Split System
Cooling Condensers — 20 to 120 Tons
Remote Chillers — 20 to 120 Tons
Introduction

Trane® 20 to 120 ton air-cooled condensing units are the leaders in the split system marketplace. The vast amount of air handling options along with the remote chiller possibility allows this condensing unit to be used in a wide array of applications. Designed for efficiency, reliability and flexibility, the Trane units have the most advanced design in the industry.

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Revision History

- Added Application Assistance and System Matching, Corrosive Atmosphere and Seismic Requirements information to Application Considerations section.
- Reformatted general, electrical and weight tables.
- Updated unit model numbers to show all option selections.
- Updated electrical data
- Updated connection drawings.
- Updated EVP dimension drawings.
- Updated Mechanical Specifications to add missing information and review existing wording for content.
- Content organization reviewed and updated to meet current standards.
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Features and Benefits

Trane 3-D Scroll Compressor

Simple, Reliable Design

The Trane® 3-D™ Scroll provides important reliability and efficiency benefits. The 3-D Scroll allows the orbiting scrolls to touch in all three dimensions, forming a completely enclosed compression chamber which leads to increased efficiency. In addition, the orbiting scrolls only touch with enough force to create a seal; so there is no wear between the scroll plates. The fixed and orbiting scrolls are made of high strength cast iron which results in less thermal distortion, less leakage, and higher efficiencies.

Microchannel Condenser Coil

Microchannel condensing coils are all-aluminum coils with fully-brazed construction. This design reduces risk of leaks and provides increased coil rigidity — making them more rugged on the jobsite. Their flat streamlined tubes with small ports and metallurgical tube-to-fin bond allow for exceptional heat transfer. Microchannel all-aluminum construction provides several additional benefits:

- Light weight (simplifies coil handling)
- Easy to recycle
- Minimize galvanic corrosion
**Suction Gas Cooled Motor**

Compressor motor efficiency and reliability is further optimized with the latest scroll design. Cool suction gas keeps the motor cooler for longer life and better efficiency.

**Proven Design Through Testing and Research**

With over twenty years of development and testing, Trane 3-D Scroll compressors have undergone more than 400,000 hours of laboratory testing and field operation. This work combined with over 25 patents makes Trane the worldwide leader in air conditioning scroll compressor technology.

**Voltage Power Supply**

Four voltage options are available on RAUJ 20 to 120 ton units: 200, 230, 460 and 575V.

**Passive Manifolding**

Trane offers a parallel manifolding scheme that uses no moving mechanical parts. This feature assures continuous oil return, again providing greater system reliability. And greater reliability means optimal performance over the life of the unit.

**Additional Features**

**System Control Options**

In addition to “no system control” option, Trane offers three system control options on 20-60 ton units and two system control options on the 80-120 ton units, each using solid-state electronics. These options allow the unit to be ordered with the controls needed, saving field installation costs.
Features and Benefits

Coil Frost Protection

Trane offers Frostat™ with the VAV system control option on the 20 to 120 ton units. Frostat is the industry’s most reliable method of coil frost protection and assures that your system will provide energy efficient comfort at part load conditions.

Remote Chiller Evaporator Option with Field Installation Kit

Allows chilled water to be generated remotely from the condensing section.

The EVP controls option includes unit controller, discharge water temperature sensor and water freezestat.

Accessory kit includes evaporator, with mounting hardware and insulation, water strainer, minimum water flow limit switch and evaporator pipe stubs with couplings. Control option must be selected with accessory kit.

20 to 120 Ton Units

Standard Features

- Trane® 3-D scroll compressors
- Phase loss/reversal/low voltage monitor
- Factory-installed discharge and liquid line service valves
- Passive manifolding for 3-D scroll compressors
- Standard ambient operating range: 40°F to 125°F (115°F max ambient for EVP chiller)
- Heavy gauge galvanized steel frame
- Louvered panels for coil protection
- Slate gray air-dry paint finish

Optional Features

- Remote chiller evaporator with field installation kit
- Non-fused disconnect (20 to 60 ton models)
- Low ambient option
- Hot gas bypass to the evaporator inlet
- Suction service valve
- Pressure gauges
- Return air sensor
- Unit spring isolators
- Neoprene-in-shear isolators
- cULus approval (60 Hz only)
- Quick ship availability
- Extended compressor warranty
- Corrosion protected condenser coil
- Controls options available include
- 20 to 60 ton models: constant volume, VAV, and no controls
- 80 to 120 ton models: VAV and no controls

Quick Ship

Trane® 20 to 120 ton model RAUJ air-cooled condensing units are available with Quick Ship. Trane knows that you want your units on the job site, on time, with the options you need. Quick Ship provides you with the controls and options you need — options like hot gas bypass, isolators and refrigerant gauges. You no longer have to settle for a basic unit requiring many field
installed options to meet your job schedule. Now, you can get a customized unit from the factory in record time. Quick ship provides more control over unit selection and scheduling than ever before. Trane wants to make it easy for you to do business with us.
Application Considerations

Certain application constraints should be considered when sizing, selecting and installing Trane® air-cooled condensing units. Unit reliability is dependent upon these considerations. Where your application varies from the guidelines presented, it should be reviewed with the local Trane sales engineer.

Unit Sizing

Unit capacities are listed in the performance data section. Intentionally oversizing a unit to assure adequate capacity is not recommended. Erratic system operation and excessive compressor cycling are often a direct result of an oversized condensing unit. In addition, an oversized unit is usually more expensive to purchase, install and operate. If oversizing is desired, consider using two units.

Application Assistance and System Matching

Trane's large commercial condensing units can be paired with a variety of performance climate changers, custom air handlers, Odyssey™ light commercial air handlers, remote chiller evaporators and much more.

Application guides, which include piping requirements and condenser specifications as well as selection tools, are available for easier system matching and installation.

Contact Trane Sales for further details or specific split system needs.

Unit Location

Foundation

A base or foundation is not required if the selected unit location is level and strong enough to support the unit's operating weight.

Isolation and Sound Emission

Since the environment in which a sound source is located affects sound pressure, unit placement must be carefully evaluated. The most effective form of noise isolation is proper unit location. Units should be placed away from noise sensitive areas.

Structurally transmitted sound can be reduced by using isolators, which are recommended for sound sensitive installations. For maximum isolation effect, the refrigeration lines and electrical conduit should also be isolated and flexible electrical conduit used.

An acoustical engineer should always be consulted on critical applications.

State and local codes on sound emissions should always be considered.

Air Flow Considerations

Unobstructed flow of condenser air is essential for maintaining condensing unit capacity and operating efficiency. When determining unit placement, careful consideration must be given to assure proper air flow across the condenser heat transfer surface. Inadequate air flow will result in warm air recirculation and coil air flow starvation.

- Warm air recirculation occurs when discharge air from the condenser fans is recycled back at the condenser coil inlet.
- Coil starvation occurs when free air flow to the condenser is restricted.

Both warm air recirculation and coil starvation cause reductions in unit efficiency and capacity. In more severe cases, nuisance unit shutdowns will result from excessive head pressures. Accurate estimates of the degree of efficiency and capacity reduction are not possible due to the unpredictable effect of varying winds.

