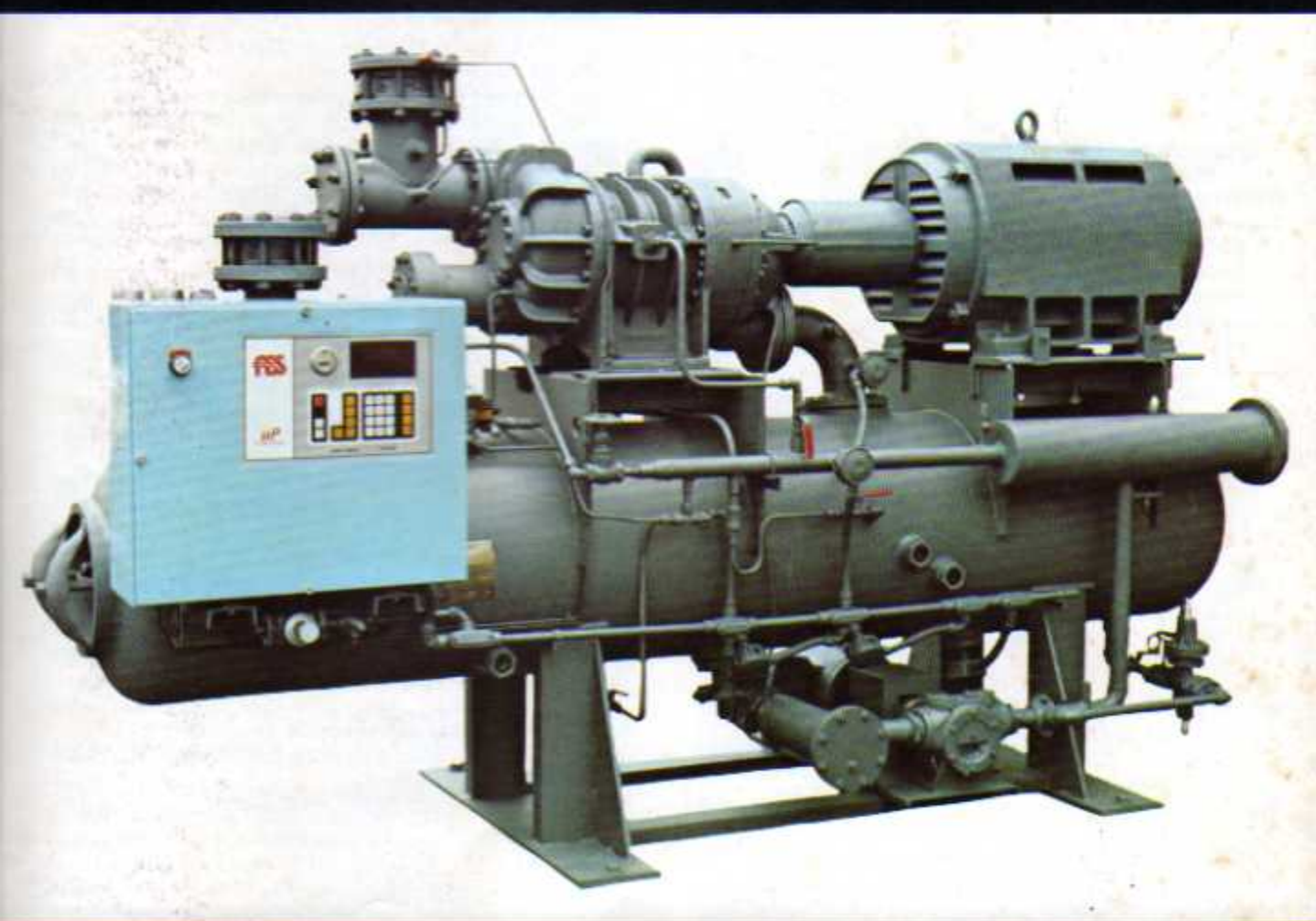




TECHNICAL MANUAL

# ROTARY SCREW COMPRESSORS







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## MECHANICAL SPECIFICATIONS

### SCREW COMPRESSOR PACKAGE

Unit is a packaged assembly with all components factory piped and tested. Unit includes either "SOC" oil cooling with automatic control valves or water cooled oil cooler with automatic water regulating valve, combination oil separator and sump with dual relief valves, oil sump heaters, initial oil charge, direct connected recirculating oil pump with motor, suction and discharge check valves, suction gas strainer, oil filter, control center and hydraulically operated capacity control factory piped with solenoid valves wired to control center. (Water regulating valve is shipped loose for field mounting in water line but the thermostat controlling the water regulating valve by sensing the oil temperature leaving the oil cooler, is mounted and wired into the control panel.)

### COMPRESSOR

#### Housing

Housing is designed in compliance with the ANSI/ASHRAE 15-78 code. Castings are a high grade, low porosity cast iron that is ribbed for structural stability and efficient heat dissipation. The complete compressor assembly is leak tested at 300 psig.

#### Rotors

The male and female rotors are precision ground steel. The male rotor has four lobes — the female rotor, six interlobe spaces. The male rotor is directly driven by the motor, and the journals are chrome plated.

#### Sleeve Bearings

Four main bearings which support the rotors are heavy duty, steel backed babbit, and are arranged for continuous forced feed lubrication.

#### Thrust Bearings

Rotor thrust bearings are oversized angular contact ball bearings fitted to give precise rotor location in the housing. A balance piston equalizes the thrust load of the rotors to minimize the loading on the thrust bearings and insures long bearing life.

#### Shaft Seal

The mechanical shaft seal consists of a carbon face in rotating contact with a tungsten carbide steel ring. Details of construction vary in different size units; however, the rotating member is mechanically locked to the shaft and the stationary member is securely gasketed in the compressor housing.

### CAPACITY REDUCTION SYSTEM

The system consists of a cast iron slide valve, hydraulically actuated by lubricating oil to load and unload the compressor. The compressor has infinite steps of capacity reduction from 100% down to 10%. "Micro" adjusting needle valves in the oil lines that operate the unloader insure that the loading and unloading rate of the compressor can be adjusted to follow the load without hunting.

### DRIVE

Compressor drive includes flexible type coupling with a spacer section that will permit seal replacement without moving the motor. A coupling guard designed to meet OSHA requirements is also furnished.

### SUCTION STRAINER

The unit includes a fine mesh stainless steel screen sized for a maximum face velocity of 320 FPM. A special conical design provides protection against collapsing and has an "outside-in" flow pattern that has a self-cleaning effect each time the compressor stops.

### CHECK VALVES

Suction and discharge check valves are standard. These are in line, wafer type with teflon seal. The suction check valve prevents compressor "back-spin" during shut down. The discharge check valve prevents refrigerant migration during "Off" period.

### LUBRICATION SYSTEM

#### Oil Pump

Unit is direct connected electrically driven gear type, located below the oil separator to insure a positive suction head at all times and is operated independently of compressor to provide prelubrication at start-up.

#### Oil Filter

Filter is a replaceable 15 micron, extended area high efficiency multiple cartridge type. All of the oil supplied to the compressor is filtered. "Extended area" filters minimize the frequency at which filters must be changed. Isolating valves are provided for servicing.

#### Oil Pump Strainer

Unit has a 100 mesh stainless steel screen which has a total free area 10 times greater than the pump suction.

#### Oil Separator

Unit is an FES exclusive two-stage design with guarantee on oil usage. The first stage removes well over 99% of the oil circulated and acts as the reservoir for the oil pump. Two bulls-eyes are provided to determine oil level in first stage. The second stage is specifically designed to remove gas entrained oil mist particles that are less than one micron in diameter. The second stage is provided with an access port that will allow service on the separator and a bulls-eye to determine the oil level in the second stage. Thermostatically controlled electric heaters maintain the oil temperature during off cycle. The separator is ASME constructed, designed for 250 psig working pressure for ammonia and 300 psig for R-22, inspected and stamped, and is furnished with dual relief valve.

#### "SOC" Oil Temperature Control

A temperature actuated proportional expansion valve modulates flow of refrigerant to the compressor to maintain a constant discharge temperature from the compressor. A solenoid valve with strainer is mounted in the liquid line and wired into the control panel and





## Mechanical Specifications (Continued)

allows passage of refrigerant only when the compressor is operating. Application and performance of the FES "SOC" oil cooling system is described in FES Engineering Data Sheet Specification SC-6. "SOC" oil cooling is used with ammonia units.

### Oil Cooler and Oil Temperature Control

Cooler is a cleanable shell and finned tube type with oil on the shell side and the coolant through 5/8" O.D. tubes. The water side of the oil cooler is designed at 150 psig working pressure, the oil side at 400 psig design working pressure. A temperature actuated, electrically powered proportional valve modulates flow of coolant through the cooler to maintain a constant oil temperature to the compressor. The oil thermostat is mounted and wired into the control panel.

### Oil Pressure Regulator

A vee ported, plug type modulating valve designed to maintain a constant oil pressure differential under varying operating conditions is standard.

## MICROPROCESSOR CONTROL CENTER

**Microprocessor Control Unit** is completely factory assembled, mounted, and wired on the screw compressor unit. It consists of NEMA 4 enclosure containing a microprocessor control unit; solid state input-output modules; terminal strip for external field wiring interlocks; transducer input terminal strip; DC power supply; 1200 watt oil sump heater relay; safety controls; operating controls; hour meter; data entry keypad; and alpha-numeric display.

**Safety Controls** are provided for:

- Low oil pressure
- Compressor unload
- Oil pump start
- Motor overload
- High discharge pressure
- High discharge temperature
- Low inlet oil temperature
- High oil filter pressure
- High oil pressure
- Low suction pressure
- Compressor shut-down
- Low oil separator temperature
- High oil separator temperature

**Operating Controls** include anti-recycle; post shut-down lube; load limit control for high discharge pressure or high motor current; load and unload capacity controls; start-up oil failure time delay; and time proportioning floating capacity controller with pressure input transducer. Operating buttons include stop/reset, remote start, local start, and capacity control (manual/unload-manual/load-hold-auto). An external capacity control button is also included.

**Display and Data Entry** — operating parameters and system status are displayed by means of a four-line by 16-character alpha-numeric display. Four principal display modes are provided as follows:

1. Operating display

2. Data examine display
3. Setpoint/limit examine and change display
4. First-out annunciation

**Operating Display** — shows suction pressure, discharge pressure, oil pressure slide valve position, local or remote start, status (stop, run, anti-recycle, reset, etc.) and capacity control status (load-unload-hold-auto-external).

**Data Examine Display** — By means of a "change display", oil temperature, discharge temperature, oil pressure at compressor inlet, discharge pressure, suction pressure, motor current, oil separator temperature, oil pressure filter inlet, and slide valve position is displayed.

**Setpoint/Limit Examine and Change Display** — For data entry, a "step/enter" key calls up the operating parameters in sequence. The current value is displayed. The current value is changed by keying in the new value and depressing the enter key.

**First-Out Annunciation** — Upon a failure or safety trip, a message describing the failure is displayed as a status message on the operating display format and the alarm output is turned on. If multiple failures occur, they are displayed in the order of occurrence.

Seven transducers monitor pressure and temperature conditions and provide an electrical signal to the microprocessor control unit. No refrigerant is piped into the panel. All wiring is run in metallic tubing and/or liquid tight flexible metal conduit and all tubing for refrigerant and oil is stainless steel. The control voltage is 115 volts.

## CODES

The shells are designed, constructed, and tested in accordance with Section VIII of the ASME code. The oil side of the oil cooler is designed for 400 psig and hydrostatically tested at 375 psig. The oil separator is designed for 250 psig working pressure for ammonia and 300 psig for R-22. The entire unit is designed, constructed, and assembled in accordance with ANSI/ASHRAE 15-78 safety code.

## ACCESSORIES AND MODIFICATIONS

### Electro-Mechanical Control Center

Control Center is factory wired and piped to safety controls, operating controls and indicators.

The control center consists of two separate compartments. The electrical section is Nema 1, non-ventilated and gasketed. The refrigerant and oil pressure devices section is also Nema 1, but it is vented and isolated from the electrical compartment.

Each section has its own access door. The electrical access door is equipped with a disconnect switch which automatically breaks the electrical circuit when the door is opened. These features are provided to conform to the most rigid electrical codes.





## Mechanical Specifications (Continued)

The safety controls consist of low pressure cutout, high pressure cutout, low differential oil pressure cutout, low oil temperature cutout, high discharge temperature cutout, combination ammeter and solid state load limiter control.

The operating controls consist of master control relay, oil failure time delay relay, anti-recycle delay relay, and compressor control relay, load and unload solenoid capacity controls, time proportioning floating suction pressure controller, pressure transducer, operating control and capacity control selector switches.

The indicators consist of pilot lights for control power, oil heaters, load, unload, compressor on, start-up delay, anti-recycle delay, oil temperature, discharge temperature, motor overload, high-low discharge pressure, oil failure and reset on safety trip. Indicators also include hour meter, ammeter, discharge gas thermometer, oil thermometer, suction, discharge and oil pressure gauges, and partial load indicator.

The control center includes complete factory control wiring with terminal strips for external field wiring interlocks. Standard control voltage is 115 volts. All wiring is run in metallic tubing and/or liquid tight flexible metal conduit. The entire control center is functionally tested at the factory.

### Stop Valves

Suction and discharge stop valves can be shipped separately for field mounting. Hand wheel type is furnished for ammonia and seal cap type on halocarbon packages.

### Compressor Motor

All motors must be furnished in accordance with FES Engineering Data Specification No. 60.35 for screw compressors.

### Starters

Compressor and oil pump motor starters must be furnished in accordance with FES Engineering Data Specification No. 60.31 for screw compressors.

### Dual Compressor

FES can furnish an exclusive arrangement of two single

stage or booster-high stage screw compressors on one oil separator shell. On booster high stage dual arrangement a liquid cooler and booster by-pass valving can be furnished as optional items.

