.0
0607CX	7.5	—	119,869	22.5	7.4	6	7.5	15.7
0610CX	10	A	174,765	30	5.1	4	11.8	24.1
0615CX	15	B	273,709	45	11.0	4	17.6	31.2
0620CX	20	C	353,820	60	13.5	4	21.9	27.1
0625AX	25	D	371,578	75	4.7	2	22.3	39.3
0630AX	30	E	437,433	90	5.2	2	26.1	35.9
0840AX	40	F	608,148	120	4.5	2	37.1	70.4
0850AX	50	G	770,641	150	7.5	2	45.0	84.8
1065AX	65	H	944,411	195	5.2	2	55.7	111.2
1075AX	75	J	1,155,961	225	7.6	2	67.5	134.2
1290AX	90	K	1,312,300	270	6.0	2	78.0	158.5
12110AX	110	L	1,645,759	330	9.6	2	94.5	191.5
12140AX	140	M	2,027,756	420	2.1	1	127.5	257.7
12150AX	150	N	2,187,086	450	2.1	1	139.6	246.6
12200AX	200	P	2,967,634	600	4.1	1	175.6	309.8
14140AX	140	Q	2,037,996	420	5.6	2	120.7	160.7
14165AX	165	R	2,518,541	495	8.4	2	146.2	194.2
16200AX	200	S	2,902,774	600	5.5	2	170.9	201.9
14210AX	210	T	3,086,396	630	2.3	1	197.3	261.3
16210AX	210	U	3,196,081	630	7.9	2	184.5	264.7
16230AX	230	V	3,544,948	690	7.8	2	206.9	244.0
14270AX	270	W	3,922,026	810	4.8	1	229.2	345.8
14290AX	290	X	4,224,263	870	4.9	1	248.4	328.3
16300AX	300	Y	4,374,171	900	2.2	1	279.2	328.3
16360AX	360	Z	5,298,332	1080	4.2	1	313.3	447.4
16400AX	400	—	5,935,269	1200	4.2	1	351.5	412.5

### LEGEND

THR — Total Heat of Rejection

### NOTES:

1. Nominal tons per ARI standards. ARI Standards include 105 F condensing temp, 85 F inlet cooling water, 14,400 Btuh/ton, .0005 total fouling factor with R-22 service.
2. P701-0615CX, P701-0620CX, P701-1290AX, P701-12110AX, P701-14165AX and P701-16210AX units have excessive velocity at ARI Standard flow rate. Flow rate shown is within acceptable velocity limits.

3. Pump down capacities based on 80% of free shell volume with R-22 at 90 F (per ARI standards).
4. Consult Totaline sales representative for marine condenser capacities.
5. Pressure drop is in psi. To convert to feet, multiply by 2.31.
6. Letter code refers to the condenser size shown as the last digit for an 07FY/HY. New letter codes are current as of 3/1/2001.



**COMPRESSOR RATINGS; R-134a**

COMPRESSOR		5F20			5F30			5F40			5F60			5H40			5H46		
SST	SDT	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR
10	90	2.9	4.0	3.8	4.4	6.0	5.7	5.8	7.9	7.5	8.7	11.7	11.2	13.7	18.7	17.7	17.1	24.3	22.2
	100	2.7	4.2	3.6	4.0	6.3	5.4	5.3	8.3	7.1	8.0	12.3	10.6	12.5	19.5	16.6	15.5	25.7	20.9
	105	2.5	4.3	3.4	3.8	6.4	5.2	5.1	8.5	6.9	7.6	12.6	10.2	11.9	19.7	16.1	14.7	26.3	20.3
	110	2.4	4.4	3.3	3.6	6.5	5.0	4.8	8.6	6.6	7.2	12.8	9.9	11.3	19.8	15.5	13.9	26.8	19.6
	120	2.1	4.5	3.1	3.2	6.7	4.7	4.3	8.8	6.2	6.5	13.1	9.2	10.1	19.8	14.3	12.5	27.6	18.3
	135	1.8	4.5	2.7	2.7	6.7	4.1	3.6	8.9	5.5	5.4	13.2	8.2	8.3	20.1	12.6	10.3	28.1	16.3
20	90	3.9	4.5	4.8	5.8	6.6	7.2	7.7	8.7	9.6	11.6	13.0	14.3	18.3	20.7	22.7	22.7	26.8	28.4
	100	3.6	4.8	4.6	5.4	7.1	6.9	7.1	9.4	9.1	10.6	14.0	13.6	16.8	22.0	21.4	20.8	28.9	26.9
	105	3.4	4.9	4.4	5.1	7.3	6.7	6.8	9.6	8.8	10.2	14.4	13.2	16.0	22.5	20.8	19.8	29.9	26.2
	110	3.2	5.0	4.3	4.9	7.5	6.5	0.7	9.9	8.6	9.7	14.7	12.8	15.3	22.8	20.1	18.9	30.7	25.4
	120	2.9	5.2	4.0	4.4	7.8	6.1	5.9	10.3	8.1	8.8	15.4	12.1	13.8	23.4	18.8	17.1	32.3	23.9
	135	2.5	5.4	3.6	3.7	8.1	5.4	5.0	10.7	7.3	7.5	16.0	10.9	11.6	24.4	16.8	14.4	33.8	21.6
30	90	5.0	4.8	6.0	7.5	7.1	9.0	10.0	9.4	12.0	15.0	14.0	18.0	23.8	22.6	28.6	29.5	28.8	35.6
	100	4.6	5.2	5.7	6.9	7.8	8.6	9.3	10.3	11.4	13.9	15.3	17.1	21.9	24.5	27.1	27.2	31.6	33.9
	105	4.4	5.4	5.6	6.7	8.1	8.4	8.9	10.7	11.2	13.3	15.9	16.7	21.0	25.3	26.4	26.1	32.9	33.0
	110	4.3	5.6	5.4	6.4	8.4	8.1	8.5	11.0	10.9	12.8	16.5	16.3	20.1	26.0	25.6	24.9	34.2	32.2
	120	3.9	6.0	5.1	5.8	8.9	7.7	7.8	11.7	10.3	11.7	17.5	15.4	18.3	27.1	24.1	22.7	36.5	30.5
	135	3.3	6.3	4.7	4.9	9.5	7.0	6.7	12.5	9.4	10.0	18.7	14.0	15.7	29.1	21.9	19.5	39.2	27.8
40	90	6.4	5.0	7.4	9.5	7.4	11.1	12.7	9.8	14.8	19.2	14.5	22.2	30.4	23.6	35.4	37.7	30.0	44.0
	100	5.9	5.6	7.1	8.9	8.3	10.6	11.9	10.9	14.2	17.8	16.3	21.2	28.2	26.4	33.8	34.9	33.6	42.1
	105	5.7	5.8	6.9	8.5	8.7	10.4	11.4	11.5	13.9	17.1	17.1	20.7	27.1	27.5	32.9	33.6	35.3	41.1
	110	5.5	6.1	6.8	8.2	9.1	10.1	11.0	12.0	13.5	16.4	17.9	20.2	26.0	28.6	32.1	32.2	37.0	40.1
	120	5.0	6.6	6.4	7.5	9.8	9.5	10.1	13.0	12.8	15.1	19.3	19.2	23.9	30.5	30.3	29.6	40.1	38.1
	135	4.4	7.2	5.9	6.5	10.7	8.7	8.8	14.2	11.8	13.2	21.2	17.6	20.7	33.5	27.8	25.6	44.2	35.0

