Product Catalog

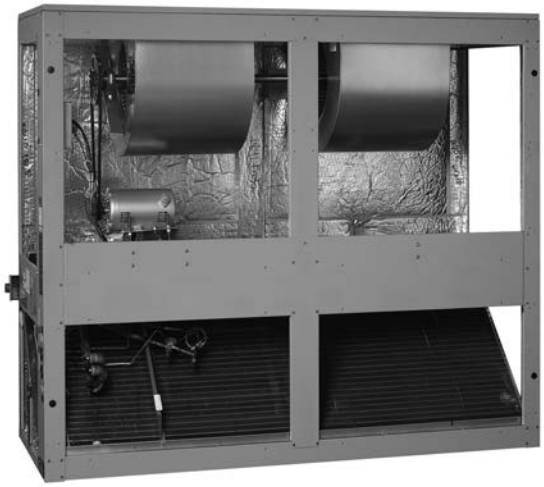
Split System Air Conditioners
Odyssey™

Heat Pump Condenser — 6 to 20 Tons — 60 Hz
Air Handler — 5 to 20 Tons — 60 Hz

August 2015

SSP-PRC023G-EN

Introduction



Trane's reputation for providing quality comfort solutions continues with the development of the next generation Light Commercial Odyssey Split Systems.

With wide network availability, flexible applications, installation ease, built-in reliability and easy servicing, Odyssey will meet any number of customer applications. Add to that Trane's outstanding customer service and you have the formula to make Odyssey the clear choice for continued customer satisfaction.

Wide network availability

A broad distribution network provides owners, maintenance personnel, contractors, etc., the means to get their hands on equipment when they need it. Whether it's an emergency replacement or a new construction project in its infancy stages, Odyssey products meet an array of needs at the right time and right price.

Flexible applications

No matter what the application, Odyssey provides the solution. A broad array of models and tonnages are available with single or dual compressors, single or dual circuits and numerous accessories. Condensing units can be installed on the ground or on a rooftop along with extended piping runs, while air handlers can be free discharge on the ground or horizontally suspended with long duct runs from a ceiling. Should application challenges arise, Odyssey delivers.

Easy to install

Small footprints and low weights combined with factory installed components like TXVs, filter driers, etc., reduce installation time and cost. Colored and numbered wiring and factory tested units make Odyssey the right choice.

Built-in reliability

Keeping in mind that productivity only occurs when equipment is operational,Trane has taken the steps to ensure that Odyssey is up and running. Early indicators such as phase/reversal monitors and loss of charge protection provide diagnostics which prevent failure and provide years of worry-free service and operation.

Easy to service

When preventive maintenance or service is required, technicians will find efficient access to both air handlers and condensers. Panels provide complete, easy access coupled with standardized cabinets in which all components are located in proximity. Odyssey's improved design results in minimum service times and costs.

With these capabilities, Odyssey provides customers high efficiency and superior performance for the best all-around value in the market today.

Copyright

Trademarks

Revision History

- Filter drier update.

Table of Contents

Features

Split System Overview

Unlike typical split systems on the market, Odyssey offers easy servicing, built-in reliability, ease of installation and outstanding customer service. And because today's owners are very cost-conscious when it comes to service and maintenance, the Odyssey Split System was designed with direct input from service contractors. This valuable information helped to design a product that would get the service person off the job quicker and save the owner money.

Flexible Applications

Odyssey offers outstanding standard features enhanced by a variety of factory and field installed options, multiple control options, rigorously tested proven designs and superior product and technical support. Because of this, Odyssey offers ultimate flexibility. Units are built to order in our standard "shortest in the industry" ship cycle time. Odyssey is available with single, dual and manifolded compressor options. Single compressor outdoor units feature a single refrigeration circuitry, lowering job installation costs by requiring only one set of refrigerant lines.

Equally important, Odyssey offers single refrigerant circuit/capacity unloading models. The unloading units feature dual manifolded scroll compressors with two stages of capacity modulation and a single refrigeration circuit. Dual compressor/dual circuit models give true stand-by protection - if one compressor fails, the second will automatically start-up. Also, the first compressor can be serviced without shutting down the unit since the refrigerant circuits are independent. Dual compressor models also save on energy costs. During light load conditions, only one compressor will operate to save energy.

On select air handlers, a factory installed variable frequency drive (VFD) is available. These 2–Speed and Single Zone VAV (SZVAV) solutions, combined with condensing units that have multiple compressors, provide increased part load performance (IEER) when conditions are not at the max design condition. Additionally, some states have adopted codes that require this type of performance. Odyssey units are built with installation in mind. With a smaller footprint, the outdoor unit takes up less space and weighs less, making its installation more efficient and economical. Our indoor air handlers are built to be installed in confined spaces, fitting through standard doorways and freight elevators.

Unmatched Product Support

One of our finest assets, Trane Sales Representatives are a support group that can assist you with:

- Product
- Application
- Service
- Training
- Special Applications
- Specifications
- Computer Programs and much more

Rigorous Testing

Our units are rigorously rain tested to ensure water integrity. Actual shipping tests are performed to determine packaging requirements. Units are test shipped around the country to determine the best packaging. Factory shake and drop tests are used as part of the package design process to help assure that the unit arrives at the job site in top condition. Rigging tests include lifting a unit into the air and letting it drop one foot, assuring that the lifting lugs and rails hold up under stress. A 100% coil leak test is performed at the factory. The condenser coils are leak tested at 660 psig and evaporators to 450 psig. All parts are inspected at the point of final assembly. Sub-standard parts are identified and rejected immediately. Every unit receives a 100% unit run test before leaving the production line to ensure it lives up to rigorous Trane requirements.

Standard and Optional Features

Figure 1. Compressors

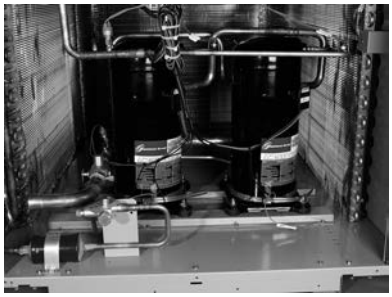


Figure 2. Belt drive motor

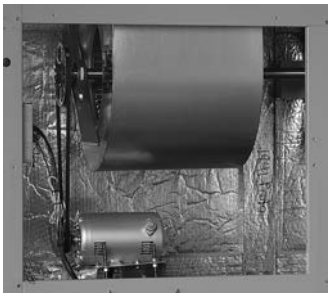
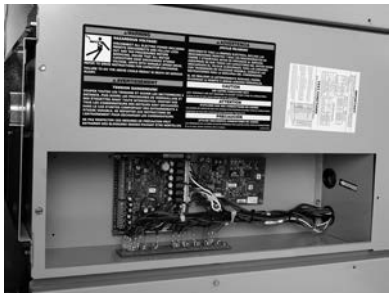


Figure 3. Easy access to terminal board



Airflow Distribution — Odyssey can replace an older machine with old ductwork and, in many cases, improve the comfort through better air distribution.

Anti-Short Cycle Timer — Provides a 3 minute minimum "ON" time and 3 minute "OFF" time for compressors to enhance compressor reliability by assuring proper oil return.

Belt Drive Motors — For additional static requirements, Odyssey Split Systems offer standard belt drive motors to meet and exceed a wide range of airflow needs.

Black Epoxy Pre-Coated Condenser Coils — The pre-coated coils are an economical option for protection in mildly corrosive environments.

Colored And Numbered Wiring — Save time and money tracing wires and diagnosing the unit.

Compressors — Odyssey Split Systems contain the best compressor technology available to achieve the highest possible performance. Dual compressors perform very well under part load cooling conditions and system back- up applications. Dual compressors are available on 6-20 ton models and allow for efficient cooling utilizing 2-stages of compressor operation.

Convertible Units — The air handlers ship in a horizontal configuration. They can be easily converted to vertical by simply repositioning the drain pan. Units come complete with duct flanges so the contractor doesn't have to field fabricate them. These duct flanges are a time and cost saver.

Crankcase Heaters — These band heaters provide improved compressor reliability by warming the oil to prevent migration during off-cycles or low ambient conditions.

Dual Sloped Drain Pans— Every Odyssey unit has a non-corrosive, removable, double sloped drain pan that's easy to clean and reversible to allow installation of drain trap in two positions on either side of the unit.

Easy Access Low Voltage Terminal Board — Odyssey's Low Voltage Terminal Board is external to the line voltage electrical cabinet. It is extremely easy to locate and attach the thermostat wire and test operation of all unit functions. This is another cost and time saving installation feature.

Electric Heaters — Electric heat modules are available in a variety of voltages and capacities.

Foil Faced Insulation — All internal air handler surfaces have cleanable foil-faced insulation. All edges are either captured or sealed to ensure insulation fibers do not get into the airstream.

Hail/Vandal Guards — These coil guards shall be either factory or field installed for condenser coil protection. This feature protects the condenser coil from vandalism and/or hail damage. When ordered factory installed, it also adds additional shipping protection.

Heat Pump Fan Fail Consideration — In the event that airflow is not available during heating operation, a bi-metallic switch is mounted on the VFD bracket to turn off the compressors and prevent overheating of the motor and VFD.

Note: *For SZVAV units only.*

High/Low Static Motor — Available on many models, this high static motor accessory extends the capability of the standard unit.

High Pressure Control — All units include High Pressure Control as standard.

Low Ambient — Provides ability to cool space when outdoor ambient is below 50°F. Choice of fan on/off or modulating control.

Low Ambient Cooling — All Odyssey microprocessor units have cooling capabilities down to 0° F as standard.

Low Voltage Connections — The wiring of the low voltage connections to the unit and the zone sensors is as simple as 1-1, 2-2, and 3-3. This simplified system makes it easy for the installer to wire.

Phase Monitor/Reversal Protection — Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitors are equipped with an LED that provides an ON or FAULT indicator.

Quick-Access Panels — Remove a few screws for access to the standardized internal components and wiring.

Single Point Power — A single electrical connection powers the unit.

Single Side Service — Single side service is standard on all units.

Single Zone Variable Air Volume (SZVAV) — A variable frequency drive is used in conjunction with the ReliaTel Options module to provide supply fan motor speed modulation. For SZVAV control, the drive will accelerate or decelerate as required to meet the Zone Cooling demand. In order to maximize energy savings, the VFD will be held at minimum speed until the load in the zone requires the speed to increase. The supply fan speed will be reduced to a minimum of 58%[1] during ventilation and part load cooling demands, and 80% during full load cooling demands with the ability to fully modulate. Units with SZVAV control will utilize a potentiometer on the Options module to easily set the commissioning maximum airflow point by adjusting the 0-10 VDC output signal sent to the VFD.

Standardized Components — Components are placed in the same location on all Odyssey units. Because of these standardized components throughout the Odyssey line, contractors/ owners can stock fewer parts.

Thermal Expansion Valve with Bypass Check Valves — This feature is standard on all indoor units.

Unit Cabinet — The compact cabinet takes up less room and is less costly to ship. It's cabinet design also ensures water integrity.

Table 1. Odyssey features – standard and optional

		Options[a]	
	Standard Features	Factory Installed	Field Installed
1-year Limited Parts Warranty	X		
5-year Limited Compressor Warranty	X		
Anti-Short Cycle Timer	X		
Belt Drive Motors	X		
Black Epoxy Pre-Coated Coils		X	
Colored and Numbered Wiring	X		
Compressor Discharge Temperature Limit (DTL)	X		
Convertible Airflow	X		
Crankcase Heaters	X		
Easy Access Low Voltage Terminal Board (LTB)	X		
Electric Heaters			X
Filters	X		
Foil-Faced and Edge Captured Insulation	X		
Hail/Vandal Guards		X	X
High Pressure Control	X		

1. *64% for part load and 83% for full load if a max speed of less than 44.5 Hz is desired.*

Table 1. Odyssey features – standard and optional (continued)

	Standard Features	Options[a]	
		Factory Installed	Field Installed
High Static Motor Kit[b]			X
Hot Gas Bypass			X
IAQ Dual Sloped and Removable Drain Pans	X		
Liquid Line Refrigerant Drier	X		
Low Ambient Cooling			X
Low Ambient Cooling to 50°F on Electromechanical Models	X		
Low Pressure Control	X		
Low Static Motor Kit[b]			X
Low Voltage Circuit Protection	X		
Phase Loss/Reversal Monitor	X		
Quick Access Panels	X		
Scroll Compressors	X		
Single Point Power	X		
Single Side Service	X		
Single Zone Variable Air Volume (SZVAV)		X	
Standardized Components	X		
Thermal Expansion Valve	X		
Vibration Isolators			X

(a) Refer to model number description for option availability or contact Product Support.
(b) Available on standard units only. See Accessories chapter for more information.

Standard and Optional Controls

ReliaTel™

Figure 4. ReliaTel board

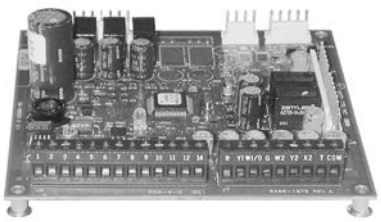
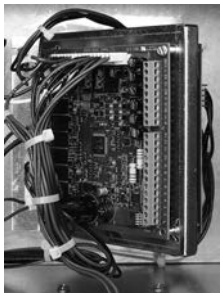


Figure 5. ReliaTel module



ReliaTel controls provide unit control for heating, cooling, and ventilating, utilizing input from sensors that measure outdoor and indoor temperature. ReliaTel also provides outputs for building automation systems and expanded diagnostics. Quality and reliability are enhanced through ReliaTel control and logic:

- Prevents the unit from short cycling, considerably improving compressor life.
- Ensures the compressor will run for a specific amount of time which allows oil to return for better lubrication, enhancing the reliability of the compressor.
- Reduces the number of components required to operate the unit, reducing possibilities for component failure.

ReliaTel Makes Installing and Servicing Easy

ReliaTel eliminates the need for field-installed, anti-short cycle timer and time delay relays. The wiring of the low voltage connections to the unit and the zone sensors is as easy as 1-1, 2-2, and 3-3. This simplified system makes wiring easier for the installer.

ReliaTel Makes Testing Easy

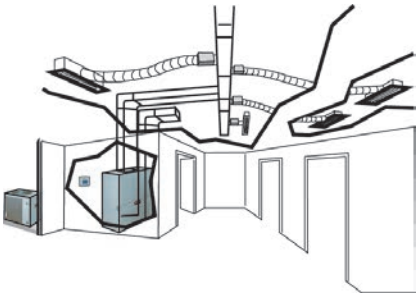
ReliaTel requires no special tools to run the unit through its paces. Simply place a jumper between Test 1 and Test 2 terminals on the Low Voltage Terminal Board and the unit will walk through its operational steps automatically. The unit automatically returns control to the zone sensor after stepping through the test mode a single time, even if the jumper is left on the unit. As long as the unit has power and the "system on" LED is lit, ReliaTel is operational. The light indicates that the controls are functioning properly. ReliaTel features expanded diagnostic capabilities when utilized with Trane Integrated Comfort™ Systems. Some zone sensor options have central control panel lights which indicate the mode the unit is in and possible diagnostic information (dirty filters for example).

ReliaTel Has Other Benefits

- The ReliaTel built-in anti-shortcycle timer, time delay relay and minimum "on" time control functions are factory tested to assure proper operation.
- ReliaTel softens electrical "spikes" by staging on fans, compressors and heaters.
- Intelligent Fallback is a benefit to the building occupant. If a component goes astray, the unit will continue to operate at predetermined temperature setpoint.
- Intelligent Anticipation is a standard feature. It functions continuously as ReliaTel and zone sensor(s) work together in harmony to provide much tighter comfort control than conventional electromechanical thermostats.
- The ReliaTel design is standardized across the board, ensuring a lower cost to owners.

Additional Controls

VariTrac® Building Automation System — When Trane's changeover VAV System for light commercial applications is coupled with the unit, it provides the latest in technological advances for comfort management systems and can allow thermostat control in every zone served by VariTrac.



Trane Communication Interface (TCI) — This module, when applied with ReliaTel, easily interfaces with the Trane Integrated Comfort System™.

Frostat™ — This control utilizes a capillary bulb embedded in the face of the evaporator coil which monitors coil temperature to inhibit evaporator icing and protect the compressor. Recommended for applications with low leaving air temperatures, low airflow and/or high latent load applications.

LonTalk® Communications Interface — The LonTalk communications interface allows the unit to communicate as a Tracer™ LCI-V device or directly with generic LonTalk Network Building Automation System Controls.

BACnet® Communication Interface (BCI) — The BACnet Communication Interface allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation Control System.

Zone Sensors/Thermostats— Available in wireless, programmable, automatic and manual styles.

Table 2. Odyssey control options – standard and optional

	Standard Features	Options[a]	
		Factory Installed	Field Installed
BACnet Communication Interface (BCI)			X
Froststat - Evaporator Defrost Control (EDC)	X		
LonTalk Communications Interface (LCI)		X	X
ReliaTel Microprocessor Controls	X	X	
Thermostat			X
Trane Communications Interface (TCI)			X
Wireless Zone Sensor			X
Zone Sensor			X

[a] Refer to model number description for option availability or contact Product Support.

Accessories

Heat Pump Condenser

Table 3. TWA Accessories

Model	Used With
Coil (Hail/Vandal) Guard	
BAYGARD058A	TWA073D, TWA090D
BAYGARD060A	TWA120D
BAYGARD061A	TWA180E, TWA240E
BAYHGBP010B	All models
Rubber Isolators	
BAYISLT005A (black)	TWA073D, TWA090D, TWA120D
BAYISLT009A (red)	TWA180E
BAYISLT010A (green)	TWA240E
Steel Spring Isolators	
BAYISLT023A (red)	TWA073D, TWA090D, TWA120D
BAYISLT024A (black)	TWA180E
BAYISLT025A (yellow)	TWA240E
Low Ambient — On/Off Fan Control (External mount, small cabinets)[a] [b] [c]	
BAYLOAMU01B (External Mount, small cabinets)[d]	(all voltages)
BAYLOAMU02B (Internal mount, large cabinets)	(all voltages) TWA120D, TWA180E, TWA240E
Head Pressure Control[b]	
BAYLOAM435B (380-460V, 0.5HP Hi-Eff Motor)	TWA073D4, TWA090D4
BAYLOAM436A (380-460V, 1 HP Hi-Eff Motor)	TWA120D4, TWA180E4, TWA240E4
Trane Communication (3/4 Communications Interface)	
BAYICSI003A	All Models
LonTalk Communications Interface	
BAYLTCI002B	All Models

[a] Cycles fan on/off, (no modulating).
[b] Quantity of 1 required for each fan (2 total for TWA180–240).
[c] ReliaTel™ requires onboard EDC function to be disabled when BAYLOAM is used, remove OA sensor from terminal J8-1&2
[d] Kit mounts external to the outdoor unit and operates by sensing ambient and liquid line temperatures.

Air Handler

Table 4. TWE Accessories

Model	Used With
Base (Subbase)	
BAYBASE009A	TWE061D/E
BAYBASE0010A	TWE090D/E
BAYBASE0011A	TWE120D/E
BAYBASE0012A	TWE150E, TWE180E
BAYBASE0013A	TWE240E, TWE300E
Drip Kit	
BAYDRKT006B	TWE061D/E
BAYDRKT007B	TWE090D/E
BAYDRKT008B	TWE120D/E
BAYDRKT009B	TWE150E, TWE180E
BAYDRKT010B	TWE240E, TWE300E
High Static Motor Kits(a)	
BAYHSMT104B — 1.5HP (230/1) with Motor Sheave, Fan Sheave and Belt	TWE061D1/E1
BAYHSMT105B — 1.5HP (230-460/3) with Motor Sheave, Fan Sheave and Belt	TWE061D3-4/E3-4
BAYHSMT106B — 1.5HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE061DW
BAYHSMT107B — 2 HP (230/1) with Motor Sheave, Fan Sheave and Belt	TWE090D1/E1
BAYHSMT108B — 2HP (230-460/3) with Motor Sheave, Fan Sheave and Belt	TWE090D3/E3
BAYHSMT109B — 2 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE090DW/EW
BAYHSMT110B — 3HP (230/460/3) with Motor Sheave, Fan Sheave and Belt	TWE090D3/E3
BAYHSMT111B — 3 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE090DW/EW
BAYHSMT112B — 3HP (230/460/3) with Motor Sheave, Fan Sheave and Belt	TWE120D3/E3
BAYHSMT113B — 3 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE120DW/EW
BAYHSMT114B — 3HP (230/460/3) with Motor Sheave, Fan Sheave and Belt	TWE150E3
BAYHSMT115B — 3 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE150EW
BAYHSMT116B — 5 HP (230/3) with Motor Sheave, Fan Sheave and Belt	TWE150E3
BAYHSMT117B — 5HP (460/3) with Motor Sheave, Fan Sheave and Belt	TWE150E3(b)
BAYHSMT118B — 5 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE150EW
BAYHSMT119B — 5 HP (208-230/3) with Motor Sheave and Fan Sheave (Stock Belt used)	TWE180E3
BAYHSMT120B — 5HP (460/380–415/3) with Motor Sheave and Fan Sheave (Stock Belt used)	TWE180E3(b)
BAYHSMT121B — 5 HP (575/3) with Motor Sheave and Fan Sheave (Stock Belt used)	TWE180EW
BAYHSMT122B — 7.5 HP (230/460/3) with Motor Sheave, Fan Sheave and Belt	TWE240E3-4
BAYHSMT123B — 7.5 HP (575/3) with Motor Sheave, Fan Sheave and Belt	TWE240EW
Rubber Isolators(c) (d) (e)	
BAYISLT004A (Floor — Blue)	TWE061D/E, TWE090D/E, TWE120D/E
BAYISLT009A (Floor — Red)(b)	TWE150E, TWE180E
BAYISLT010A (Floor — Green)(b) (c)	TWE240E, TWE300E
BAYISLT012B (Suspended —Red/Green)	TWE150E, TWE180E
BAYISLT013B (Suspended —Red/Green)(e)	TWE061D/E
BAYISLT014A (Suspended — Green)(e)	TWE090D/E
BAYISLT015B (Suspended — Green/Black)(e)	TWE120D/E
BAYISLT016B (Suspended —Red/Green)	TWE240E, TWE300E
Steel Spring Isolators(d)	
BAYISLT019A (Floor — Red)(b) (c)	TWE061D/E, TWE090D/E, TWE120D/E
BAYISLT021A (Floor — Black)(b) (c)	TWE150E, TWE180ETWE126, TWE156
BAYISLT032A (Floor — Black/Yellow)(b) (c)	TWE240E, TWE300E
BAYISLT028A (Suspended — Tan)	TWE061D/E
BAYISLT029A (Suspended — Red)	TWE090D/E, TWE120D/E

Table 4. TWE Accessories (continued)

Model	Used With
BAYISLT030A (Suspended — Black)	TWE150E, TWE180E
BAYISLT031B (Suspended — Black/Yellow)	TWE240E, TWE300E
Low Static Drive Kit[a]	
BAYLSMT001B	TWE240E
Plenum[f]	
BAYPLNM015B (Discharge Plenum & Grille)[f]	TWE061D/E
BAYPLNM016B (Discharge Plenum & Grille)[f]	TWE090D/E
BAYPLNM017B (Discharge Plenum & Grille)[f]	TWE120D/E
BAYPLNM018B (Discharge Plenum/Hydronic Coil Plenum & Grille)[f]	TWE150E, TWE180E
BAYPLNM019B (Discharge Plenum/Hydronic Coil Plenum & Grille)[f]	TWE240E, TWE300E
BAYPLNM020B (Hydronic Coil Discharge Plenum & Grille)[f]	TWE061D/E
BAYPLNM021B (Hydronic Coil Discharge Plenum & Grille)[f]	TWE090D/E
BAYPLNM022B (Hydronic Coil Discharge Plenum & Grille)[f]	TWE120D/E
BAYPLNM030A (Electric Heat Discharge Plenum & Grille)[f]	TWE061D/E
BAYPLNM031A (Electric Heat Discharge Plenum & Grille)[f]	TWE090D/E
BAYPLNM032A (Electric Heat Discharge Plenum & Grille)[f]	TWE120D/E
BAYPLNM033A (Electric Heat Discharge Plenum & Grille)[f]	TWE150E, TWE180E
BAYPLNM034A (Electric Heat Discharge Plenum & Grille)[f]	TWE240E, TWE300E
Return Air Grille	
BAYGRLE001A	TWE061D/E
BAYGRLE002A	TWE090D/E
BAYGRLE003A	TWE120D/E
BAYGRLE004A	TWE150E, TWE180E
BAYGRLE005A	TWE240E, TWE300E
Transformer[a] [g]	
BAYTFMR011B — 75va transformer (230V)[g]	TWE090D3, TWE090E3, TWE120D3, TWE120E3
BAYTFMR012B — 75va transformer (460/575V)[g]	TWE090D3/W, TWE090E3, TWE120D3/W, TWE120E3/W
Water Kits	
BAYWATR022A (Steam Coil Enclosure)[f]	TWE061D/E
BAYWATR023A (Steam Coil Enclosure)[f]	TWE090D/E
BAYWATR024A (Steam Coil Enclosure)[f]	TWE120D/E
BAYWATR025A (Steam Coil Enclosure)[f]	TWE150E, TWE180E
BAYWATR026A (Steam Coil Enclosure)[f]	TWE240E, TWE300E
BAYWATR027A (Hot Water Coil Enclosure)[f]	TWE061D/E
BAYWATR028A (Hot Water Coil Enclosure)[f]	TWE090D/E
BAYWATR029A (Hot Water Coil Enclosure)[f]	TWE120D/E
BAYWATR030A (Hot Water Coil Enclosure)[f]	TWE150E, TWE180E
BAYWATR031A (Hot Water Coil Enclosure)[f]	TWE240E, TWE300E
Wire Kit — 180° Blower Discharge Reversal Kit[a] [h]	
BAYWRKT002B	TWE061D/E, TWE090D/E, TWE120D/E

[a] Used on standard air handlers only.
[b] When the air handler is in the vertical position and close proximity trapping of condensate is required, use of subbase is required.
[c] Requires use of subbase accessory.
[d] In units with steam or hot water coils applied vertically or horizontally, check IOM for proper Isolator Kit selection.
[e] Do not use if blower will operate less than 600 RPM.
[f] When installed horizontally, plenum/water coil must be self-supported.
[g] Required when 6-10 ton air handlers are matched with 3-6 ton condensing units.
[h] Cannot be used on TWE150-300, due to motor mount location.