### Dual Oil Filters

A single filter shell with multiple filter elements is furnished as standard. Dual oil filters using two filter shells are available as an optional accessory item. Field operating experience has shown that a properly valved single filter unit requires less than 30 minutes to change elements and obviates the need for dual filters.

### Optional Oil Coolers

When oil coolers are used, shell and tube oil coolers for use with recirculated water are standard. Remotely located air cooled, closed circuit glycol or refrigerant cooled oil coolers are available.

### FES ECONOMISER

ECONOMISER System connections are available on single stage units providing side load capacity for duties such as liquid refrigerant pre-cooling, water cooling and other types of loads.

### Packaging

FES Screw Compressor Units can be packaged with other refrigerant system components making a completely contained refrigeration system.

### Outdoor Use

Modifications are available which permit use of the screw compressor unit outdoors.

### NEMA Alternates (Electromechanical Control Panel)

NEMA 12, NEMA 4, and N.E.C. Class I Group D Division II, and NEMA 7 electrical design units are available.

### Multiple Unit Control

Automatic sequencing of multiple units is available.

### Annunciator

Annunciator circuits for safety controls are available.





**TABLE 1 — PHYSICAL DATA**

Model	Shipping Weight**		Connections			Oil Charge Gals.		HP of Standard Oil Pump		*Compr. Inertia WR <sup>2</sup> lb-ft <sup>2</sup>	*Min. Cap. Torque Ft.-Lbs.	Compr. Displ. CFM
	Less Motor	With Motor Approx.	Suc-tion	Dis-charge	"SOC" Valve Conns.	Units With Water Cooled Oil Coolers	"SOC" Cooled Units	High Stage	Booster			
65	4000	4800	4"	2"	½"	25	20	2	—	5.1	40.0	208
95	4100	5000	4"	3"	¾"	45	40	3	3	6.9	57.9	278
100	4100	5000	4"	3"	¾"	45	40	3	3	7.2	60.9	292
135	4300	5500	5"	3"	¾"	45	40	3	3	9.4	77.7	398
140	4300	5500	5"	3"	¾"	45	40	3	3	10.4	85.7	439
175	5000	6500	5"	3"	¾"	75	65	5	3	19.6	124	544
180	5000	6500	5"	3"	¾"	75	65	5	3	20.6	131	571
255	5200	6900	6"	4"	¾"	75	65	5	3	27.6	168	776
270	5400	7100	6"	4"	¾"	75	65	5	3	30.3	185	853
305	5400	8100	6"	4"	¾"	75	65	5	3	33.1	201	932
350	9400	12100	6"	4"	1"	142	130	7½	5	65.5	271	1061
385	9500	12200	6"	4"	1"	142	130	7½	5	68.5	283	1110
420	9700	13200	6"	4"	1"	148	130	7½	5	78.0	322	1264
500	10400	15000	8"	5"	1"	148	130	7½	5	87.9	341	1516
550	10800	15800	8"	5"	1"	148	130	7½	5	96.7	375	1668
575	11000	16000	8"	5"	1"	148	130	7½	5	96.8	398	1670
775	13500	18600	8"	5"	1¼"	170	150	10	7½	202	611	2236
1160	14000	20400	10"	6"	1¼"	196	176	10	7½	296	849	3337

NOTE: \* Refer to Selection Guide, Page 8.

\*\* Shipping weights are estimated and include stop valves, oil, spare set of filters, and skid.

**TABLE 2 — OPERATING LIMITATIONS**

Maximum High Pressure Cutout Setting, psig, Ammonia 225, . . . R-22	275
Maximum Design Discharge Pressure, psig, Ammonia 250, . . . . R-22	300
Maximum Operating Differential, psi . . . . .	275
Maximum Suction Pressure, psig . . . . .	100
Maximum Discharge Temperature °F. . . . .	212
Maximum Oil Temperature °F. . . . .	145
Maximum Design Saturated Discharge Temperature °F.	
R-717 (Ammonia) . . . . .	126
R-22 . . . . .	130
Minimum Ambient Temperature °F. . . . .	40
Maximum Superheat °F.—Suction gas superheats above 40 °F. — refer to York for design check.	

**TABLE 3 — MOTOR SIZES**

Model	"D" Dimension		Minimum HP Motor Required <sup>3</sup>	Model	"D" Dimension		Minimum HP Motor Required <sup>3</sup>
	Max. <sup>1</sup>	Min. <sup>2</sup>			Max. <sup>1</sup>	Min. <sup>2</sup>	
65	11.0	8.0		305	12.5	8.0	75
95	11.0	8.0	25	350	14.5	9.0	100
100	11.0	8.0	25	385	14.5	9.0	100
135	11.0	8.0	25	420	14.5	9.0	100
140	11.0	8.0	30	500	14.5	9.0	125
175	12.5	8.0	40	550	14.5	9.0	125
180	12.5	8.0	40	575	14.5	9.0 <td 125	
255	12.5	8.0	50	775	17.0	12.5	200
270	12.5	8.0	60	1160	17.0	12.5	300

When applying motors for use with direct driven FES standard compressors the critical dimension is the motor "D" dimension, the distance in inches from the shaft centerline to the bottom of the feet.

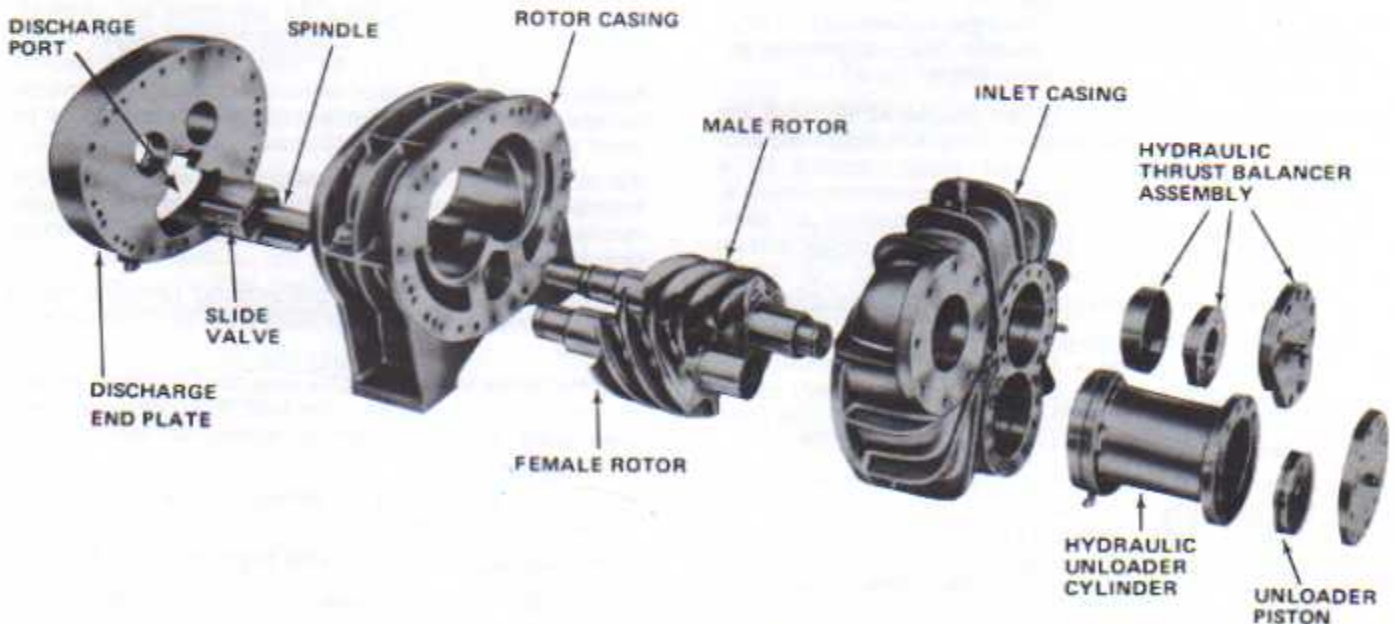
<sup>1</sup> These maximum and minimum "D" dimensions are listed above.

Motors 450 HP and smaller are reviewed in terms of NEMA TS and US frames.

Base design and "D" dimensions above relating to motors 500 HP and larger are established by review of largest physical dimensions of a cross section of motor manufacturers.

<sup>2</sup> When use of a motor which is special is anticipated, particularly with respect to exceeding the "D" dimension for the model FES screw compressor selected, a non-standard package design is likely. Contact should be made with FES in York to determine the effect on cost and delivery.

<sup>3</sup> Minimum HP motors required for across-the-line type start, to accelerate to full speed. A larger motor may be required for other reasons.



**FIGURE 1—Compressor, Exploded View**





## SELECTION GUIDE

### Guide to Selection — Rating Tables

Rating tables on FES Rotary Screw Packages, at 3550 R.P.M. are shown on Pages 13 through 50.

These ratings may be interpolated and extrapolated but must comply with design limitations shown on page 6.

All ratings must be adjusted in accordance with Selection Guide factors described below:

1. Ammonia Single Stage Rating Tables (Pages 13 thru 22) are based on use of "SOC" oil cooling with saturated suction gas temperatures and 10°F. liquid subcooling. Decrease compressor capacity one percent for each 5°F. increase in liquid temperature above this level. For every 5°F. suction gas superheat on ammonia compressors, the capacity should be reduced one percent.
2. Ammonia Booster Rating Tables (Pages 23 thru 31) are based on "SOC" oil cooling with saturated suction gas temperature and liquid cooled to a temperature corresponding to intermediate pressure. Decrease compressor capacity one percent for each 5°F. increase in suction superheat in piping and an additional one percent for each five degrees of liquid temperature above saturated discharge temperature.
3. Ammonia Single Stage and Booster Ratings (Pages 13 thru 31) must be corrected when a water cooled oil cooler is used instead of "SOC" oil cooling; decrease single stage capacity ratings three percent and brake horsepower two percent; decrease booster capacity ratings one percent and brake horsepower two percent.
4. R-22 Single Stage Rating Tables (Pages 32 thru 41) are based on water cooled oil cooling with saturated suction gas and 10°F. liquid subcooling. If liquid is at temperature corresponding to condensing pressure rather than sub-cooled 10°F., decrease T.R. capacities 5 percent. Suction gas superheat has little effect on compressor capacity unless superheat exceeds 40°F.
5. R-22 Booster Rating Tables (Pages 42 thru 50) are based on water cooled oil cooling with saturated suction gas temperature and liquid cooled to a temperature corresponding to intermediate pressure. Decrease compressor capacity 2.5 percent for each 10°F. increase in suction superheat in piping and an additional 1.6 percent for each 5°F. of liquid temperature above saturated discharge temperature.
6. Horsepower ratings are based on the most efficient internal volume ratio. Therefore, it is necessary that operating conditions be included with each screw compressor order. FES has followed this same practice on rotary booster compressors since 1950.
7. Referring to Table 6, Page 53, oil cooler heat rejection for ammonia booster units, and Table 8, Page 55, oil cooler heat rejection for R-22 booster units, you will note that zero or negative heat rejections are indicated for some operating conditions. However all such units will be furnished with a size "A" oil cooler. The reason is that under part load conditions, positive heat rejections can develop which would require an oil cooler. Accordingly it will be necessary to include the price of the oil cooler for all units.

Rating Tables show horsepower required by the motor when the screw compressor is operating fully loaded at any selected condition. A typical part load performance curve is given in Figure 15 for a single stage compressor. Actual part load performance varies appreciably with operating conditions and internal clearances in the compressor.

### Motor and Starter Selection

Motors and starters should be selected in accordance with FES motor specifications No. 60.35 and starter specifications No. 60.31.

Compressor inertia and starting torque data are given in the table of Physical Data found on Page 6. The starting torque given is for a typical compressor running at 3550 R.P.M. with slide valve at minimum capacity position and operating with inlet pressure 0 psig and outlet pressure of 185 psig.

Typical torque — speed characteristics are given in Figure 13 for starting under single stage conditions cited above, and for typical booster conditions.

Selection Data Required —

1. Tons Refrigeration (T.R.).
2. Saturated suction temperature, and suction gas superheat.
3. Saturated discharge temperature.
4. Method of oil cooling to be used.
5. Water temperature to oil cooler, if water cooled oil cooler is used.
6. Electrical current characteristics.
7. Type of starting to be used.

### High Stage Load Multiplier

High stage load multipliers for ammonia are given on pages 57, 58, and 59, and those for R-22 on pages 60 and 61. The multipliers may be used to size the second stage screw compressor after a selection of a screw booster compressor. These multipliers should not be used with any other type of booster compressor.

To obtain high stage capacity requirements, always multiply the booster capacity found in the booster rating tables by the appropriate multiplier and correction factor.

Multipliers are based on condensing temperature of 95°F. for Ammonia and for R-22 with 10°F. liquid subcooling.

The multiplier with precooler side load is based on use of a shell and coil type cooler with high pressure liquid pre-cooled to 10°F. above saturated intermediate temperature.

High stage multipliers for ammonia are given for the following applications:

1. No precooler side load. Use Figure 4, Page 57.
2. With precooler side load. Use Figure 5, Page 58.
3. "SOC" cooled booster on separate package discharging into an intercooler with both desuperheating and subcooling functions. Use Figure 6, Page 59.





## Selection Guide (Continued)

Correction factors for ammonia are given for the following applications:

"SOC" cooled booster on separate package discharging directly into second stage. Use Table 9 in conjunction with Figure 4 and Table 10 in conjunction with Figure 5.

Water cooled booster on separate package discharge into an intercooler. Use Table 11 in conjunction with Figure 6.

