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RWB II

ROTARY SCREW COMPRESSOR UNITS MODELS RWB II 60 through RWB II 480

**R-717 REFRIGERANT
HIGH STAGE and BOOSTER APPLICATIONS**

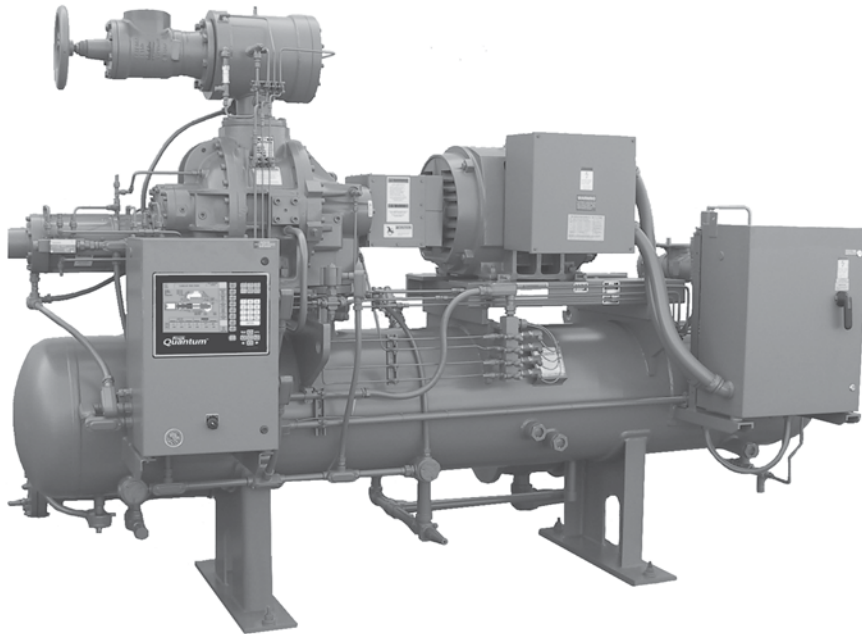
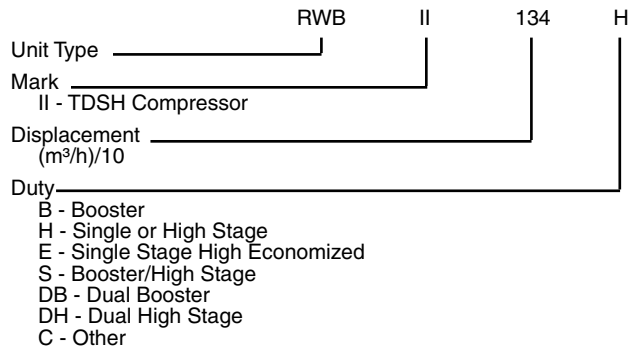


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MODEL NUMBER EXPLANATION



DESCRIPTION

The RWB II Rotary Screw Compressor Unit line consists of 13 models ranging in capacity from 357 CFM (607 m³/h) through 5067 CFM (8609 m³/h) at 3550 RPM and 60 Hz. Standard units, models 60 – 480, are designed for use on ammonia, halocarbon, and hydrocarbon refrigerants for either high stage or booster service. Models 496 – 856 are covered in publication E70-210 SED.

Standard units consist of the following major components: Frick manufactured TDSH Rotary Screw Compressor with VOLUMIZER variable volume ratio control; compressor/motor base; drive coupling and guard; Quantum™LX control panel; prelube oil pump for start-up only; suction and discharge line stop valves; suction and discharge line check valves; suction scale trap with integral strainer; and a three-stage horizontal oil separator/reservoir. All components have been selected for maximum reliability and arranged to ensure accessibility for service. The units are factory packaged, complete with wiring and piping. All piping connecting the various elements of the compressor unit is done in accordance with ANSI B31.5.

MODEL TDSH COMPRESSOR

HOUSING: All screw compressor castings are designed and tested to meet the requirements of ASHRAE 15 safety code for 350 PSIG maximum discharge pressure. Castings are close grain, ASTM-A-48 Class 40 cast iron to ensure structural integrity and mechanical and thermal stability under all operating conditions.

ROTORS: The rotors are machined from AISI-1141 steel to the exacting tolerances of the latest SRM asymmetric profile. The four-lobed male rotor is directly connected to the driver. The six-lobed female rotor is driven by the male rotor on a thin oil film.

BEARINGS: Antifriction bearings with an L₁₀ rated bearing life in excess of 100,000 hours, at design conditions, are used for reduced frictional horsepower and superior rotor positioning, resulting in reduced power consumption, particularly at higher pressure ratios. Cylindrical roller bearings are provided to handle the radial loads and the thrust loads are absorbed by angular contact ball bearings. In addition, thrust balance pistons are provided to reduce the thrust load and improve bearing life.

SHAFT SEAL: The compressor shaft seal is a single-face type with a spring-loaded carbon stationary surface riding against a cast iron rotating seat. The seal is capable of sealing up to 350 PSIG, but is vented to low pressure to provide extended seal life.

VOLUMIZER VARIABLE VOLUME RATIO CONTROL:

The Frick compressor includes a method of varying the internal volume ratio to match the system pressure ratio. With control of the internal volume ratio, the power penalty associated with overcompression or undercompression is eliminated. The volume ratio control is achieved by the use of a slide stop which is a movable portion of the rotor housing that moves axially with the rotors to control discharge port location. The slide stop is moved by hydraulic actuation of a control piston based on signals from the microprocessor. The range of adjustability is from 2.2 to 5.0 Vi for 60 – 399 models and 2.2 to 4.2 Vi for the 480 model.

CAPACITY CONTROL:

Capacity control is achieved by use of a movable slide valve. The slide valve moves axially under the rotors to provide fully modulating capacity control from 100% to minimum load capacity. Minimum load capacity varies slightly with compressor model, pressure ratio, discharge pressure level, and rotor speed. The approximate minimum capacity for RWB II models 270 and 480 is 20%. All other models from 60 through 399 are approximately 10%.

The slide valve is positioned automatically by hydraulic movement of its control piston based on time-proportional signals from the microprocessor. When in the unloaded position, gas is bypassed back to suction through a recirculation slot before compression begins and any work is expended, providing the most efficient unloading method available for part-load operation of a screw compressor.

LUBRICATION SYSTEM

LUBRICATION SYSTEM: The TDSH compressor is designed specifically for operation without an oil pump under normal operating conditions. All oil required for main oil injection and lubrication is provided by positive gas differential pressure. See OIL FILTERS at the end of this section.

The standard high stage unit is furnished with a close-coupled, positive-displacement prelube pump for start-up only. For some low pressure differential applications (see Prelube Oil Pump Limits - High Stage), an optional full-time or cycling full-time lube pump will be required. The cycling full-lube pump operates only when the suction-discharge differential is not sufficient to provide adequate lubrication and will shut off automatically to conserve pump motor power when not required.

The lubrication system on a unit designed for booster duty includes a full-lube oil pump. The full-lube pump is supplied as standard equipment due to the typically low differential pressure across the compressor in booster applications.

OIL SEPARATOR/RESERVOIR: RWB II models 60 through 480, high stage or booster have a horizontal design oil separator with integral sump. Two sight glasses are located in the reservoir section and one in the coalescing section. The separator is designed and constructed in accordance with ASME Section VIII, Div. 1 for a maximum design working pressure of 300 PSIG and supplied with dual relief valves. 500 watt heaters maintain oil temperature at an ambient temperature of 67°F minimum, with no wind factor, during compressor shutdown and are replaceable without shutting down the compressor.

Coalescent separator elements are provided for final gas/oil separation of particles down to less than 1 micron. Oil is drained from the coalescer section and returned to the compressor during operation.

On systems utilizing the standard prelube pump, a float switch is installed in the lower section of the oil separator to detect a low oil level. If a low level occurs, the float switch will shut down the compressor.

OIL FILTERS: All lubrication and injection oil passes through our new Frick SuperFilter™II, specifically designed for increased particle capture and cleaner oil and compressor operation. SuperFilter™ II captures 99% of particles 5 microns and larger and has twice the dirt holding capacity of the original filter for maximum bearing life. It is also designed for horizontal filter mounting and furnished with isolation stop valves and drain connections for ease of servicing.

OIL COOLING

LIQUID INJECTION OIL COOLING: The compressor oil is cooled by direct contact with the refrigerant injected through one of two optimized port locations prior to the compressor discharge. Liquid feed arrangements include isolation valves, strainer, solenoid valve, sight glass, a thermal expansion temperature control valve, and a pressure differential control valve. The temperature control valve will maintain the temperature of the oil returning to the compressor between 110°F and 130°F for ammonia and between 120°F and 150°F for halocarbons.

WATER-COOLED OIL COOLING: The optional water-cooled oil cooler is a shell and tube design with oil on the shell side. The cooler is designed and constructed according to ASME Section VIII Div. 1 with a Maximum Allowable Working Pressure (MAWP) of 150 PSIG on the tube side and 400 PSIG on the shell side. The finned tubes are 5/8" O.D. to minimize water fouling and the oil temperature is maintained between 110°F and 130°F for ammonia and halocarbons with a thermally controlled water-regulating valve sensing outlet oil temperature. The oil cooler is mounted on the unit with the oil piping connected. Water connections and controls are field installed.

THERMOSYPHON OIL COOLING: The optional thermosyphon cooler is a shell and tube design constructed in accordance with ASME Div. 1 with a MAWP of 400 PSIG on the shell side and 400 PSIG on the tube side. The oil cooler is mounted on the unit with the oil piping connected. Refrigerant connections and controls are field installed.

QUANTUM™LX CONTROL PANEL

HARDWARE: The Quantum™LX control panel is factory mounted, NEMA 4, UL® listed, and completely wired with all the required safety and operating devices. A 10.4" Active Color VGA Graphics Display offers a high contrast, crisp, clear display of compressor information and status. Additional I/O can be easily installed in the field. This feature provides flexibility for future engine room upgrades and changes. Three field-selectable serial communication ports allow you to choose from a combination of RS-422, RS-485, or RS-232 port configurations for both interpanel and external communications. Ethernet communications are also available for direct connection to the internet. Included in the microprocessor is time-proportioning capacity control, first-out annunciation, prealarms, volumizer control, access code protection, lead-lag sequencing, four user-defined capacity control modes, trending, maintenance schedule, and more. The operating conditions at the time of the compressor's last 50 alarms or shutdowns are stored in memory, providing the ultimate in service and troubleshooting convenience.

Additional features include: circuit breaker protection for main power; UL, cUL, CE, and ISO 9001 certifications; flexible analog inputs, making it easy to change setup in the field to accept 0-5 volt, 1-5 volt, 4-20 mA or ICTD sensors and transmitters; long life, easily replaceable, lithium coin cell battery for power backup to the time/date clock; communication activity and diagnostic lamps simplify troubleshooting and provide visual indication of proper component operation; Flash setpoint memory – all setpoints are stored on a Flash chip which requires no battery backup and can be downloaded to flash memory for storage. Setpoints can be field programmed within Johnson Controls-Frick defined limits (a notice is displayed if you attempt to program setpoints outside of the defined ranges); replaceable input and output modules; built-in fuse tester.

SOFTWARE: Quantum™LX control panel screens are user friendly, menu driven, and easy to use and understand. Help screens and prompts are available should you experience difficulties in setup or monitoring of system information. Operation instruction can be accessed on-screen via the Help key.

Numerous diagnostic features have been incorporated to ease troubleshooting and identify component malfunctions. They include: sensor short/open, setpoint input out of sensing range, DC and AC power monitoring, and memory error sensing.

Multiple capacity controllers provide application flexibility for auto setback control and control reset for changes in modes of operation. Override controls are provided to allow all safety and controller functions to be programmed to unload the compressor within maximum safety and control parameters.

On-screen calibrations for sensors, motor current, slide valve, and slide stop can be adjusted with easy to understand graphics. No potentiometer adjustment is required. Display backlight flashes on shutdown to attract attention in noisy engine rooms.

Other features include: selectable pressure and temperature units; industry standard communication protocols; real-time and historical X-Y trending - selected data and selected time periods can be viewed in either an X-Y trending chart or a tabular chart. Ability to add analog inputs with high and low alarm and shutdown setpoints, and any 0-5Vdc, 1-5Vdc, or 4-20mA sensor. A name and unit description can be entered to identify the input. Add digital inputs to monitor input continuously or only when the compressor is running. A name can be entered to identify the input. Either an alarm or shutdown can be selected to occur when the input is de-energized. Other features include: Non-English Language Displays; Selectable Pressure and Temperature Units; Programmed Compressor Sequencing; Optional Condenser Control; and Industry Standard Communication Protocols.



* UL® listing applies to standard panels. Control Panels with special components may also be certified. Contact Johnson Controls-Frick for confirmation.

ACCESSORIES and OPTIONAL ITEMS

DUAL OIL FILTERS: A second oil filter may be furnished mounted on the unit. Isolation valves are included to provide servicing of the primary filter set while the unit is running.

FULL-LUBE PUMP: Lubrication and oil injection may be achieved by using a positive-displacement, direct-driven gear-type oil pump capable of maintaining lube oil supply at low pressure differentials, operating independent of the compressor and controlled so that lubrication of the compressor begins prior to start-up.

A cycling option is available which will operate the full-lube pump only when required, due to low system differential pressure.



* UL® listing applies to standard panels. Control Panels with special components may also be certified. Contact the factory for confirmation.

ECONOMIZER: Increased refrigeration capacity with relatively low increase in brake horsepower can be achieved by the use of a Frick economizer system. The economizer consists of a shell and coil or shell and tube liquid subcooler with appropriate controls. Refrigerant vapor from the subcooler is piped to an optimized pressure port on the compressor.

MOTORS: The compressor drive motor can be supplied and mounted by Johnson Controls-Frick. In addition, a customer supplied motor can be factory mounted by Johnson Controls- Frick.

STARTERS: Starter packages complete with all accessories needed to interface with the RWB II, prewired to numbered terminal strips are available.

SPECIAL PACKAGES: For special refrigerant selection, special drivers, or any dual or two stage applications, consult the factory.

STANDARD DESIGN DATA

RWB II PLUS MODEL NO.	TDS COMPRESSOR			
	MODEL NO.	DIA mm	L/D	DISPLACEMENT CFM (m³/h)
60	163S	163.2	1.35	357 (607)
76	163L	163.2	1.70	450 (765)
100	193S	193.0	1.35	592 (1005)
134	193L	193.0	1.80	790 (1342)
177	233S	233.0	1.35	1042 (1770)
222	233L	233.0	1.70	1311 (2228)
270	233XL	233.0	2.10	1590 (2700)
316	283S	283.0	1.35	1865 (3169)
399	283L	283.0	1.70	2349 (3992)
480	283SX	283.0	2.10	2824(4798)

**EQUIPMENT SELECTION
SCREW COMPRESSOR UNIT**

The following information is required for final unit selection:

Refrigerant _____ R-717
 Other - Consult Johnson Controls-Frick
 Duty _____ Single Stage, High Stage, Booster
 Other - Consult Johnson Controls-Frick
 Compressor RPM _____ 3550 (60 Hz) or 2950 (50 Hz)
 Other - Consult Johnson Controls-Frick
 Lube Oil Pump: Single, High Stage _____ PreLube (Std)
 Full or Cycling Full Lube (Opt)
 Lube Oil Pump: Booster _____ Full Lube (Std)
 Oil Filters _____ Single (Std), Dual (Opt)
 Oil Cooling _____ Liquid Injection (Std)
 Water Cooled (Inlet/Outlet Water Temp Req'd) (Opt)
 Thermosyphon _____ (Opt)
 Saturated Suction Temperature _____ °F
 Condensing Temperature _____ °F
 Intermediate Temperature (Booster) _____ °F
 Suction Superheat _____ °F
 Liquid Subcooling _____ °F
 Economizer - Kit Only _____ (Opt)
 Economizer - Mounted Dx Cooler _____ (Opt)
 Rating _____ TR _____ BHP _____ (Including Liquid
 Subcooling, Suction Superheat, and Liquid
 Injection corrections as applicable)

COMPRESSOR DRIVER

The following information is required for proper coordination of the screw compressor unit and the compressor driver.

Driver Type _____ Electric Motor
Other - Consult Johnson Controls-Frick
Motor Speed _____ RPM (See Compressor RPM, above)
Motor Specifications _____ HP _____ Frame
_____ Service Factor _____ Full-Load Amps
_____ Bearings (Ball or Sleeve)
Motor Power _____ Volts, 3 Phase _____ Hz
Motor Supplied By _____ Frick, Others
Motor Mounted By _____ Frick, Others
Motor Enclosure _____ ODP, TEFC
_____ Explosion Proof _____ Class _____ Group
Motor Starting Method _____ Across-the-line,
Wye-delta, Autotransformer, Solid-State

* Motor Rotation _____

*** NOTE: Compressor rotation is clockwise when facing end of compressor shaft. MOTOR ROTATION MUST BE COUNTERCLOCKWISE WHEN FACING END OF MOTOR SHAFT.** Most motors have dual rotation, but some, such as the large TEFC motors, are single rotation only for purposes of fan cooling and must be ordered with the correct rotation.

MOTOR SELECTION

Motors for high stage applications may be selected for the design operating condition, however, motors for booster applications need to be sized for start-up and pull-down duty as well as for the design condition. For booster applications start-up and pull-down will quite often be the more demanding requirement.

For starting torque see Compressor Speed/Torque Curve.

MOTOR STARTER PACKAGES

The following specifications describe a motor starter package, complete with all electrical accessories necessary to interface with the RWB II compressor unit. These starter packages are available from Johnson Controls-Frick with all necessary interlocks prewired to terminals numbered for direct connection to the RWB II unit Quantum™ panel.

Specify starting method and overcurrent protection for:

_____ HP, _____ Volt/3 Phase, _____ Hz,
_____ FLA, _____ RPM compressor motor, complete with overload heaters, 2KVA-120 volt control power transformer, _____: 5 amp-15 VA signal current transformer and normally open auxiliary contact. Starter package includes one across-the-line fused oil pump starter for _____ HP, _____ Volt/Phase, _____ Hz, _____ FLA, _____ RPM motor complete with overload heaters and normally open auxiliary contact. All interlocks wired to terminals marked in accordance with the RWB II unit single-box Quantum™ control. Specify _____ NEMA rating for enclosure, NEMA 1 is standard. The maximum starter coil load on terminal 18 shall be one size 3 starter coil or one interposing relay.

The following information must be specified for each application:

STARTING METHOD: Choose Across-the-line, Autotransformer, Wye-delta Open Transition, Wye-delta Closed Transition, or Solid-State starting.

ACROSS-THE-LINE STARTING: Yields full motor starting torque. However, power companies and/or in-house power distribution systems often require other starting methods to achieve reduced starting inrush current. **NOTE: Reducing the inrush current also reduces the starting torque.** A careful analysis of compressor torque requirements versus the available motor starting torque must be made. This can be accomplished by plotting the motor speed-torque curve (obtained from motor vendor) against the compressor speed-torque curve. The available motor torque should exceed the compressor torque requirement by a minimum of 20% at the worst portion of the curve. This usually occurs at approximately half-speed in the region known as the motor pull-up torque (P.U.T.). When plotting these curves please remember that for starting methods other than across-the-line, the motor torque values are reduced as follows:

AUTOTRANSFORMER: The Autotransformer starter has three voltage taps: 50%, 65% and 80%. The starter, unless specified otherwise, is normally shipped connected to the 80% voltage tap. This can be changed in the field as required. The starting torque available is:

- 80% Tap - 64% of normal torque
- 65% Tap - 42% of normal torque
- 50% Tap - 25% of normal torque

WYE-DELTA (OPEN or CLOSED TRANSITION): Starting torque available is 33% of normal. While Wye-delta open transition starters exhibit the same torque characteristics as Wye-delta closed transition starters, closed transition is the more preferred method. This is because open transition allows the motor to get out of sync with the power line during transition. This can result in damaging power spikes that tend to nuisance trip circuit breakers and shorten motor and power distribution equipment life. This is especially true for screw compressors which represent relatively low inertia loads.