Electric Heaters

Table 5. Electric heaters

Model	Used With
6–10 Ton Electric Heater Selection	
BAYHTRL106A — 4.33/5.76 kW Heater 208/240/1 Phase	TWE061D1, TWE090D1/E1, TWE120D1/E1
BAYHTRL112A — 8.65/11.52 kW Heater 208/240/1 Phase	TWE061D1, TWE090D1/E1, TWE120D1/E1
BAYHTRL117A — 12.98/17.28 kW Heater 208/240/1 Phase	TWE061D1, TWE090D1/E1, TWE120D1/E1
BAYHTRL123A — 17.31/23.04 kW Heater 208/240/1 Phase	TWE061D1, TWE090D1/E1, TWE120D1/E1
BAYHTRL129A — 21.63/28.80 kW Heater 208/240/1 Phase	TWE061D1, TWE090D1/E1, TWE120D1/E1
BAYHTRL305A — 3.76/5.00 kW Heater 208/240/3 Phase	TWE061D3, TWE090D3/E3, TWE120D3/E3
BAYHTRL310A — 7.48/9.96 kW Heater 208/240/3 Phase	TWE061D3, TWE090D3/E3, TWE120D3/E3
BAYHTRL315A — 11.24/14.96 kW Heater 208/240/3 Phase	TWE061D3, TWE090D3/E3, TWE120D3/E3
BAYHTRL325A — 18.72/24.92 kW Heater 208/240/3 Phase	TWE061D3, TWE090D3/E3, TWE120D3/E3
BAYHTRL335A — 26.20/34.88 kW Heater 208/240/3 Phase	TWE061D3, TWE090D3/E3, TWE120D3/E3
BAYHTRL405A — 5.00 kW Heater 460/3 Phase	TWE061D4, TWE090D4/E4, TWE120D4/E4
BAYHTRL410A — 9.96 kW Heater 460/3 Phase	TWE061D4, TWE090D4/E4, TWE120D4/E4
BAYHTRL415A — 14.96 kW Heater 460/3 Phase	TWE061D4, TWE090D4/E4, TWE120D4/E4
BAYHTRL425A — 24.92 kW Heater 460/3 Phase	TWE061D4, TWE090D4/E4, TWE120D4/E4
BAYHTRL435A — 34.88 kW Heater 460/3 Phase	TWE061D4, TWE090D4/E4, TWE120D4/E4
BAYHTRLW05A — 5 kW Heater 575/3 Phase	TWE061DW, TWE090DW/EW, TWE120DW/EW
BAYHTRLW10A — 9.96 kW Heater 575/3 Phase	TWE061DW, TWE090DW/EW, TWE120DW/EW
BAYHTRLW15A — 14.96 kW Heater 575/3 Phase	TWE061DW, TWE090DW/EW, TWE120DW/EW
BAYHTRLW25A — 24.92 kW Heater 575/3 Phase	TWE061DW, TWE090DW/EW, TWE120DW/EW
BAYHTRLW35A — 34.88 kW Heater 575/3 Phase	TWE061DW, TWE090DW/EW, TWE120DW/EW
12.5–20 Ton Electric Heater Selection	
BAYHTRM310A — 7.51/10.0 kW Heater 208/230 3 Phase	TWE150E3, TWE180E3, TWE240E3
BAYHTRM320A — 14.96/19.92 kW Heater 208/230 3 Phase	TWE150E3, TWE180E3, TWE240E3
BAYHTRM330A — 22.47/29.92 kW Heater 208/230 3 Phase	TWE150E3, TWE180E3, TWE240E3
BAYHTRM350A — 37.44/49.84 kW Heater 208/230 3 Phase	TWE150E3, TWE180E3, TWE240E3
BAYHTRM410A — 10.0 kW Heater 460/3 Phase	TWE150E4, TWE180E4, TWE240E4
BAYHTRM420A — 19.92 kW Heater 460/3 Phase	TWE150E4, TWE180E4, TWE240E4
BAYHTRM430A — 29.92 kW Heater 460/3 Phase	TWE150E4, TWE180E4, TWE240E4
BAYHTRM450A — 49.84 kW Heater 460/3 Phase	TWE150E4, TWE180E4, TWE240E4
BAYHTRMW10A — 10.0 kW Heater 575/3 Phase	TWE150EW, TWE180EW, TWE240EW
BAYHTRMW20A — 19.92 kW Heater 575/3 Phase	TWE150EW, TWE180EW, TWE240EW
BAYHTRMW30A — 29.92 kW Heater 575/3 Phase	TWE150EW, TWE180EW, TWE240EW
BAYHTRMW50A — 49.84 kW Heater 575/3 Phase	TWE150EW, TWE180EW, TWE240EW

Note: Electric Heaters not available for 380/60hz

Application Considerations

Application of this product should be within the cataloged airflow and performance considerations.

Clearance Requirements

The recommended clearances identified with unit dimensions should be maintained to assure adequate serviceability, maximum capacity and peak operating efficiency. Actual clearances which appear inadequate should be reviewed with the local representative.

180° Blower Rotation

The 5, 7.5, and 10 ton standard air handler blower section can be rotated 180° to change the discharge pattern. This modification must be done in the field and requires an additional kit. See unit installation guide.

Low Ambient Cooling

As manufactured, electromechanical units can operate to 50°F in the cooling mode of operation. An accessory head pressure control will allow operation to 0°F outdoor ambient. When using these units with control systems such as bypass changeover Variable Air Volume, make sure to consider the requirement for a head pressure control to allow low ambient cooling.

Figure 6. Typical split system application

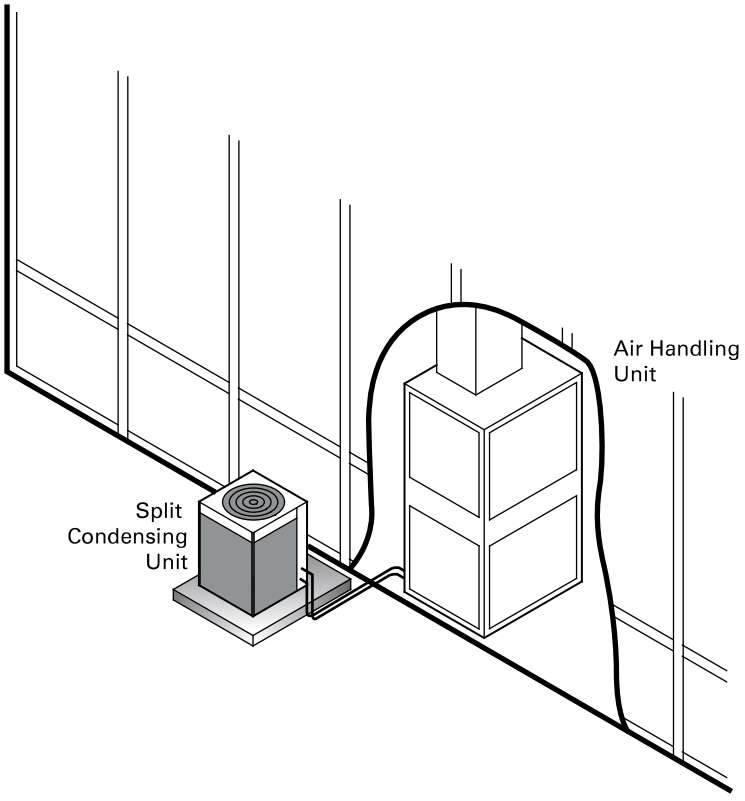


Figure 7. Typical horizontal air handler application

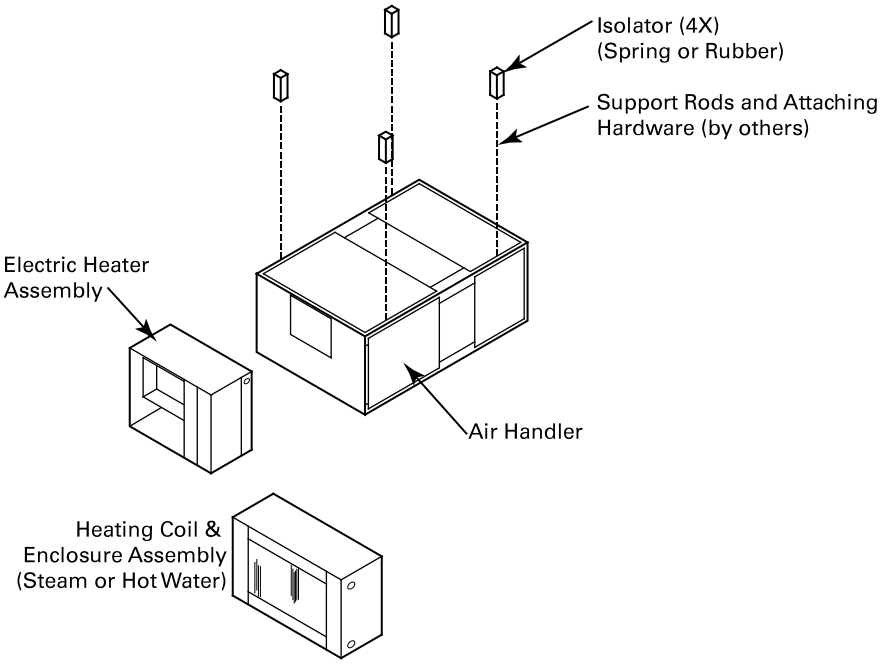
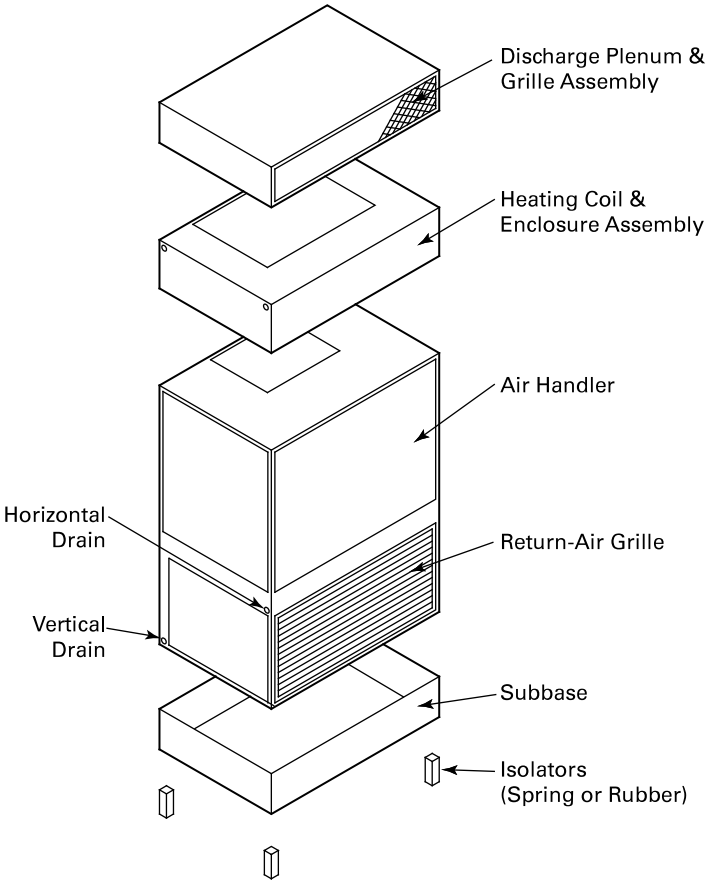


Figure 8. Typical vertical air handler application



Selection Procedure

Cooling Capacity

1. Calculate the building's total and sensible cooling loads at design conditions, using standardized calculation methods.
2. Size the equipment using the gross cooling capacity tables that begin with Table 12, p. 27. Match the cooling loads at design conditions. For example, if the following specifies the building cooling requirements:

   Electrical Characteristics: 460/60/3
   Summer Design Conditions: Entering Evap Coil—80°F DB/67°F WB , Outdoor Ambient—95°F
   Total Cooling Load: 82 MBh
   Sensible Cooling Load: 60 MBh
   Airflow: 3000 cfm
   External Static Pressure: 0.77 inches of water gauge
3. Use Table 12, p. 27 to determine that TWA090D with TWE090D has a gross cooling capacity of 93.0 and 72.9 MBh sensible capacity at 95°F DB ambient and 3000 cfm with 80°F DB/67° F WB air entering the evaporator.
4. To find the net cooling capacities, fan motor heat must be subtracted. Determine the total unit static pressure:

   External Static Duct System: 0.77
   Standard Filter: 0.10 in.
   Supplementary Electric Heat: 0.23 in.
   Total Static Pressure: 1.10 in.

   Notes:

   - *The Evaporator Fan Performance Table has included the effect of a 1 in. filter already. Therefore, the actual Total Static Pressure is 1.10 - 0.10 = 1.00 in. With 3000 cfm and 1.00 in., Table 27, p. 40 shows 1.97 Bhp (high static drive kit required).*
   - *This formula can be used to calculate Fan Motor Heat:*

     3.15 X Bhp = MBh
     3.15 X 1.97 = 6.2 MBh
     Net Total Cooling Capacity = 93 MBh - 6.2 MBh = 86.8 MBh
     Net Sensible Cooling Capacity = 72.9 MBh - 6.2 MBh = 66.7 MBh

Heating Capacity

1. Calculate the building heating load using the Trane calculation form or any other standard accepted method.
2. Size the equipment using Table 43, p. 54 to match the heating loads at design conditions. For example, if the following specifies the building heating requirements:

   Total Heating Load: 95.0 MBh
   Outdoor Ambient (Winter): 17°F DB
   Indoor Return Temperature: 70°F DB
   Airflow: 3000 cfm
3. Table 22, p. 36 indicates the mechanical heating portion of the heat pump will provide 48 MBh for the winter design conditions. Full heat load must be carried by the supplementary heater in the unlikely event the heat pump malfunctions. From Table 43, p. 54, the 34.88 kW heater at 460V has a capacity of 119,045. From Table 50, p. 60, the 34.88 kW heater at 460V indicates the heater model is BAYHTRL435A.

Air Delivery

1. The external static pressure drop through the air distribution system is 0.77 inches of water gauge, use Table 42, p. 53 to determine that the static pressure drop through the electric heater is 0.23 inches of water (0.77 + 0.23 = 1.00 in.).
2. Enter Table 27, p. 40 for TWE090D at 3000cfm and 1.00 static pressure. The high static motor at 1020 RPM gives the desired airflow.

Model Number Description

Heat Pump Condenser

TWA	240	E	3	0R	*	*
1 2 3	4 5 6	7	8	9 10	11	12

Note: *When ordering replacement parts or requesting service, be sure to refer to the specific model number, serial number, and DL number (if applicable) stamped on the unit nameplate.*

DIGITS 1 - 3: Product Type

TWA = Split System Heat Pump

DIGITS 4 - 6: Nominal Gross Cooling Capacity (MBh)

073 = 6 Tons (60Hz)
090 = 7.5 Tons (60Hz)
120 = 10 Tons (60Hz)
180 = 15 Tons (60Hz)
240 = 20 Tons (60Hz)

DIGIT 7: Major Development Sequence

D = Single Compressor, Single Circuit, Tube and Fin
E = Dual Compressor, Dual Circuit, Tube and Fin

DIGIT 8: Electrical Characteristics

3 = 208–230/60/3
4 = 460/60/3
W = 575/60/3
K = 380/60/3

DIGITS 9 - 10: Factory Installed Options

0R = ReliaTel, no LCI Board
0T = ReliaTel, no LCI Board with Coated Coil
0U = ReliaTel, with LCI Board
0W = ReliaTel, with LCI Board and Coated Coil
HR = Hail Guard with ReliaTel, no LCI Board
HT = Hail Guard with ReliaTel, no LCI Board with Coated Coil
HU = Hail Guard with ReliaTel, with LCI Board
HW = Hail Guard with ReliaTel, with LCI Board and Coated Coil

DIGITS 11: Minor Design Sequence

* = Current Design Sequence[2]

DIGITS 12: Service Digit

* = Current Design Sequence[2]

2. * = *sequential alpha character*

Air Handler

TWE	240	E	D	00	*	*
1 2 3	4 5 6	7	8	9 10	11	12

Note: *When ordering replacement parts or requesting service, be sure to refer to the specific model number, serial number, and DL number (if applicable) stamped on the unit nameplate.*

DIGITS 1 - 3: Product Type

TWE = Split System Heat Pump/Cooling Air Handler

DIGITS 4 - 6: Nominal Gross Cooling Capacity (MBh)

061 = 5 Tons (60 Hz)
090 = 7.5 Tons (60 Hz)
120 = 10 Tons (60 Hz)
150 = 12.5 Tons (60 Hz)
180 = 15 Tons (60 Hz)
240 = 20 Tons (60 Hz)

DIGIT 7: Major Development Sequence

D = Single Refrigeration Circuit
E = Dual Refrigeration Circuit

DIGIT 8: Electrical Characteristics

3 = 208–230/60/3
4 = 460/60/3
W = 575/60/3
K = 380/60/3

DIGITS 9 - 10: Factory Installed Options

00 = Packed Stock (Standard)
03 = 2-Speed Variable Frequency Drive (VFD) standard motor (electromechanical condenser only)
04 = 2-Speed Variable Frequency Drive (VFD) oversized motor (electromechanical condenser only)
R3 = Single Zone Variable Air Volume (VFD) standard motor - (ReliaTel condenser only)
R4 = Single Zone Variable Air Volume (VFD) oversized motor - (ReliaTel condenser only)

DIGITS 11: Minor Design Sequence

* = Current Design Sequence[3]

DIGITS 12: Service Digit

* = Current Design Sequence[3]

3. * = *sequential alpha character*

Table 6. General data for 6 - 20 ton (TWA073D-TWA240E) heat pump units, 60 Hz

	6 Tons	7.5 Tons	10 Tons	15 Tons	20 Tons
	Single Comp TWA073D	Single Comp TWA090D	Single Comp TWA120D	Dual Comp TWA180E	Dual Comp TWA240E
Cooling Performance - Gross Cooling Capacity					
Matched Air Handler	80,000	93,000	124,000	185,000	255,000
Condensing Unit Only	74,000	86,000	114,000	176,000	264,000
ARI Net Cooling Capacity	78,000	90,000	120,000	180,000	246,000
Efficiency					
Matched Air Handler (EER) / Cond Unit Only (EER)	11 / 12.5	11 / 12.2	11.0 / 12.7	10.6 / 12.2	10 / 12.2
System (IEER)	12.6	11.7	12.0	12.3	10.5
System kW/Condensing Unit kW	7.09/5.92	8.18/7.05	10.91/8.98	16.98/14.43	24.59/21.64
Heating Performance - ARI Htg/Matched AH					
High Temperature Capacity	69,000	82,000	105,000	174,000	236,000
System kW / COP	6.13 / 3.3	7.28 / 3.3	9.32 / 3.3	15.93 / 3.2	21.61 / 3.2
Low Temperature Capacity	40,000	49,000	73,000	109,000	134,000
System kW / COP	5.1 / 2.3	6.24 / 2.3	9.51 / 2.25	13.89 / 2.3	19.63 / 2
Compressor					
Type	Scroll	Scroll	Scroll	Scroll	Scroll
No./Tons	1/5.6	1/6.9	1/8.6	2/6.9	2/10.1
System Data[a]					
No. Refrigerant Circuits	1	1	1	2	2
Suction Line (in.) OD	1 1/8	1 1/8	1 3/8	1 3/8	1 3/8
Liquid Line (in.) OD	1/2	5/8	1/2	1/2	5/8
Outdoor Coil					
Type / Tube Size (in.) OD	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375
Face Area (sq ft)	19.24	19.24	29.02	52.60	52.60
Rows/FPI (Fins per inch)	2/18	2/18	2/18	2/18	2/18
Outdoor Fan					
Type	Propeller	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	1/26	1/26	1/28	2/28	2/28
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1	Direct/1
CFM	6,530	6,530	9,800	19,500	19,500
No. Motor/HP	1/0.5	1/0.5	1/1	2/1	2/1
Motor RPM	1,100	1,100	1,100	1,100	1,100
Refrigerant Charge (Field Supplied)					
lbs of R-410A	20.4	20.6	28.0	47.1	47.0
Shipping Dimensions					
HxWxD (in.)	46.1" x 45" x 38"	46.1" x 45" x 38"	52.1" x 55" x 42"	51.1" x 96" x 48"	51.1" x 96" x 48"

[a] Refer to refrigerant piping applications manual for line sizing and line length.

Table 7. General data — 5-10 tons (TWE061D-TWE120D) standard air handler — 60 Hz

	5 Tons	5 Tons	7.5 Tons	7.5 Tons	10 Tons	10 Tons
	Single Circuit TWE061D1, D3, D4, DW, DK	Dual Circuit TWE061E1, E3, E4	Single Circuit TWE090D1, D3, DW, DK	Dual Circuit TWE090E1, E3, EW, EK	Single Circuit TWE120D1, D3, DW, DK	Dual Circuit TWE120E1, E3, EW, EK
System Data						
No. Refrigerant Circuits	1	2	1	2	1	2
Suction Line Connection (in.) OD	1-1/8	1-1/8	1-3/8	1-1/8	1-3/8	1-1/8
Liquid Line Connection (in.) OD	1/2	1/2	1/2	1/2	1/2	1/2
Indoor Coil						
Type	Lanced	Lanced	Lanced	Lanced	Lanced	Lanced
Tube Size (in.)	0.38	0.38	0.38	0.38	0.38	0.38
Face Area (sq. ft.)	5	5	8.1	8.1	11.2	11.2
Rows/FPI (Fins per inch)	4/14	4/14	4/14	4/14	4/14	4/14
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.)	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC
Indoor Fan						
Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	1/12 x 12	1/12 x 12	1/15 x 15	1/15 x 15	1/15 x 15	1/15 x 15
Drive Type/No. Speeds	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable
CFM (Nominal)	2,000	2,000	3,000	3,000	4,000	4,000
No. Motors	1	1	1	1	1	1
Motor HP - Standard/Oversized	0.75/1.5	0.75/1.5	1.5/2.0/3.0	1.5/2.0/3.0	2.0/3.0	2.0/3.0
Motor RPM	1725	1725	1725	1725	1725	1725
Motor Frame Size	56	56	56 H	56 H	56 Hz	56 Hz
Filters[a]						
Type/Furnished	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes
(No.)/Size Recommended	(1) 16 x 20 x 1	(1) 16 x 20 x 1 (1) 20 x 20 x 1	(3) 16 X 25 X 1	(3) 16 X 25 X 1	(4) 16 X 25 X 1	(4) 16 X 25 X 1
Shipping Dimensions						
HxWxD (in.)	55.1'' x 27.5'' x 43.5''	55.1'' x 27.5'' x 43.5''	61.2'' x 30.5'' x 53''	61.2'' x 30.5'' x 53''	61.2'' x 30.5'' x 69''	61.2'' x 30.5'' x 69''

Note: Oversized motor not available on D1/DK and E1/EK models.

[a] One inch, throw-away filters shall be standard on TWE061, TWE090, TWE120 model air handlers from the factory. The filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE180E and TWE240E models.