High stage multipliers for R-22 are given for the following applications:

1. No precooler side load, water cooled oil cooler, booster compressor mounted on same package as high stage compressor. Use Figure 7, Page 60.
2. No precooler side load, water cooled oil cooler, booster compressor mounted on different package than high stage compressor. Use Figure 8, Page 60.
3. With precooler side load, water cooled oil cooler, booster compressor mounted on same package as high stage compressor. Use Figure 9, Page 61.
4. With precooler side load, water cooled oil cooler, booster compressor mounted on different package than high stage compressor and discharging into intercooler or high stage. Use Figure 10, Page 61.

### ECONOMISER Rating Curves

Capacity and brake horsepower rating factors are given on pages 62 thru 63 for ammonia and R-22 applications utilizing the ECONOMISER feature. Compressors with this feature have an extra side suction port. This allows introduction of additional gas into the compressor at a pressure between suction and discharge with little or no reduction in the amount of gas taken into the main suction port.

Figures 11 and 12 show the applicable multipliers to be used when using the ECONOMISER arrangement to subcool the liquid refrigerant to the evaporator.

The multipliers are based on use of a shell and coil type subcooler with high pressure liquid cooled to within 10°F. saturated side port temperature.

ECONOMISER ratings are given for a fully loaded compressor. Operation at part load reduces the side port effectiveness. At 75% compressor capacity, the side suction port is open to the main suction port. Therefore, maximum benefit of the ECONOMISER feature is obtained when the compressor operates fully loaded.

### SINGLE STAGE SELECTION

#### A. "SOC" Oil Cooling

##### 1. Selection Data

- a. Refrigerant: ammonia
- b. Capacity: 420 T.R.
- c. Saturated suction temp.: 10°F.
- d. Suction superheat: 10°F.
- e. Liquid subcooling: None
- f. Condensing temperature: 95°F.
- g. Method of oil cooling: "SOC"

2. Select compressor. — Model 500 rating at plus 10°F. and 95°F. has capacity 448.9 T.R. and BHP 592.8. Correct capacity for superheat and subcool-

ing according to **Selection Guide No. 1, Page 8.**

$$448.9 \times .98 \times .98 = 431 \text{ T.R.}$$

3. Select motor. — Model 500 at design conditions has BHP 592.8. Use a 600 HP motor. If design conditions can be exceeded under normal operation, recommend 1.15 service factor motor.
4. Determine total heat to be rejected (T.H.R.)  
$$430 \times 12,000 = 5,180,000 \text{ BTU/Hr.}$$
$$600 \text{ HP} \times 2545 = \frac{1,530,000 \text{ BTU/Hr.}}{6,710,000 \text{ BTU/Hr.}}$$
5. "SOC" liquid requirements. Refer to FES Engineering Data Sheet Spec. SC-6.

#### B. Water Oil Cooling

##### 1. Selection Data

- a. Refrigerant: ammonia
- b. Capacity: 420 T.R.
- c. Saturated suction temp.: 10°F.
- d. Suction superheat: 10°F.
- e. Liquid subcooling: None
- f. Condensing temperature: 95°F.
- g. Method of oil cooling: water cooled oil cooler
- h. Cooling water temp. to oil cooler: 85°F.

2. Select compressor. — Model 500 rating at plus 10°F. and 95°F. has capacity 448.9 T.R. and BHP 592.8. Correct capacity for superheat and subcooling according to **Selection Guide No. 1, Page 8.**  
$$448.9 \times .98 \times .98 = 431 \text{ T.R.}$$

Correct capacity and BHP according to Selection Guide No. 3, Page 8 for water cooling of oil.

$$\text{Capacity } 431 \times .97 = 419 \text{ T.R.}$$
$$\text{Horsepower } 592.8 \times .98 = 580 \text{ BHP}$$

3. Select motor. — Model 500 at design conditions has BHP 580. Use a 600 HP motor with 1.0 service factor or 1.15 service factor if design conditions can be exceeded under normal operation.
4. Determine total heat to be rejected (T.H.R.)  
$$419 \text{ T.R.} \times 12,000 = 5,030,000 \text{ BTU/Hr.}$$
$$600 \text{ HP} \times 2545 = \frac{1,530,000 \text{ BTU/Hr.}}{6,560,000 \text{ BTU/Hr.}}$$
5. Determine heat rejection to oil cooler (H.R.O.C.) by referring to Table 5, Page 52, for Model 500, for operating conditions of 10°F. suction and 95°F. condensing temperature.  
H.R.O.C. 10,460 BTU/Min.  
or 627,600 BTU/Hr.
6. Determine water required. Assume a 10°F. rise in water temperature across cooler.  
$$\text{G.P.M.} = \frac{627,600}{10 \times 60 \times 8.34} = 126 \text{ G.P.M.}$$
7. Standard oil cooler selection. Referring to Table 4, Page 51, a "C" cooler is standard and 126 G.P.M. is required. The G.P.M. is within the minimum and maximum limits given for the "C" cooler.
8. Pressure drop in water circuit. Figure 3, Page 56 indicates a cooler pressure drop of 3.8 psi. Adding 5 psi for the water regulating valve pressure drop gives a total for the two of 8.8 psi.





## Selection Guide (Continued)

### BOOSTER SELECTION

#### A. "SOC" Oil Cooling

1. Selection data
  - a. Refrigerant: ammonia
  - b. Capacity: 140 T.R.
  - c. Saturated suction temp.:  $-40^{\circ}\text{F}$ .
  - d. Suction superheat: None
  - e. Saturated intermediate temp.:  $+15^{\circ}\text{F}$ .
  - f. Liquid temp. to evap.:  $+25^{\circ}\text{F}$ .
  - g. Condensing temp.:  $95^{\circ}\text{F}$ .
  - h. Method of oil cooling: "SOC"
2. Select compressor. — Model 500B has capacity of 149.8 T.R. and BHP 163 at minus  $40^{\circ}\text{F}$ . and  $+15^{\circ}\text{F}$ . Correct capacity for subcooling only according to **Selection Guide No. 2**, page 8.  
 $149.8 \times .98 = 146.5 \text{ T.R.}$
3. Select motor. — Use 200 HP motor with 1.0 service factor.
4. "SOC" liquid requirements. Refer to FES Engineering Data Sheet Spec. SC-6.

#### B. Water Oil Cooling

1. Selection Data
  - a. Refrigerant: ammonia
  - b. Capacity: 140 T.R.
  - c. Saturated suction temp.:  $-40^{\circ}\text{F}$ .
  - d. Suction superheat: None
  - e. Saturated intermediate temp.:  $+15^{\circ}\text{F}$ .
  - f. Liquid temp. to evap.:  $+25^{\circ}\text{F}$ .
  - g. Condensing temp.:  $95^{\circ}\text{F}$ .
  - h. Method of oil cooling: water cooled oil cooler
  - i. Cooling water temp. to oil cooler:  $85^{\circ}\text{F}$ .
2. Select compressor. — Model 500B has capacity of 149.8 T.R. and BHP 163 at minus  $40^{\circ}\text{F}$ . and  $+15^{\circ}\text{F}$ . Correct capacity for sub-cooling only according to **Selection Guide No. 2**, Page 8.  
 $149.8 \times .98 = 146.5 \text{ T.R.}$   
Correct capacity and BHP according to **Selection Guide No. 3**, Page 8 for water cooling of oil.  
Capacity  $146.5 \times .99 = 145.0 \text{ T.R.}$   
Horsepower  $163 \times .98 = 160 \text{ BHP}$
3. Select motor. — Use 200 HP motor with 1.0 service factor.
4. Determine total heat to be rejected (T.H.R.)  
 $145 \text{ T.R.} \times 12,000 = 1,740,000 \text{ BTU/Hr.}$   
 $200 \text{ HP} \times 2545 = 509,000 \text{ BTU/Hr.}$   
 $\frac{1,740,000 + 509,000}{2,249,000 \text{ BTU/Hr.}}$
5. Determine heat rejected to oil cooler (H.R.O.C.) at  $-40^{\circ}\text{F}$ . suction and  $+15^{\circ}\text{F}$ . intermediate temperature by referring to Table 6, Page 53, for Model 500.  
H.R.O.C. 1,915 BTU/Min.  
or 114,900 BTU/Hr.
6. Determine water required. Assume a  $10^{\circ}\text{F}$ . rise in water temperature across cooler.  
 $\text{G.P.M.} = \frac{114,900}{10 \times 60 \times 8.34} = 23 \text{ G.P.M.}$
7. Standard oil cooler selection. Referring to Table 4, Page 51, an "A" cooler is standard. The G.P.M. is within the minimum and maximum limits given for the "A" cooler.

8. Pressure drop in water circuit. Figure 3, Page 56, indicates a cooler pressure drop of 2.3 psi. Adding 5 psi for the water regulating valve pressure drop gives a total for the two of 7.3 psi.

### TWO STAGE SELECTION — AMMONIA

#### A. High stage and Booster compressors mounted on same package. Exclusive FES two stage arrangement, "SOC" Oil Cooling

1. Selection data
  - a. Refrigerant: ammonia
  - b. Capacity: 140 T.R.
  - c. Saturated suction temp.:  $-40^{\circ}\text{F}$ .
  - d. Suction superheat: None
  - e. Saturated intermediate temp.:  $+15^{\circ}\text{F}$ .
  - f. Liquid temp. to evap.:  $+25^{\circ}\text{F}$ .
  - g. Condensing temp.:  $95^{\circ}\text{F}$ .
  - h. Plant side load at intermediate suction pressure: none
  - i. Means of cooling liquid refrigerant: accomplished independently.
  - j. Liquid subcooling in condenser:  $10^{\circ}\text{F}$ .
  - k. Method of oil cooling: "SOC" applied to high stage compressor only.
2. A Model 500B booster was selected under Booster Selection example "A" for these design conditions. The rated or published capacity, 149.8 T.R. is used to select the high stage compressor. Reduce published capacity one percent and brake horsepower two percent. ("SOC" oil cooling not directly applied to booster compressor.) The corrected published capacity for "SOC" two stage arrangement becomes:  
 $149.8 \text{ T.R.} \times .99 = 148.3 \text{ T.R.}$ , and correcting for subcooling only according to **Selection Guide No. 2**, Page 8.  $148.3 \times .98 = 145 \text{ T.R.}$   
Rated BHP = 163 Corrected BHP  $163 \times .98 = 160$
3. Determine higher stage load multiplier. The multiplier is selected from Figure 4, Page 57, since no precooling is handled by this package. For  $-40^{\circ}\text{F}$ . suction and  $+15^{\circ}\text{F}$ . saturated intermediate temp. the value selected is 1.147. (If precooling is handled by the high stage compressor of the new system, the higher stage multiplier would be selected from Figure 5 instead of Figure 4.)
4. High Stage Selection Capacity
  - a. Load from booster  $149.8 \text{ booster T.R.} \times 1.147 = 172 \text{ H.S.T.R.}$  (Note: always use rating table booster T.R.)
  - b. Load from plant. None
  - c. Selection capacity is the sum of a and b above or 172 T.R.
5. Select high stage compressor. Model 175 has a capacity of 176.2 T.R. and 219.7 BHP at  $+15^{\circ}\text{F}$ . suction and  $95^{\circ}\text{F}$ . condensing temperature.
6. Select motor. — Use 200 HP motor for booster and 250 HP motor for high stage each with 1.0 service factor.



7. Determine total heat to be rejected. T.H.R.

Plant Side Load =	NONE
145 x 12,000	= 1,740,000 BTU/Hr.
200 HP x 2545	= 509,000 BTU/Hr.
250 HP x 2545	= 636,000 BTU/Hr.
	2,885,000 BTU/Hr.

8. "SOC" liquid requirements. Refer to FES Engineering Data Sheet Spec. SC-6.

- B. High Stage and Booster Compressors mounted on same package. Exclusive FES two stage arrangement. Water cooled oil cooler.

1. Selection Data

Same as Example A except oil is cooled with water cooled oil cooler with 85°F. water to the cooler.

2. Select booster compressor and motor. Same as Example A.

3. Determine higher stage load multiplier. Same as Example A.

4. High stage selection capacity.

- a. Load from booster.

$$149.8 \text{ booster T.R.} \times 1.147 \text{ } \odot \text{ } 172 \text{ H.S.T.R.}$$

(Note: always use rating table booster T.R.)

- b. Load from plant. None

5. Select high stage compressor. Model 175 has a capacity of 176.2 T.R. and a BHP of 219.7 at +15°F. suction and 95°F. condensing temperature. Correct values per **Selection Guide No. 3, Page 8.** (176.2 x .97 = 171 T.R., 219.7 x .98 = 215.3 B.H.P.)

6. Select motor. Same as Example A.

7. Refer to factory for selection of water cooled oil cooler.

- C. Booster and High Stage Compressors mounted on separate packages. Booster discharges into intercooler with both desuperheating and precooling functions. Both compressors "SOC" cooled.

1. Selection Data

- a. through g. same as **Booster Selection, Example A**, first column, Page 10.

- b. Plant side load at intermediate suction pressure: none

- c. Means of cooling liquid refrigerant: accomplished in intercooler.

- d. Liquid subcooling in condenser: 10°F.

- e. Method of oil cooling: "SOC"

2. Select booster compressor and motor. Same as Booster Selection Example A.

3. Determine higher stage load multiplier. The multiplier is selected from Figure 6 found on Page 59. For -40°F. suction and +15°F. saturated intermediate temp., the multiplier is 1.245, (if the booster is water cooled, multiply the above value by 0.945 from Table 11 found on Page 59.)

4. High Stage Selection Capacity

- a. Load from booster

$$149.8 \text{ Booster T.R.} \times 1.245 = 186.5 \text{ T.R.}$$

- b. Load from plant: none

- c. Selection capacity is the sum of a and b above or 186.5 T.R.

5. Select high stage compressor. Model 255 has a capacity of 251.9 T.R. and a BHP of 315.6 at +15°F. suction and 95°F. condensing temperature. (Model 180 has a capacity of 181.6 T.R. and 232 BHP. If this is a new addition to an existing system which has some excess capacity, the smaller compressor could probably be selected. Also, by a slight shift in intermediate pressure the Model 180 would suffice.)