SOLID STATE: Solid-State starters have complex current and torque relationships. In addition, solid-state starters require careful coordination between the starter and other protective devices to prevent compressor failure due to shorted starter outputs. If a solid-state starter is being considered, consult Frick for assistance.

OVERCURRENT PROTECTION: Choose either the Starter package or the Combination starter package with circuit breaker disconnect. For high voltage (2300V, 4160V) applications, specify High voltage fused draw-out starter package.

COMPRESSOR MOTOR DATA: Indicate the motor _____ HP, _____ voltage, _____ Hz, _____ FLA (full load amps), and _____ speed.

CURRENT TRANSFORMER RATIO: Select the appropriate current transformer ratio from the chart on the wiring diagram.

OIL PUMP MOTOR DATA: The oil pump motor data is determined by Johnson Controls-Frick for each application. Standard units with either the prelube system or the optional full-lube system will have an integral horsepower pump. Units supplied with the optional full-lube system will have an integral horsepower pump.

STANDARD CONDITIONS - HIGH STAGE

The RWB II high stage ratings for R-717 are based on 3550 RPM (60 Hz), 10°F liquid subcooling (except no external liquid subcooling in economizer ratings), 10°F suction superheat (not contributing to the refrigeration effect) and thermosyphon or water-cooled oil cooling.

SELECTION PROCEDURE - HIGH STAGE

The final rating for a RWB II unit at any condition is determined from the standard rating and all of the applicable correction factors.

Capacity (TR) = standard rating (or economized rating) x subcooling correction factor x superheat correction factor x liquid injection correction factor if applicable (see Liquid Injection Oil Cooling) x 0.83 (50 Hz only).

Brake Horsepower (BHP) = standard rating (or economized rating) x 1.01 (liquid injection correction factor if applicable) x 0.83 (50 Hz only).

LIQUID SUBCOOLING CORRECTION FACTORS HIGH STAGE

For liquid subcooling other than 10°F, determine the liquid subcooling capacity correction factor (S.C.C.F.) in the following manner using the actual number of degrees of liquid subcooling (S.C.):

For R-717:

$$S.C.C.F. = 1 + (S.C. - 10^\circ F)(.0025)$$

No brake horsepower correction is required for liquid subcooling.

SUCTION SUPERHEAT CORRECTION FACTORS HIGH STAGE

For suction superheat in excess of 10°F, determine the suction superheat capacity correction factor (S.H.C.F.) in the following manner using the actual number of degrees of suction superheat (S.H.):

FOR R-717:

$$S.H.C.F. = \frac{1}{1 + (S.H. - 10^\circ F)(.0027)}$$

It is recommended that a minimum of 10°F of suction superheat be maintained to ensure that all refrigerant entering the compressor is in the vapor state.

No brake horsepower correction is required for suction superheat.

STANDARD CONDITIONS - BOOSTER

The RWB II booster ratings for R-717 are based on 3550 RPM (60 Hz), liquid cooled to intermediate temperature, no suction superheat, and thermosyphon or water-cooled oil cooling.

SELECTION PROCEDURE - BOOSTER

The final rating for a RWB II unit at any condition is determined from the standard rating and all of the applicable correction factors.

Capacity (TR) = standard rating x liquid temperature correction factor x superheat correction factor, if applicable, x 0.83 (50 Hz only).

Brake Horsepower (BHP) = standard rating x 1.01 (liquid injection correction factor, if applicable) x 0.83 (50 Hz only).

LIQUID TEMPERATURE CORRECTION FACTORS BOOSTER

For liquid temperatures greater than the saturated intermediate temperature, determine the liquid temperature de-rating factor (L.T.D.F.) in the following manner:

For R-717:

$$L.T.D.F. = 1 - (TD)(.0025)$$

Where TD is the temperature difference in degrees between the actual liquid temperature and the saturated intermediate temperature. No brake horsepower correction is required.

SUCTION SUPERHEAT CORRECTION FACTORS BOOSTER

For suction superheat in excess of 0°F, determine the suction superheat capacity correction factor (S.H.C.F.) in the following manner using the actual number of degrees of suction superheat (S.H.):

FOR R-717:

$$S.H.C.F. = \frac{1}{1 + (S.H.)(.0027)}$$

It is recommended that a minimum of 10°F of suction superheat be maintained to ensure that all refrigerant entering the compressor is in the vapor state.

No brake horsepower correction is required for suction superheat.

LIQUID INJECTION OIL COOLING

High Stage compressor units may be supplied with single-port (low Vi) or dual-port (low Vi and high Vi) liquid injection oil cooling. Single port will be furnished for low compression ratio operation and dual port for high compression ratio operation. Booster compressor units use single-port liquid injection oil cooling due to the typically lower compression ratios.

The control system on high stage units with dual-port liquid injection oil cooling automatically switches the liquid refrigerant supply to the high port when the compressor is operating at higher compression ratios (above 3.5 Vi) for best efficiency.

The following table gives the evaporator temperature limits for liquid injection use and single-port application.

CONDENSING TEMPERATURE	MAX. EVAP TEMP LIQ. INJ. USE	MIN. EVAP TEMP* (LOW Vi)
	R-717	R-717
75°F	+10°F	-23°F
85°F	+25°F	-17°F
95°F	+35°F	-11°F
105°F	+40°F	- 4°F

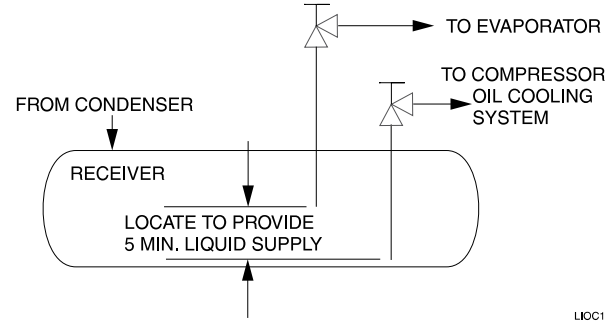
* Dual Injection Kit will be shipped by Johnson Controls-Frick below these temperatures.

Where low compression ratios are anticipated, thermosyphon or water-cooled oil cooling should be used.

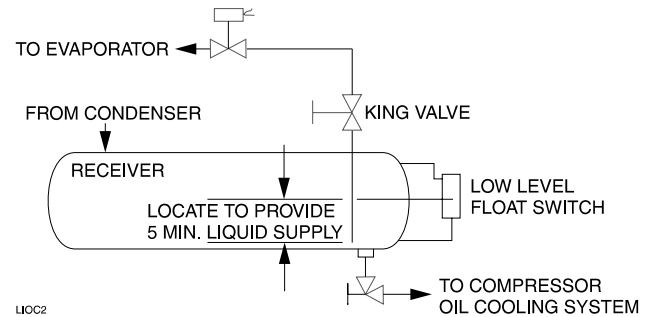
It is **IMPERATIVE** that an uninterrupted supply of high pressure liquid refrigerant be provided to the injection system at all times. Two items are of extreme importance, the design of the receiver/liquid injection supply and the size of the liquid line.

It is recommended that the receiver be oversized sufficiently to retain a five (5) minute supply of refrigerant for oil cooling. The evaporator supply must be secondary to this consideration. Two methods of accomplishing this are shown.

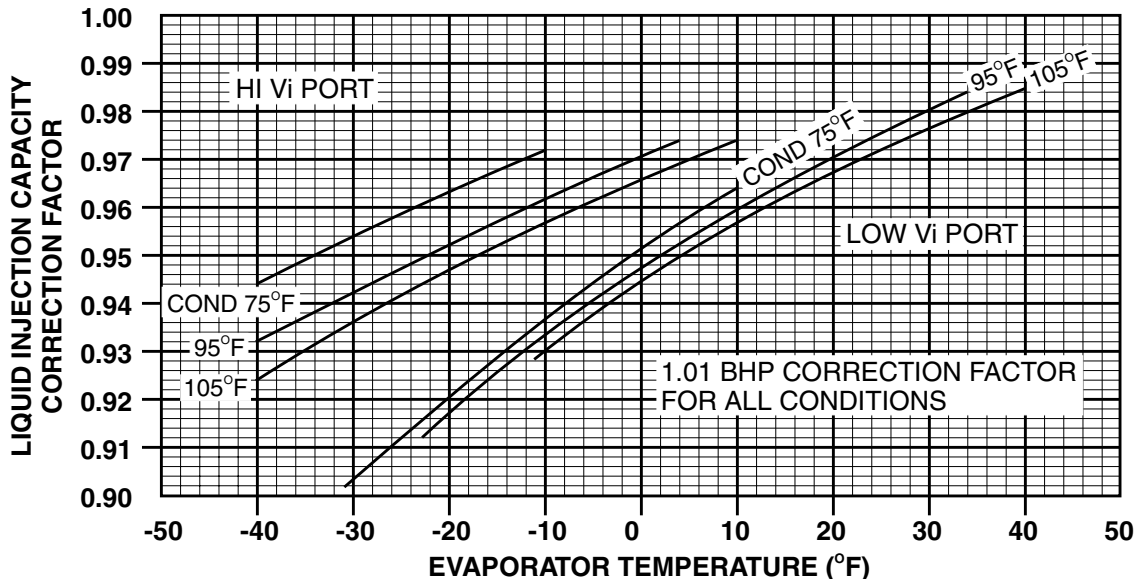
The dual dip tube method uses two dip tubes in the receiver. The liquid tube is below the evaporator tube to ensure continued oil cooling when the receiver level is low.



The level control method utilizes a float level control on the receiver to close a solenoid valve feeding the evaporator when the liquid falls below that amount necessary for 5 minutes of liquid injection oil cooling.



HIGH STAGE LIQUID INJECTION CORRECTION FACTORS - R-717



BOOSTER LIQUID INJECTION CORRECTION FACTORS - R717: No correction factor for either capacity (TR) or power (BHP).

Liquid line sizes and the additional receiver volume (quantity of refrigerant required for 5 minutes of liquid injection oil cooling) are given in the following table.

RWB II MODEL	LIQUID LINE SIZES - Inches ⁽¹⁾		5 MINUTE LIQUID SUPPLY	
	PIPE	TUBING OD	MASS LB	VOL CU FT
HIGH STAGE - R-717				
60,76	3/4	—	50	1.5
100,134	3/4	—	80	2.0
177,222	1	—	140	4.0
270	1-1/4	—	180	5.0
316,399	1-1/4	—	250	7.0
480	2	—	310	8.5
BOOSTER - R-717				
60,76	3/4	—	50	1.5
100,134	1/2	—	20	0.5
177,222	3/4	—	30	1.0
270	1	—	40	1.5
316,399	1	—	40	1.5
480	1	—	50	1.5

1. Lines are sized for a maximum 100 foot liquid line. For longer runs, increase line size accordingly.

THERMOSYPHON OIL COOLING

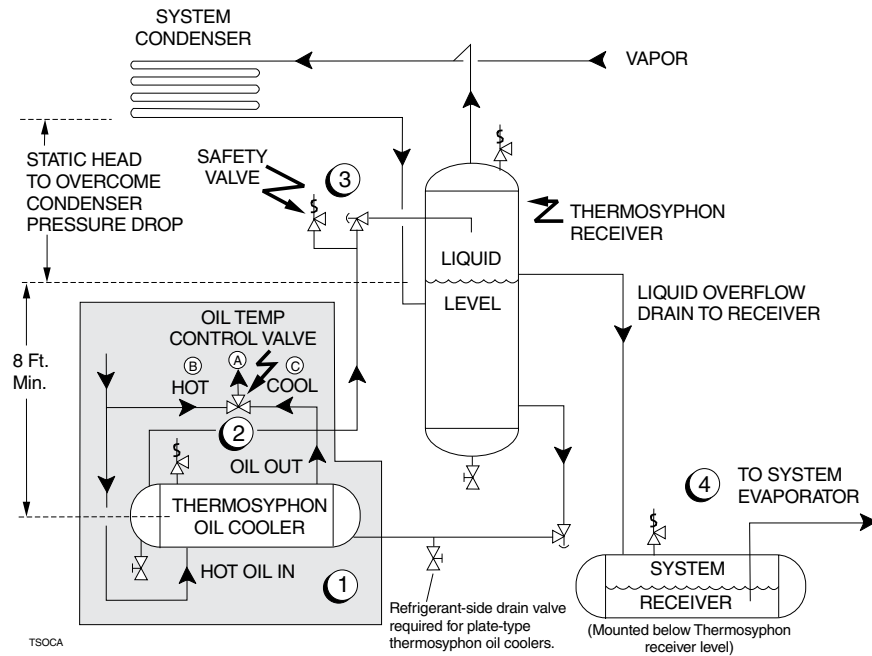
Thermosyphon oil coolers, like water (or glycol)-cooled oil coolers, eliminate the capacity and power penalties associated with liquid injection oil cooling. Thermosyphon oil coolers have the further advantages of eliminating water (or glycol) pump power consumption and maintenance, tube fouling, and potential system contamination.

The principle of operation is as follows (see diagram). A supply of high pressure liquid is maintained in a receiver at a predetermined minimum head above the oil cooler and below the condenser. Gravity causes the liquid refrigerant to flow to the oil cooler where a portion of the liquid is boiled off, thereby cooling the hot oil. New liquid from the receiver displaces the lighter refrigerant liquid/vapor mixture which rises to the receiver, dropping out the remaining liquid before allowing the vapor to return to the condenser, completing the cycle.

PIPING ARRANGEMENT FOR THERMOSYPHON OIL COOLING SYSTEMS

The components and piping of a thermosyphon oil cooling system include a liquid source at condensing pressure, adequate static heads to provide fluid flow, appropriate control valves, safety relief valves, service valves and pump-out connections. The arrangement of component placement and fluid flow requirements must be designed to suit the individual refrigeration system layout with consideration given to piping safety practices.

The component and piping arrangement shown below is intended only to illustrate the operating principles of thermosyphon oil cooling. Other component layouts may be better suited to a specific installation.



1. Thermosyphon oil cooler is supplied with the oil side piped to the compressor unit and stub ends supplied on the refrigerant side.
2. Three-way oil temperature control valve required where condensing temperature is expected to go below 65°F.
3. A refrigerant-side safety valve is required in this location only when refrigerant isolation valves are installed between the cooler and thermosyphon receiver. If no valves are used between the cooler and TSOC receiver, the safety valve on the TSOC receiver must be sized to handle the volume of both vessels. Then, the safety valve on the cooler vent (liquid refrigerant side) can be eliminated.
4. System receiver must be mounted below thermosyphon receiver level in this arrangement.

WATER-COOLED OIL COOLER SELECTION

OIL COOLER DATA TABLE

Required cooling water flow, GPM, is determined from the following formula.

$$GPM = \frac{OCHR}{500 (T_o - T_i)}$$

OCHR - Oil Cooler Heat Rejection (BTU/HR)
See Tables

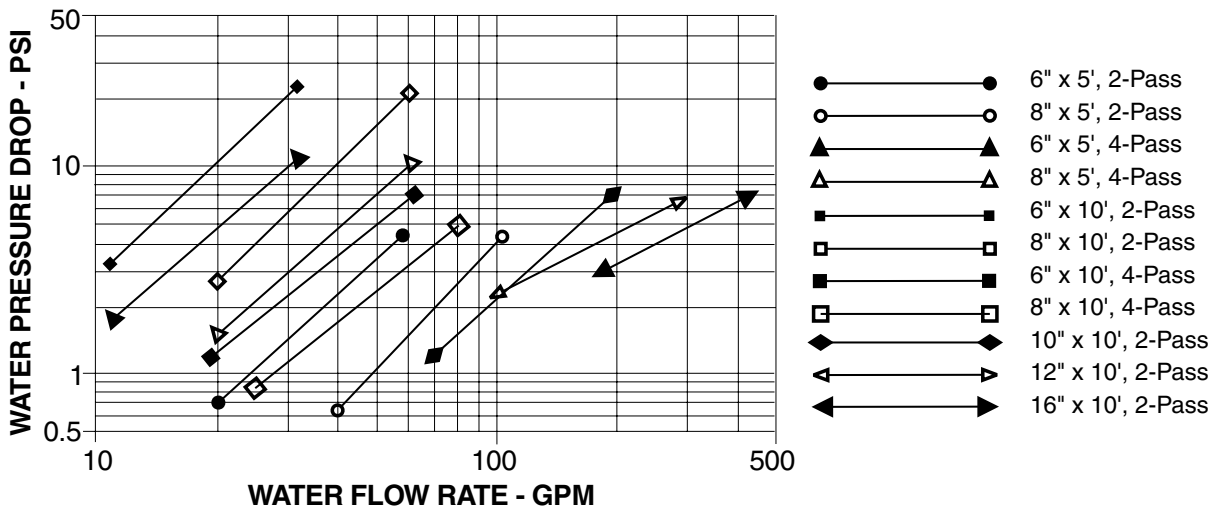
T_o - Cooling Water Outlet Temperature

(Not to exceed 110°F based upon 120°F oil out)

T_i - Cooling Water Inlet Temperature (°F)

SIZE - Inches		APPROX WATER FLOW RANGE (GPM)
COOLER	WATER CONN	
5 Feet and 10 Feet Lengths		
6"	1-1/2 NPT	22 - 57
6"(1)	1-1/2 NPT	11 - 29
8"	2-1/2 NPT	40 - 108
8"(1)	2-1/2 NPT	20 - 54
10 Feet Length		
10"	3 NPT	70 - 187
12"	4 NPT	100 - 279
16"	5 NPT	180 - 480

1. 4-pass design.



OIL COOLER HEAT REJECTION (OCHR) - 1,000 BTU/HR

Based on 10°F superheat, 10°F subcooling, superheat enthalpy not contributing to refrigeration effect. For applications having greater than 10°F superheat, consult Frick.

ECONOMIZER - HIGH STAGE (OPTIONAL)

Compressor ratings with the economizer effect included are given in the ratings tables with the “E” suffix. No allowance for vapor line pressure drop has been included. Size the economizer vapor line (including valves, strainer, etc.) from the economizer vessel to the compressor for pressure drop from one to two PSI. The economizer rating tables are based on the application of a Flash Economizer System as shown in FIG. 3 below. For capacity and brake HP with shell and coil or direct expansion (DX) type economizer (FIG. 2), refer to page 76.

The economizer option provides an increase in system capacity and efficiency by subcooling liquid from the condenser through a heat exchanger or flash tank before it goes to the evaporator. The subcooling is provided by flashing liquid in the economizer cooler to an intermediate pressure level. The intermediate pressure is provided by a port located part way down the compression process on the screw compressor.

As the screw compressor unloads, the economizer port will drop in pressure level, eventually being fully open to suction. Because of this, an output from the microprocessor is generally used to turn off the supply of flashing liquid on a shell and coil or DX economizer when the capacity falls below approximately 45%-60% capacity (85%-90% slide valve position). This is done because the compressor will be more efficient operating at a higher slide valve position with the economizer turned off, than it will at a low slide valve position with the economizer turned on. Please note however that shell and coil and DX economizers can be used at low compressor capacities in cases where efficiency is not as important as ensuring that the liquid supply is subcooled. In such cases, the economizer liquid solenoid can be left open whenever the compressor is running.