When hot gas bypass is used, reduced head pressure increases the minimum ambient condition for proper operation. In addition, wind tends to further reduce head pressure. Therefore, it is
advisable to protect the air-cooled condensing unit from continuous direct winds exceeding 10 miles per hour. Debris, trash, supplies, etc., should not be allowed to accumulate in the vicinity of the air-cooled condensing unit. Supply air movement may draw debris between coil fins and cause coil starvation. Special consideration should be given to units operating in low ambient temperatures. Condenser coils and fan discharge must be kept free of snow and other obstructions to permit adequate air flow for satisfactory unit operation.

Clearances

Adequate service clearance is required for unit access and maintenance. See Dimensions chapter for service clearance recommendations. Local code requirements may take precedence.

Effect of Altitude on Capacity

Capacities given in the performance data tables are at sea level. At elevations substantially above sea level, the decreased air density will decrease condenser capacity and, therefore, unit capacity and efficiency. The adjustment factors shown in Table 2, p. 16 can be applied directly to the catalog performance data to determine the unit’s adjusted performance.

Ambient Considerations

Start-up and operation at lower ambients requires sufficient head pressure be maintained for proper expansion valve operation. At higher ambients, excessive head pressure may result. Standard operating conditions are 40°F to 125°F (115°F max ambient for EVP chiller). With a low ambient damper, operation down to 0°F is possible. Minimum ambient temperatures are based on still conditions (winds not exceeding five mph). Greater wind velocities will result in increased minimum operating ambients. Units with hot gas bypass have a minimum operating ambient temperature of 10°F.

For proper operation outside these recommendations, contact the local Trane sales office.

Corrosive Atmospheres

Trane’s large condensers are designed and built to industrial standards and will perform to those standards for an extended period depending on the hours of use, the quality of maintenance performed, and the regularity of that maintenance. One factor that can have an adverse effect on unit life is its operation in a corrosive environment. Since the microchannel condenser coil is an all-aluminum design, it provides a high level of corrosion protection on its own. Uncoated, it withstands a salt spray test in accordance with ASTM B117 for 1,000 hours. When condensers are operated in highly corrosive environments, Trane recommends the corrosion protected condenser coil option. This corrosion protection option meets the most stringent testing in the industry, including ASTM B117 Salt Spray test for 6,000 hours and ASTM G85A2 Cyclic Acidified Salt Fog test for 2,400 hours. The acid fog test is the most stringent available today. This coating is added after coil construction covering all tubes, headers, fins and edges. The design provides superior protection from any corrosive agent.

Note: *Field coating is not allowed on microchannel coils.*

The exterior panels are durable enough to withstand a minimum of 672 hours consecutive salt spray application in accordance with standard ASTM B117. All screws are coated with zinc-plus-zinc chromate.

Coil Frost Protection

Frostat™ is standard on condensing units when the VAV option is ordered. Frostat consists of a ship-with thermostat for field installation on the suction line. A timer is also factory-installed to avoid short cycling. Frostat cycles the compressor off when the suction line is below 30°F.

When hot gas valves must be used on 20 to 120 ton units, they can be ordered as a miscellaneous option. The 20 to 30 ton units require one valve; 40 to 60 ton units also require one valve except when no system control option is selected; this option requires two valves. The 80
to 120 ton units require one valve when Supply Air VAV control is selected. Two valves are required on all other 80 to 120 ton control options.

**Refrigerant Piping**

Split systems can have significantly more refrigerant than packaged systems and thus require controls to reliably manage this excess refrigerant. Each compressor shall have crankcase heaters installed, properly sized to minimize the amount of liquid refrigerant present in the oil sump during off cycles. Additionally, the condensing unit shall have controls to initiate a liquid line solenoid closure when each refrigerant circuit shuts down. To be operational, the liquid line requires a field supplied and installed isolated solenoid valve within 10 feet of the evaporator.

Due to this, special consideration must always be given to oil return. Minimum suction gas velocities must always be maintained for proper oil return. Utilize Tube Size and Component Selection application guide SS-APG012-EN for proper system design. For special applications, call Clarksville Product Support.

**Note:** Under certain conditions, R-410A refrigerant can present special challenges with piping and system design. Whenever refrigerant line set lengths approach 150 equivalent feet and/or design ambient temperature exceeds 115°F, contact your Trane Account Executive to review application requirements.

**Seismic Requirements**

Certain RAUJ Units are seismically certified in accordance with the International Building Code (IBC) 2009, IBC 2012, California Building Code (CBC) 2010, CBC 2013, American Society of Civil Engineers (ASCE), Minimum Design Loads for Buildings and Other Structures, ASCE 7-05, and ASCE 7-10. The current certification is in accordance with OSHPD Preapproval procedure.

Test criteria ICC-ES AC 156: Sds = 2.2, z/h = 1.0

OSHPD: California Building Code (CBC) 2010, CBC 2013

Contact your Trane representative for more detail.

**Remote Chiller Evaporator**

**Water Treatment**

Using untreated or improperly treated water may result in scaling, erosion, corrosion, and algae or slime buildup in the heat exchanger that will adversely affect system capacity. Proper water treatment must be determined locally and depends on the type of system and local water characteristics. Neither salt nor brackish water is recommended, either will lead to a shortened heat exchanger life. Trane encourages employment of a qualified water treatment specialist, familiar with local water conditions, to assist in the establishment of a proper water treatment program.

**Water Flow Limits**

The minimum and maximum water flow rates are given in Table 1, p. 15. Water flow rates below the tabulated values will result in laminar flow causing freeze-up problems, scaling, stratification and poor system control. Flow rates exceeding the maximum listed may result in very high pressure drop, erosion of the heat exchanger and damage to the water flow switch.

**Water Temperature Limits**

RAUJ with remote EVP chiller performance data is based on a water temperature drop of 10°F. Full load chilled water temperature drops from 8 to 14°F may be used as long as minimum and maximum water temperature and minimum and maximum flow rates are not violated. Leaving water temperatures below 42°F require freeze protection down to 15°F. The maximum water temperature that can be circulated through the chiller when the unit is not operating is 125°F. Evaporator damage may result above this temperature.
Short Water Loops

Adequate chilled water system water volume is an important system design parameter because it provides for stable chilled water temperature control and helps limit unacceptable short cycling of chiller compressors. Typically, a five-minute water loop circulation time is sufficient to prevent short water loop issues. Therefore, as a guideline, ensure the volume of water in the chilled water loop equals or exceeds five times the evaporator flow rate. For systems with a rapidly changing load profile the amount of volume should be increased.

Note: Water volumes should be calculated as close as possible to maintain constant water flow through the water loop.

Water Piping

Foreign matter in the chilled water system will increase pressure drop and reduce water flow. Installation of a properly selected strainer is also necessary to prevent debris larger than 0.039” from entering the heat exchanger. All building water piping must be thoroughly flushed before making the final piping connections to the heat exchanger. To reduce heat loss and prevent condensation, insulation should be applied to piping. Expansion tanks are also generally required to accommodate chilled water volume changes.
Selection Procedures

Net capacity curves for the RAUJ condensing units are given in the performance data section. When matched with a coil curve, the resultant point of intersection will be the system design balance point. The design operating suction temperature and capacity can then be read directly from the graph.