6. Select motor. Use a 350 HP motor with 1.0 service factor for Model 255 or 250 HP with 1.15 service factor for Model 180 if design conditions can be exceeded under normal operation.

7. Determine total heat to be rejected. T.H.R.

Plant Side Load	=	NONE
146.5 T.R. x 12,000	=	1,755,000 BTU/Hr.
200 BHP x 2545	=	509,000 BTU/Hr.
350 BHP x 2545	=	890,750 BTU/Hr.
T.H.R.		3,154,750 BTU/Hr.

Note: If excess capacity of high stage compressor is utilized to carry load from plant, add load beyond 149.8 T.R. to the above T.H.R.

8. "SOC" liquid requirements. Refer to FES Engineering Data Sheet Spec. SC-6.

### TWO STAGE SELECTION — R-22

The method of selection is similar to that for various arrangements above, using ammonia. Refer to corresponding sources of information for R-22.

### SINGLE STAGE WITH ECONOMISER SELECTION

- A. Side Suction Port With Liquid Subcooler — Ammonia

1. Selection Data

- a. Refrigerant: ammonia

- b. Capacity: 140 T.R.

- c. Saturated suction temp.: -40°F.

- d. Suction superheat: None

- e. Condensing temp.: 95°F.

- f. Liquid subcooling in condenser: 10°F.

- g. Method of precooling liquid: ECONOMISER side suction connection.

- h. Method of oil cooling: "SOC"

2. Select compressor. — Model 550 rating at minus 40°F. and 95°F. is 117.5 T.R. and 461.1 BHP. Refer to ECONOMISER capacity and horsepower multipliers in Figure 11, Page 62 and adjust rating accordingly.

$$\text{Capacity } 117.5 \times 1.25 = 147 \text{ T.R.}$$

$$\text{Horsepower } 461.1 \times 1.046 = 482 \text{ BHP}$$

3. Select motor. — Model 550 at design conditions requires 482 BHP. Use 500 HP motor with 1.15 service factor if design conditions can be exceeded under normal operation.

4. "SOC" liquid requirement. Refer to FES Engineering Data Sheet Spec. SC-6.



### B. Side Suction Port With Liquid Subcooler — R-22

1. Selection Data — Same as for example above except.
  - a. Refrigerant: R-22
  - h. Method of oil cooling: water
  - i. Cooling water temp. to oil cooler: 85°F.
2. Select compressor. — Model 500 rating at minus 40°F. and 95°F. is 125 T.R. and 455 B.H.P. Refer to ECONOMISER capacity and horsepower multipliers in Figure 12, Page 63 and adjust rating accordingly.  
 Capacity  $125 \times 1.335 = 167$  T.R.  
 Horsepower  $455 \times 1.11 = 505$  B.H.P.
3. Determine total heat to be rejected (T.H.R.)  
 $167 \times 12,000 = 2,004,000$  BTU/Hr.  
 $505 \times 2545 = 1,285,225$  BTU/Hr.  
 $\underline{\hspace{1.5cm}}$   
 3,289,225 BTU/Hr.
4. Determine heat rejected to the oil cooler. Refer to Table 7, Page 54 for H.R.O.C. of  
 8044 BTU/Min. or  
 482,640 BTU/Hr.
5. Determine water required. Assume a 10°F. rise in water temp. across cooler.  

$$\text{G.P.M.} = \frac{482,640}{10 \times 60 \times 8.34} = 97 \text{ G.P.M.}$$
6. Standard oil cooler selection. Referring to oil cooler data, Table 4, Page 51, note that cooler "B" has maximum G.P.M. limitation of 102 G.P.M. Pressure drop of cooler "B" and water regulating valve is 6.3 plus 5 = 11.3 psi.

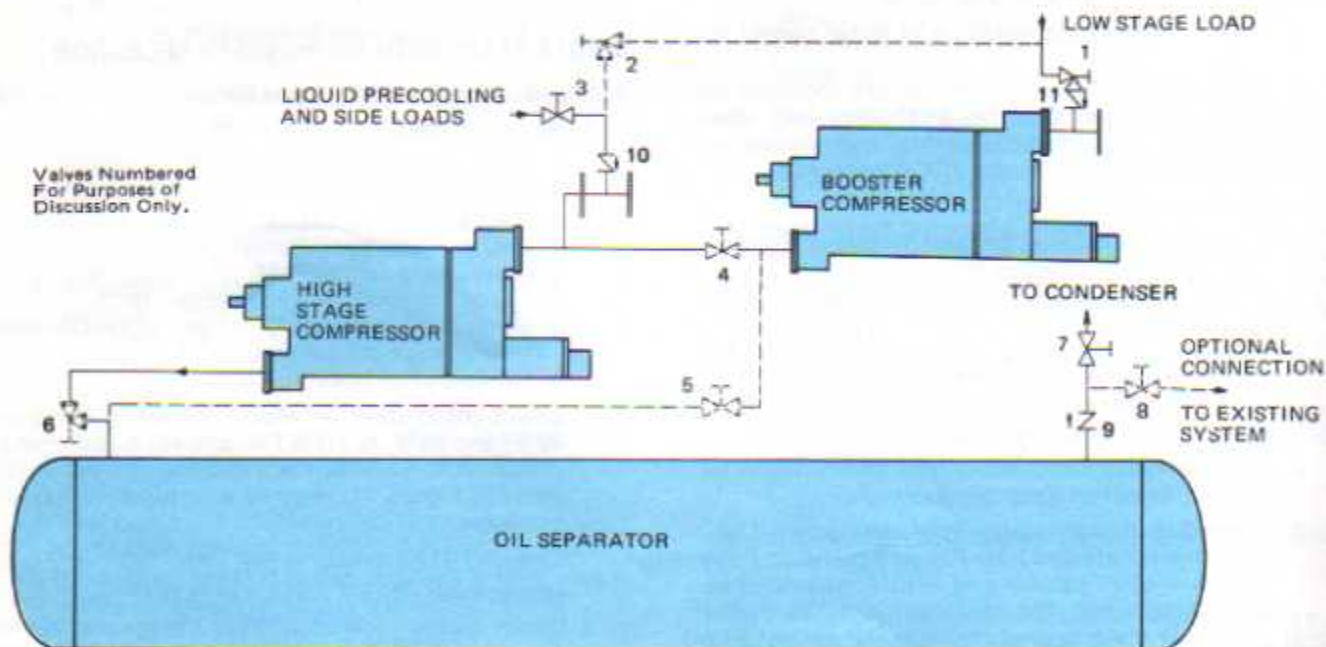
### PRECOOLER SELECTION

#### A. Two Stage Package

1. Selection Data
  - a. Refrigerant: ammonia
  - b. Two stage package selected: Model 550B/175
  - c. Saturated suction temp.: -40°F
2. Select precooler to be mounted on two stage package, piped and insulated.
  - a. Refer to Table 12, Page 65.
  - b. Use the booster portion of the two stage package for entering table.
  - c. For 550B booster compressor and -40°F. saturated suction temperature, the indicated precooler is a Model D.

#### B. Single Stage Compressor With ECONOMISER

1. Selection
  - a. Refrigerant: ammonia
  - b. Compressor selected: Model 270
  - c. Saturated suction temp.: -30°F.
2. Select precooler to be mounted on the compressor package, piped and insulated.
  - a. Refer to Table 13, Page 65.
  - b. Using Model 270 compressor and -30°F. saturated suction temperature, the indicated precooler selection is a Model B.
3. If the refrigerant is R-22 instead of ammonia, refer to Table 15, Page 66.



**FIGURE 2 TWO STAGE FES ROTARY SCREW COMPRESSOR PACKAGE**

*OPTIONAL VALVING ARRANGEMENT, SHOWN DOTTED, PERMITS SINGLE STAGE OPERATION, EITHER COMPRESSOR.*





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODEL  
**65**

## Model 65

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	15.4	20.9	27.6	36.3	46.7	59.8	75.6	94.1	115.8
	B.H.P.	50.7	53.3	55.4	58.1	61.1	62.8	63.2	63.7	64.2
85 151.7	T.R.	14.2	19.5	26.1	34.3	44.5	56.8	72.0	90.2	111.4
	B.H.P.	56.2	59.2	63.2	66.8	70.1	73.7	74.9	75.4	76.0
95 181.1	T.R.	12.7	17.9	24.3	32.3	42.0	54.1	68.2	86.0	106.7
	B.H.P.	61.7	65.2	69.7	75.0	79.7	83.6	87.4	88.0	88.6
105 214.2	T.R.	11.0	16.1	22.4	30.1	39.5	51.0	65.0	81.3	101.6
	B.H.P.	67.3	71.1	76.2	82.1	88.7	94.2	98.9	101.4	102.1

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10° F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**95**  
AND  
**100**

## Model 95

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	20.9	27.1	37.6	49.0	64.7	83.5	106.5	129.5	156.6
	B.H.P.	61.5	66.6	72.2	76.0	78.8	81.8	81.8	81.8	80.7
85 151.7	T.R.	18.8	26.1	36.0	47.5	61.6	80.4	102.3	125.3	151.4
	B.H.P.	68.9	72.9	79.5	86.3	90.6	96.6	97.6	98.1	97.6
95 181.1	T.R.	16.7	25.0	34.5	45.9	58.5	77.3	98.1	121.1	146.2
	B.H.P.	76.3	79.1	86.7	94.5	102.4	108.3	112.4	114.5	114.5
105 214.2	T.R.	15.7	23.0	31.8	42.8	55.3	74.1	94.0	116.9	140.9
	B.H.P.	83.7	88.0	94.9	102.7	111.6	121.6	126.7	133.9	133.9

## Model 100

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	21.9	29.7	39.6	52.0	67.2	86.2	109.1	136.1	167.6
	B.H.P.	67.0	71.7	76.4	80.9	85.9	89.0	89.0	89.0	88.9
85 151.7	T.R.	20.5	28.2	37.8	49.6	64.4	82.2	104.4	130.8	161.6
	B.H.P.	73.6	78.6	85.2	91.7	97.1	103.0	105.3	106.1	106.9
95 181.1	T.R.	19.0	26.6	35.9	47.3	61.5	78.8	99.5	125.2	155.3
	B.H.P.	80.7	85.9	92.9	101.2	109.2	115.4	122.4	124.0	125.5
105 214.2	T.R.	17.4	24.7	33.8	45.0	58.6	75.2	95.4	119.2	148.6
	B.H.P.	88.2	93.6	100.9	109.7	119.7	128.8	136.2	142.6	145.0

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**135**  
AND  
**140**

## Model 135

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	29.2	39.7	54.3	69.9	89.8	119.0	150.3	184.8	223.4
	B.H.P.	89.0	95.8	103.2	106.8	112.6	116.5	116.5	116.5	115.5
85 151.7	T.R.	27.1	37.6	51.7	67.3	86.7	114.8	145.1	179.0	216.1
	B.H.P.	98.6	105.1	113.5	122.7	129.5	136.9	139.0	140.0	139.5
95 181.1	T.R.	25.0	35.5	49.0	64.7	83.5	110.7	139.9	173.3	208.8
	B.H.P.	108.1	114.5	123.8	135.6	146.4	154.3	161.5	163.5	163.5
105 214.2	T.R.	23.0	33.4	45.4	60.6	79.3	105.4	134.7	167.0	201.5
	B.H.P.	118.7	126.0	135.2	146.9	160.3	173.2	182.4	192.1	191.1

## Model 140

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	33.4	45.4	60.5	79.5	102.5	131.5	166.4	207.5	255.5
	B.H.P.	100.4	107.5	114.5	121.2	128.8	133.4	133.4	133.4	133.3
85 151.7	T.R.	31.4	43.1	57.7	75.8	98.4	125.5	159.3	199.5	246.4
	B.H.P.	110.4	117.9	127.8	137.5	145.5	154.4	157.9	159.0	160.2
95 181.1	T.R.	29.2	40.6	54.9	72.4	93.9	120.4	151.9	191.0	236.9
	B.H.P.	121.0	128.8	139.2	151.7	163.6	173.0	183.6	185.8	188.2
105 214.2	T.R.	26.7	37.9	51.8	68.8	89.6	114.9	145.7	181.9	226.7
	B.H.P.	132.2	140.3	151.3	164.4	179.5	193.1	204.1	213.7	217.3

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**175**  
AND  
**180**

## Model 175

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	41.8	57.4	78.3	101.8	130.5	167.0	214.0	268.8	339.3
	B.H.P.	121.9	130.1	139.3	148.9	158.7	163.5	166.1	168.6	168.6
85 151.7	T.R.	39.2	54.8	74.4	97.9	125.3	161.8	204.9	258.4	323.6
	B.H.P.	135.2	143.1	153.5	166.9	180.5	191.6	195.5	196.7	196.7
95 181.1	T.R.	36.5	52.2	70.5	94.0	120.0	156.6	195.8	248.0	308.0
	B.H.P.	148.4	156.2	167.7	184.9	202.2	214.6	224.8	224.8	224.8
105 214.2	T.R.	33.9	48.3	66.6	88.7	114.8	148.8	187.9	236.2	293.6
	B.H.P.	165.6	171.8	181.9	199.0	218.9	237.6	252.9	263.2	263.2

## Model 180

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	44.7	60.7	80.7	106.1	136.7	175.3	221.7	276.3	340.1
	B.H.P.	130.7	140.0	149.1	157.8	167.7	173.7	173.7	173.6	173.6
85 151.7	T.R.	42.0	57.6	77.1	101.2	131.2	167.3	212.3	265.8	328.2
	B.H.P.	143.7	153.4	166.4	179.0	189.5	201.0	205.6	207.1	208.6
95 181.1	T.R.	39.1	54.3	73.3	96.6	125.3	160.6	202.5	254.6	315.5
	B.H.P.	157.5	167.7	181.3	197.5	213.1	225.3	239.0	241.9	245.0
105 214.2	T.R.	35.8	50.7	69.2	92.0	119.6	153.4	194.3	242.6	302.1
	B.H.P.	172.1	182.7	197.0	214.1	233.7	251.4	265.8	278.2	282.9