Due to the tendency of the port pressure to fall with decreasing compressor capacity, a back-pressure regulator valve (BPR) is generally required on a flash economizer system (FIG. 3) in order to maintain some preset pressure difference between the subcooled liquid in the flash vessel

and the evaporators. If the back-pressure regulator valve is not used on a flash economizer, it is possible that no pressure difference will exist to drive liquid from the flash vessel to the evaporators, since the flash vessel will be at suction pressure. In cases where wide swings in pressure are anticipated in the flash economizer vessel, it may be necessary to add an outlet pressure regulator to the flash vessel outlet to avoid overpressurizing the economizer port, which could result in motor overload. Example: A system feeding liquid to the flash vessel in batches.

The recommended economizer systems are shown below. Notice that in all systems there should be a strainer and a check valve between the economizer vessel and the economizer port on the compressor. The strainer prevents dirt from passing into the compressor and the check valve prevents oil from flowing from the compressor unit to the economizer vessel during shutdown.

CAUTION Other than the isolation valve needed for strainer cleaning, it is essential that the strainer be the last device in the economizer line before the compressor. Also, piston-type check valves are recommended for installation in the economizer line, as opposed to disc-type check valves. The latter are more prone to gas-pulsation-induced failure. The isolation and check valves and strainer should be located as closely as possible to the compressor, preferably within three feet.

For refrigeration plants employing multiple compressors on a common economizing vessel, regardless of economizer type, each compressor must have a back-pressure regulating valve in order to balance the economizer load, or gas flow, between compressors. The problem of balancing load becomes most important when one or more compressors run at partial load, exposing the economizer port to suction pressure. In the case of a flash vessel, there is no need for the redundancy of a back-pressure regulating valve on the vessel and each of the multiple compressors. Omit the BPR valve on the flash economizer vessel and use one on each compressor, as shown in FIG. 4.

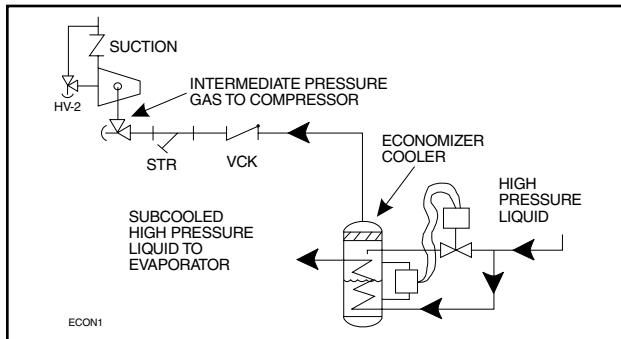


FIG. 1 - SHELL and COIL ECONOMIZER SYSTEM

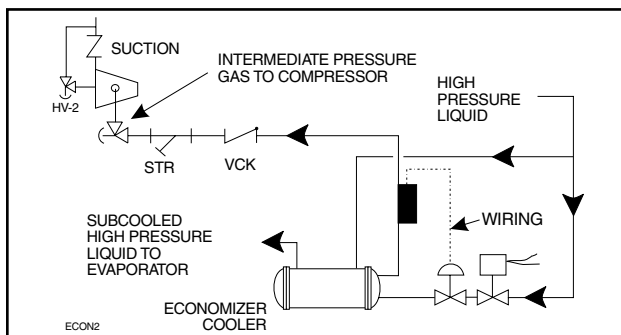


FIG. 2 - DIRECT EXPANSION ECONOMIZER SYSTEM

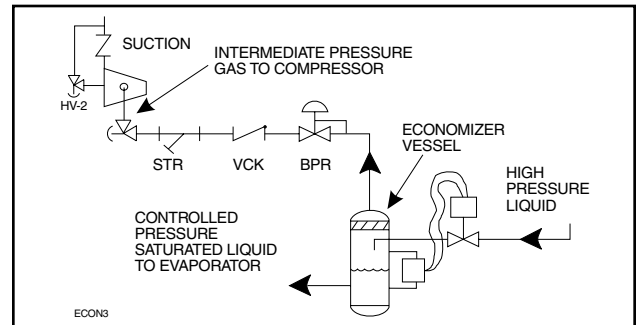


FIG. 3- FLASH ECONOMIZER SYSTEM

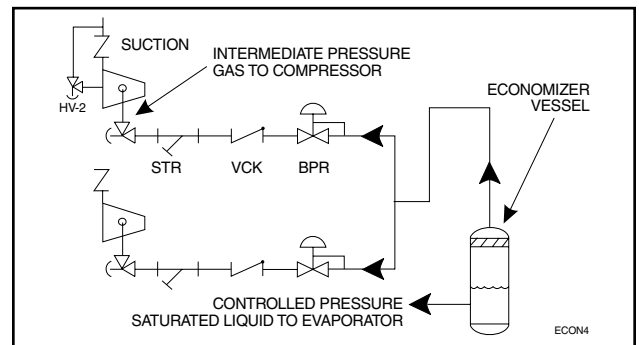


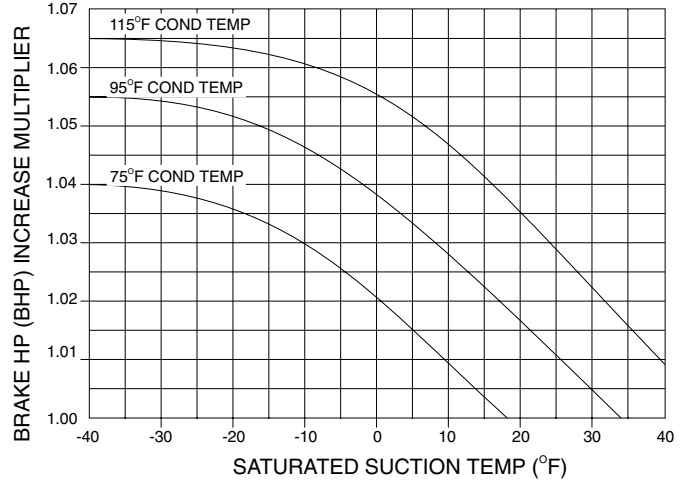
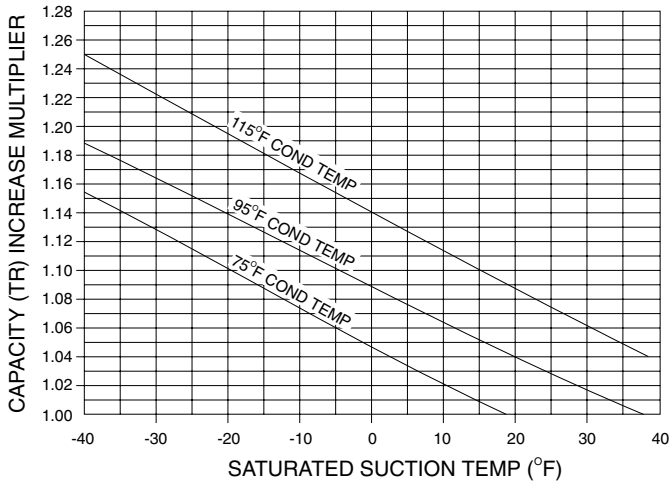
FIG. 4 - MULTIPLE COMPRESSOR ECONOMIZER SYSTEM

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATINGS WITH DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS

PROCEDURE - Determine capacity (TR) and brake horsepower (BHP) from the noneconomized, standard rating tables for the R-717 refrigerant. Multiply these ratings by the capacity and shaft horsepower increase multipliers below for the appropriate refrigerant. Apply any other correction factors (subcooling, superheat, or liquid injection or 50 Hz) using instructions from Page 7.

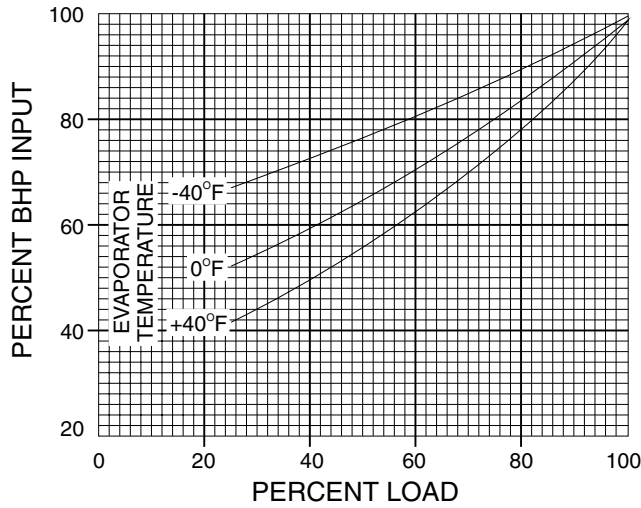
DIRECT EXPANSION OR SHELL and COIL ECONOMIZER RATING INCREASE MULTIPLIERS

R-717



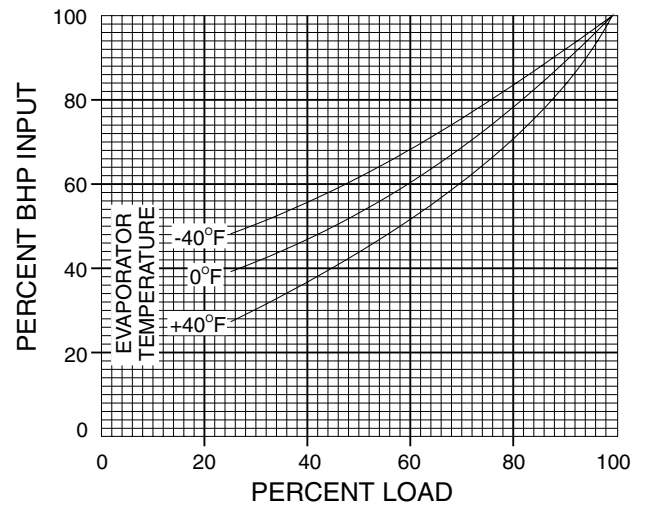
NOTE: Increase multipliers are based on liquid subcooling by either direct expansion or shell and coil economizer. Use of the increase multipliers results in ratings based on 10°F suction superheat with the superheat enthalpy not contributing to the refrigeration effect, no liquid subcooling from condenser or other external source, and 10°F small temperature difference in heat exchanger. No allowance for vapor line pressure drop is included in the resulting ratings.

TYPICAL PART LOAD POWER INPUT WITH CONSTANT CONDENSING TEMPERATURE-HIGH STAGE



This curve is applicable for R-717 (85°F to 105°F full-load condensing temperature).

TYPICAL PART LOAD POWER INPUT WITH FALLING CONDENSING TEMPERATURE-HIGH STAGE

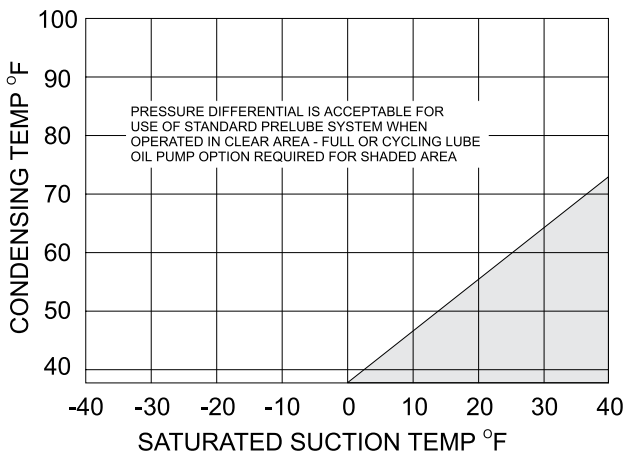


The curve, above, is based on a 20°F linear drop in condensing temperature from full load to 10% of full load. This curve is applicable for R-717 (85°F to 105°F full-load condensing temperature). It is not applicable if condensing temperature does not drop with compressor unloading as in the following examples:

1. Water-cooled condensing temperatures cannot fall below entering water temperature.
2. Single compressor unloading on a multiple compressor system will have a negligible effect on system condensing temperature.
3. No condensing temperature drop will occur if condenser fans are cycled off as the load decreases.

STANDARD LUBRICATION SYSTEM LIMITS - HIGH STAGE

The standard prelube system for compressor operation without a lube oil pump may be used on high stage applications shown in the clear area of the graph. The optional **full-lube oil pump** is required only on low differential pressure applications shown in the shaded area of the graph. Where condensing temperatures fluctuate into the shaded area only on an occasional basis in the winter, the **full-lube pump with cycling option** avoids unnecessary consumption of pump horsepower.



MINIMUM COMPRESSOR FLOW

The minimum flow capacity for each compressor varies depending upon its geometry and its operating conditions. Typical minimum flow for each of our compressor models is listed below. This table represents minimum suction flow with the slide valve fully unloaded.

UNIT	MINIMUM FLOW*	
	CFM	m ³ /hr
60	43	73
76	54	92
100	71	121
134	95	161
177	125	212
222	157	267
270	365	621
316	224	380
399	282	479
480	650	1,104

* @ 3550 rpm

MOTOR SELECTION and STARTING TORQUE

Motors must be sized adequately for all expected operating conditions since start-up, pull down, and load variations quite often require significantly more horsepower than nominal design.

Motor starting torque capacity must also be considered, especially when other than across-the-line start is employed. Motor starting and pull-up torque must be at least 20% greater than compressor requirements at maximum expected start-up conditions. Refer to the torque data.

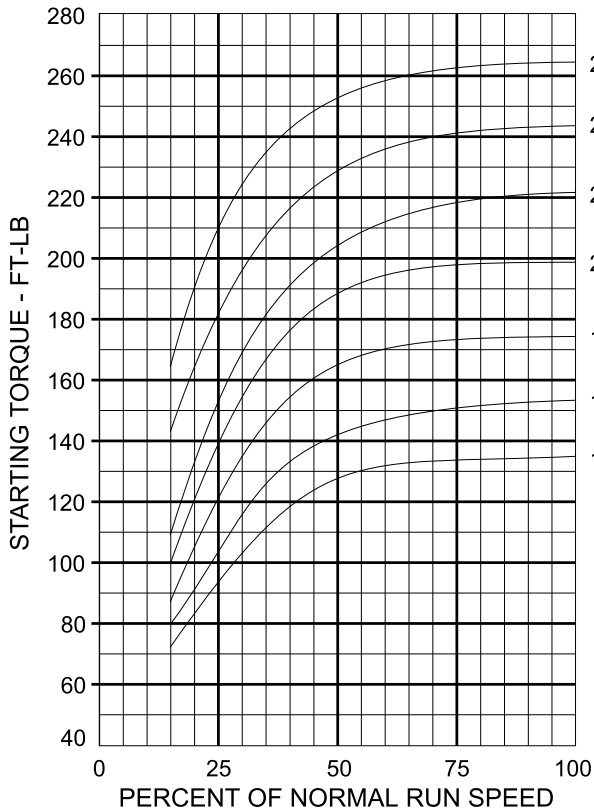
NOTE: Motor starting torque varies considerably with various manufacturers - obtain specific torque data for the motor being used.

RWB II MODEL	STARTING TORQUE (1) MULTIPLIER	BREAKAWAY TORQUE (ft-lb)	(2)(3) MASS MOMENT OF INERTIA (lb-ft ²)
60	0.46	7	3
76	0.58	7	3.5
100	0.75	10	7
134	1.00	10	8
177	1.32	14	14
222	1.66	14	17
270	2.24	14	27
316	2.36	20	35
399	2.98	20	43
480	3.91	20	50

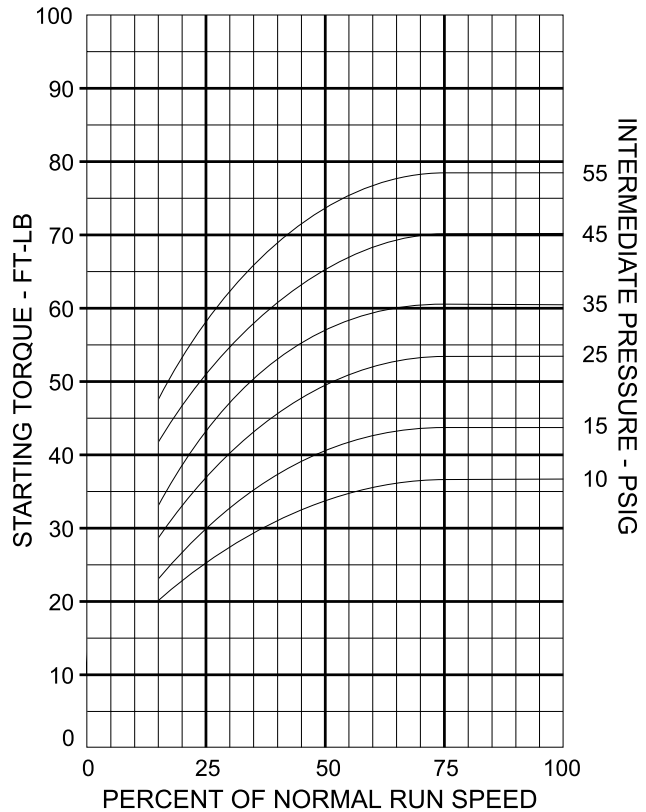
1. High Stage or Booster Application.
2. Including standard compressor coupling half.
3. Inertia resolved to drive shaft.

RWB II SCREW COMPRESSOR SPEED vs STARTING TORQUE CURVE - FULLY UNLOADED - HIGH STAGE and BOOSTER

HIGH STAGE



BOOSTER



**STARTING TORQUE
FOR SPECIFIC COMPRESSOR**

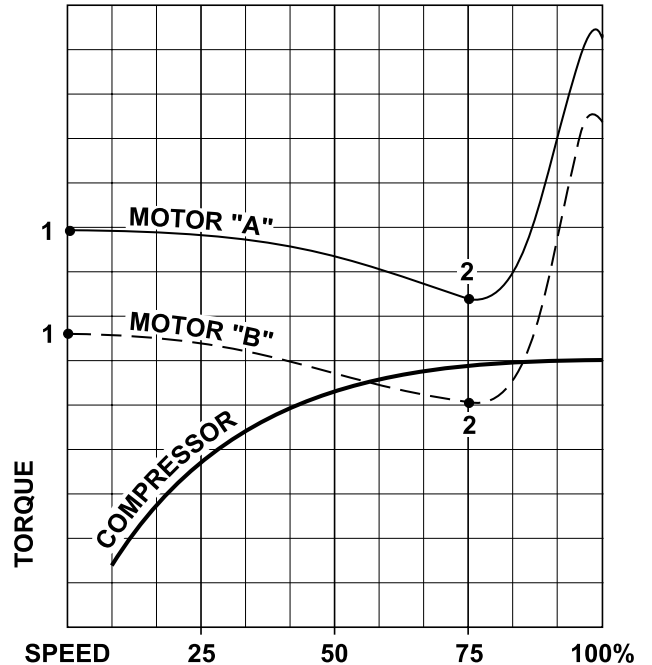
Multiply the starting torque value from high stage or booster curves at 100% of normal run speed by starting torque multiplier for appropriate compressor size.

MOTOR/COMPRESSOR TORQUE

Ensure that the motor STARTING and MINIMUM PULL-UP TORQUE capabilities will exceed the compressor requirements at the anticipated condition that will be experienced during normal starting.

NOTE: Wye-delta and auto transformer (reduced voltage) motor starting methods drastically effect the starting torque available from motors as indicated:

Across-the-Line	100% Torque
Auto Transformer	25 - 64% Torque
Wye-delta	33% Torque



Motor "A": Adequate to start the compressor.
Motor "B": Will not start the compressor

NOTE: Starting torque of both motors (1) is above compressor torque. However, the pull-up torque (2) of motor "B" is below the compressor torque curve and motor "B" will not accelerate the compressor to 100% speed.

**STANDARD MOTOR and FRAME SIZES
230, 460, and 575 Volts - 3-Phase - 60 Hertz, 3600 RPM**

50Hz motors or a special drive may require modified package design. When a modified package design is required there may be cost and delivery considerations.

