# AQUASNAP® 30RB060-390 Air-Cooled Chillers

# Installation Instructions

## CONTENTS



## SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location.

Only trained, qualified installers and service mechanics should install, start up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When working on the equipment, observe precautions in the literature and on tags, stickers, and labels attached to the equipment.

- Follow all safety codes.
- Keep quenching cloth and fire extinguisher nearby when brazing.
- Wear safety glasses and work gloves.
- Use care in handling, rigging, and setting bulky equipment.

**⚠ WARNING**

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

IMPORTANT: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with these instructions may cause radio interference. It has been tested and found to comply with the limits of a Class A computing device as defined by FCC (Federal Communications Commission, U.S.A.) regulations, Subpart J of Part 15, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

**⚠ CAUTION**

This system uses Puron® refrigerant (R-410A), which has higher pressures than R-22 and other refrigerants. No other refrigerant can be used in this system. Failure to use gage set, hoses, and recovery systems designed to handle Puron refrigerant (R-410A) may result in equipment damage or personal injury. If unsure about equipment, consult the equipment manufacturer.

## INTRODUCTION

These instructions cover installation of 30RB060-390 air-cooled liquid chillers with electronic controls and units with factory-installed options (FIOPs). See Fig. 1.

NOTE: Unit sizes 315-390 are modular units that are shipped in separate sections as modules A or B as noted in position 8 of the unit model nomenclature. Installation directions specific to these units are noted in these instructions. For modules 315A, 315B, 330A, 330B, 345A, 345B, and 360B, follow all general instructions as noted for unit sizes 30RB160-170. For modules, 360A, 390A, and 390B follow instructions for 30RB190. See Table 1 for a listing of unit sizes and modular combinations.

NOTE: The nameplate for modular units contains only the first two digits in the model number. For example, 315A and 315B nameplates read 31A and 31B.

**Table 1 — Modular Combinations**

| MODULE UNITS | MODULE A | MODULE B |
|---|---|---|
| **30RBA315** | 30RBA160 | 30RBA160 |
| **30RBA330** | 30RBA170 | 30RBA160 |
| **30RBA345** | 30RBA170 | 30RBA170 |
| **30RBA360** | 30RBA190 | 30RBA170 |
| **30RBA390** | 30RBA190 | 30RBA190 |

NOTE: An "A" in the model number indicates the design series.

## INSTALLATION

**Storage —** If the unit is to be stored for a period of time before installation or start-up, be sure to protect the machine from construction dirt and moisture. Keep protective shipping covers in place until machine is ready for installation.

### Step 1 — Place, Rig and Mount the Unit

NOTE: Inspect the unit upon arrival for damage. If damage is found, file a claim right away with the shipping company.

PLACING UNIT — When considering location for the unit, be sure to consult National Electrical Code (NEC, U.S.A.) and local code requirements. Allow sufficient space for airflow, wiring, piping, and service. See Fig. 2-20. Be sure surface beneath the unit is level, and is capable of supporting the operating weight of the unit. See Fig. 21 and Tables 2-4B for unit lifting points, mounting and operating weights.

Locate the unit so that the condenser airflow is unrestricted both above and on the sides of the unit. Airflow and service clearances are 6 ft (1.8 m) around the unit. Acceptable clearance on the cooler connection side or end opposite the control box unit can be reduced to 3 ft (1 m) without sacrificing performance as long as the remaining three sides are unrestricted. Acceptable clearance on the side with a control box can be reduced to 4 ft (1.3 m) due to NEC regulations, without sacrificing performance as long as the remaining three sides are unrestricted. Provide ample room for servicing and removing cooler. See Fig. 2-20 for required clearances. Local codes for clearances take precedence over the manufacturer's recommendations when local codes call for greater clearances.

Modular units (30RB315-390) must be installed with a minimum separation end to end of 4 ft (1.3 m) for airflow and service clearance along with NEC regulations.

If multiple units are installed at the same site, a separation of 10 ft (3 m) between the sides of the machines is required to maintain proper airflow and minimize the chances of condenser air recirculation.

MOUNTING UNIT — The unit may be mounted on a level pad directly on the base rails, on rails along the long axis of the machine, or on vibration isolation springs. For all units, ensure placement area is strong enough to support unit operating weight. Mounting holes are provided for securing the unit to the pad or vibration isolation springs. The base rail can be point loaded at the mounting points. The base rail is made from steel, which is formed into what is shown in Fig. 22. See Fig. 2-20 for locations of mounting points. At the mounting points, a U-shaped channel is welded into the base rail to provide a flat plate for mounting. See Fig. 23 for mounting plate dimensions. The $1^{9}/_{16}$ in. (40 mm) dimension shown is to the mounting hole from the outside edge of the rail.

NOTE: The $1^{9}/_{16}$ in. (40 mm) dimension in Fig. 23 is not the same dimension as the 1.42 in. (36 mm) flange that is turned under the base rail in Fig. 22.

Bolt the unit securely to pad or rails. If vibration isolators (field-supplied) are required for a particular installation, refer to unit weight distribution in Fig. 21 to aid in the proper selection of isolators. The 30RB units can be mounted directly on spring isolators. For each unit or module, the final unit location must be level so that oil will equalize properly.

RIGGING UNIT — The 30RB060-390 units are designed for overhead rigging and it is important that this method be used. Holes are provided in frame base channels, marked for rigging (see rigging label on unit). It is recommended that field-supplied shackles be used to facilitate lifting. Secure the shackles to the base rails at the points noted on the rigging label. See Table 2 for the number of lifting points for each unit.

Do not use a forklift truck to move the units.

**Table 2 — Number of Lifting Points**

| 30RB | NUMBER OF LIFTING POINTS |
|---|---|
| **060-110** | 4 |
| **120-150** | 6 |
| **160-300** | 8 |
| **315A, 315B, 330A, 330B, 345A, 345B, 360A** | 6 |
| **360B, 390A, 390B** | 8 |

Use spreader bars to keep cables or chains clear of unit sides. As further protection plywood sheets may be placed against sides of unit, behind cables or chains. Run cables or chains to a central suspension point so that angle from horizontal is not less than 45 degrees. Raise and set unit down carefully. See Fig. 24 and 25 for rigging centers of gravity.

Each module of the 30RB315-390 units must be rigged separately. When placing unit modules for unit sizes 315-390, make sure modules are placed to permit access to the control boxes for each module.

For shipping, some domestic units and all export units are mounted on a wooden skid under entire base of unit. Skid can be removed before unit is moved to installation site. Lift the unit from above to remove skid. See Fig. 24 and 25 for rigging center of gravity. On export units, the top skid can be used as the spreader bars. If the unit was shipped with a shipping bag, the bag must be removed to gain access to the rigging holes in the base rail. On export units with a full crate, the crate sides must be removed to aid in rigging.

If overhead rigging is not available, the unit can be moved on rollers or dragged. When unit is moved on rollers, the unit skid, if equipped, must be removed. To lift the unit, use jacks at the rigging points. Use a minimum number of rollers to distribute the load such that the rollers are no more than 6 feet (1.8 m) apart. If the unit is to be dragged, lift the unit as described above, and place unit on a pad. Apply moving force to the pad, and not the unit. When in its final location, raise the unit and remove the pad.

If the unit was shipped with coil protection, it must be removed before start-up. The shipping bag for export units must be removed before start-up.

NOTE: If the application includes a remote-mounted cooler option, follow the instructions included with the accessory for cooler placement and refrigerant piping.

30RB D 190 6 – 8 0 – – – L

**30RB** – Air-Cooled AquaSnap® Chiller

**Design Series**

**Nominal Sizes**

| | | | | |
|---|---|---|---|---|
| 060 | 110 | 170 | 275 | 360* |
| 070 | 120 | 190 | 300 | 390* |
| 080 | 130 | 210 | 315* | |
| 090 | 150 | 225 | 330* | |
| 100 | 160 | 250 | 345* | |

**Voltage**

**1** – 575-3-60 **5** – 208/230-3-60
**2** – 380-3-60 **6** – 460-3-60

**Condenser Coil Option**

– – Aluminum Fin/Copper Tube
**0** – Copper Fin/Copper Tube
**1** – Aluminum Pre-Coat Fin/Copper Tube
**2** – Aluminum E-Coat Fin/Copper Tube
**3** – Copper E-Coat Fin/Copper Tube
**4** – Microchannel (MCHX)
**5** – E-Coat, Microchannel (MCHX)

**Hydronics Option**

**–** – No Pump Installed
**0** – Single Pump, 3 HP
**1** – Single Pump, 5 HP
**2** – Single Pump, 7.5 HP
**3** – Single Pump, 10 HP
**4** – Single Pump, 15 HP
**6** – Dual Pump, 3 HP
**7** – Dual Pump, 5 HP
**8** – Dual Pump, 7.5 HP, Low Head
**9** – Dual Pump, 7.5 HP, High Head
**B** – Dual Pump, 10 HP
**C** – Dual Pump,15 HP
**F** – Single Pump, 3 HP with VFD
**G** – Single Pump, 5 HP with VFD
**H** – Single Pump, 7.5 HP with VFD
**J** – Single Pump, 10 HP with VFD
**K** – Single Pump, 15 HP with VFD
**M** – Dual Pump, 3 HP with VFD
**N** – Dual Pump, 5 HP with VFD
**P** – Dual Pump, 7.5 HP, Low Head with VFD
**T** – Dual Pump, 7.5 HP, High Head with VFD
**Q** – Dual Pump, 10 HP with VFD
**R** – Dual Pump, 15 HP with VFD
**Z** – Special order designation

**Cooler / Brine Options**

**-** – Integral Cooler, CRN (Canada)
**0** – Integral Cooler, Cooler Heater, CRN (Canada)
**4** – Integral Cooler, Microchannel (MCHX), CRN (Canada)
**5** – Integral Cooler, Cooler Heater, Microchannel (MCHX), CRN (Canada)
**9** – Integral Cooler, Med. Temperature Brine, CRN (Canada)
**B** – Integral Cooler, Cooler Heater, Med. Temperature Brine, CRN (Canada)
**D** – Integral Cooler, Med. Temperature Brine, Microchannel (MCHX), CRN (Canada)
**F** – Integral Cooler, Cooler Heater, Med. Temperature Brine, Microchannel (MCHX), CRN (Canada)
**G** – Integral Cooler, no CRN
**H** – Integral Cooler, Cooler Heater, no CRN
**K** – Integral Cooler, Microchannel (MCHX), no CRN
**L** – Integral Cooler, Cooler Heater, Microchannel (MCHX), no CRN
**M** – Integral Cooler, Med. Temperature Brine, no CRN
**N** – Integral Cooler, Cooler Heater, Med. Temperature Brine, no CRN
**P** – Integral Cooler, Med. Temperature Brine, Microchannel (MCHX), no CRN
**Q** – Integral Cooler, Cooler Heater, Med. Temperature Brine, Microchannel (MCHX), no CRN
**R** – Integral Cooler, Microchannel (MCHX), Heat Recovery, no CRN
**S** – Integral Cooler, Cooler Heater, Microchannel (MCHX), Heat Recovery, no CRN
**T** – Integral Cooler, Microchannel (MCHX), Heat Recovery, CRN (Canada)
**V** – Integral Cooler, Cooler Heater, Microchannel (MCHX), Heat Recovery, CRN (Canada)

LEGEND

| | | |
|---|---|---|
| **CRN** | — | Canadian Registration Number |
| **EMM** | — | Energy Management Module |
| **GFI-CO** | — | Ground Fault Interrupting Convenience Outlet |
| **LON** | — | Local Operating Network |
| **SCCR** | — | Short Circuit Current Rating |
| **VFD** | — | Variable Frequency Device |
| **XL** | — | Across-the-Line Start |

*Refer to Table 1 on page 2 for modular unit combinations.
†Sponsored by ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers).

NOTE: A "Z" in position 11 indicates a special order machine. Digits following do not correspond to tables.

**Packaging/Security Options**

**L** – No Packaging
**0** – Skid
**1** – Skid, Top Crate, Bag
**3** – Coil Trim Panels
**4** – Skid, Coil Trim Panels
**5** – Skid, Top Crate, Bag, Coil Trim Panels
**7** – Coil Trim Panels, Upper and Lower Grilles
**8** – Skid, Coil Trim Panels, Upper and Lower Grilles
**9** – Skid, Top Crate, Bag, Coil Trim Panels, Upper and Lower Grilles
**C** – Trim Panels, Upper and Lower Grilles, Upper Hail Guards
**D** – Skid, Coil Trim Panels, Upper Grilles and Lower Grilles, Upper Hail Guards
**F** – Skid, Top Crate, Bag, Trim Panels, Upper and Lower Grilles, Upper Hail Guards
**H** – Skid, Full End Covers
**J** – Skid, Top Crate, Bag, Full End Covers
**K** – Full End Covers

**Controls/Communication Option**

**–** – None
**0** – EMM
**1** – Remote Service Port, GFI-CO
**2** – EMM, Remote Service Port, GFI-CO
**3** – BACnet† Communication
**4** – BACnet Communication, EMM
**5** – BACnet Communication, Remote Service Port, GFI-CO
**6** – BACnet Communication, EMM, Remote Service Port, GFI-CO
**7** – BACnet Translator
**8** – BACnet Translator, EMM
**9** – BACnet Translator, Remote Service Port, GFI-CO
**B** – BACnet Translator, EMM, Remote Service Port, GFI-CO
**H** – LON Translator
**J** – LON Translator, EMM
**K** – LON Translator, Remote Service Port, GFI-CO
**L** – LON Translator, EMM, Remote Service Port, GFI-CO

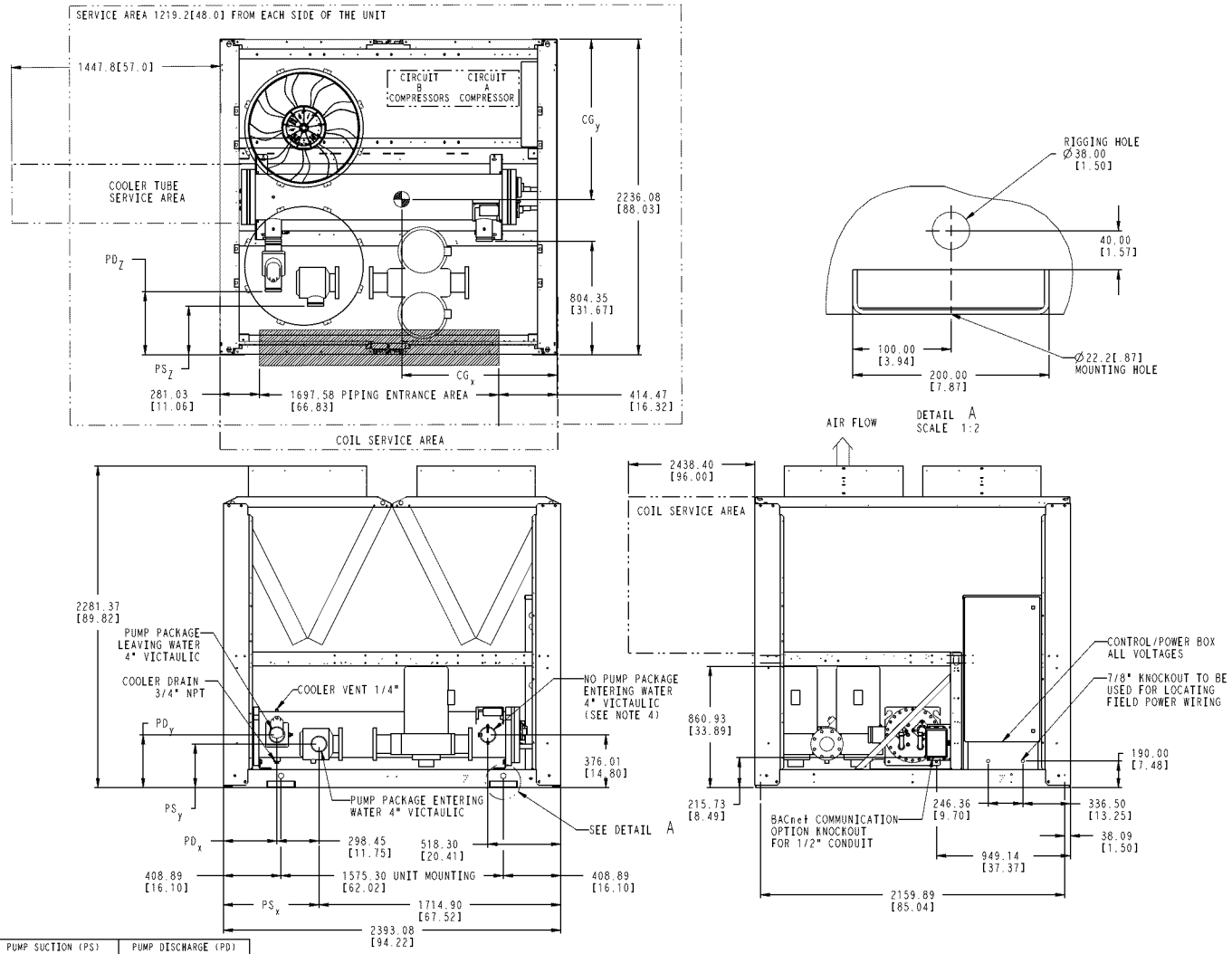
**Electrical/Low Sound Options**

**–** – Single Point Power Connections, XL, Terminal Block
**0** – Single Point Power Connections, XL, Terminal Block, High SCCR
**3** – Dual Point Power Connections, XL, Terminal Block
**4** – Dual Point Power Connections, XL, Terminal Block, High SCCR
**7** – Single Point Power Connections, XL, Non-Fused Disconnect
**8** – Single Point Power, XL, Non-Fused Disconnect, High SCCR
**C** – Dual Point Power, XL, Non-Fused Disconnect
**D** – Dual Point Power, XL, Non-Fused Disconnect, High SCCR
**G** – Single Point Power Connections, XL, Terminal Block, Cmpr Blankets
**H** – Single Point Power Connections, XL, Terminal Block, Cmpr Blankets, High SCCR
**J** – Dual Point Power Connections, XL, Terminal Block, Cmpr Blankets
**K** – Dual Point Power Connections, XL, Terminal Block, Cmpr Blankets, High SCCR
**L** – Single Point Power Connections, XL, Non-Fused Disconnect, Cmpr Blankets
**M** – Single Point Power Connections, XL, Non-Fused Disconnect, Cmpr Blankets, High SCCR
**N** – Dual Point Power, XL, Non-Fused Disconnect, Cmpr Blankets
**P** – Dual Point Power, XL, Non-Fused Disconnect, Cmpr Blankets, High SCCR
**Q** – Single Point Power Connections, XL, Terminal Block, Cmpr Blankets, Cmpr Enclosures
**R** – Single Point Power Connections, XL, Terminal Block, Cmpr Blankets, Cmpr Enclosures, High SCCR
**S** – Dual Point Power Connections, XL, Terminal Block, Cmpr Blankets, Cmpr Enclosures
**T** – Dual Point Power Connections, XL, Terminal Block, Cmpr Blankets, Cmpr Enclosures, High SCCR
**V** – Single Point Power Connections, XL, Non-Fused Disconnect, Cmpr Blankets, Cmpr Enclosures
**W** – Single Point Power Connections, XL, Non-Fused Disconnect, Cmpr Blankets, Cmpr Enclosures, High SCCR
**X** – Dual Point Power, XL, Non-Fused Disconnect, Cmpr Blankets, Cmpr Enclosures
**Y** – Dual Point Power, XL, Non-Fused Disconnect, Cmpr Blankets, Cmpr Enclosures, High SCCR

**Refrigeration Circuit Option**

**–** – No Suction Line Insulation
**0** – Suction Insulation
**1** – Suction Service Valves
**2** – Low Ambient Head Pressure Control Operation
**3** – Suction Insulation, Suction Service Valves
**4** – Suction Insulation, Low Ambient Head Pressure Control Operation
**5** – Suction Service Valves, Low Ambient Head Pressure Control Operation
**6** – Suction Insulation, Service Valves, Low Ambient Head Pressure Control Operation
**7** – Minimum Load Control
**8** – Suction Insulation, Minimum Load Control Operation
**9** – Suction Service Valves, Minimum Load Control Operation
**B** – Low Ambient Operation, Minimum Load Control Operation
**C** – Suction Insulation, Suction Service Valves, Minimum Load Control Operation
**D** – Suction Insulation, Low Ambient Head Pressure Control Operation , Minimum Load Control Operation
**F** – Suction Service Valves, Low Ambient Head Pressure Control Operation, Minimum Load Control Operation
**G** – Suction Insulation, Suction Service Valves, Low Ambient Head Pressure Control Operation, Minimum Load Control Operation

**Fig. 1 — AquaSnap® Chiller Model Number Designation**




NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].
6. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

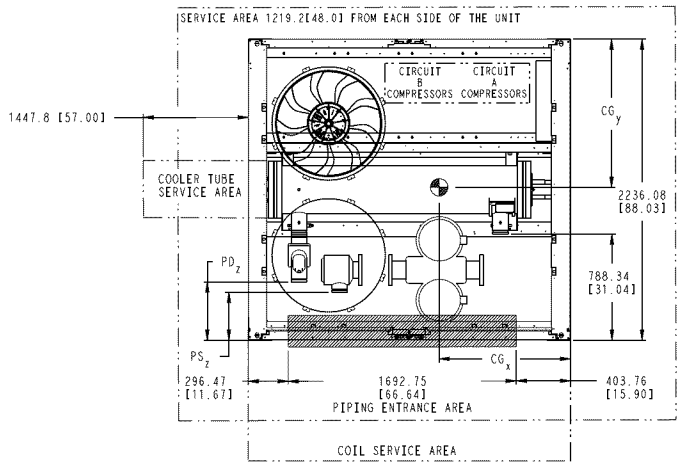
| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] | PUMP SUCTION (PS) X ±.25 | Y ±.25 | Z ±.25 | PUMP DISCHARGE (PD) X ±.25 | Y ±.25 | Z ±.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30RB-060 | 4111 1869 | 4944 2247 | 4593 2088 | 5426 2466 | 3783 1716 | 4616 2094 | 1164 [45.82] | 1038 [40.86] | 675.6 [26.6] | 309.9 [12.2] | 353.1 [13.9] | 381.0 [15.0] | 482.6 [19.0] | 188.0 [7.4] |
| 30RB-070 | 4317 1932 | 5150 2641 | 4799 2181 | 5632 2560 | 3978 1804 | 4811 2182 | 1165 [45.86] | 1013 [39.88] | 675.6 [26.6] | 309.9 [12.2] | 353.1 [13.9] | 381.0 [15.0] | 482.6 [19.0] | 188.0 [7.4] |

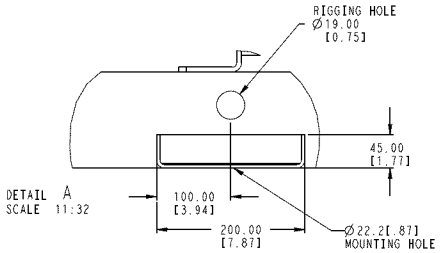
MCHX — Microchannel Condenser Coil

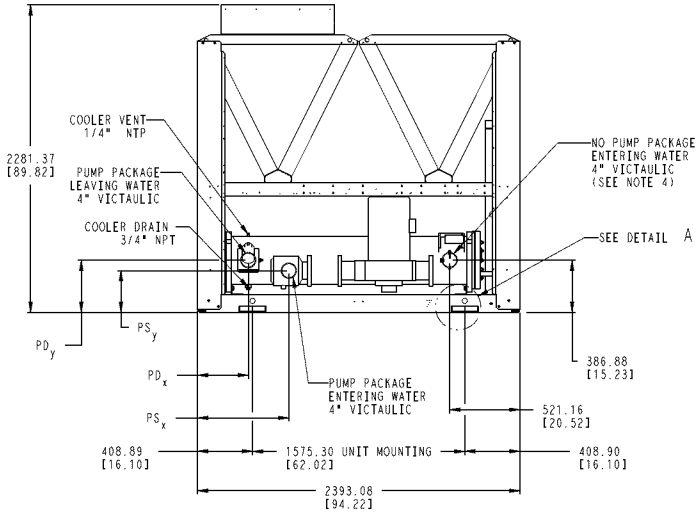
**Fig. 2 — 30RB060, 070 Air-Cooled Chiller Dimensions**

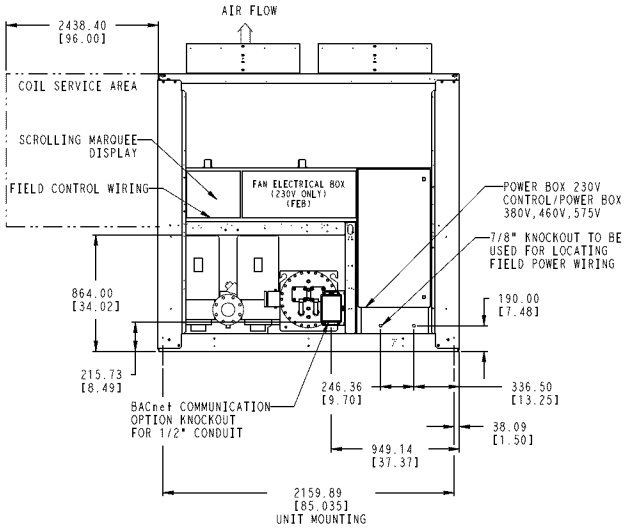
NOTES:

1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6' from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].
6. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.




| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY | | PUMP SUCTION (PS) | | | PUMP DISCHARGE (PD) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CGx MM [INCH] | CGy MM [INCH] | X ±.25 | Y ±.25 | Z ±.25 | X ±.25 | Y ±.25 | Z ±.25 |
| 30RB-080 | 4600 2091 | 5523 2511 | 5082 2310 | 6005 2730 | 4267 1934 | 5190 2355 | 1206 [47.48] | 1012 [39.84] | 675.6 [26.6] | 309.9 [12.2] | 353.1 [13.9] | 381.0 [15.0] | 497.8 [19.6] | 170.2 [6.7] |

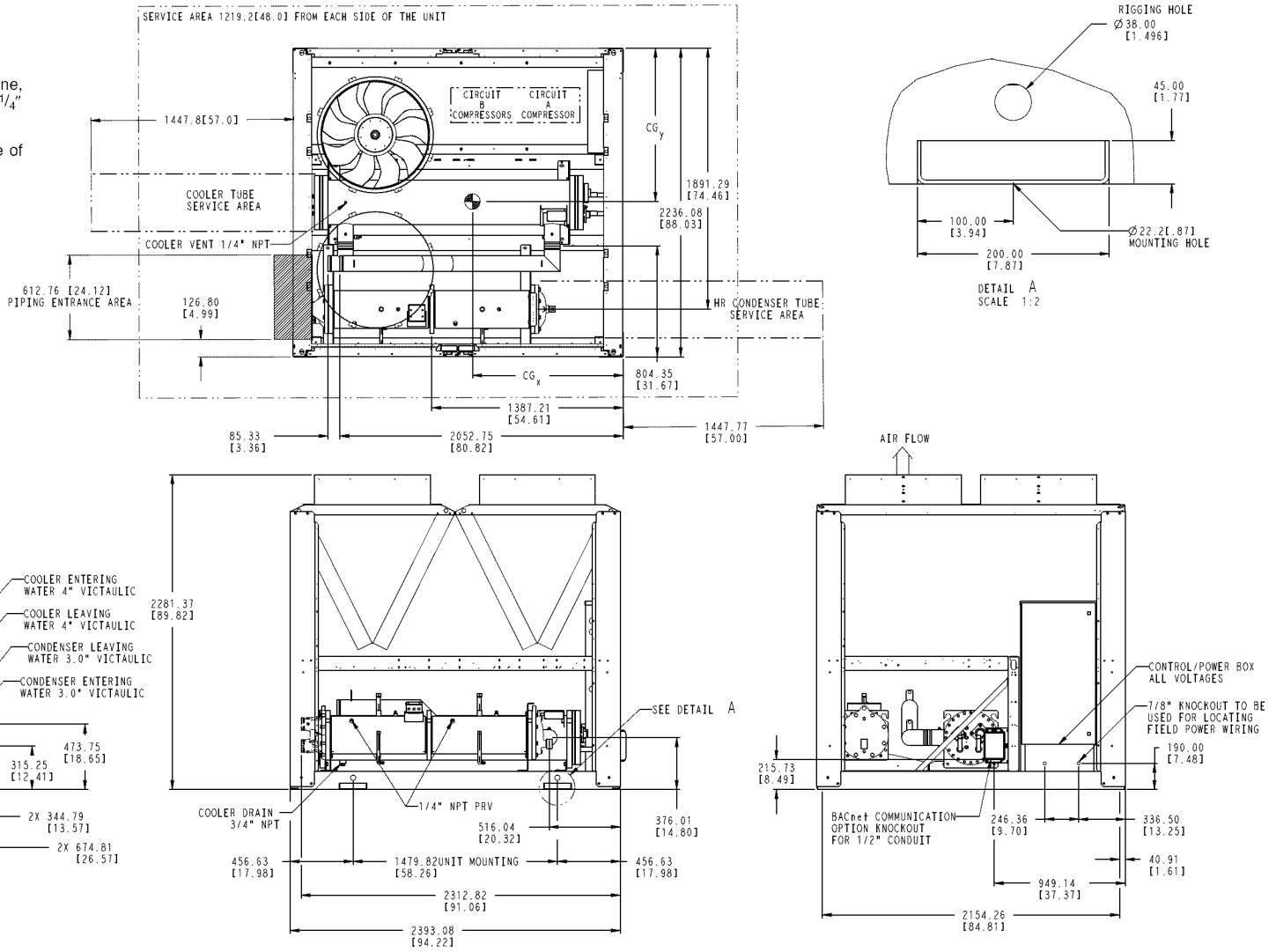
MCHX — Microchannel Condenser Coil

**Fig. 3 — 30RB080 Air-Cooled Chiller Dimensions**

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

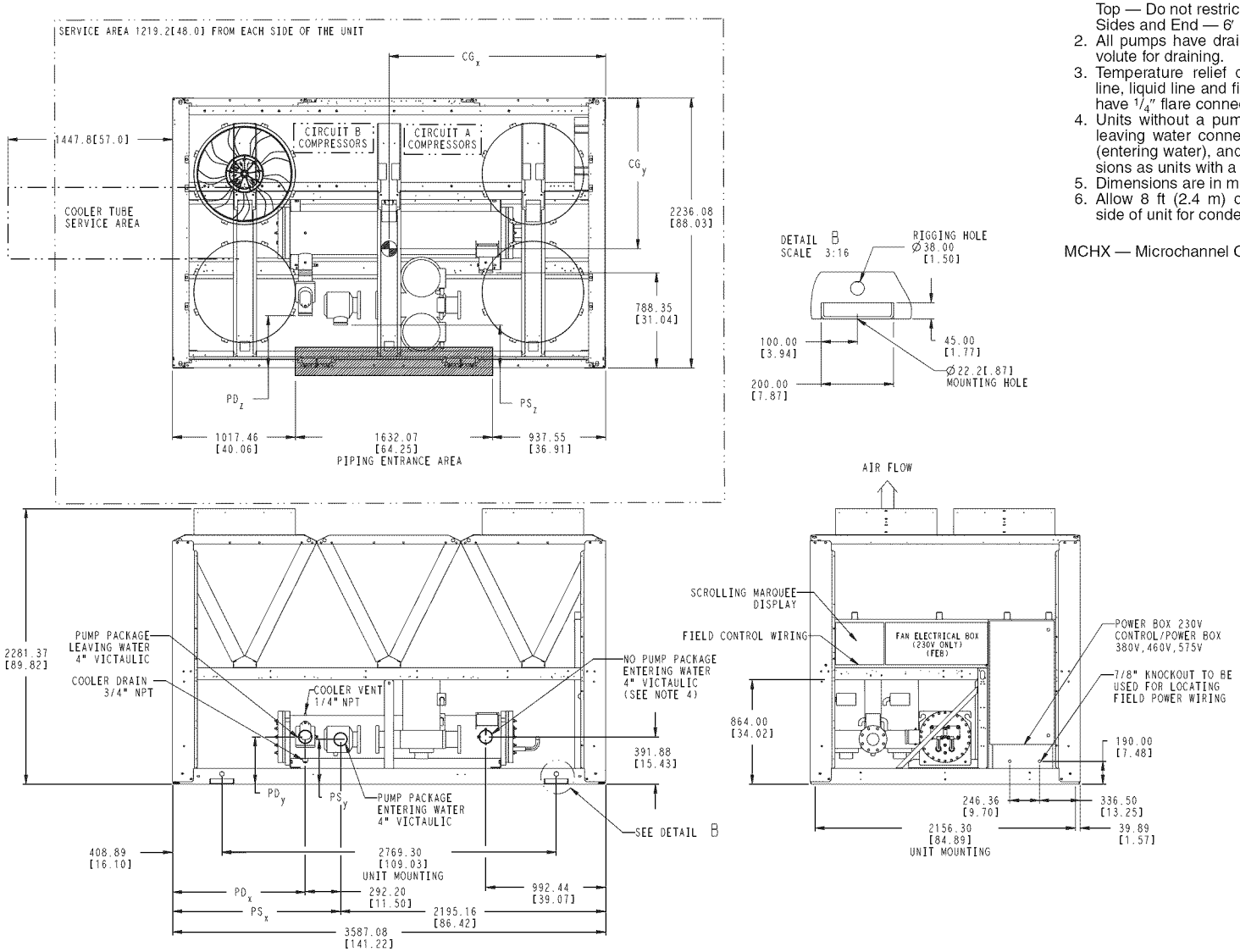
LEGEND

**HR** — Heat Reclaim
**MCHX** — Microchannel Condenser Coil
**PRV** — Pressure Relief Valve




| | WEIGHT | CENTER OF GRAVITY | |
|---|---|---|---|
| | MCHX lb/kg | CGx MM [INCH] | CGy MM [INCH] |
| 30RB-060 | 4703 2133 | 1235 [48.62] | 1082 [42.60] |
| 30RB-070 | 4898 2222 | 1198 [47.17] | 1093 [43.03] |
| 30RB-080 | 5187 2353 | 1199 [47.20] | 1120 [44.10] |

**Fig. 4 — 30RB060-080 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

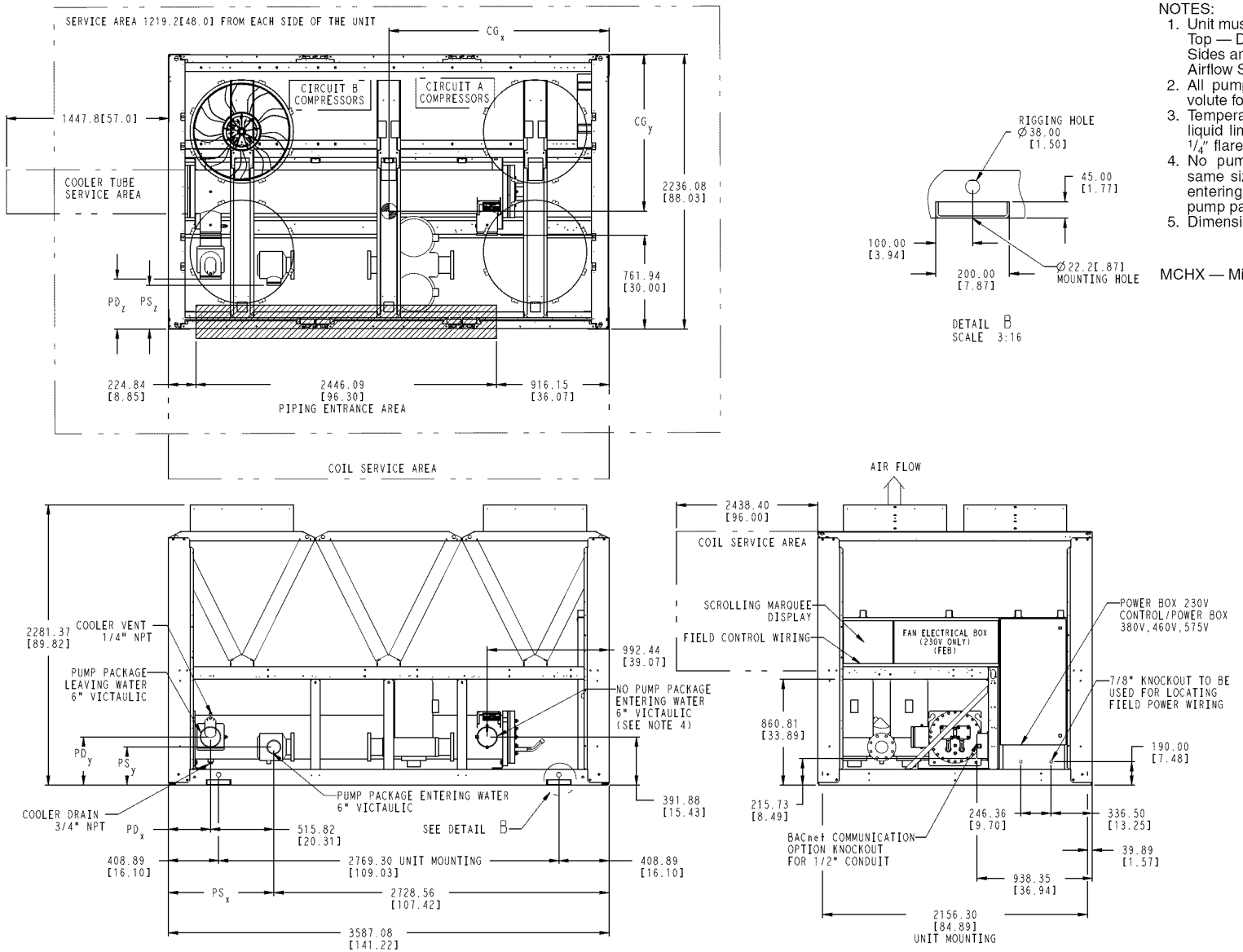



| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY | | PUMP SUCTION (PS) | | | PUMP DISCHARGE (PD) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CGx MM [INCH] | CGy MM [INCH] | X ±.25 | Y ±.25 | Z ±.25 | X ±.25 | Y ±.25 | Z ±.25 |
| 30RB-090 | 5932 2697 | 6855 3116 | 6656 3026 | 7579 3445 | 5779 2472 | 6372 2890 | 1625 [64.0] | 1017 [40.0] | 1389.4 [54.7] | 309.9 [12.2] | 353.1 [13.9] | 1097.3 [43.2] | 497.8 [19.6] | 170.2 [6.7] |
| 30RB-100 | 6155 2798 | 7078 3217 | 6879 3127 | 7802 3547 | 5663 2569 | 6586 2987 | 1614 [63.5] | 999 [39.3] | 1389.4 [54.7] | 309.9 [12.2] | 353.1 [13.9] | 1097.3 [43.2] | 497.8 [19.6] | 170.2 [6.7] |

**Fig. 5 — 30RB090, 100 Air-Cooled Chiller Dimensions**

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].
6. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

MCHX — Microchannel Condenser Coil




NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
   Airflow Side — 8′ required for coil service area.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices ocated on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
4. No pump package leaving water connection is same size and has same Y and Z dimensions as entering water. Also has same PDx dimension as pump package.
5. Dimensions are in mm [inches].

MCHX — Microchannel Condenser Coil

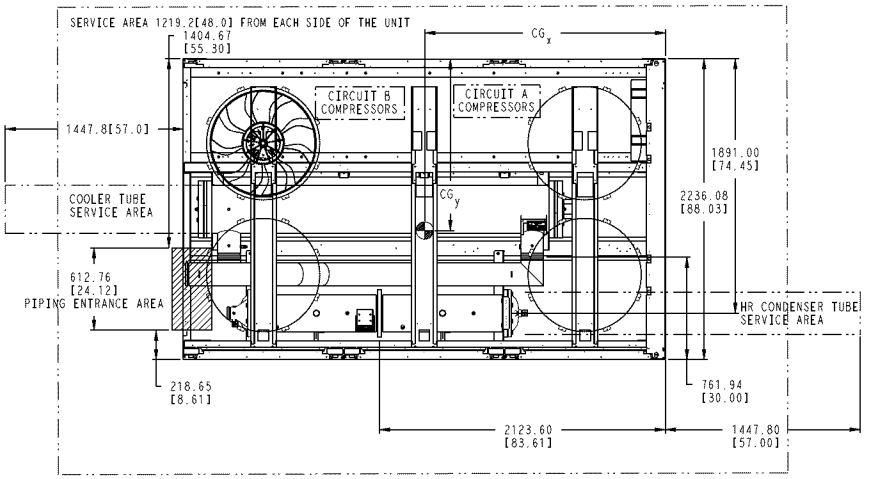
| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY | | PUMP SUCTION (PS) | | | PUMP DISCHARGE (PD) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CGx MM [INCH] | CGy MM [INCH] | X ±.25 | Y ±.25 | Z ±.25 | X ±.25 | Y ±.25 | Z ±.25 |
| 30RB-110 | 6519<br>2963 | 7442<br>3383 | 7243<br>3292 | 8166<br>3712 | 6027<br>2734 | 6950<br>3152 | 1713<br>[67.44] | 997<br>[39.25] | 856.0<br>[33.7] | 281.9<br>[11.1] | 60.9<br>[2.4] | 340.4<br>[13.4] | 391.2<br>[15.4] | 233.7<br>[9.2] |

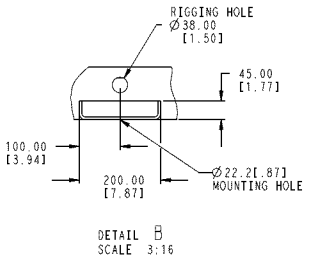
**Fig. 6 — 30RB110 Air-Cooled Chiller Dimensions**

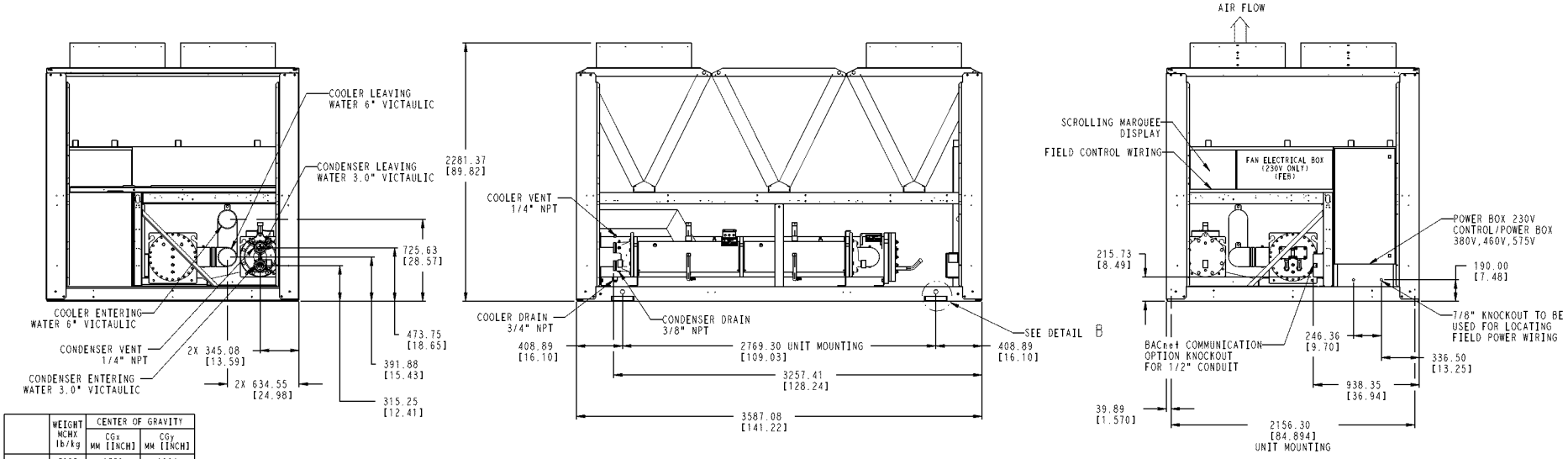
NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6' from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$" flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

LEGEND

**HR** — Heat Reclaim
**MCHX** — Microchannel Condenser Coil



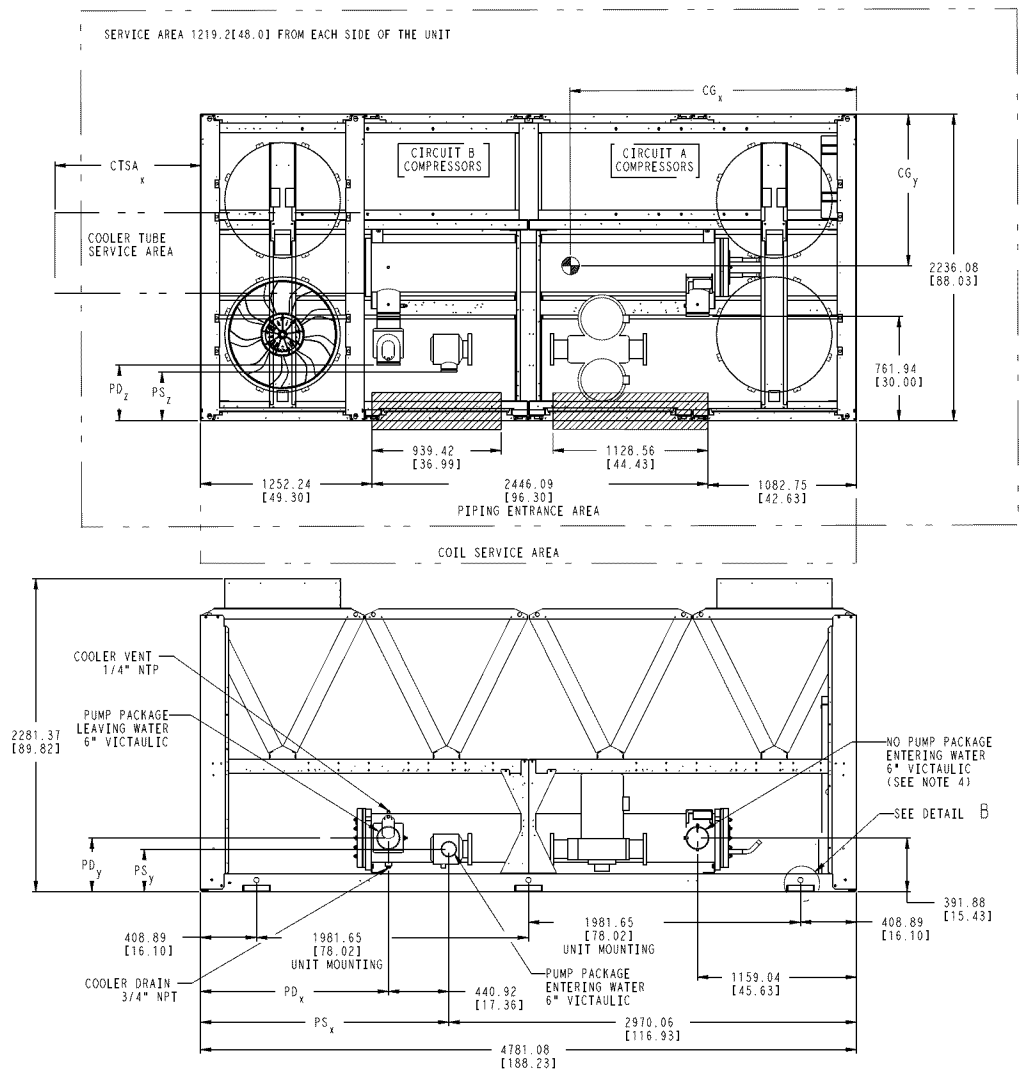



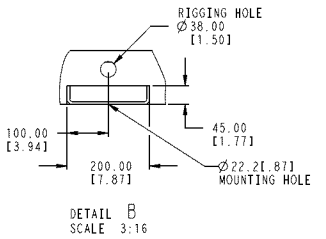



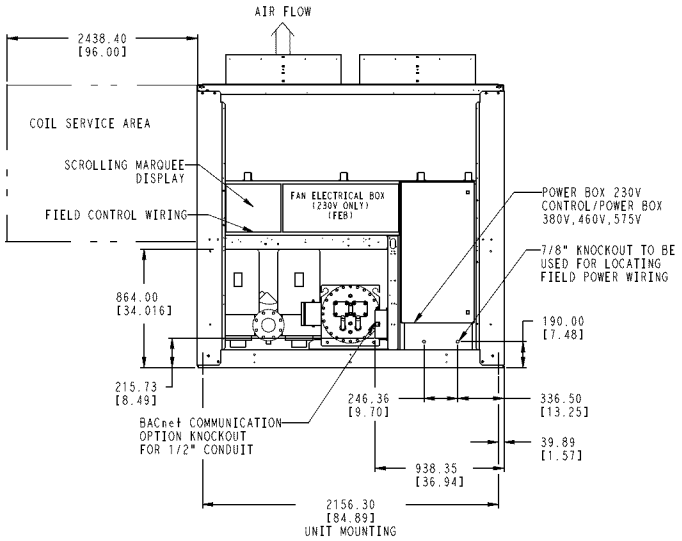

| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|
| 30RB-110 | 7133 3236 | 1759 [69.25] | 1064 [41.89] |
| 30RB-100 | 6769 3071 | 1676 [65.98] | 1067 [42.00] |
| 30RB-090 | 6555 2974 | 1689 [66.50] | 1088 [42.84] |

**Fig. 7 — 30RB090-110 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
   Airflow side — 8′ required for coil service area.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
4. No pump package leaving water connection is same size and has same Y and Z dimensions as entering water. Also has same PDx dimension as pump package.
5. Dimensions are in mm [inches].