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES™"SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R- 717**  
 AMMONIA  
 SINGLE STAGE  
 MODELS  
**255**  
 AND  
**270**

## Model 255

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	60.0	83.5	109.6	144.9	185.3	237.5	305.4	386.3	485.5
	B.H.P.	174.9	184.8	198.7	215.7	227.8	237.6	237.6	240.2	240.2
85 151.7	T.R.	56.1	78.3	105.7	139.0	179.4	229.7	293.6	369.3	462.0
	B.H.P.	193.5	205.6	202.6	241.3	258.6	274.7	281.1	282.3	281.1
95 181.1	T.R.	52.2	73.0	101.8	133.1	173.6	221.9	281.9	352.4	438.5
	B.H.P.	212.0	226.4	242.5	264.5	289.3	306.6	324.5	324.5	321.9
105 214.2	T.R.	48.3	69.2	95.3	126.6	165.1	210.1	266.2	334.1	418.9
	B.H.P.	235.9	248.5	263.2	285.0	312.3	339.8	362.8	379.4	378.1

## Model 270

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	68.6	92.9	123.2	161.4	207.8	266.1	336.2	418.7	515.1
	B.H.P.	195.4	209.3	222.9	235.9	250.7	259.6	259.6	259.6	259.5
85 151.7	T.R.	64.7	88.5	118.0	154.4	199.8	254.3	322.3	403.0	497.3
	B.H.P.	214.9	229.4	248.7	267.6	283.2	300.5	307.4	309.5	311.8
95 181.1	T.R.	60.4	83.6	112.4	147.8	191.1	244.3	307.7	386.3	478.4
	B.H.P.	235.5	250.7	271.0	295.3	318.5	336.8	357.3	361.6	366.3
105 214.2	T.R.	55.5	78.2	106.3	140.9	182.9	233.7	295.5	368.5	458.5
	B.H.P.	257.3	273.1	294.4	320.0	349.3	375.7	397.3	415.9	422.9

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
 AMMONIA  
 SINGLE STAGE  
 MODEL  
**305**

## Model 305

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	73.1	99.2	133.1	172.3	221.9	284.5	362.8	464.6	579.4
	B.H.P.	210.9	218.6	237.4	251.6	271.4	281.1	283.6	286.2	286.2
85 151.7	T.R.	67.9	94.0	127.2	165.7	214.7	276.0	351.0	445.7	552.7
	B.H.P.	232.7	244.6	264.5	291.4	309.8	332.2	336.0	337.3	337.3
95 181.1	T.R.	62.6	88.7	121.4	159.2	207.5	267.5	339.3	426.7	525.9
	B.H.P.	254.4	270.7	291.5	318.4	348.2	370.5	388.4	388.4	388.4
105 214.2	T.R.	57.4	82.2	114.2	152.7	197.7	255.1	323.6	405.9	501.8
	B.H.P.	279.6	296.7	318.6	346.6	382.7	407.5	435.6	453.5	454.8

\*Inches of mercury below one standard atmosphere (29.92")  
 Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

*Ratings include use of FES "SOC" oil cooling systems.*





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**350**  
AND  
**385**

## Model 350

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	86.1	114.8	156.6	203.6	261.0	339.3	428.0	527.2	631.6
	B.H.P.	238.5	255.0	273.5	295.3	307.2	311.7	311.7	311.7	309.2
85 151.7	T.R.	79.6	109.6	148.8	193.1	250.6	327.6	416.3	511.6	614.7
	B.H.P.	265.0	279.8	299.3	329.9	348.2	370.5	378.1	379.4	378.1
95 181.1	T.R.	73.1	104.4	140.9	182.7	240.1	315.8	404.6	495.9	597.7
	B.H.P.	291.5	304.5	325.1	356.9	389.1	413.9	444.6	447.1	447.1
105 214.2	T.R.	67.9	96.6	133.1	174.9	229.7	301.5	385.0	476.3	575.5
	B.H.P.	320.7	338.3	361.2	391.5	427.5	456.1	488.0	517.4	518.7

## Model 385

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	92.4	124.8	165.4	215.8	276.9	352.6	443.8	551.4	677.0
	B.H.P.	254.7	272.8	290.6	307.5	326.8	338.4	338.4	338.3	338.3
85 151.7	T.R.	87.4	119.0	158.4	207.0	266.7	338.5	426.7	531.8	654.6
	B.H.P.	280.1	299.0	324.2	348.8	369.2	391.7	400.6	403.5	406.4
95 181.1	T.R.	81.8	112.7	151.1	198.3	255.9	326.0	409.4	511.0	631.0
	B.H.P.	307.0	326.7	353.2	384.9	415.2	438.9	465.7	471.4	477.4
105 214.2	T.R.	75.6	105.8	143.3	189.3	245.3	312.6	394.0	488.8	606.0
	B.H.P.	335.4	356.0	383.8	417.1	455.4	489.8	517.9	542.1	551.2

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10° F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**420**  
AND  
**500**

## Model 420

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	104.4	140.9	187.9	245.3	313.2	404.6	511.6	626.4	751.7
	B.H.P.	283.6	301.9	327.7	351.7	368.6	370.5	370.5	370.5	370.5
85 151.7	T.R.	96.6	133.1	177.5	232.3	300.2	390.2	495.9	608.1	730.8
	B.H.P.	315.4	333.1	357.3	390.3	416.0	442.0	449.7	451.0	451.0
95 181.1	T.R.	88.7	125.3	167.0	219.2	287.1	375.8	480.2	589.9	709.9
	B.H.P.	347.2	364.4	387.0	421.1	463.4	493.1	528.9	531.4	531.4
105 214.2	T.R.	83.5	117.5	159.2	208.8	274.1	357.6	458.1	567.7	683.8
	B.H.P.	382.9	403.4	430.9	464.7	506.9	545.5	580.0	617.0	620.9

## Model 500

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	120.1	169.7	224.5	289.7	373.2	485.5	610.7	751.7	903.1
	B.H.P.	341.9	361.7	392.2	421.1	445.4	447.1	447.1	444.6	444.6
85 151.7	T.R.	112.2	160.5	214.0	278.0	356.3	467.2	592.5	732.1	879.6
	B.H.P.	379.0	398.2	429.6	471.1	500.5	531.4	541.7	541.7	541.7
95 181.1	T.R.	104.4	151.4	203.6	266.2	339.3	448.9	574.2	712.5	856.1
	B.H.P.	416.1	434.6	467.0	510.9	555.5	592.8	636.2	638.8	638.8
105 214.2	T.R.	96.6	140.9	193.1	253.2	326.3	428.0	548.1	682.5	824.8
	B.H.P.	457.1	484.1	517.3	559.7	610.6	656.6	698.8	741.0	746.1

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
 AMMONIA  
 SINGLE STAGE  
 MODELS  
**550**  
 AND  
**575**

## Model 550

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	130.5	187.9	248.0	321.0	409.8	529.8	670.8	824.8	991.8
	B.H.P.	376.3	398.2	428.3	462.2	486.4	490.6	490.6	490.6	490.6
85 151.7	T.R.	124.0	177.5	236.2	306.7	394.1	512.9	652.5	803.9	965.7
	B.H.P.	418.7	438.5	469.6	513.5	547.8	585.1	595.3	595.3	595.3
95 181.1	T.R.	117.5	167.1	224.5	292.3	378.5	495.9	634.2	783.0	939.6
	B.H.P.	461.1	478.9	510.8	554.6	609.3	649.0	700.1	700.1	700.1
105 214.2	T.R.	108.3	155.3	211.4	278.0	362.8	473.7	604.2	750.4	905.7
	B.H.P.	506.2	530.9	567.6	612.3	670.7	720.5	766.5	813.8	818.9

## Model 575

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75 125.8	T.R.	139.5	188.0	248.8	324.2	415.7	530.1	666.7	827.7	1015.8
	B.H.P.	381.4	408.4	435.1	460.4	489.3	506.7	506.7	506.6	506.5
85 151.7	T.R.	132.1	179.5	238.4	311.2	400.7	508.1	641.3	798.8	982.7
	B.H.P.	419.3	447.7	485.4	522.3	552.7	586.6	599.9	604.1	608.6
95 181.1	T.R.	123.9	170.2	227.7	298.4	384.6	489.5	614.4	767.9	947.6
	B.H.P.	459.6	489.2	528.9	576.3	621.6	657.3	697.2	705.8	714.9
105 214.2	T.R.	114.9	160.0	216.2	285.1	368.9	469.7	591.6	735.1	910.6
	B.H.P.	502.2	533.1	574.7	624.5	681.8	733.4	775.5	811.8	825.4

\* Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, SINGLE STAGE, 3550 R.P.M.

**R-717**  
AMMONIA  
SINGLE STAGE  
MODELS  
**775**  
AND  
**1160**

## Model 775

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75	T.R.	187.4	252.4	334.1	435.3	558.1	711.7	895.2	1111.4	1364.0
125.8	B.H.P.	512.1	548.4	584.2	618.2	657.0	680.4	680.3	680.2	680.1
85	T.R.	177.4	241.0	320.1	417.9	538.0	682.3	861.1	1072.5	1319.5
151.7	B.H.P.	563.1	601.1	651.7	701.3	742.2	787.6	805.5	811.2	817.2
95	T.R.	166.4	228.5	305.8	400.7	516.3	657.3	825.0	1031.1	1272.4
181.1	B.H.P.	617.2	656.9	710.2	773.8	834.7	882.5	936.2	947.8	959.9
105	T.R.	154.2	214.9	290.2	382.9	495.4	630.7	794.4	987.1	1222.7
214.2	B.H.P.	674.4	715.8	771.6	838.6	915.5	984.7	1041.3	1090.0	1108.3

## Model 1160

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 *8.7	-30 *1.6	-20 3.6	-10 9.0	0 15.7	10 23.8	20 33.5	30 45.0	40 58.6
75	T.R.	279.6	376.7	498.6	649.5	832.8	1062.0	1335.8	1658.4	2035.2
125.8	B.H.P.	764.2	818.3	871.7	922.5	980.3	1015.3	1015.1	1015.0	1014.8
85	T.R.	264.8	359.6	477.7	623.6	802.7	1018.1	1284.9	1600.3	1968.8
151.7	B.H.P.	840.2	896.9	972.5	1046.5	1107.5	1175.2	1201.9	1210.4	1219.3
95	T.R.	248.3	341.0	456.3	597.9	770.5	980.8	1231.0	1538.6	1898.6
181.1	B.H.P.	920.9	980.2	1059.6	1154.7	1245.5	1316.8	1397.0	1414.2	1432.3
105	T.R.	230.1	320.6	433.1	571.3	739.2	941.0	1185.3	1472.8	1824.3
214.2	B.H.P.	1006.2	1068.0	1151.4	1251.2	1366.1	1469.3	1553.7	1626.4	1653.7

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction, and with liquid subcooling of 10°F.

Ratings include use of FES "SOC" oil cooling systems.





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
 AMMONIA  
 BOOSTER  
 MODELS  
**95B**  
 AND  
**100B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 95B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	9.1	13.6	19.7	27.3			
	B.H.P.	20.4	20.4	20.9	21.4			
0 15.7	T.R.	8.6	13.4	19.4	26.8	35.9		
	B.H.P.	24.0	24.0	24.5	25.0	26.0		
+10 23.8	T.R.		13.1	19.2	26.3	35.4	46.5	
	B.H.P.		27.5	28.1	28.6	29.6	30.6	
+20 33.5	T.R.			18.4	25.5	34.3	45.5	59.3
	B.H.P.			31.6	32.1	32.9	33.7	34.7
+30 45.0	T.R.				24.7	33.3	44.4	58.1
	B.H.P.				35.7	36.2	36.7	37.7

## Model 100B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	9.8	14.5	20.7	28.5			
	B.H.P.	21.0	21.5	21.9	22.5			
0 15.7	T.R.	9.5	14.2	20.2	27.8	37.5		
	B.H.P.	24.8	25.3	25.8	26.3	26.9		
+10 23.8	T.R.		13.8	19.7	27.2	36.7	48.4	
	B.H.P.		29.1	29.6	30.2	30.7	31.4	
+20 33.5	T.R.			19.2	26.6	35.8	47.4	61.5
	B.H.P.			33.4	34.0	34.6	35.3	36.0
+30 45.0	T.R.				25.9	35.0	46.3	60.1
	B.H.P.				37.8	38.4	39.1	39.8





# AMMONIA BOOSTER, 3550 R.P.M.

**R-717**  
 AMMONIA  
 BOOSTER  
 MODELS  
**135B**  
 AND  
**140B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
 Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 135B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10	T.R.	13.1	20.2	28.8	39.4			
9.0	B.H.P.	28.6	29.1	29.6	30.6			
0	T.R.	12.6	19.4	27.8	38.4	51.5		
15.7	B.H.P.	33.9	34.4	34.9	35.7	36.5		
+10	T.R.		18.7	26.8	37.4	50.5	66.7	
23.8	B.H.P.		39.8	40.3	40.8	41.3	41.8	
+20	T.R.			26.3	36.4	49.2	64.9	82.3
33.5	B.H.P.			45.4	45.9	46.4	46.9	47.7
+30	T.R.				35.4	48.0	63.1	79.3
45.0	B.H.P.				51.0	51.5	52.0	52.5

## Model 140B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10	T.R.	15.1	22.2	31.5	43.3			
9.0	B.H.P.	31.2	31.8	32.6	33.3			
0	T.R.	14.6	21.6	30.7	42.3	57.0		
15.7	B.H.P.	36.9	37.5	38.3	39.0	39.9		
+10	T.R.		21.1	30.0	41.4	55.8	73.6	
23.8	B.H.P.		43.2	43.9	44.7	45.6	46.6	
+20	T.R.			29.4	40.5	54.6	72.0	93.5
33.5	B.H.P.			49.6	50.4	51.3	52.3	53.4
+30	T.R.				39.5	53.3	70.4	91.4
45.0	B.H.P.				56.2	57.1	58.0	59.1





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
AMMONIA  
BOOSTER  
MODELS  
**175B**  
AND  
**180B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

Ratings include use of FES "SOC" oil cooling systems.