MODEL 60/76		MODEL 100/134				MODEL 177-270		MODEL 316-480*	
HP	FRAME	HP	FRAME	HP	FRAME	HP	FRAME	HP	FRAME
20	254T	40	286TS	450	505USS	125	404TS	400	447TSS
30	284TS	50	324TS	450	507USS	150	405TS	400	505USS
40	286TS	60	326TS	500	505USS	200	444TS	450	505USS
50	324TS	75	364TS	500	507USS	250	445TS	450	507USS
60	326TS	100	365TS	-	-	300	445TS	500	505USS
75	364TS	125	404TS	-	-	300	447TSS	500	507USS
100	365TS	150	405TS	-	-	350	447TSS	600	5008S
125	404TS	200	444TS	-	-	400	447TSS	700	5008S
150	405TS	250	445TS	-	-	400	505USS	800	5010S
200	444TS	300	445TS	-	-	450	505USS	900	5808S
250	445TS	300	447TSS	-	-	450	507USS	1000	5810S
-	-	350	447TSS	-	-	500	505USS	-	-
-	-	400	447TSS	-	-	500	507USS	-	-
-	-	400	505USS	-	-	600	5008S	-	-

* For larger horsepower motors, consult Factory

Compressor Ratings begin on the following page.

NOTE: These tables are only intended to be used as a selection guideline. CoolWare™ should be used to actually configure a unit for your application.

For Temperature/Pressure conversion chart, check Table of Contents for page number.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 60

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. TR 8.7* BHP	28.2 76.3	27.0 85.9	25.9 96.9	24.9 110.7	23.9 128.3
	-35. TR 5.4* BHP	32.9 79.8	31.6 89.6	30.3 100.5	29.0 112.9	27.9 128.4
	-30. TR 1.6* BHP	38.1 83.5	36.7 93.6	35.3 104.6	33.9 116.9	32.4 130.8
	-25. TR 1.3 BHP	44.0 87.2	42.5 97.8	40.9 109.2	39.3 121.5	37.7 135.3
	-20. TR 3.6 BHP	50.6 90.9	48.9 102.1	47.1 113.9	45.4 126.6	43.6 140.4
	-15. TR 6.2 BHP	57.9 94.5	55.9 106.3	54.1 118.8	52.1 132.0	50.1 146.1
	-10. TR 9.0 BHP	66.0 97.8	63.8 110.5	61.7 123.6	59.6 137.5	57.4 152.1
	-5. TR 12.2 BHP	74.9 100.8	72.6 114.4	70.2 128.4	67.8 142.9	65.4 158.3
	0. TR 15.7 BHP	84.6 103.2	82.1 117.9	79.5 132.9	76.9 148.3	74.2 164.4
	5. TR 19.6 BHP	95.3 105.0	92.6 121.0	89.8 137.1	86.9 153.6	83.9 170.5
	10. TR 23.8 BHP	107.1 106.0	104.0 123.3	101.0 140.8	97.9 158.5	94.6 176.5
	15. TR 28.4 BHP	120.0 106.1	116.5 124.9	113.2 143.8	109.9 162.9	106.3 182.2
	20. TR 33.5 BHP	134.3 105.9	130.3 125.6	126.5 146.0	122.9 166.6	119.1 187.4
	25. TR 39.0 BHP	149.9 105.4	145.2 125.3	141.1 147.3	136.9 169.5	132.9 191.9
	30. TR 45.0 BHP	167.0 104.4	162.0 125.1	157.0 147.5	152.4 171.5	147.8 195.5
	35. TR 51.6 BHP	185.5 103.0	179.9 124.2	174.4 147.3	169.2 172.3	164.0 198.2
	40. TR 58.6 BHP	206.2 103.6	199.6 123.0	193.5 146.7	187.3 172.0	181.8 199.7

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 60E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	33.1 81.5	32.5 92.3	31.8 104.6	31.3 120.1	30.8 140.0
	-35. 5.4*	TR BHP	38.2 85.2	37.6 96.1	36.9 108.5	36.2 122.5	35.6 140.1
	-30. 1.6*	TR BHP	43.9 89.0	43.2 100.4	42.5 112.8	41.7 126.8	40.9 142.6
	-25. 1.3	TR BHP	50.1 92.9	49.5 104.8	48.7 117.6	47.9 131.6	47.1 147.4
	-20. 3.6	TR BHP	57.0 96.6	56.3 109.1	55.6 122.6	54.7 137.0	53.8 152.8
	-15. 6.2	TR BHP	64.5 100.1	63.8 113.4	63.0 127.5	62.2 142.5	61.2 158.8
	-10. 9.1	TR BHP	72.7 103.4	72.0 117.5	71.1 132.4	70.3 148.2	69.3 165.0
	-5. 12.2	TR BHP	81.6 106.1	80.9 121.3	80.1 137.1	79.1 153.7	78.2 171.3
	0. 15.7	TR BHP	91.2 108.2	90.5 124.6	89.7 141.5	88.7 159.0	87.7 177.6
	5. 19.6	TR BHP	101.6 109.5	101.0 127.3	100.2 145.4	99.2 164.2	98.1 183.7
	10. 23.8	TR BHP	112.9 110.0	112.1 129.1	111.4 148.8	110.4 168.8	109.3 189.6
	15. 28.5	TR BHP	124.9 109.4	124.1 130.1	123.4 151.3	122.5 172.8	121.4 195.0
	20. 33.5	TR BHP	138.2 108.4	137.2 130.0	136.3 152.9	135.4 176.0	134.4 199.7
	25. 39.0	TR BHP	152.3 107.0	151.0 128.9	150.2 153.4	149.2 178.2	148.3 203.7
	30. 45.1	TR BHP	167.6 105.1	166.3 127.7	165.0 152.8	164.0 179.4	162.9 206.6
	35. 51.6	TR BHP	183.7 103.1	182.3 125.8	180.9 151.6	179.8 179.3	178.5 208.5
40. 58.6	TR BHP		199.6 123.5	198.1 150.0	196.4 178.0	195.4 209.0	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 76

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. TR 8.7* BHP	35.5 96.1	34.1 108.2	32.6 122.1	31.3 139.4	30.1 161.6
	-35. TR 5.4* BHP	41.4 100.5	39.8 112.8	38.2 126.6	36.6 142.2	35.1 161.7
	-30. TR 1.6* BHP	48.0 105.2	46.3 117.9	44.5 131.8	42.7 147.2	40.8 164.8
	-25. TR 1.3 BHP	55.4 109.8	53.5 123.2	51.5 137.5	49.5 153.0	47.5 170.3
	-20. TR 3.6 BHP	63.7 114.5	61.5 128.5	59.4 143.5	57.1 159.5	54.9 176.8
	-15. TR 6.2 BHP	72.9 119.0	70.4 133.8	68.1 149.6	65.6 166.2	63.1 184.0
	-10. TR 9.0 BHP	83.0 123.2	80.4 139.1	77.7 155.6	75.0 173.1	72.3 191.6
	-5. TR 12.2 BHP	94.3 126.9	91.4 144.0	88.4 161.6	85.4 180.0	82.4 199.3
	0. TR 15.7 BHP	106.5 129.9	103.4 148.5	100.2 167.4	96.8 186.8	93.5 207.1
	5. TR 19.6 BHP	120.0 132.2	116.6 152.3	113.1 172.7	109.4 193.4	105.7 214.8
	10. TR 23.8 BHP	134.9 133.5	131.0 155.3	127.2 177.3	123.3 199.6	119.2 222.3
	15. TR 28.4 BHP	151.1 133.7	146.8 157.3	142.6 181.1	138.3 205.1	133.9 229.4
	20. TR 33.5 BHP	169.1 133.4	164.1 158.2	159.3 183.9	154.7 209.8	149.9 235.9
	25. TR 39.0 BHP	188.8 132.7	182.9 157.8	177.7 185.5	172.5 213.4	167.4 241.6
	30. TR 45.0 BHP	210.3 131.5	204.0 157.5	197.7 185.8	191.9 215.9	186.2 246.1
	35. TR 51.6 BHP	233.5 129.7	226.6 156.4	219.6 185.4	213.1 217.0	206.5 249.6
	40. TR 58.6 BHP	259.7 130.5	251.3 154.9	243.6 184.7	235.8 216.6	228.9 251.5

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 76E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	41.7 102.6	40.9 116.2	40.1 131.8	39.4 151.3	38.8 176.3
	-35. 5.4*	TR BHP	48.1 107.3	47.3 121.1	46.5 136.6	45.5 154.3	44.8 176.4
	-30. 1.6*	TR BHP	55.3 112.1	54.4 126.4	53.5 142.1	52.6 159.6	51.5 179.6
	-25. 1.3	TR BHP	63.1 116.9	62.3 131.9	61.4 148.1	60.3 165.8	59.3 185.6
	-20. 3.6	TR BHP	71.7 121.6	70.9 137.4	70.0 154.3	68.9 172.5	67.7 192.4
	-15. 6.2	TR BHP	81.2 126.1	80.3 142.8	79.4 160.6	78.3 179.5	77.1 199.9
	-10. 9.1	TR BHP	91.6 130.1	90.6 148.0	89.6 166.7	88.5 186.6	87.3 207.8
	-5. 12.2	TR BHP	102.8 133.6	101.9 152.7	100.8 172.6	99.6 193.5	98.4 215.8
	0. 15.7	TR BHP	114.9 136.2	114.0 156.9	113.0 178.2	111.7 200.3	110.5 223.6
	5. 19.6	TR BHP	127.9 137.9	127.1 160.2	126.1 183.2	124.9 206.7	123.5 231.3
	10. 23.8	TR BHP	142.1 138.5	141.2 162.6	140.3 187.4	139.0 212.6	137.7 238.7
	15. 28.5	TR BHP	157.3 137.8	156.3 163.8	155.4 190.5	154.3 217.6	152.9 245.5
	20. 33.5	TR BHP	174.0 136.5	172.8 163.7	171.6 192.5	170.5 221.6	169.2 251.5
	25. 39.0	TR BHP	191.8 134.7	190.1 162.3	189.2 193.2	187.9 224.4	186.7 256.6
	30. 45.1	TR BHP	211.0 132.3	209.4 160.9	207.7 192.4	206.5 225.9	205.2 260.2
	35. 51.6	TR BHP	231.3 129.9	229.6 158.5	227.8 190.9	226.5 225.8	224.8 262.6
40. 58.6	TR BHP		251.4 155.6	249.4 188.9	247.4 224.1	246.0 263.2	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 100

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. TR 8.7* BHP	48.6 122.7	47.0 138.9	45.4 157.6	43.9 181.8	42.4 211.9
	-35. TR 5.4* BHP	56.5 128.2	54.6 144.1	52.8 162.5	51.0 183.7	49.3 211.0
	-30. TR 1.6* BHP	65.3 133.9	63.2 150.4	61.1 168.4	59.0 189.1	56.9 213.0
	-25. TR 1.3 BHP	75.0 139.8	72.8 156.9	70.4 175.4	68.0 195.7	65.7 218.9
	-20. TR 3.6 BHP	85.9 145.7	83.4 163.6	80.8 182.8	78.1 203.5	75.5 226.1
	-15. TR 6.2 BHP	98.0 151.5	95.1 170.3	92.3 190.4	89.4 211.8	86.4 234.8
	-10. TR 9.0 BHP	111.4 156.9	108.2 177.1	104.9 198.0	101.8 220.3	98.5 244.1
	-5. TR 12.2 BHP	126.3 161.9	122.7 183.4	119.0 205.8	115.4 229.0	111.9 253.7
	0. TR 15.7 BHP	142.6 166.1	138.6 189.3	134.6 213.2	130.5 237.7	126.5 263.5
	5. TR 19.6 BHP	160.6 169.3	156.2 194.5	151.7 220.1	147.2 246.3	142.6 273.3
	10. TR 23.8 BHP	180.2 171.5	175.3 198.7	170.4 226.3	165.4 254.2	160.4 283.0
	15. TR 28.4 BHP	201.6 172.5	196.3 201.8	190.9 231.5	185.4 261.6	179.8 292.2
	20. TR 33.5 BHP	225.1 173.0	219.1 203.6	213.2 235.5	207.2 268.0	201.0 300.8
	25. TR 39.0 BHP	251.2 173.1	244.0 204.3	237.4 238.4	230.8 273.2	224.1 308.4
	30. TR 45.0 BHP	279.4 171.7	271.3 204.9	263.8 239.7	256.6 277.0	249.2 314.8
	35. TR 51.6 BHP	310.1 168.5	301.5 204.2	292.5 240.3	284.4 279.3	276.4 319.7
	40. TR 58.6 BHP	344.0 164.2	333.7 202.1	324.1 240.8	314.6 280.3	305.8 323.2

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 100E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	57.1 131.0	56.5 149.1	55.8 170.1	55.2 197.3	54.6 231.2
	-35. 5.4*	TR BHP	65.7 136.8	64.9 154.7	64.2 175.4	63.4 199.3	62.8 230.1
	-30. 1.6*	TR BHP	75.1 142.8	74.4 161.2	73.5 181.6	72.7 205.1	71.8 232.2
	-25. 1.3	TR BHP	85.4 148.8	84.7 168.0	83.9 188.9	82.9 211.9	82.0 238.5
	-20. 3.6	TR BHP	96.7 154.8	96.0 174.9	95.2 196.6	94.2 220.1	93.2 246.1
	-15. 6.2	TR BHP	109.3 160.6	108.4 181.6	107.6 204.4	106.6 228.7	105.5 255.1
	-10. 9.1	TR BHP	122.9 165.8	122.0 188.4	121.0 212.1	120.1 237.5	119.0 264.8
	-5. 12.2	TR BHP	137.7 170.4	136.8 194.5	135.8 219.7	134.7 246.2	133.7 274.6
	0. 15.7	TR BHP	153.8 174.1	152.9 200.0	151.8 226.9	150.6 254.9	149.5 284.6
	5. 19.6	TR BHP	171.2 176.6	170.2 204.6	169.2 233.4	167.9 263.2	166.6 294.3
	10. 23.8	TR BHP	189.9 177.9	189.0 208.0	187.9 239.0	186.6 270.8	185.2 303.9
	15. 28.5	TR BHP	210.0 177.8	209.1 210.1	208.1 243.5	206.8 277.6	205.3 312.7
	20. 33.5	TR BHP	231.6 177.0	230.7 210.8	229.7 246.6	228.4 283.1	226.9 320.7
	25. 39.0	TR BHP	255.2 175.7	253.7 210.1	252.7 248.3	251.5 287.2	250.0 327.4
	30. 45.1	TR BHP	280.4 172.7	278.5 209.2	277.2 248.2	276.1 289.8	274.7 332.7
	35. 51.6	TR BHP	307.1 168.8	305.5 206.8	303.4 247.3	302.3 290.7	300.9 336.3
40. 58.6	TR BHP		333.7 203.0	331.8 246.3	330.0 290.0	328.7 338.2	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 134

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. TR 8.7* BHP	64.9 163.6	62.7 185.2	60.6 210.2	58.6 242.4	56.5 282.6
	-35. TR 5.4* BHP	75.3 170.9	72.8 192.2	70.4 216.7	67.9 244.9	65.7 281.3
	-30. TR 1.6* BHP	87.0 178.5	84.3 200.5	81.4 224.5	78.7 252.1	75.9 284.0
	-25. TR 1.3 BHP	100.0 186.4	97.0 209.2	93.9 233.9	90.7 260.9	87.6 291.9
	-20. TR 3.6 BHP	114.5 194.2	111.1 218.1	107.7 243.7	104.2 271.3	100.6 301.5
	-15. TR 6.2 BHP	130.7 202.0	126.8 227.0	123.0 253.8	119.2 282.4	115.2 313.1
	-10. TR 9.0 BHP	148.6 209.2	144.3 236.1	139.9 264.0	135.7 293.8	131.3 325.5
	-5. TR 12.2 BHP	168.4 215.8	163.6 244.6	158.7 274.3	153.9 305.3	149.2 338.3
	0. TR 15.7 BHP	190.2 221.4	184.9 252.5	179.5 284.2	174.0 317.0	168.6 351.4
	5. TR 19.6 BHP	214.1 225.7	208.2 259.3	202.2 293.4	196.2 328.4	190.1 364.4
	10. TR 23.8 BHP	240.2 228.7	233.8 264.9	227.2 301.7	220.5 339.0	213.8 377.4
	15. TR 28.4 BHP	268.8 230.0	261.7 269.0	254.5 308.6	247.2 348.8	239.7 389.6
	20. TR 33.5 BHP	300.2 230.7	292.2 271.5	284.2 314.1	276.2 357.3	268.0 401.0
	25. TR 39.0 BHP	334.9 230.8	325.3 272.4	316.6 317.9	307.8 364.2	298.8 411.2
	30. TR 45.0 BHP	372.6 228.9	361.7 273.2	351.7 319.6	342.1 369.3	332.3 419.7
	35. TR 51.6 BHP	413.4 224.6	402.0 272.3	390.0 320.3	379.2 372.4	368.5 426.3
	40. TR 58.6 BHP	458.6 218.9	444.9 269.4	432.1 321.1	419.5 373.7	407.8 431.0

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 134E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	76.2 174.7	75.3 198.8	74.4 226.8	73.7 263.0	72.8 308.3
	-35. 5.4*	TR BHP	87.6 182.4	86.6 206.2	85.7 233.8	84.6 265.7	83.7 306.8
	-30. 1.6*	TR BHP	100.1 190.3	99.1 215.0	98.0 242.1	96.9 273.4	95.8 309.6
	-25. 1.3	TR BHP	113.9 198.4	112.9 224.0	111.8 251.9	110.6 282.6	109.3 318.0
	-20. 3.6	TR BHP	129.0 206.3	128.0 233.2	127.0 262.1	125.6 293.5	124.3 328.1
	-15. 6.2	TR BHP	145.7 214.1	144.5 242.2	143.5 272.5	142.2 304.9	140.7 340.2
	-10. 9.1	TR BHP	163.9 221.1	162.6 251.2	161.4 282.8	160.1 316.6	158.7 353.1
	-5. 12.2	TR BHP	183.7 227.2	182.4 259.4	181.1 293.0	179.6 328.3	178.2 366.2
	0. 15.7	TR BHP	205.1 232.1	203.8 266.7	202.4 302.6	200.8 339.9	199.3 379.4
	5. 19.6	TR BHP	228.3 235.5	227.0 272.8	225.6 311.2	223.9 351.0	222.1 392.4
	10. 23.8	TR BHP	253.2 237.2	252.0 277.3	250.6 318.7	248.8 361.1	247.0 405.2
	15. 28.5	TR BHP	280.0 237.1	278.8 280.1	277.4 324.6	275.7 370.1	273.8 417.0
	20. 33.5	TR BHP	308.8 236.0	307.5 281.0	306.2 328.8	304.5 377.5	302.5 427.6
	25. 39.0	TR BHP	340.3 234.3	338.2 280.1	337.0 331.0	335.3 383.0	333.4 436.6
	30. 45.1	TR BHP	373.8 230.3	371.3 278.9	369.6 331.0	368.2 386.4	366.2 443.6
	35. 51.6	TR BHP	409.5 225.0	407.3 275.8	404.6 329.7	403.1 387.6	401.2 448.4
40. 58.6	TR BHP		445.0 270.6	442.4 328.4	440.1 386.7	438.2 450.9	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 177