MCHX — Microchannel Condenser Coil

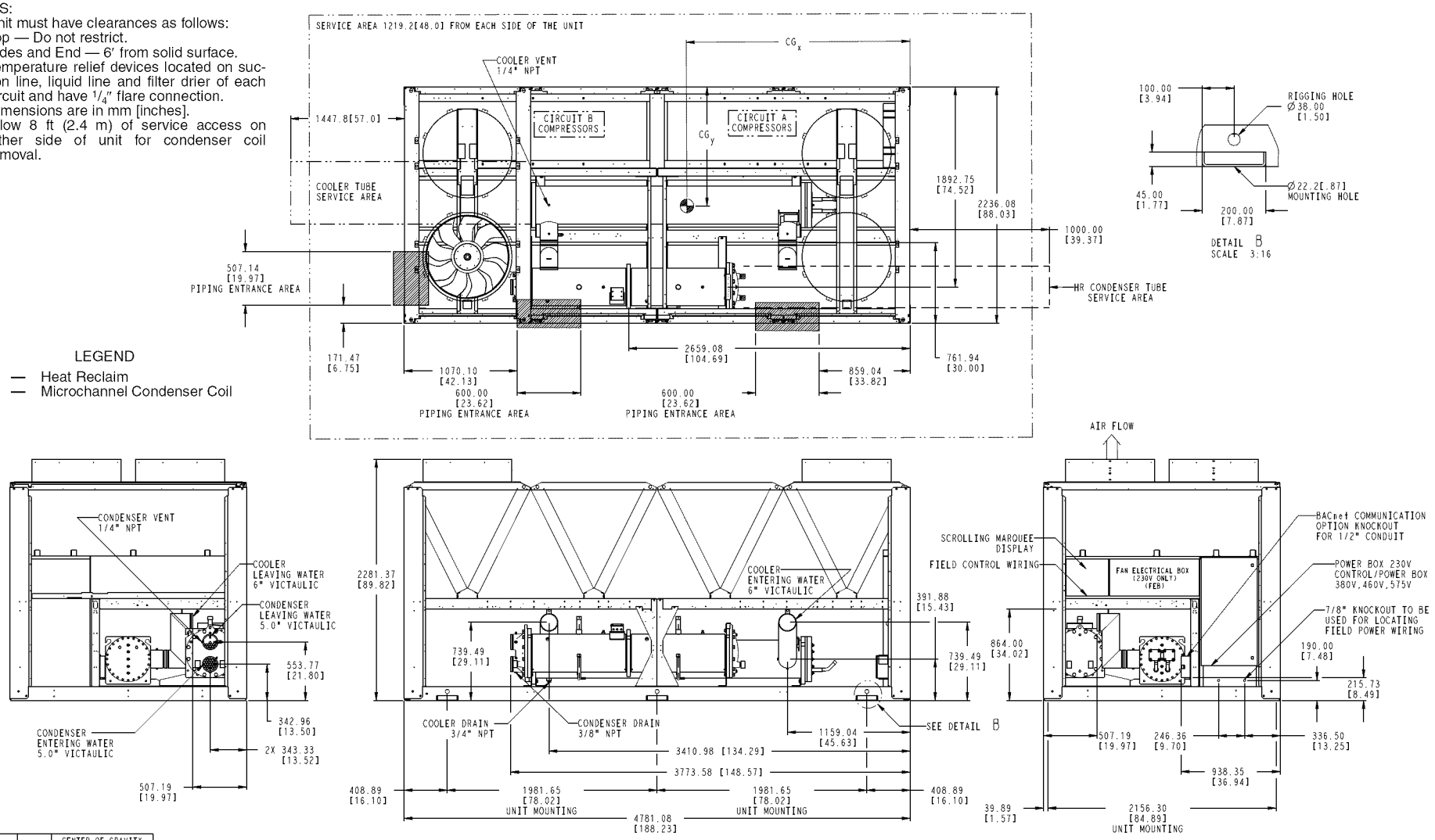
| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY | | PUMP SUCTION (PS) | | | PUMP DISCHARGE (PD) | | | COOLER TUBE SERVICE AREA CTSA x MM [INCH] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CGx MM [INCH] | CGy MM [INCH] | X ±.25 | Y ±.25 | Z ±.25 | X ±.25 | Y ±.25 | Z ±.25 | |
| 30RB-120 | 7690 3488 | 8613 3907 | 8534 3871 | 9457 4290 | 7119 3229 | 8042 3648 | 2346 [92.36] | 993 [39.09] | 1808.5 [71.2] | 281.9 [11.1] | 60.9 [2.4] | 1366.5 [53.8] | 391.2 [15.4] | 233.7 [9.2] | 1447.8 [57.0] |
| 30RB-130 | 8045 3649 | 8968 4068 | 9010 4087 | 9933 4506 | 7402 3358 | 8325 3776 | 2272 [89.45] | 983 [38.70] | 1808.5 [71.2] | 281.9 [11.1] | 60.9 [2.4] | 1366.5 [53.8] | 391.2 [15.4] | 233.7 [9.2] | 1447.8 [57.0] |

**Fig. 8 — 30RB120 Air-Cooled Chiller Dimensions**

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

LEGEND

**HR** — Heat Reclaim
**MCHX** — Microchannel Condenser Coil

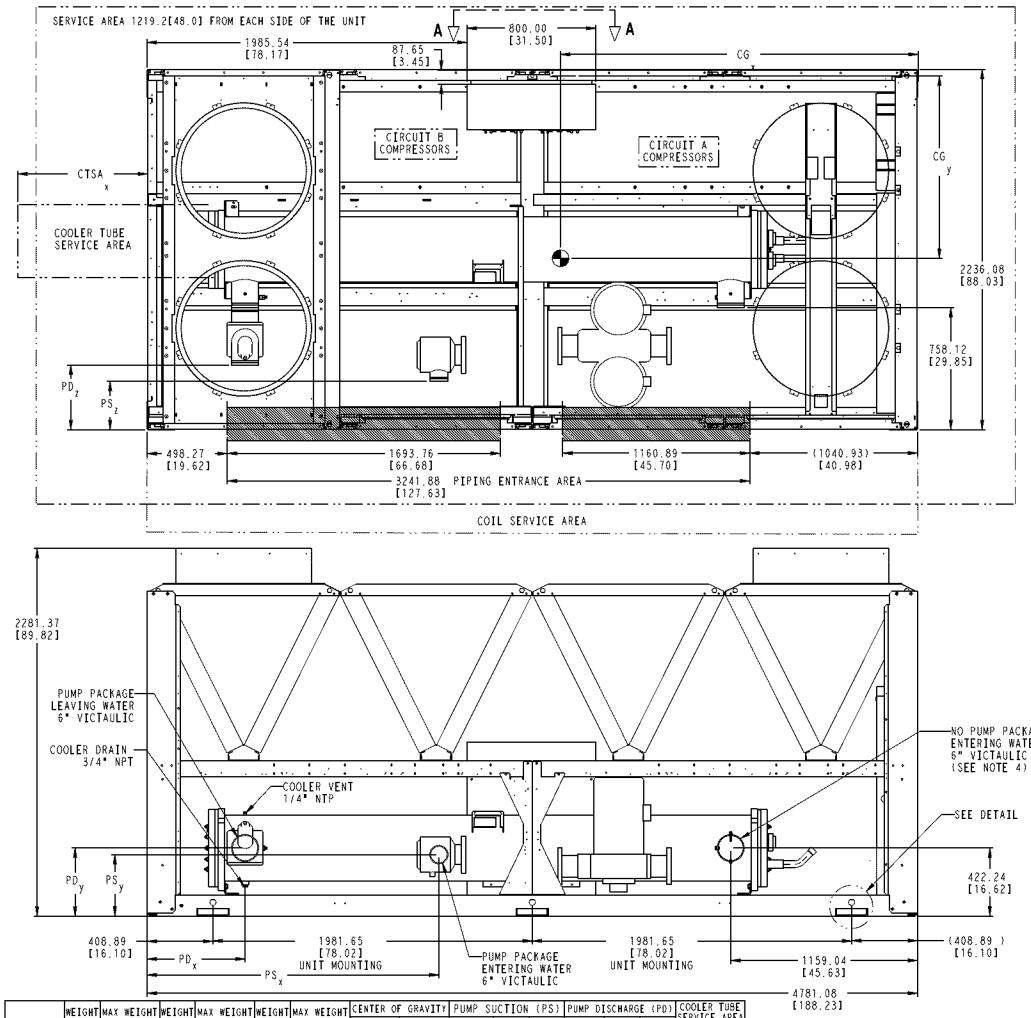


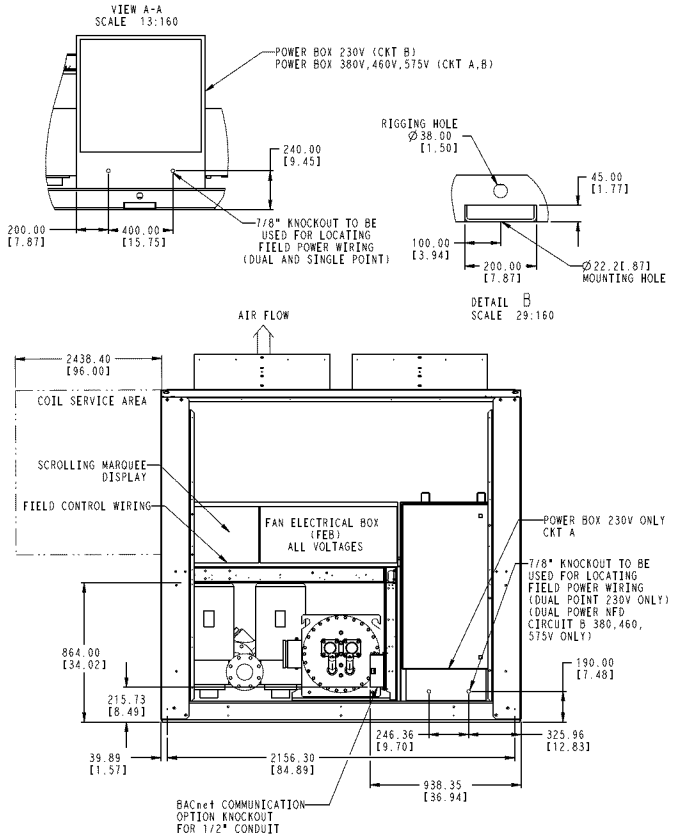

| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY | |
|---|---|---|---|
| | | CGx MM [INCH] | CGy MM [INCH] |
| 30RB-120 | 8405 3813 | 2413 [95.00] | 1089 [42.87] |

**Fig. 9 — 30RB120 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].
6. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

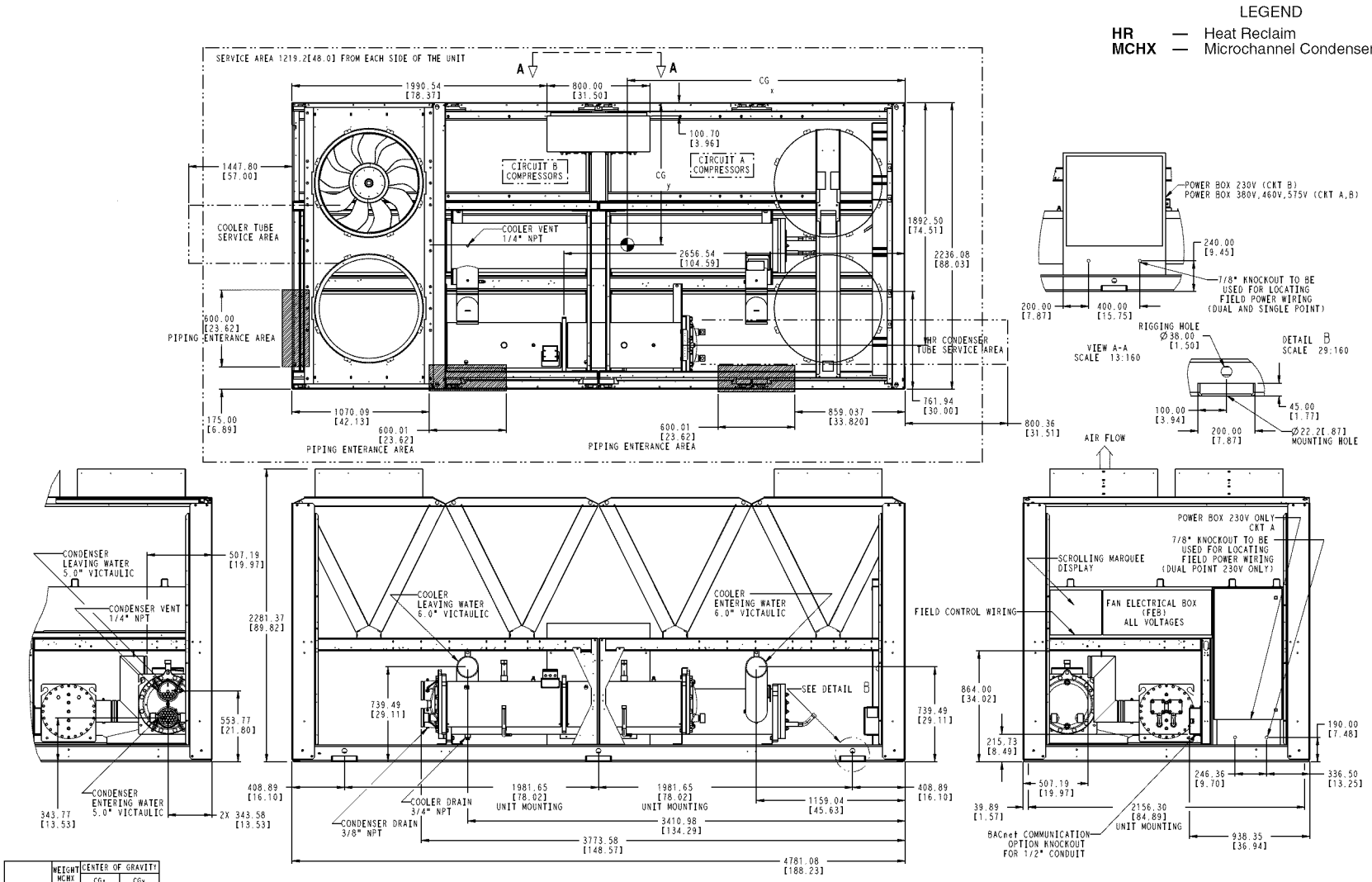
MCHX — Microchannel Condenser Coil




| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] | PUMP SUCTION (PS) X ± .25 | Y ± .25 | Z ± .25 | PUMP DISCHARGE (PD) X ± .25 | Y ± .25 | Z ± .25 | COOLER TUBE SERVICE AREA CTSA x MM [INCH] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30RB-130 | 8045<br>3649 | 8968<br>4068 | 9010<br>4087 | 9933<br>4506 | 7402<br>3358 | 8325<br>3776 | 2272<br>[89.45] | 983<br>[38.70] | 1808.5<br>[71.2] | 281.9<br>[11.1] | 60.9<br>[2.4] | 1366.5<br>[53.8] | 391.2<br>[15.4] | 233.7<br>[9.2] | 1447.8<br>[57.0] |
| 30RB-150 | 9174<br>4161 | 10419<br>4726 | 10139<br>4599 | 11384<br>5164 | 8517<br>3863 | 9762<br>4428 | 2392<br>[94.17] | 983<br>[38.70] | 1808.5<br>[71.2] | 381<br>[15.0] | 297.2<br>[11.7] | 604.5<br>[23.8] | 421.6<br>[16.6] | 231.1<br>[9.1] | 2905.8<br>[114.4] |

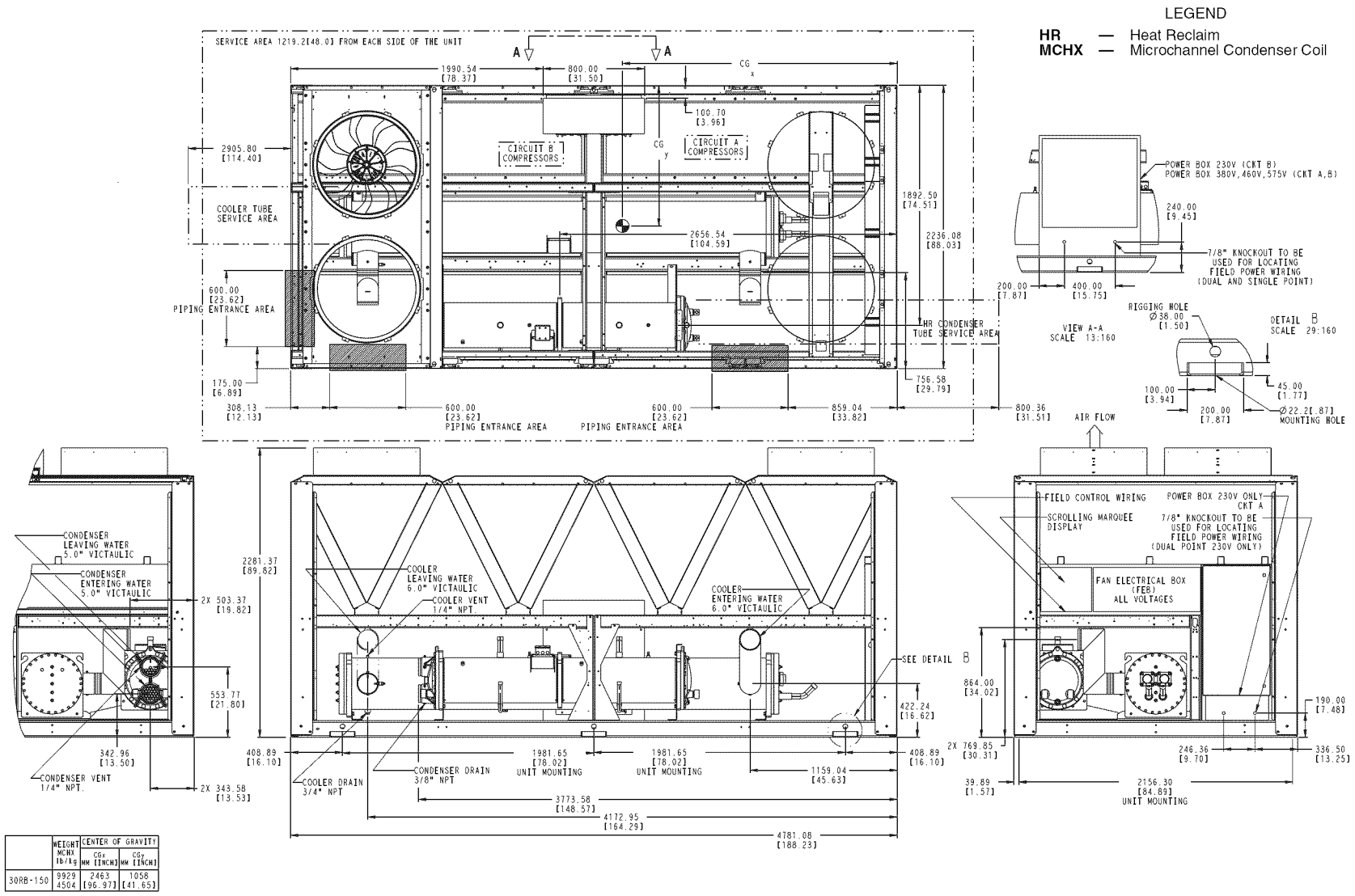
**Fig. 10 — 30RB130, 150 Air-Cooled Chiller Dimensions**




| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|
| 30RB-130 | 8814 3998 | 2346 [92.36] | 1075 [42.32] |

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

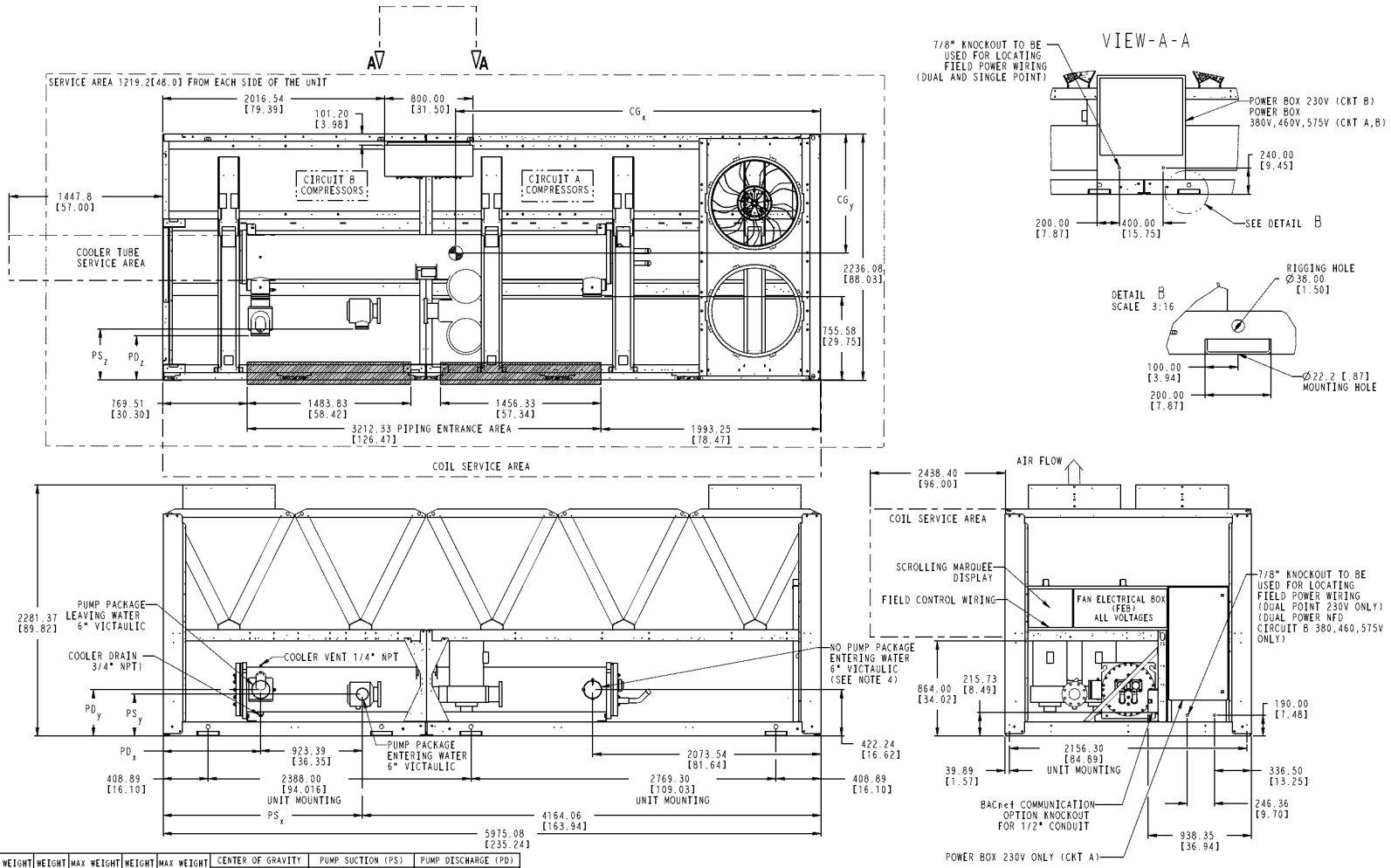
**Fig. 11 — 30RB130 Air-Cooled Chiller with Heat Reclaim Option Dimensions**




| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|
| 30RB-150 | 9929 4504 | 2463 [96.97] | 1058 [41.65] |

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

**Fig. 12 — 30RB150 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

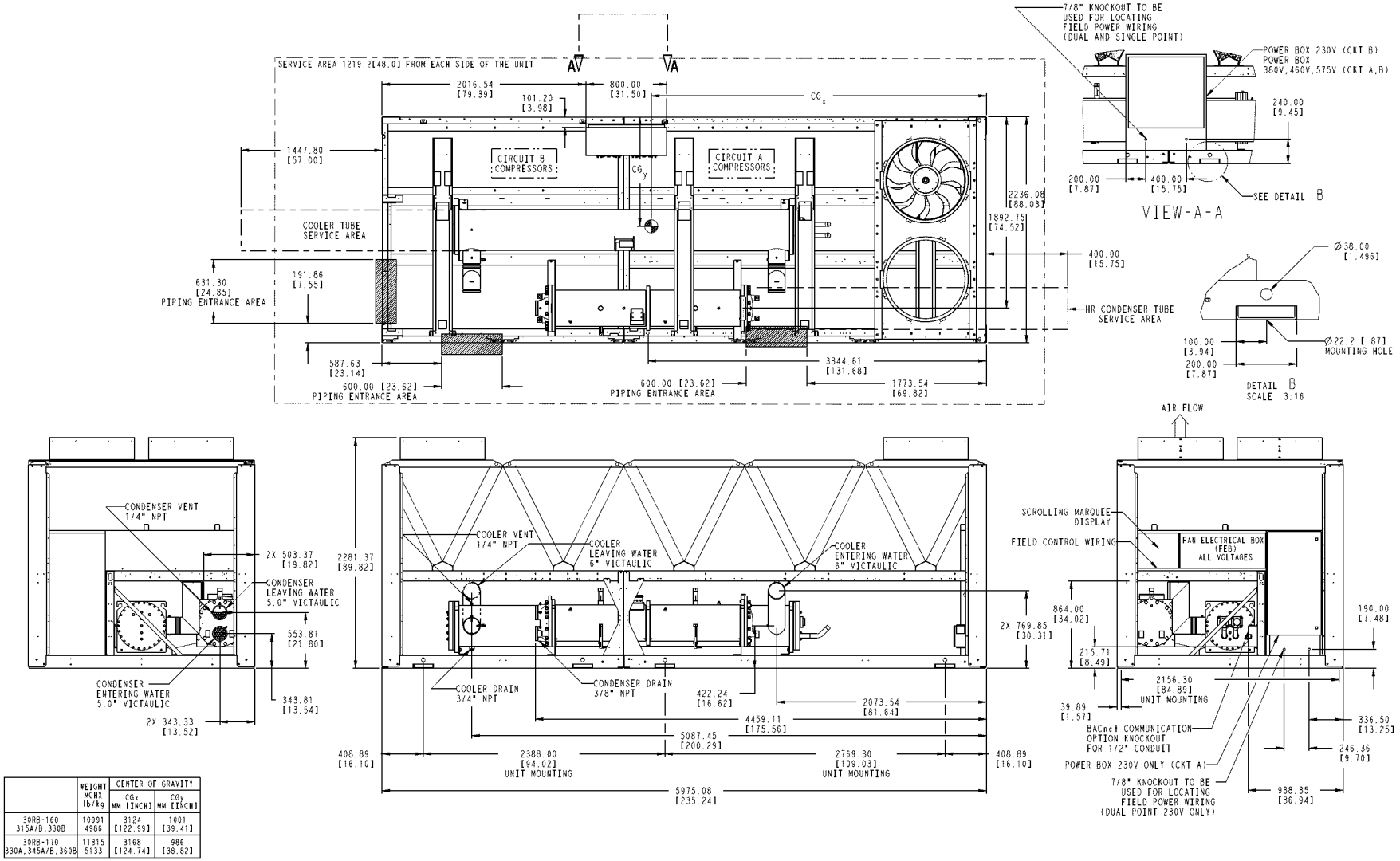



| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CENTER OF GRAVITY CGy MM [INCH] | PUMP SUCTION (PS) X ±.25 | PUMP SUCTION (PS) Y ±.25 | PUMP SUCTION (PS) Z ±.25 | PUMP DISCHARGE (PD) X ±.25 | PUMP DISCHARGE (PD) Y ±.25 | PUMP DISCHARGE (PD) Z ±.25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30RB-160 315A/B,330B | 10266 4666 | 11511 5232 | 11472 5215 | 12717 5781 | 9475 4297 | 10720 4860 | 3065 [120.66] | 994 [39.13] | 1808.48 [71.21] | 381 [15.01] | 297.2 [11.7] | 883.92 [34.8] | 421.64 [16.6] | 231.14 [9.1] |
| 30RB-170 330A,345A/B,360B | 10601 4819 | 11846 5385 | 11807 5367 | 13052 5933 | 9799 4443 | 11044 5009 | 3114 [122.59] | 978 [30.5] | 1808.48 [71.21] | 381 [15.01] | 297.2 [11.7] | 883.92 [34.8] | 421.64 [16.6] | 231.14 [9.1] |

MCHX — Microchannel Condenser Coil

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].
6. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

**Fig. 13 — 30RB160, 170, 315A/B, 330A/B, 345A/B, 360B Air-Cooled Chiller Dimensions**




| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY | |
|---|---|---|---|
| | | CGx MM [INCH] | CGy MM [INCH] |
| 30RB-160 315A/B,330B | 10991 4986 | 3124 [122.99] | 1001 [39.41] |
| 30RB-170 330A,345A/B,360B | 11315 5133 | 3168 [124.74] | 986 [38.82] |

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

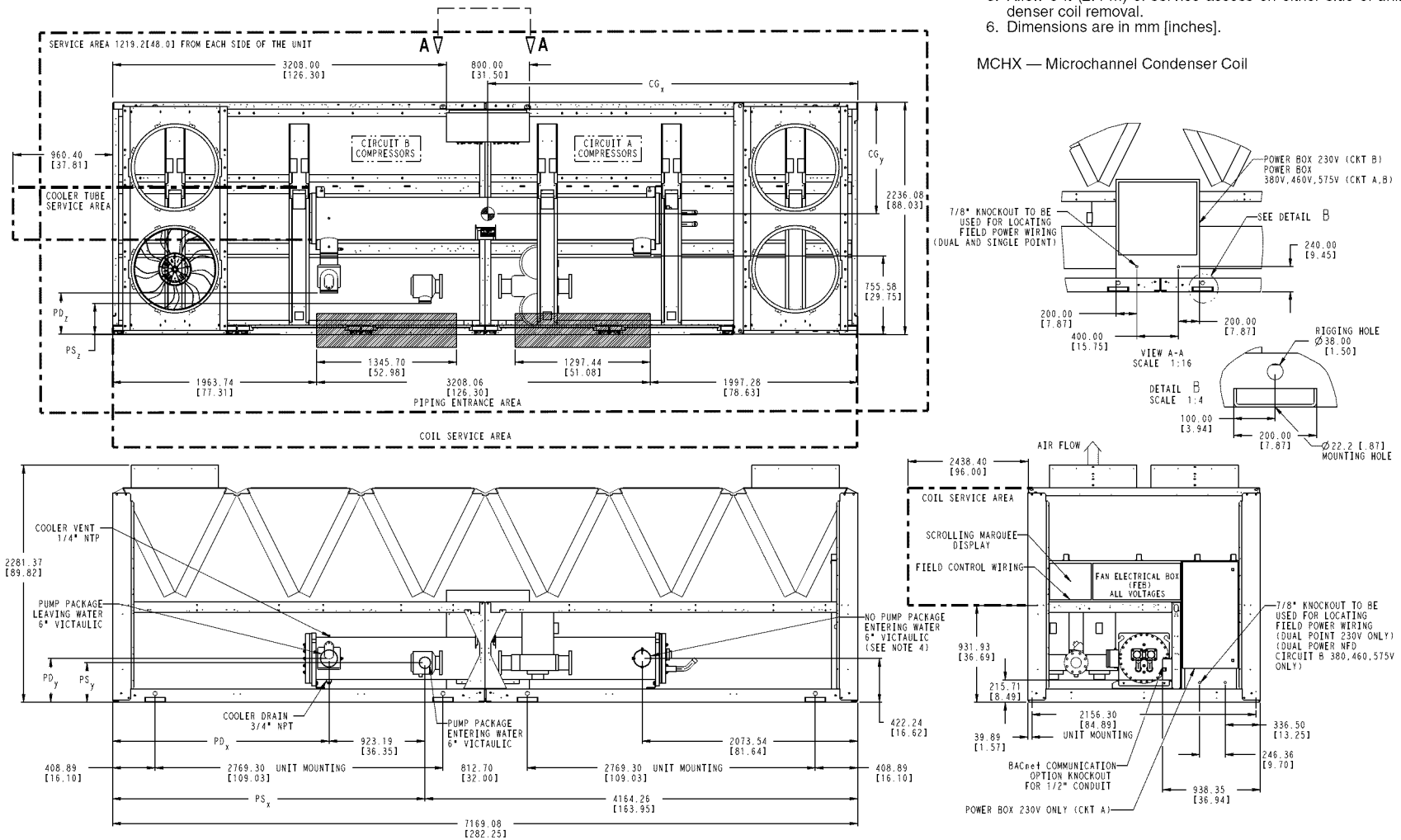
LEGEND

**HR** — Heat Reclaim
**MCHX** — Microchannel Condenser Coil

**Fig. 14 — 30RB160,170 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

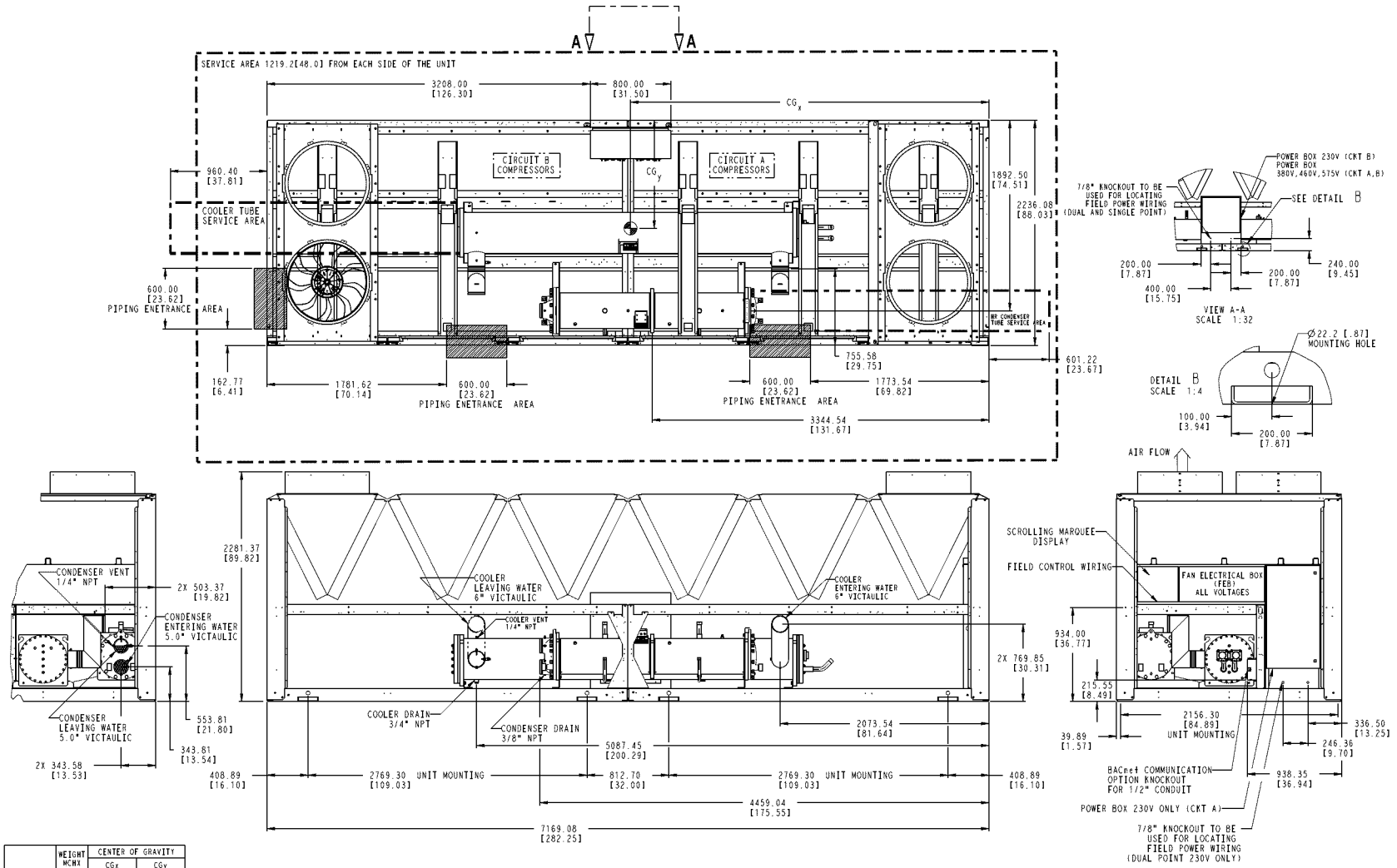
NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6' from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$" flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions (entering water), and Pump Discharge X dimensions as units with a pump package.
5. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.
6. Dimensions are in mm [inches].

MCHX — Microchannel Condenser Coil




| | WEIGHT CU/AL lb/kg | MAX WEIGHT CU/AL PUMP lb/kg | WEIGHT CU/CU lb/kg | MAX WEIGHT CU/CU PUMP lb/kg | WEIGHT MCHX lb/kg | MAX WEIGHT MCHX PUMP lb/kg | CENTER OF GRAVITY | | PUMP SUCTION (PS) | | | PUMP DISCHARGE (PD) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CGx MM [INCH] | CGy MM [INCH] | X ±.25 | Y ±.25 | Z ±.25 | X ±.25 | Y ±.25 | Z ±.25 |
| 30RB-190, 360A,390A/B | 12013 5461 | 13258 6014 | 13460 6118 | 14705 14705 | 11064 5019 | 12309 5582 | 3578 [140.87] | 974 [38.35] | 3002 [118.2] | 381 [15.0] | 297.2 [11.7] | 2080.3 [81.9] | 421.6 [16.6] | 231.1 [9.1] |

**Fig. 15 — 30RB190, 360A, 390A/B Air-Cooled Chiller Dimensions**




| | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|
| 30RB-190, 360A,390A/B | 12850 5706 | 3566 [140.39] | 979 [38.54] |

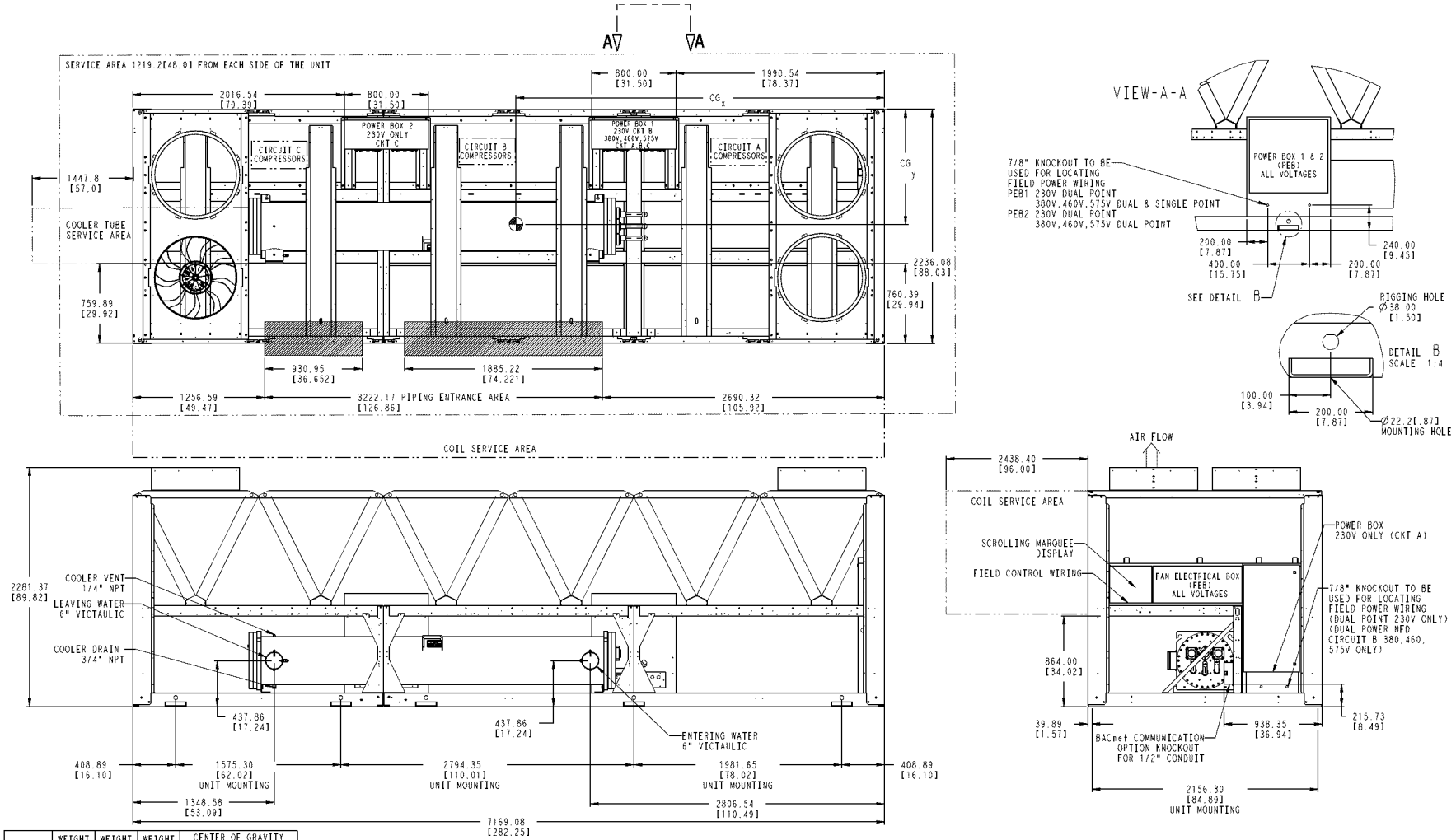
LEGEND

**HR** — Heat Reclaim
**MCHX** — Microchannel Condenser Coil

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

**Fig. 16 — 30RB190 Air-Cooled Chiller with Heat Reclaim Option Dimensions**

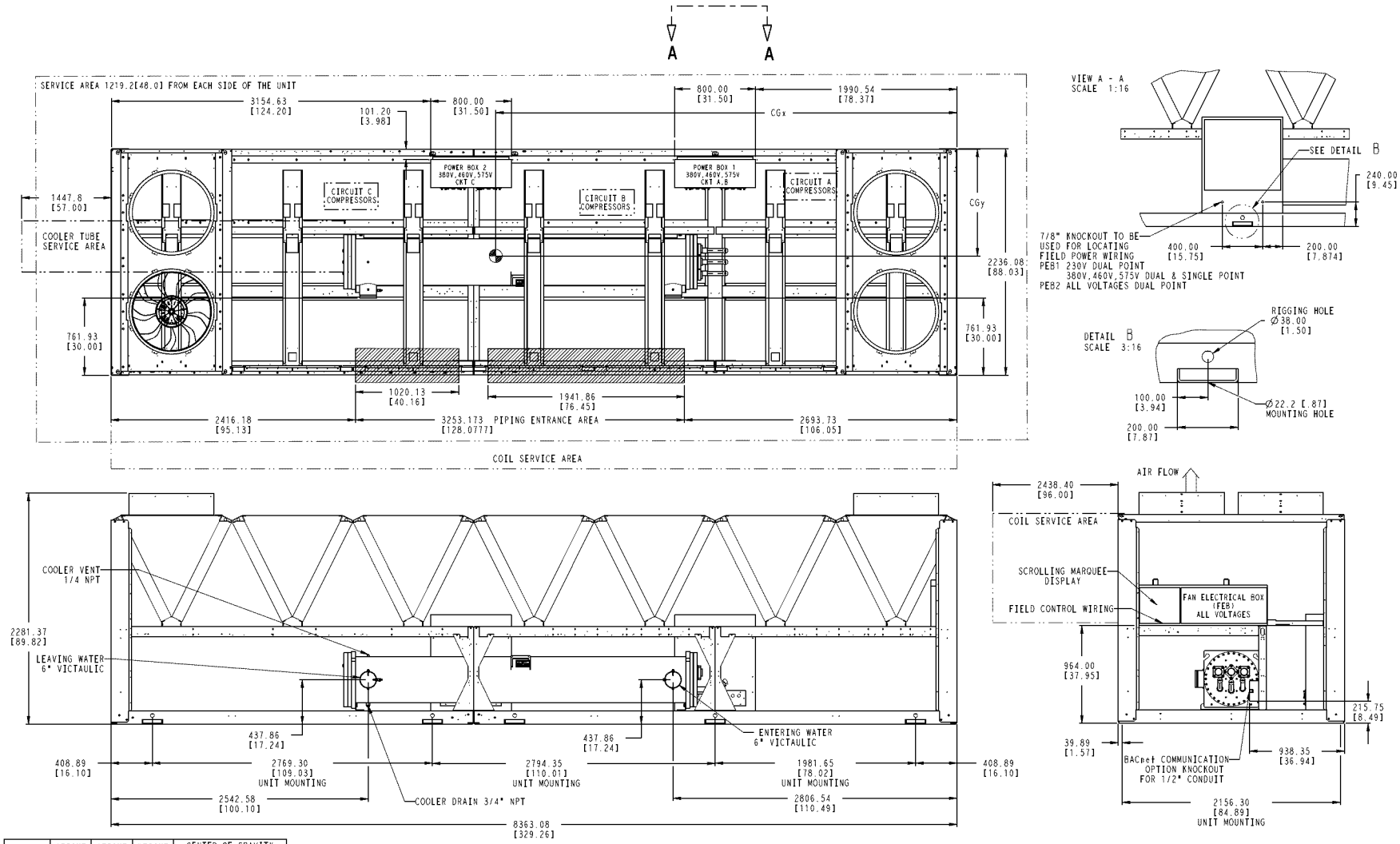
NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.




| | WEIGHT CU/AL lb/kg | WEIGHT CU/CU lb/kg | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|---|---|
| 30RB-210 | 13734 6243 | 15181 6901 | 12772 5793 | 3528 [138.90] | 917 [36.10] |
| 30RB-225 | 14067 6394 | 15514 7052 | 13093 5937 | 3588 [141.26] | 906 [35.67] |