COMPRESSOR		5H60			5H66			5H80			5H86			5H120			5H126		
SST	SDT	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR									
10	90	20.6	27.8	26.5	25.6	36.2	33.3	27.5	36.8	35.3	34.1	47.9	44.3	41.3	54.7	52.9	51.2	74.0	67.0
	100	18.7	29.4	25.0	23.4	38.3	31.5	25.0	39.0	33.3	31.1	50.6	41.8	37.6	57.9	49.9	46.7	77.6	63.1
	105	17.8	30.1	24.2	22.2	39.2	30.5	23.8	39.8	32.2	29.6	51.8	40.5	35.8	59.3	48.3	44.4	78.6	61.1
	110	16.9	30.6	23.4	21.1	39.9	29.6	22.6	40.5	31.2	28.1	52.8	39.3	34.0	60.4	46.8	42.2	79.2	59.0
	120	15.2	31.5	21.9	18.9	41.1	27.6	20.2	41.5	29.0	25.1	54.3	36.7	30.4	62.2	43.6	37.8	80.1	54.7
	135	12.6	32.1	19.4	15.8	41.8	24.6	16.8	42.1	25.7	20.9	55.2	32.6	25.2	63.4	38.7	31.4	81.9	48.7
20	90	27.4	30.8	33.9	34.0	40.1	42.5	36.5	41.1	45.2	45.3	53.2	56.6	54.8	60.7	67.7	68.0	80.6	85.1
	100	25.1	33.2	32.2	31.2	43.3	40.4	33.5	44.3	42.9	41.6	57.3	53.7	50.3	65.5	64.2	62.5	85.9	80.7
	105	24.0	34.3	31.3	29.9	44.6	39.3	32.0	45.6	41.7	39.7	59.2	52.3	48.1	67.7	62.4	59.7	87.8	78.3
	110	22.9	35.3	30.4	28.5	45.9	38.3	30.5	46.8	40.5	37.9	60.9	50.8	45.9	69.6	60.6	57.0	89.4	75.9
	120	20.7	36.9	28.6	25.8	48.1	36.0	27.6	48.9	38.0	34.3	63.7	47.8	41.5	73.0	57.0	51.5	92.1	71.1
	135	17.5	38.7	25.8	21.9	50.4	32.6	24.1	51.0	34.2	29.1	66.7	43.2	35.1	76.6	51.4	43.6	97.2	64.3
30	90	35.7	33.0	42.7	44.3	43.1	53.4	47.5	44.4	56.9	59.0	57.1	71.1	71.4	65.2	85.2	88.6	84.5	106.5
	100	32.9	36.4	40.6	40.9	47.4	50.9	43.8	48.8	54.2	54.4	62.9	67.8	65.9	71.8	81.1	81.8	91.8	101.3
	105	31.5	37.9	39.6	39.2	49.4	49.7	42.0	50.8	52.8	52.2	65.5	66.1	63.2	74.9	79.1	78.4	94.7	98.5
	110	30.2	39.3	38.5	37.5	51.3	48.4	40.2	52.6	51.4	49.9	68.0	64.4	60.5	77.8	77.0	75.1	97.4	95.7
	120	27.5	41.9	36.4	34.2	54.6	45.8	36.7	55.8	48.5	45.5	72.5	60.9	55.1	83.0	72.7	68.4	102.5	90.2
	135	23.6	45.0	33.2	29.4	58.7	41.8	31.5	59.7	44.1	39.1	77.7	55.6	47.3	89.2	66.2	58.7	111.4	82.3
40	90	45.7	34.4	53.0	56.7	44.8	66.2	60.9	46.1	70.6	75.6	59.3	88.1	91.3	67.9	105.7	113.3	87.5	131.9
	100	42.3	38.7	50.5	52.5	50.4	63.2	56.4	52.0	67.4	70.0	66.9	84.2	84.7	76.5	100.9	105.1	97.2	125.7
	105	40.7	40.7	49.3	50.5	53.1	61.8	54.2	54.6	65.8	67.3	70.5	82.2	81.4	80.6	98.5	101.0	101.4	122.5
	110	39.0	42.7	48.1	48.5	55.6	60.3	52.0	57.1	64.1	64.6	73.8	80.2	78.1	84.4	96.0	97.0	105.4	119.3
	120	35.8	46.3	45.6	44.5	60.3	57.2	47.7	61.7	60.8	59.2	80.0	76.2	71.6	91.6	91.1	88.9	113.2	112.9
	135	31.0	50.9	41.8	38.5	66.3	52.6	41.3	67.5	55.6	51.3	87.9	69.9	62.1	100.8	83.4	77.1	126.3	103.9

**LEGEND**

- Bhp** — Brake Horsepower
- Cap.** — Capacity (Tons)
- SDT** — Saturated Discharge Temperature (F)
- SST** — Saturated Suction Temperature (F)
- THR** — Total Heat of Rejection (Tons)

NOTE: An oil cooler is recommended for all long stroke compressors (5H46, 66, 86, 126).

# Performance data (cont)



## COMPRESSOR RATINGS; R-22

COMPRESSOR		5F20			5F30			5F40			5F60			5H40			5H46		
SST	SDT	Cap.	Bhp	THR															
20	90	6.3	7.1	7.8	9.5	10.5	11.7	12.6	14.0	15.6	19.0	20.9	23.5	30.6	31.9	37.4	37.9	41.5	46.7
	100	5.9	7.6	7.5	8.8	11.3	11.2	11.7	15.0	14.9	17.7	22.5	22.5	28.3	33.9	35.5	35.0	44.1	44.3
	105	5.6	7.8	7.3	8.5	11.6	10.9	11.3	15.4	14.6	17.0	23.2	21.9	27.2	34.9	34.6	33.5	45.3	43.2
	110	5.4	8.0	7.1	8.1	11.9	10.6	10.8	15.9	14.2	16.3	23.8	21.4	26.1	35.9	33.7	32.2	46.6	42.1
	120	4.9	8.3	6.7	7.4	12.4	10.0	9.9	16.6	13.4	14.9	24.6	20.1	24.0	37.7	32.0	29.9	49.0	40.3
	135	4.1	8.6	5.9	6.4	13.0	9.1	8.4	17.6	12.1	12.8	25.4	18.2	21.2	39.9	29.7	27.8	52.3	38.9
30	90	8.0	7.4	9.6	12.0	10.9	14.3	16.0	14.6	19.1	24.1	21.6	28.7	38.4	33.5	45.5	47.6	43.5	56.8
	100	7.5	8.1	9.2	11.2	12.0	13.8	14.9	15.9	18.3	22.5	23.9	27.6	35.7	36.2	43.4	44.2	47.0	54.1
	105	7.2	8.4	9.0	10.8	12.5	13.5	14.4	16.6	17.9	21.7	24.9	27.0	34.4	37.5	42.4	42.5	48.7	52.8
	110	6.9	8.6	8.8	10.4	12.9	13.1	13.8	17.1	17.5	20.9	25.7	26.3	33.1	38.8	41.3	40.9	50.4	51.6
	120	6.3	9.1	8.2	9.6	13.6	12.5	12.7	18.2	16.6	19.2	27.0	24.9	30.5	41.4	39.3	38.0	53.8	49.4
	135	5.3	9.5	7.4	8.3	14.4	11.4	10.9	19.6	15.1	16.7	28.3	22.7	27.0	44.7	36.5	34.9	58.6	47.4
40	90	10.0	7.4	11.6	15.0	11.1	17.3	20.0	14.7	23.1	30.0	21.7	34.6	47.3	34.4	54.6	58.6	44.8	68.1
	100	9.4	8.3	11.2	14.1	12.4	16.7	18.7	16.5	22.2	28.2	24.7	33.4	44.2	37.8	52.2	54.7	49.2	65.1
	105	9.1	8.7	10.9	13.6	13.0	16.4	18.1	17.3	21.7	27.3	26.0	32.8	42.6	39.5	51.0	52.7	51.4	63.6
	110	8.7	9.1	10.7	13.1	13.6	16.0	17.4	18.0	21.3	26.3	27.1	32.0	41.1	41.2	49.8	50.9	53.6	62.2
	120	8.0	9.7	10.1	12.1	14.5	15.2	16.1	19.4	20.2	24.3	28.9	30.5	38.0	44.5	47.5	47.4	58.0	59.7
	135	6.8	10.4	9.0	10.7	15.7	14.0	14.0	21.3	18.5	21.4	30.8	27.9	33.7	49.2	44.1	43.3	64.4	57.0
50	90	12.3	7.2	13.9	18.4	10.8	20.7	24.6	14.3	27.6	36.9	21.0	41.4	57.3	34.7	64.6	71.0	45.0	80.6
	100	11.6	8.4	13.4	17.4	12.5	20.0	23.1	16.5	26.6	34.8	24.8	40.1	53.7	38.8	61.9	66.6	50.4	77.3
	105	11.2	8.9	13.1	16.9	13.2	19.7	22.4	17.5	26.1	33.7	26.4	39.3	51.9	40.9	60.6	64.4	53.2	75.6
	110	10.8	9.3	12.8	16.3	13.9	19.3	21.6	18.5	25.6	32.6	27.9	38.5	50.1	43.0	59.2	62.2	55.9	74.0
	120	10.0	10.1	12.1	15.2	15.2	18.4	20.1	20.3	24.4	30.4	30.3	36.8	46.5	47.1	56.5	58.1	61.4	71.1
	135	8.6	11.0	10.9	13.5	16.7	17.0	17.6	22.7	22.4	26.9	32.9	33.9	41.3	53.1	52.6	53.0	69.6	67.7