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. TR 8.7* BHP	86.2 212.4	82.6 238.2	79.0 266.9	75.2 300.2	71.4 340.5
	-35. TR 5.4* BHP	100.5 222.8	96.7 249.4	92.7 278.5	88.5 310.8	84.3 348.1
	-30. TR 1.6* BHP	116.6 233.4	112.4 261.2	108.0 291.1	103.5 323.7	98.8 359.9
	-25. TR 1.3 BHP	134.5 244.3	129.9 273.4	125.1 304.5	120.2 337.9	115.2 374.4
	-20. TR 3.6 BHP	154.3 254.9	149.4 285.8	144.2 318.3	138.8 353.0	133.3 390.2
	-15. TR 6.2 BHP	176.3 265.0	170.9 298.0	165.2 332.4	159.4 368.6	153.3 407.2
	-10. TR 9.0 BHP	200.6 274.2	194.6 309.8	188.5 346.4	182.1 384.5	175.5 424.7
	-5. TR 12.2 BHP	227.3 282.4	220.8 320.6	214.1 360.0	207.1 400.5	200.0 442.6
	0. TR 15.7 BHP	256.8 289.5	249.5 330.5	242.2 372.7	234.6 416.0	226.8 460.6
	5. TR 19.6 BHP	289.3 295.0	281.1 339.1	273.0 384.3	264.8 430.7	256.3 478.2
	10. TR 23.8 BHP	324.6 298.3	315.8 346.3	306.6 394.6	297.7 444.2	288.5 495.1
	15. TR 28.4 BHP	363.0 299.3	353.7 351.3	343.7 403.5	333.6 456.4	323.5 510.7
	20. TR 33.5 BHP	405.1 298.1	394.7 353.8	384.1 410.5	372.9 467.1	361.7 525.1
	25. TR 39.0 BHP	451.5 295.9	439.2 353.7	427.7 414.7	415.8 476.1	403.3 537.7
	30. TR 45.0 BHP	501.9 292.6	488.2 351.5	475.0 416.1	462.2 482.3	448.8 548.7
	35. TR 51.6 BHP	556.8 288.0	541.5 348.9	526.4 414.6	512.3 485.4	498.0 557.2
	40. TR 58.6 BHP	615.8 281.7	599.5 344.4	582.7 412.1	566.4 485.4	550.9 562.2

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 177E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG					
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5	
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40. 8.7*	TR BHP	101.2 226.8	99.3 255.7	97.0 288.0	94.6 325.6	91.9 371.4
	-35. 5.4*	TR BHP	116.9 237.8	114.9 267.6	112.7 300.4	110.2 337.1	107.4 379.6
	-30. 1.6*	TR BHP	134.2 248.9	132.2 280.0	130.0 313.8	127.5 351.0	124.7 392.4
	-25. 1.3	TR BHP	153.1 260.1	151.2 292.7	149.1 328.0	146.5 366.0	143.7 407.8
	-20. 3.6	TR BHP	173.9 270.8	172.0 305.5	169.9 342.4	167.3 381.9	164.5 424.6
	-15. 6.2	TR BHP	196.6 280.8	194.7 317.9	192.6 356.8	190.1 398.1	187.3 442.4
	-10. 9.1	TR BHP	221.1 289.7	219.4 329.5	217.3 371.0	214.9 414.4	212.1 460.7
	-5. 12.2	TR BHP	247.9 297.3	246.1 340.0	244.2 384.5	241.7 430.6	239.0 479.1
	0. 15.7	TR BHP	276.9 303.4	275.1 349.1	273.2 396.8	270.8 446.0	268.0 497.4
	5. 19.6	TR BHP	308.4 307.8	306.4 356.7	304.5 407.6	302.1 460.4	299.4 515.1
	10. 23.8	TR BHP	342.1 309.5	340.3 362.5	338.1 416.9	335.8 473.2	333.2 531.6
	15. 8.5	TR BHP	378.1 308.6	376.7 365.9	374.6 424.4	372.0 484.3	369.5 546.6
	20. 33.5	TR BHP	416.8 305.1	415.4 366.2	413.8 429.7	411.0 493.5	408.3 559.8
	25. 39.0	TR BHP	458.7 300.4	456.6 363.7	455.3 431.8	452.9 500.6	449.9 570.9
	30. 45.1	TR BHP	503.5 294.4	501.1 358.8	499.2 430.9	497.5 504.6	494.6 579.9
	35. 51.6	TR BHP	551.5 288.5	548.7 353.4	546.1 426.9	544.5 505.2	542.1 586.1
40. 58.6	TR BHP		599.6 346.0	596.6 421.5	594.1 502.3	592.1 588.3	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 222

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	108.5 267.5	104.1 299.9	99.4 336.1	94.7 378.0	89.9 428.7
	-35 TR 5.4* BHP	126.6 280.5	121.8 314.0	116.7 350.7	111.5 391.3	106.1 438.3
	-30 TR 1.6* BHP	146.9 294.0	141.5 328.9	136.0 366.5	130.4 407.6	124.5 453.3
	-25 TR 1.3 BHP	169.4 307.6	163.6 344.3	157.6 383.4	151.4 425.5	145.0 471.4
	-20 TR 3.6 BHP	194.4 321.0	188.1 359.9	181.5 400.8	174.8 444.5	167.8 491.4
	-15 TR 6.2 BHP	222.0 333.7	215.2 375.3	208.1 418.6	200.7 464.2	193.1 512.8
	-10 TR 9.1 BHP	252.6 345.3	245.1 390.1	237.3 436.2	229.3 484.2	221.0 534.9
	-5 TR 12.2 BHP	286.2 355.6	278.0 403.8	269.6 453.3	260.8 504.3	251.9 557.3
	0 TR 15.7 BHP	323.4 364.5	314.2 416.2	305.0 469.3	295.5 523.8	285.7 580.0
	5 TR 19.6 BHP	364.3 371.5	353.9 427.0	343.7 483.9	333.4 542.3	322.7 602.2
	10 TR 23.8 BHP	408.7 375.7	397.7 436.1	386.2 496.9	374.8 559.4	363.3 623.4
	15 TR 8.5 BHP	457.2 376.9	445.3 442.4	432.8 508.1	420.1 574.8	407.4 643.1
	20 TR 33.5 BHP	510.2 375.4	497.0 445.6	483.7 516.9	469.6 588.3	455.5 661.2
	25 TR 39 BHP	568.5 372.6	553.1 445.4	538.6 522.2	523.6 599.5	507.9 677.1
	30 TR 45.1 BHP	632.0 368.4	614.8 442.6	598.2 523.9	582.1 607.3	565.1 690.9
	35 TR 51.6 BHP	701.2 362.7	681.8 439.3	662.9 522.1	645.1 611.2	627.2 701.6
	40 TR 58.6 BHP	775.4 354.7	754.9 433.7	733.8 518.9	713.2 611.2	693.7 707.9

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 222E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	127.4 285.6	125.0 322.0	122.2 362.7	119.1 410.1	115.7 467.6
	-35 TR 5.4* BHP	147.2 299.4	144.7 336.9	142.0 378.3	138.8 424.5	135.3 478.1
	-30 TR 1.6* BHP	169.0 313.4	166.5 352.7	163.8 395.2	160.6 441.9	157.0 494.1
	-25 TR 1.3 BHP	192.9 327.5	190.5 368.6	187.7 413.0	184.5 460.9	181.0 513.5
	-20 TR 3.6 BHP	219.0 341.0	216.6 384.7	214.0 431.1	210.7 480.9	207.2 534.7
	-15 TR 6.2 BHP	247.5 353.6	245.2 400.3	242.6 449.3	239.4 501.3	235.8 557.1
	-10 TR 9.1 BHP	278.5 364.8	276.3 415.0	273.7 467.2	270.6 521.8	267.1 580.1
	-5 TR 12.2 BHP	312.1 374.4	309.9 428.2	307.5 484.1	304.4 542.2	300.9 603.3
	0 TR 15.7 BHP	348.7 382.1	346.4 439.6	344.0 499.6	341.0 561.7	337.5 626.4
	5 TR 19.6 BHP	388.4 387.6	385.8 449.2	383.4 513.3	380.4 579.7	377.0 648.6
	10 TR 23.8 BHP	430.8 389.7	428.6 456.5	425.8 525.0	422.9 595.8	419.6 669.5
	15 TR 8.5 BHP	476.1 388.6	474.4 460.7	471.8 534.5	468.5 609.8	465.2 688.3
	20 TR 33.5 BHP	524.9 384.2	523.1 461.2	521.1 541.1	517.6 621.5	514.2 704.9
	25 TR 39 BHP	577.6 378.3	575.0 458.0	573.3 543.8	570.4 630.4	566.5 718.9
	30 TR 45.1 BHP	634.1 370.7	631.0 451.9	628.6 542.6	626.5 635.5	622.8 730.3
	35 TR 51.6 BHP	694.5 363.2	690.9 445.0	687.7 537.5	685.7 636.1	682.7 738.0
	40 TR 58.6 BHP		755.0 435.7	751.3 530.8	748.2 632.5	745.5 740.8

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 270

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	134.1 330.3	128.6 370.5	122.8 415.3	117.0 467.0	111.0 529.7
	-35 TR 5.4* BHP	156.4 346.5	150.4 387.8	144.2 433.1	137.7 483.5	131.1 541.6
	-30 TR 1.6* BHP	181.4 363.1	174.8 406.2	168.0 452.7	161.0 503.6	153.8 560.0
	-25 TR 1.3 BHP	209.2 379.9	202.1 425.2	194.7 473.5	187.0 525.6	179.1 582.5
	-20 TR 3.6 BHP	240.1 396.4	232.3 444.5	224.3 495.0	215.9 549.1	207.3 607.1
	-15 TR 6.2 BHP	274.3 412.1	265.8 463.5	257.0 516.9	247.9 573.3	238.5 633.4
	-10 TR 9.1 BHP	312.0 426.4	302.8 481.8	293.2 538.8	283.3 598.0	273.1 660.6
	-5 TR 12.2 BHP	353.5 439.2	343.4 498.7	333.0 559.8	322.2 622.8	311.1 688.3
	0 TR 15.7 BHP	399.5 450.2	388.1 514.0	376.7 579.6	365.0 647.0	352.9 716.4
	5 TR 19.6 BHP	450.0 458.8	437.2 527.3	424.6 597.7	411.9 669.8	398.7 743.8
	10 TR 23.8 BHP	504.9 463.9	491.3 538.5	477.0 613.6	463.0 690.9	448.8 770.0
	15 TR 8.5 BHP	564.7 465.5	550.1 546.4	534.7 627.5	518.9 709.8	
	20 TR 33.5 BHP	630.2 463.5	613.9 550.2	597.5 638.4	580.1 726.5	
	25 TR 39 BHP	702.3 460.1	683.3 550.0	665.4 644.8	646.8 740.3	
	30 TR 45.1 BHP	780.7 454.9	759.4 546.5	739.0 647.0	719.0 750.0	
	35 TR 51.6 BHP	866.1 447.8	842.3 542.4	818.9 644.8	796.9 754.8	
40 TR 58.6 BHP	957.9 438.0	932.5 535.5	906.5 640.7			

Condition is outside the operating range of compressor.

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 270E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	157.4 352.9	154.4 397.7	151.0 448.1	147.1 506.6	143.0 577.7
	-35 TR 5.4* BHP	181.8 369.9	178.8 416.2	175.4 467.3	171.4 524.4	167.1 590.6
	-30 TR 1.6* BHP	208.8 387.2	205.7 435.6	202.3 488.2	198.3 545.9	193.9 610.3
	-25 TR 1.3 BHP	238.2 404.6	235.3 455.4	231.9 510.2	227.9 569.3	223.6 634.4
	-20 TR 3.6 BHP	270.5 421.3	267.6 475.2	264.3 532.6	260.3 594.0	256.0 660.5
	-15 TR 6.2 BHP	305.8 436.8	302.9 494.5	299.7 555.1	295.7 619.3	291.3 688.2
	-10 TR 9.1 BHP	344.0 450.7	341.3 512.6	338.1 577.1	334.3 644.7	329.9 716.6
	-5 TR 12.2 BHP	385.6 462.4	382.9 528.9	379.9 598.1	376.0 669.8	371.8 745.2
	0 TR 15.7 BHP	430.8 472.0	427.9 543.1	425.0 617.2	421.2 693.8	416.9 773.8
	5 TR 19.6 BHP	479.8 478.8	476.6 554.9	473.6 634.1	470.0 716.1	465.8 801.2
	10 TR 23.8 BHP	532.2 481.4	529.4 563.9	526.0 648.5	522.4 736.1	518.4 827.0
	15 TR 8.5 BHP	588.2 480.0	586.0 569.1	582.8 660.3	578.7 753.3	
	20 TR 33.5 BHP	648.4 474.6	646.2 569.7	643.7 668.5	639.4 767.8	
	25 TR 39 BHP	713.6 467.3	710.3 565.8	708.2 671.7	704.6 778.8	
	30 TR 45.1 BHP	783.3 457.9	779.5 558.2	776.6 670.3	773.9 785.0	
	35 TR 51.6 BHP	857.9 448.7	853.5 549.7	849.5 664.0	847.0 785.8	
40 TR 58.6 BHP		932.7 538.2	928.1 655.8			

Condition is outside the operating range for economizer operation.
Condition is outside the operating range of compressor.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 316

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	154.4 380.6	148.1 426.8	141.5 478.2	134.7 537.8	127.9 610.0
	-35 TR 5.4* BHP	180.2 399.2	173.2 446.8	166.1 499.0	158.6 556.8	151.0 623.7
	-30 TR 1.6* BHP	209.0 418.3	201.4 468.0	193.6 521.6	185.5 580.0	177.1 644.9
	-25 TR 1.3 BHP	241.0 437.7	232.8 489.8	224.2 545.6	215.4 605.5	206.3 670.8
	-20 TR 3.6 BHP	276.6 456.7	267.6 512.0	258.3 570.3	248.7 632.5	238.8 699.1
	-15 TR 6.2 BHP	315.9 474.8	306.2 534.0	296.1 595.6	285.6 660.5	274.7 729.7
	-10 TR 9.1 BHP	359.4 491.3	348.8 555.1	337.7 620.7	326.3 689.0	314.5 761.1
	-5 TR 12.2 BHP	407.2 506.0	395.6 574.5	383.6 645.0	371.1 717.5	358.4 793.0
	0 TR 15.7 BHP	460.1 518.7	447.0 592.2	433.9 667.8	420.4 745.4	406.5 825.3
	5 TR 19.6 BHP	518.3 528.7	503.6 607.6	489.1 688.6	474.4 771.7	459.2 856.9
	10 TR 23.8 BHP	581.6 534.6	565.9 620.5	549.5 707.0	533.3 796.0	516.9 887.1
	15 TR 8.5 BHP	650.5 536.3	633.7 629.5	615.8 723.0	597.7 817.8	579.7 915.1
	20 TR 33.5 BHP	726.0 534.1	707.1 634.0	688.3 735.5	668.1 837.0	648.2 940.8
	25 TR 39 BHP	809.0 530.1	787.0 633.7	766.4 743.0	745.0 853.1	722.7 963.4
	30 TR 45.1 BHP	899.3 524.2	874.7 629.8	851.2 745.5	828.2 864.2	804.1 983.1
	35 TR 51.6 BHP	997.7 516.1	970.2 625.1	943.2 742.9	917.9 869.7	892.4 998.3
	40 TR 58.6 BHP	1103.3 504.8	1074.2 617.1	1044.1 738.4	1014.9 869.7	987.1 1007.3

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 316E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	181.3 406.4	177.8 458.1	173.9 516.1	169.4 583.5	164.7 665.4
	-35 TR 5.4* BHP	209.4 426.1	205.9 479.4	202.0 538.3	197.4 604.1	192.5 680.2
	-30 TR 1.6* BHP	240.5 446.0	236.9 501.8	233.0 562.3	228.5 628.9	223.4 703.0
	-25 TR 1.3 BHP	274.4 466.0	271.0 524.5	267.1 587.6	262.5 655.8	257.5 730.7
	-20 TR 3.6 BHP	311.6 485.3	308.3 547.4	304.4 613.4	299.8 684.2	294.8 760.8
	-15 TR 6.2 BHP	352.2 503.2	348.9 569.6	345.2 639.3	340.6 713.3	335.6 792.7
	-10 TR 9.1 BHP	396.3 519.1	393.2 590.5	389.4 664.8	385.0 742.5	380.0 825.4
	-5 TR 12.2 BHP	444.1 532.7	441.0 609.2	437.5 688.9	433.1 771.5	428.2 858.4
	0 TR 15.7 BHP	496.2 543.7	492.9 625.6	489.5 710.9	485.2 799.2	480.3 891.3
	5 TR 19.6 BHP	552.7 551.5	549.0 639.1	545.5 730.4	541.3 824.9	536.5 922.9
	10 TR 23.8 BHP	613.0 554.5	609.8 649.6	605.9 747.0	601.7 847.8	597.1 952.6
	15 TR 8.5 BHP	677.5 552.9	675.0 655.6	671.3 760.5	666.6 867.7	662.0 979.4
	20 TR 33.5 BHP	746.8 546.7	744.4 656.2	741.5 770.0	736.5 884.3	731.6 1003.0
	25 TR 39 BHP	821.9 538.3	818.2 651.7	815.8 773.7	811.6 897.0	806.1 1022.9
	30 TR 45.1 BHP	902.2 527.5	897.9 643.0	894.5 772.1	891.4 904.2	886.2 1039.1
	35 TR 51.6 BHP	988.2 516.9	983.1 633.2	978.5 764.9	975.6 905.1	971.4 1050.2
	40 TR 58.6 BHP		1074.3 619.9	1069.0 755.3	1064.6 900.0	1060.8 1054.0

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 399

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	194.4 479.2	186.5 537.5	178.2 602.2	169.7 677.3	161.0 768.2
	-35 TR 5.4* BHP	226.9 502.7	218.2 562.6	209.1 628.4	199.8 701.2	190.2 785.4
	-30 TR 1.6* BHP	263.1 526.7	253.6 589.3	243.7 656.8	233.6 730.3	223.0 812.1
	-25 TR 1.3 BHP	303.5 551.2	293.1 616.8	282.4 687.0	271.2 762.5	259.8 844.7
	-20 TR 3.6 BHP	348.3 575.1	337.0 644.8	325.3 718.2	313.1 796.5	300.7 880.4
	-15 TR 6.2 BHP	397.8 597.8	385.5 672.4	372.8 750.0	359.6 831.7	346.0 918.9
	-10 TR 9 BHP	452.5 618.6	439.2 699.0	425.2 781.6	410.9 867.6	396.1 958.4
	-5 TR 12.2 BHP	512.8 637.1	498.1 723.5	483.0 812.3	467.4 903.6	451.3 998.6
	0 TR 15.7 BHP	579.4 653.2	562.9 745.7	546.4 840.9	529.4 938.6	511.8 1039.3
	5 TR 19.6 BHP	625.7 665.7	634.2 765.1	615.9 867.1	597.4 971.8	578.3 1079.1
	10 TR 23.8 BHP	732.3 673.2	712.6 781.4	691.9 890.3	671.6 1002.3	650.9 1117.1
	15 TR 28.4 BHP	819.2 675.4	798.0 792.8	775.5 910.5	752.7 1029.9	730.0 1152.4
	20 TR 33.5 BHP	914.2 672.6	890.5 798.4	866.7 926.2	841.4 1054.1	816.2 1184.7
	25 TR 39 BHP	1018.7 667.6	991.1 798.0	965.1 935.6	938.2 1074.2	910.0 1213.2
	30 TR 45 BHP	1132.4 660.1	1101.5 793.0	1071.8 938.8	1043.0 1088.2	1012.6 1237.9
	35 TR 51.6 BHP	1256.3 649.9	1221.7 787.1	1187.7 935.5	1155.9 1095.2	1123.8 1257.2
	40 TR 58.6 BHP	1389.4 635.6	1352.6 777.1	1314.8 929.8	1278.0 1095.2	1243.0 1268.4