MCHX — Microchannel Condenser Coil

**Fig. 17 — 30RB210, 225 Air-Cooled Chiller Dimensions**

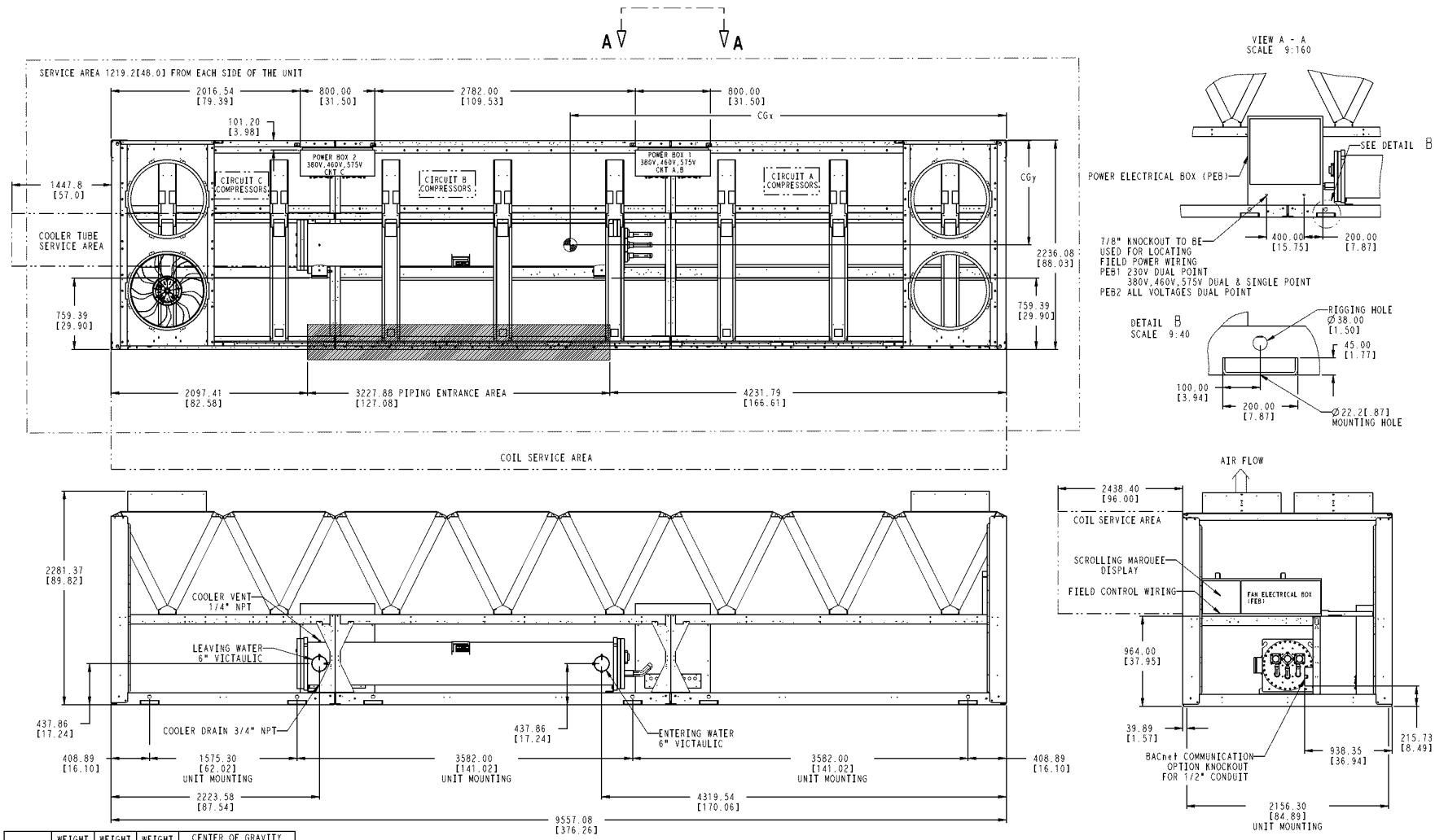



| | WEIGHT CU/AL lb/kg | WEIGHT CU/CU lb/kg | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|---|---|
| 30RB-250 | 15468 7031 | 17157 7799 | 14349 6509 | 4022 [158.35] | 910 [35.86] |

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

MCHX — Microchannel Condenser Coil

**Fig. 18 — 30RB250 Air-Cooled Chiller Dimensions**

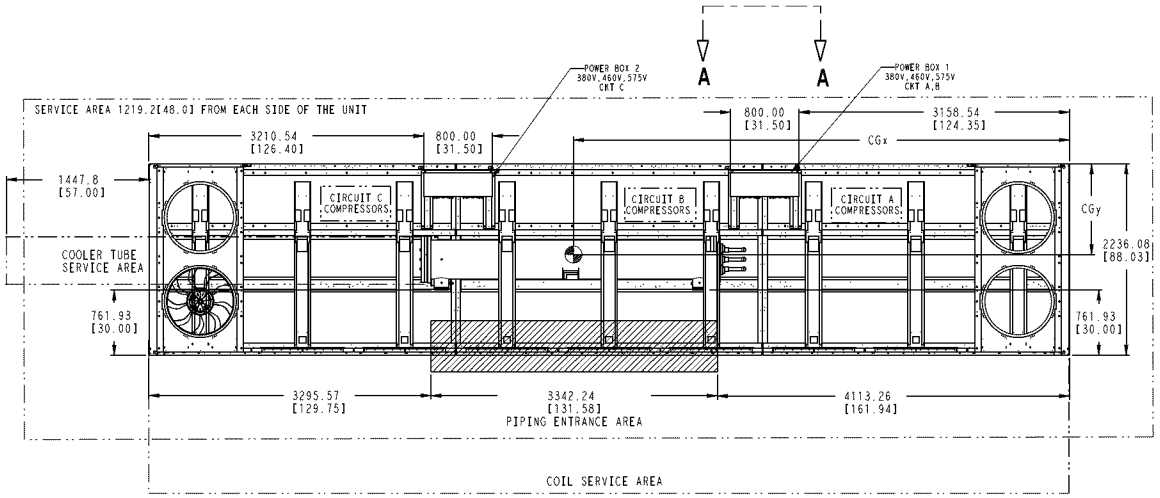


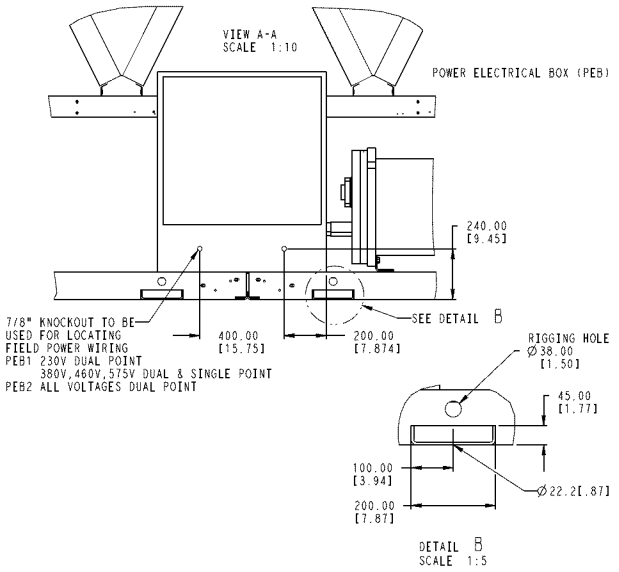

| | WEIGHT CU/AL lb/kg | WEIGHT CU/CU lb/kg | WEIGHT MCHX lb/kg | CENTER OF GRAVITY | |
|---|---|---|---|---|---|
| | | | | CGx MM [INCH] | CGy MM [INCH] |
| 30RB-275 | 16915 7689 | 18845 8566 | 15647 7096 | 4857 [191.22] | 914 [35.98] |

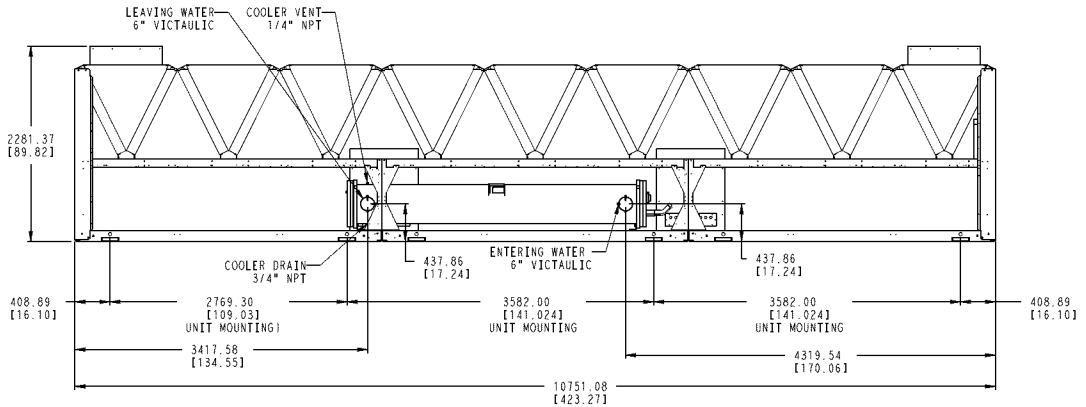
NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

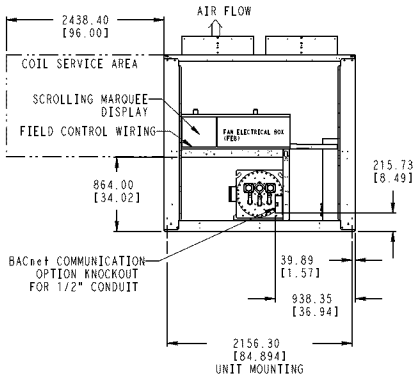
MCHX — Microchannel Condenser Coil

**Fig. 19 — 30RB275 Air-Cooled Chiller Dimensions**




| | WEIGHT CU/AL lb/kg | WEIGHT CU/CU lb/kg | WEIGHT MCHX lb/kg | CENTER OF GRAVITY CGx MM [INCH] | CGy MM [INCH] |
|---|---|---|---|---|---|
| 30RB-300 | 18306<br>8321 | 20477<br>9308 | 16893<br>7659 | 5317<br>[203.33] | 916<br>[36.06] |

NOTES:
1. Unit must have clearances as follows:
   Top — Do not restrict.
   Sides and End — 6′ from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have $^1/_4$″ flare connection.
3. Dimensions are in mm [inches].
4. Allow 8 ft (2.4 m) of service access on either side of unit for condenser coil removal.

MCHX — Microchannel Condenser Coil

**Fig. 20 — 30RB300 Air-Cooled Chiller Dimensions**

## AL/CU COIL UNITS WITHOUT PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) No Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 869 | 913 | 1193 | 1136 | 4111 | | | | |
| 070 | 891 | 936 | 1275 | 1215 | 4317 | | | | |
| 080 | 982 | 958 | 1313 | 1346 | 4600 | | | | |
| 090 | 1159 | 1397 | 1845 | 1531 | 5932 | | | | |
| 100 | 1173 | 1431 | 1952 | 1600 | 6155 | | | | |
| 110 | 1319 | 1448 | 1964 | 1788 | 6519 | | | | |
| 120 | 731 | 1762 | 809 | 985 | 2347 | 1056 | 7,690 | | |
| 130 | 728 | 1850 | 818 | 1168 | 2531 | 949 | 8,045 | | |
| 150 | 893 | 2085 | 888 | 1228 | 2864 | 1217 | 9,174 | | |
| 160 | 1106 | 2189 | 1104 | 1483 | 2923 | 1463 | 10,266 | | |
| 170 | 1142 | 2220 | 1108 | 1487 | 3039 | 1606 | 10,601 | | |
| 190 | 1094 | 1388 | 1484 | 1101 | 1479 | 2004 | 1938 | 1526 | 12,013 |
| 210 | 916 | 1804 | 2139 | 853 | 1311 | 3044 | 2440 | 1228 | 13,734 |
| 225 | 947 | 1836 | 2144 | 855 | 1313 | 3049 | 2569 | 1354 | 14,067 |
| 250 | 1122 | 2271 | 2133 | 850 | 1307 | 3035 | 3166 | 1584 | 15,468 |
| 275 | 627 | 2269 | 2805 | 1292 | 1866 | 3808 | 3169 | 1080 | 16,915 |
| 300 | 899 | 2602 | 2792 | 1284 | 1859 | 3795 | 3640 | 1435 | 18,306 |

## AL/CU COIL UNITS WITHOUT PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) No Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 395 | 415 | 542 | 516 | 1869 | | | | |
| 070 | 405 | 425 | 580 | 552 | 1962 | | | | |
| 080 | 447 | 436 | 597 | 612 | 2091 | | | | |
| 090 | 527 | 635 | 839 | 696 | 2697 | | | | |
| 100 | 533 | 650 | 887 | 727 | 2798 | | | | |
| 110 | 600 | 658 | 893 | 813 | 2963 | | | | |
| 120 | 332 | 799 | 367 | 447 | 1065 | 479 | 3488 | | |
| 130 | 330 | 839 | 371 | 530 | 1148 | 431 | 3649 | | |
| 150 | 405 | 946 | 403 | 557 | 1299 | 552 | 4161 | | |
| 160 | 503 | 995 | 502 | 674 | 1328 | 665 | 4666 | | |
| 170 | 519 | 1009 | 503 | 676 | 1381 | 730 | 4819 | | |
| 190 | 497 | 631 | 674 | 500 | 672 | 911 | 881 | 694 | 5461 |
| 210 | 416 | 820 | 972 | 388 | 596 | 1384 | 1109 | 558 | 6243 |
| 225 | 431 | 835 | 975 | 389 | 597 | 1386 | 1168 | 615 | 6394 |
| 250 | 510 | 1032 | 970 | 386 | 594 | 1380 | 1439 | 720 | 7031 |
| 275 | 285 | 1032 | 1275 | 587 | 848 | 1731 | 1440 | 491 | 7689 |
| 300 | 409 | 1183 | 1269 | 584 | 845 | 1725 | 1654 | 652 | 8321 |

## CU/CU COIL UNITS WITHOUT PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) No Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 992 | 1037 | 1311 | 1254 | 4,593 | | | | |
| 070 | 1014 | 1059 | 1393 | 1333 | 4,799 | | | | |
| 080 | 1106 | 1081 | 1431 | 1464 | 5,082 | | | | |
| 090 | 1342 | 1584 | 2020 | 1711 | 6,656 | | | | |
| 100 | 1355 | 1619 | 2126 | 1780 | 6,879 | | | | |
| 110 | 1503 | 1635 | 2139 | 1967 | 7,243 | | | | |
| 120 | 837 | 1980 | 917 | 1088 | 2551 | 1161 | 8,534 | | |
| 130 | 850 | 2100 | 940 | 1288 | 2764 | 1069 | 9,010 | | |
| 150 | 1015 | 2334 | 1009 | 1348 | 3097 | 1336 | 10,139 | | |
| 160 | 1252 | 2497 | 1266 | 1642 | 3218 | 1599 | 11,472 | | |
| 170 | 1289 | 2528 | 1270 | 1645 | 3334 | 1742 | 11,807 | | |
| 190 | 1257 | 1595 | 1691 | 1263 | 1638 | 2199 | 2133 | 1684 | 13,460 |
| 210 | 1018 | 2045 | 2410 | 978 | 1427 | 3297 | 2681 | 1326 | 15,181 |
| 225 | 1049 | 2078 | 2415 | 981 | 1429 | 3301 | 2810 | 1452 | 15,514 |
| 250 | 1283 | 2577 | 2404 | 976 | 1423 | 3288 | 3463 | 1744 | 17,157 |
| 275 | 732 | 2554 | 3193 | 1501 | 2059 | 4185 | 3446 | 1175 | 18,845 |
| 300 | 1064 | 2950 | 3179 | 1494 | 2053 | 4172 | 3974 | 1591 | 20,477 |

## CU/CU COIL UNITS WITHOUT PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) No Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 451 | 471 | 596 | 570 | 2088 | | | | |
| 070 | 461 | 481 | 633 | 606 | 2181 | | | | |
| 080 | 503 | 491 | 651 | 665 | 2310 | | | | |
| 090 | 610 | 720 | 918 | 778 | 3026 | | | | |
| 100 | 616 | 736 | 966 | 809 | 3127 | | | | |
| 110 | 683 | 743 | 972 | 894 | 3292 | | | | |
| 120 | 380 | 898 | 416 | 494 | 1157 | 527 | 3871 | | |
| 130 | 386 | 952 | 426 | 584 | 1254 | 485 | 4087 | | |
| 150 | 461 | 1059 | 458 | 611 | 1405 | 606 | 4599 | | |
| 160 | 569 | 1135 | 575 | 746 | 1463 | 727 | 5215 | | |
| 170 | 586 | 1149 | 577 | 748 | 1516 | 792 | 5367 | | |
| 190 | 571 | 725 | 769 | 574 | 744 | 1000 | 970 | 765 | 6118 |
| 210 | 463 | 930 | 1095 | 445 | 649 | 1498 | 1219 | 603 | 6901 |
| 225 | 477 | 944 | 1098 | 446 | 650 | 1501 | 1277 | 660 | 7052 |
| 250 | 583 | 1171 | 1093 | 444 | 647 | 1494 | 1574 | 793 | 7799 |
| 275 | 333 | 1161 | 1451 | 682 | 936 | 1902 | 1566 | 534 | 8566 |
| 300 | 484 | 1341 | 1445 | 679 | 933 | 1896 | 1807 | 723 | 9308 |

## MCHX COIL UNITS WITHOUT PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) No Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 800 | 840 | 1098 | 1045 | 3,783 | | | | |
| 070 | 821 | 862 | 1175 | 1120 | 3,978 | | | | |
| 080 | 911 | 889 | 1218 | 1249 | 4,267 | | | | |
| 090 | 1065 | 1283 | 1695 | 1406 | 5,449 | | | | |
| 100 | 1079 | 1316 | 1796 | 1472 | 5,663 | | | | |
| 110 | 1219 | 1339 | 1816 | 1653 | 6,027 | | | | |
| 120 | 660 | 1614 | 737 | 915 | 2210 | 985 | 7,119 | | |
| 130 | 648 | 1683 | 738 | 1088 | 2377 | 870 | 7,402 | | |
| 150 | 810 | 1914 | 805 | 1146 | 2706 | 1136 | 8,517 | | |
| 160 | 1020 | 2020 | 1019 | 1368 | 2698 | 1350 | 9,475 | | |
| 170 | 1055 | 2052 | 1024 | 1374 | 2809 | 1485 | 9,799 | | |
| 190 | 1007 | 1278 | 1367 | 1014 | 1362 | 1846 | 1785 | 1405 | 11,064 |
| 210 | 852 | 1677 | 1989 | 793 | 1219 | 2831 | 2269 | 1142 | 12,772 |
| 225 | 881 | 1709 | 1996 | 796 | 1222 | 2838 | 2391 | 1260 | 13,093 |
| 250 | 1041 | 2107 | 1979 | 789 | 1212 | 2815 | 2937 | 1469 | 14,349 |
| 275 | 580 | 2099 | 2594 | 1195 | 1726 | 3523 | 2931 | 999 | 15,647 |
| 300 | 830 | 2401 | 2576 | 1185 | 1716 | 3502 | 3359 | 1324 | 16,893 |

## MCHX COIL UNITS WITHOUT PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) No Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 060 | 363 | 381 | 498 | 474 | 1716 | | | | |
| 070 | 372 | 391 | 533 | 508 | 1804 | | | | |
| 080 | 413 | 403 | 552 | 566 | 1934 | | | | |
| 090 | 483 | 582 | 769 | 638 | 2472 | | | | |
| 100 | 489 | 597 | 815 | 668 | 2569 | | | | |
| 110 | 553 | 607 | 824 | 750 | 2734 | | | | |
| 120 | 299 | 732 | 334 | 415 | 1002 | 447 | 3229 | | |
| 130 | 294 | 763 | 335 | 493 | 1078 | 394 | 3358 | | |
| 150 | 367 | 868 | 365 | 520 | 1227 | 515 | 3863 | | |
| 160 | 463 | 916 | 492 | 620 | 1224 | 612 | 4297 | | |
| 170 | 478 | 931 | 464 | 623 | 1274 | 673 | 4443 | | |
| 190 | 457 | 580 | 620 | 460 | 618 | 837 | 810 | 637 | 5019 |
| 210 | 386 | 761 | 902 | 360 | 553 | 1284 | 1029 | 518 | 5793 |
| 225 | 400 | 775 | 905 | 361 | 554 | 1287 | 1084 | 571 | 5937 |
| 250 | 472 | 956 | 898 | 358 | 550 | 1277 | 1332 | 666 | 6509 |
| 275 | 263 | 952 | 1176 | 542 | 783 | 1598 | 1329 | 453 | 7096 |
| 300 | 376 | 1089 | 1168 | 537 | 778 | 1588 | 1523 | 600 | 7659 |

*Condenser Coil: Aluminum Fins/Copper Tubing.
†Condenser Coil: Copper Fins/Copper Tubing.
** Condenser Coil: Microchannel (MCHX) Design.

**Fig. 21 — Unit Weights**

## AL/CU COIL UNITS WITH SINGLE PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Al/Cu* | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1085 | 1127 | 1230 | 1184 | 4626 |
| 070 | 1107 | 1150 | 1312 | 1263 | 4832 |
| 080 | 1193 | 1164 | 1354 | 1388 | 5100 |
| 090 | 1353 | 1620 | 1885 | 1575 | 6432 |
| 100 | 1366 | 1655 | 1991 | 1644 | 6655 |
| 110 | 1565 | 1653 | 1974 | 1868 | 7059 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Al/Cu* | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 731 | 2062 | 960 | 961 | 2460 | 1056 | 8,230 |
| 130 | 728 | 2149 | 969 | 1144 | 2645 | 949 | 8,585 |
| 150 | 893 | 2486 | 1031 | 1165 | 3035 | 1217 | 9,827 |
| 160 | 1238 | 2583 | 1104 | 1483 | 3155 | 1357 | 10,919 |
| 170 | 1279 | 2609 | 1108 | 1487 | 3276 | 1495 | 11,254 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1094 | 1510 | 1889 | 1101 | 1479 | 2178 | 1890 | 1526 | 12,666 |

## AL/CU COIL UNITS WITH SINGLE PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Al/Cu* | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 493 | 512 | 559 | 538 | 2103 |
| 070 | 503 | 523 | 597 | 574 | 2196 |
| 080 | 542 | 529 | 616 | 631 | 2318 |
| 090 | 615 | 736 | 857 | 716 | 2924 |
| 100 | 621 | 752 | 905 | 747 | 3025 |
| 110 | 711 | 751 | 897 | 849 | 3209 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Al/Cu* | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 332 | 935 | 435 | 436 | 1116 | 479 | 3733 |
| 130 | 330 | 975 | 440 | 519 | 1200 | 431 | 3894 |
| 150 | 405 | 1128 | 468 | 528 | 1377 | 552 | 4458 |
| 160 | 563 | 1174 | 502 | 674 | 1434 | 617 | 4963 |
| 170 | 582 | 1186 | 503 | 676 | 1489 | 679 | 5116 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 497 | 686 | 858 | 500 | 672 | 990 | 859 | 694 | 5757 |

## CU/CU COIL UNITS WITH SINGLE PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Cu/Cu† | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1208 | 1250 | 1348 | 1302 | 5,108 |
| 070 | 1230 | 1273 | 1430 | 1381 | 5,314 |
| 080 | 1317 | 1287 | 1472 | 1506 | 5,582 |
| 090 | 1537 | 1806 | 2060 | 1753 | 7,156 |
| 100 | 1549 | 1841 | 2166 | 1823 | 7,379 |
| 110 | 1749 | 1839 | 2150 | 2045 | 7,783 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Cu/Cu† | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 837 | 2280 | 1068 | 1065 | 2664 | 1161 | 9,074 |
| 130 | 850 | 2399 | 1091 | 1264 | 2877 | 1069 | 9,550 |
| 150 | 1015 | 2735 | 1153 | 1284 | 3269 | 1336 | 10,792 |
| 160 | 1382 | 2894 | 1266 | 1642 | 3447 | 1495 | 12,125 |
| 170 | 1424 | 2920 | 1270 | 1645 | 3569 | 1633 | 12,460 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1257 | 1718 | 2095 | 1263 | 1638 | 2374 | 2084 | 1684 | 14,113 |

## CU/CU COIL UNITS WITH SINGLE PUMP — SI

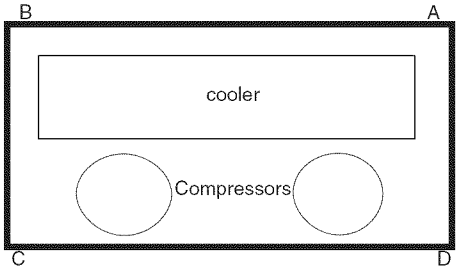
| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Cu/Cu† | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 549 | 568 | 613 | 592 | 2322 |
| 070 | 559 | 579 | 650 | 628 | 2415 |
| 080 | 599 | 585 | 669 | 684 | 2537 |
| 090 | 699 | 821 | 937 | 797 | 3253 |
| 100 | 704 | 837 | 985 | 828 | 3354 |
| 110 | 795 | 836 | 977 | 930 | 3538 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Cu/Cu† | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 380 | 1034 | 484 | 483 | 1209 | 527 | 4116 |
| 130 | 386 | 1088 | 495 | 573 | 1305 | 485 | 4332 |
| 150 | 461 | 1241 | 523 | 583 | 1483 | 606 | 4895 |
| 160 | 628 | 1315 | 575 | 746 | 1567 | 680 | 5511 |
| 170 | 647 | 1327 | 577 | 748 | 1622 | 742 | 5664 |

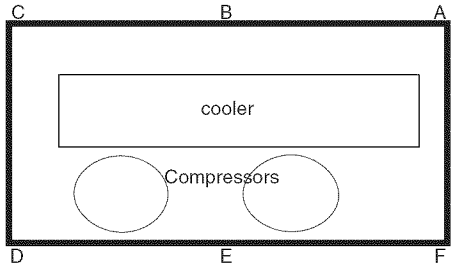
| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 571 | 781 | 952 | 574 | 744 | 1079 | 947 | 765 | 6415 |

*Condenser Coil: Aluminum Fins/Copper Tubing.
†Condenser Coil: Copper Fins/Copper Tubing.
** Condenser Coil: Microchannel (MCHX) Design.

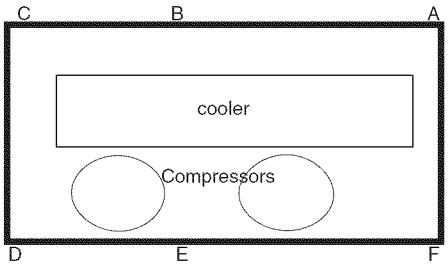
**30RB060-110**



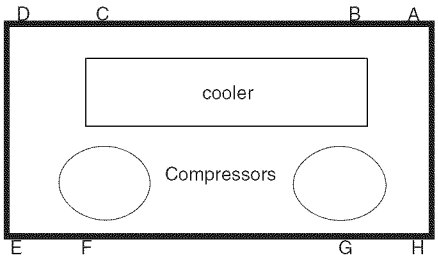

**30RB120-150**




**30RB160, 170, 315A, 315B, 330A, 330B, 345A, 345B, 360B**




**30RB190-300, 360A, 390A, 390B**




NOTE: Corner weights are calculated at mounting locations. Refer to Fig. 2-20 (certified drawings) for mounting locations.

**Fig. 21 — Unit Weights (cont)**

## MCHX COIL UNITS WITH SINGLE PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1008 | 1047 | 1143 | 1100 | 4298 |
| 070 | 1030 | 1069 | 1220 | 1174 | 4493 |
| 080 | 1115 | 1088 | 1266 | 1298 | 4767 |
| 090 | 1251 | 1498 | 1743 | 1457 | 5949 |
| 100 | 1265 | 1532 | 1844 | 1522 | 6163 |
| 110 | 1456 | 1537 | 1836 | 1738 | 6567 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 660 | 1914 | 887 | 891 | 2322 | 985 | 7,659 |
| 130 | 648 | 1982 | 888 | 1064 | 2490 | 870 | 7,942 |
| 150 | 810 | 2316 | 948 | 1083 | 2877 | 1136 | 9,170 |
| 160 | 1148 | 2395 | 1024 | 1376 | 2926 | 1259 | 10,128 |
| 170 | 1188 | 2423 | 1029 | 1381 | 3043 | 1388 | 10,452 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Single Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1012 | 1396 | 1747 | 1019 | 1368 | 2015 | 1748 | 1412 | 11,717 |

## MCHX COIL UNITS WITH SINGLE PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 457 | 475 | 518 | 499 | 1949 |
| 070 | 467 | 485 | 553 | 532 | 2037 |
| 080 | 506 | 493 | 574 | 589 | 2162 |
| 090 | 567 | 679 | 790 | 661 | 2697 |
| 100 | 574 | 695 | 836 | 690 | 2795 |
| 110 | 660 | 697 | 833 | 788 | 2978 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 299 | 868 | 402 | 404 | 1053 | 447 | 3474 |
| 130 | 294 | 899 | 403 | 483 | 1129 | 394 | 3603 |
| 150 | 367 | 1051 | 430 | 491 | 1305 | 515 | 4160 |
| 160 | 521 | 1086 | 464 | 624 | 1327 | 571 | 4593 |
| 170 | 539 | 1099 | 467 | 626 | 1380 | 629 | 4740 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Single Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 459 | 633 | 792 | 462 | 620 | 914 | 763 | 640 | 5313 |

## AL/CU COIL UNITS WITH DUAL PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Al/Cu* | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1218 | 1259 | 1254 | 1213 | 4,944 |
| 070 | 1240 | 1281 | 1336 | 1293 | 5,150 |
| 080 | 1372 | 1339 | 1389 | 1424 | 5,523 |
| 090 | 1518 | 1808 | 1919 | 1611 | 6,855 |
| 100 | 1530 | 1843 | 2025 | 1680 | 7,078 |
| 110 | 1741 | 1796 | 1983 | 1922 | 7,442 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Al/Cu* | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 731 | 2281 | 1061 | 951 | 2534 | 1056 | 8,613 |
| 130 | 728 | 2367 | 1071 | 1133 | 2719 | 949 | 8,968 |
| 150 | 893 | 2864 | 1147 | 1122 | 3177 | 1217 | 10,419 |
| 160 | 1336 | 2962 | 1104 | 1483 | 3344 | 1282 | 11,511 |
| 170 | 1383 | 2983 | 1108 | 1487 | 3471 | 1415 | 11,846 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1094 | 1588 | 2288 | 1101 | 1479 | 2303 | 1879 | 1526 | 13,258 |

## AL/CU COIL UNITS WITH DUAL PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Al/Cu* | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 554 | 572 | 570 | 552 | 2247 |
| 070 | 564 | 582 | 607 | 588 | 2341 |
| 080 | 624 | 609 | 631 | 647 | 2511 |
| 090 | 690 | 822 | 872 | 732 | 3116 |
| 100 | 695 | 838 | 920 | 764 | 3217 |
| 110 | 791 | 817 | 901 | 874 | 3383 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Al/Cu* | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 332 | 1035 | 481 | 431 | 1149 | 479 | 3907 |
| 130 | 330 | 1074 | 486 | 514 | 1233 | 431 | 4068 |
| 150 | 405 | 1299 | 520 | 509 | 1441 | 552 | 4726 |
| 160 | 607 | 1347 | 502 | 674 | 1520 | 583 | 5232 |
| 170 | 629 | 1356 | 503 | 676 | 1578 | 643 | 5385 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Al/Cu* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 497 | 722 | 1040 | 500 | 672 | 1047 | 854 | 1526 | 6014 |

## CU/CU COIL UNITS WITH DUAL PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Cu/Cu† | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1341 | 1382 | 1371 | 1331 | 5,426 |
| 070 | 1363 | 1405 | 1453 | 1411 | 5,632 |
| 080 | 1495 | 1462 | 1507 | 1541 | 6,005 |
| 090 | 1702 | 1994 | 2095 | 1788 | 7,579 |
| 100 | 1714 | 2030 | 2201 | 1858 | 7,802 |
| 110 | 1926 | 1982 | 2160 | 2099 | 8,166 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Cu/Cu† | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 837 | 2498 | 1169 | 1054 | 2739 | 1161 | 9,457 |
| 130 | 850 | 2616 | 1193 | 1252 | 2953 | 1069 | 9,933 |
| 150 | 1015 | 3112 | 1270 | 1240 | 3411 | 1336 | 11,384 |
| 160 | 1481 | 3273 | 1266 | 1642 | 3637 | 1420 | 12,717 |
| 170 | 1527 | 3294 | 1270 | 1645 | 3763 | 1553 | 13,052 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1257 | 1799 | 2492 | 1263 | 1638 | 2502 | 2071 | 1684 | 14,705 |

## CU/CU COIL UNITS WITH DUAL PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Cu/Cu† | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 610 | 628 | 623 | 605 | 2466 |
| 070 | 620 | 638 | 661 | 641 | 2560 |
| 080 | 680 | 665 | 685 | 701 | 2730 |
| 090 | 774 | 906 | 952 | 813 | 3445 |
| 100 | 779 | 923 | 1000 | 845 | 3547 |
| 110 | 875 | 901 | 982 | 954 | 3712 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Cu/Cu† | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 380 | 1133 | 530 | 478 | 1242 | 527 | 4290 |
| 130 | 386 | 1187 | 541 | 568 | 1339 | 485 | 4506 |
| 150 | 461 | 1412 | 576 | 562 | 1547 | 606 | 5164 |
| 160 | 673 | 1488 | 575 | 746 | 1653 | 646 | 5781 |
| 170 | 694 | 1497 | 577 | 748 | 1710 | 706 | 5933 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump Cu/Cu† | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 571 | 818 | 1133 | 574 | 744 | 1137 | 941 | 1684 | 6669 |

## MCHX COIL UNITS WITH DUAL PUMP — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1137 | 1175 | 1171 | 1133 | 4,616 |
| 070 | 1158 | 1197 | 1248 | 1208 | 4,811 |
| 080 | 1289 | 1258 | 1305 | 1338 | 5,190 |
| 090 | 1411 | 1680 | 1784 | 1497 | 6,372 |
| 100 | 1424 | 1715 | 1884 | 1563 | 6,586 |
| 110 | 1626 | 1677 | 1852 | 1795 | 6,950 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 660 | 2134 | 987 | 882 | 2396 | 985 | 8,042 |
| 130 | 648 | 2201 | 989 | 1054 | 2564 | 870 | 8,325 |
| 150 | 810 | 2695 | 1063 | 1041 | 3017 | 1136 | 9,762 |
| 160 | 1244 | 2759 | 1028 | 1381 | 3114 | 1194 | 10,720 |
| 170 | 1289 | 2781 | 1033 | 1386 | 3236 | 1319 | 11,044 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Dual Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 1016 | 1474 | 2124 | 1022 | 1373 | 2138 | 1745 | 1417 | 12,309 |

## MCHX COIL UNITS WITH DUAL PUMP — SI

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 516 | 533 | 531 | 514 | 2094 |
| 070 | 525 | 543 | 566 | 548 | 2182 |
| 080 | 585 | 571 | 592 | 607 | 2355 |
| 090 | 640 | 762 | 809 | 679 | 2890 |
| 100 | 646 | 778 | 854 | 709 | 2987 |
| 110 | 737 | 761 | 840 | 814 | 3152 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 299 | 968 | 448 | 400 | 1087 | 447 | 3648 |
| 130 | 294 | 998 | 449 | 478 | 1163 | 394 | 3776 |
| 150 | 367 | 1223 | 482 | 472 | 1368 | 515 | 4428 |
| 160 | 564 | 1251 | 466 | 626 | 1412 | 541 | 4860 |
| 170 | 585 | 1261 | 468 | 629 | 1468 | 598 | 5009 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Dual Pump MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 461 | 668 | 963 | 463 | 623 | 970 | 791 | 643 | 5582 |

*Condenser Coil: Aluminum Fins/Copper Tubing.
†Condenser Coil: Copper Fins/Copper Tubing.
** Condenser Coil: Microchannel (MCHX) Design.

**Fig. 21 — Unit Weights (cont)**

## MCHX COIL UNITS WITH HEAT RECLAIM — ENGLISH

| UNIT 30RB | MOUNTING WEIGHT (lb) Heat Reclaim MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 1185 | 1175 | 1166 | 1176 | 4703 |
| 070 | 1204 | 1196 | 1245 | 1253 | 4898 |
| 080 | 1302 | 1215 | 1289 | 1381 | 5187 |
| 090 | 1507 | 1689 | 1776 | 1584 | 6555 |
| 100 | 1516 | 1723 | 1878 | 1652 | 6769 |
| 110 | 1671 | 1732 | 1899 | 1832 | 7133 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Heat Reclaim MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 842 | 2353 | 889 | 863 | 2492 | 966 | 8405 |
| 130 | 846 | 2497 | 905 | 1027 | 2685 | 854 | 8814 |
| 150 | 1017 | 2723 | 969 | 1089 | 3019 | 1111 | 9929 |
| 160 | 1229 | 2841 | 1168 | 1314 | 3127 | 1312 | 10991 |
| 170 | 1268 | 2865 | 1171 | 1316 | 3245 | 1450 | 11315 |

| UNIT 30RB | MOUNTING WEIGHT (lb) Heat Reclaim MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 962 | 1311 | 1461 | 937 | 1519 | 2620 | 2296 | 1474 | 12580 |

## MCHX COIL UNITS WITH HEAT RECLAIM — SI

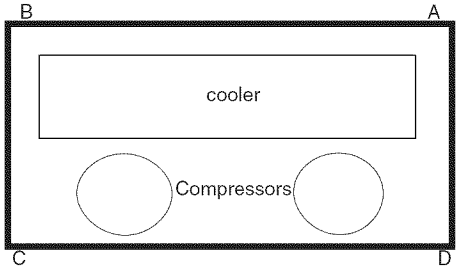
| UNIT 30RB | MOUNTING WEIGHT (kg) Heat Reclaim MCHX** | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | Total |
| 060 | 538 | 533 | 529 | 533 | 2133 |
| 070 | 546 | 542 | 565 | 568 | 2222 |
| 080 | 590 | 551 | 585 | 627 | 2353 |
| 090 | 683 | 766 | 805 | 718 | 2974 |
| 100 | 688 | 782 | 852 | 749 | 3071 |
| 110 | 758 | 786 | 861 | 831 | 3236 |

| UNIT 30RB | MOUNTING WEIGHT (kg) Heat Reclaim MCHX** | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | Total |
| 120 | 382 | 1067 | 403 | 391 | 1130 | 438 | 3813 |
| 130 | 384 | 1133 | 411 | 466 | 1218 | 387 | 3998 |
| 150 | 462 | 1235 | 440 | 494 | 1370 | 504 | 4504 |
| 160 | 557 | 1289 | 530 | 596 | 1419 | 595 | 4986 |
| 170 | 575 | 1300 | 531 | 597 | 1472 | 658 | 5133 |

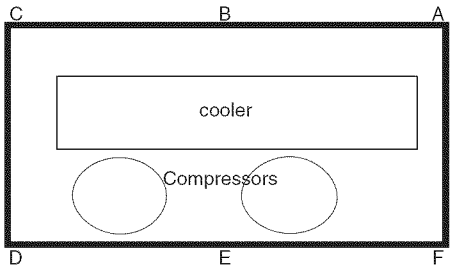
| UNIT 30RB | MOUNTING WEIGHT (kg) Heat Reclaim MCHX** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | Total |
| 190 | 436 | 595 | 663 | 425 | 689 | 1188 | 1041 | 669 | 5706 |

*Condenser Coil: Aluminum Fins/Copper Tubing.
†Condenser Coil: Copper Fins/Copper Tubing.
** Condenser Coil: Microchannel Design.

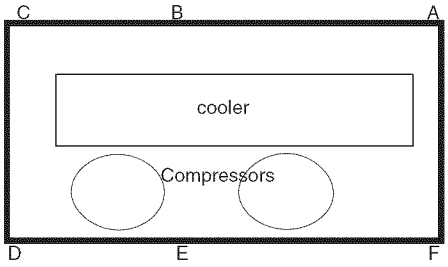
### 30RB060-110




### 30RB120-150




### 30RB160, 170, 315A, 315B, 330A, 330B, 345A, 345B, 360B




### 30RB190-300, 360A, 390A, 390B

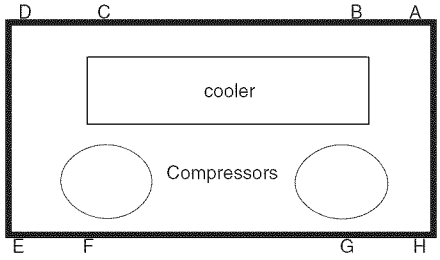



**Fig. 21 — Unit Weights (cont)**

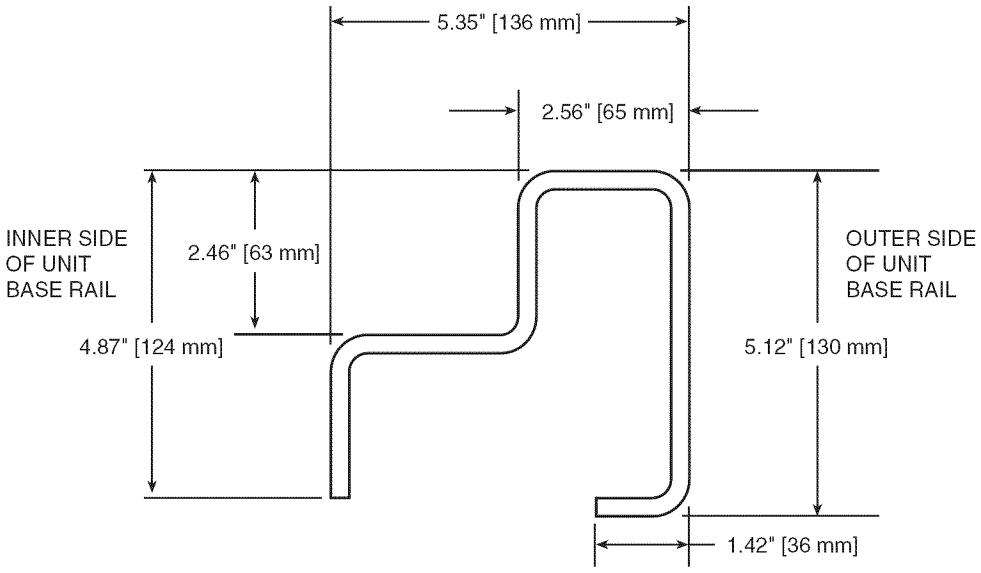



**Fig. 22 — 30RB Base Rail Cross Section**

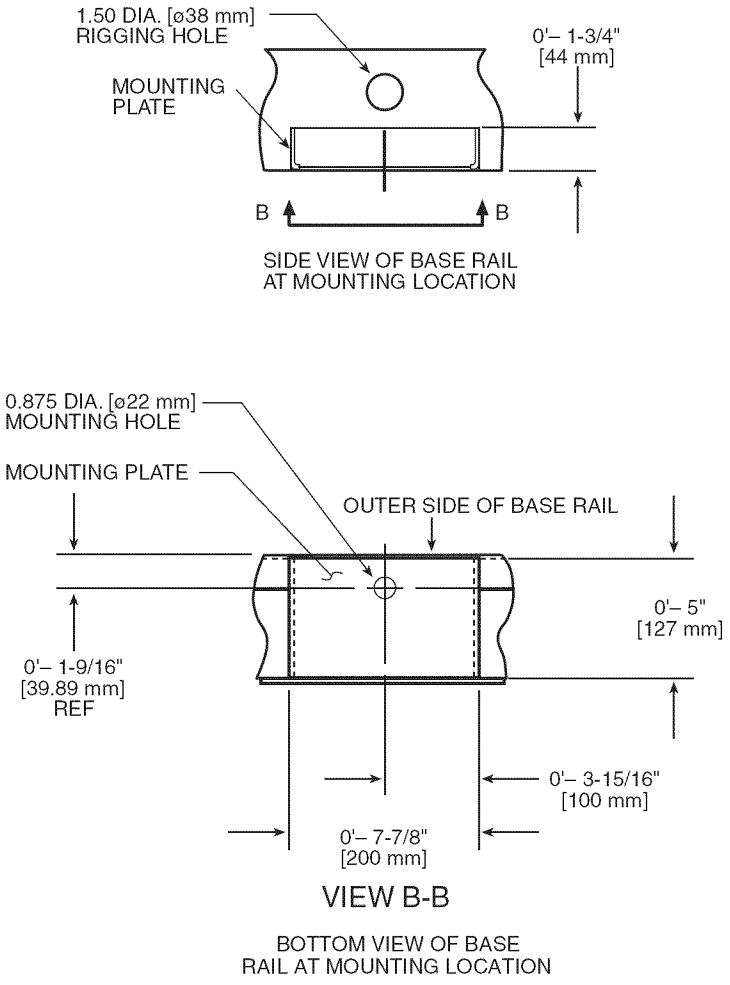



**Fig. 23 — 30RB Mounting Plate**

## Table 3A — Physical Data, 30RB060-300 — English

| UNIT 30RB | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 130 | 150 |
|---|---|---|---|---|---|---|---|---|---|
| **OPERATING WEIGHT (lb)*** | | | | | | | | | |
| **Al-Cu Condenser Coil** | 4111 | 4317 | 4600 | 5932 | 6155 | 6519 | 7690 | 8045 | 9174 |
| **Cu-Cu Condenser Coil** | 4593 | 4799 | 5082 | 6656 | 6879 | 7243 | 8534 | 9010 | 10139 |
| **MCHX Condenser Coil** | 3783 | 3978 | 4267 | 5449 | 5663 | 6027 | 7119 | 7402 | 8517 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | | | | | |
| **Refrigerant Charge (lb)** | | | | | | | | | |
| **Std Coil, Ckt A/Ckt B/Ckt C** | 90/41/— | 112/41/— | 69/69/— | 96/76/— | 96/96/— | 96/106/— | 96/133/— | 133/106/— | 133/133/— |
| **MCHX Coil, Ckt A/Ckt B/Ckt C** | 40/20/— | 40/20/— | 33/33/— | 40/40/— | 40/42/— | 40/53/— | 43/57/— | 54/43/— | 56/62/— |
| **COMPRESSORS** | Scroll, Hermetic | | | | | | | | |
| **Quantity** | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| **Speed (rpm)** | 3500 | | | | | | | | |
| **(Qty) Compressor Model Number Ckt A** | (2) SH240 | (2) SH300 | (2) SH240 | (2) SH300 | (2) SH300 | (2) SH300 | (2) SH300 | (3) SH300 | (3) SH300 |
| **(Qty) Compressor Model Number Ckt B** | (1) SH240 | (1) SH240 | (2) SH240 | (2) SH240 | (2) SH300 | (3) SH240 | (3) SH300 | (3) SH240 | (3) SH300 |
| **(Qty) Compressor Model Number Ckt C** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Oil Charge (Pt, Ckt A/Ckt B/Ckt C)** | 26.2/13.1/— | 26.2/13.1/— | 26.2/26.2/— | 26.2/26.2/— | 26.2/26.2/— | 26.2/39.4/— | 26.2/39.4/— | 39.4/39.4/— | 39.4/39.4/— |
| **No. Capacity Steps** | | | | | | | | | |
| **Standard** | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| **Optional (Maximum)** | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 7 |
| **Minimum Capacity Step (%)** | | | | | | | | | |
| **Standard** | 33 | 29 | 25 | 22 | 25 | 18 | 20 | 15 | 17 |
| **Optional** | 22 | 19 | 16 | 14 | 18 | 12 | 14 | 10 | 12 |
| **Capacity (%)** | | | | | | | | | |
| **Ckt A** | 67 | 71 | 50 | 56 | 50 | 45 | 40 | 56 | 50 |
| **Ckt B** | 33 | 29 | 50 | 44 | 50 | 55 | 60 | 44 | 50 |
| **Ckt C** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | | | | | |
| **Weight (empty, lb)** | 715 | 715 | 856 | 856 | 856 | 970 | 970 | 970 | 1518 |
| **Net Fluid Volume (gal)** | 28.2 | 28.2 | 31.3 | 31.3 | 31.3 | 45.8 | 45.8 | 45.8 | 73.5 |
| **Maximum Refrigerant Pressure (psig)** | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 |
| **Maximum Water Side Pressure without Pumps (psig)** | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| **Maximum Water Side Pressure with Pumps (psig)** | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| **COOLER WATER CONNECTIONS (in.)** | | | | | | | | | |
| **Inlet and Outlet, Victaulic** | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 |
| **Drain (NPT)** | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | | | | | |
| **Standard Low Noise Type** | | | | | | | | | |
| **Fan Speed (rpm) Standard** | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 |
| **No. Blades...Diameter (in.)** | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 |
| **No. Fans (Ckt A/Ckt B/Ckt C)** | 3/1/— | 3/1/— | 2/2/— | 3/3/— | 3/3/— | 3/3/— | 3/4/— | 4/4/— | 4/4/— |
| **Total Airflow (cfm)** | 49,600 | 49,600 | 49,600 | 74,400 | 74,400 | 74,400 | 86,800 | 99,200 | 99,200 |
| **CONDENSER COILS** | | | | | | | | | |
| **No. Coils (Ckt A/Ckt B/Ckt C)** | 3/1/— | 3/1/— | 2/2/— | 3/3/— | 3/3/— | 3/3/— | 3/4/— | 4/4/— | 4/4/— |
| **Total Face Area (sq ft)** | 94 | 94 | 94 | 141 | 141 | 141 | 164 | 188 | 188 |
| **Max Working Refrigerant Pressure (psig)** | 656 | 656 | 656 | 656 | 656 | 656 | 656 | 656 | 656 |
| **OPTIONAL HEAT RECOVERY CONDENSER** | Flooded, Shell and Tube Type | | | | | | | | |
| **Weight (lb) (empty)** | 753 | 753 | 753 | 872 | 872 | 872 | 1236 | 1236 | 1236 |
| **Net Fluid Volume (gal)** | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 15.1 | 15.1 | 15.1 |
| **Maximum Refrigerant Pressure (psig)** | 656 | 656 | 656 | 656 | 656 | 656 | 656 | 656 | 656 |
| **Maximum Water Side Pressure (psig)** | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| **Water Connections (in.)** | | | | | | | | | |
| **Inlet and Outlet, Victaulic** | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 5 |
| **Drain (NPT)** | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 |
| **HYDRONIC MODULE (Optional)** | Pump(s) with pressure/temperature taps and combination valve. | | | | | | | | |
| **Pump** | Single or Dual, 1800 or 3600 rpm | | | | | | | | |
| **CHASSIS DIMENSIONS (ft-in.)** | | | | | | | | | |
| **Length** | | 7-11 | | | 11-10 | | | 15-9 | |
| **Width** | | | | | 7-4 25/32 | | | | |
| **Height** | | | | | 7-6 7/16 | | | | |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil
**N/A** — Not Applicable

*Operating weight does not include any options.