## Model 175B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	19.2	28.3	40.4	55.6			
	B.H.P.	38.8	39.8	40.3	40.8			
0 15.7	T.R.	18.2	27.3	38.9	54.0	72.2		
	B.H.P.	46.4	46.9	47.2	47.9	49.0		
+10 23.8	T.R.		26.3	37.4	52.5	70.7	93.9	
	B.H.P.		54.1	54.1	55.1	56.1	58.1	
+20 33.5	T.R.			36.9	51.5	69.2	91.4	119.7
	B.H.P.			62.2	62.7	63.8	65.3	67.3
+30 45.0	T.R.				50.5	67.7	88.9	116.2
	B.H.P.				70.4	71.4	72.4	73.4

## Model 180B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	20.3	29.8	42.2	58.0			
	B.H.P.	40.6	41.5	42.4	43.4			
0 15.7	T.R.	19.7	29.1	41.2	56.8	76.3		
	B.H.P.	48.0	48.9	49.5	50.8	52.0		
+10 23.8	T.R.		28.4	40.3	55.5	74.7	98.5	
	B.H.P.		56.3	57.2	58.3	59.4	60.7	
+20 33.5	T.R.			39.4	54.3	73.1	96.5	125.1
	B.H.P.			64.6	65.7	66.9	68.1	69.5
+30 45.0	T.R.				53.0	71.4	94.3	122.4
	B.H.P.				73.1	74.3	75.6	77.0





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
**AMMONIA**  
**BOOSTER**  
**MODELS**  
**255B**  
**AND**  
**270B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
 Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 255B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	27.3	40.4	58.6	78.8			
	B.H.P.	55.1	56.1	57.1	58.1			
0 15.7	T.R.	25.8	39.4	56.6	76.8	103.0		
	B.H.P.	65.3	66.8	67.3	68.9	71.4		
+10 23.8	T.R.		38.4	54.5	74.7	101.0	133.3	
	B.H.P.		77.5	77.5	79.6	81.6	81.6	
+20 33.5	T.R.			53.5	72.7	99.0	130.3	171.7
	B.H.P.			87.7	89.8	91.8	92.8	96.4
+30 45.0	T.R.				70.7	97.0	127.3	165.6
	B.H.P.				100.0	102.0	104.0	106.1

## Model 270B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	30.6	45.0	63.6	87.3			
	B.H.P.	60.8	62.0	63.4	64.9			
0 15.7	T.R.	29.8	43.9	62.1	85.5	114.8		
	B.H.P.	71.8	73.0	74.4	76.0	77.7		
+10 23.8	T.R.		42.9	60.8	83.7	112.5	148.3	
	B.H.P.		84.1	85.5	87.1	88.8	90.7	
+20 33.5	T.R.			59.4	81.9	110.1	145.2	188.3
	B.H.P.			96.6	98.7	99.9	101.8	103.9
+30 45.0	T.R.				80.0	107.6	142.0	184.3
	B.H.P.				109.3	111.1	113.0	115.0





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
 AMMONIA  
 BOOSTER  
 MODEL  
**305B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
 Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 305B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	32.3	48.5	69.7	94.9			
	B.H.P.	66.3	67.3	67.3	69.4			
0 15.7	T.R.	31.3	47.5	68.2	92.9	125.2		
	B.H.P.	79.1	80.6	81.1	82.6	84.2		
+10 23.8	T.R.		46.5	66.7	90.9	123.2	161.6	
	B.H.P.		93.8	94.9	95.9	96.9	98.9	
+20 33.5	T.R.			64.6	88.4	119.7	157.1	204.0
	B.H.P.			107.1	108.1	109.7	111.7	114.2
+30 45.0	T.R.				85.9	116.2	152.5	198.0
	B.H.P.				120.4	122.4	124.4	126.5





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
AMMONIA  
BOOSTER  
MODELS

**550B**  
AND  
**575B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 550B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	60.6	90.9	126.3	171.7			
	B.H.P.	118.3	119.3	122.4	125.5			
0 15.7	T.R.	58.6	87.9	123.7	169.2	225.7		
	B.H.P.	139.2	140.8	143.8	146.4	149.9		
+10 23.8	T.R.		84.8	121.2	166.7	222.2	292.9	
	B.H.P.		162.2	165.2	167.3	170.3	175.4	
+20 33.5	T.R.			118.2	162.1	217.2	285.8	372.7
	B.H.P.			186.7	189.2	192.3	196.9	201.5
+30 45.0	T.R.				157.6	212.1	278.8	361.6
	B.H.P.				211.1	214.2	218.3	222.4

## Model 575B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	61.0	89.2	125.9	172.8			
	B.H.P.	117.4	119.8	122.5	125.4			
0 15.7	T.R.	59.5	87.2	123.2	169.2	227.1		
	B.H.P.	138.8	141.2	143.9	146.9	150.1		
+10 23.8	T.R.		85.4	120.7	165.8	222.6	293.2	
	B.H.P.		162.5	165.3	168.3	171.6	175.3	
+20 33.5	T.R.			118.2	162.4	218.1	287.3	372.3
	B.H.P.			186.7	189.8	193.1	196.8	200.7
+30 45.0	T.R.				158.8	213.4	281.2	364.5
	B.H.P.				211.2	214.6	218.3	222.3





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
 AMMONIA  
 BOOSTER  
 MODELS  
**775B**  
 AND  
**1160B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

Ratings include use of FES "SOC" oil cooling systems.

## Model 775B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	81.9	119.8	169.1	232.0			
	B.H.P.	157.6	160.8	164.4	168.4			
0 15.7	T.R.	79.9	117.1	165.5	227.2	305.0		
	B.H.P.	186.3	189.5	193.2	197.2	201.6		
+10 23.8	T.R.		114.7	162.1	222.7	298.9	393.7	
	B.H.P.		218.3	221.9	226.0	230.5	235.3	
+20 33.5	T.R.			158.7	218.1	292.9	385.8	500.0
	B.H.P.			250.7	254.8	259.3	264.2	269.6
+30 45.0	T.R.				213.3	286.5	377.6	489.5
	B.H.P.				283.6	288.2	293.1	298.5

## Model 1160B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	122.1	178.8	252.3	346.2			
	B.H.P.	235.2	240.0	245.3	251.3			
0 15.7	T.R.	119.2	174.8	246.9	339.1	455.1		
	B.H.P.	278.0	282.8	288.2	294.2	300.8		
+10 23.8	T.R.		171.1	241.9	332.2	446.0	587.5	
	B.H.P.		325.7	331.2	337.2	343.9	351.1	
+20 33.5	T.R.			236.8	325.4	437.0	575.7	746.0
	B.H.P.			374.1	380.2	386.9	394.3	402.2
+30 45.0	T.R.				318.2	427.6	563.5	730.4
	B.H.P.				423.2	430.0	437.4	445.4





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**

AMMONIA  
BOOSTER  
MODELS

**550B**

AND

**575B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5° F. increase in liquid temperature above this level. B.H.P. remains unchanged.

*Ratings include use of FES "SOC" oil cooling systems.*

## Model 550B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	60.6	90.9	126.3	171.7			
	B.H.P.	118.3	119.3	122.4	125.5			
0 15.7	T.R.	58.6	87.9	123.7	169.2	225.7		
	B.H.P.	139.2	140.8	143.8	146.4	149.9		
+10 23.8	T.R.		84.8	121.2	166.7	222.2	292.9	
	B.H.P.		162.2	165.2	167.3	170.3	175.4	
+20 33.5	T.R.			118.2	162.1	217.2	285.8	372.7
	B.H.P.			186.7	189.2	192.3	196.9	201.5
+30 45.0	T.R.				157.6	212.1	278.8	361.6
	B.H.P.				211.1	214.2	218.3	222.4

## Model 575B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	61.0	89.2	125.9	172.8			
	B.H.P.	117.4	119.8	122.5	125.4			
0 15.7	T.R.	59.5	87.2	123.2	169.2	227.1		
	B.H.P.	138.8	141.2	143.9	146.9	150.1		
+10 23.8	T.R.		85.4	120.7	165.8	222.6	293.2	
	B.H.P.		162.5	165.3	168.3	171.6	175.3	
+20 33.5	T.R.			118.2	162.4	218.1	287.3	372.3
	B.H.P.			186.7	189.8	193.1	196.8	200.7
+30 45.0	T.R.				158.8	213.4	281.2	364.5
	B.H.P.				211.2	214.6	218.3	222.3





# AMMONIA, BOOSTER, 3550 R.P.M.

**R-717**  
 AMMONIA  
 BOOSTER  
 MODELS  
**775B**  
 AND  
**1160B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

Ratings include use of FES "SOC" oil cooling systems.

## Model 775B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	81.9	119.8	169.1	232.0			
	B.H.P.	157.6	160.8	164.4	168.4			
0 15.7	T.R.	79.9	117.1	165.5	227.2	305.0		
	B.H.P.	186.3	189.5	193.2	197.2	201.6		
+10 23.8	T.R.		114.7	162.1	222.7	298.9	393.7	
	B.H.P.		218.3	221.9	226.0	230.5	235.3	
+20 33.5	T.R.			158.7	218.1	292.9	385.8	500.0
	B.H.P.			250.7	254.8	259.3	264.2	269.6
+30 45.0	T.R.				213.3	286.5	377.6	489.5
	B.H.P.				283.6	288.2	293.1	298.5

## Model 1160B

INTERMEDIATE PRESS. P.S.I.G. AND CORRESPONDING TEMP. °F		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *21.9	-60 *18.6	-50 *14.3	-40 *8.7	-30 *1.6	-20 3.6	-10 9.0
-10 9.0	T.R.	122.1	178.8	252.3	346.2			
	B.H.P.	235.2	240.0	245.3	251.3			
0 15.7	T.R.	119.2	174.8	246.9	339.1	455.1		
	B.H.P.	278.0	282.8	288.2	294.2	300.8		
+10 23.8	T.R.		171.1	241.9	332.2	446.0	587.5	
	B.H.P.		325.7	331.2	337.2	343.9	351.1	
+20 33.5	T.R.			236.8	325.4	437.0	575.7	746.0
	B.H.P.			374.1	380.2	386.9	394.3	402.2
+30 45.0	T.R.				318.2	427.6	563.5	730.4
	B.H.P.				423.2	430.0	437.4	445.4





# R-22, SINGLE STAGE, 3550 R.P.M.

R-22  
SINGLE STAGE  
MODEL  
65

## Model 65

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	15.2	20.3	26.4	34.1	43.3	54.3	67.7	83.3	101.5
	B.H.P.	55.6	59.6	63.2	65.4	68.1	71.2	71.2	71.3	71.3
95 181.8	T.R.	13.7	18.5	24.4	31.5	40.3	50.8	63.3	78.3	95.8
	B.H.P.	61.9	66.0	70.8	73.7	76.5	79.8	82.2	82.5	82.7
105 210.8	T.R.	12.0	16.7	22.3	28.8	37.3	47.2	59.0	73.0	89.8
	B.H.P.	68.6	72.8	77.8	82.6	85.5	88.9	92.9	93.7	94.2
115 242.7	T.R.	10.3	14.7	20.0	26.5	34.0	43.6	54.8	67.5	83.6
	B.H.P.	75.7	80.0	85.1	90.9	95.2	98.7	102.8	105.2	105.9

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10°F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**95**  
AND  
**100**

## Model 95

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	22.0	30.0	39.5	51.0	65.0	80.0	97.0	119.0	143.0
	B.H.P.	70.0	76.0	83.0	88.0	94.5	102.0	90.0	90.0	89.0
95 181.8	T.R.	20.0	27.0	36.0	47.6	61.0	76.0	92.0	112.0	134.0
	B.H.P.	78.0	83.5	90.0	96.5	102.5	109.0	106.0	106.0	104.0
105 210.8	T.R.	18.5	25.0	33.0	43.5	56.0	70.0	85.0	104.0	126.0
	B.H.P.	84.0	90.0	97.0	105.0	112.0	118.5	123.0	123.0	122.0
115 242.7	T.R.	16.0	22.0	29.0	39.0	51.0	63.0	78.0	97.0	117.5
	B.H.P.	89.5	95.0	102.5	112.0	120.0	128.0	136.0	140.0	138.0

## Model 100

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	22.4	29.8	38.9	50.1	63.4	79.2	99.1	122.0	148.6
	B.H.P.	75.2	81.0	86.7	91.4	96.5	102.6	103.3	103.3	103.4
95 181.8	T.R.	20.5	27.6	36.2	46.8	59.6	74.8	93.1	115.1	140.6
	B.H.P.	85.3	91.4	98.5	103.3	108.8	115.0	119.6	120.0	120.5
105 210.8	T.R.	18.5	25.3	33.5	43.5	55.7	70.2	87.3	107.9	132.4
	B.H.P.	96.0	102.4	110.0	116.2	121.9	128.4	135.7	136.9	137.8
115 242.7	T.R.	16.4	22.9	30.7	40.0	51.6	65.6	81.9	100.5	124.0
	B.H.P.	107.4	114.2	122.1	130.1	136.0	142.8	150.3	154.1	155.4

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10°F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**135**  
AND  
**140**