COMPRESSOR		5H60			5H66			5H80			5H86			5H120			5H126		
SST	SDT	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR
20	90	46.0	47.5	56.0	57.1	61.8	70.2	61.3	63.1	74.7	76.2	82.1	93.6	92.1	94.3	112.1	114.4	122.6	140.4
	100	42.5	50.6	53.2	52.8	65.8	66.7	56.7	67.2	71.0	70.4	87.4	88.9	85.2	100.4	106.5	105.6	130.6	133.3
	105	40.8	52.1	51.9	50.7	67.8	65.0	54.4	69.2	69.1	67.5	90.0	86.6	81.8	103.4	103.7	101.4	134.5	129.9
	110	39.2	53.6	50.5	48.6	69.8	63.4	52.2	71.1	67.3	64.8	92.5	84.4	78.4	106.3	101.0	97.3	138.2	126.6
	120	36.0	56.6	48.0	44.8	73.5	60.4	47.8	74.8	63.7	59.5	97.0	80.1	71.8	112.1	95.6	89.5	145.2	120.3
	135	31.6	60.8	44.5	39.9	78.8	56.7	41.7	79.3	58.5	52.8	101.7	74.4	62.3	120.3	87.9	79.7	153.6	112.3
30	90	57.6	49.9	68.2	71.5	64.9	85.3	76.9	66.3	90.9	95.4	86.2	113.7	115.4	99.0	136.4	143.3	128.7	170.6
	100	53.6	54.0	65.0	66.5	70.2	81.4	71.5	71.7	86.7	88.7	93.3	108.5	107.3	107.1	130.1	133.1	139.3	162.7
	105	51.6	56.0	63.5	64.0	72.9	79.5	68.8	74.4	84.6	85.3	96.7	105.9	103.3	111.1	126.9	128.1	144.6	158.8
	110	49.6	58.0	61.9	61.6	75.5	77.6	66.1	77.0	82.5	82.0	100.1	103.3	99.3	115.1	123.7	123.2	149.7	155.0
	120	45.7	62.1	58.9	56.9	80.7	74.0	60.8	82.2	78.2	75.6	106.5	98.2	91.4	123.1	117.5	113.7	159.5	147.6
	135	40.2	68.0	54.6	50.6	88.3	69.4	53.1	89.1	72.0	66.9	114.4	91.2	79.6	134.7	108.2	101.0	172.5	137.7
40	90	70.9	51.3	81.8	88.0	66.7	102.1	94.6	68.1	109.0	117.3	88.6	136.1	141.9	101.8	163.5	176.1	132.3	204.2
	100	66.2	56.4	78.2	82.2	73.4	97.7	88.4	75.0	104.3	109.6	97.5	130.3	132.6	112.0	156.4	164.5	145.6	195.4
	105	63.9	59.0	76.4	79.3	76.7	95.6	85.2	78.4	101.8	105.7	101.9	127.3	127.9	117.1	152.8	158.6	152.3	191.0
	110	61.5	61.6	74.6	76.4	80.1	93.4	82.1	81.8	99.4	101.8	106.3	124.4	123.2	122.2	149.2	152.9	158.9	186.6
	120	56.9	66.8	71.1	70.8	86.9	89.3	75.8	88.5	94.5	94.2	114.8	118.5	113.8	132.5	141.9	141.6	171.8	178.0
	135	50.1	74.6	65.9	63.0	96.9	83.6	66.3	98.0	87.1	83.4	125.9	110.1	99.6	147.9	131.0	125.9	189.7	166.1
50	90	85.9	51.6	96.8	106.5	67.1	120.8	114.5	68.6	129.1	142.0	89.2	160.9	171.8	102.4	193.5	213.1	133.1	241.3
	100	80.5	57.9	92.8	99.9	75.3	115.8	107.4	76.9	123.7	133.2	100.0	154.4	161.1	114.9	185.5	199.8	149.4	231.5
	105	77.8	61.0	90.8	96.5	79.4	113.4	103.8	81.1	121.0	128.7	105.5	151.1	155.7	121.2	181.4	193.1	157.5	226.6
	110	75.1	64.2	88.7	93.2	83.5	110.9	100.1	85.3	118.2	124.2	110.9	147.8	150.3	127.5	177.4	186.4	165.8	221.6
	120	69.6	70.7	84.6	86.6	91.9	106.1	92.8	93.7	112.6	155.3	121.5	141.1	139.3	140.3	169.1	173.2	181.9	211.8
	135	61.5	80.4	78.6	77.3	104.5	99.4	81.5	105.9	104.0	102.3	136.1	131.2	122.6	159.5	156.4	154.3	204.9	197.8

### LEGEND

- Bhp** — Brake Horsepower
- Cap.** — Capacity (Tons)
- SDT** — Saturated Discharge Temperature (F)
- SST** — Saturated Suction Temperature (F)
- THR** — Total Heat of Rejection (Tons)

NOTE: An oil cooler is recommended for all long stroke compressors (5H46, 66, 86, 126).

Oil cooler and water-cooled heads required.



**COMPRESSOR RATINGS; R-507/404A**

UNIT		5F20			5F30			5F40			5F60			5H40			5H46		
SST	SDT	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR
-40	90	1.0	3.5	1.8	1.5	5.1	2.6	2.1	6.8	3.5	3.1	10.2	5.3	5.0	14.9	8.2	6.2	19.4	10.3
	100	0.8	3.3	1.5	1.3	4.9	2.3	1.7	6.5	3.1	2.5	9.7	4.6	4.1	14.4	7.2	5.1	18.7	9.0
	105	0.7	3.2	1.4	1.1	4.8	2.1	1.5	6.3	2.8	2.2	9.4	4.2	3.6	14.1	6.6	4.5	18.3	8.4
	110	0.6	3.1	1.3	0.9	4.7	1.9	1.3	6.2	2.6	1.9	9.2	3.8	3.1	13.9	6.1	3.9	18.0	7.7
-20	90	2.1	5.0	3.2	3.2	7.5	4.8	4.3	10.0	6.4	6.5	14.9	9.6	10.3	22.2	15.1	12.8	28.9	18.9
	100	1.9	5.1	3.0	2.9	7.5	4.5	3.9	10.0	6.0	5.8	14.9	9.0	9.3	22.4	14.1	11.6	29.1	17.7
	105	1.8	5.1	2.9	2.7	7.5	4.3	3.6	10.0	5.8	5.5	14.9	8.7	8.8	22.4	13.6	10.9	29.1	17.1
	110	1.7	5.1	2.8	2.5	7.5	4.1	3.4	10.0	5.5	5.2	14.9	8.3	8.2	22.5	13.0	10.2	29.2	16.4
0	90	3.9	6.3	5.2	5.8	9.4	7.8	7.8	12.5	10.4	11.7	18.7	15.6	18.5	28.6	24.5	22.9	37.1	30.8
	100	3.5	6.6	4.9	5.3	9.8	7.4	7.1	13.0	9.9	10.7	19.4	14.8	16.9	29.7	23.2	21.0	38.6	29.2
	105	3.4	6.7	4.8	5.1	9.9	7.2	6.8	13.2	9.6	10.2	19.8	14.4	16.2	30.2	22.6	20.0	39.2	28.4
	110	3.2	6.8	4.6	4.8	10.1	7.0	6.4	13.4	9.3	9.7	20.1	14.0	15.4	30.7	21.9	19.0	39.9	27.5
20	90	6.6	7.4	8.2	9.9	11.0	12.3	13.3	14.6	16.3	19.9	21.8	24.5	30.9	33.6	38.0	38.3	43.7	47.6
	100	6.0	7.9	7.7	9.1	11.7	11.6	12.2	15.6	15.5	18.2	23.3	23.2	28.4	36.0	36.0	35.2	46.8	45.1
	105	5.8	8.1	7.5	8.7	12.1	11.3	11.6	16.1	15.0	17.4	24.1	22.5	27.1	37.1	35.0	33.7	48.2	43.9
	110	5.5	8.4	7.3	8.3	12.4	10.9	11.0	16.5	14.6	16.6	24.8	21.8	25.9	38.2	34.0	32.1	49.6	42.6