## Table 3A — Physical Data, 30RB060-300 — English (cont)

| UNIT 30RB | 160 | 170 | 190 | 210 | 225 | 250 | 275 | 300 |
|---|---|---|---|---|---|---|---|---|
| **OPERATING WEIGHT (lb)*** | | | | | | | | |
| Al-Cu Condenser Coil | 10,266 | 10,601 | 12,013 | 13,734 | 14,067 | 15,468 | 16,915 | 18,306 |
| Cu-Cu Condenser Coil | 11,472 | 11,807 | 13,460 | 15,181 | 15,514 | 17,157 | 18,845 | 20,477 |
| MCHX Condenser Coil | 9,475 | 9,799 | 11,064 | 12,772 | 13,093 | 14,349 | 15,647 | 16,893 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | | | | |
| Refrigerant Charge (lb) | | | | | | | | |
| Std Coil, Ckt A/Ckt B/Ckt C | 162/106/— | 162/133/— | 162/162/— | 133/106/133 | 133/133/133 | 133/133/162 | 162/162/133 | 162/162/162 |
| MCHX Coil, Ckt A/Ckt B/Ckt C | 83/55/— | 83/64/— | 83/87/— | 59/53/64 | 59/59/64 | 59/59/89 | 83/87/68 | 83/87/94 |
| **COMPRESSORS** | Scroll, Hermetic | | | | | | | |
| Quantity | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 |
| Speed (rpm) | 3500 | | | | | | | |
| (Qty) Compressor Model Number Ckt A | (4) SH300 | (4) SH300 | (4) SH300 | (3) SH300 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| (Qty) Compressor Model Number Ckt B | (3) SH240 | (3) SH300 | (4) SH300 | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| (Qty) Compressor Model Number Ckt C | N/A | N/A | N/A | (3) SH300 | (3) SH300 | (4) SH300 | (3) SH300 | (4) SH300 |
| Oil Charge (Pt, Ckt A/Ckt B/Ckt C) | 52.5/39.4/— | 52.5/39.4/— | 52.5/52.5/— | 39.4/39.4/39.4 | 39.4/39.4/39.4 | 39.4/39.4/52.5 | 52.5/52.5/39.4 | 52.5/52.5/52.5 |
| No. Capacity Steps | | | | | | | | |
| Standard | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 |
| Optional (Maximum) | 8 | 8 | 9 | 10 | 10 | 11 | 12 | 13 |
| Minimum Capacity Step (%) | | | | | | | | |
| Standard | 13 | 14 | 13 | 10 | 11 | 10 | 9 | 8 |
| Optional | 8 | 10 | 9 | 6 | 8 | 7 | 7 | 6 |
| Capacity (%) | | | | | | | | |
| Ckt A | 62 | 57 | 50 | 36 | 33 | 30 | 36 | 33 |
| Ckt B | 38 | 43 | 50 | 28 | 33 | 30 | 36 | 33 |
| Ckt C | N/A | N/A | N/A | 36 | 33 | 40 | 28 | 33 |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | | | | |
| Weight (empty, lb) | 1518 | 1518 | 1518 | 2382 | 2382 | 2382 | 2382 | 2382 |
| Net Fluid Volume (gal) | 73.5 | 73.5 | 73.5 | 86.6 | 86.6 | 86.6 | 86.6 | 86.6 |
| Maximum Refrigerant Pressure (psig) | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 |
| Maximum Water Side Pressure without Pumps (psig) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Maximum Water Side Pressure with Pumps (psig) | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| **COOLER WATER CONNECTIONS (in.)** | | | | | | | | |
| Inlet and Outlet, Victaulic | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Drain (NPT) | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | | | | |
| Standard Low Noise Type | | | | | | | | |
| Fan Speed (rpm) Standard | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 | 1140 |
| No. Blades...Diameter (in.) | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 | 9...30 |
| No. Fans (Ckt A/Ckt B/Ckt C) | 6/4/— | 6/4/— | 6/6/— | 4/4/4 | 4/4/4 | 4/4/6 | 6/6/4 | 6/6/6 |
| Total Airflow (cfm) | 124,000 | 124,000 | 148,800 | 148,800 | 148,800 | 173,600 | 198,400 | 223,200 |
| **CONDENSER COILS** | | | | | | | | |
| No. Coils (Ckt A/Ckt B/Ckt C) | 6/4/— | 6/4/— | 6/6/— | 4/4/4 | 4/4/4 | 4/4/6 | 6/6/4 | 6/6/6 |
| Total Face Area (sq ft) | 235 | 235 | 282 | 282 | 282 | 328 | 375 | 422 |
| Max Working Refrigerant Pressure (psig) | 656 | 656 | 656 | 656 | 656 | 656 | 656 | 656 |
| **OPTIONAL HEAT RECOVERY CONDENSER** | Flooded, Shell and Tube Type | | | | | | | |
| Weight (lb) (empty) | 1296 | 1296 | 1296 | — | — | — | — | — |
| Net Fluid Volume (gal) | 17.4 | 17.4 | 17.4 | — | — | — | — | — |
| Maximum Refrigerant Pressure (psig) | 656 | 656 | 656 | — | — | — | — | — |
| Maximum Water Side Pressure (psig) | 300 | 300 | 300 | — | — | — | — | — |
| Water Connections (in.) | | | | | | | | |
| Inlet and Outlet, Victaulic | 5 | 5 | 5 | — | — | — | — | — |
| Drain (NPT) | 3/8 | 3/8 | 3/8 | — | — | — | — | — |
| **HYDRONIC MODULE (Optional)** | Pump(s) with pressure/temperature taps and combination valve. | | | | | | | |
| Pump | Single or Dual, 1800 or 3600 rpm | | | Not available | | | | |
| **CHASSIS DIMENSIONS (ft-in.)** | | | | | | | | |
| Length | 19-8 | | | 23-7 | | 27-6 | 31-5 | 35-4 |
| Width | 7-4 25/32 | | | | | | | |
| Height | 7-6 7/16 | | | | | | | |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil
**N/A** — Not Applicable

*Operating weight does not include any options.

## Table 3B — Physical Data, 30RB060-300 — SI

| UNIT 30RB | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 130 | 150 |
|---|---|---|---|---|---|---|---|---|---|
| **OPERATING WEIGHT (kg)*** | | | | | | | | | |
| Al-Cu Condenser Coil | 1869 | 1962 | 2091 | 2697 | 2798 | 2963 | 3488 | 3649 | 4161 |
| Cu-Cu Condenser Coil | 2088 | 2181 | 2310 | 3026 | 3127 | 3292 | 3871 | 4087 | 4599 |
| MCHX Condenser Coil | 1716 | 1804 | 1934 | 2472 | 2569 | 2734 | 3229 | 3358 | 3863 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | | | | | |
| Refrigerant Charge (kg) | | | | | | | | | |
| Std Coil, Ckt A/Ckt B/Ckt C | 40.6/18.4/— | 50.8/18.4/— | 31.1/31.1/— | 43.5/34.5/— | 43.5/43.5/— | 43.5/48.1/— | 43.5/60.3/— | 60.3/48.1/— | 60.3/60.3/— |
| MCHX Coil, Ckt A/Ckt B/Ckt C | 18.1/9.1/— | 18.1/9.1/— | 15.0/15.0/— | 18.1/18.1/— | 18.1/19.1/— | 18.1/24.0/— | 19.5/25.9/— | 24.5/19.5/— | 25.4/28.1/— |
| **COMPRESSORS** | Scroll, Hermetic | | | | | | | | |
| Quantity | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| Speed (r/s) | 58.3 | | | | | | | | |
| (Qty) Compressor Model Number Ckt A | (2) SH240 | (2) SH300 | (2) SH240 | (2) SH300 | (2) SH300 | (2) SH300 | (2) SH300 | (3) SH300 | (3) SH300 |
| (Qty) Compressor Model Number Ckt B | (1) SH240 | (1) SH240 | (2) SH240 | (2) SH240 | (2) SH300 | (3) SH240 | (3) SH300 | (3) SH240 | (3) SH300 |
| (Qty) Compressor Model Number Ckt C | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Oil Charge (L, Ckt A/Ckt B/Ckt C) | 12.4/6.2/— | 12.4/6.2/— | 12.4/12.4/— | 12.4/12.4/— | 12.4/12.4/— | 12.4/18.6/— | 12.4/18.6/— | 18.6/18.6/— | 18.6/18.6/— |
| No. Capacity Steps | | | | | | | | | |
| Standard | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| Optional (Maximum) | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | 7 |
| Minimum Capacity Step (%) | | | | | | | | | |
| Standard | 33 | 29 | 25 | 22 | 25 | 18 | 20 | 15 | 17 |
| Optional | 22 | 19 | 16 | 14 | 18 | 12 | 14 | 10 | 12 |
| Capacity (%) | | | | | | | | | |
| Ckt A | 67 | 71 | 50 | 56 | 50 | 45 | 40 | 56 | 50 |
| Ckt B | 33 | 29 | 50 | 44 | 50 | 55 | 60 | 44 | 50 |
| Ckt C | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | | | | | |
| Weight (empty, kg) | 324 | 324 | 388 | 388 | 388 | 440 | 440 | 440 | 689 |
| Net Fluid Volume (L) | 106 | 106 | 118 | 118 | 118 | 173 | 173 | 173 | 278 |
| Maximum Refrigerant Pressure (kPa) | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 |
| Maximum Water Side Pressure without Pumps (kPa) | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 |
| Maximum Water Side Pressure with Pumps (kPa) | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 |
| **WATER CONNECTIONS (in.)** | | | | | | | | | |
| Inlet and Outlet, Victaulic | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 |
| Drain (NPT) | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | | | | | |
| Standard Low Noise Type | | | | | | | | | |
| Fan Speed (r/s) Standard | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| No. Blades...Diameter (mm) | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 |
| No. Fans (Ckt A/Ckt B/Ckt C) | 3/1/— | 3/1/— | 2/2/— | 3/3/— | 3/3/— | 3/3/— | 3/4/— | 4/4/— | 4/4/— |
| Total Airflow (L/s) | 23 409 | 23 409 | 23 409 | 35 113 | 35 113 | 35 113 | 40 965 | 46 817 | 46 817 |
| **CONDENSER COILS** | | | | | | | | | |
| No. Coils (Ckt A/Ckt B/Ckt C) | 3/1/— | 3/1/— | 2/2/— | 3/3/— | 3/3/— | 3/3/— | 3/4/— | 4/4/— | 4/4/— |
| Total Face Area (sq m) | 8.73 | 8.73 | 8.73 | 13.1 | 13.1 | 13.1 | 15.24 | 17.47 | 17.47 |
| Max Working Refrigeration Pressure (kPa) | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 |
| **OPTIONAL HEAT RECOVERY CONDENSER** | Flooded, Shell and Tube Type | | | | | | | | |
| Weight (kg) (empty) | 342 | 342 | 342 | 396 | 396 | 396 | 562 | 562 | 562 |
| Net Fluid Volume (L) | 30.3 | 30.3 | 30.3 | 37.9 | 37.9 | 37.9 | 57.2 | 57.2 | 57.2 |
| Maximum Refrigerant Pressure (kPa) | 4523 | 4523 | 4523 | 4523 | 4523 | 4523 | 4523 | 4523 | 4523 |
| Maximum Water Side Pressure (kPa) | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 |
| Water Connections (in.) | | | | | | | | | |
| Inlet and Outlet, Victaulic | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 5 |
| Drain (NPT) | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 | 3/8 |
| **HYDRONIC MODULE (Optional)** Pump | Pump(s) with pressure/temperature taps and combination valve. Single or Dual, 29.2 or 58.3 r/s | | | | | | | | |
| **CHASSIS DIMENSIONS** | | | | | | | | | |
| Length (mm) | 2412 | | | 3606 | | | 4800 | | |
| Width (mm) | 2255 | | | | | | | | |
| Height (mm) | 2296.9 | | | | | | | | |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil
**N/A** — Not Applicable

*Operating weight does not include any options.

## Table 3B — Physical Data, 30RB060-300 — SI (cont)

| UNIT 30RB | 160 | 170 | 190 | 210 | 225 | 250 | 275 | 300 |
|---|---|---|---|---|---|---|---|---|
| **OPERATING WEIGHT (kg)*** | | | | | | | | |
| **Al-Cu Condenser Coil** | 4666 | 4819 | 5461 | 6243 | 6394 | 7031 | 7686 | 8321 |
| **Cu-Cu Condenser Coil** | 5215 | 5367 | 6118 | 6901 | 7052 | 7799 | 8566 | 9308 |
| **MCHX Condenser Coil** | 4297 | 4443 | 5019 | 5793 | 5937 | 6509 | 7096 | 7659 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | | | | |
| **Refrigerant Charge (kg)** | | | | | | | | |
| **Std Coil, Ckt A/Ckt B/Ckt C** | 73.5/48.1/— | 73.5/60.3/— | 73.5/73.5/— | 60.3/48.1/60.3 | 60.3/60.3/60.3 | 60.3/60.3/73.5 | 73.5/73.5/60.3 | 73.5/73.5/73.5 |
| **MCHX Coil, Ckt A/Ckt B/Ckt C** | 37.6/24.9/— | 37.6/29.0/— | 37.6/39.5/— | 26.8/24.0/29.0 | 26.8/26.8/29.0 | 26.8/26.8/40.4 | 37.6/39.5/30.8 | 37.6/39.5/42.6 |
| **COMPRESSORS** | Scroll, Hermetic | | | | | | | |
| **Quantity** | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 |
| **Speed (r/s)** | 58.3 | | | | | | | |
| **(Qty) Compressor Model Number Ckt A** | (4) SH300 | (4) SH300 | (4) SH300 | (3) SH300 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| **(Qty) Compressor Model Number Ckt B** | (3) SH240 | (3) SH300 | (4) SH300 | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| **(Qty) Compressor Model Number Ckt C** | N/A | N/A | N/A | (3) SH300 | (3) SH300 | (4) SH300 | (3) SH300 | (4) SH300 |
| **Oil Charge (L, Ckt A/Ckt B/Ckt C)** | 24.8/18.6/— | 24.8/18.6/— | 24.8/24.8/— | 18.6/18.6/18.6 | 18.6/18.6/18.6 | 18.6/18.6/24.8 | 24.8/24.8/18.6 | 24.8/24.8/24.8 |
| **No. Capacity Steps** | | | | | | | | |
| **Standard** | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 |
| **Optional (Maximum)** | 8 | 8 | 9 | 10 | 10 | 11 | 12 | 13 |
| **Minimum Capacity Step (%)** | | | | | | | | |
| **Standard** | 13 | 14 | 13 | 10 | 11 | 10 | 9 | 8 |
| **Optional** | 8 | 10 | 9 | 6 | 8 | 7 | 7 | 6 |
| **Capacity (%)** | | | | | | | | |
| **Ckt A** | 62 | 57 | 50 | 38 | 33 | 30 | 36 | 33 |
| **Ckt B** | 38 | 43 | 50 | 28 | 33 | 30 | 36 | 33 |
| **Ckt C** | N/A | N/A | N/A | 36 | 33 | 40 | 28 | 33 |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | | | | |
| **Weight (empty, kg)** | 689 | 689 | 689 | 1080 | 1080 | 1080 | 1080 | 1080 |
| **Net Fluid Volume (L)** | 278 | 278 | 278 | 327 | 327 | 327 | 327 | 327 |
| **Maximum Refrigerant Pressure (kPa)** | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 | 3068 |
| **Maximum Water Side Pressure without Pumps (kPa)** | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 | 2068 |
| **Maximum Water Side Pressure with Pumps (kPa)** | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 |
| **WATER CONNECTIONS (in.)** | | | | | | | | |
| **Inlet and Outlet, Victaulic** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| **Drain (NPT)** | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | | | | |
| **Standard Low Noise Type** | | | | | | | | |
| **Fan Speed (r/s) Standard** | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| **No. Blades...Diameter (mm)** | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 | 9...762 |
| **No. Fans (Ckt A/Ckt B/Ckt C)** | 6/4/— | 6/4/— | 6/6/— | 4/4/4 | 4/4/4 | 4/4/6 | 6/6/4 | 6/6/6 |
| **Total Airflow (L/s)** | 58 521 | 58 521 | 70 226 | 70 226 | 70 226 | 81 930 | 93 634 | 105 339 |
| **CONDENSER COILS** | | | | | | | | |
| **No. Coils (Ckt A/Ckt B/Ckt C)** | 6/4/— | 6/4/— | 6/6/— | 4/4/4 | 4/4/4 | 4/4/6 | 6/6/4 | 6/6/6 |
| **Total Face Area (sq m)** | 21.83 | 21.83 | 26.2 | 26.2 | 26.2 | 30.47 | 34.84 | 39.21 |
| **Max Working Refrigeration Pressure (kPa)** | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 | 4522 |
| **OPTIONAL HEAT RECOVERY CONDENSER** | Flooded, Shell and Tube Type | | | | | | | |
| **Weight (kg) (empty)** | 589 | 589 | 589 | — | — | — | — | — |
| **Net Fluid Volume (L)** | 65.9 | 65.9 | 65.9 | — | — | — | — | — |
| **Maximum Refrigerant Pressure (kPa)** | 4523 | 4523 | 4523 | — | — | — | — | — |
| **Maximum Water Side Pressure (kPa)** | 2068 | 2068 | 2068 | — | — | — | — | — |
| **Water Connections (in.)** | | | | | | | | |
| **Inlet and Outlet, Victaulic** | 5 | 5 | 5 | — | — | — | — | — |
| **Drain (NPT)** | 3/8 | 3/8 | 3/8 | — | — | — | — | — |
| **HYDRONIC MODULE (Optional)** | Pump(s) with pressure/temperature taps and combination valve. | | | Not available | | | | |
| **Pump** | Single or Dual, 29.2 or 58.3 r/s | | | | | | | |
| **CHASSIS DIMENSIONS** | | | | | | | | |
| **Length (mm)** | 5994 | 5994 | 7188 | 7188 | 7188 | 8382 | 9576 | 10 770 |
| **Width (mm)** | 2255 | | | | | | | |
| **Height (mm)** | 2296.9 | | | | | | | |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil
**N/A** — Not Applicable

*Operating weight does not include any options.

## Table 4A — Physical Data — 30RB315-390 — English

| UNIT 30RB | 315 | 330 | 345 | 360 | 390 |
|---|---|---|---|---|---|
| **OPERATING WEIGHT (Module A/Module B, lb)*** | | | | | |
| Al-Cu Condenser Coil | 10,266/10,266 | 10,601/10,266 | 10,601/10,601 | 12,013/10,601 | 12,013/12,013 |
| Cu-Cu Condenser Coil | 11,472/11,472 | 11,807/11,472 | 11,807/11,807 | 13,460/11,807 | 13,460/13,460 |
| MCHX Condenser Coil | 9,475/9,475 | 9,799/9,475 | 9,799/9,799 | 11,064/9,799 | 11,064/11,064 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | |
| Circuits Qty | 4 | 4 | 4 | 4 | 4 |
| Refrigerant Charge | | | | | |
| Std Coil, Module A Ckt A/Ckt B (lb) | 162/106 | 162/133 | 162/133 | 162/162 | 162/162 |
| Std Coil, Module B Ckt A/Ckt B (lb) | 162/106 | 162/106 | 162/133 | 162/133 | 162/162 |
| MCHX Coil, Module A Ckt A/Ckt B (lb) | 83/55 | 83/64 | 83/64 | 83/87 | 83/87 |
| MCHX Coil, Module B Ckt A/Ckt B (lb) | 83/55 | 83/55 | 83/64 | 83/64 | 83/87 |
| **COMPRESSORS** | Scroll, Hermetic | | | | |
| Total Quantity | 14 | 14 | 14 | 15 | 16 |
| Speed (rpm) | | | 3500 | | |
| Module A, (Qty) Compressor Model Number Ckt A | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 |
| Module A, (Qty) Compressor Model Number Ckt B | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| Module B, (Qty) Compressor Model Number Ckt A | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 |
| Module B, (Qty) Compressor Model Number Ckt B | (3) SH240 | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 |
| Module A Oil Charge (Pt, Ckt A/Ckt B) | 52.5/39.4 | 52.5/39.4 | 52.5/39.4 | 52.5/52.5 | 52.5/52.5 |
| Module B Oil Charge (Pt, Ckt A/Ckt B) | 52.5/39.4 | 52.5/39.4 | 52.5/39.4 | 52.5/39.4 | 52.5/52.5 |
| No. Capacity Steps | | | | | |
| Standard | 14 | 14 | 14 | 15 | 16 |
| Optional (Maximum) | 16 | 16 | 16 | 17 | 18 |
| Minimum Capacity Step (%) | | | | | |
| Standard | 6 | 6 | 7 | 7 | 6 |
| Optional | 5 | 4 | 6 | 5 | 5 |
| Capacity (%) | | | | | |
| Module A, Ckt A | 31 | 30 | 29 | 27 | 25 |
| Module A, Ckt B | 19 | 22 | 21 | 27 | 25 |
| Module B, Ckt A | 31 | 30 | 29 | 27 | 25 |
| Module B, Ckt B | 19 | 18 | 21 | 20 | 25 |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | |
| Module A Weight (empty, lb) | 1518 | 1518 | 1518 | 1518 | 1518 |
| Module B Weight (empty, lb) | 1518 | 1518 | 1518 | 1518 | 1518 |
| Net Fluid Volume (gal) Module A/Module B | 73.5/73.5 | 73.5/73.5 | 73.5/73.5 | 73.5/73.5 | 73.5/73.5 |
| Maximum Refrigerant Pressure (psig) | 445 | 445 | 445 | 445 | 445 |
| Maximum Water Side Pressure (psig) | 300 | 300 | 300 | 300 | 300 |
| **WATER CONNECTIONS (in.)** | | | | | |
| Inlet and Outlet, Victaulic | 6 | 6 | 6 | 6 | 6 |
| Drain (NPT) | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | |
| Standard Low Noise Type | | | | | |
| Fan Speed (rpm) Standard | 1140 | 1140 | 1140 | 1140 | 1140 |
| Module A No. Blades...Diameter (in.) Ckt A/Ckt B | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 |
| Module B No. Blades...Diameter (in.) Ckt A/Ckt B | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 | 9...30/9...30 |
| Total No. Fans | 20 | 20 | 20 | 22 | 24 |
| Module A No. Fans (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/6 | 6/6 |
| Module B No. Fans (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/4 | 6/6 |
| Total Airflow (cfm) | 248,000 | 248,000 | 248,000 | 272,800 | 297,600 |
| **CONDENSER COILS** | | | | | |
| Module A No. Coils (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/6 | 6/6 |
| Module B No. Coils (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/4 | 6/6 |
| Total Face Area (sq ft) | 470 | 470 | 470 | 517 | 564 |
| Max Working Refrigerant Pressure (psig) | 656 | 656 | 656 | 656 | 656 |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil

*No pumps are available for models 30RB315-390.

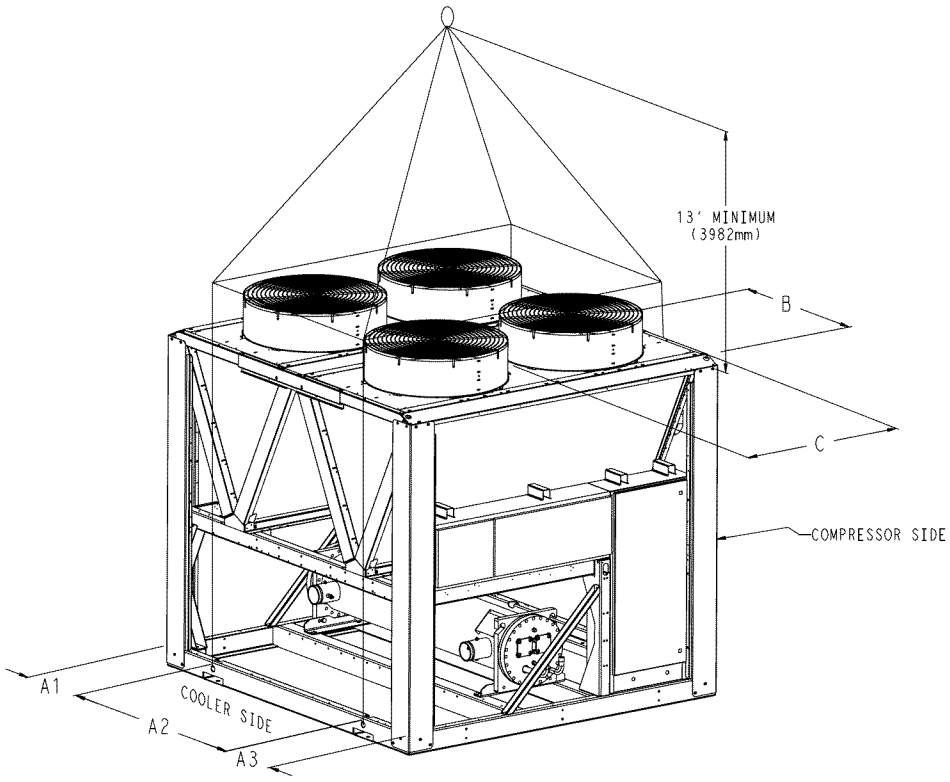
## Table 4B — Physical Data — 30RB315-390 — SI

| UNIT 30RB | 315 | 330 | 345 | 360 | 390 |
|---|---|---|---|---|---|
| **OPERATING WEIGHT (Module A/Module B, kg)*** | | | | | |
| Al-Cu Condenser Coil | 4656/4656 | 4808/4656 | 4808/4808 | 5448/4808 | 5448/5448 |
| Cu-Cu Condenser Coil | 5203/5203 | 5354/5203 | 5354/5354 | 6104/5354 | 6104/6104 |
| MCHX Condenser Coil | 4297/4297 | 4444/4297 | 4444/4444 | 5018/4444 | 5018/5018 |
| **REFRIGERANT TYPE** | R-410A, EXV Controlled System | | | | |
| Circuits Qty | 4 | 4 | 4 | 4 | 4 |
| Refrigerant Charge | | | | | |
| Std Coil, Module A Ckt A/Ckt B (kg) | 73.5/48.1 | 73.5/60.3 | 73.5/60.3 | 73.5/73.5 | 73.5/73.5 |
| Std Coil, Module B Ckt A/Ckt B (kg) | 73.5/48.1 | 73.5/48.1 | 73.5/60.3 | 73.5/60.3 | 73.5/73.5 |
| MCHX Coil, Module A Ckt A/Ckt B (kg) | 37.6/24.9 | 37.6/29.0 | 37.6/29.0 | 37.6/39.5 | 37.6/39.5 |
| MCHX Coil, Module B Ckt A/Ckt B (kg) | 37.6/24.9 | 37.6/24.9 | 37.6/29.0 | 37.6/29.0 | 37.6/39.5 |
| **COMPRESSORS** | Scroll, Hermetic | | | | |
| Total Quantity | 14 | 14 | 14 | 15 | 16 |
| Speed (r/s) | | | 58.3 | | |
| Module A, (Qty) Compressor Model Number Ckt A | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 |
| Module A, (Qty) Compressor Model Number Ckt B | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 | (4) SH300 |
| Module B, (Qty) Compressor Model Number Ckt A | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 | (4) SH300 |
| Module B, (Qty) Compressor Model Number Ckt B | (3) SH240 | (3) SH240 | (3) SH300 | (3) SH300 | (4) SH300 |
| Module A Oil Charge (L, Ckt A/Ckt B) | 24.8/18.6 | 24.8/18.6 | 24.8/18.6 | 24.8/24.8 | 24.8/24.8 |
| Module B Oil Charge (L, Ckt A/Ckt B) | 24.8/18.6 | 24.8/18.6 | 24.8/18.6 | 24.8/18.6 | 24.8/24.8 |
| No. Capacity Steps | | | | | |
| Standard | 14 | 14 | 14 | 15 | 16 |
| Optional (Maximum) | 16 | 16 | 16 | 17 | 18 |
| Minimum Capacity Step (%) | | | | | |
| Standard | 6 | 6 | 7 | 7 | 6 |
| Optional | 5 | 4 | 6 | 5 | 5 |
| Capacity (%) | | | | | |
| Module A, Ckt A | 31 | 30 | 29 | 27 | 25 |
| Module A, Ckt B | 19 | 22 | 21 | 27 | 25 |
| Module B, Ckt A | 31 | 30 | 29 | 27 | 25 |
| Module B, Ckt B | 19 | 18 | 21 | 20 | 25 |
| **COOLER** | Direct Expansion, Shell and Tube Type | | | | |
| Module A Weight (empty, kg) | 689 | 689 | 689 | 689 | 689 |
| Module B Weight (empty, kg) | 689 | 689 | 689 | 689 | 689 |
| Net Fluid Volume (L) Module A/Module B | 278/278 | 278/278 | 278/278 | 278/278 | 278/278 |
| Maximum Refrigerant Pressure (kPa) | 3068 | 3068 | 3068 | 3068 | 3068 |
| Maximum Water Side Pressure (kPa) | 2068 | 2068 | 2068 | 2068 | 2068 |
| **WATER CONNECTIONS (in.)** | | | | | |
| Inlet and Outlet, Victaulic | 6 | 6 | 6 | 6 | 6 |
| Drain (NPT) | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 |
| **CONDENSER FANS** | Shrouded Axial Type, Vertical Discharge | | | | |
| Standard Low Noise Type | | | | | |
| Fan Speed (r/s) Standard | 19 | 19 | 19 | 19 | 19 |
| Module A No. Blades...Diameter (mm) Ckt A/Ckt B | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 |
| Module B No. Blades...Diameter (mm) Ckt A/Ckt B | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 | 9...762/9...762 |
| Total No. Fans | 20 | 20 | 20 | 22 | 24 |
| Module A No. Fans (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/6 | 6/6 |
| Module B No. Fans (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/4 | 6/6 |
| Total Airflow (L/s) | 117 042 | 117 042 | 117 042 | 128 747 | 140 452 |
| **CONDENSER COILS** | | | | | |
| Module A No. Coils (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/6 | 6/6 |
| Module B No. Coils (Ckt A/Ckt B) | 6/4 | 6/4 | 6/4 | 6/4 | 6/6 |
| Total Face Area (sq m) | 43.66 | 43.66 | 43.66 | 48.03 | 52.4 |
| Max Working Refrigerant Pressure (kPa) | 4522 | 4522 | 4522 | 4522 | 4522 |

LEGEND

**Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
**Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
**EXV** — Electronic Expansion Valve
**MCHX** — Microchannel Condenser Coil

*No pumps are available for models 30RB315-390.




CAUTION- NOTICE TO RIGGERS:

ALL PANELS MUST BE IN PLACE WHEN RIGGING. DO NOT ATTEMPT TO FORK THESE UNITS IF NO SKID IS SUPPLIED.

NOTES:
1. 1.50 DIA. (38.1mm) LIFTING HOLES PROVIDED FOR FIELD SUPPLIED CLEVIS.
2. RIG WITH A MINIMUM OF 25FT (7620MM) LENGTH CHAINS OR CABLES.
3. IF CENTRAL LIFTING POINT IS USED, IT MUST BE A MINIMUM OF 13 FT. (3962mm) ABOVE THE TOP OF THE UNIT.
4. SPREADER BARS MADE FROM STEEL OR DOUBLE NAILED, AND NOTCHED 2X6's APPROXIMATELY 8FT. (2438mm) LONG, MUST BE PLACED JUST ABOVE THE TOP OF THE UNIT (AND STACKS) TO REDUCE THE RISK OF DAMAGE TO THE TOP OF THE UNIT AND COILS.
5. IF OVERHEAD RIGGING IS NOT AVAILABLE, THE UNIT CAN BE MOVED ON ROLLERS OR DRAGGED. WHEN UNIT IS MOVED ON ROLLERS, THE UNIT SKID, IF EQUIPPED, MUST BE REMOVED. TO LIFT THE UNIT, USE JACKS AT THE RIGGING POINTS. USE A MINIMUM OF ONE ROLLER EVERY 6FT. (1829mm) TO DISTRIBUTE THE LOAD. IF THE UNIT IS TO BE DRAGGED, LIFT THE UNIT AS DESCRIBED ABOVE, AND PLACE UNIT ON A PAD. APPLY MOVING FORCE TO THE PAD, NOT THE UNIT. WHEN IN ITS FINAL LOCATION, RAISE THE UNIT AND REMOVE THE PAD.
6. CHECK BILL OF LADING FOR SHIPPING WEIGHT OF UNIT.

| MODEL NUMBER | MAX. SHIPPING WT. W/O PACKAGING | | MAX. SHIPPING WT. WITH PACKAGING | | LIFTING HOLES | | | | | | CENTER OF GRAVITY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | "A1" | | "A2" | | "A3" | | "B" | | "C" | |
| | LB | KG | LB | KG | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 30RBA060 | 4705 | 2134 | 5685 | 2579 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 45.8 | 1164.3 | 40.9 | 1037.9 |
| 30RBA060-CU | 5187 | 2353 | 6167 | 2797 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 45.8 | 1164.3 | 40.9 | 1037.9 |
| 30RBA070 | 4911 | 2228 | 5891 | 2672 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 45.9 | 1164.8 | 39.9 | 1012.7 |
| 30RBA070-CU | 5393 | 2446 | 6373 | 2891 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 45.9 | 1164.8 | 39.9 | 1012.7 |
| 30RBA080 | 5258 | 2385 | 6238 | 2830 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 47.5 | 1205.7 | 39.8 | 1012.2 |
| 30RBA080-CU | 5740 | 2604 | 6720 | 3048 | 18.0 | 456.6 | 58.3 | 1479.8 | 18.0 | 456.6 | 47.5 | 1205.7 | 39.8 | 1012.2 |
| 30RBA090 | 6590 | 2989 | 7660 | 3475 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 64.0 | 1624.8 | 40.1 | 1017.4 |
| 30RBA090-CU | 7314 | 3318 | 8384 | 3803 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 64.0 | 1624.8 | 40.1 | 1017.4 |
| 30RBA100 | 6813 | 3090 | 7883 | 3576 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 63.5 | 1614.0 | 39.3 | 998.5 |
| 30RBA100-CU | 7537 | 3419 | 8607 | 3904 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 63.5 | 1614.0 | 39.3 | 998.5 |
| 30RBA110 | 7067 | 3206 | 8137 | 3691 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 67.4 | 1713.0 | 39.3 | 997.1 |
| 30RBA110-CU | 7791 | 3534 | 8861 | 4019 | 16.1 | 408.9 | 109.0 | 2769.3 | 16.1 | 408.9 | 67.4 | 1713.0 | 39.3 | 997.1 |
| 30RBA120 | 8238 | 3737 | 9398 | 4263 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 92.3 | 2345.5 | 39.1 | 992.7 |
| 30RBA120-CU | 9082 | 4120 | 10242 | 4646 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 92.3 | 2345.5 | 39.1 | 992.7 |
| 30RBA130 | 8593 | 3898 | 9753 | 4424 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 89.5 | 2272.4 | 38.7 | 983.2 |
| 30RBA130-CU | 9558 | 4336 | 10718 | 4862 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 89.5 | 2272.4 | 38.7 | 983.2 |
| 30RBA150 | 9808 | 4449 | 10968 | 4975 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 94.2 | 2392.2 | 38.7 | 982.8 |
| 30RBA150-CU | 10773 | 4887 | 11933 | 5413 | 16.1 | 408.9 | 156.0 | 3963.3 | 16.1 | 408.9 | 94.2 | 2392.2 | 38.7 | 982.8 |

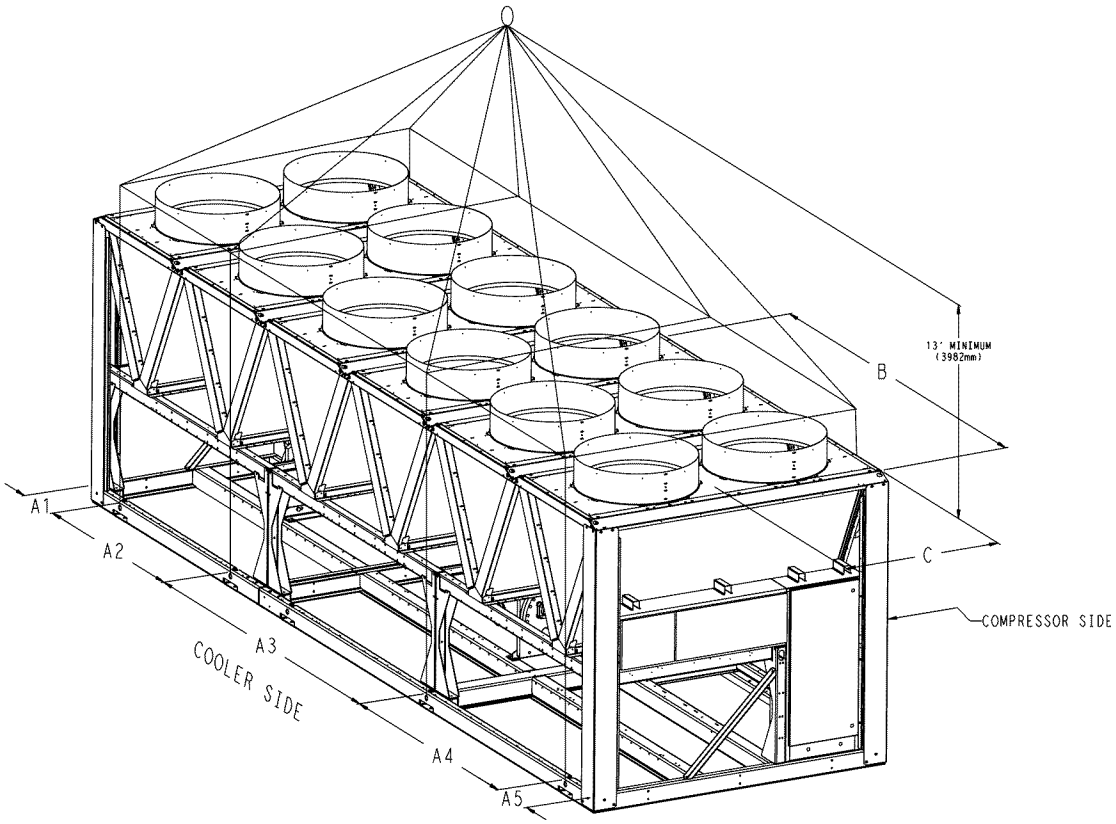
DEDUCT THESE VALUES FOR UNITS WITH NO PUMP OPTIONS

| | SINGLE PUMP DEDUCT (LB) | NO PUMP DEDUCT (LB) | | SINGLE PUMP DEDUCT (LB) | NO PUMP DEDUCT (LB) |
|---|---|---|---|---|---|
| 30RBA060,070 | 318 | 833 | 30RBA110-130 | 383 | 923 |
| 30RBA080-100 | 423 | 923 | 30RBA150 | 592 | 1245 |

CU = COPPER FINNED COILS

00PSN500037300A

**Fig. 24 — Unit Rigging Label Detail 30RB060-150**




CAUTION- NOTICE TO RIGGERS:

ALL PANELS MUST BE IN PLACE WHEN RIGGING. DO NOT ATTEMPT TO FORK THESE UNITS IF NO SKID IS SUPPLIED.

NOTES:
1. 1.50 DIA. (38.1mm) LIFTING HOLES PROVIDED FOR FIELD SUPPLIED CLEVIS.
2. RIG WITH A MINIMUM OF 25FT (7620MM) LENGTH CHAINS OR CABLES.
3. IF CENTRAL LIFTING POINT IS USED, IT MUST BE A MINIMUM OF 13 FT. (3962mm) ABOVE THE TOP OF THE UNIT.
4. SPREADER BARS MADE FROM STEEL OR DOUBLE NAILED, AND NOTCHED 2X6's APPROXIMATELY 8FT. (2438mm) LONG, MUST BE PLACED JUST ABOVE THE TOP OF THE UNIT (AND STACKS) TO REDUCE THE RISK OF DAMAGE TO THE TOP OF THE UNIT AND COILS.
5. IF OVERHEAD RIGGING IS NOT AVAILABLE, THE UNIT CAN BE MOVED ON ROLLERS OR DRAGGED. WHEN UNIT IS MOVED ON ROLLERS, THE UNIT SKID, IF EQUIPPED, MUST BE REMOVED. TO LIFT THE UNIT, USE JACKS AT THE RIGGING POINTS. USE A MINIMUM OF ONE ROLLER EVERY 6FT. (1829mm) TO DISTRIBUTE THE LOAD. IF THE UNIT IS TO BE DRAGGED, LIFT THE UNIT AS DESCRIBED ABOVE, AND PLACE UNIT ON A PAD. APPLY MOVING FORCE TO THE PAD, NOT THE UNIT. WHEN IN ITS FINAL LOCATION, RAISE THE UNIT AND REMOVE THE PAD.
6. CHECK BILL OF LADING FOR SHIPPING WEIGHT OF UNIT.

| MODEL NUMBER | MAX. SHIPPING WT. W/O PACKAGING | | MAX. SHIPPING WT. WITH PACKAGING | | LIFTING HOLES | | | | | | | | | | CENTER OF GRAVITY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | "A1" | | "A2" | | "A3" | | "A4" | | "A5" | | "B" | | "C" | |
| | LB | KG | LB | KG | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 30RBA160 | 10900 | 4944 | 12150 | 5511 | 16.1 | 408.9 | 94.0 | 2388.0 | 109.0 | 2769.3 | 16.1 | 408.9 | N/A | N/A | 120.7 | 3064.9 | 39.1 | 994.4 |
| 30RBA160-CU | 12106 | 5491 | 13356 | 6058 | 16.1 | 408.9 | 94.0 | 2388.0 | 109.0 | 2769.3 | 16.1 | 408.9 | N/A | N/A | 120.7 | 3064.9 | 39.1 | 994.4 |
| 30RBA170 | 11235 | 5096 | 12485 | 5663 | 16.1 | 408.9 | 94.0 | 2388.0 | 109.0 | 2769.3 | 16.1 | 408.9 | N/A | N/A | 122.6 | 3113.6 | 38.5 | 978.1 |
| 30RBA170-CU | 12441 | 5643 | 13691 | 6210 | 16.1 | 408.9 | 94.0 | 2388.0 | 109.0 | 2769.3 | 16.1 | 408.9 | N/A | N/A | 122.6 | 3113.6 | 38.5 | 978.1 |
| 30RBA190 | 12647 | 5737 | 13987 | 6345 | 16.1 | 408.9 | 109.0 | 2769.3 | 32.0 | 812.7 | 109.3 | 2769.3 | 16.1 | 408.9 | 140.9 | 3578.3 | 38.4 | 974.3 |
| 30RBA190-CU | 14094 | 6393 | 15434 | 7001 | 16.1 | 408.9 | 109.0 | 2769.3 | 32.0 | 812.7 | 109.3 | 2769.3 | 16.1 | 408.9 | 140.9 | 3578.3 | 38.4 | 974.3 |
| 30RBA210 | 13018 | 5905 | 14358 | 6513 | 16.1 | 408.9 | 62.0 | 1575.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 138.9 | 3527.6 | 36.1 | 917.5 |
| 30RBA210-CU | 14465 | 6561 | 15805 | 7169 | 16.1 | 408.9 | 62.0 | 1575.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 138.9 | 3527.6 | 36.1 | 917.5 |
| 30RBA225 | 13351 | 6056 | 14691 | 6664 | 16.1 | 408.9 | 62.0 | 1575.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 141.3 | 3588.4 | 35.7 | 906.4 |
| 30RBA225-CU | 14798 | 6712 | 16138 | 7320 | 16.1 | 408.9 | 62.0 | 1575.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 141.3 | 3588.4 | 35.7 | 906.4 |
| 30RBA250 | 14752 | 6691 | 16182 | 7340 | 16.1 | 408.9 | 109.0 | 2769.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 158.3 | 4021.7 | 35.8 | 910.1 |
| 30RBA250-CU | 16441 | 7457 | 17871 | 8106 | 16.1 | 408.9 | 109.0 | 2769.3 | 110.0 | 2794.4 | 78.0 | 1981.7 | 16.1 | 408.9 | 158.3 | 4021.7 | 35.8 | 910.1 |
| 30RBA275 | 16199 | 7348 | 17719 | 8037 | 16.1 | 408.9 | 62.0 | 1575.3 | 141.0 | 3582.0 | 141.0 | 3582.0 | 16.1 | 408.9 | 191.2 | 4856.9 | 36.0 | 913.8 |
| 30RBA275-CU | 18129 | 8223 | 19649 | 8913 | 16.1 | 408.9 | 62.0 | 1575.3 | 141.0 | 3582.0 | 141.0 | 3582.0 | 16.1 | 408.9 | 191.2 | 4856.9 | 36.0 | 913.8 |
| 30RBA300 | 17590 | 7979 | 19200 | 8709 | 16.1 | 408.9 | 109.0 | 2769.3 | 141.0 | 3582.0 | 141.0 | 3582.0 | 16.1 | 408.9 | 209.3 | 5316.8 | 36.0 | 915.6 |
| 30RBA300-CU | 19761 | 8964 | 21371 | 9694 | 16.1 | 408.9 | 109.0 | 2769.3 | 141.0 | 3582.0 | 141.0 | 3582.0 | 16.1 | 408.9 | 209.3 | 5316.8 | 36.0 | 915.6 |

DEDUCT THESE VALUES FOR UNITS WITH NO PUMP OPTIONS

| | SINGLE PUMP DEDUCT (LB) | NO PUMP DEDUCT (LB) |
|---|---|---|
| 30RBA160-190 | 592 | 1245 |

CU = COPPER FINNED COILS

00PSN500037400A

**Fig. 25 — Unit Rigging Label Detail 30RB160-300**

**Step 2 — Remove Compressor Rack Holddown Bolts** — The 30RB units are shipped with holddown bolts securing the compressor rail assembly to the unit base frame. These bolts are red and are located between the compressors in the front and rear of the compressor rail assembly. These bolts and holddown assemblies must be removed for the vibration isolation system to operate properly. Using a 15mm socket, loosen and remove the bolt and collar assembly as shown in Fig. 26.