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 399E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	228.4 511.8	224.0 576.9	219.0 649.9	213.3 734.7	207.4 837.9
	-35 TR 5.4* BHP	263.7 536.5	259.3 603.7	254.4 677.8	248.6 760.7	242.4 856.5
	-30 TR 1.6* BHP	302.8 561.6	298.3 631.9	293.4 708.1	287.7 791.9	281.3 885.3
	-25 TR 1.3 BHP	345.6 586.8	341.3 660.5	336.3 740.0	330.6 825.8	324.3 920.2
	-20 TR 3.6 BHP	392.4 611.1	388.2 689.3	383.4 772.5	377.6 861.6	371.3 958.1
	-15 TR 6.2 BHP	443.5 633.6	439.3 717.3	434.7 805.1	429.0 898.2	422.6 998.2
	-10 TR 9.1 BHP	499.0 653.7	495.1 743.6	490.4 837.1	484.9 935.1	478.5 1039.4
	-5 TR 12.2 BHP	559.2 670.8	555.4 767.2	551.0 867.5	545.4 971.5	539.2 1080.9
	0 TR 15.7 BHP	624.9 684.7	620.6 787.8	616.4 895.2	610.9 1006.4	604.8 1122.3
	5 TR 19.6 BHP	695.9 694.4	691.3 804.8	686.9 919.8	681.7 1038.7	675.6 1162.2
	10 TR 23.8 BHP	771.9 698.3	767.9 818.0	763.0 940.6	757.7 1067.6	751.9 1199.6
	15 TR 8.5 BHP	853.1 696.2	850.0 825.5	845.3 957.7	839.4 1092.7	833.6 1233.3
	20 TR 33.5 BHP	940.4 688.4	937.3 826.4	933.7 969.6	927.4 1113.6	921.3 1263.0
	25 TR 39 BHP	1035.0 677.8	1030.3 820.7	1027.3 974.3	1022.0 1129.6	1015.1 1288.1
	30 TR 45.1 BHP	1136.1 664.2	1130.6 809.7	1126.4 972.2	1122.5 1138.6	1116.0 1308.5
	35 TR 51.6 BHP	1244.4 650.9	1238.0 797.3	1232.1 963.2	1228.6 1139.8	1223.3 1322.4
40 TR 58.6 BHP		1352.8 780.6	1346.2 951.2	1340.6 1133.3	1335.9 1327.3	

Condition is outside the operating range for economizer operation.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 480

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR 8.7* BHP	233.9 576.5	224.4 646.6	214.4 724.5	204.2 814.8	193.7 924.2
	-35 TR 5.4* BHP	273.0 604.8	262.5 676.8	251.5 756.0	240.4 843.5	228.8 944.8
	-30 TR 1.6* BHP	316.5 633.6	305.1 708.9	293.2 790.1	281.0 878.6	268.3 977.0
	-25 TR 1.3 BHP	365.1 663.1	352.6 742.0	339.7 826.5	326.3 917.3	312.5 1016.2
	-20 TR 3.6 BHP	419.0 691.8	405.4 775.7	391.3 864.0	376.7 958.2	361.7 1059.1
	-15 TR 6.2 BHP	478.6 719.2	463.8 808.9	448.5 902.3	432.6 1000.5	416.2 1105.4
	-10 TR 9 BHP	544.4 744.2	528.4 840.9	511.5 940.3	494.3 1043.7	476.5 1153.0
	-5 TR 12.2 BHP	616.9 766.4	599.2 870.4	581.1 977.2	562.3 1087.0	542.9 1201.3
	0 TR 15.7 BHP	697.0 785.8	677.2 897.1	657.3 1011.6	636.9 1129.1	615.7 1250.3
	5 TR 19.6 BHP	752.7 800.8	762.9 920.4	740.9 1043.1	718.7 1169.1	695.7 1298.2
	10 TR 23.8 BHP	881.0 809.9	857.3 940.0	832.4 1071.0	807.9 1205.8	783.0 1343.9
	15 TR 28.4 BHP	985.5 812.5	960.0 953.7	932.9 1095.3	905.5 1239.0	878.2 1386.3
	20 TR 33.5 BHP	1099.8 809.1	1071.3 960.5	1042.6 1114.2	1012.2 1268.1	981.9 1425.2
	25 TR 39 BHP	1225.5 803.1	1192.3 960.0	1161.0 1125.5	1128.7 1292.3	1099.8 1488.2
	30 TR 45 BHP	1362.3 794.1	1325.1 954.0	1289.4 1129.4	1254.7 1309.1	1225.5 1551.2
	35 TR 51.6 BHP	1511.3 781.8	1469.7 946.9	1428.8 1125.4	1390.6 1317.5	1362.3 1614.2
40 TR 58.6 BHP	1671.5 764.6	1627.2 934.9	1581.7 1118.6	1537.4 1317.5	1511.3 1677.2	

Condition is outside the operating range of compressor.

NOTE: Capacities Based on 10°F Liquid Subcooling, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect.

HIGH STAGE - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz WITH FLASH TYPE ECONOMIZER (SEE ECONOMIZER OPERATION SECTION FOR SELECTIONS BASED ON DIRECT EXPANSION OR SHELL and COIL ECONOMIZERS).

RWB II 480E

R-717		SATURATED CONDENSING TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG				
		75.0 125.8	85.0 151.7	95.0 181.1	105.0 214.2	115.0 251.5
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-40 TR	274.8	269.5	263.5	256.6	249.5
	8.7* BHP	615.7	694.0	781.8	883.8	1008.0
	-35 TR	317.2	311.9	306.0	299.1	291.6
	5.4* BHP	645.4	726.3	815.4	915.1	1030.4
	-30 TR	364.3	358.9	353.0	346.1	338.4
	1.6* BHP	675.6	760.2	851.8	952.7	1065.0
	-25 TR	415.8	410.6	404.6	397.7	390.1
	1.3 BHP	705.9	794.6	890.2	993.4	1107.0
	-20 TR	472.1	467.0	461.2	454.3	446.7
	3.6 BHP	735.2	829.2	929.3	1036.5	1152.6
	-15 TR	533.5	528.5	522.9	516.1	508.4
	6.2 BHP	762.2	862.9	968.5	1080.5	1200.8
	-10 TR	600.3	595.6	590.0	583.3	575.6
	9.1 BHP	786.4	894.6	1007.0	1124.9	1250.4
	-5 TR	672.7	668.2	662.9	656.1	648.7
	12.2 BHP	807.0	922.9	1043.6	1168.7	1300.3
	0 TR	751.8	746.6	741.5	734.9	727.6
	15.7 BHP	823.7	947.7	1076.9	1210.7	1350.1
	5 TR	837.2	831.6	826.3	820.1	812.8
	19.6 BHP	835.4	968.2	1106.5	1249.6	1398.1
10 TR	928.6	923.8	917.9	911.5	904.5	
23.8 BHP	840.1	984.1	1131.5	1284.3	1443.1	
15 TR	1026.3	1022.6	1016.9	1009.8	1002.8	
8.5 BHP	837.5	993.1	1152.1	1314.5	1483.7	
20 TR	1131.3	1127.6	1123.2	1115.7	1108.3	
33.5 BHP	828.2	994.2	1166.4	1339.7	1519.4	
25 TR	1245.1	1239.5	1235.8	1229.5		
39 BHP	815.4	987.3	1172.1	1358.9		
30 TR	1366.7	1360.1	1355.1	1350.4		
45.1 BHP	799.0	974.1	1169.6	1369.7		
35 TR	1497.0	1489.3	1482.2	1478.0		
51.6 BHP	783.0	959.2	1158.7	1371.2		
40 TR		1627.4	1619.5	1612.8		
58.6 BHP		939.1	1144.3	1363.4		

Condition is outside the operating range for economizer operation.
Condition is outside the operating range of compressor.

NOTE: Ratings based on Liquid Subcooling by Flash Type Economizer, 10°F Suction Superheat with Superheat not contributing to the refrigeration effect, no Liquid Subcooling from condenser or external source. No allowance for vapor line pressure drop or economizing vessel temperature split is included in the above ratings.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 60

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	9.8 22.1	9.4 24.4	9.0 27.1	8.6 29.9	8.1 35.4	7.7 44.8	7.2 65.3
	-75. TR 23.2* BHP	11.8 22.7	11.4 25.2	11.0 27.8	10.6 30.6	10.1 35.1	9.6 41.7	9.0 53.2
	-70. TR 21.9* BHP	14.2 22.8	13.7 26.0	13.3 28.7	12.8 31.6	12.3 35.6	11.8 41.0	11.2 49.0
	-65. TR 20.4* BHP	17.0 23.1	16.4 26.8	16.0 29.8	15.4 32.7	14.9 36.6	14.3 41.4	13.7 47.8
	-60. TR 18.6* BHP	20.1 23.3	19.6 26.9	19.0 30.8	18.4 33.9	17.8 37.8	17.2 42.3	16.5 47.9
	-55. TR 16.6* BHP	23.7 23.2	23.2 27.3	22.5 31.2	21.8 35.2	21.1 39.1	20.5 43.6	19.7 48.8
	-50. TR 14.3* BHP	27.7 23.3	27.2 27.3	26.5 31.7	25.6 36.3	24.9 40.4	24.2 45.0	23.4 50.1
	-45. TR 11.7* BHP	32.2 24.1	31.7 27.2	31.0 32.0	30.2 36.6	29.2 41.7	28.4 46.3	27.6 51.6
	-40. TR 8.7* BHP	37.4 24.1	36.7 27.6	36.0 31.9	35.2 37.2	34.1 42.3	33.1 47.6	32.2 53.0
	-35. TR 5.4* BHP	43.2 22.4	42.4 28.3	41.6 31.9	40.8 37.2	39.7 43.0	38.4 49.0	37.4 54.2
	-30. TR 1.6* BHP	49.7 18.3	48.8 27.6	47.9 32.7	47.0 37.2	45.9 43.5	44.6 49.4	43.2 55.9
	-25. TR 1.3 BHP	57.0 11.1	55.9 24.9	54.9 33.0	53.9 37.6	52.7 43.3	51.4 50.2	49.9 56.4
	-20. TR 3.6 BHP		63.9 19.8	62.7 31.4	61.6 38.3	60.3 43.3	58.9 50.4	57.4 57.4
	-15. TR 6.2 BHP		72.7 11.7	71.3 27.8	70.1 37.9	68.6 43.5	67.1 50.2	65.6 58.1
	-10. TR 9.1 BHP			80.9 21.7	79.5 35.5	77.9 44.2	76.3 49.9	74.5 58.1
	-5. TR 12.2 BHP			91.5 12.6	89.9 30.8	88.1 43.7	86.3 50.3	84.4 57.6
0. TR 15.7 BHP				101.3 23.7	99.4 41.2	97.3 50.8	95.3 57.2	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz

RWB II 76

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	12.3 27.8	11.9 30.8	11.4 34.1	10.8 37.7	10.3 44.6	9.6 56.4	9.0 82.3
	-75. TR 23.2* BHP	14.8 28.6	14.4 31.7	13.9 35.0	13.3 38.5	12.7 44.2	12.0 52.6	11.4 66.9
	-70. TR 21.9* BHP	17.9 28.7	17.3 32.7	16.8 36.2	16.2 39.7	15.5 44.8	14.8 51.6	14.1 61.7
	-65. TR 20.4* BHP	21.4 29.1	20.7 33.7	20.1 37.5	19.4 41.2	18.7 46.1	18.0 52.1	17.2 60.1
	-60. TR 18.6* BHP	25.4 29.4	24.7 33.8	23.9 38.7	23.2 42.7	22.4 47.6	21.6 53.3	20.8 60.3
	-55. TR 16.6* BHP	29.8 29.2	29.2 34.4	28.3 39.3	27.5 44.3	26.6 49.2	25.8 54.9	24.9 61.4
	-50. TR 14.3* BHP	34.9 29.3	34.2 34.4	33.4 39.9	32.3 45.7	31.4 50.9	30.5 56.6	29.5 63.0
	-45. TR 11.7* BHP	40.6 30.4	39.9 34.2	39.1 40.3	38.0 46.1	36.8 52.5	35.7 58.3	34.7 64.9
	-40. TR 8.7* BHP	47.1 30.4	46.2 34.7	45.3 40.1	44.4 46.8	43.0 53.3	41.7 60.0	40.6 66.7
	-35. TR 5.4* BHP	54.4 28.2	53.3 35.7	52.4 40.2	51.4 46.9	50.0 54.2	48.4 61.7	47.0 68.3
	-30. TR 1.6* BHP	62.6 23.0	61.4 34.8	60.3 41.1	59.2 46.9	57.8 54.7	56.2 62.2	54.4 70.4
	-25. TR 1.3 BHP	71.8 13.9	70.4 31.4	69.1 41.5	67.9 47.3	66.4 54.6	64.8 63.2	62.9 71.1
	-20. TR 3.6 BHP		80.4 25.0	78.9 39.5	77.5 48.2	75.9 54.5	74.2 63.5	72.3 72.3
	-15. TR 6.2 BHP		91.5 14.8	89.8 35.0	88.2 47.8	86.4 54.7	84.5 63.2	82.6 73.2
	-10. TR 9.1 BHP			101.9 27.3	100.1 44.7	98.1 55.7	96.0 62.8	93.9 73.1
	-5. TR 12.2 BHP			115.2 15.8	113.2 38.8	110.9 55.0	108.7 63.3	106.3 72.5
0. TR 15.7 BHP				127.5 29.8	125.2 51.9	122.5 64.0	120.0 72.1	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 100

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	16.5 33.9	16.0 37.7	15.3 41.8	14.6 46.3	13.8 54.3	13.0 67.6	12.2 94.5
	-75. TR 23.2* BHP	19.9 35.0	19.4 39.1	18.7 43.3	17.9 47.6	17.1 54.5	16.2 64.3	15.3 80.4
	-70. TR 21.9* BHP	23.9 35.9	23.3 40.4	22.6 44.9	21.7 49.4	20.9 55.7	20.0 63.9	19.0 75.7
	-65. TR 20.4* BHP	28.5 36.8	27.8 41.8	27.0 46.6	26.1 51.4	25.2 57.5	24.2 64.9	23.2 74.7
	-60. TR 18.6* BHP	33.7 37.3	32.9 42.9	32.1 48.3	31.2 53.4	30.1 59.7	29.1 66.8	28.0 75.4
	-55. TR 16.6* BHP	39.6 37.1	38.8 43.6	37.9 49.8	36.9 55.5	35.8 61.8	34.6 69.0	33.4 77.2
	-50. TR 14.3* BHP	46.4 37.3	45.4 43.9	44.5 50.9	43.4 57.3	42.2 64.0	40.9 71.4	39.6 79.5
	-45. TR 11.7* BHP	53.9 38.4	53.0 43.7	51.9 51.4	50.7 59.0	49.4 66.1	48.0 73.6	46.6 82.1
	-40. TR 8.7* BHP	62.5 38.3	61.4 44.3	60.2 51.5	59.0 59.9	57.5 68.0	56.0 75.9	54.5 84.5
	-35. TR 5.4* BHP	72.2 35.3	70.8 45.3	69.6 51.5	68.2 60.2	66.6 69.5	65.0 78.2	63.2 86.7
	-30. TR 1.6* BHP	83.1 28.7	81.5 44.0	80.1 52.6	78.5 60.3	76.8 70.2	75.0 79.9	73.1 89.4
	-25. TR 1.3 BHP	95.3 17.3	93.5 39.6	91.7 52.9	90.1 60.7	88.1 70.3	86.1 81.2	84.0 91.3
	-20. TR 3.6 BHP		106.8 31.4	104.8 50.2	102.9 61.8	100.8 70.2	98.5 81.8	96.2 93.2
	-15. TR 6.2 BHP		121.5 18.5	119.3 44.3	117.2 61.1	114.8 70.5	112.3 81.6	109.7 94.3
	-10. TR 9.1 BHP			135.3 34.5	132.9 57.0	130.2 71.5	127.5 81.1	124.6 94.6
	-5. TR 12.2 BHP			152.9 20.0	150.2 49.5	147.3 70.5	144.3 81.6	141.2 93.8
0. TR 15.7 BHP				169.3 37.9	166.2 66.4	162.6 82.4	159.4 93.2	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz

RWB II 134

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	22.0 45.2	21.3 50.3	20.4 55.8	19.4 61.7	18.4 72.4	17.4 90.1	16.2 126.0
	-75. TR 23.2* BHP	26.6 46.7	25.8 52.1	24.9 57.7	23.9 63.5	22.8 72.6	21.7 85.7	20.4 107.3
	-70. TR 21.9* BHP	31.9 47.9	31.0 53.8	30.1 59.8	29.0 65.9	27.8 74.3	26.6 85.2	25.3 100.9
	-65. TR 20.4* BHP	38.0 49.0	37.0 55.7	36.0 62.1	34.8 68.5	33.6 76.7	32.3 86.6	30.9 99.5
	-60. TR 18.6* BHP	44.9 49.7	43.9 57.2	42.8 64.4	41.5 71.2	40.2 79.6	38.8 89.0	37.3 100.6
	-55. TR 16.6* BHP	52.8 49.5	51.7 58.2	50.5 66.3	49.2 74.1	47.7 82.5	46.2 92.0	44.6 102.9
	-50. TR 14.3* BHP	61.8 49.7	60.6 58.6	59.3 67.8	57.8 76.5	56.2 85.4	54.6 95.2	52.8 106.0
	-45. TR 11.7* BHP	71.8 51.2	70.6 58.3	69.2 68.6	67.6 78.6	65.8 88.2	64.0 98.2	62.2 109.5
	-40. TR 8.7* BHP	83.3 51.0	81.9 59.1	80.3 68.6	78.6 79.9	76.7 90.7	74.6 101.2	72.6 112.7
	-35. TR 5.4* BHP	96.3 47.1	94.4 60.4	92.8 68.7	90.9 80.3	88.8 92.6	86.6 104.3	84.2 115.6
	-30. TR 1.6* BHP	110.9 38.2	108.7 58.7	106.8 70.1	104.7 80.4	102.4 93.7	99.9 106.5	97.5 119.2
	-25. TR 1.3 BHP	127.1 23.0	124.6 52.8	122.3 70.5	120.1 81.0	117.5 93.8	114.8 108.3	112.1 121.8
	-20. TR 3.6 BHP		142.3 41.8	139.7 67.0	137.2 82.4	134.3 93.6	131.3 109.1	128.3 124.2
	-15. TR 6.2 BHP		162.0 24.7	159.0 59.1	156.2 81.4	153.0 93.9	149.7 108.8	146.3 125.7
	-10. TR 9.1 BHP			180.4 46.0	177.2 76.0	173.6 95.4	170.0 108.1	166.2 126.1
	-5. TR 12.2 BHP			203.9 26.6	200.3 65.9	196.4 94.1	192.3 108.8	188.2 125.1
0. TR 15.7 BHP				225.7 50.5	221.5 88.5	216.8 109.9	212.5 124.3	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 177