UNIT		5H60			5H66			5H80			5H86			5H120			5H126		
SST	SDT	Cap.	Bhp	THR	Cap.	Bhp	THR	Cap.	Bhp	THR									
-40	90	7.6	22.1	12.2	9.4	28.7	15.5	10.1	29.2	16.3	12.6	37.9	20.6	15.2	43.3	24.4	18.9	56.4	30.8
	100	6.2	21.3	10.7	7.8	27.7	13.6	8.3	28.1	14.3	10.3	36.5	18.1	12.5	41.6	21.4	15.6	54.3	27.1
	105	5.5	20.9	9.9	6.9	27.2	12.7	7.3	27.6	13.2	9.1	35.8	16.7	11.1	41.0	19.8	13.8	53.2	25.1
	110	4.7	20.5	9.1	6.0	26.7	11.8	6.3	27.1	12.1	7.9	35.2	15.4	9.6	40.2	18.2	11.9	52.3	23.0
-20	90	15.5	33.1	22.5	19.3	43.0	28.5	20.7	43.8	30.0	25.9	57.0	37.9	31.1	65.3	45.0	38.6	85.0	56.7
	100	14.0	33.3	21.1	17.5	43.3	26.7	18.7	44.1	28.1	23.3	57.4	35.5	28.1	65.8	42.1	34.9	85.5	53.1
	105	13.2	33.4	20.3	16.5	43.4	25.7	17.7	44.2	27.0	22.0	57.6	34.2	26.5	65.9	40.5	33.0	85.7	51.2
	110	12.4	33.4	19.5	15.5	43.5	24.7	16.6	44.2	26.0	20.6	57.7	32.9	24.9	66.0	38.9	31.0	85.9	49.2
0	90	27.7	42.6	36.8	34.5	55.5	46.2	37.0	56.5	49.0	46.0	73.5	61.6	55.5	84.3	73.4	68.9	109.7	92.2
	100	25.4	44.3	34.8	31.6	57.7	43.9	33.9	58.7	46.4	42.2	76.5	58.4	50.9	87.7	69.5	63.2	114.1	87.4
	105	24.3	45.0	33.8	30.2	58.7	42.6	32.4	59.7	45.0	40.2	77.9	56.7	48.6	89.2	67.5	60.3	116.1	84.9
	110	23.1	45.8	32.8	28.7	59.6	41.3	30.8	60.7	43.7	38.2	79.2	55.0	46.2	90.7	65.4	57.3	118.0	82.4
20	90	46.3	50.2	57.0	57.5	65.3	71.3	61.8	66.6	75.9	76.7	86.7	95.1	92.7	99.5	113.8	114.9	129.3	142.4
	100	42.6	53.8	54.0	52.9	70.0	67.7	56.8	71.4	72.0	70.5	93.0	90.3	85.2	106.7	107.9	105.8	138.7	135.2
	105	40.7	55.4	52.5	50.6	72.2	65.9	54.3	73.6	69.9	67.4	95.9	87.8	81.5	110.0	104.8	101.1	143.1	131.5
	110	38.8	57.0	50.9	48.2	74.2	64.0	51.8	75.7	67.9	64.3	98.6	85.2	77.7	113.2	101.7	96.4	147.2	127.7

**LEGEND**

- Bhp** — Brake Horsepower
- Cap.** — Capacity (Tons)
- SDT** — Saturated Discharge Temperature (F)
- SST** — Saturated Suction Temperature (F)
- THR** — Total Heat of Rejection

**NOTES:**

1.  Shaded ratings require an oil cooler and water-cooled heads.
2. An oil cooler is recommended for all long stroke compressors (5H46, 66, 86, 126).
3. Oil cooler required when SST is below -20 F.

# Performance data (cont)



## CONDENSER CAPACITY AND FLOW RATES R-22 (at 105 F) CONDENSING TEMPERATURE WITH .0005 TOTAL FOULING FACTOR

UNIT P701-	GPM	ΔP	TOTAL HEAT OF REJECTION AT SPECIFIED GTD (F)					
			15° GTD	20° GTD	25° GTD	30° GTD	35° GTD	40° GTD
0605CX	4	0.4	25,876	34,346	42,623	50,894	59,047	67,175
	7	1.2	40,573	53,575	66,384	79,002	91,433	103,691
	10	2.3	52,268	68,835	85,046	100,906	116,676	131,981
	13	3.7	61,854	80,982	100,018	118,330	136,385	154,717
	16	5.5	69,544	91,211	112,212	132,917	153,006	172,113
	19	7.5	76,284	99,334	122,457	144,354	165,956	187,291
	22	9.9	81,725	106,541	130,963	153,913	177,705	200,067
0607CX	8	1.1	47,149	62,256	77,174	91,893	106,399	120,699
	11	2.0	59,478	78,384	96,924	115,096	133,011	150,692
	14	3.1	69,930	91,849	113,217	134,266	155,035	175,071
	17	4.4	78,722	103,175	126,925	150,325	173,419	195,531
	20	6.0	86,329	112,806	138,858	164,108	189,023	213,636
	23	7.8	92,626	121,152	148,694	176,400	202,651	228,576
	26	9.7	98,283	128,605	157,814	186,617	213,715	240,462
0610CX	10	0.7	62,373	82,660	102,457	122,287	141,818	160,973
	15	1.5	85,363	112,618	139,447	165,852	191,893	217,417
	20	2.5	104,246	137,064	169,356	201,201	232,648	263,167
	25	3.7	120,229	157,722	194,628	230,151	265,167	299,727
	30	5.2	133,498	174,765	215,383	254,191	292,454	330,227
	35	6.9	144,917	189,123	232,616	274,693	317,053	357,244
	40	8.8	154,191	202,443	248,020	292,947	337,309	379,093
0615CX	15	1.5	97,523	129,183	160,807	191,540	222,649	252,631
	20	2.6	122,585	161,948	200,943	239,541	277,305	314,905
	25	3.8	144,524	190,575	235,938	280,611	324,664	368,164
	30	5.4	163,696	215,528	266,356	316,465	365,659	414,241
	35	7.1	180,523	237,619	293,047	347,672	401,108	453,874
	40	9.0	195,650	256,985	316,774	374,406	432,610	488,748
	45	11.2	208,992	273,709	336,575	398,539	459,727	520,228
0620CX	15	1.1	101,136	134,027	166,805	199,111	231,647	263,717
	20	1.8	128,374	170,328	211,585	252,256	292,405	332,450
	25	2.8	153,231	202,435	251,179	299,427	346,631	393,631
	30	3.8	175,497	231,510	286,665	341,092	394,800	447,790
	35	5.1	195,393	257,457	318,265	378,366	437,215	495,867
	40	6.5	213,379	280,670	346,918	411,868	475,987	538,365
	45	8.1	229,519	301,699	372,792	441,714	509,707	576,875
0625AX	25	0.7	143,279	189,183	234,342	278,853	322,685	365,918
	35	1.2	182,367	239,870	296,448	352,230	407,298	460,716
	45	1.9	214,674	281,873	347,257	412,496	475,260	537,191
	55	2.7	241,762	316,860	389,648	462,572	532,195	600,918
	65	3.7	265,014	346,304	426,315	502,128	580,044	650,648
	75	4.8	283,919	371,578	456,014	539,267	617,577	694,849
	85	6.0	300,803	391,753	483,509	569,523	654,414	738,299
0630AX	30	0.7	170,758	225,374	279,128	332,028	384,176	435,634
	40	1.2	209,945	276,499	341,625	405,807	468,118	529,518
	50	1.8	242,650	319,222	393,855	466,584	537,416	609,117
	60	2.5	271,334	356,215	438,635	519,889	597,581	674,205
	70	3.4	295,532	386,982	477,015	564,243	647,069	732,076
	80	4.3	317,239	415,518	508,451	603,921	694,287	779,467
	90	5.3	335,480	437,433	537,756	636,707	729,719	826,329
0840AX	40	0.6	231,569	305,830	378,918	450,965	521,942	591,910
	60	1.3	309,640	408,013	504,258	597,595	689,529	780,189
	80	2.2	372,012	487,692	603,017	713,803	819,900	927,725
	100	3.3	422,189	552,832	681,449	806,061	924,384	1,045,822
	120	4.5	463,073	608,148	745,178	880,222	1,013,523	1,139,022
	140	6.0	500,930	651,392	799,425	941,663	1,082,025	1,220,703
0850AX	50	1.1	296,824	392,331	486,264	578,850	670,228	760,485
	70	1.9	378,460	498,635	616,474	731,993	845,905	958,367
	90	3.0	445,812	585,635	723,306	857,721	987,383	1,118,374
	110	4.4	502,450	656,782	808,565	958,209	1,105,984	1,247,414
	130	5.9	548,504	717,949	884,783	1,046,464	1,200,062	1,357,777
	150	7.6	587,833	770,641	947,107	1,117,473	1,285,647	1,451,868
1065AX	100	1.6	497,687	655,475	808,070	958,376	1,106,650	1,249,634
	120	2.2	558,019	731,538	904,525	1,070,705	1,229,850	1,391,588
	140	2.9	609,337	799,341	986,472	1,165,035	1,341,130	1,514,993
	160	3.7	655,460	856,550	1,054,440	1,249,623	1,434,672	1,617,293
	180	4.6	694,609	912,222	1,117,768	1,320,333	1,520,285	1,708,533
	200	5.6	731,968	955,731	1,170,825	1,388,102	1,592,145	1,793,632
	220	6.6	764,169	996,751	1,225,710	1,445,627	1,650,631	1,865,118

### LEGEND

- GPM** — Gallons Per Minute
- GTD** — Greatest Temperature Difference (F)
- ΔP** — Change In Pressure (psi)

### NOTES:

1. Total heat of rejection is in Btuh.
2. GTD is the difference between the condensing temperature and the inlet water temperature.
3. ΔP is in psi. To convert to feet, multiply by 2.31.