Table 8. General data — 10-20 tons (TWE120E-TWE180E) standard air handler — 60 Hz

	12.5 Tons	15 Tons	20 Tons	25 Tons
	Dual Circuit TWE150E3, EW, EK	Dual Circuit TWE180E3, EW, EK	Dual Circuit TWE240E3, E4, EW, EK	Dual Circuit TWE300E3, E4, EW, EK
System Data				
No. Refrigerant Circuits	2	2	2	2
Suction Line Connection (in.) OD	1-3/8	1-3/8	1-3/8	1-3/8
Liquid Line Connection (in.) OD	1/2	1/2	1/2	5/8
Indoor Coil				
Type	Lanced	Lanced	Lanced	Lanced
Tube Size (in.)	0.38	0.38	0.38	0.38
Face Area (sq. ft.)	16.3	16.3	21.7	21.7
Rows/FPI (Fins per inch)	4/14	4/14	3/14	4/14
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.)	1 PVC	1 PVC	1 PVC	1 PVC
Indoor Fan				
Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	2/15 x 15	2/15 x 15	2/15 x 15	2/15 x 15
Drive Type/No. Speeds	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable
CFM (Nominal)	5,000	6,000	8,000	10,000
No. Motors	1	1	1	1
Motor HP - Standard/Oversized	2.0/3.0/5.0	3.0/5.0	3.0/5.0/7.5	7.5
Motor RPM	1755	1,728/1,750	1,750/3,470	3490
Motor Frame Size	145T	56 Hz	184T	184T
Filters[a]				
Type/Furnished	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes
(No.)/Size Recommended	(8) 15 X 20 X 2	(8) 15 X 20 X 2	(4) 16 X 25 X 2 (4) 16 X 20 X 2	(4) 16 X 25 X 2 (4) 16 X 20 X 2
Shipping Dimensions				
HxWxD (in.)	76.3'' x 33.3'' x 85''	76.3'' x 33.3'' x 85''	79.1'' x 35.8'' x 95''	79.1'' x 35.8'' x 95''

Note: Oversized motor not available on D1/DK and E1/EK models.

[a] One inch, throw-away filters shall be standard on TWE061, TWE090, TWE120 model air handlers from the factory. The filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE180E and TWE240E models.

Table 9. General data — 7.5–12.5 (TWE090E3**-TWE150EW****) tons SZVAV and 2–speed VFD air handler — 60 Hz**

	7.5 Tons	10 Tons	10 Tons	12.5 Tons
	Dual Circuit TWE090E3****, E4****, EW****	Single Circuit TWE120D3****, D4****, DW****	Dual Circuit TWE120E3****, E4****, EW****	Dual Circuit, TWE150E3****, E4****, EW****
Indoor Fan				
Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	1/15 x 15	1/15 x 15	1/15 x 15	2/15 x 15
Drive Type/No. Speeds	Belt/VFD Variable	Belt/VFD Variable	Belt/VFD Variable	Belt/VFD Variable
CFM (Nominal)	3,000	4,000	4,000	5,000
No. Motors	1	1	1	1
Motor HP - Standard/Oversized	2.0/3.0	2.0/3.0	2.0/3.0	2.0/5.0
Motor RPM	1725	1725	1725	1755/3450
Motor Frame Size	56HZ	56HZ	56HZ	56HZ

Table 10. General data — 15-20 tons (TWE180E3**-TWE240EW****) SZVAV and 2–speed VFD air handler — 60 Hz**

	15 Tons	20 Tons
	Dual Circuit, TWE180E3****, E4****, EW****	Dual Circuit, TWE240E3****, E4****, EW****
Indoor Fan		
Type	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	2/15 x 15	2/15 x 15
Drive Type/No. Speeds	Belt/VFD Variable	Belt/VFD Variable
CFM (Nominal)	6,000	8,000
No. Motors	1	1
Motor HP - Standard/Oversized	3.0/5.0	5.0/7.5
Motor RPM	1725/3450	3450/3470
Motor Frame Size	56HZ	56HZ/184T

Performance Data

Table 11. Gross cooling capacities (MBH) 6 tons TWA073D heat pump with 7.5 tons TWE090D standard air handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F) 85						Ambient Temperature (°F) 95						Ambient Temperature (°F) 105					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
2160	75	75.0	63.0	82.1	48.1	89.9	33.1	71.0	61.1	78.1	46.5	85.5	31.5	67.1	59.6	73.8	44.7	81.0	29.9
	80	75.7	74.5	82.2	59.5	90.0	44.7	72.2	72.2	78.2	57.9	85.7	43.1	68.8	68.8	74.0	56.1	81.1	41.4
	85	79.3	79.3	82.6	71.0	90.1	56.1	76.1	76.1	78.7	69.3	85.8	54.4	72.7	72.7	74.5	67.6	81.2	52.8
	90	83.3	83.3	83.7	82.6	90.3	67.4	80.0	80.0	79.9	79.9	86.0	65.8	76.5	76.5	76.5	76.5	81.5	64.1
2400	75	76.4	66.4	83.3	50.2	91.1	33.6	72.3	64.5	79.2	48.6	86.6	32.0	68.3	62.7	74.9	46.8	82.0	30.4
	80	77.6	77.6	83.5	62.7	91.2	46.4	74.4	74.4	80.0	61.3	86.8	44.8	70.9	70.9	75.1	59.3	82.1	43.1
	85	81.8	81.8	84.1	75.3	91.4	58.9	78.4	78.4	80.1	73.6	86.9	57.3	74.9	74.9	75.9	71.9	82.2	55.6
	90	85.9	85.9	85.9	85.9	91.7	71.5	82.4	82.4	82.4	82.4	87.2	69.8	78.8	78.8	78.7	78.7	82.6	68.0
2640	75	77.6	69.8	84.3	52.3	92.0	34.1	73.4	67.9	80.1	50.6	87.5	32.5	69.4	66.1	75.7	48.9	82.8	30.9
	80	79.7	79.7	84.6	65.9	92.3	48.1	76.3	76.3	80.4	64.2	87.7	46.5	72.7	72.7	76.0	62.3	83.0	44.8
	85	84.0	84.0	85.4	79.5	92.4	61.7	80.4	80.4	81.3	77.9	87.8	60.1	76.8	76.8	77.1	76.1	83.1	58.4
	90	88.2	88.2	88.2	88.2	92.8	75.2	84.6	84.6	84.5	84.5	88.3	73.6	80.8	80.8	80.7	80.7	83.6	71.9
2880	75	78.7	73.2	85.2	54.4	92.8	34.6	74.4	71.2	80.9	52.7	88.2	33.0	70.4	69.5	76.4	51.0	83.5	31.4
	80	81.4	81.4	85.5	68.8	93.1	49.7	77.9	77.9	81.3	67.1	88.5	48.1	74.2	74.2	76.9	65.3	83.7	46.4
	85	85.8	85.8	86.6	83.7	93.3	64.5	82.2	82.2	82.5	82.0	88.6	62.9	78.4	78.4	78.4	78.4	83.8	61.2
	90	90.2	90.2	90.2	90.2	93.8	79.0	86.4	86.4	86.4	86.4	89.2	77.3	82.5	82.5	82.5	82.5	84.5	75.6

CFM	Ent DB (°F)	Ambient Temperature (°F) 115						Ambient Temperature (°F) 125					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
2160	75	63.0	57.7	69.4	42.9	76.2	28.2	58.5	55.3	64.5	41.0	71.1	26.4
	80	65.3	65.3	69.6	54.3	76.4	39.7	61.4	61.4	64.7	52.4	71.2	37.9
	85	69.0	69.0	70.2	65.7	76.4	51.0	65.0	65.0	65.5	63.8	71.3	49.2
	90	72.7	72.7	72.7	72.7	76.7	62.4	68.6	68.6	68.6	68.6	71.6	60.5
2400	75	64.1	60.8	70.3	45.0	77.1	28.7	59.6	58.8	65.3	43.1	71.8	26.9
	80	67.2	67.2	70.6	57.5	77.3	41.4	63.1	63.1	65.6	55.5	72.0	39.6
	85	71.1	71.1	71.5	70.1	77.4	53.9	66.9	66.9	66.9	66.9	72.1	52.1
	90	74.9	74.9	74.8	74.8	77.8	66.3	70.6	70.6	70.6	70.6	72.6	64.4
2640	75	65.2	64.3	71.1	47.1	77.8	29.2	60.8	60.8	66.0	45.2	72.5	27.4
	80	68.8	68.8	71.4	60.5	78.0	43.1	64.7	64.7	66.5	58.5	72.6	41.2
	85	72.8	72.8	72.8	72.8	78.2	56.7	68.5	68.5	68.5	68.5	72.8	54.9
	90	76.7	76.7	76.7	76.7	78.7	70.1	72.3	72.3	72.3	72.3	73.5	68.2
2880	75	66.2	66.2	71.7	49.2	78.4	29.7	62.0	62.0	66.6	47.2	73.0	27.9
	80	70.3	70.3	72.2	63.5	78.6	44.7	66.0	66.0	67.2	61.5	73.2	42.9
	85	74.3	74.3	74.3	74.3	78.8	59.5	69.9	69.9	69.9	69.9	73.4	57.5
	90	78.3	78.3	78.3	78.3	79.5	73.9	73.7	73.7	73.7	73.7	74.3	72.0

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat.
2. kW = Total Gross Capacity, SHC = Sensible Heat Capacity

Table 12. Gross cooling capacities (MBH) 7.5 tons TWA090D heat pump with 7.5 tons TWE090D standard air handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F) 85						Ambient Temperature (°F) 95						Ambient Temperature (°F) 105					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
2700	75	88.0	75.1	95.3	57.2	103.5	38.2	83.3	72.8	90.8	55.3	98.7	36.5	79.0	70.9	86.1	53.5	93.7	34.7
	80	88.6	88.6	95.4	70.6	103.6	52.3	85.0	85.0	91.0	68.8	98.8	50.5	81.3	81.3	86.3	66.9	93.8	48.7
	85	93.0	93.0	95.9	84.4	103.7	66.1	89.3	89.3	91.6	82.6	98.9	64.3	85.5	85.5	87.0	80.7	93.9	62.5
	90	97.4	97.4	97.3	97.3	103.9	79.9	93.6	93.6	93.5	93.5	99.1	78.1	89.6	89.6	89.6	89.6	94.2	76.3
3000	75	89.4	79.1	96.5	59.7	104.6	38.8	84.6	76.8	91.9	57.9	99.8	37.1	80.3	74.9	87.2	56.0	94.7	35.3
	80	91.0	91.0	96.7	74.3	104.8	54.3	87.3	87.3	93.0	72.9	99.9	52.5	83.4	83.4	87.4	70.6	94.8	50.7
	85	95.5	95.5	97.4	89.4	104.9	69.4	91.7	91.7	93.0	87.6	100.0	67.7	87.7	87.7	88.4	85.7	94.9	65.8
	90	100.0	100.0	100.0	100.0	105.2	84.4	96.1	96.1	96.0	96.0	100.3	82.6	91.9	91.9	91.8	91.8	95.3	80.7
3300	75	90.7	83.0	97.5	62.3	105.6	39.4	85.8	80.7	92.9	60.5	100.6	37.7	81.5	78.8	88.0	58.6	95.5	35.9
	80	93.1	93.1	97.7	77.7	105.8	56.2	89.2	89.2	93.1	75.9	100.8	54.4	85.1	85.1	88.3	73.9	95.7	52.6
	85	97.7	97.7	98.8	94.3	105.9	72.7	93.7	93.7	94.3	92.4	100.9	70.9	89.6	89.6	89.5	89.5	95.7	69.1
	90	102.3	102.3	102.2	102.2	106.4	88.8	98.2	98.2	98.1	98.1	101.4	87.0	93.9	93.9	93.9	93.9	96.3	85.2
3600	75	91.9	86.8	98.4	64.8	106.4	40.0	86.9	84.5	93.7	63.0	101.4	38.3	82.3	82.3	88.7	61.1	96.2	36.6
	80	94.8	94.8	98.7	81.1	106.7	58.0	90.9	90.9	94.0	79.2	101.6	56.3	86.8	86.8	89.2	77.3	96.4	54.5
	85	99.6	99.6	100.1	99.0	106.8	75.9	95.5	95.5	95.5	95.5	101.7	74.1	91.2	91.2	91.2	91.2	96.5	72.3
	90	104.3	104.3	104.2	104.2	107.4	93.1	100.0	100.0	100.0	100.0	102.4	91.3	95.6	95.6	95.6	95.6	97.3	89.5

CFM	Ent DB (°F)	Ambient Temperature (°F) 115						Ambient Temperature (°F) 125					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
2700	75	74.5	68.8	81.2	51.5	88.4	32.9	69.7	66.6	75.8	49.4	82.8	30.9
	80	77.3	77.3	81.4	64.9	88.5	46.9	72.8	72.8	76.1	62.8	82.9	44.9
	85	81.4	81.4	82.2	78.7	88.6	60.6	76.8	76.8	77.1	76.6	83.0	58.6
	90	85.3	85.3	85.3	85.3	88.9	74.3	80.7	80.7	80.7	80.7	83.4	72.2
3000	75	75.8	72.8	82.1	54.1	89.3	33.5	70.9	70.6	76.7	52.0	83.6	31.6
	80	79.2	79.2	82.4	68.4	89.5	48.8	74.7	74.7	77.0	66.3	83.7	46.9
	85	83.4	83.4	83.3	83.3	89.5	64.0	78.7	78.7	78.7	78.7	83.8	62.0
	90	87.5	87.5	87.5	87.5	90.0	78.8	82.7	82.7	82.7	82.7	84.5	76.8
3300	75	76.9	76.7	82.9	56.6	90.0	34.1	72.0	72.0	77.4	54.5	84.2	32.2
	80	80.9	80.9	83.3	71.9	90.2	50.7	76.2	76.2	77.9	69.7	84.4	48.8
	85	85.1	85.1	85.1	85.1	90.3	67.2	80.3	80.3	80.3	80.3	84.6	65.3
	90	89.3	89.3	89.3	89.3	91.0	83.2	84.4	84.4	84.4	84.4	85.4	81.2
3600	75	78.0	78.0	83.5	59.2	90.7	34.7	73.3	73.3	77.9	57.1	84.8	32.8
	80	82.4	82.4	84.1	75.3	90.8	52.6	77.5	77.5	78.7	73.2	85.0	50.7
	85	86.7	86.7	86.6	86.6	91.0	70.1	81.7	81.7	81.7	81.7	85.2	68.1
	90	90.9	90.9	90.9	90.9	91.9	87.6	85.9	85.9	85.9	85.9	86.3	85.6

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat.
2. kW = Total Gross Capacity, SHC = Sensible Heat Capacity

Table 13. Gross cooling capacities (MBH) 10 tons TWA120D heat pump with 10 tons TWE120D standard air handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F) 85						Ambient Temperature (°F) 95						Ambient Temperature (°F) 105					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
3600	75	115.4	100.2	127.9	76.5	141.3	51.9	110.7	98.0	122.5	74.3	135.1	49.7	105.6	95.7	116.7	72.0	128.6	47.4
	80	116.8	116.8	127.6	95.7	140.9	71.4	112.8	112.8	122.2	93.6	134.7	69.2	108.4	108.4	116.4	91.3	128.2	66.9
	85	123.1	123.1	127.3	112.7	140.5	90.8	118.9	118.9	121.8	110.5	134.4	88.6	114.3	114.3	116.1	108.1	127.9	86.4
	90	129.6	129.6	127.0	127.0	140.2	108.2	125.1	125.1	121.5	121.5	134.0	106.0	120.3	120.3	115.8	115.8	127.5	103.6
4000	75	117.6	106.4	129.9	80.1	143.2	52.8	112.7	104.2	124.3	77.9	136.9	50.6	107.5	101.9	118.3	75.6	130.2	48.3
	80	120.6	120.6	129.6	101.5	142.8	74.5	116.3	116.3	124.0	99.3	136.5	72.3	111.7	111.7	118.1	96.9	129.8	70.0
	85	127.2	127.2	129.3	119.8	142.5	96.1	122.7	122.7	123.7	117.5	136.1	93.9	117.8	117.8	117.7	115.1	129.4	91.6
	90	133.8	133.8	129.0	129.0	142.1	114.8	129.1	129.1	123.3	123.3	135.8	112.5	124.0	124.0	117.4	117.4	129.1	110.1
4400	75	119.5	112.6	131.5	83.7	144.8	53.7	114.5	110.4	125.8	81.5	138.3	51.5	109.2	108.1	119.7	79.2	131.5	49.2
	80	123.8	123.8	131.3	107.2	144.4	77.6	119.4	119.4	125.6	104.9	137.9	75.4	114.5	114.5	119.6	102.6	131.1	73.1
	85	130.7	130.7	130.9	126.6	144.1	101.4	126.0	126.0	125.2	124.3	137.6	99.2	120.9	120.9	119.1	119.1	130.7	96.9
	90	137.5	137.5	130.6	130.6	143.8	121.2	132.5	132.5	124.8	124.8	137.2	118.9	127.2	127.2	118.7	118.7	130.4	116.5
4800	75	121.2	118.8	132.9	87.3	146.1	54.6	115.3	115.3	127.0	85.0	139.5	52.4	110.5	110.5	120.8	82.7	132.5	50.1
	80	126.7	126.7	132.9	112.8	145.7	80.7	122.0	122.0	127.0	110.5	139.1	78.4	117.0	117.0	120.9	108.2	132.1	76.1
	85	133.8	133.8	132.3	132.3	145.4	106.6	128.8	128.8	126.4	126.4	138.8	104.4	123.5	123.5	120.2	120.2	131.8	101.9
	90	140.8	140.8	132.0	132.0	145.1	127.5	135.5	135.5	126.1	126.1	138.5	125.2	129.9	129.9	119.8	119.8	131.5	122.8

CFM	Ent DB (°F)	Ambient Temperature (°F) 115						Ambient Temperature (°F) 125					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
3600	75	100.2	93.2	110.5	69.6	121.7	45.1	94.4	90.6	103.8	67.0	114.1	42.5
	80	103.7	103.7	110.3	88.8	121.3	64.6	98.4	98.4	103.6	86.2	113.7	62.0
	85	109.4	109.4	109.9	105.7	121.0	84.0	103.9	103.9	103.1	103.0	113.4	81.4
	90	115.1	115.1	109.6	109.6	120.6	101.1	109.2	109.2	102.8	102.8	113.0	98.5
4000	75	102.0	99.4	112.0	73.2	123.1	46.0	95.6	95.6	105.0	70.6	115.3	43.4
	80	106.7	106.7	111.8	90.2	122.7	67.6	101.2	101.2	105.0	91.8	114.9	65.0
	85	112.6	112.6	111.3	111.3	122.3	89.2	106.8	106.8	104.4	104.4	114.6	86.6
	90	118.7	118.7	111.0	111.0	122.0	107.6	112.3	112.3	104.1	104.1	114.2	104.9
4400	75	103.3	103.3	113.2	76.7	124.2	46.8	97.8	97.8	106.1	74.1	116.2	44.2
	80	109.3	109.3	113.2	100.1	123.8	70.7	103.5	103.5	106.2	97.4	115.8	68.1
	85	115.4	115.4	112.5	112.5	123.5	94.3	109.2	109.2	105.5	105.5	115.6	91.6
	90	121.3	121.3	112.2	112.2	123.1	113.6	114.9	114.9	105.1	105.1	115.2	111.3
4800	75	105.4	105.4	114.2	80.2	125.1	47.7	99.7	99.7	107.0	77.6	117.0	45.1
	80	111.6	111.6	114.4	105.6	124.7	73.7	105.6	105.6	107.3	102.9	116.7	71.1
	85	117.7	117.7	113.5	113.5	124.5	99.4	111.3	111.3	106.3	106.3	116.5	96.7
	90	123.8	123.8	113.2	113.2	124.1	120.2	117.0	117.0	105.9	105.9	116.0	116.0

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat.
2. kW = Total Gross Capacity, SHC = Sensible Heat Capacity

Table 14. Gross cooling capacities (MBH) 15 tons TWA180E heat pump with 15 tons TWE180E standard/SZVAV air handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F) 85						Ambient Temperature (°F) 95						Ambient Temperature (°F) 105					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
5400	75	173.8	145.4	192.2	115.4	211.8	77.9	165.2	141.3	182.8	111.6	201.7	74.3	156.0	137.0	172.7	107.6	190.7	70.5
	80	176.4	173.1	192.4	138.4	212.0	104.7	167.7	167.7	183.0	134.4	201.9	100.8	159.9	159.9	172.8	130.1	190.9	96.8
	85	184.6	184.6	193.0	165.0	212.2	130.9	177.1	177.1	183.8	161.0	202.0	127.0	169.1	169.1	174.0	156.8	191.1	122.9
	90	194.3	194.3	195.8	192.2	212.4	157.0	186.5	186.5	186.5	186.5	202.2	153.1	178.3	178.3	178.2	178.2	191.2	148.9
6000	75	176.8	152.8	195.1	120.8	214.8	79.3	168.1	148.7	185.4	117.0	204.4	75.7	158.8	144.4	175.1	112.9	193.2	71.9
	80	180.2	180.2	195.4	145.1	215.0	108.3	172.6	172.6	185.6	141.0	204.6	104.4	164.4	164.4	175.2	136.7	193.4	100.3
	85	190.1	190.1	196.5	174.2	215.2	136.9	182.3	182.3	187.1	170.2	204.8	133.0	174.0	174.0	177.1	166.0	193.5	128.8
	90	200.2	200.2	200.1	200.1	215.5	165.4	192.2	192.2	192.1	192.1	205.0	161.5	183.4	183.4	183.4	183.4	194.0	157.3
6600	75	179.6	160.0	197.5	126.2	217.3	80.7	170.7	155.9	187.6	122.3	206.7	77.1	161.2	151.5	177.1	118.2	195.3	73.3
	80	184.7	184.7	197.8	151.5	217.5	111.7	176.8	176.8	187.9	147.4	206.9	107.9	168.4	168.4	177.4	143.1	195.5	103.7
	85	195.0	195.0	199.5	183.1	217.8	142.7	186.9	186.9	190.0	179.1	207.1	138.8	178.2	178.2	179.9	175.0	195.6	134.6
	90	205.4	205.4	205.2	205.2	218.1	173.5	197.0	197.0	196.9	196.9	207.6	169.6	188.0	188.0	187.9	187.9	196.4	165.5
7200	75	182.0	166.9	199.6	131.5	219.4	82.1	173.0	162.8	189.5	127.6	208.6	78.4	163.5	158.5	178.8	123.5	197.0	74.6
	80	188.7	188.7	199.9	157.7	219.6	115.1	180.6	180.6	190.0	153.6	208.8	111.2	171.8	171.8	179.4	149.3	197.2	107.0
	85	199.3	199.3	202.3	191.6	219.9	148.3	191.0	190.9	192.7	187.7	209.0	144.3	181.9	181.9	181.8	181.8	197.4	140.1
	90	209.9	209.9	209.8	209.8	220.6	181.5	201.3	201.3	201.2	201.2	209.9	177.6	192.0	192.0	192.0	191.9	198.5	173.4

CFM	Ent DB (°F)	Ambient Temperature (°F) 115						Ambient Temperature (°F) 125					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
5400	75	146.3	132.5	161.8	103.3	179.1	66.4	135.9	127.7	150.0	98.7	166.2	62.1
	80	151.5	151.5	162.0	125.6	179.2	92.5	142.2	142.2	150.3	120.9	166.3	87.9
	85	160.4	160.4	163.6	152.4	179.3	118.6	150.8	150.8	152.4	147.8	166.5	113.9
	90	169.3	169.3	169.2	169.2	179.7	144.6	159.5	159.5	159.3	159.3	167.1	140.0
6000	75	148.9	139.9	163.9	108.6	181.3	67.8	138.3	135.1	151.8	104.0	168.1	63.5
	80	155.6	155.6	164.3	132.2	181.4	96.0	145.9	145.9	152.4	127.4	168.3	91.4
	85	164.9	164.9	166.6	161.6	181.5	124.5	154.9	154.9	154.7	154.7	168.4	119.8
	90	174.1	174.1	174.0	174.0	182.2	153.0	163.8	163.8	163.8	163.8	169.4	148.4
6600	75	151.3	147.0	165.7	113.9	183.1	69.2	140.1	140.1	153.4	109.2	169.8	64.8
	80	159.2	159.2	166.3	138.6	183.2	99.4	149.3	149.3	154.3	133.8	169.9	94.7
	85	168.8	168.8	168.6	168.6	183.3	130.2	158.4	158.4	158.3	158.3	170.0	125.5
	90	178.2	178.2	178.2	178.2	184.4	161.2	167.6	167.6	167.6	167.6	171.5	156.6
7200	75	152.7	152.7	167.3	119.1	184.7	69.4	142.8	142.8	154.7	114.5	171.1	66.1
	80	162.5	162.5	168.1	144.8	184.8	102.7	152.2	152.1	155.9	140.0	171.2	98.0
	85	172.2	172.2	172.1	172.1	184.9	135.7	161.5	161.5	161.4	161.4	171.4	131.0
	90	181.9	181.9	181.9	181.9	186.4	169.1	170.9	170.9	170.9	170.9	173.4	164.5

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat.
2. kW = Total Gross Capacity, SHC = Sensible Heat Capacity