## Model 135

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	31.5	42.5	56.5	73.5	93.0	115.0	140.0	170.0	204.0
	B.H.P.	100.0	108.0	118.0	126.0	135.0	145.0	128.0	127.0	126.0
95 181.8	T.R.	28.0	38.5	52.0	68.0	87.0	108.0	131.0	158.0	191.0
	B.H.P.	111.0	120.0	129.0	138.0	146.5	156.0	151.0	150.0	149.0
105 210.8	T.R.	26.0	35.0	47.0	61.5	79.5	100.0	122.0	149.0	180.0
	B.H.P.	120.0	128.0	139.0	151.0	159.5	169.0	176.0	176.0	175.0
115 242.7	T.R.	22.0	31.0	42.0	56.0	72.0	91.0	111.0	136.0	166.0
	B.H.P.	128.5	137.0	147.5	160.5	172.0	183.0	194.0	200.0	197.0

## Model 140

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	34.8	46.1	59.9	76.9	97.3	121.3	151.7	186.5	227.0
	B.H.P.	112.8	121.4	130.0	136.8	144.7	153.7	154.8	154.9	155.0
95 181.8	T.R.	32.0	42.8	55.9	72.1	91.6	114.7	142.6	176.1	215.0
	B.H.P.	127.9	137.0	147.6	154.8	163.1	172.4	179.2	179.9	180.6
105 210.8	T.R.	29.0	39.3	51.8	67.0	85.7	107.9	134.0	165.3	202.7
	B.H.P.	143.9	153.6	164.8	174.3	182.8	192.5	203.5	205.3	206.6
115 242.7	T.R.	25.6	35.7	47.6	61.8	79.7	100.8	125.8	154.2	189.9
	B.H.P.	161.0	171.1	183.0	195.1	203.9	214.0	225.3	231.0	233.0

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**175**  
AND  
**180**

## Model 175

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	48.0	64.0	83.0	106.0	134.0	165.0	200.0	240.0	292.0
	B.H.P.	136.0	148.0	162.0	172.0	182.0	192.0	180.0	182.0	184.0
95 181.8	T.R.	44.0	57.0	76.0	98.0	126.0	155.0	188.0	224.0	272.0
	B.H.P.	156.0	168.0	181.0	194.0	205.0	216.0	208.0	210.0	212.0
105 210.8	T.R.	40.0	52.0	69.0	91.0	117.0	147.0	179.0	212.0	258.0
	B.H.P.	170.0	182.0	197.0	214.0	225.0	238.0	242.0	242.0	244.0
115 242.7	T.R.	36.0	46.0	62.0	82.0	106.0	134.0	164.0	195.0	240.0
	B.H.P.	187.0	198.0	212.0	229.0	245.0	258.0	272.0	272.0	272.0

## Model 180

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	46.9	61.7	80.0	102.4	129.1	160.8	200.8	246.6	299.9
	B.H.P.	146.9	158.1	169.2	178.1	188.4	200.2	201.6	201.7	201.8
95 181.8	T.R.	43.3	57.5	74.8	96.1	121.8	152.3	189.0	233.1	284.3
	B.H.P.	166.5	178.4	192.2	201.6	212.3	224.5	233.3	234.2	235.1
105 210.8	T.R.	39.5	53.1	69.6	89.6	114.2	143.4	177.7	219.0	268.2
	B.H.P.	187.4	199.9	214.6	226.9	238.0	250.7	264.9	267.2	269.0
115 242.7	T.R.	35.5	48.4	64.2	82.9	106.4	134.2	167.1	204.5	251.6
	B.H.P.	209.7	222.8	238.3	254.0	265.5	278.6	293.4	300.8	303.3

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

R-22

SINGLE STAGE  
MODELS

255

AND

270

## Model 255

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	69.0	90.0	118.0	151.0	190.0	235.0	285.0	340.0	415.0
	B.H.P.	195.0	212.0	232.0	245.0	260.0	276.0	257.5	260.0	265.0
95 181.8	T.R.	64.0	83.0	108.0	138.0	176.0	220.0	268.0	320.0	392.5
	B.H.P.	222.0	238.0	257.0	275.0	291.0	309.0	297.5	300.0	305.0
105 210.8	T.R.	56.0	75.0	100.0	130.0	167.0	209.0	255.0	302.5	370.0
	B.H.P.	242.0	260.0	280.0	304.0	322.0	340.0	345.0	347.5	347.5
115 242.7	T.R.	51.0	68.0	90.0	118.0	152.0	191.0	235.0	281.3	345.0
	B.H.P.	268.0	284.0	304.0	328.0	349.0	368.0	388.0	390.0	390.0

## Model 270

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	71.5	93.9	121.5	155.4	195.8	243.7	304.0	373.3	453.8
	B.H.P.	219.5	236.3	253.0	266.2	281.6	299.2	301.3	301.4	301.6
95 181.8	T.R.	66.1	87.6	113.7	146.0	184.8	230.8	286.3	352.9	430.3
	B.H.P.	248.9	266.6	287.4	301.3	317.3	335.6	348.8	350.1	351.5
105 210.8	T.R.	60.5	81.0	105.9	136.2	173.4	217.5	269.4	331.8	406.1
	B.H.P.	280.2	298.9	320.8	339.1	355.8	374.7	396.0	399.5	402.1
115 242.7	T.R.	54.5	74.0	97.8	126.1	161.6	203.8	253.4	310.0	381.1
	B.H.P.	313.4	333.1	356.2	379.7	396.9	416.5	438.5	449.6	453.5

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

R-22  
SINGLE STAGE  
MODEL  
305

## Model 305

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	84.0	110.0	142.0	181.0	228.0	283.0	342.5	407.5	500.0
	B.H.P.	233.8	253.8	276.3	293.8	312.5	332.5	310.0	312.5	315.0
95 181.8	T.R.	76.0	100.0	130.0	167.0	213.0	265.0	322.5	382.5	467.5
	B.H.P.	267.5	285.0	307.5	330.0	350.0	370.0	357.5	360.0	365.0
105 210.8	T.R.	67.0	90.0	119.0	155.0	200.0	251.0	307.5	365.0	442.5
	B.H.P.	290.0	312.5	336.3	362.5	385.0	407.5	415.0	415.0	417.5
115 242.7	T.R.	56.0	76.0	106.0	142.0	183.0	230.0	282.5	340.0	415.0
	B.H.P.	317.5	340.0	366.3	397.5	420.0	442.5	465.0	467.5	467.5

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10°F.

*(Faint, illegible table content)*





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**350**  
AND  
**385**

## Model 350

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	94.0	125.0	164.0	211.0	265.0	325.0	390.0	475.0	570.0
	B.H.P.	285.0	305.0	330.0	345.0	365.0	385.0	375.0	375.0	372.5
95 181.8	T.R.	86.0	116.0	153.0	197.0	249.0	307.0	370.0	450.0	545.0
	B.H.P.	317.5	337.5	360.0	380.0	397.5	415.0	432.5	432.5	430.0
105 210.8	T.R.	82.0	109.0	143.0	185.0	233.0	286.0	342.0	425.0	515.0
	B.H.P.	345.0	365.0	390.0	410.0	430.0	447.5	467.5	485.0	485.0
115 242.7	T.R.	73.0	99.0	131.0	170.0	216.0	267.0	321.0	400.0	490.0
	B.H.P.	390.0	410.0	432.5	460.0	475.0	495.0	517.5	550.0	545.0

## Model 385

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	94.5	123.8	160.6	205.0	258.0	320.8	399.8	490.6	596.0
	B.H.P.	286.1	308.0	329.7	347.0	367.1	390.0	392.8	392.9	393.1
95 181.8	T.R.	87.5	115.6	150.2	192.8	243.7	304.0	376.7	464.0	565.4
	B.H.P.	324.4	347.5	374.8	392.8	413.6	437.5	454.7	456.3	458.1
105 210.8	T.R.	80.1	107.0	139.7	180.2	229.0	286.7	354.8	436.5	533.9
	B.H.P.	365.2	389.6	418.1	442.1	463.7	488.4	516.1	520.7	524.1
115 242.7	T.R.	72.4	98.0	129.2	167.1	213.7	268.9	334.0	409.8	501.3
	B.H.P.	408.5	434.2	464.2	495.3	517.3	542.9	571.6	586.1	591.1

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**420**  
AND  
**500**

## Model 420

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	110.0	147.5	195.0	252.5	317.5	387.5	460.0	562.5	685.0
	B.H.P.	340.0	362.5	390.0	410.0	430.0	455.0	447.5	447.5	445.0
95 181.8	T.R.	102.5	137.5	181.3	235.0	295.0	366.3	440.0	535.0	655.0
	B.H.P.	380.0	400.0	427.5	450.0	475.0	495.0	512.5	515.0	510.0
105 210.8	T.R.	97.5	130.0	170.0	220.0	275.0	340.0	407.5	500.0	615.0
	B.H.P.	410.0	435.0	465.0	490.0	512.5	535.0	560.0	580.0	575.0
115 242.7	T.R.	87.5	117.5	155.0	202.5	256.3	318.8	382.5	470.0	580.0
	B.H.P.	460.0	485.0	515.0	545.0	570.0	590.0	615.0	660.0	655.0

## Model 500

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	135.0	180.0	235.0	300.0	380.0	465.0	555.0	672.5	820.0
	B.H.P.	410.0	435.0	470.0	495.0	520.0	547.5	535.0	540.0	535.0
95 181.8	T.R.	125.0	165.0	217.5	280.0	355.0	437.5	527.5	637.5	777.5
	B.H.P.	455.0	480.0	512.5	540.0	565.0	595.0	615.0	615.0	612.5
105 210.8	T.R.	115.0	155.0	205.0	265.0	332.5	410.0	490.0	597.5	735.0
	B.H.P.	490.0	520.0	555.0	587.5	612.5	640.0	670.0	695.0	690.0
115 242.7	T.R.	105.0	140.0	187.5	242.5	310.0	380.0	460.0	565.0	697.5
	B.H.P.	555.0	585.0	617.5	655.0	680.0	710.0	740.0	790.0	780.0

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**550**  
AND  
**575**

## Model 550

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85	T.R.	147.5	197.5	260.0	335.0	420.0	510.0	610.0	745.0	890.0
155.7	B.H.P.	450.0	485.0	520.0	542.5	570.0	605.0	595.0	592.5	587.5
95	T.R.	140.0	185.0	242.5	312.5	390.0	477.5	575.0	710.0	850.0
181.8	B.H.P.	500.0	530.0	565.0	595.0	625.0	655.0	682.5	680.0	675.0
105	T.R.	130.0	172.5	225.0	290.0	365.0	450.0	537.5	667.5	807.5
210.8	B.H.P.	540.0	575.0	612.5	645.0	672.5	705.0	740.0	765.0	760.0
115	T.R.	115.0	155.0	205.0	270.0	340.0	420.0	505.0	630.0	762.5
242.7	B.H.P.	610.0	642.5	680.0	720.0	750.0	780.0	815.0	865.0	860.0

## Model 575

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85	T.R.	143.3	187.4	243.8	310.7	390.5	485.0	603.9	740.6	899.3
155.7	B.H.P.	428.5	461.2	493.7	519.6	549.7	584.0	588.1	588.3	588.6
95	T.R.	132.9	175.2	228.4	292.6	369.2	460.0	569.4	700.8	853.5
181.8	B.H.P.	485.7	520.3	561.3	588.1	619.4	655.0	680.8	683.3	686.0
105	T.R.	121.9	162.4	211.7	273.8	347.2	434.2	536.6	659.7	806.2
210.8	B.H.P.	546.8	583.3	626.1	661.9	694.3	731.3	772.8	779.7	784.7
115	T.R.	110.4	149.0	196.0	254.3	324.4	409.6	505.5	617.3	757.5
242.7	B.H.P.	611.7	650.1	695.1	741.0	774.6	812.9	855.9	877.5	885.0

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, SINGLE STAGE, 3550 R.P.M.

**R-22**  
SINGLE STAGE  
MODELS  
**775**  
AND  
**1160**

## Model 775

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	192.4	251.7	327.4	417.1	524.3	651.2	810.9	994.4	1207.5
	B.H.P.	575.3	619.2	663.0	697.7	738.1	784.2	789.7	790.0	790.4
95 181.8	T.R.	178.4	235.3	306.7	392.9	495.8	617.7	764.6	941.0	1146.0
	B.H.P.	652.2	698.7	753.7	789.7	831.7	879.5	914.1	917.5	921.1
105 210.8	T.R.	163.7	218.0	284.2	367.6	466.2	583.0	720.6	885.8	1082.6
	B.H.P.	734.2	783.3	840.7	888.8	932.3	982.0	1037.7	1046.9	1053.7
115 242.7	T.R.	148.3	200.0	263.1	341.5	435.6	547.3	678.8	828.9	1017.2
	B.H.P.	821.3	873.0	933.4	995.0	1040.1	1091.5	1149.3	1178.3	1188.4

## Model 1160

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG								
		-40 0.5	-30 4.9	-20 10.2	-10 16.5	0 24.0	10 32.8	20 43.0	30 54.9	40 68.5
85 155.7	T.R.	287.1	375.5	488.5	622.4	782.3	971.6	1209.9	1483.8	1801.7
	B.H.P.	858.4	924.0	989.2	1041.0	1101.3	1170.1	1178.3	1178.8	1179.3
95 181.8	T.R.	266.2	351.1	457.7	586.2	739.7	921.7	1140.8	1404.1	1710.0
	B.H.P.	973.2	1042.5	1124.5	1178.3	1240.9	1312.4	1364.0	1369.0	1374.0
105 210.8	T.R.	244.3	325.3	424.1	548.6	695.6	870.0	1075.2	1321.8	1615.3
	B.H.P.	1095.5	1168.7	1254.4	1326.2	1391.1	1465.2	1548.4	1562.1	1572.3
115 242.7	T.R.	221.2	298.5	392.6	509.5	649.9	816.6	1012.9	1236.8	1517.7
	B.H.P.	1225.5	1302.6	1392.7	1484.6	1551.9	1628.6	1714.8	1758.2	1773.2

Refrigeration capacity based on a saturated suction and with liquid subcooling of 10° F.