**CONDENSER CAPACITY AND FLOW RATES (cont)**  
**R-22 (at 105 F) CONDENSING TEMPERATURE WITH .0005 TOTAL FOULING FACTOR (cont)**

UNIT P701-	GPM	ΔP	TOTAL HEAT OF REJECTION AT SPECIFIED GTD (F)					
			15° GTD	20° GTD	25° GTD	30° GTD	35° GTD	40° GTD
1075AX	100	1.8	549,242	723,666	894,725	1,064,037	1,229,536	1,392,800
	120	2.5	620,641	816,646	1,008,988	1,195,572	1,379,434	1,560,856
	140	3.3	684,010	898,961	1,108,478	1,310,356	1,514,172	1,710,591
	160	4.2	740,636	970,480	1,193,714	1,413,701	1,630,852	1,838,835
	180	5.2	790,161	1,031,523	1,272,666	1,502,922	1,730,059	1,954,402
	200	6.2	832,768	1,091,177	1,341,161	1,587,674	1,821,717	2,052,717
	220	7.4	873,638	1,143,861	1,399,460	1,662,009	1,910,686	2,145,306
1290AX	125	1.5	647,708	851,897	1,052,844	1,247,755	1,443,202	1,632,703
	150	2.1	727,950	957,665	1,181,564	1,399,753	1,612,247	1,827,351
	175	2.7	801,122	1,050,925	1,293,509	1,529,077	1,764,923	1,997,960
	200	3.5	865,203	1,130,819	1,392,139	1,645,384	1,895,198	2,141,908
	225	4.4	920,475	1,202,857	1,480,758	1,754,871	2,014,720	2,271,172
	250	5.3	973,062	1,270,146	1,556,383	1,838,443	2,116,837	2,379,001
12110AX	125	1.7	709,443	935,822	1,158,675	1,378,012	1,593,021	1,806,411
	150	2.3	806,243	1,061,146	1,311,985	1,559,368	1,798,741	2,038,119
	175	3.1	891,444	1,172,494	1,449,312	1,717,584	1,982,106	2,243,254
	200	3.9	968,319	1,270,209	1,567,302	1,860,345	2,142,651	2,428,676
	225	4.8	1,036,223	1,362,848	1,676,315	1,985,238	2,290,194	2,582,240
	250	5.8	1,100,217	1,441,382	1,772,096	2,103,464	2,420,017	2,732,636
12140AX	200	0.6	1,001,127	1,315,969	1,625,774	1,931,178	2,229,385	2,516,832
	275	1.0	1,227,329	1,608,045	1,982,676	2,352,045	2,704,787	3,052,573
	350	1.6	1,409,736	1,845,046	2,265,246	2,687,795	3,087,802	3,482,486
	425	2.2	1,556,958	2,033,727	2,491,961	2,954,691	3,388,991	3,817,573
	500	2.9	1,679,131	2,198,496	2,682,488	3,173,108	3,657,631	4,108,083
	575	3.7	1,785,789	2,324,867	2,855,407	3,362,094	3,862,159	4,322,409
	14140AX	150	0.9	837,468	1,104,779	1,367,476	1,625,473	1,880,768
200		1.5	1,024,922	1,348,299	1,664,135	1,978,055	2,282,311	2,582,434
250		2.2	1,180,023	1,550,353	1,915,099	2,265,790	2,611,549	2,952,835
300		3.1	1,315,964	1,718,611	2,120,895	2,504,871	2,883,491	3,257,263
350		4.1	1,429,599	1,868,143	2,299,754	2,708,794	3,129,046	3,527,334
400		5.2	1,531,322	1,991,541	2,444,151	2,890,336	3,330,900	3,745,417
450		6.5	1,615,835	2,112,964	2,578,846	3,049,759	3,490,559	3,937,867
12150AX	225	0.6	1,115,708	1,467,119	1,813,040	2,150,604	2,483,462	2,804,138
	300	1.0	1,340,371	1,756,172	2,165,306	2,568,678	2,953,928	3,347,060
	375	1.5	1,528,485	1,998,193	2,460,469	2,898,293	3,348,127	3,755,280
	450	2.1	1,676,685	2,187,086	2,689,272	3,184,458	3,649,584	4,132,598
	525	2.8	1,814,346	2,353,276	2,883,226	3,405,512	3,921,048	4,430,503
	600	3.5	1,925,912	2,497,970	3,060,678	3,598,318	4,128,647	4,652,365
	675	4.3	2,012,271	2,630,528	3,200,063	3,780,874	4,354,531	4,881,361
14165AX	100	0.5	653,019	863,988	1,075,136	1,284,549	1,488,236	1,694,373
	175	1.3	1,020,301	1,346,893	1,668,492	1,985,663	2,298,685	2,607,208
	250	2.5	1,311,461	1,723,877	2,132,322	2,526,493	2,921,219	3,304,471
	325	4.0	1,545,317	2,022,692	2,497,840	2,954,947	3,405,763	3,850,932
	400	5.8	1,734,022	2,273,809	2,788,416	3,295,339	3,795,567	4,289,800
	475	7.9	1,888,436	2,472,537	3,036,448	3,592,558	4,130,103	4,637,316
12200AX	175	0.5	1,036,407	1,370,530	1,699,143	2,022,971	2,342,462	2,657,876
	275	1.1	1,443,277	1,900,667	2,348,235	2,789,344	3,217,610	3,639,661
	375	1.8	1,761,534	2,314,216	2,845,078	3,367,805	3,883,355	4,392,400
	475	2.8	2,009,806	2,641,826	3,243,681	3,836,775	4,422,170	4,978,075
	575	3.9	2,216,727	2,911,067	3,566,859	4,213,194	4,851,251	5,451,971
	675	5.1	2,389,837	3,112,286	3,841,096	4,524,378	5,198,771	5,865,201
16200AX	175	0.6	1,024,624	1,354,070	1,678,702	1,998,149	2,313,249	2,623,657
	275	1.3	1,420,618	1,871,931	2,313,491	2,741,744	3,171,255	3,587,662
	375	2.4	1,734,267	2,273,442	2,797,067	3,312,944	3,821,973	4,309,151
	475	3.6	1,975,785	2,589,891	3,183,902	3,769,536	4,325,191	4,873,334
	575	5.1	2,176,714	2,848,763	3,496,108	4,134,381	4,734,756	5,327,175
	675	6.9	2,344,233	3,057,721	3,760,097	4,434,731	5,063,607	5,721,592
14210AX	300	0.6	1,517,254	1,993,877	2,462,665	2,920,225	3,371,081	3,815,758
	400	1.1	1,830,461	2,402,416	2,965,530	3,496,911	4,036,389	4,569,118
	500	1.6	2,083,261	2,732,006	3,359,473	3,977,847	4,588,129	5,166,653
	600	2.2	2,304,057	3,012,589	3,710,107	4,382,864	5,015,617	5,670,941
	700	2.9	2,480,970	3,250,710	3,990,250	4,700,497	5,401,112	6,092,993
	800	3.7	2,637,269	3,459,476	4,224,991	4,979,263	5,700,870	6,413,044
	900	4.5	2,785,070	3,625,707	4,453,153	5,243,277	6,023,187	6,740,668

**LEGEND**

**GPM** — Gallons Per Minute  
**GTD** — Greatest Temperature Difference (F)  
**ΔP** — Change In Pressure (psi)

**NOTES:**

- Total heat of rejection is in Btuh.
- GTD is the difference between the condensing temperature and the inlet water temperature.
- ΔP is in psi. To convert to feet, multiply by 2.31.