Table 15. Gross cooling capacities (MBH) 20 tons TWA240E heat pump with 20 tons TWE240E standard/SZVAV air handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F) 85						Ambient Temperature (°F) 95						Ambient Temperature (°F) 105					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
7200	75	238.3	188.2	263.4	157.3	290.4	106.7	226.4	182.2	250.7	152.2	276.7	101.8	213.5	175.8	236.8	146.6	261.7	96.3
	80	239.7	220.5	263.8	179.8	290.6	139.1	228.4	214.7	251.1	174.0	276.9	133.6	216.3	208.7	237.2	167.8	261.9	127.7
	85	246.7	246.7	264.1	211.2	290.9	170.5	236.7	236.7	251.3	205.4	277.1	165.0	225.8	225.8	237.5	199.3	262.1	159.0
	90	259.1	259.1	265.8	243.3	291.2	201.8	248.9	248.9	253.7	237.7	277.4	196.2	237.7	237.7	240.7	231.7	262.3	190.1
8000	75	242.5	196.3	267.8	164.8	294.9	108.8	230.3	190.2	254.7	159.6	280.8	103.6	217.0	183.8	240.4	153.9	265.4	97.7
	80	244.8	231.6	268.2	187.2	295.1	143.2	233.4	225.9	255.1	181.4	281.0	137.6	220.0	220.0	240.8	175.1	265.6	131.7
	85	254.0	254.0	268.5	221.3	295.4	177.2	243.6	243.6	255.6	215.5	281.3	171.6	232.3	232.3	241.5	209.3	265.9	165.6
	90	266.9	266.9	271.3	256.2	295.7	211.0	256.3	256.3	259.1	250.6	281.6	205.4	244.6	244.6	244.4	244.4	266.1	199.3
8800	75	246.1	204.0	271.5	172.1	298.8	110.5	233.6	198.0	258.1	166.9	284.4	104.9	220.2	191.5	243.5	161.2	268.6	99.0
	80	249.6	242.3	272.0	194.2	299.0	147.1	236.8	236.8	258.6	188.4	284.5	141.5	225.3	225.3	243.9	182.0	268.8	135.4
	85	260.4	260.4	272.5	230.9	299.3	183.6	249.7	249.7	259.3	225.1	284.8	177.9	238.0	238.0	245.1	218.9	269.0	171.8
	90	273.7	273.7	276.5	268.6	299.6	219.8	262.7	262.7	262.6	262.6	285.1	214.1	250.7	250.7	250.5	250.5	269.3	208.0
9600	75	249.2	211.4	274.7	179.4	302.0	111.8	236.7	205.4	261.0	174.1	287.3	106.2	223.1	199.0	246.1	168.4	271.3	100.2
	80	252.6	252.6	275.2	201.0	302.3	150.8	241.9	241.9	261.5	195.0	287.6	145.1	230.0	230.0	246.6	188.7	271.5	139.0
	85	266.2	266.2	276.0	240.2	302.6	189.6	255.2	255.2	262.7	234.4	287.8	183.9	243.0	243.0	248.4	228.2	271.7	177.8
	90	279.8	279.8	279.6	279.6	302.9	228.3	268.5	268.5	268.3	268.3	288.1	222.6	256.0	256.0	255.9	255.9	272.0	216.4

CFM	Ent DB (°F)	Ambient Temperature (°F) 115						Ambient Temperature (°F) 125					
		Entering Wet Bulb (°F)						Entering Wet Bulb (°F)					
		61		67		73		61		67		73	
		MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC	MBH	SHC
7200	75	199.5	169.0	221.6	140.6	245.1	90.0	184.3	161.8	204.7	134.0	227.0	83.2
	80	202.3	202.3	221.9	161.2	245.4	121.3	189.3	189.3	205.1	154.0	227.3	114.5
	85	213.8	213.8	222.5	192.7	245.6	152.6	200.5	200.5	206.3	185.8	227.5	145.7
	90	225.4	225.4	225.2	225.2	245.8	183.7	211.7	211.7	211.6	211.6	227.7	176.7
8000	75	202.8	177.0	224.7	147.8	248.5	91.3	187.5	169.8	207.6	141.3	229.9	84.5
	80	207.8	207.8	225.2	168.4	248.7	125.3	194.4	194.4	208.0	161.1	230.1	118.4
	85	219.8	219.8	226.4	202.8	248.9	159.1	205.9	205.9	209.9	195.8	230.4	152.2
	90	231.8	231.8	231.6	231.6	249.2	192.8	217.5	217.5	217.4	217.4	230.7	185.8
8800	75	205.9	184.8	227.5	155.1	251.2	92.5	190.3	177.5	209.9	148.4	232.2	88.5
	80	212.7	212.7	227.9	175.2	251.5	129.0	198.8	198.8	210.3	167.9	232.6	122.0
	85	225.0	225.0	229.8	212.4	251.7	165.3	210.7	210.7	213.2	205.4	232.8	158.3
	90	237.3	237.3	237.2	237.2	252.0	201.5	222.6	222.6	222.5	222.5	233.4	194.6
9600	75	208.7	192.2	229.8	162.2	253.6	96.6	193.0	184.9	212.0	155.5	234.4	90.3
	80	217.1	217.1	230.3	181.8	253.9	132.5	202.7	202.7	212.5	174.5	234.7	125.5
	85	229.7	229.7	233.0	221.6	254.2	171.3	214.9	214.9	214.7	214.7	234.9	164.2
	90	242.3	242.3	242.2	242.2	254.7	209.9	227.1	227.1	227.0	227.0	235.8	203.0

Notes:

1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat.
2. kW = Total Gross Capacity, SHC = Sensible Heat Capacity

Table 16. Gross cooling capacities (MBH) 6 tons TWA073D condensing unit only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	255.3	270.1	277.5	285.2	293.2	301.4
	Capacity (Btuh/1000)	66.3	73.4	81.0	88.8	96.9	105.3
	Unit Power (kW)	4.4	4.4	4.4	4.5	4.5	4.6
75	Head Press (psig)	300.7	308.1	315.8	323.8	332.0	340.4
	Capacity (Btuh/1000)	62.4	69.3	76.4	83.9	91.5	99.4
	Unit Power (kW)	4.7	4.8	4.8	4.9	5.0	5.0
85	Head Press (psig)	341.9	349.6	357.6	365.8	374.2	382.8
	Capacity (Btuh/1000)	58.4	64.9	71.7	78.7	86.0	93.4
	Unit Power (kW)	5.2	5.3	5.3	5.4	5.5	5.6
95	Head Press (psig)	386.6	394.7	402.9	411.4	420.0	428.8
	Capacity (Btuh/1000)	54.1	60.3	66.7	73.4	80.3	87.3
	Unit Power (kW)	5.8	5.8	5.9	6.0	6.0	6.1
105	Head Press (psig)	435.0	443.6	452.3	461.2	470.2	479.3
	Capacity (Btuh/1000)	49.6	55.5	61.6	68.0	74.5	81.1
	Unit Power (kW)	6.4	6.4	6.5	6.6	6.6	6.7
115	Head Press (psig)	488.0	497.2	506.4	515.7	525.0	534.5
	Capacity (Btuh/1000)	44.8	50.5	56.3	62.3	68.5	74.8
	Unit Power (kW)	7.1	7.1	7.2	7.3	7.3	7.4
125	Head Press (psig)	546.3	556.4	566.1	576.1	586.2	596.2
	Capacity (Btuh/1000)	39.8	45.2	50.7	56.5	62.3	68.2
	Unit Power (kW)	7.9	7.9	8.0	8.0	8.1	8.1

Note: Performance data calculated at 15°F subcooling and 15°F superheat and does not include capacity loss due to refrigerant lines.

Figure 9. TWA073D capacity curves

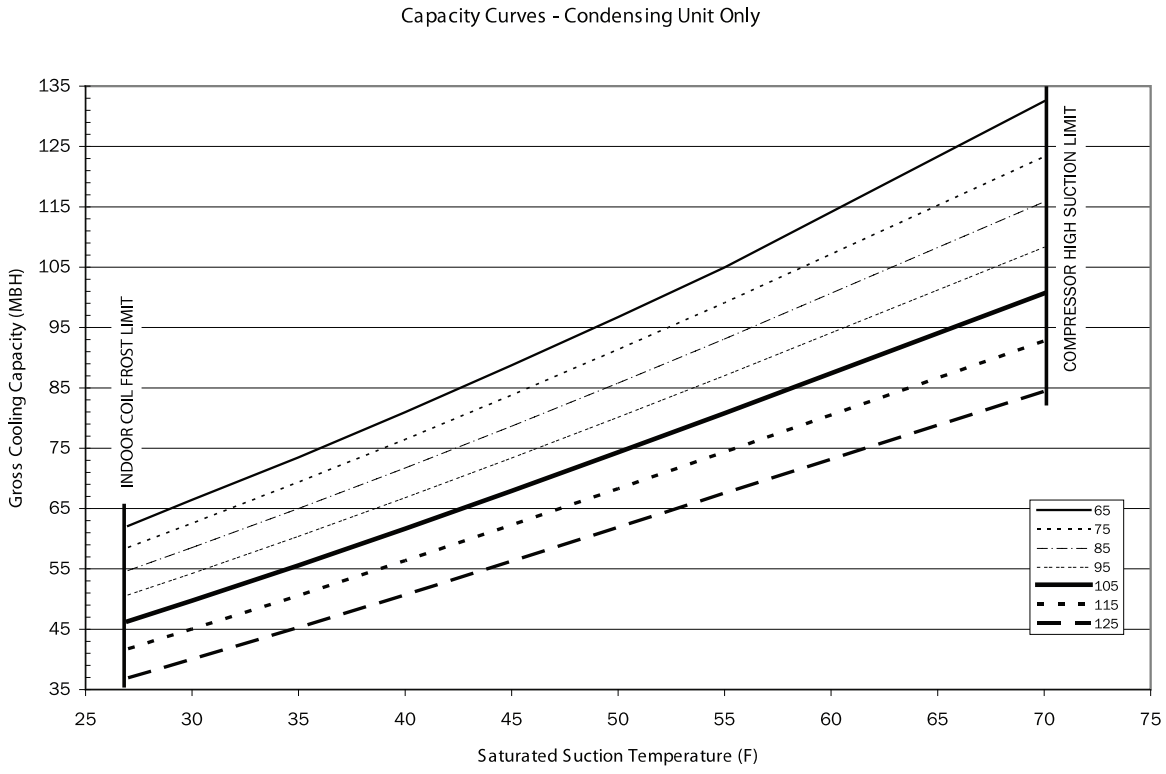


Table 17. Gross cooling capacities (MBH) 7.5 tons TWA090D condensing unit only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	264.2	280.4	288.4	296.8	305.5	314.6
	Capacity (Btuh/1000)	79.0	86.2	94.3	102.6	111.2	120.0
	Unit Power (kW)	5.1	5.2	5.3	5.5	5.6	5.8
75	Head Press (psig)	310.5	318.5	326.8	335.5	344.6	353.9
	Capacity (Btuh/1000)	74.0	81.3	89.0	96.9	105.1	113.5
	Unit Power (kW)	5.5	5.7	5.8	5.9	6.1	6.2
85	Head Press (psig)	351.7	360.0	368.6	377.6	386.9	396.5
	Capacity (Btuh/1000)	69.3	76.3	83.5	91.1	98.8	106.8
	Unit Power (kW)	6.1	6.2	6.4	6.5	6.7	6.8
95	Head Press (psig)	396.3	404.9	413.8	423.0	432.6	442.5
	Capacity (Btuh/1000)	64.4	71.0	77.9	85.0	92.3	99.8
	Unit Power (kW)	6.7	6.8	7.0	7.1	7.3	7.4
105	Head Press (psig)	444.8	453.6	462.9	472.5	482.3	492.5
	Capacity (Btuh/1000)	59.4	65.6	72.1	78.7	85.6	92.6
	Unit Power (kW)	7.4	7.6	7.7	7.9	8.0	8.2
115	Head Press (psig)	497.4	506.6	516.1	526.0	536.2	546.6
	Capacity (Btuh/1000)	54.3	60.0	66.0	72.3	78.7	85.3
	Unit Power (kW)	8.2	8.3	8.5	8.6	8.8	8.9
125	Head Press (psig)	554.8	564.3	574.2	584.5	595.0	605.8
	Capacity (Btuh/1000)	48.9	54.2	59.8	65.6	71.6	77.7
	Unit Power (kW)	9.1	9.2	9.4	9.5	9.7	9.8

Note: Performance data calculated at 15°F subcooling and 15°F superheat and does not include capacity loss due to refrigerant lines.

Figure 10. TWA090D capacity curves

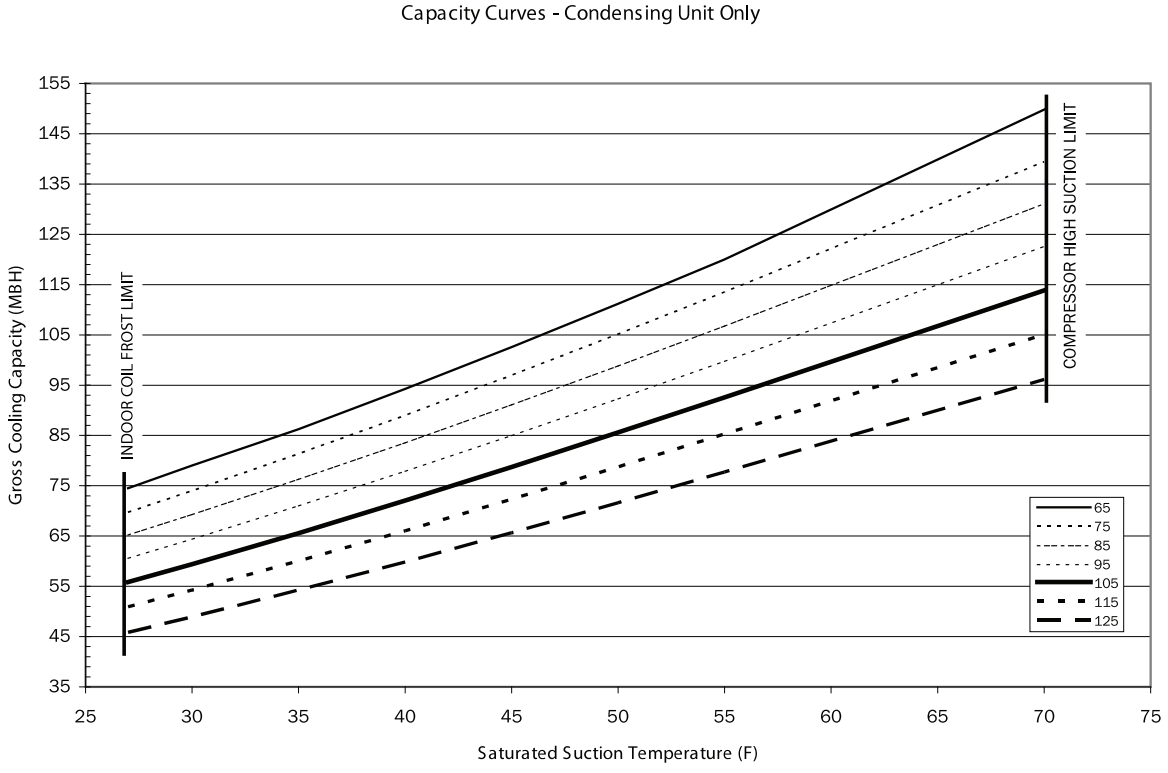


Table 18. Gross cooling capacities (MBH) 10 tons TWA120D condensing unit only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	264.5	270.3	276.2	282.1	287.9	293.6
	Capacity (Btuh/1000)	102.5	112.9	123.8	135.5	147.7	160.4
	Unit Power (kW)	6.7	6.8	6.9	7.0	7.1	7.2
75	Head Press (psig)	303.0	308.9	315.0	321.0	326.9	332.5
	Capacity (Btuh/1000)	97.1	107.1	117.5	128.5	140.1	152.1
	Unit Power (kW)	7.3	7.3	7.4	7.5	7.6	7.8
85	Head Press (psig)	345.3	351.4	357.5	363.6	369.5	375.3
	Capacity (Btuh/1000)	91.7	101.1	110.9	121.4	132.3	144.1
	Unit Power (kW)	7.9	8.0	8.1	8.2	8.3	8.4
95	Head Press (psig)	391.6	397.8	404.0	410.0	415.9	421.4
	Capacity (Btuh/1000)	86.0	94.8	104.1	114.0	124.3	134.9
	Unit Power (kW)	8.7	8.8	8.9	9.0	9.1	9.2
105	Head Press (psig)	442.1	448.4	454.6	460.6	466.2	472.0
	Capacity (Btuh/1000)	79.9	88.3	97.1	106.3	116.0	126.0
	Unit Power (kW)	9.6	9.7	9.8	9.8	9.9	10.0
115	Head Press (psig)	497.1	503.3	509.3	515.0	520.4	525.4
	Capacity (Btuh/1000)	73.7	81.4	89.8	98.4	107.4	117.0
	Unit Power (kW)	10.5	10.6	10.7	10.8	10.9	11.0
125	Head Press (psig)	556.5	562.3	568.0	573.2	577.9	581.9
	Capacity (Btuh/1000)	67.0	74.3	81.9	90.0	98.3	106.8
	Unit Power (kW)	11.5	11.6	11.7	11.8	11.9	12.0

Note: Performance data calculated at 15°F subcooling and 15°F superheat and does not include capacity loss due to refrigerant lines.

Figure 11. TWA120D capacity curves

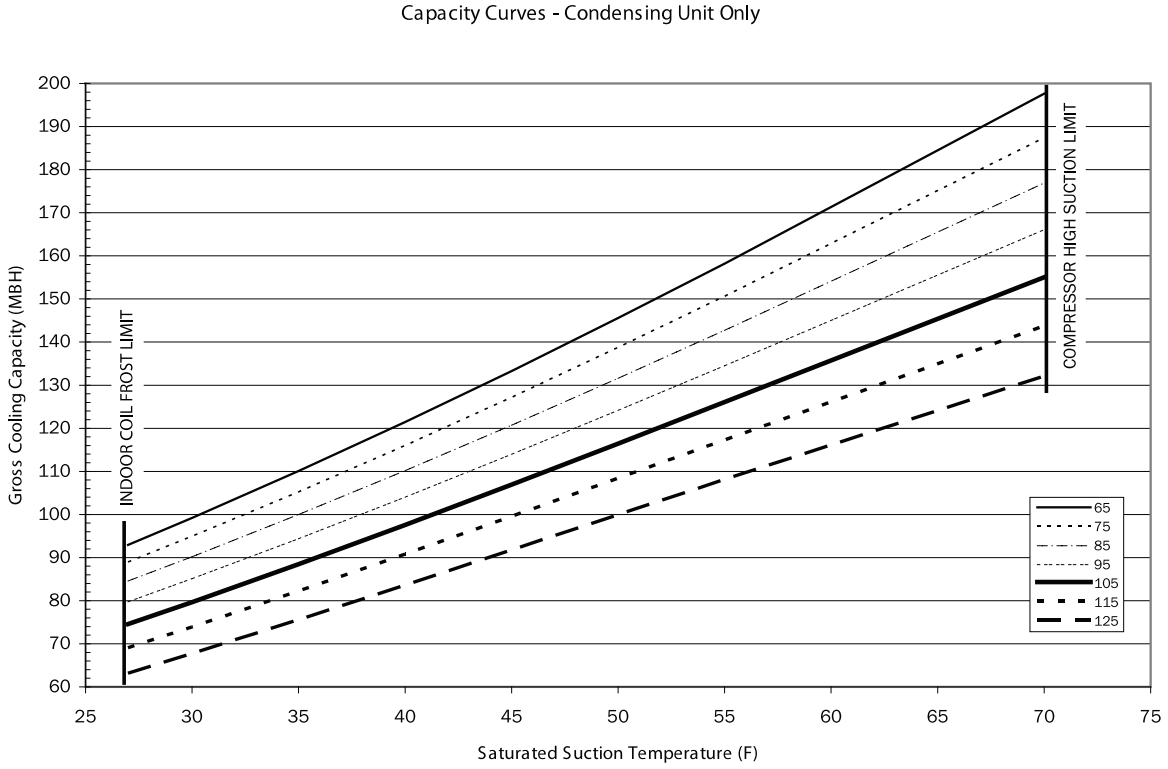


Table 19. Gross cooling capacities (MBH) 15 tons TWA180E condensing unit only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	240.5	245.6	251.0	256.7	262.7	269.0
	Capacity (Btuh/1000)	158.4	175.2	193.4	212.6	232.6	253.3
	Unit Power (kW)	10.9	11.1	11.3	11.5	11.7	12.0
75	Head Press (psig)	275.8	281.1	286.7	292.6	298.8	305.3
	Capacity (Btuh/1000)	148.9	165.1	182.4	200.9	220.1	240.1
	Unit Power (kW)	11.7	11.9	12.1	12.3	12.6	12.8
85	Head Press (psig)	314.7	320.2	326.0	332.1	338.4	345.1
	Capacity (Btuh/1000)	139.0	154.7	171.2	188.6	207.1	226.3
	Unit Power (kW)	12.6	12.8	13.1	13.3	13.5	13.8
95	Head Press (psig)	357.3	363.0	368.9	375.1	381.6	388.3
	Capacity (Btuh/1000)	128.9	143.8	159.5	176.0	193.6	211.8
	Unit Power (kW)	13.8	14.0	14.2	14.4	14.7	14.9
105	Head Press (psig)	403.7	409.6	415.6	421.8	428.4	435.2
	Capacity (Btuh/1000)	118.3	132.4	147.3	163.0	179.3	196.6
	Unit Power (kW)	15.1	15.3	15.5	15.7	15.9	16.2
115	Head Press (psig)	454.2	460.2	466.3	472.6	479.2	486.1
	Capacity (Btuh/1000)	107.3	120.6	134.6	149.3	164.6	180.7
	Unit Power (kW)	16.6	16.8	17.0	17.2	17.4	17.6
125	Head Press (psig)	508.8	514.9	521.0	527.4	534.0	540.8
	Capacity (Btuh/1000)	95.8	108.1	121.1	134.8	149.0	163.8
	Unit Power (kW)	18.2	18.4	18.6	18.8	19.0	19.2

Note: Performance data calculated at 15°F subcooling and 15°F superheat and does not include capacity loss due to refrigerant lines.

Figure 12. TWA180E capacity curves

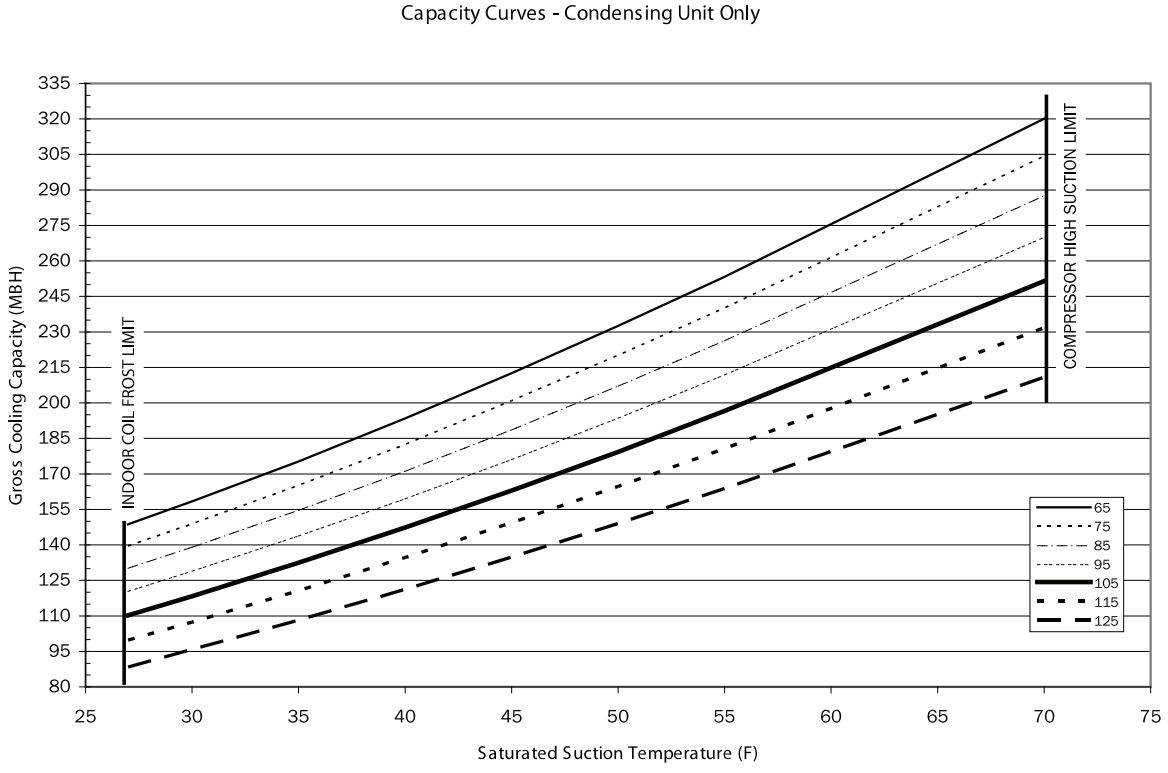


Table 20. Gross cooling capacities (MBH) 20 tons TWA240E condensing unit only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	269.1	277	285.5	294.6	304.2	314.4
	Capacity (Btuh/1000)	240.3	264.7	290.5	317.6	345.9	375.5
	Unit Power (kW)	16	16.3	16.7	17	17.4	17.9
75	Head Press (psig)	304.6	312.9	321.7	331.1	341	351.6
	Capacity (Btuh/1000)	225.9	249.9	275	301.3	328.8	357.4
	Unit Power (kW)	17.1	17.5	17.9	18.3	18.7	19.2
85	Head Press (psig)	343.5	352.1	361.2	370.9	381.1	391.8
	Capacity (Btuh/1000)	210.7	233.8	258.1	283.5	309.8	337.2
	Unit Power (kW)	18.6	19	19.4	19.8	20.3	20.9
95	Head Press (psig)	385.9	394.7	404	413.9	424.2	435.2
	Capacity (Btuh/1000)	194.7	216.6	239.8	264	289.1	315.1
	Unit Power (kW)	20.4	20.8	21.2	21.6	22.2	22.7
105	Head Press (psig)	431.8	440.9	450.4	460.4	470.9	482
	Capacity (Btuh/1000)	178	198.7	220.5	243.3	267	291.5
	Unit Power (kW)	22.5	22.9	23.3	23.7	24.2	24.8
115	Head Press (psig)	481.8	490.9	500.4	510.5	521	532.2
	Capacity (Btuh/1000)	160.7	179.9	200.1	221.4	243.6	266.5
	Unit Power (kW)	25	25.3	25.6	26.1	26.6	27.1
125	Head Press (psig)	535.6	544.8	554.3	564.2	574.7	585.8
	Capacity (Btuh/1000)	142.7	160.2	178.8	198.3	218.8	240
	Unit Power (kW)	27.7	28	28.3	28.7	29.2	29.7

Note: Performance data calculated at 15°F subcooling and 15°F superheat and does not include capacity loss due to refrigerant lines.