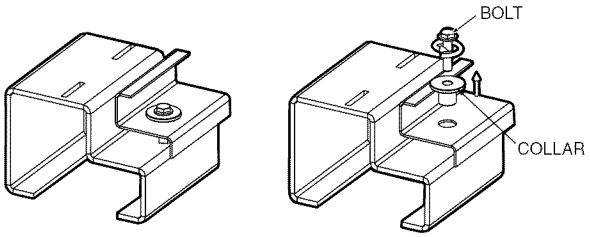



**Fig. 26 — Compressor Rack Holddown Bolts**

See Table 5 for the number of holddown assemblies for each unit.

Isolation mounts for the compressor rail assembly are located directly in front of and behind each compressor. Do not loosen or remove the isolation mounts, only the shipping bolts. There are 4 bolts that hold down each compressor. Do not loosen these bolts.

**Table 5 — Number of Holddown Assemblies**

| UNIT 30RB | CIRCUIT A + B | CIRCUIT A | CIRCUIT B | CIRCUIT C |
|---|---|---|---|---|
| 060-070 | 4 | — | — | — |
| 080-100 | 4 | — | — | — |
| 110-120 | — | 2 | 4 | — |
| 130-190 | — | 4 | 4 | — |
| 210-300 | — | 4 | 4 | 4 |

| MODULAR UNIT 30RB | CIRCUIT A | | CIRCUIT B | |
|---|---|---|---|---|
| | Module A | Module B | Module A | Module B |
| 315 | 4 | 4 | 4 | 4 |
| 330 | 4 | 4 | 4 | 4 |
| 345 | 4 | 4 | 4 | 4 |
| 360 | 4 | 4 | 4 | 4 |
| 390 | 4 | 4 | 4 | 4 |

**Step 3 — Remove Compressor Shipping Braces** — Each unit is equipped with compressor shipping braces tying each circuit together. Prior to installation these braces must be removed. Using a 15mm socket, loosen each bolt and nut on each compressor tab and remove all braces before unit start-up. Remove the compressor shipping braces attached between the compressors; see Fig. 27 for guidance.

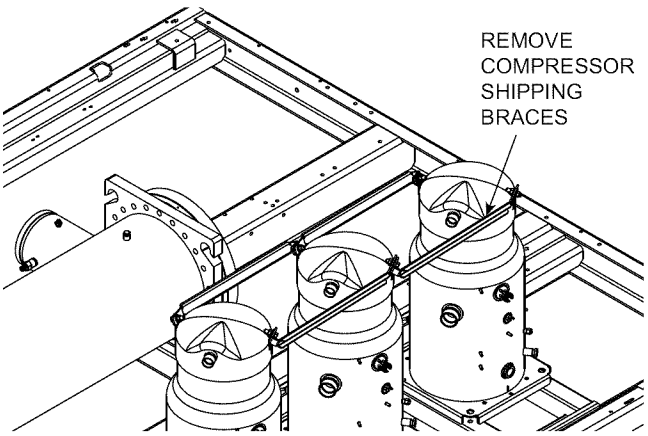



**Fig. 27 — Compressor Shipping Braces Removal**

FOR UNITS EQUIPPED WITH COMPRESSOR SOUND BLANKETS — The sound blanket top covers are shipped inside the control box(es) for the unit. Remove the top covers from the control boxes and install prior to start-up. Align the discharge tube with the cutout on the top cover; see Fig. 28. Firmly press the Velcro sections together, ensuring the top cover is held tightly against the blanket.

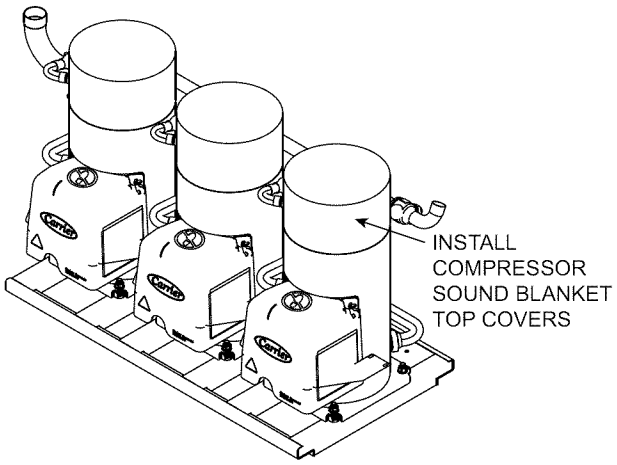



**Fig. 28 — Compressor Sound Blanket Top Covers**

**Step 4 — Make Cooler Fluid, Heat Reclaim and Drain Piping Connections** — To facilitate servicing, it is recommended additional field-supplied air vents be installed. Locate air vents at the highest possible point of the chilled water and heat reclaim systems. In addition to field-supplied air vents, facilitate servicing in addition to flow balancing by installing field-supplied shut-off valves, thermometers, clean-out tees, pressure and temperature taps in the inlet and outlet piping. Locate valves in return and supply cooler water and heat reclaim lines as close to the chiller as possible.

In sound sensitive applications, consider the installation of piping vibration isolators. Drain connections are provided in the cooler. Refer to the dimensional drawings, Fig. 2-20 for locations. Insulate the drain piping (in the same manner as the chilled water piping) for at least 12-in. (305 mm) from the cooler.

FREEZE PROTECTION — Upon completion of the field piping installation, freeze protection must be considered. Freeze protection for the cooler is available from the factory with a freeze protection option for the unit. Freeze protection for the pump (hydronic) package is standard on all units with the optional hydronic package (30RB060-190 units). External piping freeze protection also must be considered. Since power is sometimes lost for extended periods during winter storms, freeze protection provided by heater tapes will be effective only if a back-up power supply can be assured for the unit's control circuit, heater and cooler pump. If not protected with an antifreeze solution, draining the cooler and outdoor piping is recommended if the system will not be used during freezing weather conditions.

NOTE: See Freeze Protection section on page 50 for a more detailed overview of freeze protection.

IMPORTANT: Glycol anti-freeze solutions are highly recommended since heater tapes provide no protection in the event of a power failure.

UNITS WITH HYDRONIC PUMP PACKAGE — The 30RB060-190 units can be equipped with a factory-installed hydronic pump package consisting of a suction guide/strainer, pump, combination valve, internal piping and wiring connected at the factory.

The combination valve performs the following functions:

- Drip-tight shut-off valve
- Spring closure design with a non-slam check valve
- Flow-throttling valve

Refer to Fig. 2-20 for cooler connection locations. The inlet is connected to the suction guide/strainer of the pump via a victaulic-type connection. The cooler supply has water-side victaulic-type connections (follow connection directions as provided by the coupling manufacturer). Provide proper support for the piping. If compressor and cooler grilles have been added, holes must be cut in the grilles for field piping and insulation.

The suction guide/strainer is shipped from the factory with a run-in screen. This screen is a temporary device used during the start-up/clean-up process of the chilled water circuit to prevent construction debris from damaging the pump or internal tubes of cooler. After all debris has been removed or a maximum of 24 running hours the temporary screen must be removed. See the Controls, Start-Up, Operation, Service and Troubleshooting guide for further information.

**⚠ CAUTION**

The suction guide/strainer is shipped from the factory with a run-in screen. This temporary screen must be removed after all debris has been removed or a maximum of 24 running hours. Failure to remove the temporary screen may result in damage to the pump or cooler.

NOTE: It is required that an additional field-supplied strainer with a minimum size of 20 mesh be installed within 10 ft (3.05 m) of and ahead of the cooler inlet to prevent debris from damaging internal tubes of the cooler.

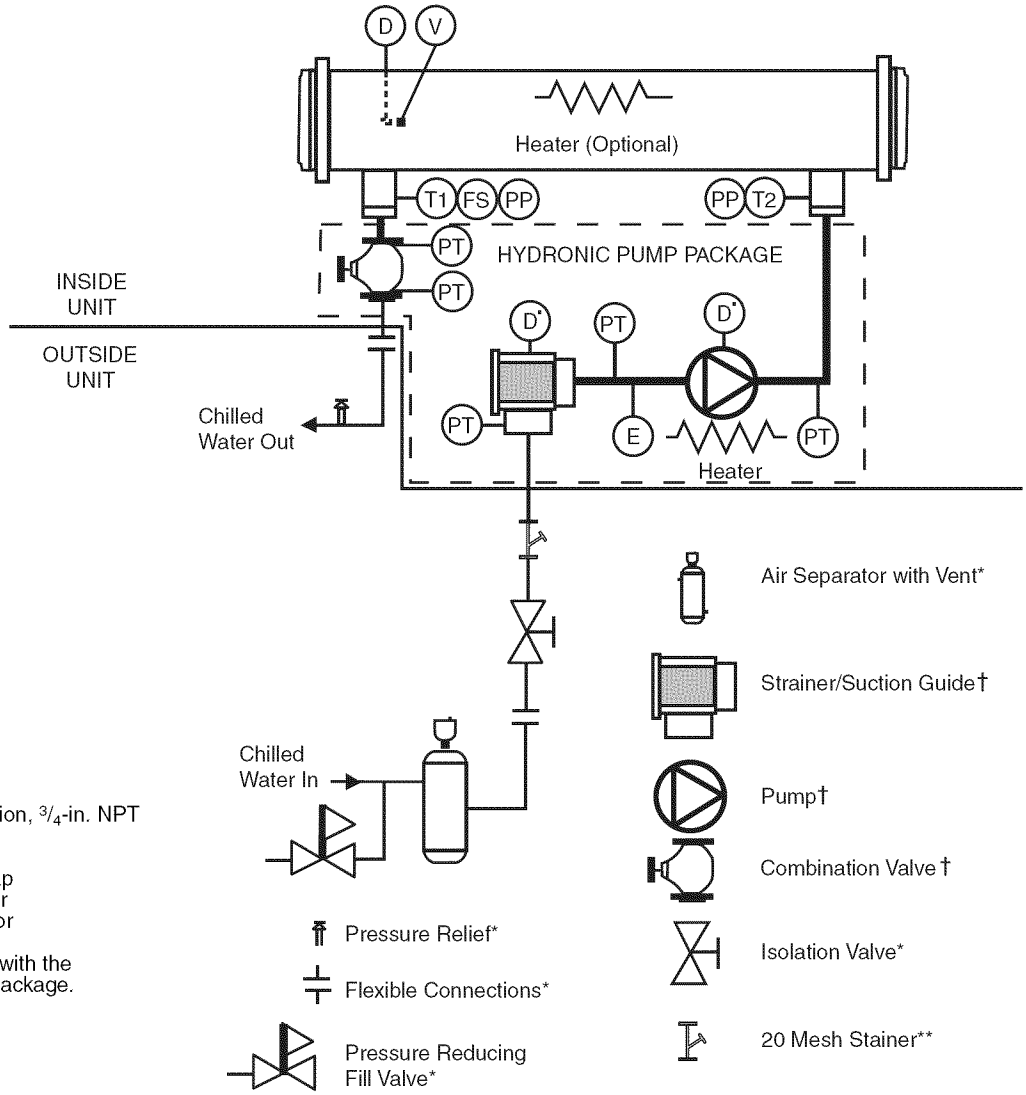
**⚠ CAUTION**

Do not circulate water through unit without strainers in place. Failure to use the strainers represents abuse and may impair or otherwise negatively affect the Carrier product warranty.

A $^{3}/_{4}$ in. NPT fitting is installed in the inlet piping of the pump for connection to an expansion tank. Install the tank in accordance with the manufacturer's instructions.

Figures 29 and 30 illustrate typical single and dual pump packages.

Two drain connections are provided and are located at pump volute, and the suction guide. See Fig. 2-20 for connection location.




LEGEND

| | | |
|---|---|---|
| **D** | — | Drain, $^{3}/_{4}$-in. NPT |
| **D'** | — | Drain, $^{1}/_{4}$-in. NPT |
| **E** | — | Expansion Tank Connection, $^{3}/_{4}$-in. NPT |
| **FS** | — | Flow Switch |
| **PP** | — | Pipe Plug, $^{1}/_{4}$-in. NPT |
| **PT** | — | Pressure/Temperature Tap |
| **T1** | — | Leaving Water Thermistor |
| **T2** | — | Entering Water Thermistor |
| **V** | — | Vent, $^{1}/_{4}$-in. NPT |
| - - - - | | Indicates items provided with the optional hydronic pump package. |

*Field-supplied and installed.
†Factory-installed option.
**Required for open loop systems.

**Fig. 29 — Typical Piping Diagram on 30RB Units with Hydronic Package — Single Pump**

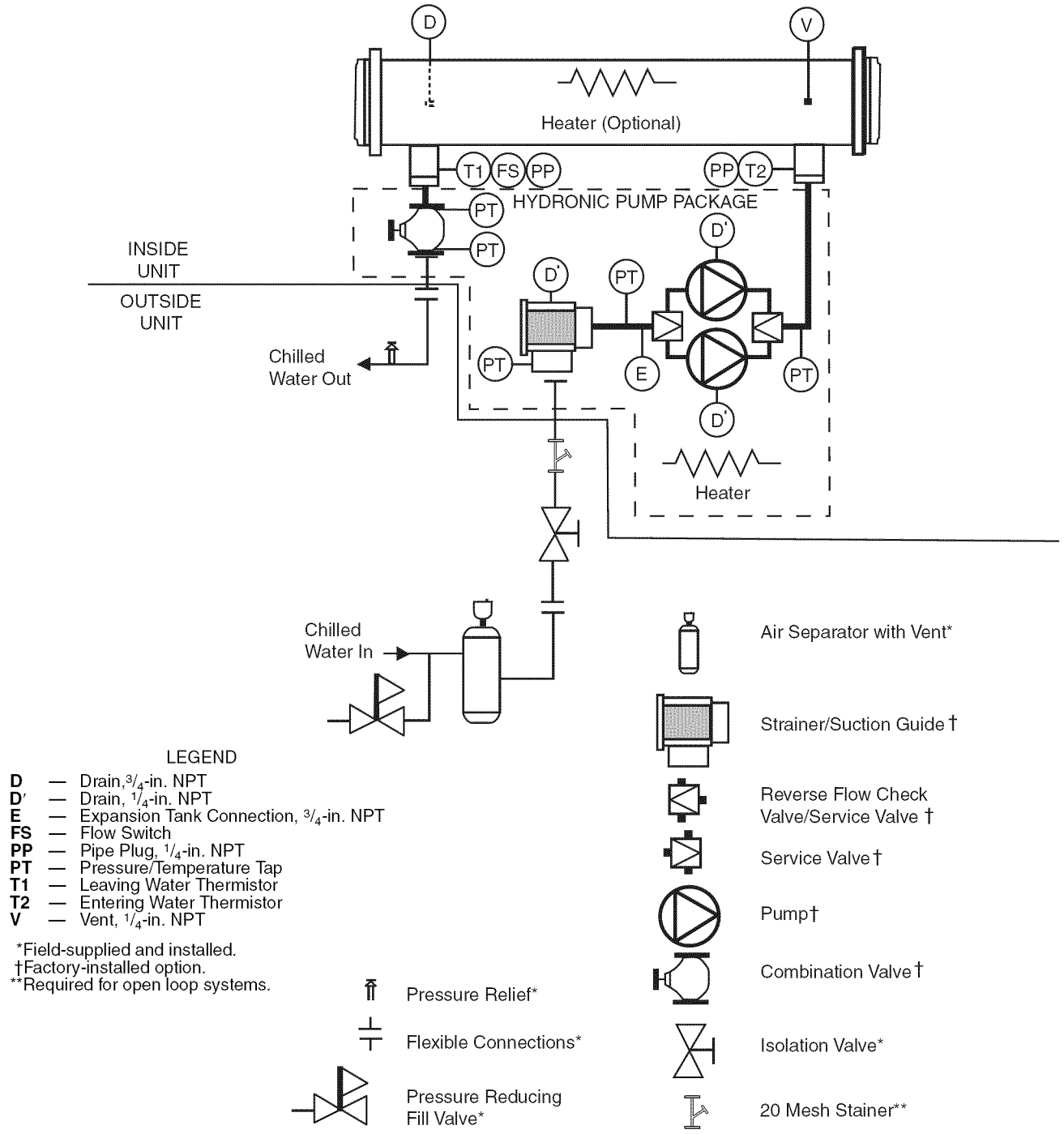



**Fig. 30 — Typical Piping Diagram on 30RB Units with Hydronic Package — Dual Pumps**

UNITS WITHOUT HYDRONIC PUMP PACKAGE — Refer to Fig. 2-20 for cooler connection locations. It is required that a field-supplied strainer with a minimum size of 20 mesh be installed within 10 ft (3.05 m) of and ahead of the cooler inlet to prevent debris from damaging internal tubes of the cooler.

**⚠ CAUTION**

Do not circulate water through unit without strainers in place. Failure to use the strainers represents abuse and may impair or otherwise negatively affect the Carrier product warranty.

The cooler has water-side victaulic-type connections (follow connection directions as provided by the coupling manufacturer). Provide proper support for the piping. If compressor and cooler grilles have been added, holes must be cut in the grilles for field piping and insulation. See Fig. 31 for a typical piping diagram of a 30RB unit without a hydronic pump package.

A drain connection is located at the leaving water (supply) end of cooler. See Fig. 2-20 for connection location. Insulate the drain piping (in the same manner as the chilled water piping) for at least 12 in. (305 mm) from the unit.

UNITS WITH OPTIONAL HEAT RECLAIM — The 30RB060-190 units can be equipped with a factory-installed heat reclaim package consisting of a shell and tube condenser,

condenser flow switch, temperature sensors and refrigeration devices to allow up to 100% of the condenser heat to be reclaimed for hot water. This means that this water-cooled condenser, which is in parallel with the standard air-cooled condenser, is capable of capturing all of the heat available from the chiller condensing process. The leaving water temperature can reach at maximum 131 F (55 C) under steady state and constant hot water flow conditions with an allowable hot water temperature range of 68 to 131 F (20 to 55 C). The heat reclaim condenser fluid connections are at the end of the unit opposite the control panel. The temperature sensor and the condenser flow switch are mounted in the nozzles and are wired in the control box. Refer to the Controls and Troubleshooting Book for detailed operational information.

The heat reclaim condenser has water-side victaulic-type connections (follow connection directions as provided by the coupling manufacturer). Provide proper support for the piping. If compressor and cooler grilles have been added, holes must be cut for field piping and insulation. A field-supplied strainer with a minimum size of 20 mesh must be installed within 10 ft (3.0 m) of the inlet to the heat reclaim condener. See Fig. 32 for a typical piping diagram of the heat reclaim condenser and 3-way valve location. All piping must follow standard piping techniques. Refer to Carrier System Design Manual or appropriate ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers) handbook for details.

**⚠ CAUTION**

Do not circulate water through unit without strainers in place. Failure to use the strainers represents abuse and may impair or otherwise negatively affect the Carrier product warranty.

Two drain connections are provided, one in each head of the condenser.

HEAD PRESSURE CONTROL — A form of head pressure control is required while in the heat reclaim mode. In order to meet this requirement, a properly sized 3-way valve must be field-installed. This valve will facilitate cold water start-up (water temperatures below 68 F [20 C]), and it also will be able to maintain proper head pressure during heat reclaim operation. Since the hot water temperature at start-up may be very low, the 3-way valve is to be located as close to the heating condenser as possible so that this valve can quickly accomplish its purpose of maintaining the minimum required head pressure. Locate the 3-way valve within 40 ft (12.2 m) of the heating condenser if the circulating pump is located between the 3-way valve and the heat reclaim condenser. See Fig. 33A. If the pumps are too far away from the condenser, a second option is to install the 3-way control valve close to the condenser. See Fig. 33B. The 30RB unit uses an anolog output to control this valve.

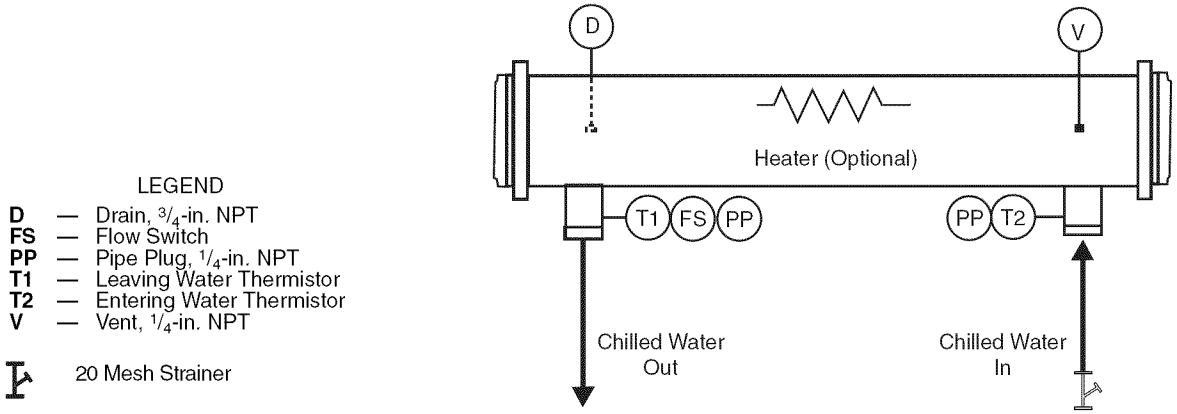



**Fig. 31 — Typical Piping Diagram on 30RB Units without Hydronic Package**

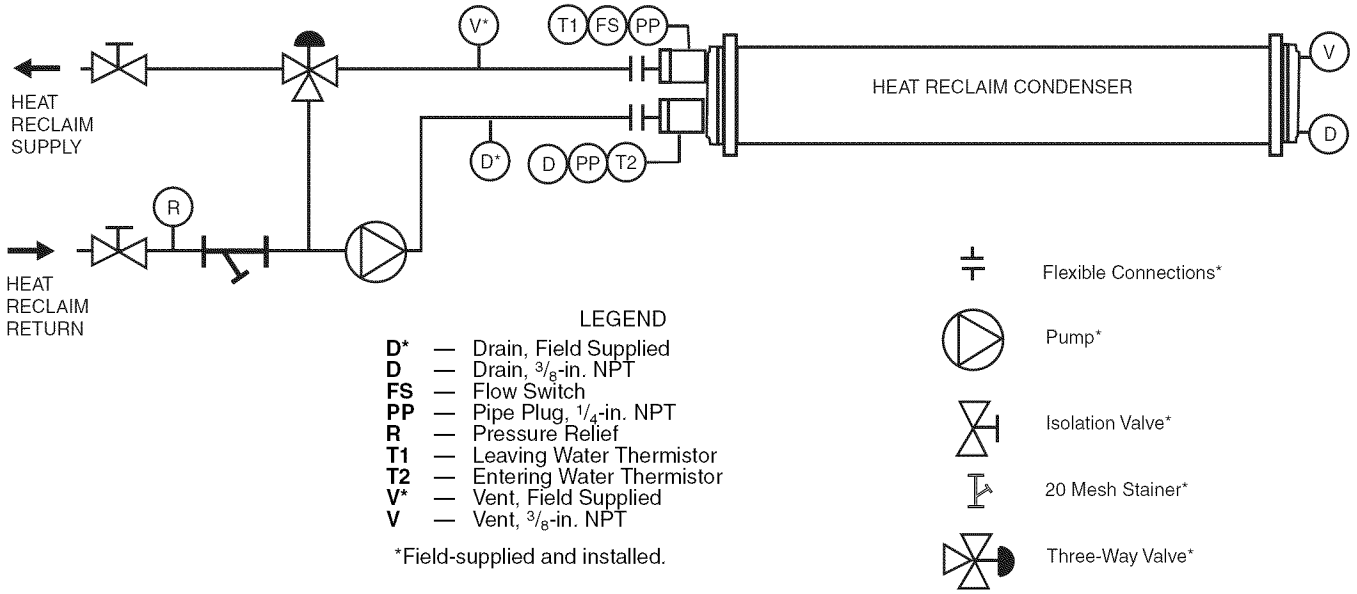



**Fig. 32 — Typical Piping Diagram on 30RB Units with Heat Reclaim Option**

NOTE: Locate the 3-way valve as close as possible to the chiller to minimize head pressure control response time.

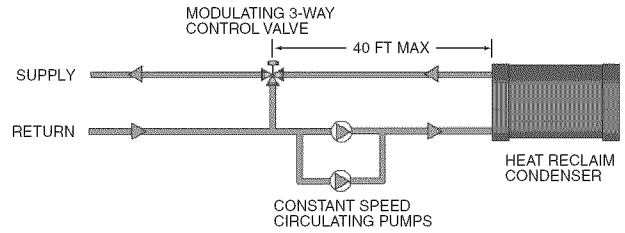



**Fig. 33A — Three-Way Head Pressure Control Valve Location (Preferred)**

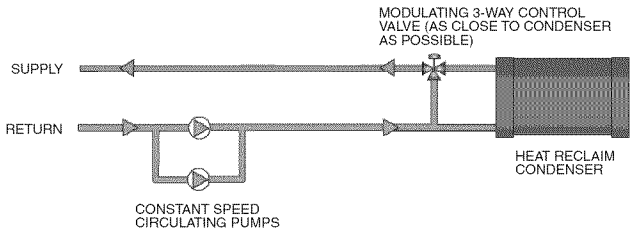



**Fig. 33B — Three-Way Head Pressure Control Valve Location (Alternate)**

FOR ALL UNITS

Dual Chiller Control Option — If the dual chiller algorithm is used, and the machines are installed in parallel, an additional chilled water sensor must be installed for each module. For 30RB315-390, a factory-supplied thermistor and well are shipped in the control box of each module. Install the wells in the common leaving water header. See Fig. 34.

Parallel chiller control with dedicated pumps is recommended. Chiller must start and stop its own water pump located in its own piping. If pumps are not dedicated for each chiller, then isolation valves are required. Each chiller must open and close its own isolation valve through the unit control (the valve must be connected to the pump outputs).

See Dual Chiller Control Option section on page 57 for more dual chiller leaving water sensor information.

Minimum Loop Volume — The preferred minimum loop volume is dependent on the type of application. In order to obtain leaving water temperature stability for comfort cooling applications, a minimum of 3 gallons per ton (3.25 liters per kW) is required on all unit sizes. For process cooling applications, applications where high stability is critical, or operation at ambient temperatures below 32 F (0° C) is expected, the loop volume should be increased to 6 to 10 gallons per ton (6.46 to 10.76 liters per kW) of cooling.

In order to achieve this volume, it may be necessary to add a water storage tank to the water loop. If a storage tank is added to the system, it should be properly vented so that the tank can be completely filled and all air eliminated. Failure to do so could cause lack of pump stability and poor system operation. Any storage tank that is placed in the water loop should have internal baffles to allow thorough mixing of the fluid. See Fig. 35. For units with heat reclaim option, a minimum condenser loop volume of 6 gallons per ton of heating (0.5 to 0.83 gallons [1.9 to 3.1 L] per 100 Btu/h of heating) capacity is necessary. In come cases, this will require the installation of a hot-water buffer tank.

System Piping — Proper system design and installation procedures should be followed closely. The system must be constructed with pressure tight components and thoroughly tested for installation leaks.

Installation of water systems should follow sound engineering practice as well as applicable local and industry standards. Improperly designed or installed systems may cause unsatisfactory operation and/or system failure. Consult a water treatment specialist or appropriate literature for information regarding filtration, water treatment, and control devices. Figure 29 shows a typical installation with components that might be installed with the hydronic package of the 30RB unit.

NOTE: It is recommended for units with the hydronic package that an inlet isolation (shutoff) valve be placed exterior to the unit to allow removal and service of the entire pump assembly, if necessary. The hydronic package is supplied from the factory with a combination valve for isolation of leaving water. Also, if the unit is isolated with valves, a properly sized pressure relief valve is recommended and should be installed in the piping between the unit and the valves, following all applicable local codes.

Air Separation — For proper system operation, it is essential that water loops be installed with proper means to manage air in the system. Free air in the system can cause noise, reduce terminal output, stop flow, or even cause pump failure due to pump cavitation. For closed systems, equipment should be provided to eliminate all air from the system.

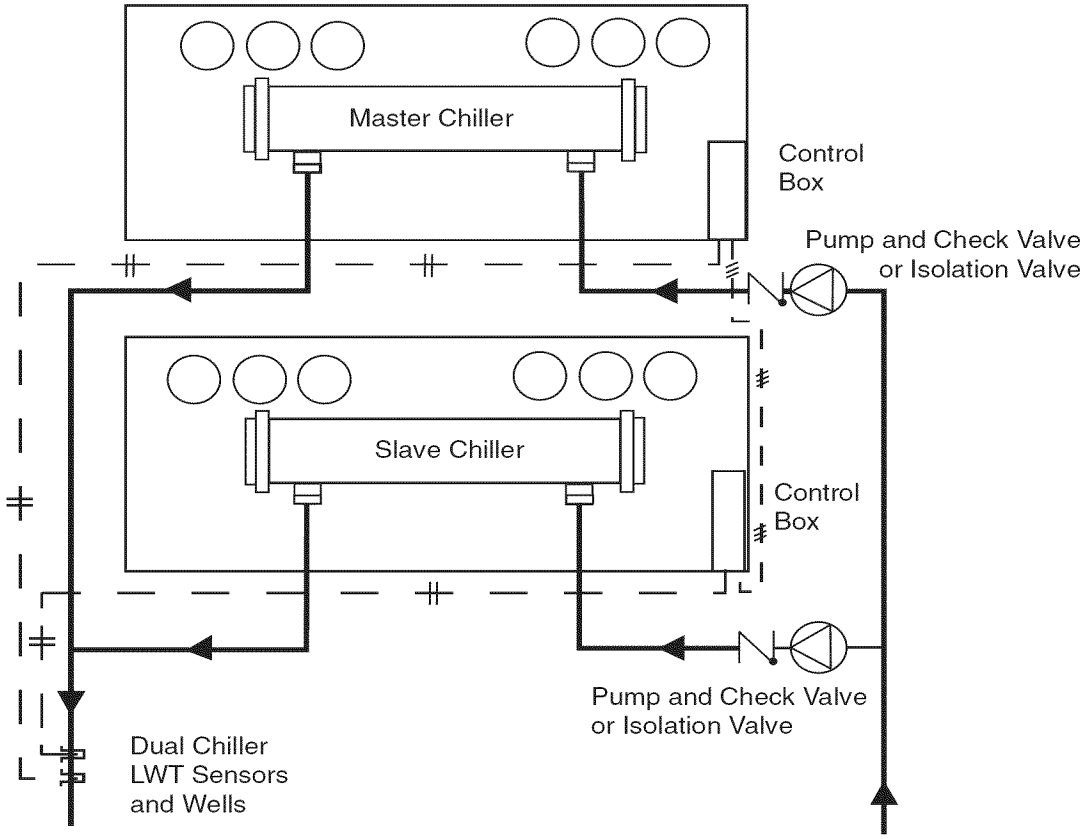
The amount of air that water can hold in solution depends on the pressure and temperature of the water/air mixture. Air is less soluble at higher temperatures and at lower pressures. Therefore, separation can best be done at the point of highest water temperature and lowest pressure. Typically, this point would be on the suction side of the pump as the water is returning from the system or terminals. This is generally the optimal place to install an air separator, if possible.

1. Install automatic air vents at all high points in the system. (If the 30RB unit is located at the high point of the system, a vent can be installed on the piping leaving the heat exchanger on the $^1/_4$ in. NPT female port.)
2. Install an air separator in the water loop, at the place where the water is at higher temperatures and lower pressures — usually in the chilled water return piping. On a primary-secondary system, the highest temperature water is normally in the secondary loop, close to the decoupler. Preference should be given to that point on the system (see Fig. 36). In-line or centrifugal air separators are readily available in the field.

It may not be possible to install air separators at the place of the highest temperature and lowest pressure. In such cases, preference should be given to the points of highest temperature. It is important that the pipe be sized correctly so that free air can be moved to the point of separation. Generally, a water velocity of at least 2 feet per second (0.6 m per second) will keep free air entrained and prevent it from forming air pockets.

Automatic vents should be installed at all physically elevated points in the system so that air can be eliminated during system operation. Provisions should also be made for manual venting during the water loop fill.

IMPORTANT: Automatic vents should be located in accessible locations for maintenance purposes and protected from freezing.




LEGEND

**LWT** — Leaving Water (Fluid) Temperature
– // – Field Wiring
– /// – Field Communication Wiring

NOTE: This is a simplified piping diagram — not all hydronic specialties are shown.

**Fig. 34 — Dual Chiller Control Option Thermistor Location**

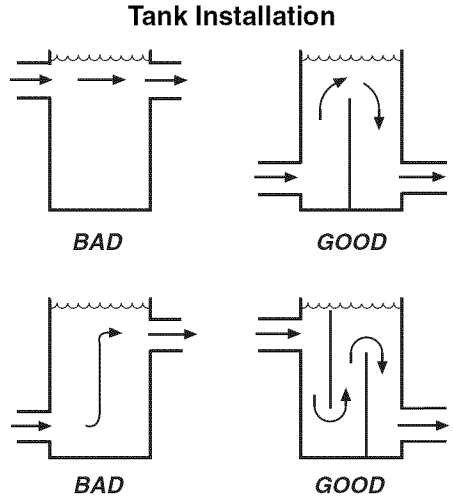
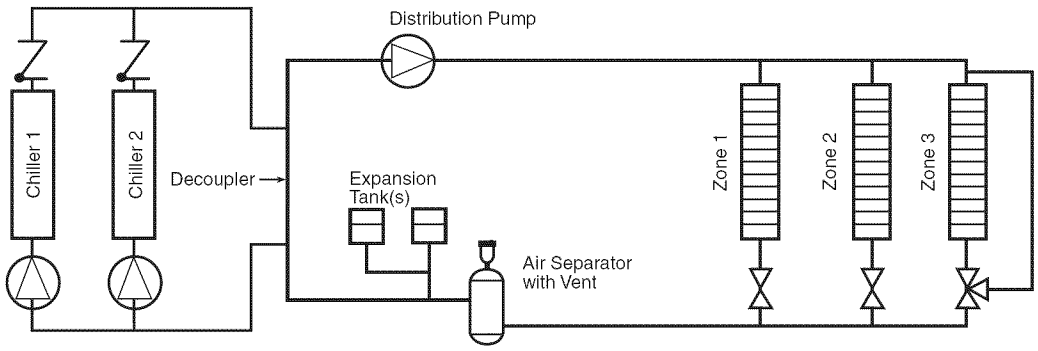



**Fig. 35 — Tank Baffling**




NOTE: Expansion tanks for 30RB hydronic kits must be installed for chillers piped in parallel in the primary water loop.

**Fig. 36 — Typical Air Separator and Expansion Tank Location on Primary-Secondary Systems**

## Step 5 — Fill the Chilled Water and Heat Reclaim Loop

IMPORTANT: Before starting unit, be sure all of the air has been purged from the system.

The chilled water pump (if equipped) is rated for 150 psig (1034 kPa) duty. The maximum cooler water-side pressure is 300 psig (2068 kPa). Check the pressure rating for all of the chilled water devices installed. Do not exceed the lowest pressure rated device.

WATER SYSTEM CLEANING — Proper water system cleaning is of vital importance. Excessive particulates in the water system can cause excessive pump seal wear, reduce or stop flow, and cause damage of other components.

**⚠ CAUTION**

Failure to properly clean all piping and components of the chilled water or heat reclaim system before unit start-up may result in plugging of the heat exchanger, which can lead to poor performance, nuisance alarms and/or damage from freezing. Freezing damage caused by an improperly cleaned system represents abuse and may impair or otherwise negatively affect the Carrier product warranty.

**⚠ CAUTION**

Do not circulate water through unit without strainers in place. Failure to use the strainers represents abuse and may impair or otherwise negatively affect the Carrier product warranty.

1. Install a temporary bypass around the chiller to avoid circulating dirty water and particulates into the pump package and chiller during the flush. Use a temporary circulating pump during the cleaning process. Also, be sure that there is capability to fully drain the system after cleaning. See Fig. 37.
2. Be sure to use a cleaning agent that is compatible with all system materials. Be especially careful if the system contains any galvanized or aluminum components. Both detergent-dispersant and alkaline-dispersant cleaning agents are available.
3. It is recommended to fill the system(s) through a water meter. This provides a reference point for the future for loop volume readings, and it also establishes the correct quantity of cleaner needed in order to reach the required concentration.
4. Use a feeder/transfer pump to mix the solution and fill the system. Circulate the cleaning system for the length of time recommended by the cleaning agent manufacturer.
   a. After cleaning, drain the cleaning fluid and flush the system with fresh water.
   b. A slight amount of cleaning residue in the system can help keep the desired, slightly alkaline, water pH of 8 to 9. Avoid a pH greater than 10, since this will adversely affect pump seal components.
   c. A side stream filter is recommended (see Fig. 38) during the cleaning process. Filter side flow rate should be enough to filter the entire water volume every 3 to 4 hours. Change filters as often as necessary during the cleaning process.
   d. Remove temporary bypass when cleaning is complete.

A suction guide with an internal strainer is standard on all 30RB units with factory-installed hydronic packages. This strainer allows removal of particulates from the chilled water loop. Using the combination valve and the field-installed isolation valve at the inlet, the strainer can be isolated from the chilled water loop to be cleaned.

The *Comfort*Link controls provided have a built-in feature to remind building owners or operators to clean the strainer at a pre-set time interval. Properly installed, cleaned and maintained systems will rarely need the strainer cleaned after the initial fill. This time interval is user-configurable.

Ideally, the chilled water loop will be cleaned before the unit is connected. If the run-in screen is left in the suction guide/strainer, it is recommended that the Service Maintenance be set to alert the operator within 24 hours of start-up to be sure that the run-in screen in the suction guide/strainer is not removed at start-up.

NOTE: The suction guide/strainer must be removed after the first 24 hours of operation.

To set the time for the parameter, go to Time Clock/MCFG/W.FIL in the scrolling marquee or the handheld Navigator™ display. Values for this item are input in days.

WATER TREATMENT — Fill the fluid loop with water (or brine) and a corrosion-resistant inhibitor suitable for the water of the area. Consult the local water treatment specialist for characteristics of system water and a recommended inhibitor for the cooler or heat reclaim fluid loop.

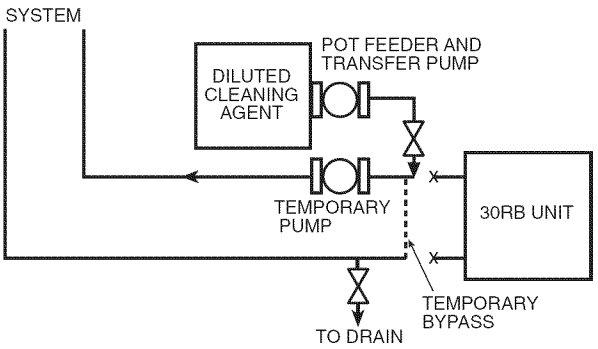



**Fig. 37 — Typical Set Up for Cleaning Process**

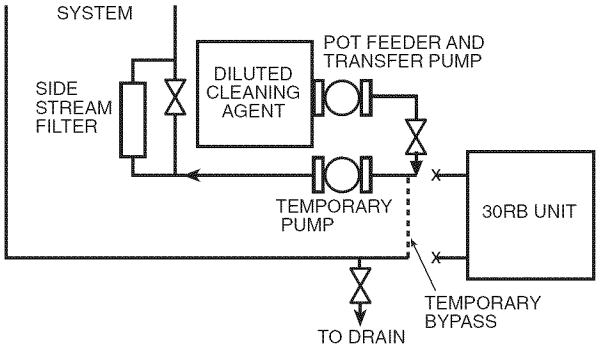



**Fig. 38 — Cleaning Using a Side Stream Filter**

SYSTEM PRESSURIZATION — A proper initial cold fill pressure must be established before filling of the unit. The initial cold fill pressure is the pressure applied at the filling point to fill a system to its highest point, plus a minimum pressure at the top of the system (4 psig minimum [27.6 kPa]) to operate air vents and positively pressurize the system. The expansion tank is very important to system pressurization. The expansion tank serves several purposes:

1. Provide NPSH (net positive suction head) required for the pump to operate satisfactorily.
2. Set system pressure.
3. Accommodate expansion or contraction of water due to temperature changes.
4. Act as a pressure reference for the pump.

The expansion tank pressure must be set BEFORE the system is filled. Follow the manufacturer's recommendation for instructions on setting the pressure in the expansion tank. The net positive suction head pressure required information is provided on the pump curves in Fig. 39-46 for units with factory-installed hydronic kits. See Table 6 for pump impeller sizes.

Once the system is pressurized, the pressure at the connection point of the expansion tank to water piping will not change unless the water loop volume changes (either due to addition/subtraction of water or temperature expansion/contraction). The pressure at this point remains the same regardless of whether or not the pump is running.

Since the expansion tank acts as a reference point for the pump, there cannot be two reference points (two expansion tanks) in a system, unless manifolded together. Where two or more 30RB chillers with the hydronic option are installed in parallel, there should not be more than one expansion tank in the system, unless manifolded together as seen in Fig. 36. It is permissible to install the expansion tank(s) in a portion of the return water line that is common to all pumps, providing that the tank is properly sized for combined system volume.

If the application involves two or more chillers in a primary secondary system, a common place for mounting the expansion tank is in the chilled water return line, just before the decoupler. See Fig. 36 for placement of expansion tank in primary-secondary systems.

If a diaphragm expansion tank is utilized (a flexible diaphragm physically separates the water/air interface) it is not recommended to have any air in the water loop. See the section on air separation on page 40 for instructions on providing air separation equipment.

FILLING THE SYSTEM(S) — The initial fill of the chilled water or heat reclaim system must accomplish three goals:

1. The entire piping system must be filled with water.
2. The pressure at the top of the system must be high enough to vent air from the system (usually 4 psig [27.6 kPa] is adequate for most vents).
3. The pressure at all points in the system must be high enough to prevent flashing in the piping or cavitation in the pump.

The pressure created by an operating pump affects system pressure at all points except one — the connection of the expansion tank to the system. This is the only location in the system where pump operation will not give erroneous pressure indications during the fill. Therefore, the best location to install the fill connection is close to the expansion tank. An air vent should be installed close by to help eliminate air that enters during the fill procedure.

When filling the system, ensure the following:

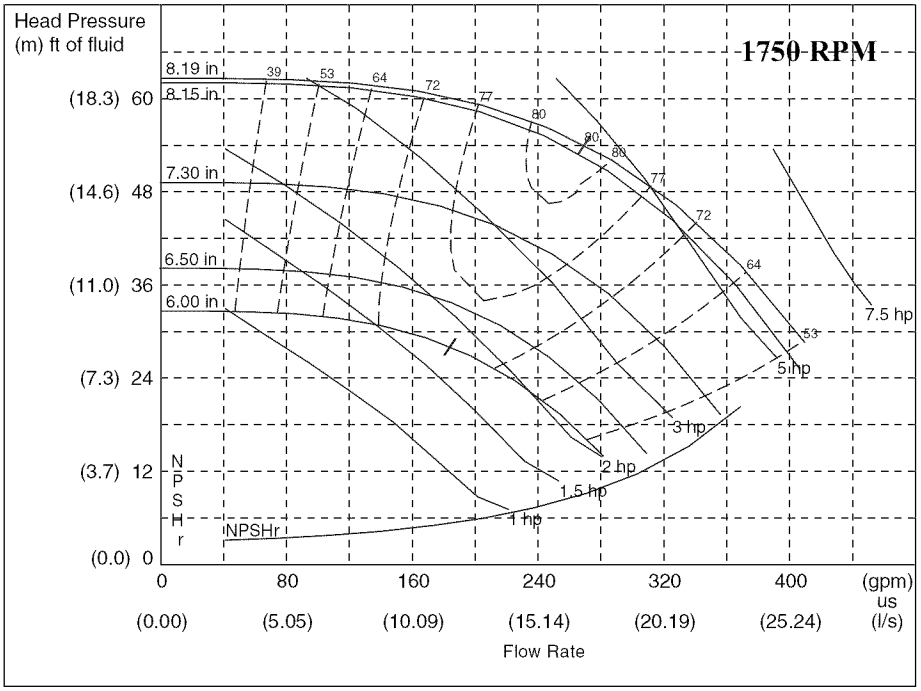
1. Remove temporary bypass piping and cleaning/flushing equipment.
2. Check to make sure all drain plugs are installed.

## Table 6 — Pump Impeller Sizes

| UNIT 30RB | PUMP Hp | SINGLE PUMP | | | | DUAL PUMP | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Option Code* | Rpm | Impeller Dia. (in.) | Pump Curve | Option Code* | Rpm | Impeller Dia. (in.) | Pump Curve |
| 060 070 | 3 | 0,F | 1750 | 6.5 | I | 6,M | 1750 | 6.5 | V |
| | 5 | 1,G | 1750 | 7.3 | I | 7,N | 1750 | 7.3 | V |
| | 7.5 | 2,H | 1750 | 8.15 | I | 8,P | 1750 | 8.15 | V |
| | | | | | | 9,T | 3450 | 5.25 | VI |
| | 10 | 3,J | 3450 | 5.4 | II | B,Q | 3450 | 5.9 | VI |
| 080 090 100 | 5 | 1,G | 1750 | 7.3 | I | 7,N | 1750 | 7.3 | V |
| | 7.5 | 2,H | 1750 | 8.15 | I | 8,P | 1750 | 8.15 | V |
| | 10 | 3,J | 3450 | 5.4 | II | B,Q | 3450 | 5.4 | VII |
| | 15 | 4,K | 3450 | 6.1 | II | C,R | 3450 | 6.1 | VII |
| 110 120 130 | 5 | 1,G | 1750 | 7.3 | I | 7,N | 1750 | 7.3 | V |
| | 7.5 | 2,H | 1750 | 8.15 | I | 8,P | 1750 | 8.15 | V |
| | 10 | 3,J | 3450 | 5.4 | II | B,Q | 3450 | 5.4 | VII |
| | 15 | 4,K | 3450 | 6.1 | II | C,R | 3450 | 6.1 | VII |
| 150 160 170 190 | 5 | 1,G | 1750 | 6.5 | III | — | — | — | — |
| | 7.5 | 2,H | 3450 | 4.6 | IV | 8,P | 3450 | 4.6 | VIII |
| | 10 | 3,J | 3450 | 5.0 | IV | B,Q | 3450 | 5.0 | VIII |
| | 15 | 4,K | 3450 | 5.5 | IV | C,R | 3450 | 5.5 | VIII |

*Option Code refers to the Hydronics Option (position 11) in the model number. See Fig. 1 for option identification.

NOTE: Pump Selections are chiller size dependent. For example, dual pump "C" on a 30RB170 chiller is not the same as dual pump "C" on a 30RB130 chiller.