*Note:* It is usually necessary to account for suction and liquid line losses in the performance. The actual losses are determined by the interconnecting piping.

To plot the DX evaporator performance curve it is only necessary to obtain gross evaporator capacities for the given entering air conditions and cfm at two different saturated suction temperatures. The Trane Refrigeration Coil Computer Selection Program can be used to conveniently provide the necessary evaporator capacity values at the selected suction temperatures.

**Selection Example**

The RAUJ 20 to 120 ton TOPSS™ selection program provides the ability to generate performance output for pre-selected Trane Modular Climate Changer evaporator coils with the RAUJ condensing units.

To select a condensing unit and evaporator coil not available in the RAUJ TOPSS™ program, the example below can be used to cross-plot an evaporator coil with known performance with the RAUJ condensing unit.

From the Trane Refrigeration Coil Computer Selection Program:

- DX Evap Coil = Model Number DFDB42 - 42" X 60" / 4 Row / 144 FPF - FD/Delta-flo E
- Entering Coil Conditions = 80/67 DB/WB and 95°F Ambient - 8500 CFM
- Coil Performance @ 38F SST - 406.49 MBh Total
- Coil Performance @ 45F SST - 293.09 MBh Total
- Balance Point at 95°F Ambient = 370 MBh @ 40.2 SST
- Coils are identical fin series and circuiting on both simulations.

**Figure 1. Performance - RAUJ 30 ton (60 Hz)**

By plotting the two coil performance outputs across the RAUJC30 Net Capacity curve at their respective total MBH at the defined saturated suction temperatures and ignoring line losses, we can see that the condenser/evaporator coil combination, at 95 F ambient, provides 370 MBH Net Capacity at 40.2 SST.
# Model Number Description

## 20 to 60 Ton Units

<table>
<thead>
<tr>
<th>Digit 1 — Unit Type</th>
<th>Digit 10 — Design Sequence</th>
<th>Digit 18 — Corrosion Protected Condenser Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>R = Condenser</td>
<td>Factory Assigned</td>
<td>0 = None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J = Corrosion Protected Condenser Coil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 2 — Condenser</th>
<th>Digit 11 — Ambient Control</th>
<th>Digit 19 — Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Air-Cooled</td>
<td>0 = Standard</td>
<td>0 = None</td>
</tr>
<tr>
<td></td>
<td>1 = 0°F (Low Ambient Dampers)</td>
<td>C = Remote Chiller Evaporator and Install Kit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 3 — System Type</th>
<th>Digit 12 — Agency Approval</th>
<th>Digit 20 — Isolators</th>
</tr>
</thead>
<tbody>
<tr>
<td>U = Upflow</td>
<td>0 = None</td>
<td>1 = Spring Isolator</td>
</tr>
<tr>
<td></td>
<td>J = cULus (60 Hz only)</td>
<td>2 = Neoprene Isolators</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 4 — Development Sequence</th>
<th>Digit 13 — Disconnect Switch</th>
<th>Digit 21 — Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>J = Third</td>
<td>0 = None</td>
<td>The service digit for each model number contains 20 digits. All 20 digits must be referenced.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 5, 6, 7 — Nominal Capacity</th>
<th>Digit 14 — Hot-Gas Bypass Valve</th>
<th>Digit 22 —</th>
</tr>
</thead>
<tbody>
<tr>
<td>C20 = 20 Tons</td>
<td>0 = None</td>
<td>Options</td>
</tr>
<tr>
<td>C25 = 25 Tons</td>
<td>B = Hot-Gas Bypass Valve</td>
<td></td>
</tr>
<tr>
<td>C30 = 30 Tons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C40 = 40 Tons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C50 = 50 Tons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C60 = 60 Tons</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 8 — Voltage and Start Characteristics</th>
<th>Digit 15 — Suction Service Valve</th>
<th>Digit 23 —</th>
</tr>
</thead>
<tbody>
<tr>
<td>D = 415/50/3 XL</td>
<td>0 = None</td>
<td>Options</td>
</tr>
<tr>
<td>E = 200/60/3 XL</td>
<td>D = Suction Service Valve</td>
<td></td>
</tr>
<tr>
<td>F = 230/60/3 XL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 = 460/60/3 XL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = 575/60/3 XL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 = 380/50/3 XL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 9 — System Controls</th>
<th>Digit 16 — Pressure Gauges</th>
<th>Digit 24 —</th>
</tr>
</thead>
<tbody>
<tr>
<td>B = No System Control</td>
<td>0 = None</td>
<td>Options</td>
</tr>
<tr>
<td>C = Constant Volume Control</td>
<td>F = Pressure Gauges and Piping</td>
<td></td>
</tr>
<tr>
<td>E = Supply Air VAV Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P = EVP Control</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 17 — Return Air Sensor</th>
<th>Digit 18 — Corrosion Protected Condenser Coil</th>
<th>Digit 25 —</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = None</td>
<td>0 = None</td>
<td>Options</td>
</tr>
<tr>
<td>J = Return Air Sensor</td>
<td>J = Corrosion Protected Condenser Coil</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 19 — Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = None</td>
</tr>
<tr>
<td>C = Remote Chiller Evaporator and Install Kit</td>
</tr>
<tr>
<td>T = Flow Switch (EVP Control Only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digit 20 — Isolators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Spring Isolator</td>
</tr>
<tr>
<td>2 = Neoprene Isolators</td>
</tr>
</tbody>
</table>

**Note:** The service digit for each model number contains 20 digits. All 20 digits must be referenced.
# Model Number Description

## 80 to 120 Ton Units

**Digit 1 — Unit Type**
- R = Condenser

**Digit 2 — Condenser**
- A = Air-Cooled

**Digit 3 — System Type**
- U = Upflow

**Digit 4 — Development Sequence**
- J = Third

**Digit 5, 6, 7 — Nominal Capacity**
- C80 = 80 Tons
- D10 = 100 Tons
- D12 = 120 Tons

**Digit 8 — Voltage and Start Characteristics**
- E = 200/60/3 XL
- F = 230/60/3 XL
- 4 = 460/60/3 XL
- 5 = 575/60/3 XL
- * = 380/50/3 XL
- * = 415/50/3 XL

**Digit 9 — System Controls**
- B = No System Control
- E = Supply Air VAV Control
- P = EVP Control

**Digit 10 — Design Sequence**
- Factory Assigned

**Digit 11 — Ambient Control**
- 0 = Standard
- 1 = 0°F (Low Ambient Dampers)

**Digit 12 — Agency Approval**
- 0 = None
- 3 = cULus (60 Hz only)

**Digit 13 — Circuits**
- A = Dual

**Digit 14 — Hot-Gas Bypass Valve**
- 0 = None
- B = Hot-Gas Bypass Valve

**Digit 15 — Suction Service Valve**
- 0 = None
- D = Suction Service Valve

**Digit 16 — Pressure Gauges**
- 0 = None
- F = Pressure Gauges and Piping

**Digit 17 — Corrosion Protected Condenser Coil**
- 0 = None
- J = Corrosion Protected Condenser Coil

**Digit 18 — Isolators**
- 0 = None
- 1 = Spring Isolator

**Digit 19 —**
- C = Remote Chiller Evap and Install Kit
- 3 = Flow Switch (EVP Controls Only)

**Notes:**
1. The service digit for each model number contains 19 digits. All 19 digits must be referenced.
2. * = Design special.
General Data