Figure 13. TWA240E capacity curves

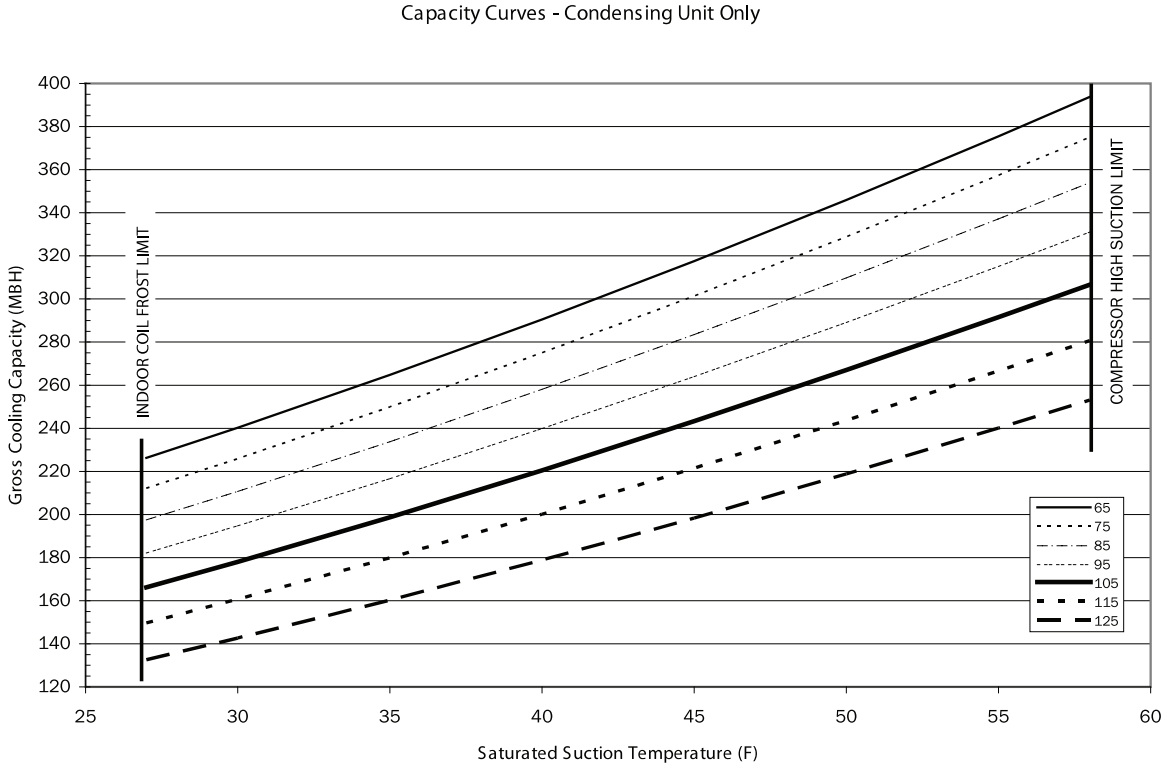


Table 21. Gross heating capacities (MBH) 6.25 tons TWA073D heat pump with 7.5 tons TWE090D standard air handler at 2400 CFM (IP)

Outdoor Temp (°F)	Integrated Heating Capacity (MBH) at Indicated Indoor Dry Bulb Temp (°F)				Total Power (kW) at Indicated Indoor Dry Bulb Temp (°F)			
	60	70	75	80	60	70	75	80
-18	22.7	23	22.9	22.6	5.1	5.4	5.7	5.9
-13	24.8	24.9	24.7	24.4	5.1	5.5	5.7	5.9
-8	27	27	26.8	26.5	5.1	5.5	5.7	6
-3	29.5	29.3	29.1	28.8	5.2	5.5	5.8	6
2	32.2	31.9	31.6	31.2	5.2	5.6	5.8	6.1
7	35.1	34.6	34.2	33.8	5.2	5.6	5.9	6.1
12	38.1	37.4	36.9	36.4	5.3	5.7	5.9	6.2
17	41.3	40.4	39.9	39.3	5.3	5.7	6	6.2
22	44.6	43.5	42.9	42.3	5.4	5.8	6	6.3
27	48.1	46.8	46.1	45.4	5.4	5.9	6.1	6.4
32	51.7	50.1	49.3	48.5	5.5	5.9	6.2	6.4
37	61.3	59.3	58.3	57.3	5.5	6	6.2	6.5
42	65.2	63	61.9	60.7	5.6	6	6.3	6.6
47	69.3	66.8	65.6	64.3	5.6	6.1	6.4	6.7
52	73.5	70.8	69.7	68.5	5.7	6.2	6.5	6.8
57	77.9	75.4	74.1	72.8	5.8	6.3	6.6	6.9
62	82.8	80	78.6	77.1	5.9	6.4	6.7	7
67	87.6	84.5	82.8	81.2	6	6.5	6.8	7.1
72	92	88.7	87	85.3	6.1	6.7	6.9	7.2

Notes:

1. Net heating capacity and power include indoor fan heat at ARI ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.
2. Integrated heating capacities and power include the effects of defrost in the frost region. All heating capacities and power are at 70% outdoor relative humidity and demand defrost cycle.

Table 22. Gross heating capacities (MBH) 7.5 tons TWA090D heat pump with 7.5 tons TWE090D standard air handler at 3000 CFM (IP)

Outdoor Temp (°F)	Integrated Heating Capacity (MBH) at Indicated Indoor Dry Bulb Temp (°F)				Total Power (kW) at Indicated Indoor Dry Bulb Temp (°F)			
	60	70	75	80	60	70	75	80
-18	30.9	29.7	29.2	28.9	5.8	6.2	6.4	6.7
-13	32.7	31.5	31.1	30.8	5.9	6.2	6.5	6.7
-8	34.9	33.7	33.2	32.9	5.9	6.3	6.5	6.8
-3	37.3	36	35.6	35.2	5.9	6.3	6.6	6.8
2	40	38.7	38.2	37.8	5.9	6.4	6.6	6.9
7	42.9	41.6	41.1	40.6	6	6.4	6.7	7
12	46.1	44.7	44.1	43.6	6.1	6.5	6.8	7.1
17	49.5	48	47.4	46.8	6.1	6.6	6.9	7.2
22	53.1	51.5	50.9	50.2	6.2	6.7	7	7.3
27	56.9	55.3	54.5	53.8	6.3	6.8	7.1	7.4
32	61	59.1	58.3	57.4	6.4	6.9	7.2	7.5
37	72.2	69.9	68.9	67.9	6.5	7	7.3	7.6
42	76.7	74.3	73.1	72	6.6	7.1	7.4	7.8
47	81.4	78.7	77.4	76.4	6.7	7.3	7.6	7.9
52	86.4	83.8	82.6	81.4	6.9	7.4	7.8	8.1
57	92	89.3	88	86.7	7	7.6	7.9	8.3
62	97.8	94.9	93.5	92	7.2	7.8	8.1	8.5
67	103.5	100.4	98.8	97.3	7.4	8	8.3	8.7
72	109.1	105.7	104.1	102.4	7.5	8.2	8.5	8.9

Notes:

1. Net heating capacity and power include indoor fan heat at ARI ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.
2. Integrated heating capacities and power include the effects of defrost in the frost region. All heating capacities and power are at 70% outdoor relative humidity and demand defrost cycle.

Table 23. Gross heating capacities (MBH)10 tons TWA120D heat pump with 10 tons TWE120D standard air handler at 4000 CFM (IP)

Outdoor Temp (°F)	Integrated Heating Capacity (MBH) at Indicated Indoor Dry Bulb Temp (°F)				Total Power (kW) at Indicated Indoor Dry Bulb Temp (°F)			
	60	70	75	80	60	70	75	80
-18	31.9	31.9	31.9	31.9	7.3	7.9	8.2	8.5
-13	36.4	36.3	36.2	36.2	7.4	8.0	8.4	8.7
-8	41.1	40.8	40.7	40.6	7.6	8.2	8.5	8.9
-3	46.0	45.5	45.4	45.3	7.7	8.3	8.7	9.0
2	50.8	50.2	49.9	49.6	7.8	8.4	8.7	9.1
7	56.1	55.2	54.9	54.5	7.9	8.5	8.9	9.2
12	61.2	60.2	59.7	59.5	8.0	8.6	9.0	9.3
17	66.8	65.6	65.0	64.4	8.1	8.7	9.1	9.5
22	72.6	71.1	70.4	69.7	8.2	8.8	9.2	9.6
27	78.6	76.8	76.0	75.2	8.3	8.9	9.3	9.7
32	84.9	82.7	81.7	80.8	8.4	9.0	9.4	9.8
37	91.1	88.6	87.5	86.3	8.5	9.1	9.5	9.9
42	96.7	93.8	92.4	91.0	8.5	9.2	9.6	10.0
47	104.5	100.9	99.0	98.5	8.7	9.4	9.7	10.1
52	110.1	107.1	105.5	103.9	8.8	9.5	9.8	10.2
57	117.9	114.1	112.3	110.5	8.9	9.6	10.0	10.4
62	125.5	121.2	119.1	117.1	9.1	9.8	10.1	10.5
67	133.5	128.5	126.2	123.8	9.3	9.9	10.3	10.7
72	141.7	136.7	133.6	130.9	9.5	10.2	10.5	10.9

Notes:

1. Net heating capacity and power include indoor fan heat at ARI ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.
2. Integrated heating capacities and power include the effects of defrost in the frost region. All heating capacities and power are at 70% outdoor relative humidity and demand defrost cycle.

Table 24. Gross heating capacities (MBH) 15 tons TWA180E heat pump with 15 tons TWE180E standard/SZVAV handler at 6000 CFM (IP)

Outdoor Temp (°F)	Integrated Heating Capacity (MBH) at Indicated Indoor Dry Bulb Temp (°F)				Total Power (kW) at Indicated Indoor Dry Bulb Temp (°F)			
	60	70	75	80	60	70	75	80
-18	61.6	58.5	57.4	56.4	12.9	13.8	14.3	14.8
-13	66.3	63.2	62	61	13	13.8	14.3	14.9
-8	71.8	68.6	67.3	66.2	13	13.9	14.4	15
-3	77.9	74.6	73.3	72	13.1	14	14.5	15.1
2	84.6	81.2	79.7	78.4	13.2	14.1	14.6	15.2
7	91.7	88.1	86.5	85	13.2	14.2	14.8	15.3
12	99.4	95.5	93.7	92.1	13.4	14.4	14.9	15.5
17	107.3	103.1	101.1	99.2	13.6	14.5	15.1	15.7
22	115.6	110.9	108.7	106.5	13.7	14.7	15.3	15.9
27	124.1	118.9	116.4	113.9	13.9	14.9	15.5	16.1
32	132.7	127	124.2	121.3	14.1	15.1	15.7	16.3
37	156.9	149.9	146.3	142.8	14.3	15.4	15.9	16.6
42	166.5	158.7	154.8	151.3	14.6	15.6	16.2	16.8
47	176.5	168.5	164.8	161.3	14.8	15.9	16.5	17.2
52	187.2	179.3	175.4	171.5	15.1	16.3	16.9	17.6
57	198.8	190.5	186.3	182.1	15.5	16.6	17.3	17.9
62	210.7	201.6	197	192.4	15.8	17	17.6	18.3
67	222.7	213	208	203.1	16.2	17.4	18	18.7
72	234.4	224.1	218.8	213.5	16.6	17.8	18.4	19.1

Notes:

1. Net heating capacity and power include indoor fan heat at ARI ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.
2. Integrated heating capacities and power include the effects of defrost in the frost region. All heating capacities and power are at 70% outdoor relative humidity and demand defrost cycle.

Table 25. Gross heating capacities (MBH) 20 tons TWA240E heat pump with 20 tons TWE240E standard/SZVAV air handler at 8000 CFM (IP)

Outdoor Temp (°F)	Integrated Heating Capacity (MBH) at Indicated Indoor Dry Bulb Temp (°F)				Total Power (kW) at Indicated Indoor Dry Bulb Temp (°F)			
	60	70	75	80	60	70	75	80
-18	77.3	69	65.9	63.5	15.9	17.3	18.1	19.1
-13	84.7	76.7	73.7	71.4	16.3	17.6	18.5	19.4
-8	92.6	85	82.1	79.9	16.6	17.9	18.8	19.7
-3	101.1	93.8	91	88.8	16.9	18.3	19.1	20
2	110.1	103.1	100.4	98.2	17.3	18.6	19.4	20.3
7	119.7	112.7	109.9	107.6	17.6	18.9	19.7	20.6
12	129.9	122.9	120	117.6	17.9	19.2	20	20.9
17	140.6	133.5	130.5	127.8	18.2	19.5	20.3	21.2
22	151.7	144.4	141.3	138.4	18.5	19.8	20.6	21.5
27	163.4	155.7	152.3	149.2	18.8	20.1	21	21.8
32	175.4	167.4	163.8	160.3	19.1	20.5	21.3	22.2
37	208	198.7	194.3	190.1	19.4	20.8	21.6	22.5
42	221.3	211.5	206.8	202.3	19.7	21.2	22	22.9
47	235.3	225.3	220.6	215.9	20.1	21.6	22.4	23.3
52	250.5	240.2	235.2	230.5	20.5	22	22.9	23.9
57	266.7	256.1	251	245.9	21	22.6	23.5	24.4
62	283.9	273	267.5	262	21.5	23.2	24.1	25.1
67	300.4	289.3	283.5	277.7	22.1	23.8	24.8	25.7
72	317.6	305.2	299	292.7	22.7	24.5	25.4	26.4

Notes:

1. Net heating capacity and power include indoor fan heat at ARI ESP. To obtain net heating at other conditions, subtract fan heat at this condition and add fan heat at new condition.
2. Integrated heating capacities and power include the effects of defrost in the frost region. All heating capacities and power are at 70% outdoor relative humidity and demand defrost cycle.

Table 26. Evaporator fan performance —TWE061 — standard air handler

External Static Pressure (Inches of Water Gauge)																						
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		1.10"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	3/4 HP Standard Motor																		1.5 HP High Static Motor			
1600	—	—	738	0.33	790	0.38	840	0.44	888	0.50	936	0.56	980	0.62	1025	0.69	1070	0.76	1111	0.83	1152	0.91
1700	719	0.33	771	0.38	821	0.44	869	0.50	914	0.56	959	0.62	1003	0.68	1047	0.75	1089	0.82	1129	0.90	1170	0.98
1800	756	0.39	804	0.44	853	0.50	898	0.56	942	0.62	985	0.69	1028	0.75	1068	0.82	1109	0.89	1149	0.97	1187	1.05
1900	792	0.45	838	0.51	884	0.57	928	0.63	971	0.69	1012	0.76	1052	0.83	1092	0.90	1131	0.97	1170	1.05	1207	1.13
2000	829	0.52	873	0.58	917	0.64	959	0.71	1000	0.77	1040	0.84	1079	0.91	1117	0.98	1155	1.06	1192	1.14	1227	1.21
2100	866	0.60	908	0.66	950	0.72	991	0.79	1030	0.86	1069	0.93	1106	1.00	1144	1.08	1179	1.15	1215	1.23	1250	1.31
2200	903	0.68	944	0.74	983	0.81	1023	0.88	1061	0.95	1099	1.02	1134	1.10	1170	1.18	1206	1.26	1241	1.34	1274	1.42
2300	940	0.78	979	0.84	1017	0.90	1055	0.97	1093	1.05	1129	1.13	1164	1.21	1198	1.28	1232	1.37	1266	1.45	1299	1.53
2400	978	0.88	1015	0.94	1052	1.01	1089	1.08	1125	1.16	1160	1.24	1194	1.32	1227	1.40	1259	1.48	1292	1.57	—	—

External Static Pressure (Inches of Water Gauge)						
	1.20"		1.30"		1.40"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP
	1.5 HP High Static Motor					
1600	1191	0.99	1229	1.07	1264	1.14
1700	1208	1.06	1246	1.14	1281	1.22
1800	1226	1.13	1263	1.22	1300	1.30
1900	1245	1.21	1281	1.30	1317	1.39
2000	1265	1.30	1300	1.39	1335	1.48
2100	1285	1.39	1319	1.48	—	—
2200	1308	1.50	—	—	—	—
2300	—	—	—	—	—	—
2400	—	—	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 27. Evaporator fan performance —TWE090 — standard air handler

External Static Pressure (Inches of Water Gauge)																						
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		1.10"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
			1.5 HP Standard Motor												2 HP High Static Motor							
2400	—	—	572	0.52	634	0.62	691	0.74	744	0.85	795	0.96	844	1.08	892	1.21	939	1.35	982	1.49	1023	1.62
2550	—	—	592	0.59	652	0.70	707	0.82	759	0.95	809	1.06	856	1.18	902	1.31	947	1.45	990	1.59	1032	1.74
2700	—	—	612	0.67	670	0.79	724	0.91	774	1.05	822	1.18	868	1.29	913	1.42	957	1.56	999	1.71	1040	1.86
2850	575	0.68	633	0.73	689	0.89	741	1.01	790	1.15	837	1.29	882	1.42	925	1.55	967	1.68	1008	1.83	1048	1.99
3000	599	0.76	654	0.82	709	0.99	760	1.13	807	1.26	853	1.41	896	1.56	939	1.69	980	1.82	1020	1.97	1058	2.12
3150	623	0.85	675	0.93	729	1.11	778	1.25	825	1.39	869	1.54	911	1.70	953	1.85	992	1.98	1031	2.12	1069	2.27
3300	647	0.95	697	1.09	749	1.22	797	1.38	842	1.52	886	1.67	927	1.83	967	2.00	1007	2.15	1045	2.30	1082	2.45
3450	673	1.08	724	1.26	770	1.32	816	1.52	861	1.67	903	1.82	943	1.98	983	2.16	1020	2.33	1058	2.48	1094	2.63
3600	698	1.21	746	1.43	790	1.43	836	1.67	880	1.83	922	1.98	961	2.14	999	2.32	1037	2.51	1073	2.68	1107	2.84

External Static Pressure (Inches of Water Gauge)																		
	1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	2 HP High Static Motor		3 HP Ultra High Static Motor															
2400	1062	1.75	1101	1.89	1137	2.03	1172	2.16	1207	2.30	1241	2.44	1273	2.58	1303	2.71	1334	2.85
2550	1071	1.88	1109	2.03	1145	2.17	1181	2.32	1215	2.46	1248	2.61	1281	2.75	1311	2.89	1341	3.04
2700	1079	2.01	1117	2.17	1154	2.32	1189	2.47	1223	2.62	1255	2.77	1288	2.93	—	—	—	—
2850	1087	2.14	1126	2.31	1161	2.47	1198	2.63	1232	2.79	1264	2.95	—	—	—	—	—	—
3000	1096	2.29	1135	2.46	1171	2.63	1206	2.80	1239	2.96	—	—	—	—	—	—	—	—
3150	1105	2.43	1142	2.60	1179	2.79	1214	2.96	—	—	—	—	—	—	—	—	—	—
3300	1118	2.61	1154	2.78	1187	2.95	—	—	—	—	—	—	—	—	—	—	—	—
3450	1130	2.79	1164	2.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	1144	3.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 28. Evaporator fan performance —TWE120 — standard air handler

	External Static Pressure (Inches of Water Gauge)																					
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		1.10"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	2 HP Standard Motor																				3 HP High Static Motor	
3200	—	—	—	—	588	0.87	625	0.95	658	1.03	691	1.13	722	1.22	753	1.32	783	1.40	812	1.48	839	1.58
3400	—	—	—	—	611	1.01	646	1.09	679	1.18	711	1.27	742	1.38	771	1.48	799	1.57	828	1.67	854	1.75
3600	—	—	598	1.04	634	1.16	668	1.26	700	1.34	731	1.44	761	1.54	789	1.65	817	1.76	844	1.86	871	1.96
3800	588	1.17	624	1.24	658	1.29	691	1.43	722	1.53	752	1.62	781	1.72	809	1.83	835	1.95	862	2.07	887	2.18
4000	616	1.34	651	1.47	682	1.45	714	1.63	745	1.73	774	1.83	801	1.93	829	2.04	855	2.16	880	2.28	905	2.40
4200	643	1.52	677	1.70	706	1.65	738	1.81	767	1.95	795	2.05	823	2.15	849	2.26	874	2.38	899	2.50	923	2.63
4400	670	1.74	703	1.94	731	1.90	761	2.00	790	2.19	818	2.29	844	2.40	870	2.51	895	2.63	919	2.75	942	2.88
4600	698	1.97	729	2.19	756	2.20	785	2.21	814	2.44	840	2.56	866	2.67	891	2.78	915	2.90	—	—	—	—
4800	726	2.23	755	2.46	785	2.53	809	2.47	837	2.65	863	2.85	889	2.96	—	—	—	—	—	—	—	—

	External Static Pressure (Inches of Water Gauge)																					
	1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"		2.10"		2.20"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	3 HP High Static Motor										3 HP High Static Motor w/Field Supplied Sheave & Belt											
3200	866	1.67	893	1.77	920	1.88	946	1.99	971	2.10	996	2.21	1019	2.32	1044	2.43	1066	2.54	1088	2.64	1109	2.75
3400	881	1.85	906	1.95	931	2.05	957	2.16	982	2.28	1007	2.40	1030	2.51	1054	2.63	1076	2.74	1098	2.86	1120	2.97
3600	896	2.05	922	2.15	946	2.25	970	2.36	993	2.47	1018	2.59	1042	2.72	1065	2.84	1087	2.96	—	—	—	—
3800	912	2.28	937	2.38	961	2.48	985	2.58	1008	2.70	1030	2.81	1053	2.93	—	—	—	—	—	—	—	—
4000	930	2.52	953	2.62	977	2.73	1000	2.83	1022	2.94	—	—	—	—	—	—	—	—	—	—	—	—
4200	947	2.76	970	2.89	993	3.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 29. Evaporator fan performance - TWE120**** - SZVAV air handler

External Static Pressure (Inches of Water Gauge)

	0.10"			0.20"			0.30"			0.40"			0.50"			0.60"			0.70"			0.80"			0.90"			1.00"		
CFM	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**
2 HP Standard Drive																														
3200	—	—	—	—	—	—	**588**	**38**	**0.87**	**625**	**41**	**0.95**	**658**	**43**	**1.03**	**691**	**45**	**1.13**	**722**	**47**	**1.22**	**753**	**49**	**1.32**	**783**	**51**	**1.40**	**812**	**53**	**1.48**
3400	—	—	—	—	—	—	**611**	**40**	**1.01**	**646**	**42**	**1.09**	**679**	**44**	**1.18**	**711**	**47**	**1.27**	**742**	**49**	**1.38**	**771**	**50**	**1.48**	**799**	**52**	**1.57**	**828**	**44**	**1.67**
3600	—	—	—	598	39	1.04	634	41	1.16	668	44	1.26	700	46	1.34	731	48	1.44	761	50	1.54	789	52	1.65	817	53	1.76	844	45	1.86
3800	588	38	1.17	624	41	1.24	658	43	1.29	691	45	1.43	722	47	1.53	752	49	1.62	781	51	1.72	809	53	1.83	835	44	1.95	862	46	2.07
4000	616	40	1.34	651	43	1.47	682	45	1.45	714	47	1.63	745	49	1.73	774	51	1.83	801	52	1.93	829	44	2.04	855	45	2.16	880	47	2.28
4200	643	42	1.52	677	44	1.70	706	46	1.65	738	48	1.81	767	50	1.95	795	42	2.05	823	44	2.15	849	45	2.26	874	46	2.38	899	48	2.50
4400	670	44	1.74	703	46	1.94	731	48	1.90	761	50	2.00	790	42	2.19	818	43	2.29	844	45	2.40	870	46	2.51	895	47	2.63	919	49	2.75
4600	698	46	1.97	729	39	2.19	756	40	2.20	785	42	2.21	814	43	2.44	840	44	2.56	866	46	2.67	891	47	2.78	915	48	2.90	—	—	—
4800	726	38	2.23	755	40	2.46	785	42	2.53	809	43	2.47	837	44	2.65	863	46	2.85	889	47	2.96	—	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)