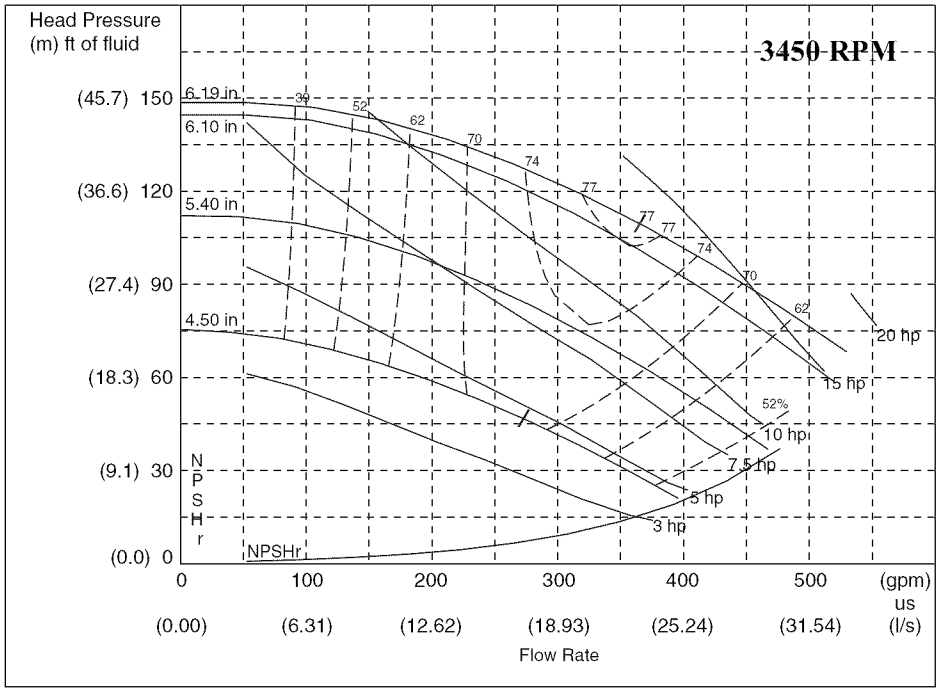



LEGEND

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 above for more information.

**Fig. 39 — Pump Curve I for Hydronic Package Single Pump (Fresh Water)**

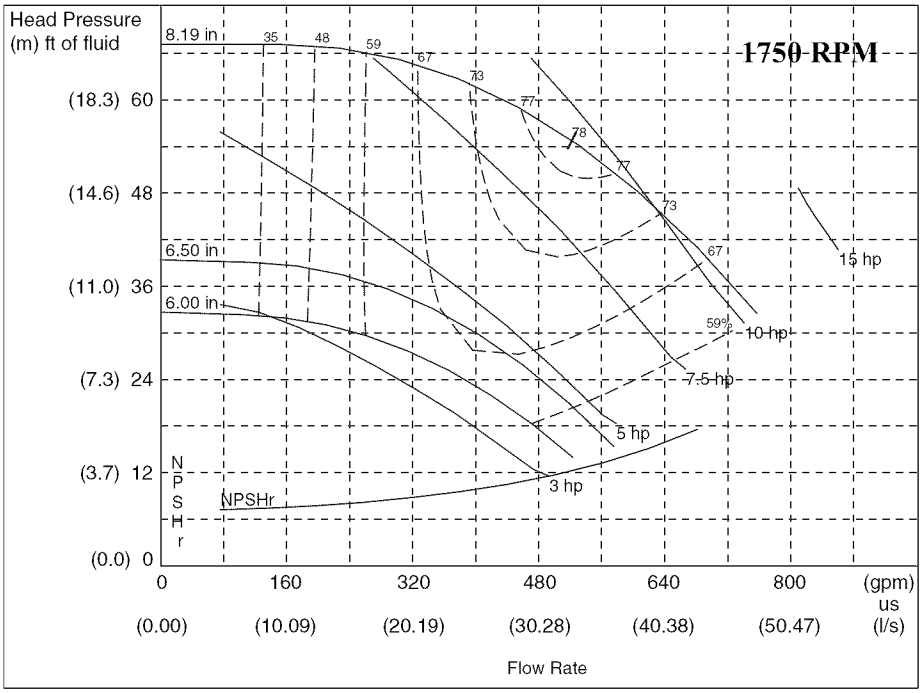



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 40 — Pump Curve II for Hydronic Package Single Pump (Fresh Water)**

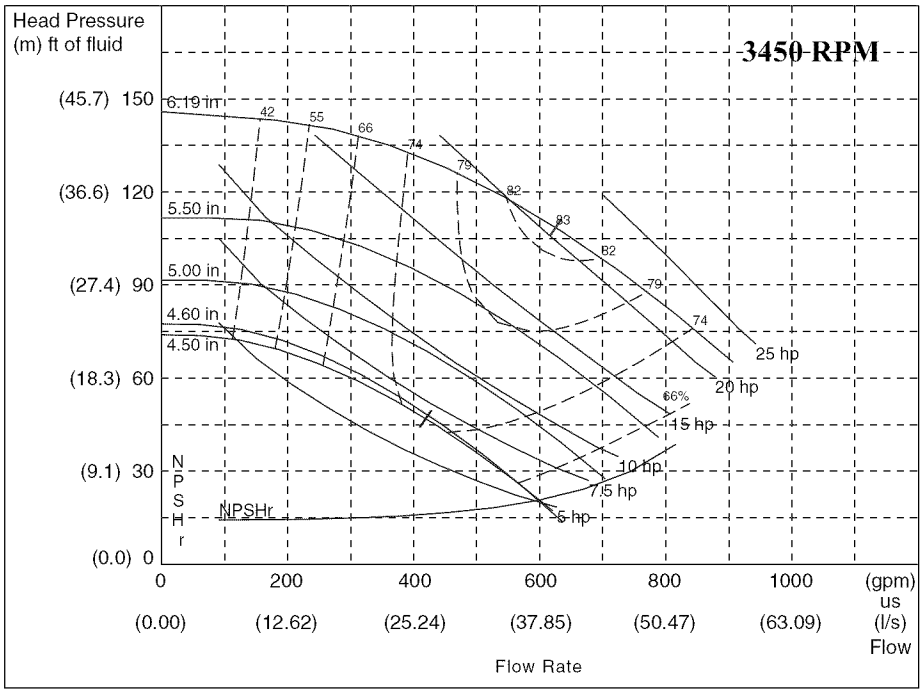



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 41 — Pump Curve III for Hydronic Package Single Pump (Fresh Water)**

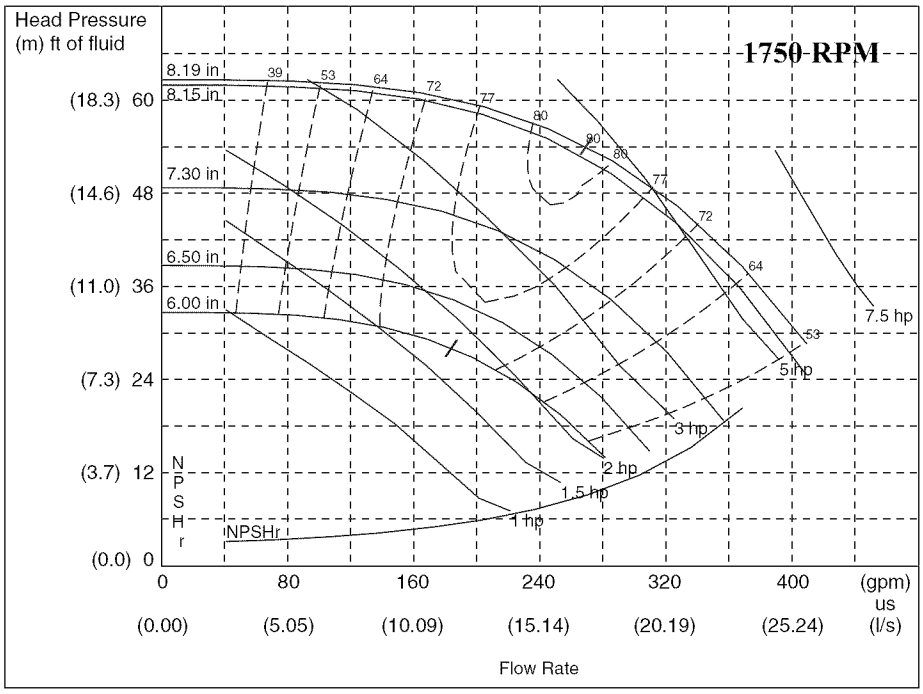



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 42 — Pump Curve IV for Hydronic Package Single Pump (Fresh Water)**

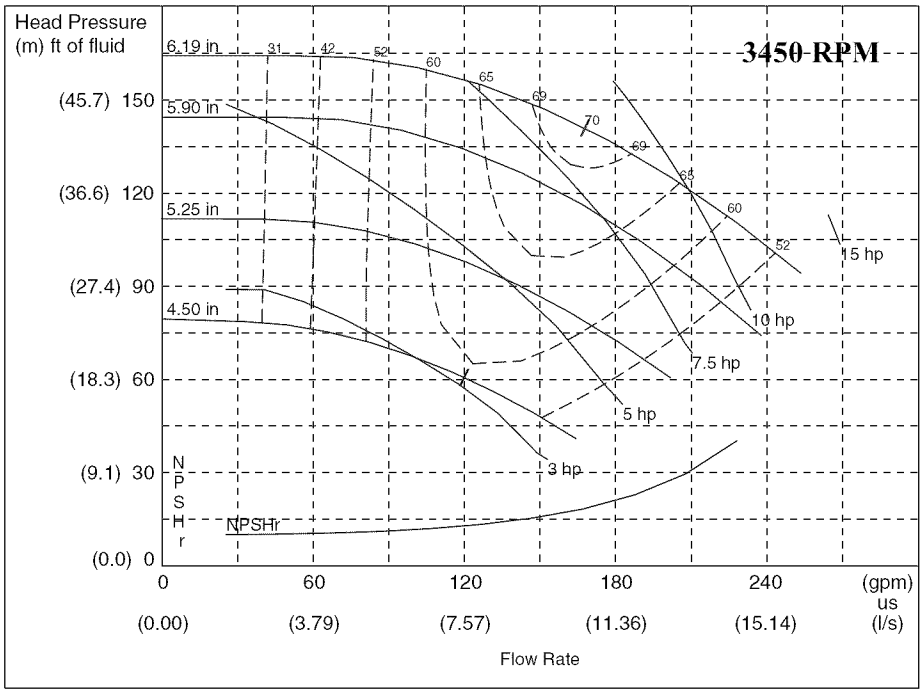



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 43 — Pump Curve V for Hydronic Package Dual Pump (Fresh Water)**

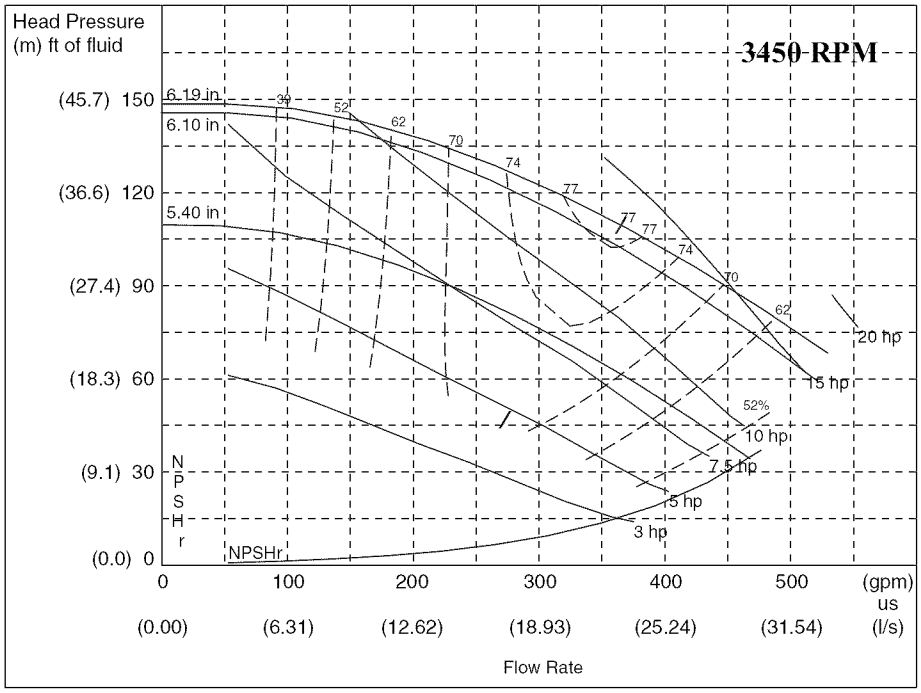



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 44 — Pump Curve VI for Hydronic Package Dual Pump (Fresh Water)**

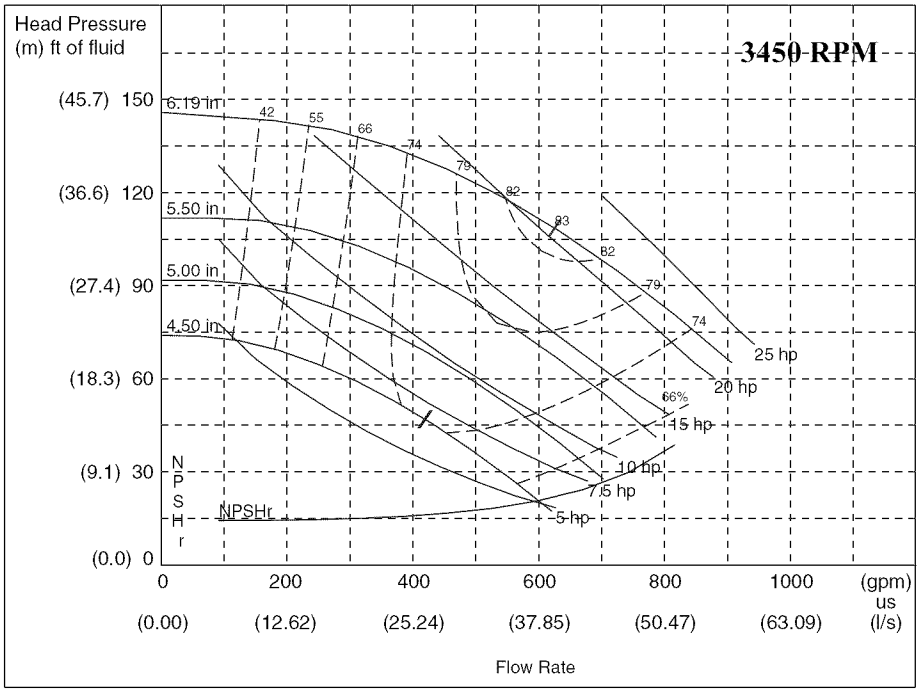



LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 45 — Pump Curve VII for Hydronic Package Dual Pump (Fresh Water)**




LEGEND

**NPSHr** — Positive Suction Head (Pressure) Required

NOTE: Refer to Fig. 1 option identification. Refer to Table 6 on page 44 for more information.

**Fig. 46 — Pump Curve VIII for Hydronic Package Dual Pump (Fresh Water)**

Normally, a closed system needs to be filled only once. The actual filling process is a fairly simple procedure. All air should be purged or vented from the system. Thorough venting at high points and circulation at room temperature for several hours is highly recommended.

NOTE: Local codes concerning backflow devices and other protection of the city water system should be consulted and followed to prevent contamination of the public water supply. This is critical when antifreeze is used in the system.

SET WATER FLOW RATE — Once the system is cleaned, pressurized, and filled, the flow rate through the chiller and heat reclaim needs to be established. Refer to the Job Submittal for flow rate requirements. See the Controls and Troubleshooting literature for operating limits. On units with the hydronic package, this can be accomplished by using the balancing valve. Follow the manufacturer's recommendations for setting the balancing valve. Local codes may prohibit restricting the amount of water using the balancing valve for a given motor horsepower. In this case, use the method listed in the Pump Modification/Trimming section. See Table 7 for the type of combination valve in 30RB units with the optional hydronic package.

**Table 7 — Combination Valve Details**

| 30RB UNIT | SINGLE/DUAL PUMP |
|---|---|
| 060-130 | FTV-4 in. |
| 150-190 | FTV-6 in. |

NOTE: Carrier recommends a differential pressure gage when measuring pressures across the pumps or balancing valves. This provides for greater accuracy and reduces error build-up that often occurs when subtracting pressures made by different gages.

A rough estimate of water flow can also be obtained from the pressure gages across the 30RB heat exchangers.

Figures 47-51 show the relationship between gpm and heat exchanger pressure drop. It should be noted that these curves are for fresh water and "clean" heat exchangers; they do not apply to heat exchangers with fouling. To read the chart, subtract the readings of the two pressure gages on the hydronic kit. This number is the pressure drop across the heat exchanger. Adjust the factory-installed balancing valve or external balancing valve (in units without hydronic package) until the correct pressure drop is obtained for the required gpm.

PUMP MODIFICATION/TRIMMING — Since the pumps are constant speed, the only way to obtain greater flow with a given pump/impeller is to decrease system head. This will allow the pump to "ride" its curve to the right, resulting in increased flow. If greater flow is necessary, consider opening the combination valve. Also, verify that the strainer is clean, and that no unnecessary system resistance is present, such as partially closed isolation valves.

Once the combination valve is set, note the stem position. If later service work requires the valve to be closed, it will be easier to re-balance the system, if the original balance point is known.

Increasing system resistance by closing the balancing valve will force the pump to "ride" its curve to the left, resulting in less flow. Although this does reduce power consumption slightly, it may not be the desirable method of reducing the flow, especially if a large reduction is needed.

The other method for reducing flow on a constant speed pump is impeller trimming. The impellers in the pumps provided in the 30RB hydronic kit can be easily removed for this purpose. Refer to the vendor literature packet supplied with the hydronic package information on Seal Replacement in the Service Section, and follow instructions for impeller removal and trimming. Trimming should only be done by a qualified machine shop that has experience in this operation. Contact your local Carrier representative for a recommended machine shop.

**⚠ CAUTION**

After trimming, the impeller MUST be balanced. Failure to balance trimmed impellers can result in excessive vibration, noise, and premature bearing failure.

Impeller trimming has the added benefit of maximum bhp (brake horsepower) savings, which can recover the cost incurred by performing the impeller trimming.

PUMP VFD — Pumps may be ordered with a variable frequency drive (VFD) for speed control.

SENSORLESS CONTROL (CLOSED LOOP) — ACTIVE SETUP 1 — The VFD provided with the pump from the factory is configured for sensorless control. Default set points are entered for the unit according to nominal tonnage of the unit. Table 8 shows the settings from the factory. For details on operating the drive display, see the pump installation and operation manual, and for more detailed information on the drive, see IVS 102 Operating Instructions. These manuals are supplied in the control box of the chiller.

The following set points should be verified or modified for the actual installation.

Parameter 20-21 Setpoint, Hdesign, Ft-Wc

Parameter 22-89 Design Flow Setpoint, GPM

Parameter 22-87 Pressure at no-flow speed, Hmin, GPM (40% of design flow)

When changing set points, assure values are within the pump curve for the pump provided with the unit.

Minimum speed for the pump is set at 50 Hz, Parameter 4-12. This may be changed as long as the corresponding flow rate meets the minimum flow requirement for the chiller.

REMOTE SENSOR (CLOSED LOOP) — ACTIVE SETUP 2 — The drive may be set up to use a remote sensor instead of sensorless pump control. For a remote sensor control change Active Setup on the drive from 1 to 2, Parameter 0-10. The drive will read a 0-10vdc or a 0/4-20 mA signal from the sensor. Switch S2-01 must be set to Off (default setting) for 0-10 vdc or On for 0/4-20 mA. The switch is located behind the display. The cover must be removed and the display will snap off to access this switch.

The setpoint is defined by Parameter 20-21, Setpoint 1. This is a percentage of the maximum signal from the sensor. The default is 80%.

REMOTE CONTROLLER (OPEN LOOP) — ACTIVE SETUP 3 — Drive may be controlled by external sources. For a remote control of the drive change Active Setup on the drive to 3, Parameter 0-10. An input signal can used to control the drive speed. Input signal may be 0-10 vdc or 0/4-20 mA. The setup is the same as a remote sensor.

A BACnet card is also included with the drive. For BACnet, use Setup 3. The communication settings are in section 8 of the drive parameters. See drive manual for details.

**Table 8 — Default Settings for Sensorless Control — Setup 1**

**SINGLE PUMP**

| Unit Size (tons) | | | | 60,70 | | | | 80, 90, 100 | | | | 110,120,130 | | | | 150 | | | | 160, 170, 190 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pump | | | | 4380 3x3x8 | | | 4380 3x3x6 | 4380 3x3x8 | | 4380 3x3x6 | | 4380 3x3x8 | | 4380 3x3x6 | | 4380 4x4x8 | | 4380 4x4x6 | | 4380 4x4x8 | | 4380 4x4x6 | |
| HP | | | | 3 | 5 | 7.5 | 10 | 5 | 7.5 | 10 | 15 | 5 | 7.5 | 10 | 15 | 5 | 7.5 | 10 | 15 | 5 | 7.5 | 10 | 15 |
| Impeller Dia (inches) | | | | 6.5 | 7.3 | 8.15 | 5.9 | 7.3 | 8.15 | 5.4 | 6.1 | 7.3 | 8.15 | 5.4 | 6.1 | 6.5 | 4.6 | 5 | 5.5 | 6.5 | 4.6 | 5 | 5.5 |
| 20-21 | Setpoint 1 | Hd | ft wc | 30 | 45 | 55 | 95 | 40 | 50 | 90 | 120 | 35 | 45 | 80 | 115 | 25 | 50 | 70 | 95 | 25 | 45 | 65 | 90 |
| 22-89 | Flow at Design Point | | gpm | 150 | | | | 200 | | | | 270 | | | | 340 | | | | 410 | | | |
| 22-87 | Press at No Flow Speed | 40% Hd | ft wc | 12 | 18 | 22 | 38 | 16 | 20 | 36 | 48 | 14 | 18 | 32 | 46 | 10 | 20 | 28 | 38 | 10 | 18 | 26 | 36 |

**DUAL PUMP**

| Unit Size (tons) | | | | 60,70 | | | | | 80, 90, 100 | | | | 110, 120, 130 | | | | 150 | | | 160, 170, 190 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pump | | | | 4382 4x4x8 | | | 4382 4x4x6 | | 4382 4x4x8 | | 4382 4x4x6 | | 4382 4x4x8 | | 4382 4x4x6 | | 4382 6x6x6 | | | 4382 6x6x6 | | |
| HP | | | | 3 | 5 | 7.5 | 7.5 | 10 | 5 | 7.5 | 10 | 15 | 5 | 7.5 | 10 | 15 | 7.5 | 10 | 15 | 7.5 | 10 | 15 |
| Impeller Dia (inches) | | | | 6.5 | 7.3 | 8.15 | 5.25 | 5.9 | 7.3 | 8.15 | 5.4 | 6.1 | 7.3 | 8.15 | 5.4 | 6.1 | 4.5 | 5 | 5.5 | 4.5 | 5 | 5.5 |
| 20-21 | Setpoint 1 | Hd | ft wc | 30 | 45 | 55 | 75 | 95 | 40 | 50 | 90 | 120 | 35 | 45 | 80 | 115 | 50 | 70 | 95 | 45 | 65 | 90 |
| 22-89 | Flow at Design Point | | gpm | 150 | | | | | 200 | | | | 270 | | | | 340 | | | 410 | | |
| 22-87 | Press at No Flow Speed | 40% Hd | ft wc | 12 | 18 | 22 | 30 | 38 | 16 | 20 | 36 | 48 | 14 | 18 | 32 | 46 | 20 | 28 | 38 | 18 | 26 | 36 |

PREPARATION FOR YEAR ROUND OPERATION — If the unit is in operation year-round, add sufficient suitable inhibited antifreeze solution such as propylene or ethylene glycol to chilled water and heat reclaim to prevent freezing under low-ambient temperature operating conditions. Consult local water treatment specialist on characteristics of water and recommended inhibitor.

IMPORTANT: Glycol anti-freeze solutions are highly recommended since heater tapes provide no protection in the event of a power failure.

If the unit is equipped with low ambient temperature head pressure control, field-fabricated and field-installed wind baffles are required if the wind velocity is anticipated to be greater than 5 mph (8 km/h). Two different baffles are required, one for the control box end and one for the opposite end of the control box. Wind baffles should be constructed with minimum 18-gage galvanized sheet metal or other suitable corrosion-resistance material with cross breaks for strength. Use field-supplied screws to attach baffles to the corner posts of the machine. Be sure to hem or turn a flange on all edges to eliminate sharp edges on the baffles.

**⚠ WARNING**

Disconnect all power to the unit before performing maintenance or service. Unit may automatically start if power is not disconnected. Electrical shock and personal injury could result.

**⚠ CAUTION**

To avoid damage to the refrigerant coils and electrical components, use extreme care when drilling screw holes and screwing in fasteners.

Mount the smaller height baffle on the end of the control box. It is recommended that the upper notches be used for mounting the baffles. This reduces the risk of damaging the coil while drilling a mounting hole. Loosen the upper corner post bolts and slide the baffle under the bolt and washer. Tighten the bolts. Drill holes in the bottom of the flange of the baffle and mount with two screws to secure the bottom of the baffle to the corner post. Repeat the process for the opposite side. See Fig. 52.

FREEZE PROTECTION — The 30RB units are provided with a flow switch for chilled water to protect against freezing situations that occur from no water flow. For freeze protection of the chiller in case of power failure during subfreezing ambient temperatures, or in other cases where water temperature falls below the freezing mark, other methods must be used. Appropriate concentrations of inhibited propylene or ethylene glycol or other suitable inhibited antifreeze solution should be considered for chiller protection for both chilled water and heat reclaim, where ambient temperatures are expected to fall below 32 F (0° C). Consult local water treatment specialist on characteristics of the system water and add a recommended inhibitor to the chilled water. The Carrier warranty does not cover damage due to freezing.

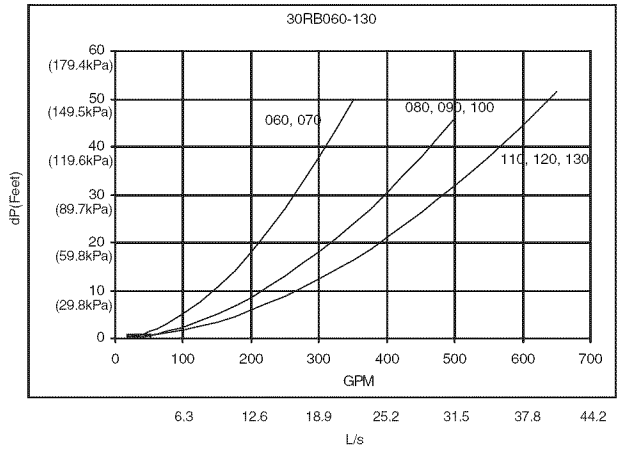



**Fig. 47 — 30RB060-130 Cooler Pressure Drop Curves**

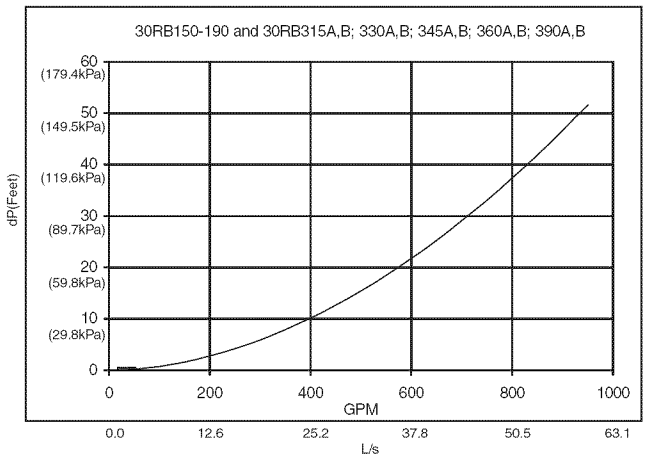



**Fig. 48 — 30RB150-190 and 30RB315A,B; 345A,B; 360A,B; 390A,B Cooler Pressure Drop Curve**

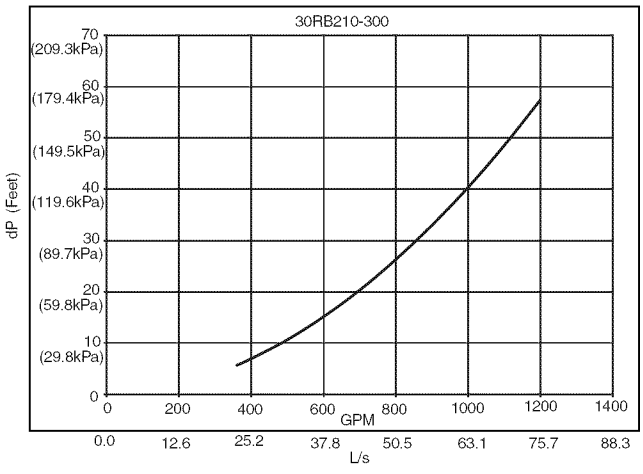



**Fig. 49 — 30RB210-300 Cooler Pressure Drop Curve**

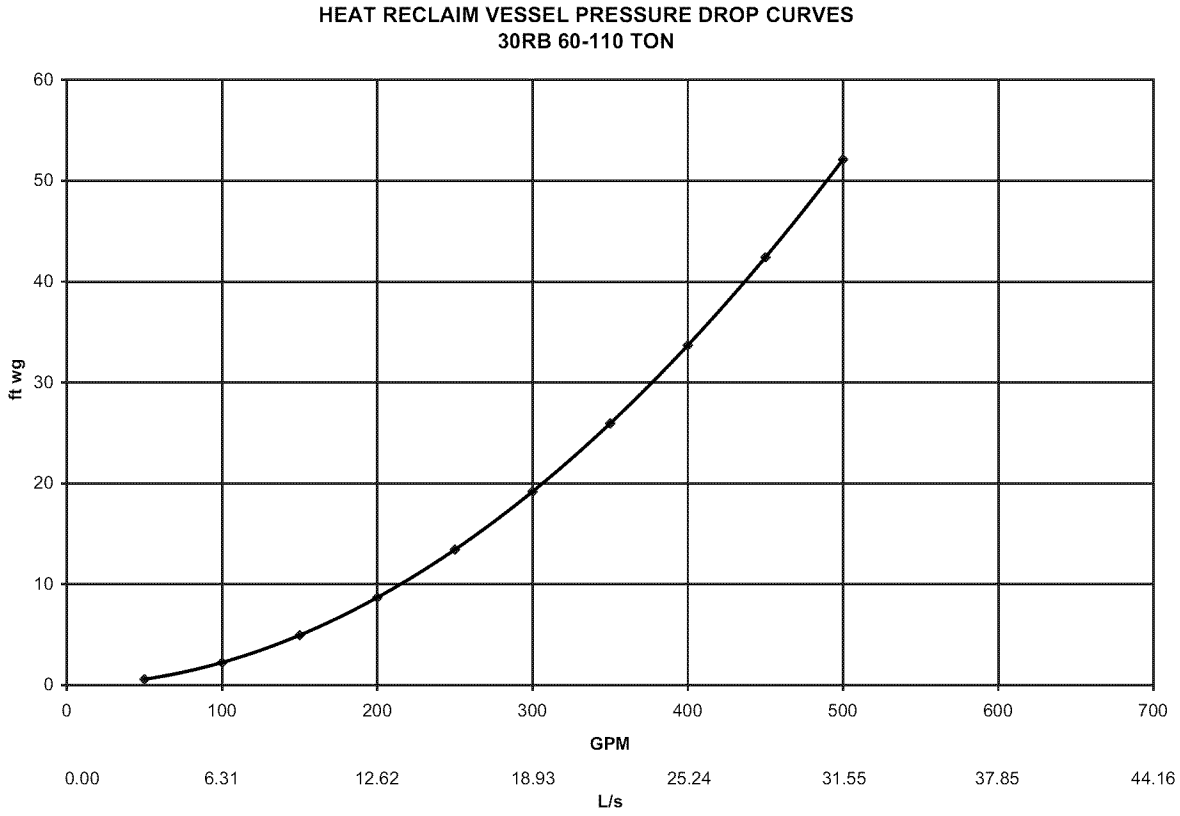



**Fig. 50 — 30RB060-110 Optional Heat Reclaim Pressure Drop Curves**

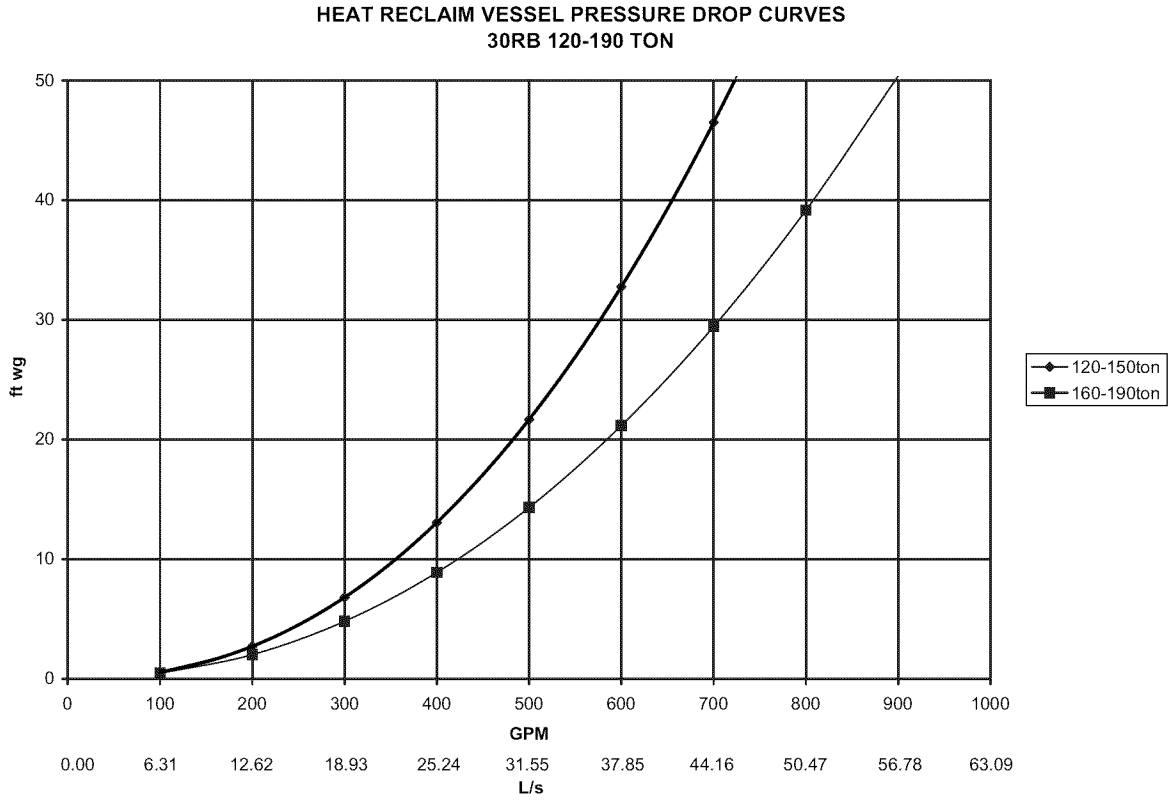
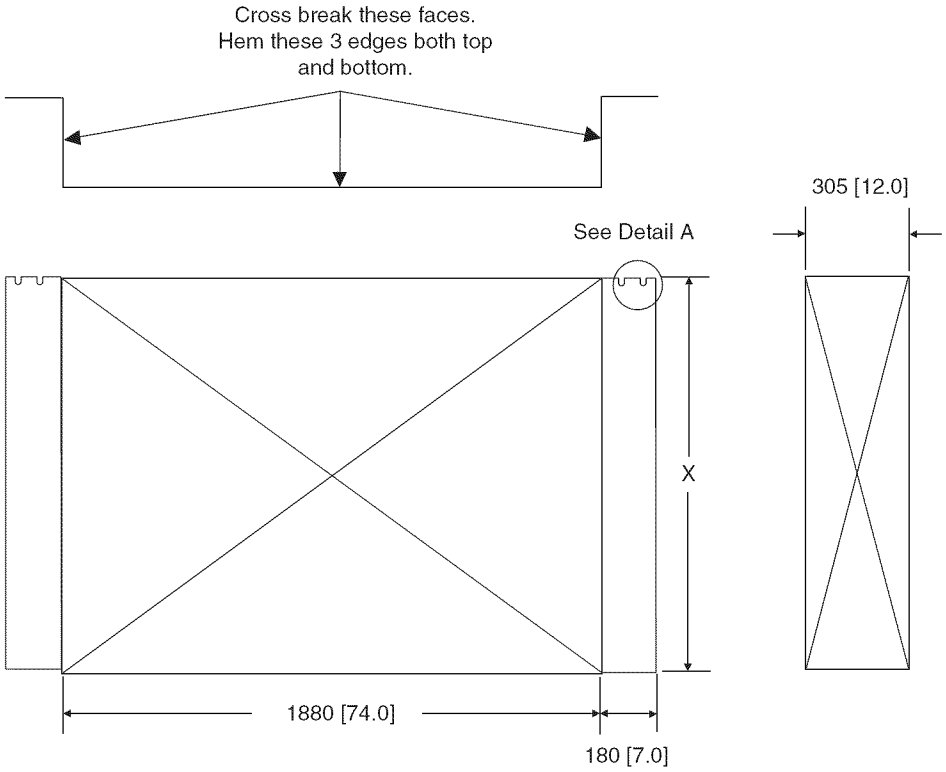



**Fig. 51 — 30RB120-190 Optional Heat Reclaim Pressure Drop Curves**




| POSITION | BAFFLE HEIGHT (X) |
|---|---|
| Control/Power End | 635 [25.0] |
| Opposite Control/Power End | 1040 [41.0] |

NOTES:
1. Material: 18 ga. Corrosion Resistant Sheet Metal.
2. Dimensions are in mm [inches].

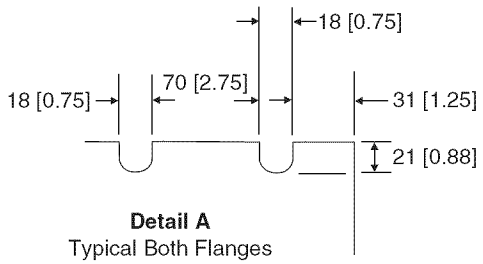



**Fig. 52 — Field-Fabricated and Field-Installed Wind Baffles**

NOTE: Do not use automobile antifreeze, or any other fluid that is not approved for heat exchanger duty. Only use appropriately inhibited glycols, concentrated to provide adequate protection for the temperature considered.

1. Use an electric heater tape for the external piping, if unit will be exposed to freezing temperatures.
2. Ensure that power is available to the chiller at all times, even during the off-season, so that the pump, cooler heaters and heat reclaim have power. Also make sure that the piping tape heaters have power.
3. On units with pump packages, a heater is supplied with the hydronic package that will protect this section from freezing in outdoor-air temperatures down to –20 F (–29 C), except in the case of a power failure. If the pump will be subjected to freezing temperatures, steps must be taken to prevent freeze damage. If the pump will not be used during this time, it is recommended to drain the pump and hydronic package and these components are back-flushed with inhibited glycol. Otherwise, a glycol-water solution should be considered as the heat transfer fluid. Drains are located on the pump(s) and suction guide/strainer for units with hydronic kits. Units without hydronic kits have a drain mounted on the bottom of the heat exchanger near the leaving water connection of the heat exchanger. The Carrier warranty does not cover damage due to freezing.
4. Cooler heaters that will protect components down to –20 F (–28.9 C) can be ordered as a factory-installed option. It should be noted that these heaters will not protect the cooler from freezing in the event of a power failure. The Carrier warranty does not cover damage due to freezing.

5. Units with the heat reclaim option are supplied with a heater to protect the reclaim condenser down to 0° F (–18 C). If the unit controls the heat reclaim circulator pump and or valves to allow flow through the condenser, freeze protection to –20 F (–29 C) is provided. Again, it should be noted that the heaters and pump control will not protect the reclaim condenser from freezing in the event of a power failure. The Carrier warranty does not cover damage due to freezing.

PREPARATION FOR WINTER SHUTDOWN — If the unit is not operational during the winter months, at the end of cooling season, perform the following:

**⚠ CAUTION**

Failure to remove power before draining heater equipped coolers, heat reclaim condensers and hydronic packages can result in heater tape and insulation damage.

CHILLED WATER SYSTEM

1. If the unit has an optional heater on the cooler and the cooler will not be drained, do not shut off power disconnect during off-season shutdown. If the unit has an optional heater on the cooler and the cooler will be drained, open the circuit breaker for the heater, CB-HT or shut off power during off-season shutdown.
2. Draining the fluid from the system is highly recommended. If the unit is equipped with a hydronic package, there are additional drains in the pump housing and strainer that must be opened to allow for all of the water to drain.
3. Replace the drain plug and add 2 gallons (7.6 liters) of a suitable corrosion-inhibited anti-freeze solution such as propylene glycol to the cooler to prevent freezing of any remaining water in system. Antifreeze can be added through the vent on top of cooler. If the unit has a hydronic pump package, the pump must also be treated in the same manner.
4. Open one of the thermistor connections to allow air to escape the vessel and the anti-freeze to enter.
5. At the beginning of the next cooling season, be sure that there is refrigerant pressure on each circuit before refilling cooler, add recommended inhibitor, and reset the CB-HT (circuit breaker heater) (if opened) or restore power.

HEAT RECLAIM SYSTEM — At the end of each cooling season the fluid should be drained from the system. However, due to the heat reclaim condenser circuiting, some fluid will remain in the condenser after draining. To prevent freeze-up damage to the condenser tubes perform the following procedure.

1. If the heat reclaim condenser will not be drained do not shut off power disconnect during off-season shutdown. If the condenser will be drained, deenergize the heaters to prevent damage and possible safety hazards when draining, or when there is no liquid in the system. Open the condenser heater circuit breaker, CB-CDH7 to deenergize the heaters. Drain the fluid from the system.
2. Isolate the condenser from the rest of the system with water shut off valves.
3. Completely fill the condenser with an appropriate amount of inhibited ethylene glycol solution (or other suitable corrosion-inhibitive antifreeze) for 15 F (8.3 C) below the expected low ambient conditions.
4. Leave the condenser filled with the antifreeze solution for the winter, or drain if desired. Be sure to deenergize heaters as explained in Step 1 to prevent damages. Use an approved method of disposal when removing the antifreeze solution.
5. At the beginning of the next cooling season, be sure that there is refrigerant pressure on each circuit before refilling the condenser circuit, add recommended inhibitor and reset the CB-CDHT (if opened) to restore power.

## Step 6 — Make Electrical Connections

**⚠ WARNING**

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

POWER SUPPLY — The electrical characteristics of the available power supply must agree with the unit nameplate rating. Supply voltage must be within the limits shown. Some units have options for multiple power connections. See Tables 9 and Fig. 53 for elecrical connection information. See Tables 10-14 for electrical requirements.

IMPORTANT: Operating unit on improper supply voltage or with excessive phase imbalance constitutes abuse and may adversely affect Carrier warranty.

POWER WIRING — All power wiring must comply with applicable local and national codes. Install field-supplied branch circuit fused disconnect per NEC of a type that can be locked OFF or OPEN. Disconnect must be within sight and readily accessible from the unit in compliance with NEC Article 440-14. In the power box, $^{7}/_{8}$ in. holes are provided for power entry. The holes will need to be enlarged to accept the appropriate conduit. NEC also requires all conduits from a conditioned space to the power box(es) be sealed to prevent airflow and moisture into the control box.

Duplex units require at least two separate power supplies, at least one for each module, depending on the power supply option ordered.

General Wiring Notes:

1. The control circuit does NOT require a separate power source. A step-down transformer from the main three-phase power supply obtains control circuit power. Be sure that the appropriate connection tap is connected on all transformers for the supply voltage. Up to there terminal blocks are provided for field-wired control devices.
2. Cooler heat reclaim condenser and pump heaters (if factory installed) are wired in the control circuit so they are operable as long as the main power supply to the unit is ON. A factory-installed and set overload device protects them.

NOTE: The field-supplied disconnect should never be off except when unit is being serviced or is to be down for a prolonged period, in which case the cooler and heat reclaim condenser should be drained if not properly protected.

3. Power entry depends on the size and power entry option ordered.
4. Maximum field wire sizes allowed by lugs on terminal block/non-fused disconnect are listed in Tables 10 and 11.
5. Terminals for field power supply are suitable for copper conductors. Insulation must be rated 75 C minimum.

IMPORTANT: To ensure power to the heaters, make sure power to the unit is always on (except during service or a prolonged shutdown).

**⚠ CAUTION**

Proper rotation of condenser fan(s) and pump(s) MUST be verified before pumps or compressors are started. Consult the Controls, Start-Up and Operation guide provided with 30RB060-390 units for correct procedure. Improper pump rotation can cause permanent damage to pump impeller and housing. If pump(s) have been removed for trimming, verify wiring is reconnected in the original manner.

CONTROL POWER — Control power is obtained from the main power supply and does NOT require a separate source. A toggle switch (marked SW2 on the unit label diagram and by the switch) allows the control circuit to be manually disconnected when necessary. Cooler heat reclaim condenser and pump heaters (if installed) are in an inoperable state when this switch is in the Off position.

IMPORTANT: For 208-v systems, the connection tap for all transformers must be changed. The factory default setting is for 230-v. Failure to connect to the proper tap may result in unreliable operation.

FIELD CONTROL OPTION WIRING — Install field control wiring options. See Fig. 53 and 54. Some options, such as 4 to 20 mA demand limit that requires the energy management module, may require that accessories be installed first if not factory installed for terminal connections.

## Table 9 — Control and Power Connections, 30RB060-390

| 30RB UNIT SIZE | VOLTAGE | ELECTRICAL OPTION | CONNECTIONS | MAIN POWER ENTRANCE | CONTROL BOX |
|---|---|---|---|---|---|
| 060,070 | 208/230, 380, 460, 575 | Standard (Terminal Block) | Single Point | Circuit 1 | Combination |
| | | | Dual Point | Circuit 1 | Combination |
| | | | | Circuit 2 | Combination |
| | | Non-Fused Disconnect Option* | Single Point | Circuit 1 | Combination |
| 080-120 | 208/230 | Standard (Terminal Block) | Single Point | Circuit 1 | Power-L |
| | | | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | Power-L |
| | | Non-Fused Disconnect Option* | Single Point | Circuit 1 | Power-L |
| | 380, 460, 575 | Standard (Terminal Block) | Single Point | Circuit 1 | Combination |
| | | | Dual Point | Circuit 1 | Combination |
| | | | | Circuit 2 | Combination |
| | | Non-Fused Disconnect Option* | Single Point | Circuit 1 | Combination |
| 130-190, 315A-390A, 315B-390B | 208/230 | Standard (Terminal Block) | Single Point | Circuit 1 | Power-L |
| | | | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB1 |
| | | Non-Fused Disconnect Option | Single Point | Circuit 1 | Power-L |
| | | | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB1 |
| | 380, 460, 575 | Standard (Terminal Block) | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | PEB1 |
| | | Non-Fused Disconnect Option | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | Power-L |
| 210, 225 | 208/230† | Standard (Terminal Block) | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB2 |
| | | Non-Fused Disconnect Option | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB2 |
| | 380, 460, 575 | Standard (Terminal Block) | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | PEB1 |
| | | Non-Fused Disconnect Option | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | Power-L |
| 250-300 | 208/230† | Standard (Terminal Block) | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB2 |
| | | Non-Fused Disconnect Option | Dual Point | Circuit 1 | Power-L |
| | | | | Circuit 2 | PEB2 |
| | 380, 460, 575 | Standard (Terminal Block) | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | PEB2 |
| | | Non-Fused Disconnect | Single Point | Circuit 1 | PEB1 |
| | | | Dual Point | Circuit 1 | PEB1 |
| | | | | Circuit 2 | PEB2 |

*Dual point connection is not available when non-fused disconnect option is selected.
†Single point connection not available.