Table 1. General data — RAUJ condensing units

<table>
<thead>
<tr>
<th>Unit Size (tons)</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
</tr>
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<tbody>
<tr>
<td><strong>Compressor Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Scroll</td>
<td>Scroll</td>
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<td>Scroll</td>
<td>Scroll</td>
<td>Scroll</td>
<td>Scroll</td>
<td>Scroll</td>
</tr>
<tr>
<td>Number of Refrigerant Circuits</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Manifolded Compressor sizes(a)</td>
<td>Tons</td>
<td>10-10</td>
<td>10-13.5</td>
<td>15-15</td>
<td>10-10</td>
<td>11.5-13.5</td>
<td>15-15</td>
<td>15-15-15</td>
<td>20-20-20</td>
</tr>
<tr>
<td>Unit Capacity Steps</td>
<td>%</td>
<td>100-50</td>
<td>100-42</td>
<td>100-50</td>
<td>100-75-50-25</td>
<td>100-73-46-23</td>
<td>100-75-50-25</td>
<td>100-83-66-50-33-17</td>
<td>100-80-60-45-30-15</td>
</tr>
</tbody>
</table>

| **Condenser Fan Data** |     |     |     |     |     |     |     |     |     |
| Type/Drive Type       | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct | Prop/Direct |
| Qty                | 2 | 3 | 3 | 4 | 6 | 6 | 8 | 12 | 12 |
| Diameter             | in | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| Power/motor          | hp | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Nominal Total Airflow| cfm | 14600 | 20700 | 20700 | 26790 | 36890 | 40490 | 56490 | 73890 | 76280 |

| **Condenser Coil Data** |     |     |     |     |     |     |     |     |     |
| Type                   | Microchannel | Microchannel | Microchannel | Microchannel | Microchannel | Microchannel | Microchannel | Microchannel | Microchannel |
| Number of Coils        | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 |
| Size                  | ft² | 42x71 | 42x71 | 42x71 | 59x71 | 51x96 | 51x96 | 51x96 | 51x96 |
| Face Area             | ft² | 41.4 | 41.4 | 41.4 | 58.2 | 68.0 | 68.0 | 116.4 | 136.0 | 170.7 |
| Rows/Fin Per Ft.      | 1/240 | 1/240 | 1/240 | 1/240 | 1/240 | 1/240 | 1/240 | 1/240 | 1/240 |
| Storage Capacity(b)   | lbs | 18.7 | 18.7 | 18.7 | 23.5 | 25.0 | 25.0 | 47.1 | 50.0 | 62.9 |

| **Refrigerant Data(c)** |     |     |     |     |     |     |     |     |     |
| Type                   | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A |
| Operating Charge(d)    | lbs | 11.9 | 11.8 | 11.8 | 22.7 | 23.4 | 23.8 | 57.1 | 59.1 | 65.3 |

| **Outdoor Air Temperature for Mechanical Cooling** |     |     |     |     |     |     |     |     |     |
| Standard Ambient Operating Range(e) | °F | 40-125 | 40-125 | 40-125 | 40-125 | 40-125 | 40-125 | 40-125 | 40-125 |
| Low Ambient Option | °F | 0-125 | 0-125 | 0-125 | 0-125 | 0-125 | 0-125 | 0-125 | 0-125 |

(a) Circuit 1 compressor manifold sizes shown. For units with 2 circuits, compressor manifold set is the same for circuit 1 and 2.

(b) Condenser storage capacity is given at conditions of 95°F outdoor temperature, and 95% full.

(c) Refer to Refrigerant Piping in the Application Considerations section. Condensing units are shipped with nitrogen holding charge only.

(d) Operating charge is approximate for condensing unit only, and does not include charge for low side or interconnecting lines. Condensing units are shipped with a nitrogen holding charge only.

(e) Maximum operating ambient for EVP remote chillers is 115°F.
Table 2. Altitude correction multiplier for capacity

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Performance Data

60Hz Units

Figure 2. Performance — RAUJ 20 ton 60 Hz

Figure 3. Performance — RAUJ 25 ton 60 Hz
Figure 6. Performance — RAUJ 50 ton 60 Hz

Figure 7. Performance — RAUJ 60 ton 60 Hz
Figure 8. Performance — RAUJ 80 ton 60 Hz

Figure 9. Performance — RAUJ 100 ton 60 Hz
**50Hz Units**

Figure 10. Performance — RAUJ 120 ton 60 Hz

Figure 11. Performance — RAUJ 20 ton 50 Hz
Figure 12. Performance — RAUJ 25 ton 50 Hz

Figure 13. Performance — RAUJ 30 ton 50 Hz
Figure 14. Performance — RAUJ 40 ton 50 Hz

Figure 15. Performance — RAUJ 50 ton 50 Hz
Figure 16. Performance — RAUJ 60 ton 50 Hz

Figure 17. Performance — RAUJ 80 ton 50 Hz
Figure 18. Performance — RAUJ 100 ton 50 Hz

Figure 19. Performance — RAUJ 120 ton 50 Hz
Table 3. System performance — 20 to 120 ton RAUJ with remote EVP chiller

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Notes:
1. Performance data at 10°F water temperature drop and 60 Hz.
2. Leaving water temperature (LWT) below 42°F requires freeze protection to 15°F.
3. 40°F LWT performance includes 20% glycol

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Figure 20. Remote EVP glycol freeze protection
Figure 21. Remote EVP ethylene glycol GPM, capacity, compressor power adjustment

Figure 22. Remote EVP propylene glycol GPM, capacity, compressor power adjustment
Controls

System Control Options

Select one of the following control options to meet your application requirements.

No System Control

Provides the compressors wired to a terminal strip inside the control panel. The temperature controller must be field provided and installed. The 20, 25 and 30 ton sizes have two capacity steps. The 40, 50 and 60 ton sizes have four steps available. The 80, 100, and 120 ton sizes have six steps available.

Constant Volume Control (20 to 60 Ton Models)

Includes a W973 controller with two cool, four heat steps on the 20, 25 and 30 ton sizes. Four cool, four heat steps are provided on the 40, 50 and 60 ton sizes. The heating contacts are wired to terminals in the condensing unit control panel for easy interface with a field supplied electric duct heater or gas duct furnace. An optional return air sensor is available with this controller which provides the zone temperature input to the thermostat, thus generating the loading demand signal to the Honeywell W973 constant volume controller.

EVP Chiller Control

Consists of an interface panel in the main unit control box and a remote mounted control box that is customer installed. The remote mounted box contains the Honeywell W7100G controller. The water chiller controller has an adjustable 0-10°F control band using integrating logic, built-in fixed-off timers and field installed discharge water temperature sensors for control and chiller freeze protection. Pumpdown is provided. Lead-lag and multiple chiller control are not provided. There are two capacity steps on 20, 25 and 30 ton sizes, four capacity steps on 40, 50 and 60 ton sizes and six capacity steps on 80, 100 and 120 ton sizes.