	1.10"			1.20"			1.30"			1.40"			1.50"			1.60"			1.70"			1.80"			1.90"			2.00"		
CFM	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**
3 HP High Static Drive																														
3200	**839**	**44**	**1.58**	**866**	**46**	**1.67**	**893**	**47**	**1.77**	**920**	**49**	**1.88**	**946**	**50**	**1.99**	**971**	**51**	**2.10**	**996**	**53**	**2.21**	**1019**	**54**	**2.32**	**1044**	**55**	**2.43**	**1066**	**56**	**2.54**
3400	**854**	**45**	**1.75**	**881**	**47**	**1.85**	**906**	**48**	**1.95**	**931**	**49**	**2.05**	**957**	**51**	**2.16**	**982**	**52**	**2.28**	**1007**	**53**	**2.40**	**1030**	**54**	**2.51**	**1054**	**56**	**2.63**	**1076**	**57**	**2.74**
3600	871	46	1.96	896	47	2.05	922	49	2.15	946	50	2.25	970	51	2.36	993	53	2.47	1018	54	2.59	1042	55	2.72	1065	56	2.84	1087	58	2.96
3800	887	47	2.18	912	48	2.28	937	50	2.38	961	51	2.48	985	52	2.58	1008	53	2.70	1030	54	2.81	1053	56	2.93	—	—	—	—	—	—
4000	905	48	2.40	930	49	2.52	953	50	2.62	977	52	2.73	1000	53	2.83	1022	54	2.94	—	—	—	—	—	—	—	—	—	—	—	—
4200	923	49	2.63	947	50	2.76	970	51	2.89	993	53	3.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4400	942	50	2.88	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)

	2.10"			2.20"		
CFM	**RPM**	**HZ**	**BHP**	**RPM**	**HZ**	**BHP**
3 HP High Static Drive						
3200	**1088**	**58**	**2.64**	**1109**	**59**	**2.75**
3400	**1098**	**58**	**2.86**	**1120**	**59**	**2.97**
3600	—	—	—	—	—	—
3800	—	—	—	—	—	—
4000	—	—	—	—	—	—
4200	—	—	—	—	—	—
4400	—	—	—	—	—	—
4600	—	—	—	—	—	—
4800	—	—	—	—	—	—

Notes:

1. Bolded values denotes disallowed for Single Zone VAV Static Pressure Control Point.
2. Hz data is Variable Frequency Drive frequency.
3. Single Zone VAV Static Pressure Control Point operation disallowed at less than 340 CFM/ton.
4. Check General Data for indoor fan motor HP availability.
5. TWE120**** = D303, D304, D3R3, D3R4, D403, D404, D4R3, D4R4, DW03, DW04, DWR3, DWR4, E303, E304, E3R3, E3R4, E403, E404, E4R3, E4R4, EW03, EW04, EWR3, EWR4

Table 30. Evaporator fan performance —TWE150 — standard air handler

External Static Pressure (Inches of Water Gauge)																						
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		1.10"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
							2 HP Standard Motor										2 HP Standard Motor w/Field Supplied Sheave & Belt					
4000	—	—	—	—	—	—	614	0.85	658	0.98	698	1.12	728	1.22	756	1.32	786	1.43	817	1.56	849	1.70
4200	—	—	—	—	581	0.80	627	0.93	669	1.05	710	1.21	744	1.34	772	1.44	799	1.55	827	1.66	858	1.80
4400	—	—	—	—	595	0.88	640	1.02	682	1.15	722	1.29	758	1.45	789	1.58	814	1.68	840	1.79	867	1.92
4600	—	—	563	0.82	609	0.96	653	1.11	695	1.25	732	1.38	771	1.55	804	1.71	831	1.83	856	1.94	880	2.05
4800	—	—	579	0.90	624	1.05	667	1.20	707	1.35	745	1.50	783	1.66	817	1.83	847	1.98	872	2.10	896	2.22
5000	—	—	595	0.99	639	1.15	681	1.31	721	1.47	759	1.62	794	1.77	828	1.94	861	2.12	888	2.27	911	2.39
5200	568	0.95	612	1.09	655	1.25	695	1.42	735	1.58	771	1.74	806	1.90	840	2.06	873	2.25	903	2.43	927	2.57
5400	587	1.05	628	1.20	670	1.36	710	1.53	748	1.71	784	1.88	819	2.04	852	2.20	885	2.38	915	2.58	943	2.76
5600	605	1.16	645	1.31	686	1.48	724	1.66	762	1.83	798	2.01	832	2.19	864	2.35	896	2.52	928	2.73	956	2.92
5800	624	1.28	662	1.43	702	1.60	740	1.79	777	1.97	812	2.15	845	2.34	877	2.51	908	2.68	938	2.87	969	3.09
6000	643	1.40	679	1.56	719	1.74	755	1.92	791	2.12	826	2.30	858	2.49	891	2.68	920	2.86	950	3.03	980	3.25

External Static Pressure (Inches of Water Gauge)																						
	1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"		2.10"		2.20"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
							3 HP High Static Motor										5 HP Ultra High Static Motor					
4000	882	1.85	915	2.02	947	2.19	976	2.36	1002	2.52	1028	2.69	1053	2.86	1078	3.03	1101	3.20	1126	3.38	1148	3.54
4200	888	1.95	919	2.11	950	2.28	980	2.45	1010	2.64	1036	2.81	1061	2.98	1085	3.15	1109	3.33	1132	3.51	1155	3.69
4400	896	2.06	925	2.21	955	2.38	985	2.55	1013	2.73	1044	2.93	1070	3.11	1094	3.30	1117	3.47	1141	3.66	1163	3.84
4600	906	2.19	934	2.33	961	2.49	989	2.66	1018	2.84	1045	3.02	1074	3.22	1101	3.43	1125	3.61	1150	3.81	1172	4.00
4800	918	2.33	944	2.47	970	2.63	996	2.79	1023	2.96	1051	3.15	1078	3.34	1105	3.55	1131	3.74	1157	3.96	1179	4.15
5000	934	2.51	956	2.64	980	2.78	1005	2.93	1031	3.11	1057	3.28	1083	3.48	1109	3.67	1135	3.87	1161	4.09	1186	4.30
5200	950	2.71	972	2.83	993	2.95	1016	3.11	1040	3.27	1064	3.43	1090	3.62	1115	3.82	1139	4.01	1164	4.21	1189	4.44
5400	966	2.90	989	3.04	1008	3.17	1029	3.30	1051	3.45	1075	3.62	1098	3.79	1122	3.98	1146	4.17	1170	4.38	1193	4.58
5600	982	3.11	1004	3.25	1025	3.39	1045	3.52	1065	3.66	1085	3.81	1108	3.98	1130	4.16	1153	4.35	1176	4.55	1198	4.74
5800	996	3.29	1020	3.47	1041	3.62	1062	3.77	1081	3.91	1099	4.04	1120	4.20	1141	4.37	1162	4.55	1184	4.74	1206	4.94
6000	1008	3.46	1034	3.67	1057	3.86	1077	4.01	1097	4.16	1115	4.30	1134	4.45	1153	4.60	1174	4.78	1194	4.96	—	—

External Static Pressure (Inches of Water Gauge)				
	2.30"		2.40"	
CFM	RPM	BHP	RPM	BHP
	5 HP Ultra High Static Motor			
4000	1170	3.73	1191	3.89
4200	1179	3.88	1200	4.06
4400	1186	4.03	1208	4.23
4600	1193	4.18	1215	4.37
4800	1202	4.36	—	—
5000	1210	4.52	—	—
5200	1214	4.66	—	—
5400	1218	4.81	—	—
5600	1222	4.97	—	—
5800	—	—	—	—
6000	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 31. Evaporator fan performance - TWE150**** - SZVAV air handler

External Static Pressure (Inches of Water Gauge)																													
	0.10"			0.20"			0.30"			0.40"			0.50"			0.60"			0.70"			0.80"			0.90"			1.00"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
2 HP Standard Drive																													
4000	—	—	—	—	—	—	—	—	—	**614**	**40**	**0.85**	**658**	**43**	**0.98**	**698**	**46**	**1.12**	**728**	**48**	**1.22**	**756**	**49**	**1.32**	**786**	**51**	**1.43**	**817**	**53**	**1.56**
4200	—	—	—	—	—	—	**581**	**38**	**0.80**	**627**	**41**	**0.93**	**669**	**44**	**1.05**	**710**	**46**	**1.21**	**744**	**49**	**1.34**	**772**	**51**	**1.44**	**799**	**52**	**1.55**	**827**	**54**	**1.66**
4400	—	—	—	—	—	—	595	39	0.88	640	42	1.02	682	45	1.15	722	47	1.29	758	50	1.45	789	52	1.58	814	53	1.68	840	55	1.79
4600	—	—	—	—	—	—	609	40	0.96	653	43	1.11	695	45	1.25	732	48	1.38	771	50	1.55	804	53	1.71	831	54	1.83	856	56	1.94
4800	—	—	—	579	38	0.90	624	41	1.05	667	44	1.20	707	46	1.35	745	49	1.50	783	51	1.66	817	53	1.83	847	55	1.98	872	57	2.10
5000	—	—	—	595	39	0.99	639	42	1.15	681	45	1.31	721	47	1.47	759	50	1.62	794	52	1.77	828	54	1.94	861	56	2.12	888	45	2.27
5200	—	—	—	612	40	1.09	655	43	1.25	695	45	1.42	735	48	1.58	771	50	1.74	806	53	1.90	840	55	2.06	873	44	2.25	903	45	2.43
5400	587	38	1.05	628	41	1.20	670	44	1.36	710	46	1.53	748	49	1.71	784	51	1.88	819	54	2.04	852	43	2.20	885	45	2.38	915	46	2.58
5600	605	40	1.16	645	42	1.31	686	45	1.48	724	47	1.66	762	50	1.83	798	52	2.01	832	42	2.19	864	44	2.35	896	45	2.52	928	47	2.73
5800	624	41	1.28	662	43	1.43	702	46	1.60	740	48	1.79	777	51	1.97	812	53	2.15	845	43	2.34	877	44	2.51	908	46	2.68	938	47	2.87
6000	643	42	1.40	679	44	1.56	719	47	1.74	755	49	1.92	791	52	2.12	826	42	2.30	858	43	2.49	891	45	2.68	920	46	2.86	950	48	3.03

External Static Pressure (Inches of Water Gauge)																													
	1.10"			1.20"			1.30"			1.40"			1.50"			1.60"			1.70"			1.80"			1.90"			2.00"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
5 HP High Static Drive																													
4000	**849**	**43**	**1.70**	**882**	**44**	**1.85**	**915**	**46**	**2.02**	**947**	**48**	**2.19**	**976**	**49**	**2.36**	**1002**	**50**	**2.52**	**1028**	**52**	**2.69**	**1053**	**53**	**2.86**	**1078**	**54**	**3.03**	**1101**	**55**	**3.20**
4200	**858**	**43**	**1.80**	**888**	**45**	**1.95**	**919**	**46**	**2.11**	**950**	**48**	**2.28**	**980**	**49**	**2.45**	**1010**	**51**	**2.64**	**1036**	**52**	**2.81**	**1061**	**53**	**2.98**	**1085**	**55**	**3.15**	**1109**	**56**	**3.33**
4400	867	44	1.92	896	45	2.06	925	47	2.21	955	48	2.38	985	50	2.55	1013	51	2.73	1044	53	2.93	1070	54	3.11	1094	55	3.30	1117	56	3.47
4600	880	44	2.05	906	46	2.19	934	47	2.33	961	48	2.49	989	50	2.66	1018	51	2.84	1045	53	3.02	1074	54	3.22	1101	55	3.43	1125	57	3.61
4800	896	45	2.22	918	46	2.33	944	48	2.47	970	49	2.63	996	50	2.79	1023	52	2.96	1051	53	3.15	1078	54	3.34	1105	56	3.55	1131	57	3.74
5000	911	46	2.39	934	47	2.51	956	48	2.64	980	49	2.78	1005	51	2.93	1031	52	3.11	1057	53	3.28	1083	55	3.48	1109	56	3.67	1135	57	3.87
5200	927	47	2.57	950	48	2.71	972	49	2.83	993	50	2.95	1016	51	3.11	1040	52	3.27	1064	54	3.43	1090	55	3.62	1115	56	3.82	1139	57	4.01
5400	943	48	2.76	966	49	2.90	989	50	3.04	1008	51	3.17	1029	52	3.30	1051	53	3.45	1075	54	3.62	1098	55	3.79	1122	57	3.98	1146	58	4.17
5600	956	48	2.92	982	49	3.11	1004	51	3.25	1025	52	3.39	1045	53	3.52	1065	54	3.66	1085	55	3.81	1108	56	3.98	1130	57	4.16	1153	58	4.35
5800	969	49	3.09	996	50	3.29	1020	51	3.47	1041	52	3.62	1062	54	3.77	1081	54	3.91	1099	55	4.04	1120	56	4.20	1141	57	4.37	1162	59	4.55
6000	980	49	3.25	1008	51	3.46	1034	52	3.67	1057	53	3.86	1077	54	4.01	1097	55	4.16	1115	56	4.30	1134	57	4.45	1153	58	4.60	1174	59	4.78

External Static Pressure (Inches of Water Gauge)												
	2.10"			2.20"			2.30"			2.40"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
5 HP High Static Drive												
4000	**1126**	**57**	**3.38**	**1148**	**58**	**3.54**	**1170**	**59**	**3.73**	**1191**	**60**	**3.89**
4200	**1132**	**57**	**3.51**	**1155**	**58**	**3.69**	**1179**	**59**	**3.88**	**1200**	**60**	**4.06**
4400	1141	57	3.66	1163	59	3.84	1186	60	4.03	—	—	—
4600	1150	58	3.81	1172	59	4.00	1193	60	4.18	—	—	—
4800	1157	58	3.96	1179	59	4.15	—	—	—	—	—	—
5000	1161	58	4.09	1186	60	4.30	—	—	—	—	—	—
5200	1164	59	4.21	1189	60	4.44	—	—	—	—	—	—
5400	1170	59	4.38	1193	60	4.58	—	—	—	—	—	—
5600	1176	59	4.55	1198	60	4.74	—	—	—	—	—	—
5800	1184	60	4.74	—	—	—	—	—	—	—	—	—
6000	1194	60	4.96	—	—	—	—	—	—	—	—	—

Notes:

1. Bolded values denotes disallowed for Single Zone VAV Static Pressure Control Point.
2. Hz data is Variable Frequency Drive frequency.
3. Single Zone VAV Static Pressure Control Point operation disallowed at less than 340 CFM/ton.
4. Check General Data for indoor fan motor HP availability.
5. TWE150****: E303, E304, E3R3, E3R4, E403, E404, E4R3, E4R4, EW03, EW04, EWR3, EWR4

Table 32. Evaporator fan performance —TWE180 — standard air handler

External Static Pressure (Inches of Water Gauge)																						
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"		1.10"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	3 HP Standard Motor w/ Field Supplied Sheave & Belt								3 HP Standard Motor												5 HP High Static Motor	
4800	492	0.80	539	0.94	583	1.08	624	1.21	663	1.34	701	1.49	738	1.66	774	1.82	807	1.98	839	2.14	869	2.30
5100	517	0.95	562	1.08	604	1.24	644	1.38	681	1.52	718	1.67	753	1.83	788	2.00	821	2.18	853	2.35	883	2.52
5400	542	1.11	585	1.25	625	1.41	663	1.57	700	1.71	735	1.86	769	2.02	802	2.20	835	2.38	866	2.57	897	2.75
5700	567	1.29	609	1.43	647	1.60	684	1.78	719	1.93	753	2.08	786	2.24	818	2.41	849	2.60	881	2.80	910	2.99
6000	593	1.48	632	1.64	669	1.80	705	1.99	739	2.16	773	2.32	804	2.48	835	2.66	865	2.84	895	3.04	924	3.25
6300	619	1.70	656	1.86	692	2.03	726	2.22	760	2.42	792	2.59	823	2.75	853	2.93	882	3.12	910	3.31	939	3.52
6600	644	1.94	681	2.11	715	2.28	748	2.48	781	2.69	811	2.87	841	3.04	871	3.22	899	3.40	927	3.60	954	3.81
6900	670	2.20	705	2.37	739	2.55	771	2.75	802	2.97	832	3.18	861	3.36	890	3.54	917	3.72	944	3.92	971	4.13
7200	696	2.49	730	2.66	763	2.85	794	3.05	824	3.27	853	3.49	881	3.70	909	3.89	936	4.08	963	4.28	988	4.48

External Static Pressure (Inches of Water Gauge)																						
	1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"		2.10"		2.20"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	5 HP High Static Motor												5 HP High Static Motor w/ Field Supplied Sheave & Belt									
4800	897	2.46	926	2.62	953	2.77	979	2.93	1004	3.08	1029	3.24	1051	3.38	1075	3.54	1097	3.69	1120	3.84	1141	3.99
5100	911	2.69	940	2.86	965	3.02	992	3.19	1017	3.36	1042	3.52	1065	3.68	1088	3.84	1111	4.02	1132	4.17	1154	4.33
5400	925	2.93	953	3.11	980	3.29	1005	3.47	1031	3.65	1055	3.82	1078	3.99	1102	4.17	1123	4.34	1146	4.52	1167	4.69
5700	940	3.19	966	3.38	993	3.57	1019	3.75	1044	3.94	1068	4.13	1092	4.32	1114	4.50	1137	4.69	1159	4.87	1180	5.06
6000	953	3.45	980	3.65	1008	3.86	1033	4.06	1057	4.26	1081	4.45	1105	4.66	1129	4.86	1150	5.05	—	—	—	—
6300	967	3.73	995	3.95	1022	4.17	1046	4.37	1071	4.59	1095	4.79	1119	5.01	—	—	—	—	—	—	—	—
6600	981	4.02	1009	4.25	1035	4.48	1061	4.71	1085	4.93	—	—	—	—	—	—	—	—	—	—	—	—
6900	998	4.35	1022	4.57	1049	4.81	1074	5.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	1014	4.70	1039	4.93	1063	5.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)				
	2.30”		2.40”	
CFM	RPM	BHP	RPM	BHP
	5 HP High Static Motor w/ Field Supplied Sheave & Belt			
4800	1162	4.14	1183	4.30
5100	1175	4.49	1196	4.66
5400	1188	4.86	1209	5.04
5700	—	—	—	—
6000	—	—	—	—
6300	—	—	—	—
6600	—	—	—	—
6900	—	—	—	—
7200	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 33. Evaporator fan performance - TWE180**** - SZVAV air handler

External Static Pressure (Inches of Water Gauge)																												
	0.10"			0.20"			0.30"			0.40"			0.50"			0.60"			0.70"			0.80"			0.90"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
														3 HP Standard Drive													
4800	—	—	—	**539**	**38**	**0.94**	**583**	**41**	**1.08**	**624**	**44**	**1.21**	**663**	**47**	**1.34**	**701**	**49**	**1.49**	**738**	**52**	**1.66**	**774**	**54**	**1.82**	**807**	**57**	**1.98**
5100	—	—	—	**562**	**39**	**1.08**	**604**	**42**	**1.24**	**644**	**45**	**1.38**	**681**	**48**	**1.52**	**718**	**50**	**1.67**	**753**	**53**	**1.83**	**788**	**55**	**2.00**	**821**	**58**	**2.18**
5400	542	38	1.11	585	41	1.25	625	44	1.41	663	47	1.57	700	49	1.71	735	52	1.86	769	54	2.02	802	56	2.20	835	59	2.38
5700	567	40	1.29	609	43	1.43	647	45	1.60	684	48	1.78	719	51	1.93	753	53	2.08	786	55	2.24	818	57	2.41	849	60	2.60
6000	593	42	1.48	632	44	1.64	669	47	1.80	705	50	1.99	739	52	2.16	773	54	2.32	804	56	2.48	835	59	2.66	865	44	2.84
6300	619	43	1.70	656	46	1.86	692	49	2.03	726	51	2.22	760	53	2.42	792	56	2.59	823	58	2.75	853	60	2.93	882	44	3.12
6600	644	45	1.94	681	48	2.11	715	50	2.28	748	53	2.48	781	55	2.69	811	57	2.87	841	59	3.04	871	44	3.22	899	45	3.40
6900	670	47	2.20	705	50	2.37	739	52	2.55	771	54	2.75	802	56	2.97	832	42	3.18	861	43	3.36	890	45	3.54	917	46	3.72
7200	696	49	2.49	730	51	2.66	763	54	2.85	794	56	3.05	824	42	3.27	853	43	3.49	881	44	3.70	909	46	3.89	936	47	4.08

External Static Pressure (Inches of Water Gauge)																												
	1.00"			1.10"			1.20"			1.30"			1.40"			1.50"			1.60"			1.70"			1.80"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
	3 HP Standard Drive													5 HP High Static Drive													
4800	**839**	**59**	**2.14**	**869**	**44**	**2.30**	**897**	**45**	**2.46**	**926**	**47**	**2.62**	**953**	**48**	**2.77**	**979**	**49**	**2.93**	**100-4**	**51**	**3.08**	**102-9**	**52**	**3.24**	**105-1**	**53**	**3.38**
5100	**853**	**60**	**2.35**	**883**	**44**	**2.52**	**911**	**46**	**2.69**	**940**	**47**	**2.86**	**965**	**49**	**3.02**	**992**	**50**	**3.19**	**101-7**	**51**	**3.36**	**104-2**	**52**	**3.52**	**106-5**	**54**	**3.68**
5400	866	44	2.57	897	45	2.75	925	47	2.93	953	48	3.11	980	49	3.29	1005	51	3.47	1031	52	3.65	1055	53	3.82	1078	54	3.99
5700	881	44	2.80	910	46	2.99	940	47	3.19	966	49	3.38	993	50	3.57	1019	51	3.75	1044	53	3.94	1068	54	4.13	1092	55	4.32
6000	895	45	3.04	924	47	3.25	953	48	3.45	980	49	3.65	1008	51	3.86	1033	52	4.06	1057	53	4.26	1081	54	4.45	1105	56	4.66
6300	910	46	3.31	939	47	3.52	967	49	3.73	995	50	3.95	1022	51	4.17	1046	53	4.37	1071	54	4.59	1095	55	4.79	1119	56	5.01
6600	927	47	3.60	954	48	3.81	981	49	4.02	1009	51	4.25	1035	52	4.48	1061	53	4.71	1085	55	4.93	—	—	—	—	—	—
6900	944	48	3.92	971	49	4.13	998	50	4.35	1022	51	4.57	1049	53	4.81	1074	54	5.04	—	—	—	—	—	—	—	—	—
7200	963	49	4.28	988	50	4.48	1014	51	4.70	1039	52	4.93	1063	54	5.15	—	—	—	—	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)																		
	1.90"			2.00"			2.10"			2.20"			2.30"			2.40"		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
	5 HP High Static Drive																	
4800	**107-5**	**54**	**3.54**	**109-7**	**55**	**3.69**	**112-0**	**56**	**3.84**	**114-1**	**57**	**3.99**	**116-2**	**59**	**4.14**	**118-3**	**60**	**4.30**
5100	**108-8**	**55**	**3.84**	**111-1**	**56**	**4.02**	**113-2**	**57**	**4.17**	**115-4**	**58**	**4.33**	**117-5**	**59**	**4.49**	**119-6**	**60**	**4.66**
5400	1102	56	4.17	1123	57	4.34	1146	58	4.52	1167	59	4.69	1188	60	4.86	—	—	—
5700	1114	56	4.50	1137	57	4.69	1159	58	4.87	1180	59	5.06	—	—	—	—	—	—
6000	1129	57	4.86	1150	58	5.05	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes:

1. Bolded values denotes disallowed for Single Zone VAV Static Pressure Control Point.
2. Hz data is Variable Frequency Drive frequency.
3. Single Zone VAV Static Pressure Control Point operation disallowed at less than 340 CFM/ton.
4. Check General Data for indoor fan motor HP availability.
5. TWE180**** = E303, E304, E3R3, E3R4, E403, E404, E4R3, E4R4, EW03, EW04, EWR3, EWR4