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	29.4 57.7	28.4 64.3	27.3 71.4	26.0 78.9	24.6 92.4	23.2 114.1	21.7 156.8
	-75. TR 23.2* BHP	35.5 59.7	34.5 66.8	33.2 74.0	31.9 81.5	30.4 93.1	28.9 109.5	27.3 136.0
	-70. TR 21.9* BHP	42.6 61.3	41.4 69.1	40.1 76.9	38.7 84.8	37.2 95.5	35.5 109.4	33.8 129.1
	-65. TR 20.4* BHP	50.7 62.0	49.4 71.5	48.0 80.0	46.5 88.3	44.9 98.9	43.1 111.5	41.3 128.0
	-60. TR 18.6* BHP	59.9 62.4	58.6 73.2	57.1 82.9	55.4 91.9	53.7 102.7	51.8 114.9	49.8 129.7
	-55. TR 16.6* BHP	70.5 62.2	69.0 73.6	67.4 85.5	65.6 95.6	63.7 106.6	61.6 119.0	59.5 133.0
	-50. TR 14.3* BHP	82.5 62.3	80.8 73.9	79.1 86.7	77.2 98.8	75.0 110.4	72.8 123.2	70.5 137.3
	-45. TR 11.7* BHP	95.8 63.9	94.2 73.6	92.3 87.0	90.2 101.3	87.8 114.1	85.4 127.2	83.0 141.9
	-40. TR 8.7* BHP	111.2 63.2	109.2 74.4	107.1 87.1	104.9 102.0	102.3 117.4	99.6 131.2	96.9 146.2
	-35. TR 5.4* BHP	128.5 57.9	126.0 75.7	123.8 87.1	121.3 102.2	118.5 119.1	115.6 135.3	112.4 150.1
	-30. TR 1.6* BHP	147.9 46.7	145.0 73.1	142.4 88.6	139.7 102.3	136.6 119.6	133.3 137.8	130.0 154.9
	-25. TR 1.3 BHP	169.5 28.0	166.3 65.5	163.2 88.8	160.2 103.0	156.7 119.8	153.2 139.2	149.5 158.3
	-20. TR 3.6 BHP		189.9 51.7	186.4 84.0	183.1 104.5	179.2 119.6	175.2 139.7	171.2 160.5
	-15. TR 6.2 BHP		216.1 30.3	212.1 73.8	208.4 102.9	204.1 119.8	199.7 139.4	195.2 161.5
	-10. TR 9.1 BHP			240.6 57.3	236.3 95.8	231.5 121.3	226.8 138.5	221.6 161.9
	-5. TR 12.2 BHP			271.9 33.1	267.2 82.9	262.0 119.2	256.5 139.1	251.1 160.7
0. TR 15.7 BHP				301.0 63.3	295.5 111.8	289.2 140.1	283.4 159.5	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz

RWB II 222

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	37.1 72.6	35.8 81.0	34.3 89.9	32.7 99.4	31.0 116.4	29.2 143.6	27.3 197.4
	-75. TR 23.2* BHP	44.7 75.2	43.4 84.1	41.9 93.2	40.1 102.6	38.3 117.2	36.4 137.9	34.4 171.3
	-70. TR 21.9* BHP	53.6 77.2	52.1 87.0	50.5 96.8	48.7 106.7	46.8 120.3	44.7 137.7	42.6 162.6
	-65. TR 20.4* BHP	63.8 78.1	62.2 90.1	60.5 100.7	58.6 111.2	56.5 124.5	54.3 140.4	52.0 161.1
	-60. TR 18.6* BHP	75.5 78.5	73.8 92.1	71.9 104.4	69.8 115.7	67.6 129.3	65.2 144.7	62.7 163.3
	-55. TR 16.6* BHP	88.8 78.3	86.9 92.7	84.9 107.6	82.6 120.4	80.2 134.2	77.6 149.8	74.9 167.5
	-50. TR 14.3* BHP	103.9 78.4	101.8 93.1	99.6 109.1	97.2 124.4	94.4 139.1	91.7 155.2	88.8 172.8
	-45. TR 11.7* BHP	120.7 80.4	118.6 92.7	116.2 109.5	113.6 127.5	110.6 143.7	107.6 160.2	104.5 178.7
	-40. TR 8.7* BHP	140.0 79.6	137.6 93.7	134.9 109.6	132.1 128.5	128.8 147.9	125.4 165.2	122.0 184.2
	-35. TR 5.4* BHP	161.8 73.0	158.7 95.3	155.9 109.6	152.8 128.7	149.2 150.0	145.5 170.4	141.5 189.0
	-30. TR 1.6* BHP	186.2 58.8	182.6 92.1	179.3 111.6	175.9 128.9	172.0 150.7	167.9 173.5	163.7 195.1
	-25. TR 1.3 BHP	213.4 35.2	209.4 82.5	205.5 111.8	201.8 129.7	197.3 150.9	192.9 175.2	188.2 199.3
	-20. TR 3.6 BHP		239.1 65.1	234.7 105.7	230.5 131.5	225.7 150.6	220.6 175.9	215.5 202.1
	-15. TR 6.2 BHP		272.1 38.2	267.1 93.0	262.4 129.6	257.0 150.9	251.4 175.6	245.8 203.3
	-10. TR 9.1 BHP			302.9 72.1	297.6 120.6	291.6 152.7	285.6 174.4	279.1 203.9
	-5. TR 12.2 BHP			342.4 41.6	336.4 104.4	329.9 150.1	323.1 175.2	316.2 202.3
0. TR 15.7 BHP				379.1 79.8	372.1 140.8	364.2 176.4	356.9 200.9	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 270

R-717			SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
			-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. 24.3*	TR BHP	45.9 87.3	44.2 100.1	42.4 112.1	40.4 122.8	38.3 144.4	36.1 177.5	33.5 239.9
	-75. 23.2*	TR BHP	55.4 90.5	53.7 103.9	51.7 116.2	49.6 126.8	47.4 145.5	45.0 170.4	42.3 209.5
	-70. 21.9*	TR BHP	66.4 93.0	64.4 107.5	62.4 120.7	60.2 131.9	57.8 149.4	55.3 170.2	52.5 199.7
	-65. 20.4*	TR BHP	79.0 94.2	76.9 111.3	74.7 125.4	72.4 137.5	69.8 154.6	67.1 173.6	64.1 198.4
	-60. 18.6*	TR BHP	93.5 94.7	91.2 113.8	88.8 130.0	86.3 143.0	83.5 160.6	80.6 178.9	77.4 201.4
	-55. 16.6*	TR BHP	109.9 94.4	107.4 114.5	104.8 134.0	102.2 148.8	99.1 166.7	96.0 185.2	92.6 206.9
	-50. 14.3*	TR BHP	128.6 94.6	125.8 115.1	123.0 135.9	120.1 153.7	116.7 172.8	113.4 191.8	109.8 213.7
	-45. 11.7*	TR BHP	149.5 96.9	146.6 114.6	143.6 136.4	140.5 157.6	136.7 178.6	133.0 198.0	129.2 221.1
	-40. 8.7*	TR BHP	173.4 95.6	170.0 115.8	166.6 136.5	163.3 158.7	159.2 183.8	155.0 204.2	150.9 227.5
	-35. 5.4*	TR BHP	200.4 87.3	196.1 117.7	192.6 136.5	188.8 159.1	184.4 186.4	179.9 210.5	175.0 233.5
	-30. 1.6*	TR BHP	230.5 70.1	225.7 113.8	221.5 138.9	217.5 159.2	212.6 187.2	207.5 214.5	202.4 241.0
	-25. 1.3	TR BHP	264.2 41.8	258.8 101.9	253.8 139.2	249.4 160.3	243.9 187.5	238.5 216.5	232.8 246.4
	-20. 3.6	TR BHP		295.6 80.4	290.0 131.8	285.0 162.5	278.8 187.1	272.7 217.4	266.5 249.9
	-15. 6.2	TR BHP		336.3 47.1	330.0 115.9	324.4 160.1	317.6 187.6	310.8 217.0	303.8 251.4
	-10. 9.1	TR BHP			374.3 89.9	367.9 148.9	360.3 189.9	353.0 215.5	345.0 251.8
	-5. 12.2	TR BHP			423.1 51.9	415.9 128.9	407.6 186.5	399.4 216.5	390.8 250.0
0. 15.7	TR BHP				468.6 98.4	459.8 174.6	450.2 217.9	441.2 248.3	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz.

RWB II 316

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	52.7 103.3	50.9 115.2	48.9 127.9	46.5 141.4	44.1 165.6	41.6 204.4	38.9 280.9
	-75. TR 23.2* BHP	63.6 107.0	61.8 119.6	59.6 132.6	57.1 146.0	54.6 166.8	51.8 196.2	49.0 243.7
	-70. TR 21.9* BHP	76.2 109.8	74.2 123.8	71.9 137.8	69.3 151.9	66.6 171.1	63.7 196.0	60.6 231.4
	-65. TR 20.4* BHP	90.8 111.1	88.5 128.1	86.1 143.3	83.3 158.2	80.4 177.2	77.2 199.8	74.0 229.3
	-60. TR 18.6* BHP	107.4 111.7	104.9 131.1	102.3 148.5	99.3 164.6	96.1 184.0	92.8 205.9	89.2 232.4
	-55. TR 16.6* BHP	126.3 111.4	123.6 131.9	120.7 153.2	117.6 171.3	114.1 191.0	110.5 213.2	106.6 238.4
	-50. TR 14.3* BHP	147.8 111.6	144.8 132.5	141.7 155.3	138.3 177.0	134.4 197.9	130.5 220.8	126.4 245.9
	-45. TR 11.7* BHP	171.7 114.4	168.8 131.9	165.3 155.9	161.7 181.5	157.4 204.5	153.0 228.0	148.6 254.3
	-40. TR 8.7* BHP	199.2 113.2	195.7 133.3	191.9 156.0	188.0 182.8	183.3 210.4	178.4 235.1	173.7 262.0
	-35. TR 5.4* BHP	230.3 103.8	225.8 135.6	221.8 156.0	217.4 183.2	212.3 213.4	207.1 242.4	201.4 269.0
	-30. TR 1.6* BHP	265.0 83.7	259.8 131.0	255.2 158.8	250.3 183.3	244.8 214.4	238.9 246.9	233.0 277.5
	-25. TR 1.3 BHP	303.7 50.1	297.9 117.4	292.3 159.0	287.1 184.5	280.8 214.7	274.5 249.3	267.8 283.6
	-20. TR 3.6 BHP		340.2 92.6	334.0 150.5	328.0 187.2	321.1 214.2	313.9 250.3	306. 287.5
	-15. TR 6.2 BHP		387.1 54.4	380.1 132.3	373.3 184.4	365.7 214.7	357.7 249.8	349.7 289.3
	-10. TR 9.1 BHP			431.0 102.6	423.4 171.6	414.8 217.3	406.3 248.2	397.1 290.1
	-5. TR 12.2 BHP			487.2 59.2	478.7 148.5	469.3 213.6	459.7 249.3	449.8 287.9
	0. TR 15.7 BHP				539.4 113.5	529.4 200.3	518.2 251.0	507.8 285.8

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz

RWB II 399

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20.0 3.6	-10.0 9.1	0.0 15.7	10.0 23.8	20.0 33.5	30.0 45.1	40.0 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80. TR 24.3* BHP	66.4 130.1	64.1 145.1	61.5 161.1	58.6 178.0	55.6 208.5	52.4 257.3	49.0 353.7
	-75. TR 23.2* BHP	80.1 134.7	77.8 150.6	75.0 166.9	71.9 183.9	68.7 210.0	65.3 247.0	61.7 306.8
	-70. TR 21.9* BHP	96.0 138.3	93.4 155.8	90.6 173.5	87.3 191.2	83.8 215.5	80.2 246.8	76.3 291.3
	-65. TR 20.4* BHP	114.3 139.9	111.5 161.4	108.4 180.4	104.9 199.3	101.2 223.1	97.3 251.6	93.2 288.7
	-60. TR 18.6* BHP	135.2 140.7	132.1 165.0	128.8 187.0	125.1 207.3	121.1 231.7	116.8 259.3	112.4 292.6
	-55. TR 16.6* BHP	159.1 140.3	155.7 166.0	152.0 192.9	148.1 215.7	143.7 240.5	139.1 268.4	134.3 300.2
	-50. TR 14.3* BHP	186.1 140.5	182.4 166.8	178.4 195.6	174.1 222.9	169.2 249.2	164.3 278.1	159.1 309.7
	-45. TR 11.7* BHP	216.3 144.1	212.5 166.1	208.2 196.3	203.6 228.5	198.2 257.5	192.7 287.1	187.2 320.2
	-40. TR 8.7* BHP	250.9 142.5	246.5 167.9	241.7 196.4	236.7 230.2	230.8 265.0	224.6 296.1	218.7 330.0
	-35. TR 5.4* BHP	290.0 130.7	284.3 170.7	279.3 196.5	273.7 230.7	267.4 268.8	260.8 305.3	253.6 338.7
	-30. TR 1.6* BHP	333.7 105.4	327.2 165.0	321.3 199.9	315.2 230.9	308.2 270.0	300.8 310.9	293.4 349.5
	-25. TR 1.3 BHP	382.4 63.1	375.1 147.9	368.1 200.3	361.6 232.4	353.6 270.4	345.6 314.0	337.3 357.1
	-20. TR 3.6 BHP		428.4 116.6	420.5 189.5	413.1 235.7	404.3 269.8	395.3 315.3	386.2 362.1
	-15. TR 6.2 BHP		487.5 68.5	478.6 166.6	470.1 232.2	460.5 270.4	450.5 314.6	440.4 364.3
	-10. TR 9.1 BHP			542.8 129.2	533.2 216.1	522.4 273.7	511.6 312.5	500.1 365.3
	-5. TR 12.2 BHP			613.5 74.6	602.8 187.0	591.0 269.0	578.8 313.9	566.5 362.5
0. TR 15.7 BHP				679.2 142.9	666.7 252.3	652.6 316.1	639.4 359.9	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

BOOSTER - CAPACITY and BRAKE HORSEPOWER RATING @ 3550 RPM 60 Hz

RWB II 480

R-717		SATURATED INTERMEDIATE TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG						
		-20 3.6	-10 9.1	0 15.7	10 23.8	20 33.5	30 45.1	40 58.6
SATURATED SUCTION TEMPERATURE, °F/CORRESPONDING PRESSURE, PSIG (* in Hg)	-80 TR 24.3* BHP	79.9 156.5	77.1 174.6	74.0 193.8	70.5 214.1	66.9 250.8	63.0 309.5	58.9 425.5
	-75 TR 23.2* BHP	96.4 162.0	93.6 181.2	90.2 200.8	86.5 221.2	82.6 252.6	78.6 297.1	74.2 369.1
	-70 TR 21.9* BHP	115.5 166.4	112.4 187.4	109.0 208.7	105.0 230.0	100.8 259.2	96.5 296.9	91.8 350.4
	-65 TR 20.4* BHP	137.5 168.3	134.1 194.2	130.4 217.0	126.2 239.8	121.7 268.4	117.1 302.7	112.1 347.3
	-60 TR 18.6* BHP	162.6 169.3	158.9 198.5	154.9 225.0	150.5 249.4	145.7 278.7	140.5 311.9	135.2 352.0
	-55 TR 16.6* BHP	191.4 168.8	187.3 199.7	182.9 232.1	178.2 259.5	172.9 289.3	167.3 322.9	161.6 361.1
	-50 TR 14.3* BHP	223.9 169.0	219.4 200.7	214.6 235.3	209.4 268.2	203.5 299.8	197.7 334.6	191.4 372.6
	-45 TR 11.7* BHP	260.2 173.4	255.6 199.8	250.5 236.2	244.9 274.9	238.4 309.8	231.8 345.4	225.2 385.2
	-40 TR 8.7* BHP	301.8 171.4	296.5 202.0	290.8 236.3	284.8 276.9	277.7 318.8	270.2 356.2	263.1 397.0
	-35 TR 5.4* BHP	348.9 157.2	342.0 205.4	336.0 236.4	329.3 277.5	321.7 323.4	313.7 367.3	305.1 407.5
	-30 TR 1.6* BHP	401.4 126.8	393.6 198.5	386.5 240.5	379.2 277.8	370.8 324.8	361.9 374.0	353.0 420.5
	-25 TR 1.3 BHP	460.0 75.9	451.2 177.9	442.8 241.0	435.0 279.6	425.4 325.3	415.8 377.7	405.8 429.6
	-20 TR 3.6 BHP		515.4 140.3	505.9 228.0	497.0 283.5	486.4 324.6	475.5 379.3	464.6 435.6
	-15 TR 6.2 BHP		586.5 82.4	575.8 200.4	565.5 279.3	554.0 325.3	542.0 378.5	529.8 438.3
	-10 TR 9.1 BHP			653.0 155.4	641.4 260.0	628.5 329.3	615.5 375.9	601.6 439.5
	-5 TR 12.2 BHP			738.0 89.7	725.2 225.0	711.0 323.6	696.3 377.6	681.5 436.1
0 TR 15.7 BHP				817.1 171.9	802.0 303.5	785.1 380.3	769.2 433.0	

NOTE: Capacities Based on Liquid at Intermediate Temperature and no Suction Superheat.

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (10°F Superheat, 120°F oil into compressor)

COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - HIGH STAGE R-717									
		60	76	100	134	177	222	270	316	399	480
75	-40	136	168	211	273	353	439	564	629	787	947
	-35	136	168	212	272	353	438	566	628	786	946
	-30	137	168	211	271	351	436	566	625	781	940
	-25	137	167	211	268	348	431	563	619	773	930
	-20	136	166	209	264	343	423	557	608	759	913
	-15	134	163	205	258	334	412	546	592	738	888
	-10	131	158	200	250	323	397	530	570	710	854
	-5	126	152	193	239	308	377	509	543	675	812
	0	120	144	183	226	290	354	482	510	633	762
	5	113	135	172	210	269	327	449	471	584	703
	10	104	123	158	192	244	296	410	425	527	634
	15	94	110	142	171	216	261	365	376	464	558
	20	94	112	146	178	221	269	373	390	484	582
	25	83	98	130	157	191	232	324	336	416	500
	30	72	84	112	134	161	195	275	282	349	420
	35	61	71	93	110	131	158	226	230	283	340
40	52	61	73	86	103	123	178	179	220	265	
85	-40	163	202	256	333	427	532	680	763	957	1151
	-35	164	203	257	332	429	535	687	767	961	1156
	-30	166	204	258	333	431	536	692	770	964	1160
	-25	167	205	259	332	431	536	696	770	963	1158
	-20	167	205	259	331	430	533	697	767	959	1154
	-15	167	204	259	328	426	527	694	759	948	1140
	-10	166	202	256	323	419	518	687	746	931	1120
	-5	164	198	252	316	409	504	673	727	906	1090
	0	160	193	246	306	395	486	654	701	873	1050
	5	154	185	237	293	378	463	629	669	832	1001
	10	147	176	226	277	356	435	597	630	782	941
	15	139	165	213	259	331	403	558	584	724	871
	20	128	151	197	237	302	367	513	531	658	792
	25	116	136	179	214	271	327	462	474	586	705
	30	104	121	161	190	237	285	408	413	510	614
	35	92	106	141	165	205	245	354	355	437	526
40	93	109	146	173	212	257	367	374	462	556	
95	-40	194	241	309	402	510	637	811	913	1146	1379
	-35	195	242	309	401	514	642	821	920	1154	1388
	-30	198	244	310	401	518	646	831	928	1163	1399
	-25	200	246	313	403	522	650	841	935	1171	1409
	-20	202	248	315	404	525	653	848	939	1176	1415
	-15	203	249	317	404	526	653	854	941	1177	1416
	-10	204	249	317	403	524	649	855	937	1172	1410
	-5	204	248	316	400	519	642	852	928	1159	1394
	0	202	245	314	394	511	630	843	912	1138	1369
	5	199	240	309	385	498	614	827	889	1108	1333
	10	194	233	301	373	482	592	804	858	1069	1286
	15	188	224	291	357	461	565	774	820	1020	1227
	20	179	213	278	339	436	533	737	775	962	1157
	25	169	200	262	317	407	495	692	721	895	1077
	30	157	185	243	292	374	454	640	661	818	984
	35	144	168	224	266	337	408	582	595	736	885
40	130	151	203	240	300	362	521	528	652	784	

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (10°F Superheat, 120°F oil into compressor)

COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - HIGH STAGE R-717									
		60	76	100	134	177	222	270	316	399	480
105	-40	232	288	374	489	605	757	961	1086	1363	1640
	-35	231	286	369	480	608	761	970	1092	1370	1648
	-30	233	289	370	480	615	768	983	1103	1384	1665
	-25	236	292	372	481	622	776	998	1116	1399	1683
	-20	239	295	376	485	628	783	1013	1128	1413	1700
	-15	243	298	380	488	634	789	1027	1138	1424	1713
	-10	245	300	384	490	637	792	1037	1144	1431	1722
	-5	247	301	386	490	639	792	1044	1146	1433	1724
	0	247	301	387	489	636	788	1046	1141	1426	1715
	5	247	299	386	484	630	779	1042	1130	1411	1697
	10	245	295	382	477	619	764	1030	1111	1385	1666
	15	241	290	376	466	604	744	1011	1083	1349	1623
	20	235	281	367	452	585	718	985	1047	1303	1568
	25	227	271	354	434	561	687	950	1003	1247	1500
	30	217	258	339	412	531	649	906	949	1179	1418
	35	205	242	321	387	497	606	854	887	1100	1323
40	191	224	300	358	459	558	794	817	1013	1219	
115	-40	279	348	456	596	719	901	1140	1291	1622	1951
	-35	274	340	444	579	717	897	1140	1287	1617	1945
	-30	273	339	438	570	722	903	1153	1298	1629	1960
	-25	276	342	440	571	732	914	1172	1315	1650	1985
	-20	281	346	444	574	742	926	1193	1333	1672	2011
	-15	285	351	450	579	752	937	1214	1352	1694	2038
	-10	289	355	456	585	760	947	1234	1368	1714	2062
	-5	293	359	461	589	767	954	1251	1380	1728	2079
	0	296	362	466	592	772	958	1265	1389	1737	2090
	5	298	363	469	592	772	958	1273	1391	1739	2092
	10	299	362	470	590	769	952	1275	1385	1730	2081
	15	298	360	468	585	761	941	1269	1371	1711	2058
	20	295	355	464	576	748	923	1255	1347	1680	2021
	25	291	348	456	563	730	899	1232	1314	1638	1971
	30	283	338	445	546	707	869	1202	1272	1584	1906
	35	274	325	431	524	679	832	1161	1221	1518	1826
40	262	310	413	499	645	788	1110	1158	1438	1730	

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (10°F Superheat, 120°F oil into compressor)

COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - ECONOMIZED R-717									
		60	76	100	134	177	222	270	316	399	480
75	-40	136	168	211	271	350	435	562	624	781	940
	-35	137	168	211	270	349	433	563	621	777	935
	-30	137	167	210	268	347	430	562	617	771	928
	-25	136	166	209	265	343	424	558	609	761	915
	-20	135	164	207	260	337	416	551	598	745	896
	-15	133	161	203	254	328	404	539	581	723	870
	-10	129	156	197	245	316	388	522	558	695	836
	-5	125	150	190	234	301	368	499	530	659	793
	0	119	142	180	221	283	345	471	497	616	741
	5	111	132	168	205	261	318	438	457	567	682
	10	102	120	154	186	237	286	399	413	511	615
	15	91	107	139	166	209	252	355	363	449	540
	20	92	109	142	173	214	261	362	378	469	564
	25	81	95	126	151	184	224	314	325	402	484
	30	70	83	109	130	157	189	268	275	340	409
	35	60	70	92	109	131	157	225	228	282	339
40	52	61	73	86	103	123	178	179	220	265	
85	-40	165	204	258	334	428	533	685	764	957	1151
	-35	166	204	258	332	429	533	689	766	959	1154
	-30	167	205	259	332	430	533	693	767	959	1154
	-25	168	205	259	331	429	532	695	765	956	1150
	-20	168	205	259	328	426	528	695	760	949	1142
	-15	167	203	257	325	422	521	690	751	937	1127
	-10	165	200	255	319	414	510	681	736	917	1103
	-5	163	196	250	311	403	495	666	715	890	1071
	0	158	190	243	301	388	476	645	688	855	1029
	5	152	182	234	287	370	452	618	654	813	978
	10	145	173	222	271	348	424	585	614	763	918
	15	136	161	208	252	323	392	546	568	704	847
	20	125	148	192	231	294	356	500	516	639	769
	25	113	133	174	208	263	317	450	460	568	683
	30	101	118	156	185	230	276	395	400	494	594
	35	89	103	137	160	198	237	343	343	423	509
40	92	107	144	170	208	252	360	367	454	546	
95	-40	198	245	314	407	515	643	824	923	1158	1393
	-35	199	246	313	404	518	646	832	928	1163	1399
	-30	201	247	314	404	521	649	840	933	1169	1406
	-25	202	249	316	404	524	651	848	938	1174	1412
	-20	204	250	317	404	525	651	853	939	1175	1414
	-15	205	250	318	403	524	649	856	938	1172	1410
	-10	205	249	318	401	521	644	855	932	1163	1399
	-5	204	247	316	396	515	635	850	920	1148	1381
	0	202	243	312	389	505	622	838	901	1124	1352
	5	198	238	306	380	491	604	819	876	1091	1312
	10	193	231	298	367	474	581	795	844	1050	1263
	15	186	221	287	351	452	553	763	805	1000	1203
	20	177	210	273	332	427	521	725	758	941	1132
	25	166	196	257	310	398	484	679	705	874	1051
	30	154	181	239	286	365	443	627	645	799	961
	35	141	165	219	260	330	398	570	581	718	864
40	128	149	200	235	294	354	511	516	637	766	

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (10°F Superheat, 120°F oil into compressor)

COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - ECONOMIZED R-717									
		60	76	100	134	177	222	270	316	399	480
105	-40	239	296	384	499	618	773	987	1109	1392	1675
	-35	237	293	377	489	620	774	993	1112	1395	1678
	-30	239	295	377	487	624	779	1004	1120	1404	1689
	-25	241	297	379	487	629	784	1017	1130	1415	1702
	-20	244	299	382	489	634	789	1029	1138	1425	1714
	-15	246	301	385	491	638	792	1039	1145	1432	1723
	-10	248	303	387	491	639	793	1047	1147	1434	1725
	-5	249	303	388	490	638	790	1051	1146	1431	1722
	0	249	302	388	487	634	784	1049	1138	1420	1708
	5	248	299	386	482	626	772	1042	1123	1401	1685
	10	245	294	381	473	614	756	1027	1100	1371	1649
	15	240	288	374	461	597	734	1005	1070	1332	1602
	20	234	279	364	446	576	707	976	1032	1284	1545
	25	225	267	351	427	551	674	939	986	1225	1474
	30	215	254	335	405	521	636	894	931	1156	1391
35	203	238	316	379	487	593	841	869	1078	1297	
40	188	220	295	351	450	546	781	801	992	1193	
115	-40	290	360	472	615	742	929	1183	1333	1674	2014
	-35	284	352	458	595	737	922	1180	1325	1663	2001
	-30	283	349	451	584	741	925	1189	1332	1670	2009
	-25	285	351	452	583	748	933	1206	1345	1686	2028
	-20	288	355	455	585	756	942	1224	1359	1703	2049
	-15	292	358	460	588	763	950	1242	1374	1720	2069
	-10	296	362	465	592	770	957	1258	1386	1734	2086
	-5	299	364	469	594	774	961	1271	1393	1743	2097
	0	301	366	472	595	776	962	1281	1397	1747	2102
	5	302	365	473	594	774	958	1286	1395	1742	2096
	10	302	364	473	590	769	950	1283	1385	1728	2079
	15	300	360	470	583	758	935	1273	1366	1703	2049
	20	296	354	464	572	743	915	1255	1339	1668	2007
	25	290	346	455	558	723	889	1229	1302	1621	1950
	30	282	335	443	540	699	857	1195	1258	1564	1882
35	273	322	427	517	669	819	1152	1204	1496	1800	
40	260	306	409	491	635	775	1099	1140	1416	1703	

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (Liquid at intermediate temperature, no superheat, 120°F oil into compressor)

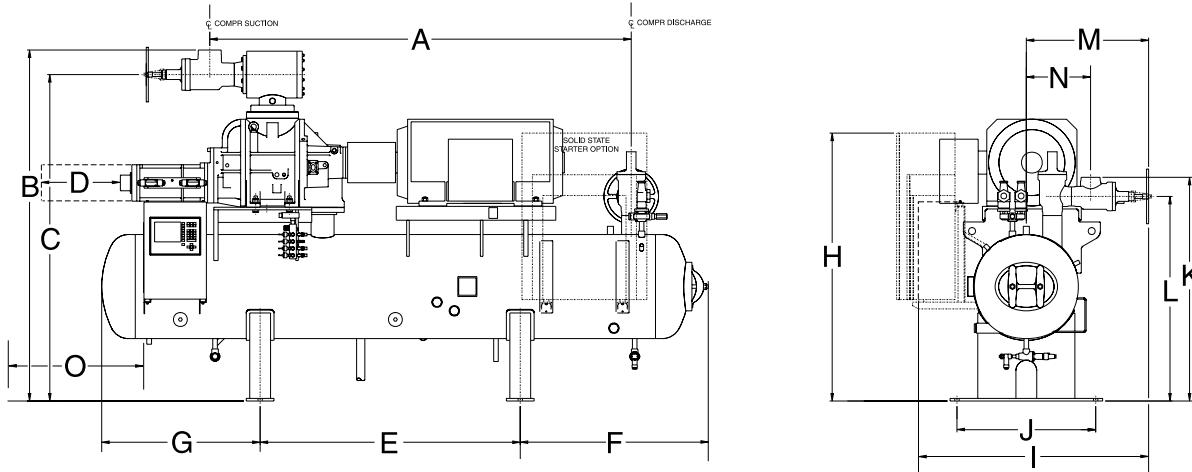
COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - BOOSTER R-717									
		60	76	100	134	177	222	270	316	399	480
-20	-80	31	39	45	60	73	91	113	126	158	190
	-75	29	36	42	55	67	82	102	114	143	172
	-70	25	31	37	48	58	71	89	99	123	148
	-65	21	26	31	41	47	57	71	79	98	118
	-60	17	21	24	32	34	41	51	56	70	84
	-55	11	14	16	20	19	23	29	32	39	47
	-50	6	8	7	9	5	6	8	8	10	12
	-45	3	3	1	1	(1)	(1)	(1)	(1)	(1)	(1)
-10	-80	39	49	58	76	94	117	145	163	204	245
	-75	37	46	55	71	88	109	135	152	190	229
	-70	35	43	50	66	81	99	124	138	172	207
	-65	32	39	46	60	73	89	111	123	153	184
	-60	27	33	40	52	62	75	94	103	129	155
	-55	22	27	33	42	48	57	72	79	98	118
	-50	17	20	24	31	33	39	49	53	66	79
	-45	11	13	14	18	16	19	24	26	32	38
-40	6	7	6	7	1	2	2	2	3	4	
-35	1	1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
0	-80	47	59	70	92	115	142	177	200	250	301
	-75	45	56	67	87	109	134	167	188	235	283
	-70	43	53	63	82	103	126	157	176	220	265
	-65	40	50	59	77	95	117	145	162	202	243
	-60	37	46	54	70	87	106	132	146	182	219
	-55	33	40	48	62	76	92	115	127	158	190
	-50	27	34	41	53	62	74	93	102	127	153
	-45	22	27	32	41	45	54	68	74	92	111
-40	15	19	22	28	28	33	42	45	56	67	
-35	9	11	11	14	11	12	16	17	21	25	
-30	4	5	3	4	(1)	(1)	(1)	(1)	(1)	(1)	
10	-80	54	68	81	107	134	166	207	234	293	352
	-75	52	64	78	102	128	158	197	222	278	334
	-70	50	62	74	97	122	150	187	210	263	316
	-65	47	59	71	93	116	142	177	198	247	297
	-60	45	55	67	87	108	132	165	183	229	275
	-55	42	52	62	80	99	121	151	167	208	250
	-50	38	47	56	72	89	107	134	147	183	220
	-45	32	39	49	62	75	90	113	124	154	185
	-40	27	32	40	50	58	69	87	94	117	141
	-35	20	24	29	37	40	47	59	64	79	95
	-30	13	16	18	22	21	25	31	33	41	49
	-25	7	8	7	9	4	4	6	6	7	8
-20	1	1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
20	-80	69	86	103	136	171	212	263	299	375	451
	-75	64	80	97	127	160	198	246	278	349	420
	-70	61	76	92	121	152	187	233	263	329	396
	-65	58	72	88	115	145	178	222	249	311	374
	-60	55	69	84	109	137	168	210	234	293	352
	-55	53	65	79	103	129	156	196	218	272	327
	-50	49	61	74	95	119	144	180	199	248	298
	-45	45	56	67	87	107	129	162	178	222	267
	-40	40	48	60	77	94	113	142	155	192	231
	-35	34	41	51	65	77	91	115	125	155	186
	-30	27	33	40	51	57	68	86	92	114	137
	-25	19	23	28	36	38	44	56	60	74	89
-20	12	14	16	20	18	20	26	27	34	41	
-15	5	6	5	6	(1)	(1)	(1)	(1)	(1)	(1)	

1. Oil cooling not required.

OIL COOLER HEAT REJECTION (OCHR) - 1000 BTU/HR (Liquid at intermediate temperature, no superheat, 120°F oil into compressor)

COND TEMP. °F	EVAP TEMP. °F	RWB II PLUS SCREW COMPRESSOR MODELS - BOOSTER R-717									
		60	76	100	134	177	222	270	316	399	480
30	-80	93	116	137	181	226	281	349	397	498	599
	-75	81	101	122	161	202	250	311	353	443	533
	-70	75	93	113	149	187	231	288	326	409	492
	-65	70	87	107	140	177	218	272	306	383	461
	-60	67	83	102	133	168	206	258	289	362	435
	-55	64	79	97	127	159	195	244	272	340	409
	-50	61	75	92	119	150	182	228	254	317	381
	-45	57	70	86	111	139	167	210	232	290	349
	-40	52	64	79	101	126	152	191	210	261	314
	-35	48	58	71	91	113	135	170	185	231	278
	-30	40	49	62	79	96	114	144	156	194	233
	-25	34	41	52	65	76	90	114	123	152	183
	-20	26	32	40	50	56	65	83	88	109	131
	-15	18	22	26	33	34	40	50	53	66	79
	-10	10	12	13	16	12	14	18	19	24	29
-5	3	4	2	2	(1)	(1)	(1)	(1)	(1)	(1)	
0	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
40	-80	142	177	201	266	328	408	507	578	726	873
	-75	109	136	162	213	267	331	412	468	588	707
	-70	95	118	143	188	237	294	365	414	520	626
	-65	87	108	132	174	219	271	337	381	478	575
	-60	82	101	125	164	207	254	318	357	448	539
	-55	78	96	119	155	196	241	301	337	422	508
	-50	74	92	114	148	187	228	285	318	398	479
	-45	71	87	108	140	176	214	269	299	373	449
	-40	66	81	101	130	164	197	248	275	343	413
	-35	61	75	93	119	149	179	226	249	310	373
	-30	57	69	86	109	136	162	205	224	279	336
	-25	49	60	76	96	119	141	179	194	241	290
	-20	43	51	66	83	100	117	149	161	199	239
	-15	35	42	54	68	78	91	116	125	154	185
	-10	27	32	40	50	56	65	83	88	109	131
-5	18	21	26	32	33	38	48	51	63	76	
0	9	11	12	15	11	12	16	16	20	24	

1. Oil cooling not required.



RWB II MODEL NO.	APPROXIMATE DIMENSIONS INCHES/MILLIMETERS														
	A	B	C	D (2)	E	F (1)	G	H	I (3)	J	K	L	M (3)	N	O (4)
60	99/2515	80/2032	76/1930	20/508	60/1524	46/1168	34/864	57/1448	54/1372	32/813	51/1295	47/1194	21/533	11/279	25/635
76	100/2540	79/2007	75/1905	20/508	60/1524	46/1168	34/864	57/1448	54/1372	32/813	51/1295	47/1194	21/533	11/279	25/635
100	107/2718	90/2286	85/2159	24/610	66/1676	48/1219	35/889	65/1651	60/1524	32/813	55/1397	50/1270	27/686	16/406	39/991
134	110/2794	90/2286	83/2108	24/610	66/1676	48/1219	35/889	65/1651	60/1524	32/813	55/1397	50/1270	27/686	16/406	39/991
177	117/2972	101/2565	93/2362	27/686	75/1905	54/1372	46/1168	77/1956	66/1676	40/1016	65/1651	59/1499	33/838	18/457	39/991
222	121/3073	100/2540	94/2388	27/686	75/1905	54/1372	46/1168	77/1956	66/1676	40/1016	65/1651	59/1499	33/838	18/457	39/991
270	142/3607	117/2972	105/2667	31/787	88/2235	56/1422	50/1270	77/1956	76/1930	54/1372	70/1778	64/1626	37/940	21/533	48/1219
316	155/3937	119/3023	105/2667	20/508	88/2235	56/1422	50/1270	77/1956	76/1930	54/1372	70/1778	64/1626	37/940	21/533	48/1219
399	159/4039	119/3023	107/2718	27/686	88/2235	56/1422	50/1270	77/1956	76/1930	54/1372	70/1778	64/1626	37/940	21/533	48/1219
480	171/4343	126/3200	113/2870	20/508	88/2235	58/1473	52/1321	77/1956	79/2007	62/1575	81/2057	75/1905	42/1067	23/584	48/1219

1. Allow additional 36 in./915 mm to remove coalescer element.
2. Required clearance for removal of cylinder.
3. Valve shown in open dimension.
4. Required for oil filter element removal. Oil Filter assembly not shown

NOTE: Drawing for reference only. Use certified drawings for erection.

RWB II MODEL NO.	STANDARD CONNECTIONS INCHES/MILLIMETERS (1)	
	R-717	
	SUCTION	DISCHARGE
60	4/101.6	3/76.2
76	4/101.6	3/76.2
100	5/127.0	4/101.6
134	6/152.4	4/101.6
177	6/152.4	5/127.0
222	6/152.4	5/127.0
270	8/203.2	6/152.4
316	8/203.2	6/152.4
399	8/203.2	6/152.4
480	8/203.2	6/152.4

1. All connections are provided in inches, metric dimensions given for reference only.

TEMPERATURE/PRESSURE CONVERSION CHART

Temp °F	Pressure
	R-717
-60	18.7"
-55	16.7"
-50	14.4"
-45	11.8"
-40	8.8"
-35	5.5"
-30	1.7"
-25	1.2
-20	3.5
-18	4.5
-16	5.6
-14	6.7
-12	7.8
-10	9.0
-8	10.2
-6	11.5
-4	12.8
-2	14.2
0	15.6
1	16.4
2	17.1
3	17.9
4	18.7
5	19.5
6	20.3
7	21.1
8	22.0
9	22.8
10	23.7
11	24.6
12	25.5
13	26.4
14	27.4
15	28.3
16	29.3
17	30.3
18	31.3
19	32.4
20	33.4
21	34.5
22	35.5
23	36.6
24	37.7
25	38.8
26	40.0

Temp °F	Pressure
	R-717
27	41.2
28	42.4
29	43.7
30	44.9
31	46.1
32	47.4
33	48.7
34	50.0
35	51.4
36	52.7
37	54.1
38	55.5
39	57.0
40	58.4
41	59.2
42	61.4
43	62.9
44	64.5
45	66.1
46	67.6
47	69.3
48	70.9
49	72.6
50	74.3
55	83.2
60	92.6
65	102.8
70	113.8
75	125.5
80	138.0
85	151.4
90	165.5
95	180.6
100	196.7
105	213.9
110	231.8
115	251.0
120	271.1
125	292.5
130	314.9
135	338.8
140	363.5
145	390.2
150	417.4
155	447.0