NOTES:
1. "Combination" is identified as COMB1 in Fig. 53.
2. "Power-L" is the same as COMB1 in Fig. 53.
3. "PEB" or Power Electrical Box is shown in Fig. 53.

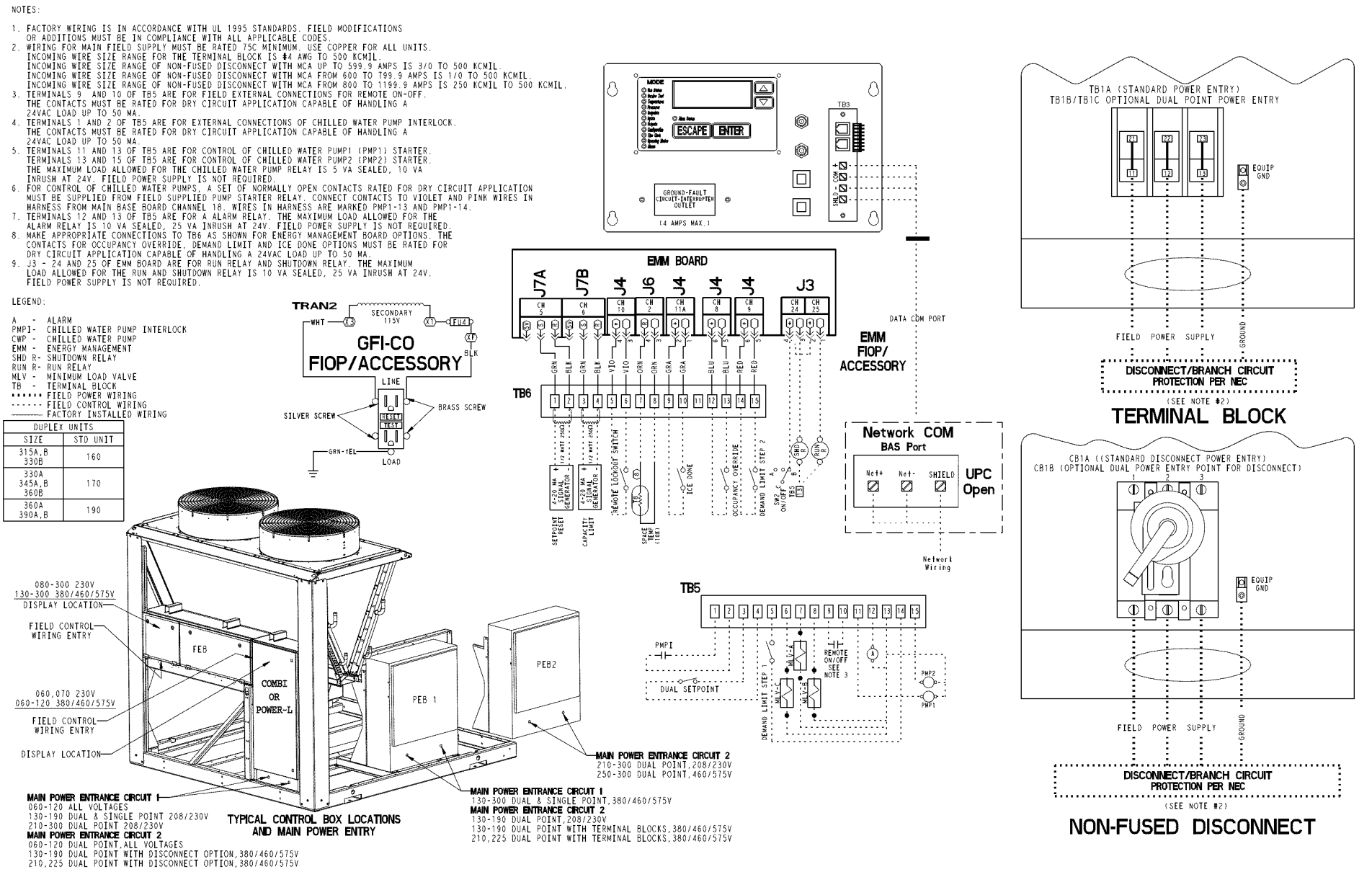
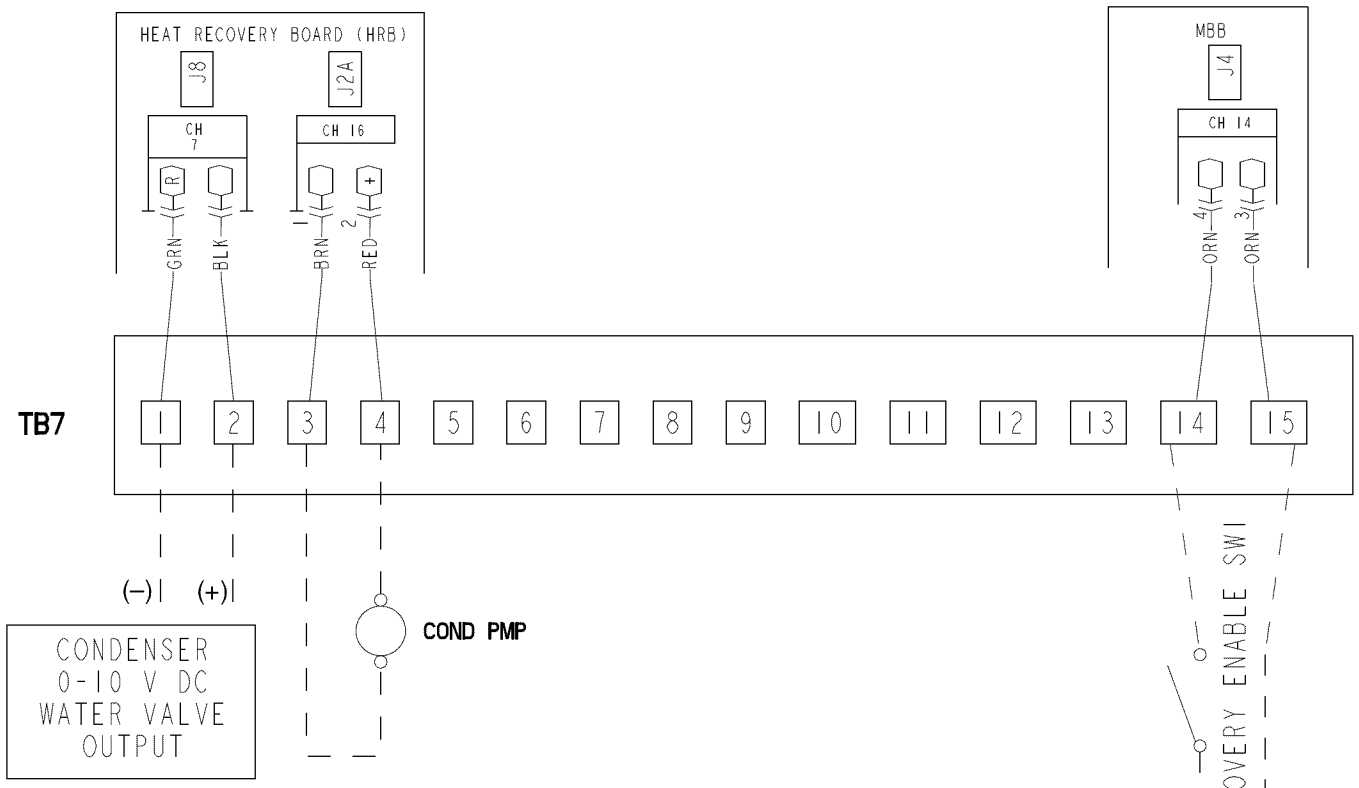



**Fig. 53 — Control and Power Wiring Schematic, 30RB060-390**




LEGEND

Field Control Wiring

Factory Installed Wiring

NOTES:

1. Terminals 1 and 2 of TB7 are for external connection of heat reclaim condenser water valve.
2. Terminals 3 and 4 of TB7 are for external connection of field-supplied heat reclaim water pump control relay.
3. The maximum load allowed for the condenser pump relay is 5 va sealed, 10 va inrush at 24 v.
4. Terminals 14 and 15 of TB7 are for external connection of heat reclaim remote enable switch.
5. Terminals 5 through 13 of TB7 are for the connection of factory-installed solenoid valve control wiring.

**Fig. 54 — Optional Heat Reclaim Control Typical Field Wiring**

DUAL CHILLER CONTROL OPTION — If the Dual Chiller algorithm is used and the machines are installed in parallel, an additional chilled water sensor must be installed for each chiller. For 30RB315-390 units, a factory-supplied thermistor and well are shipped in the control box of each. Install the well in the common leaving water header. See Fig 34. Do not relocate the chiller's leaving water thermistors. They must remain in place for the unit to operate properly.

For the non-modular units, an accessory kit, Part No. 00EFN900044000A, is available. This kit includes all parts necessary for dual chiller control.

The thermistor well is a $^1/_4$ in. NPT fitting for securing the well in the piping. The piping must be drilled and tapped for the well. Select a location that will allow for removal of the thermistor without any restrictions. See Fig. 55 and 56.

Once the well is inserted, install the thermistors. Insert the thermistor into the well until the O-ring reaches the well body. Use the nut on the thermistor to secure the thermistor in place. Once the thermistor is in place, it is recommended that a thermistor wire loop be made and secured with a wire tie to the chilled water pipe. This will aid in thermistor retention in the well. See Fig. 55. Attach connector (part no. HY06AM016) to thermistor lead. Plug connector into MBB J6-CH-3.

For 30RB315-390 units, as well as all units using the dual chiller algorithm, a Carrier Comfort Network® (CCN) bus must be connected between the two modules. See the Carrier Comfort Network Communication Bus Wiring section on page 66 for additional information.

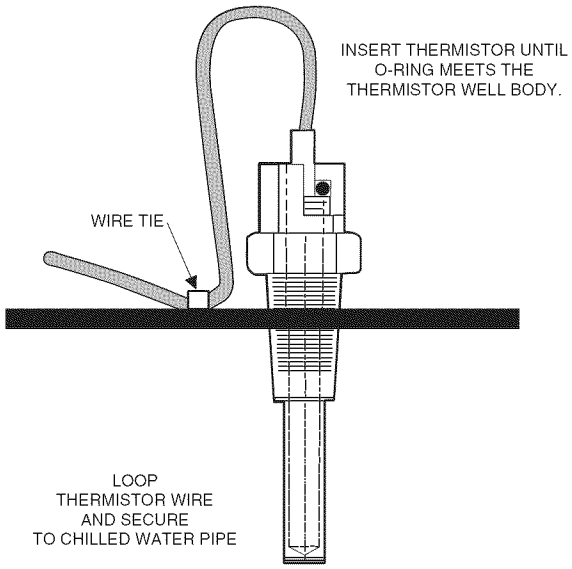



**Fig. 55 — Dual Leaving Water Thermistor (Part No. 30RB660036)**

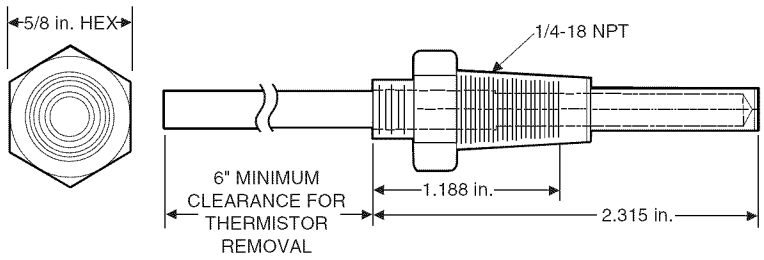



**Fig. 56 — Dual Leaving Water Thermistor Well (Part No. 00PPG000008000A)**

# Table 10 — 30RB Electrical Data — Single Point Units

| UNIT 30RB | UNIT VOLTAGE | | | NO HYDRONIC PACKAGE | | | | 3 HP PUMP, 1750 RPM | | | | 5 HP PUMP, 1750 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 060 | 208/230-60 | 187 | 253 | 291.5 | 350 | 682.8 | 350 | 302.4 | 350 | 693.6 | 350 | 309.2 | 350 | 700.5 | 350 |
| | 380-60 | 342 | 418 | 150.9 | 175 | 362.9 | 175 | 156.9 | 175 | 368.8 | 175 | 160.6 | 175 | 372.6 | 175 |
| | 460-60 | 414 | 506 | 127.9 | 150 | 302.0 | 150 | 132.8 | 150 | 306.9 | 150 | 135.9 | 150 | 310.0 | 150 |
| | 575-60 | 518 | 633 | 102.4 | 125 | 244.7 | 110 | 106.4 | 125 | 248.6 | 125 | 108.8 | 125 | 251.1 | 125 |
| 070 | 208/230-60 | 187 | 253 | 334.7 | 400 | 777.0 | 400 | 345.6 | 400 | 787.8 | 400 | 352.4 | 400 | 794.7 | 400 |
| | 380-60 | 342 | 418 | 175.5 | 200 | 428.8 | 200 | 181.4 | 225 | 434.7 | 200 | 185.2 | 225 | 438.5 | 200 |
| | 460-60 | 414 | 506 | 147.9 | 175 | 355.9 | 175 | 152.8 | 175 | 360.8 | 175 | 155.9 | 175 | 363.9 | 175 |
| | 575-60 | 518 | 633 | 119.8 | 150 | 287.4 | 150 | 123.7 | 150 | 291.3 | 150 | 126.2 | 150 | 293.8 | 150 |
| 080 | 208/230-60 | 187 | 253 | 366.5 | 400 | 757.8 | 400 | — | — | — | — | 384.2 | 450 | 775.5 | 450 |
| | 380-60 | 342 | 418 | 189.3 | 225 | 401.3 | 200 | — | — | — | — | 199.0 | 225 | 411.0 | 225 |
| | 460-60 | 414 | 506 | 160.6 | 175 | 334.7 | 175 | — | — | — | — | 168.6 | 200 | 342.7 | 200 |
| | 575-60 | 518 | 633 | 128.6 | 150 | 270.9 | 150 | — | — | — | — | 135.0 | 150 | 277.3 | 150 |
| 090 | 208/230-60 | 187 | 253 | 433.6 | 500 | 875.9 | 500 | — | — | — | — | 451.3 | 500 | 893.6 | 500 |
| | 380-60 | 342 | 418 | 226.9 | 250 | 480.3 | 250 | — | — | — | — | 236.6 | 250 | 490.0 | 250 |
| | 460-60 | 414 | 506 | 191.4 | 225 | 399.4 | 225 | — | — | — | — | 199.4 | 225 | 407.4 | 225 |
| | 575-60 | 518 | 633 | 154.6 | 175 | 322.2 | 175 | — | — | — | — | 161.0 | 175 | 328.6 | 175 |
| 100 | 208/230-60 | 187 | 253 | 472.0 | 500 | 914.3 | 500 | — | — | — | — | 489.7 | 500 | 932.0 | 500 |
| | 380-60 | 342 | 418 | 248.7 | 250 | 502.1 | 250 | — | — | — | — | 258.4 | 300 | 511.8 | 300 |
| | 460-60 | 414 | 506 | 209.2 | 250 | 417.2 | 225 | — | — | — | — | 217.2 | 250 | 425.2 | 250 |
| | 575-60 | 518 | 633 | 170.0 | 200 | 337.6 | 200 | — | — | — | — | 176.4 | 200 | 344.0 | 200 |
| 110 | 208/230-60 | 187 | 253 | 508.6 | 600 | 950.9 | 600 | — | — | — | — | 526.3 | 600 | 968.6 | 600 |
| | 380-60 | 342 | 418 | 265.3 | 300 | 518.7 | 300 | — | — | — | — | 275.0 | 300 | 528.4 | 300 |
| | 460-60 | 414 | 506 | 224.1 | 250 | 432.1 | 250 | — | — | — | — | 232.1 | 250 | 440.1 | 250 |
| | 575-60 | 518 | 633 | 180.8 | 200 | 348.4 | 200 | — | — | — | — | 187.2 | 200 | 354.8 | 200 |
| 120 | 208/230-60 | 187 | 253 | 578.1 | 600 | 1020.4 | 600 | — | — | — | — | 595.8 | 600 | 1038.1 | 700 |
| | 380-60 | 342 | 418 | 304.6 | 350 | 538.0 | 350 | — | — | — | — | 314.3 | 350 | 567.6 | 350 |
| | 460-60 | 414 | 506 | 256.2 | 300 | 464.2 | 300 | — | — | — | — | 264.2 | 300 | 472.2 | 300 |
| | 575-60 | 518 | 633 | 208.2 | 225 | 325.8 | 225 | — | — | — | — | 214.6 | 225 | 382.2 | 250 |
| 130 | 208/230-60 | 187 | 253 | 626.7 | 700 | 1068.9 | 700 | — | — | — | — | 644.4 | 700 | 1086.6 | 700 |
| | 380-60 | 342 | 418 | 327.7 | 350 | 581.1 | 350 | — | — | — | — | 337.4 | 350 | 590.8 | 350 |
| | 460-60 | 414 | 506 | 276.5 | 300 | 484.5 | 300 | — | — | — | — | 284.5 | 300 | 492.5 | 300 |
| | 575-60 | 518 | 633 | 223.3 | 250 | 391.0 | 250 | — | — | — | — | 229.7 | 250 | 397.4 | 250 |
| 150 | 208/230-60 | 187 | 253 | 684.3 | 700 | 1126.5 | 700 | — | — | — | — | 702.0 | 800 | 1144.2 | 800 |
| | 380-60 | 342 | 418 | 360.4 | 400 | 613.8 | 400 | — | — | — | — | 370.1 | 400 | 623.5 | 400 |
| | 460-60 | 414 | 506 | 303.2 | 350 | 511.2 | 350 | — | — | — | — | 311.2 | 350 | 519.2 | 350 |
| | 575-60 | 518 | 633 | 246.4 | 250 | 414.1 | 250 | — | — | — | — | 252.8 | 300 | 420.5 | 300 |
| 160 | 208/230-60 | 187 | 253 | 744.8 | 800 | 1187.0 | 800 | — | — | — | — | 762.5 | 800 | 1204.7 | 800 |
| | 380-60 | 342 | 418 | 390.1 | 400 | 643.5 | 400 | — | — | — | — | 399.8 | 400 | 653.2 | 400 |
| | 460-60 | 414 | 506 | 328.9 | 350 | 536.9 | 350 | — | — | — | — | 336.9 | 350 | 544.9 | 350 |
| | 575-60 | 518 | 633 | 265.9 | 300 | 433.5 | 300 | — | — | — | — | 272.3 | 300 | 439.9 | 300 |
| 170 | 208/230-60 | 187 | 253 | 802.4 | 1000 | 1244.6 | 1000 | — | — | — | — | 820.1 | 1000 | 1262.3 | 1000 |
| | 380-60 | 342 | 418 | 422.8 | 450 | 676.2 | 450 | — | — | — | — | 432.5 | 450 | 685.9 | 450 |
| | 460-60 | 414 | 506 | 355.6 | 400 | 563.6 | 400 | — | — | — | — | 363.6 | 400 | 571.6 | 400 |
| | 575-60 | 518 | 633 | 289.0 | 300 | 456.6 | 300 | — | — | — | — | 295.4 | 300 | 463.0 | 300 |
| 190 | 208/230-60 | 187 | 253 | 920.5 | 1000 | 1362.7 | 1000 | — | — | — | — | 938.2 | 1000 | 1380.4 | 1000 |
| | 380-60 | 342 | 418 | 485.2 | 500 | 738.5 | 500 | — | — | — | — | 494.9 | 500 | 748.2 | 500 |
| | 460-60 | 414 | 506 | 408.0 | 450 | 616.0 | 450 | — | — | — | — | 416.0 | 450 | 624.0 | 450 |
| | 575-60 | 518 | 633 | 331.5 | 350 | 499.1 | 350 | — | — | — | — | 337.9 | 350 | 505.5 | 350 |
| 210 | 208/230-60 | 187 | 253 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 501.8 | 600 | 755.1 | 600 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 422.9 | 450 | 630.9 | 450 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 342.3 | 350 | 509.9 | 350 | — | — | — | — | — | — | — | — |
| 225 | 208/230-60 | 187 | 253 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 534.5 | 600 | 787.8 | 600 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 449.6 | 450 | 657.6 | 450 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 365.4 | 400 | 533.0 | 400 | — | — | — | — | — | — | — | — |
| 250 | 208/230-60 | 187 | 253 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 596.8 | 600 | 850.2 | 600 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 502.0 | 600 | 710.0 | 600 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 408.0 | 450 | 575.6 | 450 | — | — | — | — | — | — | — | — |
| 275 | 208/230-60 | 187 | 253 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 659.2 | 700 | 912.6 | 700 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 554.4 | 600 | 762.4 | 600 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 450.5 | 500 | 618.1 | 500 | — | — | — | — | — | — | — | — |
| 300 | 208/230-60 | 187 | 253 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 721.6 | 800 | 975.0 | 800 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 606.8 | 700 | 814.8 | 700 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 493.0 | 500 | 660.7 | 500 | — | — | — | — | — | — | — | — |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow
**MCA** — Minimum Circuit Amps
**MOCP** — Maximum Overcurrent Protection
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units or modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.


208/230
460
575 v only

# Table 10 — 30RB Electrical Data — Single Point Units (cont)

| UNIT 30RB | | UNIT VOLTAGE | | | NO HYDRONIC PACKAGE | | | | 3 HP PUMP, 1750 RPM | | | | 5 HP PUMP, 1750 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 315 | A | 208/230-60 | 187 | 253 | 744.8 | 800 | 1187.0 | 800 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 390.1 | 400 | 643.5 | 400 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 328.9 | 350 | 536.9 | 350 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 265.9 | 300 | 433.5 | 300 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 744.8 | 800 | 1187.0 | 800 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 390.1 | 400 | 643.5 | 400 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 328.9 | 350 | 536.9 | 350 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 265.9 | 300 | 433.5 | 300 | — | — | — | — | — | — | — | — |
| 330 | A | 208/230-60 | 187 | 253 | 802.4 | 1000 | 1244.6 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 422.8 | 450 | 676.2 | 450 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 355.6 | 400 | 563.6 | 400 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 289.0 | 300 | 456.6 | 300 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 744.8 | 800 | 1187.0 | 800 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 390.1 | 400 | 643.5 | 400 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 328.9 | 350 | 536.9 | 350 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 265.9 | 300 | 433.5 | 300 | — | — | — | — | — | — | — | — |
| 345 | A | 208/230-60 | 187 | 253 | 802.4 | 1000 | 1244.6 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 422.8 | 450 | 676.2 | 450 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 355.6 | 400 | 563.6 | 400 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 289.0 | 300 | 456.6 | 300 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 802.4 | 1000 | 1244.6 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 422.8 | 450 | 676.2 | 450 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 355.6 | 400 | 563.6 | 400 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 289.0 | 300 | 456.6 | 300 | — | — | — | — | — | — | — | — |
| 360 | A | 208/230-60 | 187 | 253 | 920.5 | 1000 | 1362.7 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 485.2 | 500 | 738.5 | 500 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 408.0 | 450 | 616.0 | 450 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 331.5 | 350 | 499.1 | 350 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 802.4 | 1000 | 1244.6 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 422.8 | 450 | 676.2 | 450 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 355.6 | 400 | 563.6 | 400 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 289.0 | 300 | 456.6 | 300 | — | — | — | — | — | — | — | — |
| 390 | A | 208/230-60 | 187 | 253 | 920.5 | 1000 | 1362.7 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 485.2 | 500 | 738.5 | 500 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 408.0 | 450 | 616.0 | 450 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 331.5 | 350 | 499.1 | 350 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 920.5 | 1000 | 1362.7 | 1000 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 485.2 | 500 | 738.5 | 500 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 408.0 | 450 | 616.0 | 450 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 331.5 | 350 | 499.1 | 350 | — | — | — | — | — | — | — | — |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow
**MCA** — Minimum Circuit Amps
**MOCP** — Maximum Overcurrent Protection
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units or modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.


208/230
460
575 v only

## Table 10 — 30RB Electrical Data — Single Point Units (cont)

| UNIT 30RB | UNIT VOLTAGE | | | 7.5 HP PUMP, 1750/3450 RPM | | | | 10 HP PUMP, 3450 RPM | | | | 15 HP PUMP, 3450 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 060 | 208/230-60 | 187 | 253 | 317.2 | 350 | 708.5 | 350 | 325.1 | 400 | 716.4 | 350 | — | — | — | — |
| | 380-60 | 342 | 418 | 165.0 | 200 | 376.9 | 175 | 169.3 | 200 | 381.3 | 200 | — | — | — | — |
| | 460-60 | 414 | 506 | 139.5 | 150 | 313.6 | 150 | 143.1 | 175 | 317.2 | 175 | — | — | — | — |
| | 575-60 | 518 | 633 | 111.7 | 125 | 254.0 | 125 | 114.6 | 125 | 256.9 | 125 | — | — | — | — |
| 070 | 208/230-60 | 187 | 253 | 360.4 | 450 | 802.7 | 400 | 368.3 | 450 | 810.6 | 400 | — | — | — | — |
| | 380-60 | 342 | 418 | 189.5 | 225 | 442.8 | 225 | 193.9 | 225 | 447.2 | 225 | — | — | — | — |
| | 460-60 | 414 | 506 | 159.5 | 200 | 367.5 | 175 | 163.1 | 200 | 371.1 | 175 | — | — | — | — |
| | 575-60 | 518 | 633 | 129.0 | 150 | 296.7 | 150 | 131.9 | 150 | 299.6 | 150 | — | — | — | — |
| 080 | 208/230-60 | 187 | 253 | 392.2 | 450 | 783.5 | 450 | 400.1 | 450 | 791.4 | 450 | 416.3 | 450 | 807.6 | 450 |
| | 380-60 | 342 | 418 | 203.4 | 225 | 415.3 | 225 | 207.7 | 225 | 419.7 | 225 | 216.6 | 250 | 428.5 | 250 |
| | 460-60 | 414 | 506 | 172.2 | 200 | 346.3 | 200 | 175.8 | 200 | 349.9 | 200 | 183.1 | 200 | 357.2 | 200 |
| | 575-60 | 518 | 633 | 137.9 | 150 | 280.2 | 150 | 140.8 | 150 | 283.1 | 150 | 146.6 | 150 | 288.9 | 150 |
| 090 | 208/230-60 | 187 | 253 | 459.3 | 500 | 901.6 | 500 | 467.2 | 500 | 909.5 | 500 | 483.4 | 500 | 925.7 | 500 |
| | 380-60 | 342 | 418 | 241.0 | 250 | 494.3 | 250 | 245.3 | 250 | 498.7 | 250 | 254.2 | 300 | 507.5 | 300 |
| | 460-60 | 414 | 506 | 203.0 | 225 | 411.0 | 225 | 206.6 | 225 | 414.6 | 225 | 213.9 | 250 | 421.9 | 225 |
| | 575-60 | 518 | 633 | 163.9 | 175 | 331.5 | 175 | 166.8 | 200 | 334.4 | 200 | 172.6 | 200 | 340.2 | 200 |
| 100 | 208/230-60 | 187 | 253 | 497.7 | 500 | 940.0 | 500 | 505.6 | 600 | 947.9 | 600 | 521.8 | 600 | 964.1 | 600 |
| | 380-60 | 342 | 418 | 262.8 | 300 | 516.1 | 300 | 267.1 | 300 | 520.5 | 300 | 276.0 | 300 | 529.3 | 300 |
| | 460-60 | 414 | 506 | 220.8 | 250 | 428.8 | 250 | 224.4 | 250 | 432.4 | 250 | 231.7 | 250 | 439.7 | 250 |
| | 575-60 | 518 | 633 | 179.3 | 200 | 346.9 | 200 | 182.2 | 200 | 349.8 | 200 | 188.0 | 200 | 355.6 | 200 |
| 110 | 208/230-60 | 187 | 253 | 534.3 | 600 | 976.6 | 600 | 542.2 | 600 | 984.5 | 600 | 558.4 | 600 | 1000.7 | 600 |
| | 380-60 | 342 | 418 | 279.4 | 300 | 532.7 | 300 | 283.7 | 300 | 537.1 | 300 | 292.6 | 300 | 545.9 | 300 |
| | 460-60 | 414 | 506 | 235.7 | 250 | 443.7 | 250 | 239.3 | 250 | 447.3 | 250 | 246.6 | 250 | 454.6 | 250 |
| | 575-60 | 518 | 633 | 190.1 | 200 | 357.7 | 200 | 193.0 | 225 | 360.6 | 225 | 198.8 | 225 | 366.4 | 225 |
| 120 | 208/230-60 | 187 | 253 | 603.8 | 700 | 1046.1 | 600 | 611.8 | 700 | 1054.0 | 700 | 627.9 | 700 | 1070.2 | 700 |
| | 380-60 | 342 | 418 | 318.6 | 350 | 572.0 | 350 | 323.0 | 350 | 576.4 | 350 | 331.8 | 350 | 585.2 | 350 |
| | 460-60 | 414 | 506 | 267.8 | 300 | 425.8 | 300 | 271.4 | 300 | 479.4 | 300 | 278.7 | 300 | 486.7 | 300 |
| | 575-60 | 518 | 633 | 217.5 | 250 | 385.1 | 250 | 220.4 | 250 | 388.0 | 250 | 226.2 | 250 | 393.8 | 250 |
| 130 | 208/230-60 | 187 | 253 | 652.3 | 700 | 1094.6 | 700 | 660.3 | 700 | 1102.5 | 700 | 676.4 | 700 | 1118.7 | 700 |
| | 380-60 | 342 | 418 | 341.8 | 350 | 595.1 | 350 | 346.1 | 350 | 599.5 | 350 | 355.0 | 400 | 608.3 | 400 |
| | 460-60 | 414 | 506 | 288.1 | 300 | 496.1 | 300 | 291.7 | 300 | 499.7 | 300 | 299.0 | 300 | 507.0 | 300 |
| | 575-60 | 518 | 633 | 232.6 | 250 | 400.3 | 250 | 235.5 | 250 | 403.2 | 250 | 241.3 | 250 | 409.0 | 250 |
| 150 | 208/230-60 | 187 | 253 | 709.9 | 800 | 1152.2 | 800 | 717.9 | 800 | 1160.1 | 800 | 734.0 | 800 | 1176.3 | 800 |
| | 380-60 | 342 | 418 | 374.5 | 400 | 627.8 | 400 | 378.8 | 400 | 632.2 | 400 | 387.7 | 400 | 641.0 | 400 |
| | 460-60 | 414 | 506 | 314.8 | 350 | 522.8 | 350 | 318.4 | 350 | 526.4 | 350 | 325.7 | 350 | 533.7 | 350 |
| | 575-60 | 518 | 633 | 255.7 | 300 | 423.4 | 300 | 258.6 | 300 | 426.3 | 300 | 264.4 | 300 | 432.1 | 300 |
| 160 | 208/230-60 | 187 | 253 | 770.4 | 800 | 1212.7 | 800 | 778.4 | 800 | 1220.6 | 800 | 794.5 | 800 | 1236.8 | 800 |
| | 380-60 | 342 | 418 | 404.1 | 450 | 657.5 | 450 | 408.5 | 450 | 661.9 | 450 | 417.3 | 450 | 670.7 | 450 |
| | 460-60 | 414 | 506 | 340.5 | 350 | 548.5 | 350 | 344.1 | 350 | 552.1 | 350 | 351.4 | 400 | 559.4 | 400 |
| | 575-60 | 518 | 633 | 275.2 | 300 | 442.8 | 300 | 278.0 | 300 | 445.7 | 300 | 283.9 | 300 | 451.5 | 300 |
| 170 | 208/230-60 | 187 | 253 | 828.0 | 1000 | 1270.3 | 1000 | 836.0 | 1000 | 1278.2 | 1000 | 852.1 | 1000 | 1294.4 | 1000 |
| | 380-60 | 342 | 418 | 436.8 | 450 | 690.2 | 450 | 441.2 | 450 | 694.6 | 450 | 450.0 | 500 | 703.4 | 500 |
| | 460-60 | 414 | 506 | 367.2 | 400 | 575.2 | 400 | 370.8 | 400 | 578.8 | 400 | 378.1 | 400 | 586.1 | 400 |
| | 575-60 | 518 | 633 | 298.3 | 300 | 465.9 | 300 | 301.1 | 350 | 468.8 | 350 | 307.0 | 350 | 474.6 | 350 |
| 190 | 208/230-60 | 187 | 253 | 946.1 | 1000 | 1388.4 | 1000 | 954.1 | 1000 | 1396.3 | 1000 | 970.2 | 1000 | 1412.5 | 1000 |
| | 380-60 | 342 | 418 | 499.2 | 500 | 752.5 | 500 | 503.6 | 600 | 756.9 | 600 | 512.4 | 600 | 765.7 | 600 |
| | 460-60 | 414 | 506 | 419.6 | 450 | 627.6 | 450 | 423.2 | 450 | 631.2 | 450 | 430.5 | 450 | 638.5 | 450 |
| | 575-60 | 518 | 633 | 340.8 | 350 | 508.4 | 350 | 343.7 | 350 | 511.3 | 350 | 349.5 | 350 | 517.1 | 350 |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow
**MCA** — Minimum Circuit Amps
**MOCP** — Maximum Overcurrent Protection
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units and modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.


208/230
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575 v only

# Table 11 — 30RB Electrical Data — Dual Point Units

| 30RB UNIT SIZE | UNIT VOLTAGE | | | NO HYDRONIC PACKAGE | | | | 3 HP PUMP, 1750 RPM | | | | 5 HP PUMP, 1750 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 060 | 208/230-60 | 187 | 253 | 168.8/141.5 | 225/200 | 560.0/532.8 | 200/175 | 179.6/141.5 | 250/200 | 570.8/532.8 | 200/175 | 186.4/141.5 | 250/200 | 577.7/532.8 | 225/175 |
| | 380-60 | 342 | 418 | 86.4/ 74.1 | 110/110 | 298.4/286.1 | 100/ 90 | 92.3/ 74.1 | 125/110 | 304.3/286.1 | 110/ 90 | 96.1/ 74.1 | 125/110 | 308.1/286.1 | 110/ 90 |
| | 460-60 | 414 | 506 | 73.6/ 62.5 | 100/ 90 | 247.7/236.6 | 90/ 80 | 78.5/ 62.5 | 110/ 90 | 252.6/236.6 | 90/ 80 | 81.6/ 62.5 | 110/ 90 | 255.7/236.6 | 90/ 80 |
| | 575-60 | 518 | 633 | 59.0/ 50.0 | 80/ 70 | 201.2/192.3 | 70/ 60 | 62.9/ 50.0 | 80/ 70 | 205.1/192.3 | 70/ 60 | 65.4/ 50.0 | 90/ 70 | 207.6/192.3 | 80/ 60 |
| 070 | 208/230-60 | 187 | 253 | 212.0/141.5 | 300/200 | 654.2/532.8 | 250/175 | 222.8/141.5 | 300/200 | 665.0/532.8 | 250/175 | 229.6/141.5 | 300/200 | 671.9/532.8 | 300/175 |
| | 380-60 | 342 | 418 | 110.9/ 74.1 | 150/110 | 364.3/286.1 | 125/ 90 | 116.9/ 74.1 | 150/110 | 370.2/286.1 | 150/ 90 | 120.6/ 74.1 | 150/110 | 374.0/286.1 | 150/ 90 |
| | 460-60 | 414 | 506 | 93.6/ 62.5 | 125/ 90 | 301.6/236.6 | 110/ 80 | 98.5/ 62.5 | 125/ 90 | 306.5/236.6 | 110/ 80 | 101.6/ 62.5 | 125/ 90 | 309.6/236.6 | 125/ 80 |
| | 575-60 | 518 | 633 | 76.3/ 50.0 | 110/ 70 | 243.9/192.3 | 90/ 60 | 80.2/ 50.0 | 110/ 70 | 247.8/192.3 | 90/ 60 | 82.7/ 50.0 | 110/ 70 | 250.3/192.3 | 100/ 60 |
| 080 | 208/230-60 | 187 | 253 | 216.5/168.8 | 250/225 | 607.8/560.0 | 250/200 | — | — | — | — | 234.2/168.8 | 300/225 | 625.5/560.0 | 300/200 |
| | 380-60 | 342 | 418 | 112.5/ 86.4 | 150/110 | 324.5/298.4 | 125/100 | — | — | — | — | 122.2/ 86.4 | 150/110 | 334.2/298.4 | 150/100 |
| | 460-60 | 414 | 506 | 95.2/ 73.6 | 125/100 | 269.3/247.7 | 110/ 90 | — | — | — | — | 103.2/ 73.6 | 125/100 | 277.3/247.7 | 125/ 90 |
| | 575-60 | 518 | 633 | 76.2/ 59.0 | 100/ 80 | 218.5/201.2 | 90/ 70 | — | — | — | — | 82.6/ 59.0 | 100/ 80 | 224.9/201.2 | 90/ 70 |
| 090 | 208/230-60 | 187 | 253 | 283.6/168.8 | 350/225 | 725.9/560.0 | 350/200 | — | — | — | — | 301.3/168.8 | 350/225 | 743.5/560.0 | 350/200 |
| | 380-60 | 342 | 418 | 150.1/ 86.4 | 175/110 | 403.5/298.4 | 175/100 | — | — | — | — | 159.8/ 86.4 | 200/110 | 413.2/298.4 | 175/100 |
| | 460-60 | 414 | 506 | 126.0/ 73.6 | 150/100 | 334.0/247.7 | 150/ 90 | — | — | — | — | 134.0/ 73.6 | 175/100 | 342.0/247.7 | 150/ 90 |
| | 575-60 | 518 | 633 | 102.2/ 59.0 | 125/ 80 | 269.8/201.2 | 125/ 70 | — | — | — | — | 108.6/ 59.0 | 125/ 80 | 276.2/201.2 | 125/ 70 |
| 100 | 208/230-60 | 187 | 253 | 283.6/212.0 | 350/300 | 725.9/654.2 | 350/250 | — | — | — | — | 301.3/212.0 | 350/300 | 743.5/654.2 | 350/250 |
| | 380-60 | 342 | 418 | 150.1/110.9 | 175/150 | 403.5/364.3 | 175/125 | — | — | — | — | 159.8/110.9 | 200/150 | 413.2/364.3 | 175/125 |
| | 460-60 | 414 | 506 | 126.0/ 93.6 | 150/125 | 334.0/301.6 | 150/110 | — | — | — | — | 134.0/ 93.6 | 175/125 | 342.0/301.6 | 150/110 |
| | 575-60 | 518 | 633 | 102.2/ 76.3 | 125/110 | 269.8/243.9 | 125/ 90 | — | — | — | — | 108.6/ 76.3 | 125/110 | 276.2/243.9 | 125/ 90 |
| 110 | 208/230-60 | 187 | 253 | 283.6/243.8 | 350/300 | 725.9/635.0 | 350/300 | — | — | — | — | 301.3/243.8 | 350/300 | 743.5/635.0 | 350/300 |
| | 380-60 | 342 | 418 | 150.1/124.8 | 175/150 | 403.5/336.8 | 175/150 | — | — | — | — | 159.8/124.8 | 200/150 | 413.2/336.8 | 175/150 |
| | 460-60 | 414 | 506 | 126.0/106.3 | 150/125 | 334.0/280.4 | 150/125 | — | — | — | — | 134.0/106.3 | 175/125 | 342.0/280.4 | 150/125 |
| | 575-60 | 518 | 633 | 102.2/ 85.2 | 125/110 | 269.8/227.4 | 125/100 | — | — | — | — | 108.6/ 85.2 | 125/110 | 276.2/227.4 | 125/100 |
| 120 | 208/230-60 | 187 | 253 | 295.5/306.2 | 350/400 | 737.8/748.4 | 350/350 | — | — | — | — | 313.2/306.2 | 400/400 | 755.5/748.4 | 350/350 |
| | 380-60 | 342 | 418 | 156.7/160.2 | 200/200 | 410.1/413.6 | 175/175 | — | — | — | — | 166.4/160.2 | 200/200 | 419.7/413.6 | 200/175 |
| | 460-60 | 414 | 506 | 131.4/135.2 | 150/175 | 339.4/343.2 | 150/150 | — | — | — | — | 139.4/135.2 | 175/175 | 347.4/343.2 | 150/150 |
| | 575-60 | 518 | 633 | 106.5/110.2 | 125/125 | 274.1/277.8 | 125/125 | — | — | — | — | 112.9/110.2 | 125/125 | 280.5/277.8 | 125/125 |
| 130 | 208/230-60 | 187 | 253 | 401.7/243.8 | 450/300 | 843.9/635.0 | 450/300 | — | — | — | — | 419.4/243.8 | 500/300 | 861.6/635.0 | 450/300 |
| | 380-60 | 342 | 418 | 212.5/124.8 | 250/150 | 465.9/336.8 | 225/150 | — | — | — | — | 222.2/124.8 | 250/150 | 475.6/336.8 | 250/150 |
| | 460-60 | 414 | 506 | 178.4/106.3 | 200/125 | 386.4/280.4 | 200/125 | — | — | — | — | 186.4/106.3 | 225/125 | 394.4/280.4 | 200/125 |
| | 575-60 | 518 | 633 | 144.7/ 85.2 | 175/110 | 312.4/227.4 | 175/100 | — | — | — | — | 151.1/ 85.2 | 175/110 | 318.8/227.4 | 175/100 |
| 150 | 208/230-60 | 187 | 253 | 401.7/306.2 | 450/400 | 843.9/748.4 | 450/350 | — | — | — | — | 419.4/306.2 | 500/400 | 861.6/748.4 | 450/350 |
| | 380-60 | 342 | 418 | 212.5/160.2 | 250/200 | 465.9/413.6 | 225/175 | — | — | — | — | 222.2/160.2 | 250/200 | 475.6/413.6 | 250/175 |
| | 460-60 | 414 | 506 | 178.4/135.2 | 200/175 | 386.4/343.2 | 200/150 | — | — | — | — | 186.4/135.2 | 225/175 | 394.4/343.2 | 200/150 |
| | 575-60 | 518 | 633 | 144.7/110.2 | 175/125 | 312.4/277.8 | 175/125 | — | — | — | — | 151.1/110.2 | 175/125 | 318.8/277.8 | 175/125 |
| 160 | 208/230-60 | 187 | 253 | 519.8/243.8 | 600/300 | 962.0/635.0 | 600/300 | — | — | — | — | 537.5/243.8 | 600/300 | 979.7/635.0 | 600/300 |
| | 380-60 | 342 | 418 | 274.9/124.8 | 300/150 | 528.3/336.8 | 300/150 | — | — | — | — | 284.6/124.8 | 300/150 | 538.0/336.8 | 300/150 |
| | 460-60 | 414 | 506 | 230.8/106.3 | 250/125 | 438.8/280.4 | 250/125 | — | — | — | — | 238.8/106.3 | 250/125 | 446.8/280.4 | 250/125 |
| | 575-60 | 518 | 633 | 187.3/ 85.2 | 200/110 | 354.9/227.4 | 200/100 | — | — | — | — | 193.7/ 85.2 | 225/110 | 361.3/227.4 | 225/100 |
| 170 | 208/230-60 | 187 | 253 | 519.8/306.2 | 600/400 | 962.0/748.4 | 600/350 | — | — | — | — | 537.5/306.2 | 600/400 | 979.7/748.4 | 600/350 |
| | 380-60 | 342 | 418 | 274.9/160.2 | 300/200 | 528.3/413.6 | 300/175 | — | — | — | — | 284.6/160.2 | 300/200 | 538.0/413.6 | 300/175 |
| | 460-60 | 414 | 506 | 230.8/135.2 | 250/175 | 438.8/343.2 | 250/150 | — | — | — | — | 238.8/135.2 | 250/175 | 446.8/343.2 | 250/150 |
| | 575-60 | 518 | 633 | 187.3/110.2 | 200/125 | 354.9/277.8 | 200/125 | — | — | — | — | 193.7/110.2 | 225/125 | 361.3/277.8 | 225/125 |
| 190 | 208/230-60 | 187 | 253 | 543.7/400.4 | 600/450 | 985.9/842.6 | 600/450 | — | — | — | — | 561.4/400.4 | 600/450 | 1003.6/842.6 | 600/450 |
| | 380-60 | 342 | 418 | 288.0/209.5 | 300/250 | 541.3/462.9 | 300/225 | — | — | — | — | 297.7/209.5 | 300/250 | 551.0/462.9 | 300/225 |
| | 460-60 | 414 | 506 | 241.6/176.8 | 250/200 | 449.6/384.8 | 250/200 | — | — | — | — | 249.6/176.8 | 250/200 | 457.6/384.8 | 250/200 |
| | 575-60 | 518 | 633 | 195.9/144.1 | 225/175 | 363.5/311.7 | 225/175 | — | — | — | — | 202.3/144.1 | 225/175 | 369.9/311.7 | 225/175 |
| 210 | 208/230-60 | 187 | 253 | 626.7/353.9 | 700/400 | 1068.9/796.2 | 700/400 | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 327.7/186.4 | 350/225 | 581.1/439.7 | 350/200 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 233.3/200.0 | 250/225 | 441.3/408.0 | 250/225 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 188.8/162.0 | 200/175 | 356.4/329.6 | 200/175 | — | — | — | — | — | — | — | — |
| 225 | 208/230-60 | 187 | 253 | 684.3/353.9 | 700/400 | 1126.5/796.2 | 700/400 | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 360.4/186.4 | 400/225 | 613.8/439.7 | 400/200 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 260.0/200.0 | 300/225 | 468.0/408.0 | 300/225 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 211.9/162.0 | 225/175 | 379.5/329.6 | 225/175 | — | — | — | — | — | — | — | — |
| 250 | 208/230-60 | 187 | 253 | 684.3/472.0 | 700/500 | 1126.5/914.3 | 700/500 | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 360.4/248.7 | 400/250 | 613.8/502.1 | 400/250 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 303.2/209.2 | 350/250 | 511.2/417.2 | 350/225 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 246.4/170.0 | 250/200 | 414.1/337.6 | 250/200 | — | — | — | — | — | — | — | — |
| 275 | 208/230-60 | 187 | 253 | 920.5/353.9 | 1000/400 | 1362.7/796.2 | 1000/400 | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 485.2/186.4 | 500/225 | 738.5/439.7 | 500/200 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 408.0/156.8 | 450/175 | 616.0/364.8 | 450/175 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 331.5/127.5 | 350/150 | 499.1/295.1 | 350/150 | — | — | — | — | — | — | — | — |
| 300 | 208/230-60 | 187 | 253 | 920.5/472.0 | 1000/500 | 1362.7/914.3 | 1000/500 | — | — | — | — | — | — | — | — |
| | 380-60 | 342 | 418 | 485.2/248.7 | 500/250 | 738.5/502.1 | 500/250 | — | — | — | — | — | — | — | — |
| | 460-60 | 414 | 506 | 408.0/209.2 | 450/250 | 616.0/417.2 | 450/225 | — | — | — | — | — | — | — | — |
| | 575-60 | 518 | 633 | 331.5/170.0 | 350/200 | 499.1/337.6 | 350/200 | — | — | — | — | — | — | — | — |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow (Ckt1/Ckt2)
**MCA** — Minimum Circuit Amps (Ckt1/Ckt2)
**MOCP** — Maximum Overcurrent Protection (Ckt1/Ckt2)
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. Control power is derived from main power. No separate control power connection is required.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.