Table 34. Evaporator fan performance — TWE240 — standard air handler

External Static Pressure (Inches of Water Gauge)																				
	0.10"		0.20"		0.30"		0.40"		0.50"		0.60"		0.70"		0.80"		0.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	3 HP Low Static Motor																5 HP Standard Motor			
6400	—	—	—	—	652	1.55	693	1.70	732	1.86	769	2.02	802	2.17	833	2.33	867	2.53	901	2.75
6800	—	—	—	—	677	1.79	717	1.96	754	2.12	791	2.29	824	2.46	855	2.62	885	2.79	916	3.00
7200	—	—	661	1.87	703	2.05	742	2.24	778	2.42	812	2.59	846	2.77	878	2.95	906	3.11	934	3.29
7600	647	1.98	688	2.15	729	2.34	766	2.55	802	2.74	835	2.92	868	3.10	900	3.29	929	3.48	956	3.66
8000	677	2.29	716	2.47	755	2.67	791	2.88	826	3.09	858	3.28	889	3.47	921	3.67	951	3.87	979	4.06
8400	707	2.63	744	2.82	781	3.02	817	3.24	851	3.46	883	3.68	913	3.87	942	4.07	972	4.28	1000	4.49
8800	737	3.01	773	3.21	808	3.41	843	3.63	876	3.87	907	4.10	937	4.31	965	4.52	994	4.73	1022	4.95
9200	767	3.41	802	3.63	836	3.84	869	4.06	901	4.30	932	4.55	961	4.79	989	5.00	1016	5.21	1044	5.44
9600	797	3.86	831	4.08	863	4.30	896	4.53	927	4.78	957	5.03	986	5.29	1013	5.52	1040	5.75	1065	5.97

External Static Pressure (Inches of Water Gauge)																				
	1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90"		2.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	5 HP Standard Motor				5 HP High Standard Motor w/Field Supplied Sheaves								7.5 HP Ultra High Static Motor				7.5 HP Ultra High Static Motor w/Field Supplied Fan Sheave & Belt			
6400	934	2.95	965	3.16	996	3.37	1028	3.58	1059	3.81	1091	4.03	1120	4.25	1148	4.46	1177	4.69	1204	4.90
6800	948	3.22	979	3.45	1008	3.66	1039	3.89	1069	4.12	1099	4.35	1128	4.58	1156	4.81	1185	5.05	1212	5.28
7200	964	3.51	994	3.75	1024	3.99	1052	4.22	1079	4.45	1108	4.69	1136	4.93	1166	5.19	1193	5.43	1219	5.67
7600	982	3.85	1011	4.07	1039	4.31	1066	4.56	1095	4.82	1121	5.06	1148	5.31	1174	5.56	1202	5.82	1228	6.07
8000	1004	4.25	1029	4.45	1055	4.67	1082	4.92	1109	5.19	1136	5.46	1161	5.71	1186	5.97	1213	6.24	1236	6.48
8400	1027	4.70	1051	4.90	1075	5.10	1100	5.33	1125	5.58	1151	5.85	1177	6.14	1202	6.42	1225	6.68	1250	6.96
8800	1049	5.17	1074	5.39	1097	5.59	1120	5.81	1144	6.03	1168	6.30	1192	6.57	1216	6.85	1241	7.16	1264	7.44
9200	1071	5.68	1096	5.90	1120	6.13	1143	6.34	1164	6.56	1186	6.79	1209	7.05	1233	7.35	—	—	—	—
9600	1092	6.21	1117	6.45	1142	6.69	1166	6.93	1187	7.15	1208	7.38	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)								
	2.10"		2.20"		2.30"		2.40"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	7.5 HP Ultra High Static Motor w/Field Supplied Fan Sheave & Belt							
6400	1230	5.11	1257	5.33	1282	5.54	1308	5.77
6800	1239	5.52	1265	5.75	1290	5.98	1315	6.20
7200	1246	5.92	1272	6.17	1298	6.41	1323	6.66
7600	1255	6.35	1282	6.61	1306	6.86	—	—
8000	1262	6.76	1289	7.04	1313	7.31	—	—
8400	1273	7.22	—	—	—	—	—	—
8800	—	—	—	—	—	—	—	—
9200	—	—	—	—	—	—	—	—
9600	—	—	—	—	—	—	—	—

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Check General Data for indoor fan motor HP availability.
4. Factory supplied motors, in commercial equipment, are definite purpose motors, specifically designed and tested to operate reliably and continuously at all cataloged conditions. Using the full horsepower range of our fan motors as shown in our tabular data will not result in nuisance tripping or premature motor failure. Our product's warranty will not be affected.

Important: *See fan motor values in Table 36, p. 49- Table 39, p. 51.*

Table 35. Evaporator fan performance - TWE240**** - SZVAV air handler

External Static Pressure (Inches of Water Gauge)																													
	0.10"			0.20" ESP			0.30" ESP			0.40" ESP			0.50" ESP			0.60" ESP			0.70" ESP			0.80" ESP			0.90" ESP			1.00" ESP		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
													5 HP Standard Drive																	
6400	—	—	—	—	—	—	—	—	—	—	—	—	**732**	**39**	**1.86**	**769**	**41**	**2.02**	**802**	**42**	**2.17**	**833**	**44**	**2.33**	**867**	**46**	**2.53**	**901**	**47**	**2.75**
6800	—	—	—	—	—	—	—	—	—	**717**	**38**	**1.96**	**754**	**40**	**2.12**	**791**	**42**	**2.29**	**824**	**43**	**2.46**	**855**	**45**	**2.62**	**885**	**47**	**2.79**	**916**	**48**	**3.00**
7200	—	—	—	—	—	—	—	—	—	742	39	2.24	778	41	2.42	812	43	2.59	846	45	2.77	878	46	2.95	906	48	3.11	934	49	3.29
7600	—	—	—	—	—	—	729	38	2.34	766	40	2.55	802	42	2.74	835	44	2.92	868	46	3.10	900	47	3.29	929	49	3.48	956	50	3.66
8000	—	—	—	716	38	2.47	755	40	2.67	791	42	2.88	826	44	3.09	858	45	3.28	889	47	3.47	921	49	3.67	951	50	3.87	979	52	4.06
8400	—	—	—	744	39	2.82	781	41	3.02	817	43	3.24	851	45	3.46	883	47	3.68	913	48	3.87	942	50	4.07	972	51	4.28	1000	53	4.49
8800	737	39	3.01	773	41	3.21	808	43	3.41	843	44	3.63	876	46	3.87	907	48	4.10	937	49	4.31	965	51	4.52	994	52	4.73	1022	54	4.95
9200	767	40	3.41	802	42	3.63	836	44	3.84	869	46	4.06	901	47	4.30	932	49	4.55	961	51	4.79	989	52	5.00	1016	46	5.21	1044	47	5.44
9600	797	42	3.86	831	44	4.08	863	45	4.30	896	47	4.53	927	49	4.78	957	50	5.03	986	45	5.29	1013	46	5.52	1040	47	5.75	1065	48	5.97

External Static Pressure (Inches of Water Gauge)																													
	1.10" ESP			1.20" ESP			1.30" ESP			1.40" ESP			1.50" ESP			1.60" ESP			1.70" ESP			1.80" ESP			1.90" ESP			2.00" ESP		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
							5 HP Standard Drive															7.5 HP Standard Drive								
6400	**934**	**49**	**2.95**	**965**	**51**	**3.16**	**996**	**52**	**3.37**	**1028**	**54**	**3.58**	**1059**	**56**	**3.81**	**1091**	**57**	**4.03**	**1120**	**51**	**4.25**	**1148**	**52**	**4.46**	**1177**	**53**	**4.69**	**1204**	**55**	**4.90**
6800	**948**	**50**	**3.22**	**979**	**52**	**3.45**	**1008**	**53**	**3.66**	**1039**	**55**	**3.89**	**1069**	**56**	**4.12**	**1099**	**50**	**4.35**	**1128**	**51**	**4.58**	**1155**	**53**	**4.81**	**1185**	**54**	**5.05**	**1212**	**55**	**5.28**
7200	964	51	3.51	994	52	3.75	1024	54	3.99	1052	55	4.22	1079	57	4.45	1108	50	4.69	1136	52	4.93	1166	53	5.19	1193	54	5.43	1219	55	5.67
7600	982	52	3.85	1011	53	4.07	1039	55	4.31	1066	56	4.56	1095	50	4.82	1121	51	5.06	1148	52	5.31	1174	53	5.56	1202	55	5.82	1228	56	6.07
8000	1004	53	4.25	1029	54	4.45	1055	56	4.67	1082	57	4.92	1109	50	5.19	1136	52	5.46	1161	53	5.71	1186	54	5.97	1213	55	6.24	1236	56	6.48
8400	1027	54	4.70	1051	55	4.90	1075	57	5.10	1100	50	5.33	1125	51	5.58	1151	52	5.85	1177	53	6.14	1202	55	6.42	1225	56	6.68	1250	57	6.96
8800	1049	48	5.17	1074	49	5.39	1097	50	5.59	1120	51	5.81	1144	52	6.03	1168	53	6.30	1192	54	6.57	1216	55	6.85	1241	56	7.16	1264	57	7.44
9200	1071	49	5.68	1096	50	5.90	1120	51	6.13	1143	52	6.34	1164	53	6.56	1186	54	6.79	1209	55	7.05	1233	56	7.35	—	—	—	—	—	—
9600	1092	50	6.21	1117	51	6.45	1142	52	6.69	1166	53	6.93	1187	54	7.15	1208	55	7.38	—	—	—	—	—	—	—	—	—	—	—	—

External Static Pressure (Inches of Water Gauge)												
	2.10" ESP			2.20" ESP			2.30" ESP			2.40" ESP		
CFM	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP	RPM	HZ	BHP
	7.5 HP Standard Drive											
6400	**1230**	**56**	**5.11**	**1257**	**57**	**5.33**	**1282**	**58**	**5.54**	**1308**	**59**	**5.77**
6800	**1239**	**56**	**5.52**	**1265**	**57**	**5.75**	**1290**	**59**	**5.98**	**1315**	**60**	**6.20**
7200	1246	57	5.92	1272	58	6.17	1298	59	6.41	1323	60	6.66
7600	1255	57	6.35	1282	58	6.61	1306	59	6.86	—	—	—
8000	1262	57	6.76	1289	59	7.04	1313	60	7.31	—	—	—
8400	1273	58	7.22	—	—	—	—	—	—	—	—	—
8800	—	—	—	—	—	—	—	—	—	—	—	—
9200	—	—	—	—	—	—	—	—	—	—	—	—
9600	—	—	—	—	—	—	—	—	—	—	—	—

Notes:

1. Bolded values denotes disallowed for Single Zone VAV Static Pressure Control Point.
2. Hz data is Variable Frequency Drive frequency.
3. Single Zone VAV Static Pressure Control Point operation disallowed at less than 340 CFM/ton.
4. Check General Data for indoor fan motor HP availability.
5. TWE240**** = E303, E304, E3R3, E3R4, E403, E404, E4R3, E4R4, EW03, EW04, EWR3, EWR4

Table 36. Low static fan motors - standard air handlers

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE180.	Standard Motor with Field Supplied Components 3 HP	0 1 2 3 4 5	649 613 557 500 444 469	Variable Pitch (2.4 - 3.4 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VL40	Fixed Pitch (9.5 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK105	Browning AX59
TWE240	Low Static Motor 3 HP	0 1 2 3 4 5	855 812 769 726 683 640	N/A	N/A	N/A
TWE300	Standard Motor with Field Supplied Components 7.5 HP	1 2 3 4 5 6	929 884 839 793 748 703	Variable Pitch (3.1 - 4.1 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VL44	Fixed Pitch (15.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK160	Browning BX70

Table 37. Standard fan motors - standard air handlers

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE061	Standard Motor .75 HP	0 1 2 3 4 5	1071 1000 928 857 785 714	N/A	N/A	N/A
TWE090	Standard Motor 1.5 HP	0 1 2 3 4 5	847 791 734 678 621 565	N/A	N/A	N/A
TWE120	Standard Motor 2 HP	0 1 2 3 4 5	818 773 727 682 636 591	N/A	N/A	N/A
TWE150	Standard Motor 2 HP	0 1 2 3 4 5	768 725 683 640 598 555	N/A	N/A	N/A
TWE180	Standard Motor 3 HP	0 1 2 3 4 5 6	845 812 728 745 711 678 644	N/A	N/A	N/A

Table 37. Standard fan motors - standard air handlers (continued)

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE240	Standard Motor 5 HP	0	966	N/A	N/A	N/A
		1	932			
		2	899			
		3	865			
		4	831			
		5	798			
		6	764			

Table 38. High static fan motors - standard air handlers

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE061	High Static Motor 1.5 HP	0	1346	N/A	N/A	N/A
		1	1279			
		2	1212			
		3	1144			
		4	1077			
		5	1010			
TWE090	High Static Motor 2 HP	0	1094	N/A	N/A	N/A
		1	1039			
		2	984			
		3	930			
		4	875			
		5	820			
TWE120	High Static Motor 3 HP	0	972	N/A	N/A	N/A
		1	923			
		2	875			
		3	826			
		4	778			
		5	729			
TWE120	High Static Motor with Field Supplied Components 3 HP	0	1129	Variable Pitch (2.8 - 3.8 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VP44	Fixed Pitch (6.0 Inch Pitch Diameter), 1.0 Inch Bore, Single Groove, Browning AK64	Browning A50
		1	1073			
		2	1016			
		3	960			
		4	903			
		5	847			
TWE150	High Static Motor 3 HP	0	913	N/A	N/A	N/A
		1	862			
		2	806			
		3	749			
		4	693			
		5	659			
TWE150	High Static Motor with Field Supplied Components 2 HP	0	1094	Variable Pitch (2.4 - 3.4 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VL40	Fixed Pitch (6.7 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning AK71	Browning A55
		1	1039			
		2	991			
		3	942			
		4	893			
		5	820			
TWE180	High Static Motor 5 HP	0	1024	N/A	N/A	N/A
		1	989			
		2	953			
		3	918			
		4	882			
		5	847			
		6	811			

Table 38. High static fan motors - standard air handlers (continued)

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE180	High Static Motor with Field Supplied Components 5 HP	0 1 2 3 4 5 6	1217 1175 1118 1062 1006 964 964	Variable Pitch (3.4 - 4.4 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP50	Fixed Pitch (7.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK72	Browning BX58
TWE240	Standard Motor with Field Supplied Components 5 HP	0 1 2 3 4 5 6	1091 1053 1015 978 940 902 864	Variable Pitch (3.4 - 4.4 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP50	Fixed Pitch (7.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK115	Browning BX57

Table 39. Ultra high static fan motors - standard air handlers

Model	Motor	Motor Sheave Turns Open	Nominal RPM	Required Field Supplied Components		
				Motor Sheave	Blower Sheave	Belt
TWE090	Ultra High Static Motor 3 HP	0 1 2 3 4 5 —	1346 1241 1136 1030 925 820 —	N/A	N/A	N/A
TWE150	Ultra High Static Motor 5 HP	0 1 2 3 4 5 6	1217 1175 1133 1091 1048 1006 964	N/A	N/A	N/A
TWE240	Ultra High Static Motor 7.5 HP	0 1 2 3 4 5 6	1294 1243 1191 1140 1089 1037 986	N/A	N/A	N/A
TWE240	Ultra High Static Motor with Field Supplied Components 7.5 HP	0 1 2 3 4 5 6	1315 1281 1243 1205 1168 1100 1111	Variable Pitch (2.8 - 3.8 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP44	Fixed Pitch (10.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK110	Browning BX62

Table 40. Discharge plenum and grille assembly throw distance (ft) — standard/SZVAV/2Speed VFD air handler

Tons	Model No.	CFM	Louver Angle Deflection Position			
			Straight	20°	40°	55°
5	TWE061D/E	1600	42	31	26	20
		1800	46	37	29	22
		2000	48	43	33	24
		2200	51	50	36	25
		2400	54	57	39	29

Table 40. Discharge plenum and grille assembly throw distance (ft) — standard/SZVAV/2Speed VFD air handler (continued)

7.5	TWE090D/E	2400	52	43	35	29
		2700	55	48	38	31
		3000	58	53	42	32
		3300	62	57	46	35
		3600	66	60	50	37
10	TWE120D/E	3200	56	46	38	30
		3600	62	51	42	33
		4000	66	57	47	35
		4400	71	62	52	38
		4800	76	67	56	42
12.5	TWE150E	4900	47	38	32	25
		5400	52	44	37	29
		6000	57	49	41	32
		6600	61	53	43	34
		7200	65	57	46	35
15	TWE180E	4900	47	38	32	25
		5400	52	44	37	29
		6000	57	49	41	32
		6600	61	53	43	34
		7200	65	57	46	35
20	TWE240E	6400	56	46	38	30
		7200	62	51	42	33
		8000	66	57	47	35
		8800	71	62	52	38
		9600	76	67	56	42

Notes:

1. Assumes incompressible and adiabatic flow through grille.
2. Throw distance values are based on a terminal velocity of 75 FPM.
3. Throw distance values at other terminal velocities may be established by multiplying throw distances in the table above by throw factor as follows: for 50 FPM terminal velocity, multiply by 1.50 throw factor; for 100 FPM terminal velocity, multiply by 0.75 throw factor; for 150 FPM terminal velocity, multiply by 0.50 throw factor.
4. SZVAV/2-Speed VFD available for 10–25 ton only.

Table 41. Electric heat discharge plenum and grille airflow (CFM)—standard/SZVAV/2-Speed VFD air handler

Tons	Unit Model No.	Electric Heater Model No.	Airflow (CFM)	
			Minimum	Maximum
5	TWE061D1, E1	BAYHTRL117A	2000	2400
	TWE061D3, E3	BAYHTRL315A	2000	2400
	TWE061D4, E4	BAYHTRL415A	2000	2400
7.5	TWE090D1, E1	BAYHTRL117A	3000	3600
	TWE090D3, E3	BAYHTRL123A	3375	3600
	TWE090D3, E3[a]	BAYHTRL315A	2625	3600
	TWE090D3, E3[a]	BAYHTRL325A	3000	3600
	TWE090D3, E3[a]	BAYHTRL415A	2625	3600
	TWE090D3, E3[a]	BAYHTRL425A	2625	3600
10	TWE120D1, E1	BAYHTRL117A	3500	4800
	TWE120D3, E3	BAYHTRL123A	4000	4800
	TWE120D3, E3	BAYHTRL315A	4000	4800
	TWE120D4, E4	BAYHTRL325A	3500	4800
	TWE120D4, E4	BAYHTRL415A	3500	4800
	TWE120D4, E4	BAYHTRL425A	3500	4800
12.5	TWE150E3	BAYHTRM330A	5250	6000
	TWE150E3[a], TWE150E4	BAYHTRM430A	5250	6000
15	TWE180E3	BAYHTRM330A	5250	7200
	TWE180E3[a], TWE180E4	BAYHTRM430A	5250	7200
20	TWE240E3	BAYHTRM330A	7000	9600
	TWE240E4	BAYHTRM430A	7000	9600

Note: SZVAV/2-Speed VFD available for 10–25 ton only.

[a] Standard Air Handler wired for 460V, use with BAYHTR*4** only. See Electric Heaters in the Accessories chapter.

Table 42. Static pressure drop through accessories (inches of water column) — Standard/SZVAV/2-Speed VFD air handler

Tons	Unit Model No.	CFM	Return Grille	Discharge Plenum & Grille	Electric Heaters (kW)				Hydronic Coils	
					5–10	15–20	25–30	35–50	Steam	Hot Water
5	TWE061D/E	1600	0.12	0.21	0.08	0.08	0.14	—	0.44	0.31
		2000	0.18	0.33	0.13	0.13	0.19	—	0.62	0.44
		2400	0.28	0.47	0.19	0.19	0.37	—	0.80	0.59
7.5	TWE090D/E	2400	0.08	0.27	0.03	0.06	0.08	0.12	0.38	0.23
		3000	0.13	0.40	0.06	0.12	0.17	0.23	0.50	0.33
		3600	0.18	0.58	0.08	0.16	0.24	0.32	0.66	0.44
10	TWE120D/E	3200	0.70	0.43	0.06	0.13	0.19	0.26	0.42	0.40
		4000	0.11	0.66	0.10	0.20	0.30	0.40	0.59	0.56
		4800	0.15	0.95	0.14	0.28	0.42	0.57	0.76	0.75
12.5	TWE150E	4000	0.06	0.16	0.02	0.02	0.04	0.08	0.28	0.24
		5000	0.10	0.25	0.03	0.03	0.08	0.12	0.44	0.38
		6000	0.14	0.36	0.04	0.05	0.12	0.17	0.64	0.54
15	TWE180E	4800	0.09	0.23	0.03	0.03	0.06	0.08	0.46	0.38
		6000	0.15	0.34	0.06	0.06	0.12	0.17	0.64	0.54
		7200	0.20	0.49	0.08	0.08	0.16	0.24	0.82	0.72
20	TWE240E	6400	0.11	0.43	0.06	0.06	0.13	0.19	0.50	0.41
		8000	0.17	0.66	0.10	0.10	0.20	0.30	0.70	0.58
		9600	0.23	0.95	0.14	0.14	0.28	0.42	0.89	0.78

Notes:

1. SZVAV/2-Speed VFD available for 10–25 ton only.
2. Return air filter ESP included in Fan Performance Table data.
3. Discharge plenum and grille - at louver opening angle of 42°. For ESP at other angle openings, see accessory installation instructions.

Table 43. Auxiliary electric heat capacity - standard/SZVAV/2-Speed air handler

Unit Model No.	Total kW	No. of Stages	Stage 1		Stage 2		Total	
			kW Input	BTUH Output	kW Input	BTUH Output	kW Input	BTUH Output
TWE061D3, TWE061D4, TWE061DW, TWE061E3, TWE061E4	5.00	1	5.00	17065	–	–	5.00	17065
	9.96	1	9.96	33993	–	–	9.96	33993
	14.96	1	14.96	51058	–	–	14.96	51058
	24.92	2	14.96	51058	9.96	33993	24.92	85051
TWE090D3[a], TWE120D3[a], TWE120DW, TWE090E3[a], TWE120D4, TWE120E4, TWE120E3[a], TWE120EW	5.00	1	5.00	17065	–	–	5.00	17065
	9.96	1	9.96	33993	–	–	9.96	33993
	14.96	1	14.96	51058	–	–	14.96	51058
	24.92	2	14.96	51058	9.96	33993	24.92	85051
TWE061D1,TWE090D1, TWE120D1, TWE061E1, TWE090E1, TWE120E1	5.76	1	5.76	19659	–	–	5.76	19659
	11.52	1	11.52	39318	–	–	11.52	39318
	17.28	1	17.28	58977	–	–	17.28	58977
	23.04	2	11.52	39318	11.52	39318	23.04	78636
TWE090D1,TWE120D1, TWE090D3[a], TWE120E1, TWE120D3[a], TWE120D4, TWE120DW, TWE120E3[a], TWE120E4, TWE120EW	28.80	2	17.28	58977	11.52	39318	28.80	98295
	34.88	2	19.92	67987	14.96	51058	34.88	119045
	10.00	1	10.00	34130	–	–	10.00	34130
TWE150E, TWE180E, TWE240E	10.00	1	10.00	34130	–	–	10.00	34130
	19.92	1	19.92	67987	–	–	19.92	67987
	29.92	2	19.92	67987	10.00	34130	29.92	102117
	49.84	2	29.92	102117	19.92	67987	49.84	170104

Notes:

1. Heaters are rated at 240V, 480V, and 600V. For other than rated voltage, capacity = (Voltage/Related Voltage)^2 x Rated Capacity.

2. SZVAV/2-Speed VFD available for 10–25 ton only.

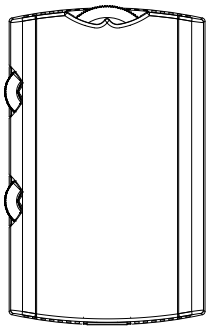
[a] Standard air handler field converted to 460V.

Controls

ReliaTel

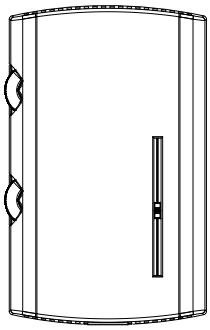
Zone Sensors are the building occupant's comfort control devices. Zone sensors are required for SZVAV applications. The following zone sensor options are available for units with ReliaTel control.

Manual Changeover (BAYSENS106*)



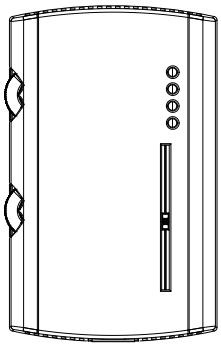
Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.

Manual/Automatic Changeover (BAYSENS108*)



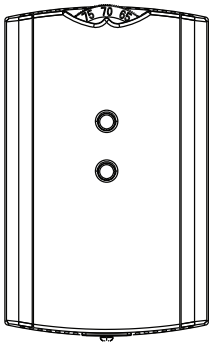
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers.