# Performance data (cont)



## CONDENSER CAPACITY AND FLOW RATES (cont) R-22 (at 105 F) CONDENSING TEMPERATURE WITH .0005 TOTAL FOULING FACTOR

UNIT P701-	GPM	ΔP	TOTAL HEAT OF REJECTION AT SPECIFIED GTD (F)					
			15° GTD	20° GTD	25° GTD	30° GTD	35° GTD	40° GTD
16210AX	200	1	1,194,350	1,578,641	1,956,273	2,329,709	2,698,111	3,062,287
	275	1.8	1,507,268	1,985,089	2,456,183	2,916,566	3,375,334	3,823,536
	350	2.8	1,770,094	2,323,697	2,868,324	3,400,202	3,924,854	4,442,995
	425	4	1,991,883	2,608,452	3,215,109	3,805,374	4,387,800	4,963,190
	500	5.3	2,173,887	2,850,585	3,506,490	4,153,270	4,780,925	5,378,156
	575	6.9	2,342,974	3,060,496	3,766,791	4,436,244	5,096,548	5,748,665
	650	8.5	2,486,054	3,232,073	3,965,846	4,689,412	5,404,144	6,077,054
16230AX	225	1.1	1,343,705	1,774,662	2,199,194	2,619,003	3,034,096	3,442,551
	300	1.8	1,658,124	2,186,147	2,704,940	3,212,311	3,717,051	4,210,543
	375	2.7	1,926,815	2,533,533	3,126,145	3,715,226	4,286,501	4,850,302
	450	3.7	2,154,179	2,834,521	3,489,889	4,135,715	4,764,872	5,385,954
	525	4.9	2,351,561	3,088,477	3,793,499	4,498,966	5,173,593	5,862,392
	600	6.2	2,528,836	3,310,041	4,079,235	4,797,247	5,532,731	6,259,915
	675	7.7	2,680,047	3,509,005	4,293,092	5,098,519	5,861,381	6,581,106
14270AX	300	0.8	1,659,847	2,189,338	2,709,603	3,218,407	3,724,199	4,218,564
	400	1.4	2,024,956	2,659,408	3,283,509	3,892,882	4,493,714	5,086,777
	500	2.1	2,325,370	3,048,255	3,768,927	4,461,273	5,124,368	5,798,307
	600	2.8	2,576,282	3,382,754	4,164,316	4,921,708	5,668,965	6,407,079
	700	3.7	2,807,096	3,655,656	4,506,963	5,312,992	6,108,043	6,893,203
	800	4.8	2,982,903	3,899,223	4,781,048	5,660,710	6,487,671	7,346,606
	900	5.9	3,163,790	4,119,905	5,036,865	5,940,587	6,832,761	7,664,767
14290AX	300	0.7	1,696,427	2,238,151	2,771,577	3,295,118	3,812,421	4,323,115
	425	1.4	2,163,318	2,846,526	3,519,423	4,171,405	4,814,028	5,448,155
	550	2.2	2,546,440	3,337,925	4,106,608	4,863,922	5,611,202	6,326,541
	675	3.1	2,851,064	3,733,082	4,601,424	5,442,767	6,241,750	7,061,758
	800	4.3	3,118,233	4,070,090	4,987,248	5,891,008	6,783,032	7,664,521
	925	5.5	3,331,512	4,356,253	5,341,138	6,312,257	7,246,436	8,169,269
16300AX	475	0.7	2,316,169	3,039,869	3,759,339	4,445,216	5,137,081	5,802,897
	625	1.2	2,749,165	3,604,853	4,434,163	5,264,683	6,057,206	6,838,959
	775	1.7	3,111,810	4,054,506	5,000,040	5,894,968	6,777,151	7,647,698
	925	2.3	3,395,270	4,458,625	5,458,362	6,443,346	7,390,511	8,325,127
	1075	3.0	3,659,895	4,783,503	5,860,457	6,922,151	7,909,981	8,884,406
	1225	3.8	3,872,697	5,032,227	6,173,035	7,298,037	8,373,584	9,436,001
	1375	4.7	4,074,876	5,286,951	6,479,584	7,615,195	8,735,819	9,801,754
16360AX	475	1.0	2,518,292	3,311,712	4,096,515	4,860,189	5,618,421	6,367,262
	625	1.6	3,013,394	3,954,287	4,880,307	5,771,694	6,672,864	7,540,194
	775	2.4	3,416,332	4,477,293	5,505,721	6,535,813	7,519,583	8,490,628
	925	3.2	3,769,142	4,924,974	6,062,656	7,140,653	8,248,700	9,252,776
	1075	4.2	4,056,344	5,308,452	6,514,437	7,648,327	8,822,102	9,925,908
	1225	5.3	4,311,940	5,615,111	6,864,968	8,096,719	9,312,672	10,514,506
16400AX	475	0.8	2,605,621	3,432,065	4,247,606	5,052,103	5,838,210	6,613,309
	625	1.4	3,139,915	4,124,948	5,103,101	6,050,035	6,983,882	7,905,841
	775	2.0	3,592,864	4,709,650	5,794,296	6,862,846	7,917,186	8,958,654
	925	2.7	3,965,169	5,186,929	6,409,377	7,575,035	8,725,168	9,818,054
	1075	3.6	4,284,368	5,611,293	6,918,043	8,155,234	9,375,599	10,580,803
	1225	4.5	4,569,570	5,988,678	7,324,212	8,671,764	9,938,639	11,254,399
	1375	5.5	4,839,239	6,301,762	7,704,446	9,086,817	10,451,466	11,800,277

### LEGEND

**GPM** — Gallons Per Minute  
**GTD** — Greatest Temperature Difference (F)  
**ΔP** — Change In Pressure (psi)

### NOTES:

1. Total heat of rejection is in Btuh.
2. GTD is the difference between the condensing temperature and the inlet water temperature.
3. ΔP is in psi. To convert to feet, multiply by 2.31.



**CONDENSER CAPACITY AND FLOW RATES (cont)**

**R-134a (at 105 F) CONDENSING TEMPERATURE WITH .0005 TOTAL FOULING FACTOR**

UNIT P701-	GPM	TOTAL HEAT OF REJECTION AT SPECIFIED GTD (F)			
		15° GTD		40° GTD	
		ΔP	THR	ΔP	THR
0605CX	4	0.43	25,765	0.44	66,796
	22	9.69	80,103	10.06	194,621
0607CX	8	1.08	46,790	1.12	119,453
	26	9.55	96,365	9.90	234,015
0610CX	10	0.69	62,074	0.71	159,840
	40	8.57	151,198	8.93	369,084
0615CX	15	1.50	96,870	1.56	251,118
	42	9.64	197,657	10.04	490,954
0620CX	15	1.07	100,679	1.11	262,189
	45	7.88	226,118	8.18	565,547
0625AX	25	0.65	142,136	0.68	361,781
	85	5.83	294,664	6.12	717,671
0630AX	30	0.71	169,332	0.74	430,974
	90	5.16	328,979	5.41	804,474
0840AX	40	0.61	229,741	0.64	585,906
	140	5.83	487,215	6.10	1,186,682
0850AX	50	1.04	294,477	1.08	752,237
	150	7.41	576,477	7.77	1,414,060
1065AX	100	1.55	491,308	1.62	1,231,276
	220	6.44	748,299	6.75	1,811,718
1075AX	100	1.75	543,235	1.83	1,371,900
	220	7.21	857,022	7.56	2,089,682
1290AX	125	1.45	640,243	1.51	1,610,509
	250	5.17	949,116	5.38	2,331,313
12110AX	125	1.62	702,533	1.68	1,781,996
	250	5.71	1,081,660	5.95	2,670,390
12140AX	200	0.57	989,938	0.60	2,484,282
	575	3.61	1,746,399	3.84	4,222,703
14140AX	150	0.86	829,800	0.89	2,106,140
	450	6.32	1,583,375	6.60	3,828,377
12150AX	225	0.61	1,102,892	0.64	2,759,028
	675	4.20	1,966,220	4.46	4,725,153
14165AX	100	0.47	648,134	0.49	1,684,102
	475	7.74	1,852,532	8.09	4,517,159
12200AX	175	0.47	1,029,404	0.49	2,632,546
	675	4.97	2,340,751	5.27	5,700,528
16200AX	175	0.58	1,017,399	0.61	2,597,916
	675	6.71	2,295,546	7.02	5,557,759
14210AX	300	0.62	1,500,798	0.65	3,767,346
	900	4.42	2,723,529	4.65	6,531,613
16210AX	200	1.00	1,184,433	1.04	3,029,886
	650	8.25	2,421,220	8.66	5,912,984
16230AX	225	1.04	1,331,505	1.08	3,406,100
	675	7.48	2,629,070	7.83	6,410,453
14270AX	300	0.81	1,644,295	0.85	4,168,315
	900	5.68	3,074,944	6.00	7,495,165
14290AX	300	0.73	1,681,478	0.76	4,269,982
	925	5.37	3,264,221	5.66	7,943,303
16300AX	475	0.69	2,288,601	0.73	5,705,596
	1375	4.53	3,961,437	4.80	9,566,629
16360AX	475	0.97	2,490,601	1.03	6,270,314
	1225	5.13	4,191,020	5.45	10,215,657
16400AX	475	0.82	2,579,947	0.86	6,522,230
	1375	5.33	4,703,510	5.64	11,464,852

**LEGEND**

**GPM** — Gallons Per Minute  
**GTD** — Greatest Temperature Difference (F)  
**THR** — Total Heat of Rejection  
**ΔP** — Change In Pressure (psi)

**NOTES:**

- Total heat of rejection is in Btuh.
- GTD is the difference between the condensing temperature and the inlet water temperature.
- ΔP is in psi. To convert to feet, multiply by 2.31.