Supply Air VAV Control

Provides a Honeywell W7100A control system. This option is for use with shut-off VAV or other applications requiring control of supply air temperature. The control provides a voltage output for interface with field supplied components to provide simultaneous economizer operation. The discharge air sensor ships with the unit for field mounting. The standard VAV unit is provided with reliable coil frost protection in the form of Trane’s proven and patented Frostat™. Frostat™ is used in place of hot gas bypass.

Low Ambient Control Option

Standard

Unit start-up and operation down to approximately 40°F at minimum compressor load.

Low Ambient

Factory-installed head pressure control damper assembly permits operation down to 0°F by maintaining proper head pressure. Ten minute timer is standard for protection against nuisance trips.

Miscellaneous Options

Select the miscellaneous options to meet your project requirements.

Disconnect (20 to 60 Ton Models)

Non-fused unit disconnect switch is mounted in the control box and provides for interruption of power for servicing the unit. Lugs are suitable for copper wires only. No overcurrent or short circuit protection is provided for the unit by this switch.
Hot Gas Bypass Valves

Hot gas bypass valves are stocked and shipped with the unit for field installation. When suction pressure falls below the valve adjustable set point, the valve modulates hot gas to the inlet of the evaporator.

*Note: Frostat™ is standard on VAV units and is recommended in place of hot gas bypass.*
Table 5. RAUJ electrical data

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(a) Voltage Utilization Range is +/- 10% of Rated Voltage (use range): 200/60/3 (180-220), 230/60/3 (208-254), 460/60/3 (414-506), 575/60/3 (516-633), 380/50/3 (342-418), 415/50/3 (373-456)
(b) Electrical information is for each individual motor.
(c) Minimum circuit ampacity (MCA) is 125 percent of the RLA of one compressor motor plus the total RLA of the remaining motors.
(d) Maximum Overcurrent Protection Device permitted by NEC 440-22 is 225 percent of the RLA of one compressor motor plus the total RLA of the remaining motors.
Unit Dimensions

Figure 23. Air-cooled condensing unit — 20 ton

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT OF UNIT CLEARANCE 72", BACK OF UNIT CLEARANCE 72", LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42".

DETAIL A
CONTROL BOX BOTTOM

CONTROL PANEL
(SEE DETAIL A)

FAN GRILLE

LOW AMBIENT DAMPER (SEE NOTE 2)

4" LINE VOLTAGE ACCESS
1 1/4" x 4 1/2" SLOT FOR 115 VOLT CONTROL

CONTROL BOX BOTTOM (SEE DETAIL A)

4" CONDUIT MAIN POWER

FAN GRILLE

3/4" x 4 MTG HOLES

72 1/2"

8"

DOOR 43 1/4" W/ 180 DEG SWING

1 1/4"

57 5/8"

1 3/4" KO LOW VOLTAGE (30V MAX.)

1/2" X 4 KO (115V)

1/2" X 2 KO (115V)

5 3/8" 3 3/8"

3 3/8"

4 1/2"

29 1/4"

31 1/4"

35 13/16"

37 11/16"

4 3/8"

6 1/8"

60"

26 13/16"

74 1/4"

18"

11 1/2"

13/16"
Figure 24. Air-cooled condensing unit connections — 20 ton

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

PLAN VIEW OF UNIT
CONNECTION DRAWING

CONTROL PANEL SIDE

1 5/8" O.D.
SUCTION LINE

42"

13"

34 1/2"

8 1/16"

CONTROL PANEL

VOLTAGE ACCESS

ORIENTATION VIEW OF UNIT
ISOMETRIC DRAWING

COIL

SUCTION LINE

5 3/4"

5 7/16"

LIQUID LINE

CONTROL PANEL SIDE VIEW OF UNIT
CONNECTION DRAWING

20 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 25. Air-cooled condensing unit — 25 and 30 ton

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT OF 20 AND 30 UNIT CLEARANCE 72", BACK OF UNIT CLEARANCE 72".
   LEFT AND RIGHT SIDE OF 20 AND 30 UNIT CLEARANCE 42".

DETAIL A
CONTROL BOX BOTTOM

CONTROL PANEL
(SEE DETAIL A)

FAN GRIFFE

3/4" x 4 MTC HOLES

door 43 1/4" w/ 180 deg swing

~1 1/4"

72 1/2" 88 1/2"

front (see note 3 for all min. clearance)

1/2" x 4 ko (115v)
1/2" x 2 ko (115v)
1 3/4" ko low voltage (30v max.)
3/8" conduit main power

control panel

low ambient damper (see note 2)

fan grille

4" line voltage access

1 1/4" x 4 1/2"

slot for 115 volt control

control box bottom (see detail a)

13"

27 1/4"

60 1/8"

6 1/4"

11 1/2"

4 3/8"

6 1/8"

78"

88 5/16"
Figure 26. Air-cooled condensing unit connections — 25 and 30 tons

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

25 - 30 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 27. Air-cooled condensing unit — 40 ton

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 72", LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42".

DETAIL A
BOTTOM OF CONTROL BOX

CONTROL PANEL
(SEE DETAIL A)
FAN GRILLE

DOOR 43 1/4" W/ 180 DEG SWING
85 5/8"

BOTTOM OF CONTROL BOX (SEE DETAIL A)

1 1/4" x 4 1/2" SLOT FOR 115 VOLT CONTROL

FAN GRILLE
3/4" X 6 MTG HOLES

1/2" X 4 KO (115V)
1/2" X 2 KO (115V)
1 3/4" KD LOW VOLTAGE (30V MAX.)

29 1/4"
31 1/4"
35 13/16"
37 11/16"

4" CONDUIT MAIN POWER

2 5/8"
3 3/8"
5 5/16"

CONTROL PANEL

LOW AMBIENT DAMPER (SEE NOTE 2)
Figure 28. Air-cooled condensing unit connections — 40 ton

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

PLAN VIEW OF UNIT
CONNECTION DRAWING

ORIENTATION VIEW OF UNIT
ISOMETRIC DRAWING

CONTROL PANEL SIDE VIEW OF UNIT
CONNECTION DRAWING

BACK VIEW OF UNIT
CONNECTION DRAWING

40 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 29. Air-cooled condensing unit — 50 ton

NOTES:

1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 72” - LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42”.

DETAIL A
BOTTOM OF CONTROL BOX

CONTROL PANEL (SEE DETAIL A)
FAN GRILLE
1 1/4" x 4 1/2" SLOT FOR 115 VOLT CONTROL
4" LINE VOLTAGE ACCESS
1/2" X 4 KO (115V)
1/2" X 2 KO (115V)
3 3/8" 5 1/8"
2 5/8" 5 5/16"
3 3/8"
3 5/8" 4 1/2"
CONTROL PANEL
LOW AMBIENT DAMPER (SEE NOTE 2)
4" CONDUIT MAIN POWER

UNIT CLEARANCE 72"
LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42”

BOTTOM OF CONTROL BOX (SEE DETAIL A)

DOOR 43 1/4" W/ 180 DEG SWING
8 1/8"
48 7/8"
3/4" X 6 MTG HOLES

FRONT (SEE NOTE 3 FOR ALL MIN. CLEARANCE)

FAN GRILLE
Figure 30. Air-cooled condensing unit connections — 50 ton

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

PLAN VIEW OF UNIT
CONNECTION DRAWING

CONTROL PANEL SIDE VIEW OF UNIT
CONNECTION DRAWING

50 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 31. Air-cooled condensing unit — 60 ton

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 72" - LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42".