208/230
460
575 v only

## Table 11 — 30RB Electrical Data — Dual Point Units (cont)

| 30RB UNIT SIZE | | UNIT VOLTAGE | | | NO HYDRONIC PACKAGE | | | | 3 HP PUMP, 1750 RPM | | | | 5 HP PUMP, 1750 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 315 | A | 208/230-60 | 187 | 253 | 519.8/243.8 | 600/300 | 962.0/635.0 | 600/300 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/124.8 | 300/150 | 528.3/336.8 | 300/150 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/106.3 | 250/125 | 438.8/280.4 | 250/125 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/ 85.2 | 200/110 | 354.9/227.4 | 200/100 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 519.8/243.8 | 600/300 | 962.0/635.0 | 600/300 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/106.3 | 250/125 | 438.8/280.4 | 250/125 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/ 85.2 | 200/110 | 354.9/227.4 | 200/100 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/124.8 | 300/150 | 528.3/336.8 | 300/150 | — | — | — | — | — | — | — | — |
| 330 | A | 208/230-60 | 187 | 253 | 519.8/306.2 | 600/400 | 962.0/748.4 | 600/350 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/160.2 | 300/200 | 528.3/413.6 | 300/175 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/135.2 | 250/175 | 438.8/343.2 | 250/150 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/110.2 | 200/125 | 354.9/277.8 | 200/125 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 519.8/243.8 | 600/300 | 962.0/635.0 | 600/300 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/124.8 | 300/150 | 528.3/336.8 | 300/150 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/106.3 | 250/125 | 438.8/280.4 | 250/125 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/ 85.2 | 200/110 | 354.9/227.4 | 200/100 | — | — | — | — | — | — | — | — |
| 345 | A | 208/230-60 | 187 | 253 | 519.8/306.2 | 600/400 | 962.0/748.4 | 600/350 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/160.2 | 300/200 | 528.3/413.6 | 300/175 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/135.2 | 250/175 | 438.8/343.2 | 250/150 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/110.2 | 200/125 | 354.9/277.8 | 200/125 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 519.8/306.2 | 600/400 | 962.0/748.4 | 600/350 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/160.2 | 300/200 | 528.3/413.6 | 300/175 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/135.2 | 250/175 | 438.8/343.2 | 250/150 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/110.2 | 200/125 | 354.9/277.8 | 200/125 | — | — | — | — | — | — | — | — |
| 360 | A | 208/230-60 | 187 | 253 | 543.7/400.4 | 600/450 | 985.9/842.6 | 600/450 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 288.0/209.5 | 300/250 | 541.3/462.9 | 300/225 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 241.6/176.8 | 250/200 | 449.6/384.8 | 250/200 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 195.9/144.1 | 225/175 | 363.5/311.7 | 225/175 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 519.8/306.2 | 600/400 | 962.0/748.4 | 600/350 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 274.9/160.2 | 300/200 | 528.3/413.6 | 300/175 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 230.8/135.2 | 250/175 | 438.8/343.2 | 250/150 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 187.3/110.2 | 200/125 | 354.9/277.8 | 200/125 | — | — | — | — | — | — | — | — |
| 390 | A | 208/230-60 | 187 | 253 | 543.7/400.4 | 600/450 | 985.9/842.6 | 600/450 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 288.0/209.5 | 300/250 | 541.3/462.9 | 300/225 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 241.6/176.8 | 250/200 | 449.6/384.8 | 250/200 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 195.9/144.1 | 225/175 | 363.5/311.7 | 225/175 | — | — | — | — | — | — | — | — |
| | B | 208/230-60 | 187 | 253 | 543.7/400.4 | 600/450 | 985.9/842.6 | 600/450 | — | — | — | — | — | — | — | — |
| | | 380-60 | 342 | 418 | 288.0/209.5 | 300/250 | 541.3/462.9 | 300/225 | — | — | — | — | — | — | — | — |
| | | 460-60 | 414 | 506 | 241.6/176.8 | 250/200 | 449.6/384.8 | 250/200 | — | — | — | — | — | — | — | — |
| | | 575-60 | 518 | 633 | 195.9/144.1 | 225/175 | 363.5/311.7 | 225/175 | — | — | — | — | — | — | — | — |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow (Ckt1/Ckt2)
**MCA** — Minimum Circuit Amps (Ckt1/Ckt2)
**MOCP** — Maximum Overcurrent Protection (Ckt1/Ckt2)
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. Control power is derived from main power. No separate control power connection is required.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.


208/230
460
575 v only

# Table 11 — 30RB Electrical Data — Dual Point Units (cont)

| 30RB UNIT SIZE | UNIT VOLTAGE | | | 7.5 HP PUMP, 1750/3450 RPM | | | | 10 HP PUMP, 3450 RPM | | | | 15 HP PUMP, 3450 RPM | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V-Hz (3 Ph) | Supplied | | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size | MCA | MOCP | ICF | Rec Fuse Size |
| | | Min | Max | XL | XL | XL | | XL | XL | XL | | XL | XL | XL | |
| 060 | 208/230-60 | 187 | 253 | 194.4/141.5 | 250/200 | 585.7/532.8 | 225/175 | 202.4/141.5 | 250/200 | 593.6/532.8 | 225/175 | — | — | — | — |
| | 380-60 | 342 | 418 | 100.4/ 74.1 | 125/110 | 312.4/286.1 | 125/ 90 | 104.8/ 74.1 | 125/110 | 316.8/286.1 | 125/ 90 | — | — | — | — |
| | 460-60 | 414 | 506 | 85.2/ 62.5 | 110/ 90 | 259.3/236.6 | 100/ 80 | 88.8/ 62.5 | 110/ 90 | 262.9/236.6 | 100/ 80 | — | — | — | — |
| | 575-60 | 518 | 633 | 68.2/ 50.0 | 90/ 70 | 210.5/192.3 | 80/ 60 | 71.1/ 50.0 | 90/ 70 | 213.4/192.3 | 80/ 60 | — | — | — | — |
| 070 | 208/230-60 | 187 | 253 | 237.6/141.5 | 300/200 | 679.9/532.8 | 300/175 | 245.6/141.5 | 300/200 | 687.8/532.8 | 300/175 | — | — | — | — |
| | 380-60 | 342 | 418 | 125.0/ 74.1 | 150/110 | 378.3/286.1 | 150/ 90 | 129.3/ 74.1 | 175/110 | 382.7/286.1 | 150/ 90 | — | — | — | — |
| | 460-60 | 414 | 506 | 105.2/ 62.5 | 125/ 90 | 313.2/236.6 | 125/ 80 | 108.8/ 62.5 | 150/ 90 | 316.8/236.6 | 125/ 80 | — | — | — | — |
| | 575-60 | 518 | 633 | 85.6/ 50.0 | 110/ 70 | 253.2/192.3 | 100/ 60 | 88.4/ 50.0 | 110/ 70 | 256.1/192.3 | 100/ 60 | — | — | — | — |
| 080 | 208/230-60 | 187 | 253 | 242.2/168.8 | 300/225 | 633.4/560.0 | 300/200 | 250.1/168.8 | 300/225 | 641.4/560.0 | 300/200 | 266.3/168.8 | 300/225 | 657.5/560.0 | 300/200 |
| | 380-60 | 342 | 418 | 126.6/ 86.4 | 150/110 | 338.6/298.4 | 150/100 | 130.9/ 86.4 | 150/110 | 342.9/298.4 | 150/100 | 139.8/ 86.4 | 175/110 | 351.8/298.4 | 150/100 |
| | 460-60 | 414 | 506 | 106.8/ 73.6 | 125/100 | 280.9/247.7 | 125/ 90 | 110.4/ 73.6 | 125/100 | 284.5/247.7 | 125/ 90 | 117.7/ 73.6 | 150/100 | 291.8/247.7 | 150/ 90 |
| | 575-60 | 518 | 633 | 85.5/ 59.0 | 110/ 80 | 227.8/201.2 | 100/ 70 | 88.4/ 59.0 | 110/ 80 | 230.6/201.2 | 100/ 70 | 94.2/ 59.0 | 110/ 80 | 236.5/201.2 | 110/ 70 |
| 090 | 208/230-60 | 187 | 253 | 309.3/168.8 | 400/225 | 751.5/560.0 | 350/200 | 317.2/168.8 | 400/225 | 759.5/560.0 | 350/200 | 333.4/168.8 | 400/225 | 775.6/560.0 | 400/200 |
| | 380-60 | 342 | 418 | 164.2/ 86.4 | 200/110 | 417.6/298.4 | 200/100 | 168.5/ 86.4 | 200/110 | 421.9/298.4 | 200/100 | 177.4/ 86.4 | 225/110 | 430.8/298.4 | 200/100 |
| | 460-60 | 414 | 506 | 137.6/ 73.6 | 175/100 | 345.6/247.7 | 150/ 90 | 141.2/ 73.6 | 175/100 | 349.2/247.7 | 175/ 90 | 148.5/ 73.6 | 175/100 | 356.5/247.7 | 175/ 90 |
| | 575-60 | 518 | 633 | 111.5/ 59.0 | 125/ 80 | 279.1/201.2 | 125/ 70 | 114.4/ 59.0 | 125/ 80 | 282.0/201.2 | 125/ 70 | 120.2/ 59.0 | 150/ 80 | 287.8/201.2 | 150/ 70 |
| 100 | 208/230-60 | 187 | 253 | 309.3/212.0 | 400/300 | 751.5/654.2 | 350/250 | 317.2/212.0 | 400/300 | 759.5/654.2 | 350/250 | 333.4/212.0 | 400/300 | 775.6/654.2 | 400/250 |
| | 380-60 | 342 | 418 | 164.2/110.9 | 200/150 | 417.6/364.3 | 200/125 | 168.5/110.9 | 200/150 | 421.9/364.3 | 200/125 | 177.4/110.9 | 225/150 | 430.8/364.3 | 200/125 |
| | 460-60 | 414 | 506 | 137.6/ 93.6 | 175/125 | 345.6/301.6 | 150/110 | 141.2/ 93.6 | 175/125 | 349.2/301.6 | 175/110 | 148.5/ 93.6 | 175/125 | 356.5/301.6 | 175/110 |
| | 575-60 | 518 | 633 | 111.5/ 76.3 | 125/110 | 279.1/243.9 | 125/ 90 | 114.4/ 76.3 | 125/110 | 282.0/243.9 | 125/ 90 | 120.2/ 76.3 | 150/110 | 287.8/243.9 | 150/ 90 |
| 110 | 208/230-60 | 187 | 253 | 309.3/243.8 | 400/300 | 751.5/635.0 | 350/300 | 317.2/243.8 | 400/300 | 759.5/635.0 | 350/300 | 333.4/243.8 | 400/300 | 775.6/635.0 | 400/300 |
| | 380-60 | 342 | 418 | 164.2/124.8 | 200/150 | 417.6/336.8 | 200/150 | 168.5/124.8 | 200/150 | 421.9/336.8 | 200/150 | 177.4/124.8 | 225/150 | 430.8/336.8 | 200/150 |
| | 460-60 | 414 | 506 | 137.6/106.3 | 175/125 | 345.6/280.4 | 150/125 | 141.2/106.3 | 175/125 | 349.2/280.4 | 175/125 | 148.5/106.3 | 175/125 | 356.5/280.4 | 175/125 |
| | 575-60 | 518 | 633 | 111.5/ 85.2 | 125/110 | 279.1/227.4 | 125/100 | 114.4/ 85.2 | 125/110 | 282.0/227.4 | 125/100 | 120.2/ 85.2 | 150/110 | 287.8/227.4 | 150/100 |
| 120 | 208/230-60 | 187 | 253 | 321.2/306.2 | 400/400 | 763.5/748.4 | 350/350 | 329.2/306.2 | 400/400 | 771.4/748.4 | 400/350 | 345.3/306.2 | 400/400 | 787.6/748.4 | 400/350 |
| | 380-60 | 342 | 418 | 170.7/160.2 | 200/200 | 424.1/413.6 | 200/175 | 175.1/160.2 | 200/200 | 428.5/413.6 | 200/175 | 183.9/160.2 | 225/200 | 437.3/413.6 | 200/175 |
| | 460-60 | 414 | 506 | 143.0/135.2 | 175/175 | 351.0/343.2 | 175/150 | 146.6/135.2 | 175/175 | 354.6/343.2 | 175/150 | 153.9/135.2 | 175/175 | 361.9/343.2 | 175/150 |
| | 575-60 | 518 | 633 | 115.8/110.2 | 125/125 | 283.4/277.8 | 125/125 | 118.7/110.2 | 150/125 | 286.3/277.8 | 150/125 | 124.5/110.2 | 150/125 | 292.1/277.8 | 150/125 |
| 130 | 208/230-60 | 187 | 253 | 427.3/243.8 | 500/300 | 869.6/635.0 | 500/300 | 435.3/243.8 | 500/300 | 877.6/635.0 | 500/300 | 451.4/243.8 | 500/300 | 893.7/635.0 | 500/300 |
| | 380-60 | 342 | 418 | 226.6/124.8 | 250/150 | 479.9/336.8 | 250/150 | 230.9/124.8 | 250/150 | 484.3/336.8 | 250/150 | 239.8/124.8 | 250/150 | 493.1/336.8 | 250/150 |
| | 460-60 | 414 | 506 | 190.0/106.3 | 225/125 | 398.0/280.4 | 225/125 | 193.6/106.3 | 225/125 | 401.6/280.4 | 225/125 | 200.9/106.3 | 225/125 | 408.9/280.4 | 225/125 |
| | 575-60 | 518 | 633 | 154.0/ 85.2 | 175/110 | 321.6/227.4 | 175/100 | 156.9/ 85.2 | 175/110 | 324.5/227.4 | 175/100 | 162.7/ 85.2 | 175/110 | 330.4/227.4 | 175/100 |
| 150 | 208/230-60 | 187 | 253 | 427.3/306.2 | 500/400 | 869.6/748.4 | 500/350 | 435.3/306.2 | 500/400 | 877.6/748.4 | 500/350 | 451.4/306.2 | 500/400 | 893.7/748.4 | 500/350 |
| | 380-60 | 342 | 418 | 226.6/160.2 | 250/200 | 479.9/413.6 | 250/175 | 230.9/160.2 | 250/200 | 484.3/413.6 | 250/175 | 239.8/160.2 | 250/200 | 493.1/413.6 | 250/175 |
| | 460-60 | 414 | 506 | 190.0/135.2 | 225/175 | 398.0/343.2 | 225/150 | 193.6/135.2 | 225/175 | 401.6/343.2 | 225/150 | 200.9/135.2 | 225/175 | 408.9/343.2 | 225/150 |
| | 575-60 | 518 | 633 | 154.0/110.2 | 175/125 | 321.6/277.8 | 175/125 | 156.9/110.2 | 175/125 | 324.5/277.8 | 175/125 | 162.7/110.2 | 175/125 | 330.4/277.8 | 175/125 |
| 160 | 208/230-60 | 187 | 253 | 545.4/243.8 | 600/300 | 987.7/635.0 | 600/300 | 553.4/243.8 | 600/300 | 995.6/635.0 | 600/300 | 569.5/243.8 | 600/300 | 1011.8/635.0 | 600/300 |
| | 380-60 | 342 | 418 | 288.9/124.8 | 300/150 | 542.3/336.8 | 300/150 | 293.3/124.8 | 300/150 | 546.7/336.8 | 300/150 | 302.1/124.8 | 350/150 | 555.5/336.8 | 350/150 |
| | 460-60 | 414 | 506 | 242.4/106.3 | 250/125 | 450.4/280.4 | 250/125 | 246.0/106.3 | 250/125 | 454.0/280.4 | 250/125 | 253.3/106.3 | 300/125 | 461.3/280.4 | 300/125 |
| | 575-60 | 518 | 633 | 196.6/ 85.2 | 225/110 | 364.2/227.4 | 225/100 | 199.4/ 85.2 | 225/110 | 367.1/227.4 | 225/100 | 205.3/ 85.2 | 225/110 | 372.9/227.4 | 225/100 |
| 170 | 208/230-60 | 187 | 253 | 545.4/306.2 | 600/400 | 987.7/748.4 | 600/350 | 553.4/306.2 | 600/400 | 995.6/748.4 | 600/350 | 569.5/306.2 | 600/400 | 1011.8/748.4 | 600/350 |
| | 380-60 | 342 | 418 | 288.9/160.2 | 300/200 | 542.3/413.6 | 300/175 | 293.3/160.2 | 300/200 | 546.7/413.6 | 300/175 | 302.1/160.2 | 350/200 | 555.5/413.6 | 350/175 |
| | 460-60 | 414 | 506 | 242.4/135.2 | 250/175 | 450.4/343.2 | 250/150 | 246.0/135.2 | 250/175 | 454.0/343.2 | 250/150 | 253.3/135.2 | 300/175 | 461.3/343.2 | 300/150 |
| | 575-60 | 518 | 633 | 196.6/110.2 | 225/125 | 364.2/277.8 | 225/125 | 199.4/110.2 | 225/125 | 367.1/277.8 | 225/125 | 205.3/110.2 | 225/125 | 372.9/277.8 | 225/125 |
| 190 | 208/230-60 | 187 | 253 | 569.3/400.4 | 600/450 | 1011.6/842.6 | 600/450 | 577.3/400.4 | 600/450 | 1019.5/842.6 | 600/450 | 593.4/400.4 | 600/450 | 1035.7/842.6 | 600/450 |
| | 380-60 | 342 | 418 | 302.0/209.5 | 350/250 | 555.4/462.9 | 350/225 | 306.4/209.5 | 350/250 | 559.7/462.9 | 350/225 | 315.2/209.5 | 350/250 | 568.6/462.9 | 350/225 |
| | 460-60 | 414 | 506 | 253.2/176.8 | 300/200 | 461.2/384.8 | 300/200 | 256.8/176.8 | 300/200 | 464.8/384.8 | 300/200 | 264.1/176.8 | 300/200 | 472.1/384.8 | 300/200 |
| | 575-60 | 518 | 633 | 205.2/144.1 | 225/175 | 372.8/311.7 | 225/175 | 208.1/144.1 | 225/175 | 375.7/311.7 | 225/175 | 213.9/144.1 | 225/175 | 381.5/311.7 | 225/175 |

LEGEND

**AWG** — American Wire Gage
**ICF** — Instantaneous Current Flow (Ckt1/Ckt2)
**MCA** — Minimum Circuit Amps (Ckt1/Ckt2)
**MOCP** — Maximum Overcurrent Protection (Ckt1/Ckt2)
**XL** — Across-the-Line Start

NOTES:

1. Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
2. All units/modules have single point primary power connection. (Each unit/module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
3. Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
4. For MCA that is less than or equal to 380 amps, 3 conductors are required.
   For MCA between 381-760 amps, 6 conductors are required.
   For MCA between 761-1140 amps, 9 conductors are required.
   For MCA between 1141-1520 amps, 12 conductors are required.
   Calculation of conductors required is based on 75 C copper wire.
5. Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
   a. Incoming wire size range for the terminal block is #4 AWG to 500 kcmil.
   b. Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
   c. Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
   d. Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
6. Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
7. Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.


208/230
460
575 v only

## Table 12 — Condenser Fan Electrical Data

| UNIT 30RB | UNIT VOLTAGE V-Hz (3 Ph) | STANDARD CONDENSER FANS | | | | | |
|---|---|---|---|---|---|---|---|
| | | Circuit A Quantity | FLA (each) | Circuit B Quantity | FLA (each) | Circuit C Quantity | FLA (each) |
| 060, 070 | 208/230-60 | 3 | 11.9 | 1 | 11.9 | — | — |
| | 460-60 | 3 | 5.4 | 1 | 5.4 | — | — |
| | 575-60 | 3 | 4.3 | 1 | 4.3 | — | — |
| | 380-60 | 3 | 6.5 | 1 | 6.5 | — | — |
| 080 | 208/230-60 | 2 | 11.9 | 2 | 11.9 | — | — |
| | 460-60 | 2 | 5.4 | 2 | 5.4 | — | — |
| | 575-60 | 2 | 4.3 | 2 | 4.3 | — | — |
| | 380-60 | 2 | 6.5 | 2 | 6.5 | — | — |
| 090, 100, 110 | 208/230-60 | 3 | 11.9 | 3 | 11.9 | — | — |
| | 460-60 | 3 | 5.4 | 3 | 5.4 | — | — |
| | 575-60 | 3 | 4.3 | 3 | 4.3 | — | — |
| | 380-60 | 3 | 6.5 | 3 | 6.5 | — | — |
| 120 | 208/230-60 | 3 | 11.9 | 4 | 11.9 | — | — |
| | 460-60 | 3 | 5.4 | 4 | 5.4 | — | — |
| | 575-60 | 3 | 4.3 | 4 | 4.3 | — | — |
| | 380-60 | 3 | 6.5 | 4 | 6.5 | — | — |
| 130, 150 | 208/230-60 | 4 | 11.9 | 4 | 11.9 | — | — |
| | 460-60 | 4 | 5.4 | 4 | 5.4 | — | — |
| | 575-60 | 4 | 4.3 | 4 | 4.3 | — | — |
| | 380-60 | 4 | 6.5 | 4 | 6.5 | — | — |
| 160,170, 315A, 315B, 330A, 330B, 345A, 345B, 360B | 208/230-60 | 6 | 11.9 | 4 | 11.9 | — | — |
| | 460-60 | 6 | 5.4 | 4 | 5.4 | — | — |
| | 575-60 | 6 | 4.3 | 4 | 4.3 | — | — |
| | 380-60 | 6 | 6.5 | 4 | 6.5 | — | — |
| 190, 360A, 390A, 390B | 208/230-60 | 6 | 11.9 | 6 | 11.9 | — | — |
| | 460-60 | 6 | 5.4 | 6 | 5.4 | — | — |
| | 575-60 | 6 | 4.3 | 6 | 4.3 | — | — |
| | 380-60 | 6 | 6.5 | 6 | 6.5 | — | — |
| 210, 225 | 208/230-60 | 4 | 11.9 | 4 | 11.9 | 4 | 11.9 |
| | 460-60 | 4 | 5.4 | 4 | 5.4 | 4 | 5.4 |
| | 575-60 | 4 | 4.3 | 4 | 4.3 | 4 | 4.3 |
| | 380-60 | 4 | 6.5 | 4 | 6.5 | 4 | 6.5 |
| 250 | 208/230-60 | 4 | 11.9 | 4 | 11.9 | 6 | 11.9 |
| | 460-60 | 4 | 5.4 | 4 | 5.4 | 6 | 5.4 |
| | 575-60 | 4 | 4.3 | 4 | 4.3 | 6 | 4.3 |
| | 380-60 | 4 | 6.5 | 4 | 6.5 | 6 | 6.5 |
| 275 | 208/230-60 | 6 | 11.9 | 6 | 11.9 | 4 | 11.9 |
| | 460-60 | 6 | 5.4 | 6 | 5.4 | 4 | 5.4 |
| | 575-60 | 6 | 4.3 | 6 | 4.3 | 4 | 4.3 |
| | 380-60 | 6 | 6.5 | 6 | 6.5 | 4 | 6.5 |
| 300 | 208/230-60 | 6 | 11.9 | 6 | 11.9 | 6 | 11.9 |
| | 460-60 | 6 | 5.4 | 6 | 5.4 | 6 | 5.4 |
| | 575-60 | 6 | 4.3 | 6 | 4.3 | 6 | 4.3 |
| | 380-60 | 6 | 6.5 | 6 | 6.5 | 6 | 6.5 |

LEGEND
**FLA** — Full Load Amps

## Table 13 — Pump Electrical Data

| PUMP HP | UNIT VOLTAGE V-Hz (3 Ph) | HYDRONIC SYSTEM (SINGLE/DUAL) FLA (each) | USED ON 30RB SIZES* |
|---|---|---|---|
| 3 | 208/230-60 | 10.8 | 060, 070 |
| | 460-60 | 4.9 | |
| | 575-60 | 3.9 | |
| | 380-60 | 5.9 | |
| 5 | 208/230-60 | 17.7 | 060-190 |
| | 460-60 | 8.0 | |
| | 575-60 | 6.4 | |
| | 380-60 | 9.7 | |
| 7.5 | 208/230-60 | 25.7 | 060-190 |
| | 460-60 | 11.6 | |
| | 575-60 | 9.3 | |
| | 380-60 | 14.0 | |
| 10 | 208/230-60 | 33.6 | 060-190 |
| | 460-60 | 15.2 | |
| | 575-60 | 12.2 | |
| | 380-60 | 18.4 | |
| 15 | 208/230-60 | 49.8 | 080-190 |
| | 460-60 | 22.5 | |
| | 575-60 | 18.0 | |
| | 380-60 | 27.2 | |

LEGEND
**FLA** — Full Load Amps

*Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.

## Table 14 — Compressor Electrical Data

| UNIT 30RB | UNIT VOLTAGE V-Hz (3 Ph) | COMPRESSOR A | | | | | | | | COMPRESSOR B | | | | | | | | COMPRESSOR C | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 2 | | 3 | | 4 | | 1 | | 2 | | 3 | | 4 | | 1 | | 2 | | 3 | | 4 | |
| | | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA | RLA | LRA |
| 060 | 208/230-60 | 75.0 | 485 | 75.0 | 485 | — | — | — | — | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 32.7 | 215 | 32.7 | 215 | — | — | — | — | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 26.2 | 175 | 26.2 | 175 | — | — | — | — | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 38.4 | 260 | 38.4 | 260 | — | — | — | — | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 070 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 080 | 208/230-60 | 75.0 | 485 | 75.0 | 485 | — | — | — | — | 75.0 | 485 | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 32.7 | 215 | 32.7 | 215 | — | — | — | — | 32.7 | 215 | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 26.2 | 175 | 26.2 | 175 | — | — | — | — | 26.2 | 175 | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 38.4 | 260 | 38.4 | 260 | — | — | — | — | 38.4 | 260 | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — | — | — |
| 090 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | 75.0 | 485 | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | 32.7 | 215 | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | 26.2 | 175 | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | 38.4 | 260 | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — | — | — |
| 100 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | 94.2 | 560 | 94.2 | 560 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | 41.6 | 260 | 41.6 | 260 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | 33.9 | 210 | 33.9 | 210 | — | — | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | 49.3 | 315 | 49.3 | 315 | — | — | — | — | — | — | — | — | — | — | — | — |
| 110 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | 75.0 | 485 | 75.0 | 485 | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | 32.7 | 215 | 32.7 | 215 | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | 26.2 | 175 | 26.2 | 175 | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | 38.4 | 260 | 38.4 | 260 | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — |
| 120 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | — | — | — | — | — | — |
| 130 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 75.0 | 485 | 75.0 | 485 | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 32.7 | 215 | 32.7 | 215 | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 26.2 | 175 | 26.2 | 175 | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 38.4 | 260 | 38.4 | 260 | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — |
| 150 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | — | — | — | — | — | — |
| 160, 315A, 315B, 330B | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 75.0 | 485 | 75.0 | 485 | 75.0 | 485 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 32.7 | 215 | 32.7 | 215 | 32.7 | 215 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 26.2 | 175 | 26.2 | 175 | 26.2 | 175 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 38.4 | 260 | 38.4 | 260 | 38.4 | 260 | — | — | — | — | — | — | — | — | — | — |
| 170, 330A, 345A, 345B, 360B | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | — | — | — | — | — | — |
| 190, 360A, 390A, 390B | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | — | — | — | — | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | — | — | — | — | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | — | — | — | — | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | — | — | — | — | — | — |
| 210 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 75.0 | 485 | 75.0 | 485 | 75.0 | 485 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 32.7 | 215 | 32.7 | 215 | 32.7 | 215 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 26.2 | 175 | 26.2 | 175 | 26.2 | 175 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 38.4 | 260 | 38.4 | 260 | 38.4 | 260 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — |
| 225 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — |
| 250 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 |
| 275 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | — | — |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | — | — |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | — | — |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | — | — |
| 300 | 208/230-60 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 | 94.2 | 560 |
| | 460-60 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 | 41.6 | 260 |
| | 575-60 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 | 33.9 | 210 |
| | 380-60 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 | 49.3 | 315 |

LEGEND

**LRA** — Locked Rotor Amps
**RLA** — Rated Load Amps

CARRIER COMFORT NETWORK® (CCN) COMMUNICATION BUS WIRING — The communication bus wiring is a shielded, 3-conductor cable with drain wire and is field supplied and installed in the field.

The system elements are connected to the communication bus in a daisy chain arrangement. The positive pin of each system element communication connector must be wired to the positive pins of the system elements on either side of it. This is also required for the negative and signal ground pins of each system element. Wiring connections for CCN should be made at TB 3 (terminal block). Consult the CCN Contractor's Manual for further information. See Fig. 57.

NOTE: Conductors and drain wire must be 20 AWG (American Wire Gage) minimum stranded, tinned copper. Individual conductors must be insulated with PVC, PVC/nylon, vinyl, Teflon*, or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl, or Teflon with a minimum operating temperature range of –4 F (–20 C) to 140 F (60 C) is required. Refer to Table 15 for a list of manufacturers that produce CCN bus wiring that meets these requirements.

**Table 15 — CCN Communication Bus Wiring**

| MANUFACTURER | PART NUMBER | |
|---|---|---|
| | Regular Wiring | Plenum Wiring |
| Alpha | 1895 | — |
| American | A21451 | A48301 |
| Belden | 8205 | 884421 |
| Columbia | D6451 | — |
| Manhatten | M13402 | M64430 |
| Quabik | 6130 | — |

It is important when connecting to a CCN communication bus that a color coding scheme be used for the entire network to simplify the installation. It is recommended that red be used for the signal positive, black for the signal negative, and white for the signal ground. Use a similar scheme for cables containing different colored wires. At each system element, the shields of its communication bus cables must be tied together. If the communication bus is entirely within one building, the resulting continuous shield must be connected to a ground at one point only. If the communication bus cable exits from one building and enters another, the shields must be connected to grounds at the lightning suppressor in each building where the cable enters or exits the building (one point per building only).

To connect the unit to the network:

1. Turn off power to the control box.
2. Cut the CCN wire and strip the ends of the red (+), white (ground), and black (–) conductors. Substitute appropriate colors for different colored cables.
3. Connect the red wire to (+) terminal on TB3 of the plug, the white wire to COM terminal, and the black wire to the (–) terminal.
4. The RJ14 CCN connector on TB3 can also be used, but is only intended for temporary connection (for example, a laptop computer running Service Tool).

IMPORTANT: A shorted CCN bus cable will prevent some routines from running and may prevent the unit from starting. If abnormal conditions occur, disconnect the machine from the CCN network. If conditions return to normal, check the CCN connector and cable. Run new cable if necessary. A short in one section of the bus can cause problems with all system elements on the bus.

NON-CCN COMMUNICATION WIRING — The 30RB units offer several non-CCN translators. Refer to the separate installation instructions for additional wiring steps.

**Step 7 — Install Accessories** — A number of accessories are available to provide the following optional features (for details, refer to the Controls, Start-Up, Operation, Service and Troubleshooting guide).

Energy management module is used for any of the following types of temperature reset, demand limit and ice features:

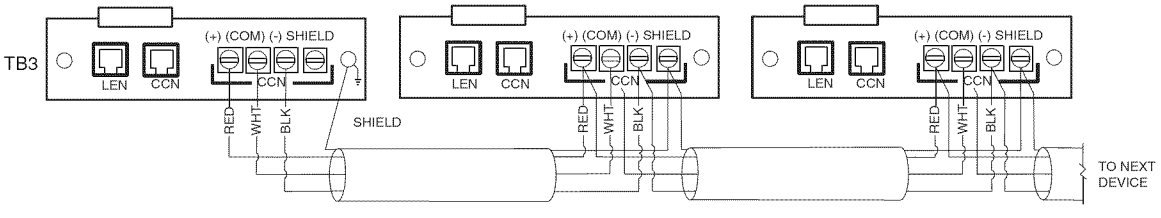
- 4 to 20 mA inputs for cooling set point reset and capacity limit (requires field-supplied 4 to 20 mA generator)
- 0 to 10 v output for percentage total capacity running
- 24 v discrete outputs for shutdown and running relays
- 10k space temperature input
- Discrete inputs for occupancy override, demand limit switch 2 (step 1 demand limit is wired to the base board, requires field-supplied dry contacts), remote lockout switch and ice done switch (requires field-supplied dry contacts)

NAVIGATOR™ DISPLAY — Provides hand-held, mobile capability using easy to read 4-line display. Keypad function is the same as the scrolling marquee display. The Navigator display features a mounting magnet for 'hands free' service of components.

REMOTE ENHANCED DISPLAY — For applications where remote monitoring of the equipment is required; the remote enhanced display provides an indoor display, capable of monitoring any equipment on the Carrier Comfort Network® (CCN) bus. A CCN bus is needed.

LOW AMBIENT TEMPERATURE OPERATION — If outdoor ambient operating temperatures below 32 F (0° C) are expected, refer to separate installation instructions for low ambient temperature operation using the low ambient temperature head pressure control accessory.

MINIMUM LOAD ACCESSORY — If minimum load accessory is required, contact your local Carrier representative for more details. For installation details, refer to separate installation instructions supplied with the accessory package.




LEGEND

**CCN** — Carrier Comfort Network®
**LEN** — Local Equipment Network

**Fig. 57 — TB-3 — CCN Wiring**

* Registered trademark of DuPont.

UNIT SECURITY/PROTECTION ACCESSORIES — For applications with unique security and/or protection requirements, several options are available for unit protection. Compressor enclosures, security grilles and hail guards are available. Contact your local Carrier representative for more details. For installation details, refer to separate installation instructions supplied with the accessory package.

COMMUNICATION ACCESSORIES — A number of communication options are available to meet any requirement. Contact your local Carrier representative for more details. For installation details, refer to separate installation instructions supplied with the accessory package.

SERVICE OPTIONS — Two additional accessories are offered to aid in servicing 30RB units, a ground fault convenience outlet (GFI-CO) and a remote service port. The remote service port is a weather-proof enclosure with a communication port to plug-in the Navigator device. Contact your local Carrier representative for more details. For installation details, refer to separate installation instructions supplied with the accessory package.

## Refrigerant Circuit

LEAK TESTING — Units are shipped with complete operating charge of R-410A (see Tables 3A-4B) and should be under sufficient pressure to conduct a leak test.

**⚠ CAUTION**

This system uses Puron® R-410A refrigerant, which has higher pressures than R-22 and other refrigerants. No other refrigerant can be used in this system. Failure to use gage set, hoses, and recovery systems designed to handle Puron refrigerant (R-410A) may result in equipment damage or personal injury. If unsure about equipment, consult the equipment manufacturer.

Perform a leak test to ensure that leaks have not developed during unit shipment. Dehydration of the system is not required unless the entire refrigerant charge has been lost. Compressor oil equalization line fittings use Roto-lok fittings. If a leak is detected at these fittings, tighten fitting 107 ft-lb (145 Nm). If leak persists, open system and inspect the gasket surface for foreign material or damage. Do not reuse gaskets. Repair any leak found using good refrigeration practice.

DEHYDRATION — Refer to Carrier Standard Service Techniques Manual, Chapter 1, Refrigerants, Sections 6 and 7 for details. Do not use compressor to evacuate system.

REFRIGERANT CHARGE (Refer to Tables 3A-4B) — Immediately ahead of filter drier in each circuit is a factory-installed liquid line service valve. Each valve has a $^{1}/_{4}$-in. Schrader connection for charging liquid refrigerant. Refer to Controls, Start-Up, Operation, Service and Troubleshooting Guide for more information.

**⚠ CAUTION**

When charging, circulate water through the cooler at all times to prevent freezing. Freezing damage is considered abuse and may impair or otherwise negatively affect the Carrier warranty.

**⚠ CAUTION**

DO NOT OVERCHARGE system. Overcharging results in higher discharge pressure possible compressor damage, and higher power consumption.

**⚠ CAUTION**

Refrigerant charge must be removed slowly to prevent loss of compressor oil that could result in compressor failure.

## Optional BACnet* Communications Wiring —

The BACnet communications option uses the UPC Open controller. The controller communicates using BACnet on an MS/TP network segment communications at 9600 bps, 19.2 kbps, 38.4 kbps, or 76.8 kbps.

Wire the controllers on an MS/TP network segment in a daisy-chain configuration. Wire specifications for the cable are 22 AWG (American Wire Gage) or 24 AWG, low-capacitance, twisted, stranded, shielded copper wire. The maximum length is 2000 ft.

Install a BT485 terminator on the first and last controller on a network segment to add bias and prevent signal distortions due to echoing. See Fig. 58-60.

To wire the UPC Open controller to the BAS network:

1. Pull the screw terminal connector from the controller's BAS Port.
2. Check the communications wiring for shorts and grounds.
3. Connect the communications wiring to the BAS port's screw terminals labeled Net +, Net -, and Shield.

NOTE: Use the same polarity throughout the network segment.

4. Insert the power screw terminal connector into the UPC Open controller's power terminals if they are not currently connected.
5. Verify communication with the network by viewing a module status report. To perform a module status report using the BACview keypad/display unit, press and hold the "FN" key then press the "." Key.

To install a BT485 terminator, push the BT485, on to the BT485 connector located near the BACnet connector.

NOTE: The BT485 terminator has no polarity associated with it.

To order a BT485 terminator, consult Commercial Products i-Vu® Open Control System Master Prices.

MS/TP WIRING RECOMMENDATIONS — Recommendations are shown in Tables 16 and 17. The wire jacket and UL temperature rating specifications list two acceptable alternatives. The Halar specification has a higher temperature rating and a tougher outer jacket than the SmokeGard specification, and it is appropriate for use in applications where the user is concerned about abrasion. The Halar jacket is also less likely to crack in extremely low temperatures.

NOTE: Use the specified type of wire and cable for maximum signal integrity.

* Sponsored by ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers).

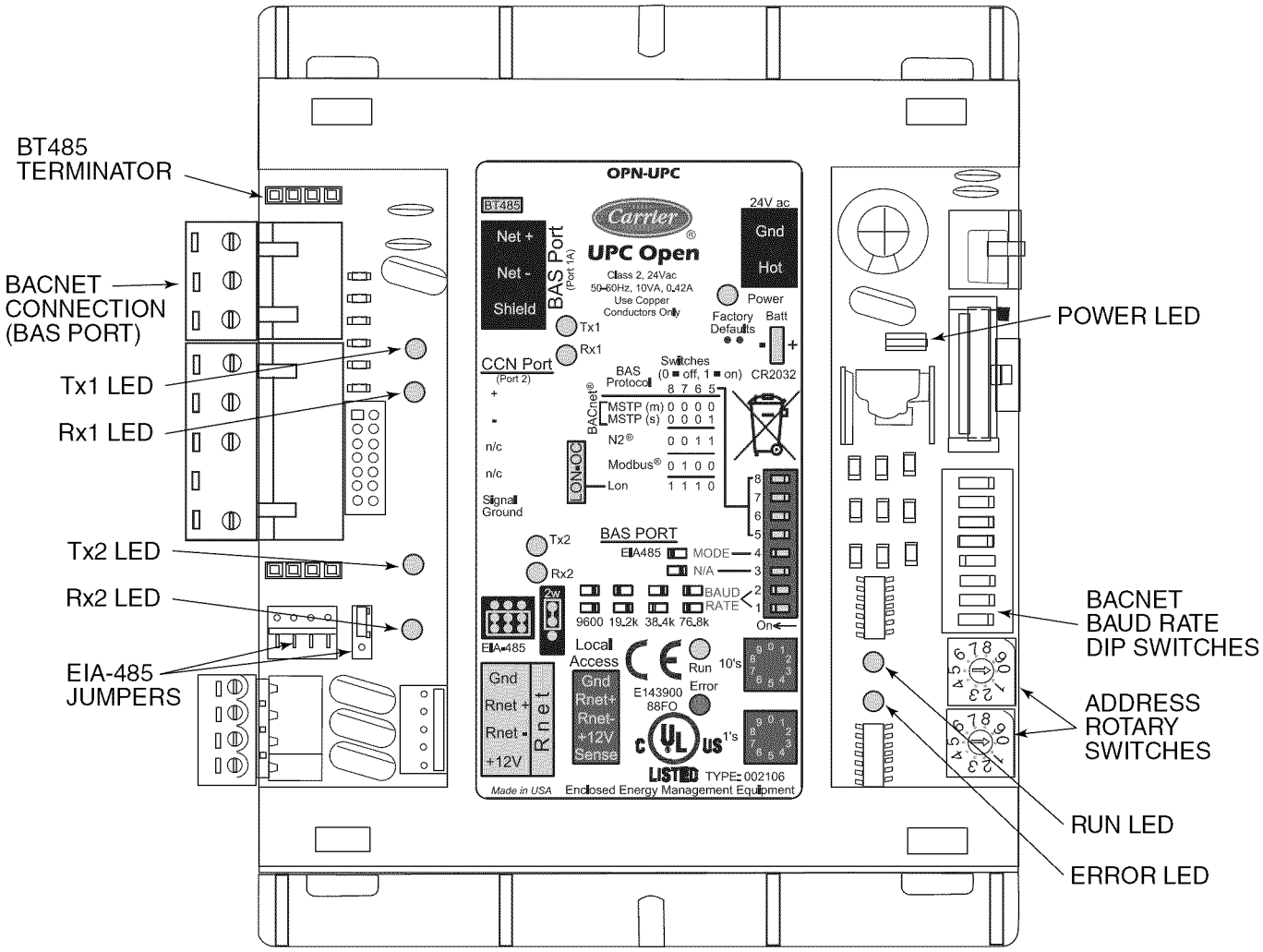



**Fig. 58 — UPC Open Controller**

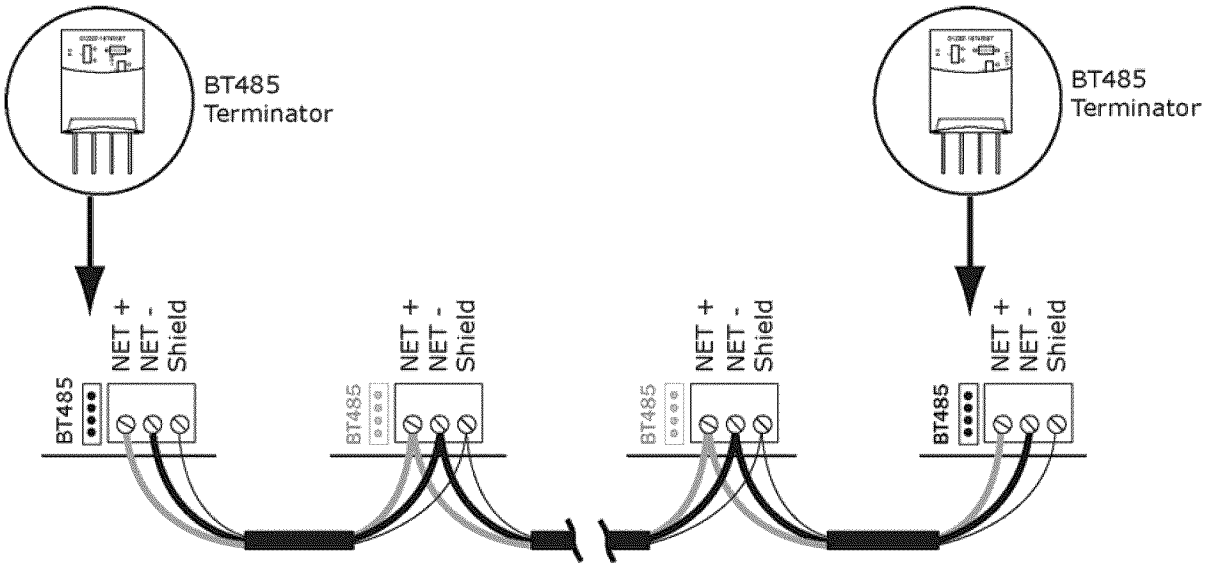



**Fig. 59 — Network Wiring**

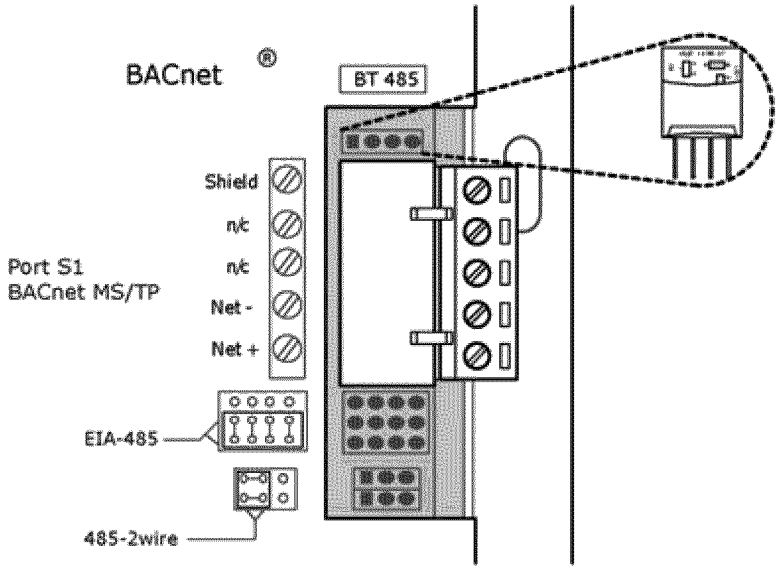



**Fig. 60 — BT485 Terminator Installation**

**Table 16 — MS/TP Wiring Recommendations**

| SPECIFICATION | RECOMMMENDATION |
|---|---|
| **Cable** | Single twisted pair, low capacitance, CL2P, 22 AWG (7x30), TC foam FEP, plenum rated cable |
| **Conductor** | 22 or 24 AWG stranded copper (tin plated) |
| **Insulation** | Foamed FEP 0.015 in. (0.381 mm) wall 0.060 in. (1.524 mm) O.D. |
| **Color Code** | Black/White |
| **Twist Lay** | 2 in. (50.8 mm) lay on pair 6 twists/foot (20 twists/meter) nominal |
| **Shielding** | Aluminum/Mylar shield with 24 AWG TC drain wire |
| **Jacket** | SmokeGard Jacket (SmokeGard PVC) 0.021 in. (0.5334 mm) wall 0.175 in. (4.445 mm) O.D.<br>Halar Jacket (E-CTFE) 0.010 in. (0.254 mm) wall 0.144 in. (3.6576 mm) O.D. |
| **DC Resistance** | 15.2 Ohms/1000 feet (50 Ohms/km) nominal |
| **Capacitance** | 12.5 pF/ft (41 pF/meter) nominal conductor to conductor |
| **Characteristic Impedance** | 100 Ohms nominal |
| **Weight** | 12 lb/1000 feet (17.9 kg/km) |
| **UL Temperature Rating** | SmokeGard 167°F (75°C), Halar -40 to 302°F (-40 to 150°C) |
| **Voltage** | 300 Vac, power limited |
| **Listing** | UL: NEC CL2P, or better |

LEGEND

**AWG** — American Wire Gage
**CL2P** — Class 2 Plenum Cable
**DC** — Direct Current
**FEP** — Fluorinated Ethylene Polymer
**NEC** — National Electrical Code
**O.D.** — Outside Diameter
**TC** — Tinned Copper
**UL** — Underwriters Laboratories

**Table 17 — Open System Wiring Specifications and Recommended Vendors**

| WIRING SPECIFICATIONS | | RECOMMENDED VENDORS AND PART NUMBERS | | | |
|---|---|---|---|---|---|
| **Wire Type** | **Description** | **Connect Air International** | **Belden** | **RMCORP** | **Contractors Wire and Cable** |
| **MS/TP Network (RS-485)** | 22 AWG, single twisted shielded pair, low capacitance, CL2P, TC foam FEP, plenum rated. See MS/TP Installation Guide for specifications. | W221P-22227 | — | 25160PV | CLP0520LC |
| | 24 AWG, single twisted shielded pair, low capacitance, CL2P, TC foam FEP, plenum rated. See MS/TP Installation Guide for specifications. | W241P-2000F | 82841 | 25120-OR | — |
| **Rnet** | 4 conductor, unshielded, CMP, 18 AWG, plenum rated. | W184C-2099BLB | 6302UE | 21450 | CLP0442 |

LEGEND

**AWG** — American Wire Gage
**CL2P** — Class 2 Plenum Cable
**CMP** — Communications Plenum Rated
**FEP** — Fluorinated Ethylene Polymer
**TC** — Tinned Copper