# Performance data (cont)



## CONDENSER CAPACITY AND FLOW RATES (cont)

R-507/404A (at 105 F) CONDENSING TEMPERATURE WITH .0005 TOTAL FOULING FACTOR

UNIT P701-	GPM	TOTAL HEAT OF REJECTION AT SPECIFIED GTD (F)			
		15° GTD		40° GTD	
		ΔP	THR	ΔP	THR
0605CX	4	0.43	25,582	0.44	66,021
	22	9.69	76,649	10.07	186,012
0607CX	8	1.08	46,132	1.12	117,295
	26	9.56	92,293	9.91	223,811
0610CX	10	0.69	61,395	0.71	157,440
	40	8.57	145,885	8.93	353,223
0615CX	15	1.50	96,015	1.56	247,451
	42	9.64	191,905	10.05	471,557
0620CX	15	1.07	99,591	1.11	258,740
	45	7.88	220,172	8.19	547,035
0625AX	25	0.65	140,108	0.68	355,018
	85	5.83	283,698	6.13	680,343
0630AX	30	0.71	166,854	0.74	422,296
	90	5.17	317,371	5.41	764,927
0840AX	40	0.61	226,617	0.64	575,438
	140	5.83	469,123	6.12	1,133,013
0850AX	50	1.04	290,154	1.08	737,603
	150	7.41	556,359	7.78	1,346,139
1065AX	100	1.55	481,415	1.62	1,195,454
	220	6.44	719,947	6.75	1,727,631
1075AX	100	1.75	532,609	1.83	1,339,365
	220	7.21	827,576	7.57	2,001,385
1290AX	125	1.45	626,889	1.51	1,563,267
	250	5.17	916,892	5.39	2,235,009
12110AX	125	1.62	690,314	1.69	1,742,825
	250	5.71	1,048,796	5.96	2,558,547
12140AX	200	0.57	969,692	0.60	2,419,279
	575	3.61	1,675,473	3.84	4,013,472
14140AX	150	0.86	816,842	0.89	2,060,332
	450	6.32	1,513,513	6.61	3,655,576
12150AX	225	0.61	1,083,086	0.64	2,693,371
	675	4.20	1,883,280	4.46	4,481,024
14165AX	100	0.47	643,291	0.49	1,663,120
	475	7.74	1,788,919	8.10	4,326,399
12200AX	175	0.47	1,016,231	0.49	2,588,503
	675	4.97	2,253,177	5.28	5,402,854
16200AX	175	0.58	1,004,120	0.61	2,553,079
	675	6.71	2,208,564	7.02	5,299,788
14210AX	300	0.62	1,471,001	0.65	3,670,893
	900	4.42	2,612,665	4.65	6,258,033
16210AX	200	1.00	1,168,653	1.04	2,974,120
	650	8.25	2,333,933	8.67	5,653,432
16230AX	225	1.04	1,313,736	1.08	3,343,356
	675	7.48	2,530,572	7.84	6,139,566
14270AX	300	0.81	1,616,728	0.85	4,073,584
	900	5.69	2,958,091	6.01	7,149,523
14290AX	300	0.73	1,655,375	0.76	4,184,727
	925	5.37	3,144,178	5.67	7,586,650
16300AX	475	0.69	2,238,728	0.73	5,565,050
	1375	4.53	3,792,706	4.80	9,070,571
16360AX	475	0.98	2,441,137	1.03	6,123,263
	1225	5.14	4,031,866	5.45	9,774,892
16400AX	475	0.82	2,534,088	0.86	6,380,518
	1375	5.33	4,524,881	5.65	10,936,480

### LEGEND

**GPM** — Gallons Per Minute  
**GTD** — Greatest Temperature Difference (F)  
**THR** — Total Heat of Rejection  
**ΔP** — Change In Pressure (psi)

### NOTES:

1. Total heat of rejection is in Btuh.
2. GTD is the difference between the condensing temperature and the inlet water temperature.
3. ΔP is in psi. To convert to feet, multiply by 2.31.



### STANDARD RATINGS FOR COMPRESSORS

COMPR	REFRIGERANT								
	R-134a			R-22			R-507/404A		
	Cap. (tons)	Bhp	THR (tons)	Cap. (tons)	Bhp	THR (tons)	Cap. (tons)	Bhp	THR (tons)
5F20	2.9	5.2	4.0	8.3	10.9	10.4	2.3	5.9	3.6
5F30	4.4	7.8	6.1	12.6	16.2	15.7	3.5	8.8	5.4
5F40	5.9	10.3	8.1	16.7	21.6	20.8	4.7	11.6	7.2
5F60	8.8	15.4	12.1	25.1	32.2	31.3	7.1	17.4	10.8
5H40	13.8	23.4	18.8	39.9	49.0	49.4	11.4	26.4	17.0
5H46	17.1	32.3	23.9	49.1	63.7	61.4	14.1	34.3	21.4
5H60	20.7	36.9	28.6	59.6	73.4	73.7	17.1	39.3	25.4
5H66	25.8	48.1	36.0	73.9	95.5	92.4	21.3	51.2	32.2
5H80	27.6	48.9	38.0	79.4	97.5	98.2	22.8	52.1	33.9
5H86	34.3	63.7	47.8	98.6	126.8	123.0	28.4	68.0	42.8
5H120	41.5	73.0	57.0	119.2	145.9	147.4	34.3	77.8	50.8
5H126	51.5	92.1	71.1	147.9	189.7	184.5	42.3	101.2	64.0

### STANDARD RATING CONDITIONS

REFRIGERANT	SST	SDT	RGT	SC	RPM
R-22	45	130	65	15	1750
R-134a	20	120	65	15	1750
R-507/404A	-10	105	65	5	1750

#### LEGEND

**Bhp** — Brake Horsepower      **SDT** — Saturated Discharge Temp (F)  
**Cap.** — Capacity                      **SST** — Saturated Suction Temp (F)  
**RGT** — Return Gas Temp to Compr (F)      **THR** — Total Heat Rejection (tons)  
**SC** — Liquid Subcooling (F)

NOTE: The refrigerant ratings closely correspond to standard air conditioning and refrigeration conditions in which these compressors are typically applied.

### RATING BASIS AND CAPACITY MULTIPLIERS

SAT. SUCT TEMP (F)	RATED SUCT GAS TEMP (F)	CAPACITY MULTIPLIERS									
		Actual Suction Gas Temp to Compr (F)									
		-40	-20	0	10	20	30	40	50	60	65
-40	65	0.790	0.830	0.870	0.890	0.910	0.930	0.950	0.970	0.990	1.000
-20	65	—	0.830	0.870	0.890	0.910	0.930	0.950	0.970	0.990	1.000
0	65	—	—	0.870	0.890	0.910	0.930	0.950	0.970	0.990	1.000
10	65	—	—	—	0.890	0.910	0.930	0.950	0.970	0.990	1.000
		—	—	—	0.950	0.959	0.968	0.977	0.986	0.995	1.000
20	65	—	—	—	—	0.910	0.930	0.950	0.970	0.990	1.000
		—	—	—	—	0.960	0.969	0.978	0.987	0.996	1.000
30	65	—	—	—	—	—	0.970	0.979	0.987	0.996	1.000
40	65	—	—	—	—	—	—	0.987	0.992	0.997	1.000

# Performance data (cont)



## 5F,H RATING LIMITS

REFRIGERANT	SST		SDT	
	Minimum	Maximum	Minimum	Maximum
R-134a	0	50	80	145
R-22	-40	50	80	135
R-507/404A	-60	50	80	120

### LEGEND

SDT — Saturated Discharge Temp (F)  
 SST — Saturated Suction Temp (F)

## MULTIPLYING FACTORS FOR OTHER THAN 1750 RPM

RPM	1450	1160
CAPACITY	0.835	0.674
BHP	0.798	0.602

### LEGEND

Bhp — Brake Horsepower

## CONDENSING UNIT MAXIMUM LIQUID LIFT

TEMP DIFF (F) SDT — ENT WATER TEMP	HEIGHT (ft)*	
	R-134a	R-22, 507/404A
15	30	52
20	37	64
25	43	75
30	49	85
35	53	93
40	57	99
45	58	103
50	61	107
55	62	110