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**95B**  
AND  
**100B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 95B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	14.0	19.5	26.0	34.8			
	B.H.P.	23.8	24.0	25.0	26.0			
0 24.0	T.R.	13.5	18.9	25.3	33.9	43.5		
	B.H.P.	27.7	28.5	29.0	29.8	30.3		
+10 32.8	T.R.		18.3	24.5	33.0	42.5	54.0	
	B.H.P.		32.0	33.0	33.5	34.0	35.0	
+20 43.0	T.R.			23.5	31.8	41.3	52.5	65.8
	B.H.P.			37.0	37.7	38.0	39.0	39.8
+30 54.9	T.R.				30.5	40.0	51.0	64.0
	B.H.P.				41.8	42.0	43.0	43.5

## Model 100B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	14.2	19.8	26.8	35.4			
	B.H.P.	25.1	25.5	25.9	26.4			
0 24.0	T.R.	13.7	19.1	25.9	24.3	44.7		
	B.H.P.	29.3	29.7	30.2	30.7	31.2		
+10 32.8	T.R.		18.5	25.1	33.3	43.3	55.4	
	B.H.P.		34.0	34.4	34.9	35.5	36.1	
+20 43.0	T.R.			24.2	32.2	41.9	53.7	67.8
	B.H.P.			38.7	39.2	39.8	40.4	41.0
+30 54.9	T.R.				31.0	40.4	51.9	65.6
	B.H.P.				43.4	44.0	44.6	45.3





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**135B**  
AND  
**140B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. Increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 135B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	20.0	27.5	37.0	49.5			
	B.H.P.	34.0	35.0	36.3	37.0			
0 24.0	T.R.	19.4	26.8	36.0	48.3	62.8		
	B.H.P.	39.5	40.5	41.7	42.5	43.5		
+10 32.8	T.R.		26.0	35.0	47.0	61.0	77.0	
	B.H.P.		46.0	47.0	48.0	49.0	50.0	
+20 43.0	T.R.			33.8	45.3	58.8	74.7	94.5
	B.H.P.			53.0	53.5	54.5	55.5	56.5
+30 54.9	T.R.				43.5	56.5	72.3	91.5
	B.H.P.				59.0	60.0	61.0	62.0

## Model 140B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	21.7	30.1	40.7	53.8			
	B.H.P.	37.6	38.2	38.9	39.6			
0 24.0	T.R.	20.9	29.2	39.5	52.2	67.9		
	B.H.P.	44.0	44.6	45.2	46.0	46.8		
+10 32.8	T.R.		28.2	38.2	50.6	65.8	84.2	
	B.H.P.		50.9	51.6	52.4	53.2	54.1	
+20 43.0	T.R.			37.0	49.0	63.7	81.6	103.0
	B.H.P.			58.0	58.7	59.6	60.5	61.5
+30 54.9	T.R.				47.3	61.5	78.9	99.7
	B.H.P.				65.1	66.0	66.9	67.9





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**175B**  
AND  
**180B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 175B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	27.5	38.0	52.0	69.0			
	B.H.P.	46.0	47.0	48.0	49.0			
0 24.0	T.R.	27.0	37.0	50.0	66.5	86.8		
	B.H.P.	53.5	54.5	55.5	56.5	57.8		
+10 32.8	T.R.		36.0	48.0	64.0	84.0	108.0	
	B.H.P.		62.0	63.0	64.0	65.0	66.0	
+20 43.0	T.R.			47.0	62.0	81.0	104.2	131.5
	B.H.P.			71.0	72.0	73.3	74.5	75.5
+30 54.9	T.R.				60.0	78.0	100.3	127.0
	B.H.P.				80.0	81.5	83.0	84.0

## Model 180B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	29.1	40.4	54.6	72.1			
	B.H.P.	48.5	49.3	50.1	51.1			
0 24.0	T.R.	28.1	39.1	52.9	70.0	90.8		
	B.H.P.	56.7	57.4	58.3	59.3	60.4		
+10 32.8	T.R.		37.8	51.2	67.8	88.1	112.7	
	B.H.P.		65.6	66.5	67.5	68.6	69.8	
+20 43.0	T.R.			49.5	65.6	85.3	109.2	137.9
	B.H.P.			74.7	75.7	76.8	78.0	79.3
+30 54.9	T.R.				63.3	82.4	105.5	133.4
	B.H.P.				83.9	85.1	86.3	87.6





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**255B**  
AND  
**270B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 255B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	39.0	54.0	73.0	98.0			
	B.H.P.	66.0	67.5	68.5	70.0			
0 24.0	T.R.	38.0	52.5	71.0	95.0	124.5		
	B.H.P.	77.0	78.3	80.0	81.0	82.3		
+10 32.8	T.R.		51.0	69.0	92.0	120.0	154.0	
	B.H.P.		89.0	91.0	92.0	93.0	94.0	
+20 43.0	T.R.			67.8	89.0	115.3	148.8	188.3
	B.H.P.			96.5	98.0	99.5	101.0	102.3
+30 54.9	T.R.				86.0	110.5	143.5	182.5
	B.H.P.				104.0	106.0	107.5	109.0

## Model 270B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	43.9	60.9	82.2	108.5			
	B.H.P.	72.5	73.6	74.9	76.4			
0 24.0	T.R.	42.4	58.9	79.7	105.3	136.7		
	B.H.P.	84.7	85.9	87.2	88.7	90.3		
+10 32.8	T.R.		57.1	77.2	102.1	132.6	169.6	
	B.H.P.		98.1	99.5	100.9	102.6	104.3	
+20 43.0	T.R.			74.7	98.8	128.4	164.3	207.4
	B.H.P.			111.7	113.2	114.9	116.6	118.6
+30 54.9	T.R.				95.4	124.1	158.9	200.7
	B.H.P.				125.5	127.1	129.0	130.7





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODEL  
**305B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 305B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	48.0	65.0	89.0	118.0			
	B.H.P.	79.0	80.5	82.0	84.0			
0 24.0	T.R.	46.0	63.0	85.5	114.0	148.5		
	B.H.P.	92.3	93.8	95.5	97.3	98.0		
+10 32.8	T.R.		61.0	82.0	110.0	144.0	186.0	
	B.H.P.		107.0	109.0	110.5	112.0	114.0	
+20 43.0	T.R.			81.0	106.0	139.0	178.0	226.0
	B.H.P.			123.0	124.0	125.5	127.5	129.5
+30 54.9	T.R.				103.0	134.0	172.0	218.0
	B.H.P.				137.0	139.0	141.0	143.0





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**350B**  
AND  
**385B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 350B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	56.0	76.0	104.0	136.0			
	B.H.P.	88.0	90.0	92.0	94.0			
0 24.0	T.R.	54.0	74.0	100.5	131.5	171.5		
	B.H.P.	103.5	106.0	108.0	110.0	112.0		
+10 32.8	T.R.		72.0	97.0	127.0	166.0	212.0	
	B.H.P.		122.0	124.0	126.0	128.0	130.0	
+20 43.0	T.R.			94.5	123.5	160.0	204.5	258.5
	B.H.P.			140.0	142.0	144.0	145.0	147.0
+30 54.9	T.R.				120.0	154.0	197.0	252.0
	B.H.P.				156.0	158.0	160.0	162.0

## Model 385B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	57.7	79.9	107.8	142.4			
	B.H.P.	94.5	96.0	97.7	99.6			
0 24.0	T.R.	55.8	77.5	104.6	138.2	179.3		
	B.H.P.	110.4	111.9	113.7	115.6	117.7		
+10 32.8	T.R.		75.1	101.4	134.0	174.0	222.4	
	B.H.P.		127.9	129.6	131.6	133.7	136.0	
+20 43.0	T.R.			98.2	129.8	168.6	215.6	272.1
	B.H.P.			145.6	147.6	149.7	152.0	154.6
+30 54.9	T.R.				125.4	162.9	208.5	263.3
	B.H.P.				163.6	165.7	168.1	170.6





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**350B**  
AND  
**385B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 350B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	56.0	76.0	104.0	136.0			
	B.H.P.	88.0	90.0	92.0	94.0			
0 24.0	T.R.	54.0	74.0	100.5	131.5	171.5		
	B.H.P.	103.5	106.0	108.0	110.0	112.0		
+10 32.8	T.R.		72.0	97.0	127.0	166.0	212.0	
	B.H.P.		122.0	124.0	126.0	128.0	130.0	
+20 43.0	T.R.			94.5	123.5	160.0	204.5	258.5
	B.H.P.			140.0	142.0	144.0	145.0	147.0
+30 54.9	T.R.				120.0	154.0	197.0	252.0
	B.H.P.				156.0	158.0	160.0	162.0

## Model 385B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	57.7	79.9	107.8	142.4			
	B.H.P.	94.5	96.0	97.7	99.6			
0 24.0	T.R.	55.8	77.5	104.6	138.2	179.3		
	B.H.P.	110.4	111.9	113.7	115.6	117.7		
+10 32.8	T.R.		75.1	101.4	134.0	174.0	222.4	
	B.H.P.		127.9	129.6	131.6	133.7	136.0	
+20 43.0	T.R.			98.2	129.8	168.6	215.6	272.1
	B.H.P.			145.6	147.6	149.7	152.0	154.6
+30 54.9	T.R.				125.4	162.9	208.5	263.3
	B.H.P.				163.6	165.7	168.1	170.6





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODEL  
**305B**

**NOTE:**

\* Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 305B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	48.0	65.0	89.0	118.0			
	B.H.P.	79.0	80.5	82.0	84.0			
0 24.0	T.R.	46.0	63.0	85.5	114.0	148.5		
	B.H.P.	92.3	93.8	95.5	97.3	98.0		
+10 32.8	T.R.		61.0	82.0	110.0	144.0	186.0	
	B.H.P.		107.0	109.0	110.5	112.0	114.0	
+20 43.0	T.R.			81.0	106.0	139.0	178.0	226.0
	B.H.P.			123.0	124.0	125.5	127.5	129.5
+30 54.9	T.R.				103.0	134.0	172.0	218.0
	B.H.P.				137.0	139.0	141.0	143.0





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**420B**  
AND  
**500B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")

Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 420B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	66.0	92.0	123.0	162.0			
	B.H.P.	106.0	108.0	110.0	112.0			
0 24.0	T.R.	64.5	89.0	119.0	156.5	203.5		
	B.H.P.	124.5	126.5	128.5	131.0	133.0		
+10 32.8	T.R.		86.0	115.0	151.0	197.0	253.0	
	B.H.P.		145.0	147.0	150.0	152.0	154.0	
+20 43.0	T.R.			112.5	146.5	190.0	244.0	311.0
	B.H.P.			167.0	168.0	170.0	172.0	174.0
+30 54.9	T.R.				142.0	183.0	235.0	298.0
	B.H.P.				186.0	188.0	190.0	193.0

## Model 500B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	80.0	110.0	149.0	195.0			
	B.H.P.	128.0	130.0	133.0	136.0			
0 24.0	T.R.	78.0	106.5	144.0	189.0	247.0		
	B.H.P.	152.0	154.0	155.0	158.0	160.0		
+10 32.8	T.R.		103.0	139.0	183.0	238.0	304.0	
	B.H.P.		174.0	177.0	180.0	182.0	186.0	
+20 43.0	T.R.			134.5	177.0	229.5	294.5	370.0
	B.H.P.			198.5	201.5	204.0	207.0	210.5
+30 54.9	T.R.				171.0	221.0	284.0	361.0
	B.H.P.				223.0	226.0	229.0	233.0





# R-22, BOOSTER, 3550 R.P.M.

**R-22**  
BOOSTER  
MODELS  
**550B**  
AND  
**575B**

**NOTE:**

\*Inches of mercury below one standard atmosphere (29.92")  
Refrigeration capacity based on a saturated suction and refrigerant liquid cooled to a temperature corresponding with intermediate pressure. Decrease compressor capacity 1.6% for each 5°F. increase in liquid temperature above this level. B.H.P. remains unchanged.

## Model 550B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	87.0	120.0	162.0	213.0			
	B.H.P.	140.0	143.0	146.0	148.0			
0 24.0	T.R.	84.5	116.5	157.0	206.5	271.0		
	B.H.P.	165.0	168.0	170.0	172.5	175.5		
+10 32.8	T.R.		113.0	152.0	200.0	262.0	333.0	
	B.H.P.		191.0	194.0	197.0	200.0	204.0	
+20 43.0	T.R.			148.0	194.0	251.5	321.5	407.5
	B.H.P.			218.0	222.0	224.0	227.0	230.5
+30 54.9	T.R.				188.0	241.0	310.0	396.0
	B.H.P.				245.0	248.0	252.0	256.0

## Model 575B

CONDENSING TEMP. °F AND CORRESPONDING PRESSURE PSIG		SUCTION TEMPERATURE °F AND CORRESPONDING PRESSURE PSIG						
		-70 *16.6	-60 *12.0	-50 *6.2	-40 0.5	-30 4.9	-20 10.2	-10 16.5
-10 16.5	T.R.	87.1	120.6	162.6	214.6			
	B.H.P.	141.4	143.7	146.3	149.1			
0 24.0	T.R.	84.4	117.0	157.8	208.4	270.3		
	B.H.P.	165.3	167.6	170.2	173.0	176.2		
+10 32.8	T.R.		113.4	153.0	202.1	262.3	335.2	
	B.H.P.		191.5	194.1	197.0	200.2	203.6	
+20 43.0	T.R.			148.2	195.8	254.2	325.0	410.0
	B.H.P.			218.0	221.0	224.2	227.7	231.4
+30 54.9	T.R.				189.2	245.8	314.4	396.8
	B.H.P.				244.9	248.2	251.7	255.5