- 1/2" X 4 KO (115V)
- 1/2" X 2 KO (115V)
- 1 3/4" KO LOW VOLTAGE (30V MAX.)

DETAIL A
BOTTOM OF CONTROL BOX

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 72" - LEFT AND RIGHT SIDE OF UNIT CLEARANCE 42".
Figure 32. Air-cooled condensing unit connections — 60 ton

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

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<thead>
<tr>
<th>Dimensions</th>
<th>Description</th>
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<tr>
<td>7/8&quot; O.D. LIQUID LINE</td>
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<tr>
<td>7/8&quot; O.D. HOT GAS BYPASS (OPTIONAL)</td>
<td>7 11/16&quot;</td>
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<td>38 3/4&quot;</td>
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<td>29 3/4&quot;</td>
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<td>10 13/16&quot;</td>
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<td>7 11/16&quot;</td>
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<td>18 1/2&quot;</td>
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<td>5 13/16&quot;</td>
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<td>BACK VIEW OF UNIT</td>
<td>CONNECTION DRAWING</td>
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</tbody>
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60 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 33. Air-cooled condensing unit — 80 ton

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 96°, LEFT AND RIGHT SIDE OF UNIT CLEARANCE 48°.

DETAIL A
DIMENSIONAL DETAIL
Figure 34. Air-cooled condensing unit connections — 80 ton

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

PLAN VIEW OF UNIT
CONNECTION DRAWING

ORIENTATION VIEW OF UNIT
ISOMETRIC DRAWING

LEFT VIEW OF UNIT
CONNECTION DRAWING

CONTROL PANEL SIDE VIEW OF UNIT
CONNECTION DRAWING

80 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 35. Air-cooled condensing unit — 100 and 120 tons

NOTES:
1. SEE CONNECTION DRAWING FOR CONNECTION LOCATION AND SIZES.
2. LOW AMBIENT DAMPER ONLY COMES WITH SELECTED UNIT.
3. FRONT AND BACK OF UNIT CLEARANCE 96". LEFT AND RIGHT SIDE OF UNIT CLEARANCE 48".

DETAIL A
DIMENSIONAL DETAIL
Figure 36. Air-cooled condensing unit connections — 100 and 120 tons

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

100 - 120 TON UNIT
DIMENSIONAL CONNECTION DRAWING
Figure 37. Evaporator chiller — 20 ton

NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY.
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH SUPPLIED FASTENERS.
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST HEAT WHEN BRAZING REFRIGERANT LINES.
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING).
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION.
6. WATER CONNECTIONS ARE PREDICED (VICTAULIC).
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" X 14 NPT F4 CONNECTION SUPPLIED ON EXT 04 THRU 06 AND 08 10 ONLY BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION.

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAUJ CONDENSING UNIT.
2. INSTALLATION KIT, TO INCLUDE:
   1. MOUNTING BRACKETS
   1. INSULATION KIT
   1. MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   1. WATER CONNECTION KIT WITH PIPING STUBS, Y CONNECTOR, STRAINER, VICTAULIC CONNECTIONS WITH GASKETS.
   WATER FLOW SWITCH
   1. WATER CONNECTION KIT INSTALLATION INSTRUCTIONS.

INSTALLATION ADDITIONALLY REQUIRES:
RAUJ REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR, FREEZE-STAY, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP CONTROL PANEL.
4. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT EXCHANGER TO PERMANENT MOUNTING SURFACE.
2. FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC.
FIELD PROVIDED TE-FLOM TAPE FOR SEALING 1/2" PIPE PLUGS.
FIELD PROVIDED WATER STRAINERS PLUG OR BLOW DOWN VALVE.
FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH.
FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS.

SEE IOM FOR INSTALLATION DETAIL.
NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER MAY REQUIRE TRIMMING
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTaulic)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL BRAZ MATERIALS. SEE 10M BRAZE PROCEDURE.
8. 1/2" - 14 NPT F4 CONNECTION SUPPLIED ON EXT'S 05 THRU 08 AND 13 THRU 16 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAUJ CONDENSING UNIT
2. INSTALLATION KIT, TO INCLUDE:
   1. INSTALLATION KIT
   2. MOUNTING BRACKETS
   3. INSULATION KIT
   4. MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   5. WATER CONNECTION KIT WITH PIPING STUBS, Y CONNECTOR, STRAINER, VICTaulic CONNECTIONS WITH GASKETS,
   6. WATER FLOW SWITCH
   7. WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRES:
   RAUJ REMOTE EVP CONTROL PANEL WITH LEADING WATER TEMPERATURE SENSOR, FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP CONTROL PANEL
4. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT EXCHANGER TO PERMANENT MOUNTING SURFACE
2. FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC
FIELD PROVIDED TIP-ON TAPE FOR SEALING 1/2" PIPING PLUGS
FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE 10M FOR INSTALLATION DETAIL

25 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING
NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTAULIC)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL, AND REQUIRE SPECIAL BRAZE MATERIALS, SEE IOM BRAZE PROCEDURE.
8. 1/2" - 14 NPT F4 CONNECTION SUPPLIED ON EXTS 05 THRU 08 AND 13 THRU 16 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAUJ CONDENSING UNIT
2. INSTALLATION KIT, TO INCLUDE:
   - MOUNTING BRACKETS
   - INSULATION KIT
   - MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   - WATER CONNECTION KIT WITH PIPING StubS, Y Connector, STRAINER, VICTAULIC CONNECTIONS WITH GASKETS, WATER FLOW SWITCH
   - WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRES:
RAUJ REMOTE EVAP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR, FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVAP CONTROL PANEL
1. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT EXCHANGER TO PERMANENT MOUNTING SURFACE
2. FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC FIELD PROVIDED TEFLO TAPe FOR SEALING 1/2" PIPE PLUGS
FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE FIELD PROVIDED TAPe FOR INSTALLING WATER FLOW SWITCH
FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL

30 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING

SEE NOTE 8
Figure 40. Evaporator chiller — 40 ton

NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTaulic)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" NPT CONNECTIONS SUPPLIED ON EXTS 04 THRU 06 ONLY
BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAU CONDENSING UNIT
2. INSTALLATION KIT, TO INCLUDE:
   1. MOUNTING BRACKETS
   2. INSULATION KIT
   3. MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   4. WATER CONNECTION KIT WITH PIPING STUBS, Y CONNECTOR, STRAINER, VICTaulic CONNECTIONS WITH GASKETS,
   5. WATER FLOW SWITCH
   6. WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRE:
RAU REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR, FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP CONTROL PANEL
4. FIELD PROVIDED 3/16" BOLTS FOR SECURING BRAZED PLATE HEAT EXCHANGER TO PERMANENT MOUNTING SURFACE
2. FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC
FIELD PROVIDED "TEFLON TAPE FOR SEALING 1/2" PIPE PLUGS
FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
FIELD PROVIDED "TEE FOR INSTALLING WATER FLOW SWITCH
FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL
Figure 41. Evaporator chiller — 50 ton

NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH
   SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING
   LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST
   HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTaulic)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL
   BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" - 14 NPT FS CONNECTION SUPPLIED ON EXTS 13 THRU 24 AND 37
   THRU 48 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION

OPTION INCLUDES:
1 - BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAU) CONDENSING
UNIT
1 - INSTALLATION KIT, TO INCLUDE:
2 - MOUNTING BRACKETS
3 - INSULATION KIT
1 - MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
1 - WATER CONNECTION KIT WITH RIPPING STUBS, Y CONNECTOR, STRAINER,
   VICTaulic CONNECTIONS WITH GASKETS,
   WATER FLOW SWITCH
1 - WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRES:
RAU REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR,
FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP
CONTROL PANEL
4 - FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT
EXCHANGER TO PERMANENT MOUNTING SURFACE
2 - FIELD PROVIDED 1/2" - 14 NPT PlUGS, STAINLESS STEEL OR PVC
FIELD PROVIDED TEFLOm TAPe FOR SEALiNG 1/2" PIPE PlUGS
FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
FIELD PROVIDED 2" VINYL TAPe FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL

50 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING
Figure 42. Evaporator chiller — 60 ton

NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH
SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING
LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST
HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTAULIC)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL
BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" - 14 NPT F5 CONNECTION SUPPLIED ON EXTS 13 THRU 24 AND 37
THRU 48 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAHPORATOR OPTION

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAU CONDENSING
UNIT
2. INSTALLATION KIT, TO INCLUDE:
   1. MOUNTING BRACKETS
   2. INSULATION KIT
   3. MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   4. WATER CONNECTION KIT WITH PIPING STUBS, Y CONNECTOR, STRAINER,
      VICTAULIC CONNECTIONS WITH GASKETS,
      WATER FLOW SWITCH
   5. WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRES:
RAU REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR,
FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP
CONTROL PANEL
4. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT
EXCHANGER TO PERMANENT MOUNTING SURFACE
2. FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC
FIELD PROVIDED TELON TAPE FOR SEALING 1/2" PIPE PLUGS
FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL

60 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING

SS-PRC030J-EN
53
NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH
   SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING
   LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST
   HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTUALIC)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL AND REQUIRE SPECIAL
   BRAZE MATERIALS. SEE IAM BRAZE PROCEDURE.
8. 1/2" - 14 NPT FS CONNECTION SUPPLIED ON EXTS 13 THRU 24 AND 37
    THRU 48 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER EVAPORATOR OPTION

OPTION INCLUDES:
1. - BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAUJ CONDENSING
   UNIT
2. - INSTALLATION KIT, TO INCLUDE:
   1 - MOUNTING BRACKETS
   1 - INSULATION KIT
   1 - MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   1 - WATER CONNECTION KIT WITH PIPING STUBS, Y CONNECTOR, STRAINER,
   VICTUALIC CONNECTIONS WITH GASKETS,
   WATER FLOW SWITCH
   1 - WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRES:
RAUJ REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR,
FREEZES-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP
CONTROL PANEL
4. - FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT
   EXCHANGER TO PERMANENT MOUNTING SURFACE
2. - FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC
   FIELD PROVIDED TEE FLOK TAP FOR SEALING 1/2" PIPE PLUGS
   FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
   FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
   FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IAM FOR INSTALLATION DETAIL

80 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING
Figure 44. Evaporator chiller — 100 ton

NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH
   SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING
   LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST
   HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTAULIC)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL, AND REQUIRE SPECIAL
   BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" - 14 NPT F5 CONNECTION SUPPLIED ON EXT'S 13 THRU 24 AND 37
   THRU 48 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE CHILLER Evaporator Option

OPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAU CONDENSING
   UNIT
2. INSTALLATION KIT, TO INCLUDE:
   1 - MOUNTING BRACKETS
   1 - INSULATION KIT
   1 - MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY INCLUDES:
- RAU REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR,
  FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP
  CONTROL PANEL
4. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT
   EXCHANGER TO PERMANENT MOUNTING SURFACE
5. 2 FIELD PROVIDED 1/2" - 14 NPT PLUGS, STAINLESS STEEL OR PVC
   FIELD PROVIDED TEFLO-TAPE FOR SEALING 1/2" PIPE PLUGS
   FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
   FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
   FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL

100 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING
NOTES:
1. THIS HEAT EXCHANGER IS INTENDED FOR INDOOR INSTALLATION ONLY
2. HEAT EXCHANGER MOUNTING LEGS ARE INSTALLED AT JOB SITE WITH
   SUPPLIED FASTENERS
3. INSULATION SHOULD BE INSTALLED AFTER INSTALLING
   LEGS & REFRIGERANT TUBING, OR MUST BE ADEQUATELY SHIELDED AGAINST
   HEAT WHEN BRAZING REFRIGERANT LINES
4. INSTALL INSULATION SIDE PIECES FIRST THEN WRAPPER (MAY REQUIRE TRIMMING)
5. USE VINYL TAPE (FIELD SUPPLIED) TO SEAL INSULATION AFTER INSTALLATION
6. WATER CONNECTIONS ARE GROOVED (VICTAULIC)
7. REFRIGERANT CONNECTIONS ARE STAINLESS STEEL, AND REQUIRE SPECIAL
   BRAZE MATERIALS. SEE IOM BRAZE PROCEDURE.
8. 1/2" - 14 NPT FS CONNECTION SUPPLIED ON EXTS. 13 THRU 24 AND 37
   THRU 48 ONLY.

BRAZED PLATE HEAT EXCHANGER REMOTE Chiller EVA\n\n\nOPTION INCLUDES:
1. BRAZED PLATE HEAT EXCHANGER - SHIPS SEPARATE FROM RAU CONDENSING
   UNIT
2. INSTALLATION KIT, TO INCLUDE:
   1) MOUNTING BRACKETS
   2) INSULATION KIT
   3) MOUNTING BRACKET & INSULATION KIT INSTALLATION INSTRUCTIONS
   4) WATER CONNECTION KIT WITH RASM STUBS, Y CONNECTOR, STRAINER,
   VICTAULIC CONNECTIONS WITH GASKETS,
   WATER FLOW SWITCH
   5) WATER CONNECTION KIT INSTALLATION INSTRUCTIONS

INSTALLATION ADDITIONALLY REQUIRE:
   1. RAU REMOTE EVP CONTROL PANEL WITH LEAVING WATER TEMPERATURE SENSOR,
   FREEZE-STAT, AND INSTALLATION INSTRUCTIONS - ALL INCLUDED WITH REMOTE EVP
   CONTROL PANEL.
2. FIELD PROVIDED 7/16" BOLTS FOR SECURING BRAZED PLATE HEAT
   EXCHANGER TO PERMANENT MOUNTING SURFACE
3. FIELD PROVIDED 1/2" - 14 NPT FEMALE PLUGS, STAINLESS STEEL OR PVC
   FIELD PROVIDED TELON TAPE FOR SEALING 1/2" PIPE PLUGS
   FIELD PROVIDED WATER STRAINER PLUG OR BLOW DOWN VALVE
   FIELD PROVIDED TEE FOR INSTALLING WATER FLOW SWITCH
   FIELD PROVIDED 2" VINYL TAPE FOR SEALING INSULATION SEAMS