### LEGEND

SDT — Saturated Discharge Temperature (F)

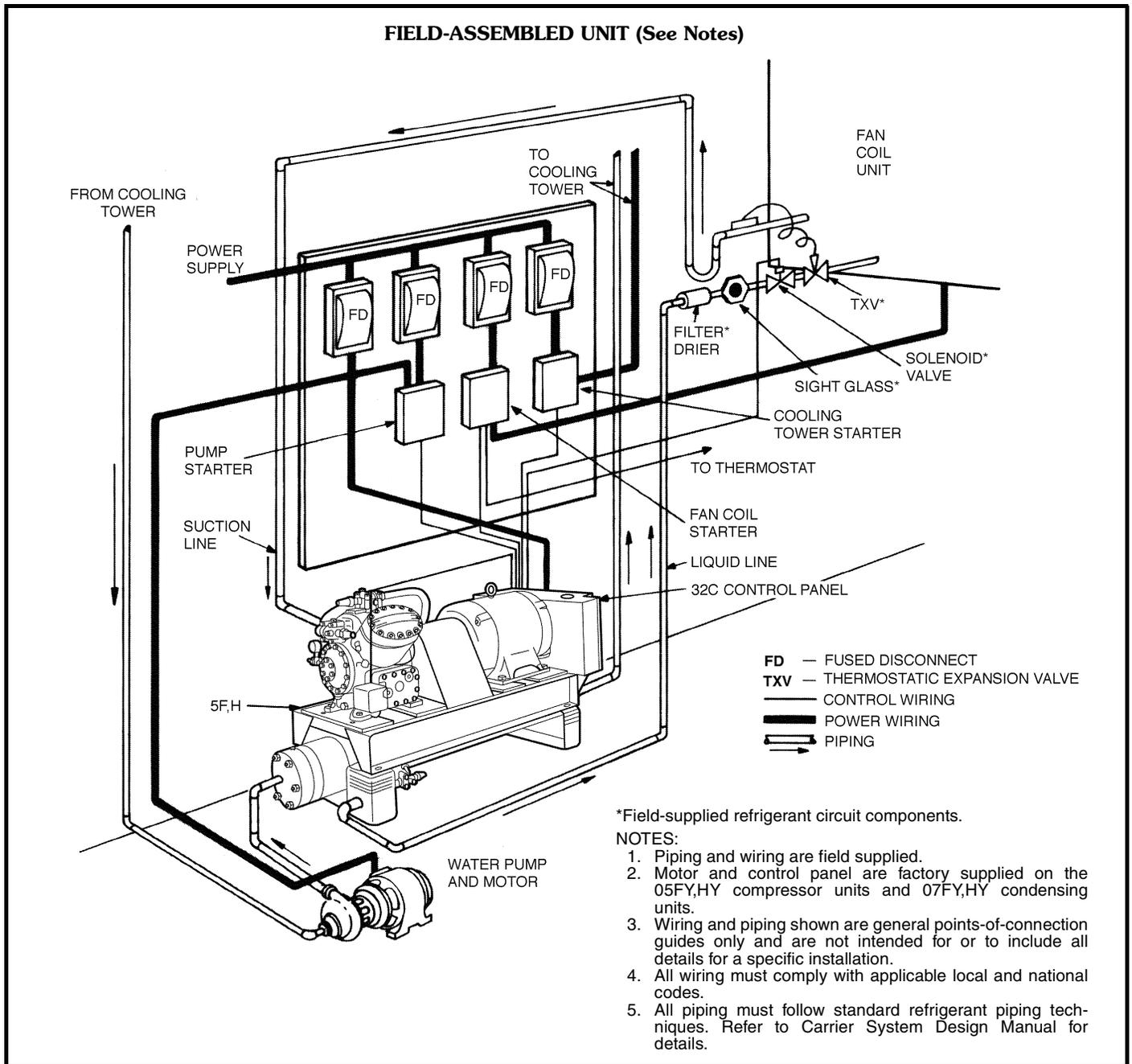
\*Maximum allowable vertical distance from condenser to evaporator sections (with evaporator located *above* condenser. Location of compressor is irrelevant, since it contacts gases only at suction and discharge).

## CAPACITY CONTROL REDUCTION STEPS

COMPR SIZE	CONTROL CYL	CAP. STEPS (% Full Load Cap.)									
		100	87 <sup>1</sup> / <sub>2</sub>	83 <sup>1</sup> / <sub>3</sub>	75	66 <sup>2</sup> / <sub>3</sub>	62 <sup>1</sup> / <sub>2</sub>	50	37 <sup>1</sup> / <sub>2</sub>	33 <sup>1</sup> / <sub>3</sub>	25
		% Full Load Bhp									
		100	90	86	80	74	71	60	50	45	38
Number of Active Cylinders											
5F20*	1	2	—	—	—	—	—	1	—	—	—
5F30*	1	3	—	—	—	2	—	—	—	—	—
5F40, 5H40,46	3	4	—	—	3	—	—	2	—	—	1
5F60, 5H60,66	4	6	—	5	—	4	—	3	—	2	—
5H80, 86	6	8	7	—	—	—	5	—	3	—	2
5H120,126	8	12	—	10	—	8	—	6	—	4	—

\*5F20 and 5F30 compressors available with or without one cylinder for unloading. Two controlled cylinders (to 33<sup>1</sup>/<sub>3</sub>%) available on request for 5F30 only.

# Typical piping and wiring





## 05FY,HY Open-Direct-Drive and Open-Belt-Drive Reciprocating Compressor Unit

### HVAC Guide Specifications

Size Range: **5 to 150 Tons**

Carrier Part Numbers: **05FY,HY**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

Compressor unit utilizing direct driven or belt driven reciprocating type refrigerant compressor.

##### 1.02 QUALITY ASSURANCE

- A. Unit performance shall be rated according to ARI 520 latest edition, comply with ANSI/ASHRAE 15 latest revision Safety Code, NEC, and ASME Code.
- B. Compressors will be factory run tested to ensure proper performance.
- C. Motor and control panel shall be UL listed and NEMA approved.

##### 1.03 DELIVERY, STORAGE AND HANDLING

Unit will be stored and handled according to manufacturer's instructions.

#### Part 2 — Products

##### 2.01 EQUIPMENT

###### A. General:

Factory assembled single piece, refrigerant compressor unit. Contained within the package shall be an open-drive reciprocating compressor, motor and drive package, control package, structural steel base, wiring, piping, controls, and special features required prior to field start-up.

###### B. Compressors:

Reciprocating open-drive type only, with shutoff valves, automatically reversible positive displacement oil pump, oil charge, crankcase heater with relay (standard on 05FY040 and above), and suction pressure actuated cylinder unloaders.

###### C. Motor and Drive Package:

1. Motor shall be NEMA T-frame only with operating speed of 1750 rpm.
2. Open-Direct-Drive Package shall include motor-to-compressor coupling and guard, shims and fastening set.

Open-Belt-Drive Package shall include belt guard, motor pulley and belts, fastening set, and compressor flywheel.

##### D. Controls and Safeties:

1. Included in the control panel are power and control terminal blocks, contactors, control relays, on/off switch, pressure gages for oil, discharge, and suction pressure. Unit designed to start with controlled cylinders unloaded. Factory-assembled control box to be tested and mounted on structural base. Controls capable of interlocking with evaporator, condenser, or cooling tower fans.
2. Safeties in the control box include high, low, and oil pressure switches, timer to prevent compressor short cycling, overload relays or circuit breakers, and control circuit fuse.

##### E. Electrical Requirements:

All control and power wiring between control box and compressor shall be factory assembled.

##### F. Special Features:

Certain standard features are removed and replaced by those features designated by \*. Consult your local Carrier sales office for amending specifications.

###### 1. Water-Cooled Condenser:

Shell and tube with integral finned copper tubes for field installation. Shall be factory tested to comply with ASME Code for unfired pressure vessels, ARI Standard 450 for condensers, and ANSI/ASHRAE 15 Safety Code. Equipped with pressure relief, liquid line shutoff, and connection for water regulating valve.

###### 2. Discharge Muffler:

Discharge line muffler for noise reduction.

###### 3. Vibration Isolators:

To prevent transmission of vibration to building.

###### 4. Water-Cooled Oil Cooler:

Water-cooled oil cooler to reduce oil temperature during operation.

###### \* 5. Water-Cooled Cylinder Heads:

Used to reduce unit operating temperature.

###### \* 6. Partial-Flow Oil Filter:

Controls the amount of contaminants within the operating oil charge. Partial flow type for safety.