SEE IOM FOR INSTALLATION DETAIL

120 TON BRAZED PLATE HEAT EXCHANGER
ACCESSORY DRAWING
## Unit Weights

### Table 6. RAUJ condensing unit weights

<table>
<thead>
<tr>
<th>Unit Size (tons)</th>
<th>Weights (lbs)</th>
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<th></th>
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<tbody>
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<td>Operating</td>
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<tr>
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### Table 7. EVP remote chiller weights

<table>
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<th>Weights (lbs)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>Operating</td>
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</tr>
<tr>
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</tr>
<tr>
<td>120</td>
<td>327</td>
<td>524</td>
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</tbody>
</table>
Mechanical Specifications

Air-Cooled Condensing Unit — Model RAUJ

General

All air-cooled condensing units shall have scroll compressors and are factory assembled and wired. Each unit shall ship from the factory with a nitrogen holding charge. Units shall be constructed of 14-gauge welded galvanized steel frame with 14 and 16-gauge galvanized steel panels and access doors. Unit surface shall be phosphatized and finished with an air-dry paint. This air-dry paint finish shall be durable enough to withstand a minimum of 672-consecutive-hour salt spray application in accordance with standard ASTM B117.

Refrigeration Circuits

The 20 to 30 ton units shall be single circuit with two steps of capacity. The 40 to 60 ton units shall be dual circuited with four capacity steps. Each circuit shall have two compressors piped in parallel. The 80, 100, and 120 ton sizes are two circuits with six capacity steps. Each circuit has three compressors piped in parallel. All units shall ship with factory installed discharge and liquid line service valves.

Unit control

Factory shall provide 115-volt control circuit which includes fusing and control power transformer. The unit shall be wired with magnetic contactors for compressor and condenser motors, three-leg solid-state compressor overload protection, and high/low pressure cutouts. Charge isolation, reset relay and anti-recycle compressor timer shall be provided. Across-the-line start is standard.

Compressor

Trane® 3-D™ Scroll compressors shall have a simple mechanical design. Scroll type compression shall provide low vibration. 3-D compressors shall provide a completely enclosed compression chamber with no leakage paths. The compressor shall be suction gas cooled, direct drive, with 3600 RPM hermetic motors. The Scroll compressor shall include a centrifugal oil pump, oil level sight glass, and an oil charging valve.

Split systems can have significantly more refrigerant than packaged systems and thus require controls to reliably manage this excess refrigerant. Each compressor shall have crankcase heaters installed, properly sized to minimize the amount of liquid refrigerant present in the oil sump during off cycles. Additionally, the condensing unit shall have controls to initiate a refrigerant pump down cycle at system shut down on each refrigerant circuit. To be operational, the refrigerant pump down cycle requires a field provided and installed isolation solenoid valve on the liquid line near the evaporator.

Condenser Coils

Condenser coils shall have all aluminum microchannel coils. All coils shall be leak tested at the factory to ensure pressure integrity. The condenser coil shall be pressure tested to 650 psig.

Condenser Fans

All condenser fans shall be vertical discharge, direct drive fans, statically balanced, with aluminum blades and zinc plated steel hubs. Condenser fan motors shall be three-phase motors with permanently lubricated ball bearings, built in current and thermal overload protection and weather-tight slingers over motor bearings.

Options

Low Ambient Control

Low ambient option shall allow operation down to 0°F through the use of fan cycling and head pressure control dampers. The control shall consist of a heavy gauge damper assembly that is
modulated by an actuator. The actuator shall be controlled by a low ambient control module. All components are factory-mounted.

**Non-Fused Unit Disconnect Switch**

A non-fused disconnect switch shall be mounted in the control box and provides for interruption of power for servicing the unit. Lugs are suitable for copper wires only. No overcurrent or short circuit protection is provided for unit by this switch.

**Hot Gas Bypass Valve**

The hot gas bypass valve shall modulate hot gas to the inlet of the evaporator when suction pressure falls below the valve adjustable set point. Electronic versions shall be available with control through temperature or pressure. Hot gas bypass valves shall be shipped with the unit for field installation.

(Model: Sporlan, SHGBE-8)

*Note:* For 40T to 120 ton units with No Control and CV systems, two valves will need be field installed (1 per circuit) to enable use of lead/lag. For all other systems, one valve will need to be field installed.

**Suction Service Valve**

Option shall consist of a refrigerant shutoff valve to isolate the compressor for servicing.

**Pressure Gauges**

Pressure gauges shall be provided for monitoring suction and discharge pressure. One set is provided for each circuit. The gauges are ship-with for field installation.

**Corrosion Protected Condenser Coil**

All-aluminum microchannel condenser coil protection shall consist of a corrosion resistant coating that will withstand ASTM B117 Salt Spray test for 1000 hours and ASTM G85 A2 Cyclic Acidified Salt Fog test for 2400 hours. This coating shall be added after coil construction to cover all tubes, headers and fin edges, providing optimal protection in more corrosive environments.

**Spring Isolation Package**

Spring vibration isolators shall be supplied for field installation under the unit base to minimize transmission of unit vibrations. Isolators shall consist of a cast, spring loaded, telescoping housing as the isolation medium. Mountings shall include built-in leveling bolts, resilient inserts that act as centering guides, and ribbed neoprene acoustical pads bonded to the bottom of the isolator. The kit shall include instructions for field installation.

**Neoprene Vibration Isolation Package**

Neoprene-in shear isolators shall be supplied for field installation under the unit base to minimize transmission of unit vibration. The isolators shall consist of a steel top plate and base completely imbedded in color coded oil-resistant neoprene stock. Mountings have a 1/4-inch deflection. The kit shall include instructions for field installation. (Available on 20 to 60 ton units only).

**Remote Evaporator Chillers — Model EVP**

The remote chiller control option shall include an interface panel in the main unit control box and a remote mounted control box that is customer installed. The remote mounted box shall contain the Honeywell W7100G controller. The chiller controller shall have an adjustable 0-10°F control band with integrating logic, built in fixed-off timers and field installed discharge water temperature sensors for control and chiller freeze protection. There are two capacity steps on 20, 25 and 30 ton sizes, four capacity steps on 40, 50 and 60 ton sizes and six capacity steps on 80, 100 and 120 ton sizes. The remote chiller accessory kit shall include the evaporator with mounting hardware and insulation, water strainer, minimum water flow limit switch and water side pipe stubs with couplings. The chiller shall be a stainless steel brazed plate heat exchanger.
Mechanical Specifications

designed for up to 150 psig water side working pressure and 430 psig refrigerant working pressure. Chiller mounting is intended for non-freezing locations.

Flow Switch

The flow switch shall be provided for applications where the condensing unit is used with a remote evaporator chiller. This option shall be a ship-with item for field installation. The switch shall prohibit compressor start-up and operation, if the water flow through the chiller is not adequate.
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