Manual/Automatic Changeover (BAYSENS110*)



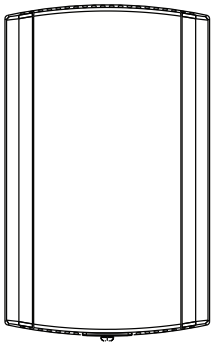
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Status Indication LED lights, System On, Heat, Cool, or Service.

Integrated Comfort™ System (BAYSENS074*)



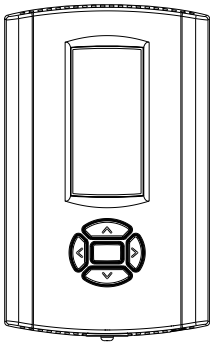
Sensor(s) available with optional temperature adjustment and override buttons to provide central control through a Trane Integrated Comfort™ system.

Remote Sensor (BAYSENS077*)



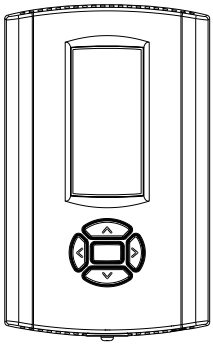
Sensor(s) available for all zone sensors to provide remote sensing capabilities.

Wireless Zone Sensor (BAYSENS050*)



LCD display that provides heat, cool, auto or off. Includes two temperature setpoints and a lockable setting with °F or °C indicators.

Programmable Night Setback (BAYSENS119*)

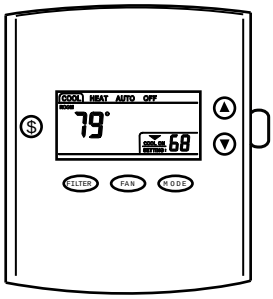


Auto or manual changeover with seven-day programming. Keyboard selection of Heat, Cool, Fan, Auto, EM Heat or On. All sensors have System On, Heat, Cool, Service LED/ indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Un-occupied, and one (1) Override program per day.

Electromechanical

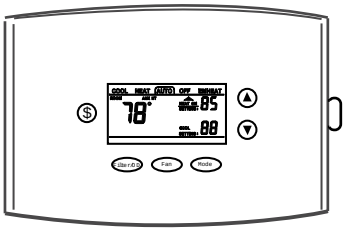
Non-Programmable Thermostats

TCONT200* (1H/1C)**



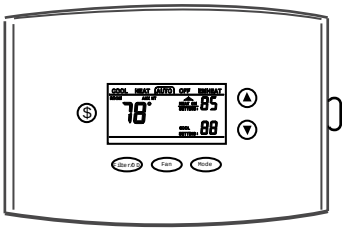
Auto-changeover Backlit Display & Keys Filter Reminder Keypad Lock

TCONT401* (2H/1C)**



Auto-changeover Backlit Display & Keys Filter Reminder Keypad Lock Outdoor Temp Sensor Available

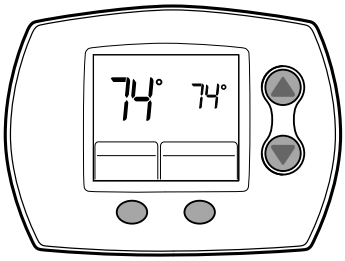
TCONT402* (3H/2C)**



Auto-changeover Backlit Display & Keys Filter Reminder Keypad Lock Outdoor Temp Sensor Included

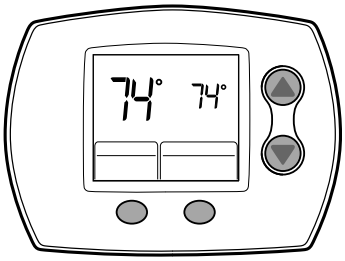
Programmable Thermostats

TCONT600*(1H/1C)**



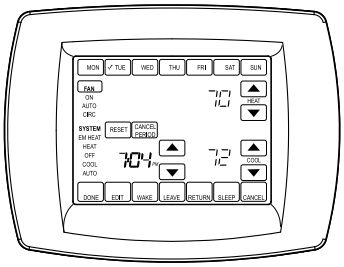
5/2 or 5/1/1 Programming Actual and Setpoint temps displayed simultaneously

TCONT602*(2H/2C)**



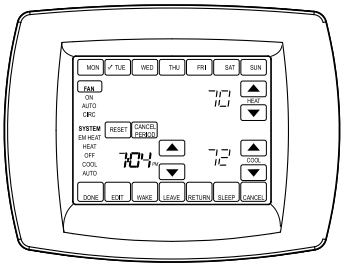
5/2 or 5/1/1 Programming Actual and Setpoint temps displayed simultaneously

TCONT800* (1H/1C)**



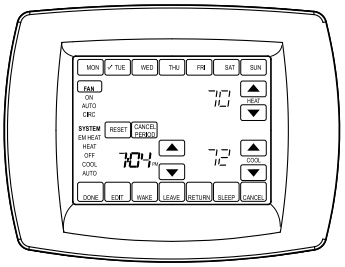
Interactive touchscreen Large display Real time clock

TCONT802* (3H/2C)**



Interactive touchscreen Large display Real time clock

TCONT803* (3H/2C)**



Interactive touchscreen Large display Real time clock Built-in humidity sensor

Notes:

- *All thermostats may be used with ReliaTel units.*
- *Thermostats may be used with ReliaTel-equipped Cooling units, but only when matched with Standard Air Handlers (SZVAV Air Handlers excluded).*

Electrical Data

Heat Pump Condenser

Table 44. Electrical characteristics — compressor and condenser fan motors — heat pumps — 60Hz

Tons	Unit Model Number	Compressor Motor					Condenser Fan Motor				
		No.	Volts	Phase	Amps		No.	Volts	Phase	Amps	
					RLA (Ea.)	LRA (Ea.)				FLA (Ea.)	LRA (Ea.)
6	TWA073D3	1	208-230	3	22.4	149	1	208-230	1	3.1	8.1
	TWA073D4	1	460	3	10.6	75	1	460	1	1.6	3.8
	TWA073DK	1	380	3	11.3	88	1	380	1	1.9	4.9
	TWA073DW	1	575	3	8.3	54	1	575	1	1.2	3
7.5	TWA090D3	1	208-230	3	25	164	1	208-230	1	3.1	8.1
	TWA090D4	1	460	3	13	100	1	460	1	1.6	3.8
	TWA090DK	1	380	3	13.9	94.3	1	380	1	1.9	4.9
	TWA090DW	1	575	3	10.8	78	1	575	1	1.2	3
10	TWA120D3	1	208-230	3	33	267	1	208-230	1	5	14.4
	TWA120D4	1	460	3	17.8	142	1	460	1	2.5	5.8
	TWA120DK	1	380	3	25.1	160	1	380	1	3.4	7.8
	TWA120DW	1	575	3	15.8	103	1	575	1	2	5.1
15	TWA180E3	2	208-230	3	25	164	2	208-230	1	5	14.4
	TWA180E4	2	460	3	12.6	100	2	460	1	2.5	5.8
	TWA180EK	2	380	3	14.3	94.3	2	380	1	3.4	7.8
	TWA180EW	2	575	3	10.4	78	2	575	1	2	5.1
20	TWA240E3	2	208-230	3	33.8	239	2	208-230	1	5	14.4
	TWA240E4	2	460	3	18	125	2	460	1	2.5	5.8
	TWA240EK	2	380	3	24.4	145	2	380	1	3.4	7.8
	TWA240EW	2	575	3	13.7	80	2	575	1	2	5.1

Table 45. Unit wiring — heat pumps — 60Hz

Tons	Unit Model Number	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
6	TWA073D3	187-253	31.1	40
	TWA073D4	414-506	14.9	20
	TWA073DK	342-418	17.0	25
	TWA073DW	518-632	11.6	15
7.5	TWA090D3	187-253	34.4	45
	TWA090D4	414-506	17.9	25
	TWA090DK	342-418	20.0	30
	TWA090DW	518-632	14.7	20
10	TWA120D3	187-253	47.0	70
	TWA120D4	414-506	25.0	40
	TWA120DK	342-418	35.0	50
	TWA120DW	518-632	22.0	35
15	TWA180E3	187-253	66.3	80
	TWA180E4	414-506	33.4	40
	TWA180EK	342-418	39.0	45
	TWA180EW	518-632	27.4	30

Table 45. Unit wiring — heat pumps — 60Hz (continued)

Tons	Unit Model Number	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
20	TWA240E3	187-253	86.1	100
	TWA240E4	414-506	45.5	50
	TWA240EK	342-418	61.8	70
	TWA240EW	518-632	34.8	40

Note: HACR type circuit breaker per NEC.

Air Handler (Standard and SZVAV)

Table 46. Voltage operating range (all air handlers)

Model Number: Digit 8	Electrical Characteristics	Unit Operating Voltage Range
1	208-230/60/1	187-253
3	208-230/60/3	187-253
4	460/60/3	414-506
K	380/60/3	342-418
W	575/60/3	518-632

Table 47. Electrical characteristics — standard and low static motors — 60 Hz standard air handler

Tons	Unit Model Number	Standard Evaporator Fan Motor								Low Static Evaporator Fan Motor							
		No.	Volts	Phase	Hp	Amps		MCA	MFS	No.	Volts	Phase	Hp	Amps		MCA	MFS
						FLA	LRA							FLA	LRA		
5	TWE061D1, E1	1	208	1	0.75	6.0	41.0	7.5	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D1, E1	1	230	1	0.75	5.9	45.0	7.4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D3, E3	1	208	3	0.75	2.5	16.4	3.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D3, E3	1	230	3	0.75	2.4	16.4	3.0	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D4, E4	1	460	3	0.75	1.2	8.2	1.5	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061DW	1	575	3	0.75	1.3	6.1	1.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7.5	TWE090D1, E1	1	208	1	1.5	6.8	31.5	8.5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D1, E1	1	230	1	1.5	6.2	31.5	7.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3	1	208	3	1.5	5.3	34.3	6.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3	1	230	3	1.5	5.0	34.3	6.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090DK, EK	1	380	3	1.5	3.0	20.2	3.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3	1	460	3	1.5	2.5	17.0	3.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090DW, EW	1	575	3	1.5	1.8	13.6	2.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	TWE120D1, E1	1	208	1	2	8.5	57.4	10.6	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D1, E1	1	230	1	2	7.7	57.4	9.6	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	208	3	2	7.0	33.9	7.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	230	3	2	6.6	33.9	7.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120DK, EK	1	380	3	2	3.3	28.0	4.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3[a]	1	460	3	2	3.3	19.0	3.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120DW, EW	1	575	3	2	2.3	15.6	4.0	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12.5	TWE150E3	1	208	3	2	6.0	23.0	7.4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE150E3	1	230	3	2	5.5	23.0	6.9	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE150EK	1	380	3	2	3.3	28.0	4.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE150E3[a]	1	460	3	2	2.8	23.0	3.4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE150EW	1	575	3	2	2.2	18.0	2.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 47. Electrical characteristics — standard and low static motors — 60 Hz standard air handler (continued)

Tons	Unit Model Number	Standard Evaporator Fan Motor								Low Static Evaporator Fan Motor							
		No.	Volts	Phase	Hp	Amps		MCA	MFS	No.	Volts	Phase	Hp	Amps		MCA	MFS
						FLA	LRA							FLA	LRA		
15	TWE180E3	1	208	3	3	9.4	74.9	11.8	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3	1	230	3	3	9.2	74.9	11.5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180EK	1	380	3	5	8.1	63.5	10.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3[a]	1	460	3	3	4.6	39.3	5.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180EW	1	575	3	3	3.4	24.6	4.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	TWE240E3	1	208	3	5	14.0	90.8	17.5	30	1	208	3	3	9.4	74.9	11.8	25
	TWE240E3	1	230	3	5	13.6	103.0	17.0	30	1	230	3	3	9.2	74.9	11.5	25
	TWE240EK	1	380	3	5	8.1	63.5	10.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE240E4	1	460	3	5	6.6	44.8	9.0	15	1	460	3	3	4.6	39.3	5.8	15
	TWE240EW	1	575	3	5	5.3	36.2	6.6	15	1	575	3	3	3.4	24.6	4.3	15

Note: For additional information contact product support.

[a] Field wired for 460V.

Table 48. Electrical characteristics — high and ultra-high static motors — 60 Hz standard air handler

Tons	Unit Model Number	High Static Evaporator Fan Motor								Ultra-High Static Evaporator Fan Motor							
		No.	Volts	Phase	Hp	Amps		MCA	MFS	No.	Volts	Phase	Hp	Amps		MCA	MFS
						FLA	LRA							FLA	LRA		
5	TWE061D1, E1	1	208	1	1.5	6.8	31.5	8.5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D1, E1	1	230	1	1.5	6.2	31.5	7.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D3, E3	1	208	3	1.5	5.3	34.3	6.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D3, E3	1	230	3	1.5	5	34.3	6.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D4, E4	1	460	3	1.5	2.5	17	3.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061DW	1	575	3	1.5	1.8	13.6	2.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7.5	TWE090D1, E1	1	208	1	2	8.5	57.4	10.6	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D1, E1	1	230	1	2	7.7	57.4	9.6	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3	1	208	3	2	7	33.9	7.8	15	1	208	3	3	9.4	74.9	11.8	25
	TWE090D3, E3	1	230	3	2	6.6	33.9	7.3	15	1	230	3	3	9.2	74.9	11.5	25
	TWE090D3, E3[a]	1	460	3	2	3.3	19	3.6	15	1	460	3	3	4.6	39.3	5.8	15
	TWE090DW, EW	1	575	3	2	2.3	15.6	4	15	1	575	3	3	3.4	24.6	4.3	15
10	TWE120D1, E1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D1, E1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	208	3	3	9.4	74.9	11.8	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	230	3	3	9.2	74.9	11.5	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3[a]	1	460	3	3	4.6	39.3	5.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120DW, EW	1	575	3	3	3.4	24.6	4.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12.5	TWE150E3	1	208	3	3	9.4	74.9	11.8	25	1	208	3	5	14	98	17.5	35
	TWE150E3	1	230	3	3	9.2	74.9	11.5	25	1	230	3	5	13.6	103	17	35
	TWE150E3[a]	1	460	3	3	4.6	39.3	5.8	15	1	460	3	5	6.6	44.8	8.3	20
	TWE150EW	1	575	3	3	3.4	24.6	4.3	15	1	575	3	5	5.2	36.2	6.5	15
15	TWE180E3	1	208	3	5	14	98	17.5	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3	1	230	3	5	13.6	103	17	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3[a]	1	460	3	5	6.6	44.8	8.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180EW	1	575	3	5	5.2	36.2	6.5	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	TWE240E3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	208	3	7.5	19.6	114	25	45
	TWE240E3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	230	3	7.5	17.6	126	22	40
	TWE240E4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	460	3	7.5	9	61.4	11.3	25
	TWE240EW	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	575	3	7.5	7.2	49.8	9	20

Note: For additional information contact product support.

Table 48. Electrical characteristics — high and ultra-high static motors — 60 Hz standard air handler (continued)

(a) Field wired for 460V.

Table 49. Electrical characteristics — standard and oversized motors — 60 Hz SZVAV air handler

Tons	Unit Model Number	Standard Evaporator Fan Motor								High Static Evaporator Fan Motor							
		No.	Volts	Phase	Hp	Amps		MCA	MFS	No.	Volts	Phase	Hp	Amps		MCA	MFS
						FLA	LRA							FLA	LRA		
7.5	TWE090E4	1	208	3	2	6.2	43.4	8	15	1	208	3	3	9.4	71	12	20
	TWE090E3	1	230	3	2	5.8	48	8	15	1	230	3	3	9.2	64	12	20
	TWE090E4	1	460	3	2	2.9	24	4	15	1	460	3	3	4.6	35.5	6	15
	TWE090E4	1	575	3	2	2.2	20.6	3	15	1	575	3	3	3.7	28.4	5	15
10	TWE120D3, E3	1	208	3	2	6.2	43.4	8	15	1	208	3	3	9.4	71	12	20
	TWE120D3, E3	1	230	3	2	5.8	48	8	15	1	230	3	3	9.2	64	12	20
	TWE120D4, E4	1	460	3	2	2.9	24	4	15	1	460	3	3	4.6	35.5	6	15
	TWE120DW, EW	1	575	3	2	2.2	20.6	3	15	1	575	3	3	3.7	28.4	5	15
12.5	TWE150E3	1	208	3	2	6.2	43.4	8	15	1	208	3	5	13.4	99.5	17	30
	TWE150E3	1	230	3	2	5.8	48	8	15	1	230	3	5	12.6	110	17	30
	TWE150E4	1	460	3	2	2.9	24	4	15	1	460	3	5	6.3	55	8	15
	TWE150EW	1	575	3	2	2.2	20.6	3	15	1	575	3	5	5.1	44	7	15
15	TWE180E3	1	208	3	3	9.4	71	12	20	1	208	3	5	13.4	99.5	17	30
	TWE180E3	1	230	3	3	9.2	64	12	20	1	230	3	5	12.6	110	17	30
	TWE180E4	1	460	3	3	4.6	35.5	6	15	1	460	3	5	6.3	55	8	15
	TWE180EW	1	575	3	3	3.7	28.4	5	15	1	575	3	5	5.1	44	7	15
20	TWE240E3	1	208	3	5	13.4	99.5	17	30	1	208	3	7.5	19.6	113.4	25	45
	TWE240E3	1	230	3	5	12.6	110	17	30	1	230	3	7.5	17.6	124	25	45
	TWE240E4	1	460	3	5	6.3	55	8	15	1	460	3	7.5	8.8	63	11	15
	TWE240EW	1	575	3	5	5.1	44	7	15	1	575	3	7.5	7.1	50.4	9	15

Notes:
1. For additional information contact product support.
2. Not available with 380/60 Hz models.

Table 50. Unit wiring with electric heat (single point connection) — 5-25 ton standard air handlers — 60 Hz

Tons	Used With	Heater Model Number	Heater kW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
5	TWE061D1, TWE061E1	BAYHTRL106*	4.33/5.76	208-230/1/60	1	33.5/37.4	35.0/40.0
		BAYHTRL112*	8.65/11.52		1	59.5/67.4	60.0/70.0
		BAYHTRL117*	12.98/17.28		1	85.5/97.4	90.0/100.0
		BAYHTRL123*	17.31/23.04		2	111.5/127.4(a)	125.0/150.0
5	TWE061D3, TWE061E3	BAYHTRL305*	3.76/5.00	208-230/3/60	1	16.1/18.0	20.0/20.0
		BAYHTRL310*	7.48/9.96		1	29.0/33.0	30.0/35.0
		BAYHTRL315*	11.24/14.96		1	42.2/48.0	45.0/50.0
		BAYHTRL325*	18.72/24.92		2	68.0/77.9(a)	70.0/80.0
5	TWE061D4, TWE061E4	BAYHTRL405*	5.00	460/3/60	1	10.0	15.0
		BAYHTRL410*	9.96		1	17.0	20.0
		BAYHTRL415*	14.96		1	25.0	25.0
		BAYHTRL425*	24.92		2	40.0	40.0
5	TWE061DW	BAYHTRLW05*	5.00	575/3/60	1	8.0	15.0
		BAYHTRLW10*	9.96		1	15.0	15.0
		BAYHTRLW15*	14.96		1	21.0	20.0
		BAYHTRLW25*	24.92		2	33.0	35.0

Table 50. Unit wiring with electric heat (single point connection) — 5-25 ton standard air handlers — 60 Hz (continued)

Tons	Used With	Heater Model Number	Heater kW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
7.5	TWE090D1, TWE090E1	BAYHTRL106*	4.33/5.76	208-230/1/60	1	34.5/37.8	40.0/40.0
		BAYHTRL112*	8.65/11.52		1	60.5/67.8[a]	70.0/70.0
		BAYHTRL117*	12.98/17.28		1	86.5/97.8	90.0/100.0
		BAYHTRL123*	17.31/23.04		2	112.5/127.8[a]	125.0/150.0
		BAYHTRL129*	21.63/28.80		2	138.6/157.8[a]	150.0/175.0
7.5	TWE090D3, TWE090E3	BAYHTRL305*	3.76/5.00	208-230/3/60	1	19.6/21.3	25.0/25.0
		BAYHTRL310*	7.48/9.96		1	32.5/36.2	35.0/40.0
		BAYHTRL315*	11.24/14.96		1	45.7/51.2	50.0/60.0
		BAYHTRL325*	18.72/24.92		2	71.5/82.0[a]	80.0/90.0
		BAYHTRL335*	26.20/34.88		2	98.7/112[b]	100.0/125.0
7.5	TWE090D3, TWE090E3[c]	BAYHTRL405*	5.00	460/3/60	1	11.0	15.0
		BAYHTRL410*	9.96		1	19.0	20.0
		BAYHTRL415*	14.96		1	26.0	30.0
		BAYHTRL425*	24.92		2	41.0	45.0
		BAYHTRL435*	34.88		2	56.0	60.0
7.5	TWE090DW, TWE090EW	BAYHTRLW05*	5.00	575/3/60	1	11.0	15.0
		BAYHTRLW10*	9.96		1	17.0	15.0
		BAYHTRLW15*	14.96		1	23.0	25.0
		BAYHTRLW25*	24.92		2	36.0	35.0
		BAYHTRLW35*	34.88		2	48.0	45.0
10	TWE120D1, TWE120E1	BAYHTRL106*	4.33/5.76	208-230/1/60	1	36.6/39.6	40.0/45.0
		BAYHTRL112*	8.65/11.52		1	62.6/69.6[a]	70.0/70.0
		BAYHTRL117*	12.98/17.28		1	88.6/99.6	90.0/100.0
		BAYHTRL123*	17.31/23.04		2	114.6/129.6[a]	125.0/150.0
		BAYHTRL129*	21.63/28.80		2	140.7/159.6[a]	150.0/175.0
10	TWE120D3, TWE120E3	BAYHTRL305*	3.76/5.00	208-230/3/60	1	21.0/23.0	25.0/30.0
		BAYHTRL310*	7.48/9.96		1	34.0/38.0	35.0/40.0
		BAYHTRL315*	11.24/14.96		1	47.0/53.0	50.0/60.0
		BAYHTRL325*	18.72/24.92		2	73.0/83.0[a]	80.0/90.0
		BAYHTRL335*	26.20/34.88		2	98.7/113.0[b]	100.0/125.0
10	TWE120D3[c], TWE120E3[c]	BAYHTRL405*	5.00	460/3/60	1	12.0	15.0
		BAYHTRL410*	9.96		1	20.0	20.0
		BAYHTRL415*	14.96		1	27.0	30.0
		BAYHTRL425*	24.92		2	42.0	45.0
		BAYHTRL435*	34.88		2	57.0	60.0
10	TWE120DW, TWE120EW	BAYHTRLW05*	5.00	575/3/60	1	10.0	15.0
		BAYHTRLW10*	9.96		1	16.0	15.0
		BAYHTRLW15*	14.96		1	22.0	25.0
		BAYHTRLW25*	24.92		2	35.0	35.0
		BAYHTRLW35*	34.88		2	47.0	45.0
12.5	TWE150E3	BAYHTRM310A	7.51/10.00	208-230/3/60	1	33.5/36.9	35/40
		BAYHTRM320A	14.96/19.92		1	59.3/66.8	60/70
		BAYHTRM330A	22.47/29.92		2	85.5/96.8	90/100
		BAYHTRM350A	37.44/49.84		2	137.3/156.7	150/175

Table 50. Unit wiring with electric heat (single point connection) — 5-25 ton standard air handlers — 60 Hz (continued)

Tons	Used With	Heater Model Number	Heater kW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
12.5	TWE150E3(c)	BAYHTRM410*	10.00	460/3/60	1	19.0	20.0
		BAYHTRM420*	19.92		1	34.0	35.0
		BAYHTRM430*	29.92		2	49.0	50.0
		BAYHTRM450*	49.84		2	79.0	80.0
12.5	TWE150EW	BAYHTRMW10*	10.00	575/3/60	1	15.0	15.0
		BAYHTRMW20*	19.92		1	27.0	30.0
		BAYHTRMW30*	29.92		2	39.0	40.0
		BAYHTRMW50*	49.84		2	63.0	70.0
15	TWE180E3	BAYHTRM310*	7.51/10.00	208-230/3/60	1	37.8/41.6	45.0/45.0
		BAYHTRM320*	14.96/19.92		1	63.7/71.4	70.0/80.0
		BAYHTRM330*	22.47/29.92		2	89.8/101.5	90.0/110.0
		BAYHTRM350*	37.44/49.84		2	141.6/161.4(b)	150.0/175.0
15	TWE180E3(c)	BAYHTRM410*	10.00	460/3/60	1	21.0	25.0
		BAYHTRM42*	19.92		1	36.0	40.0
		BAYHTRM430*	29.92		2	51.0	60.0
		BAYHTRM450*	49.84		2	81.0	90.0
15	TWE180EW	BAYHTRMW10*	10.00	575/3/60	1	17.0	20.0
		BAYHTRMW20*	19.92		1	30.0	30.0
		BAYHTRMW30*	29.92		2	42.0	45.0
		BAYHTRMW50*	49.84		2	67.0	70.0
20	TWE240E3	BAYHTRM310*	7.51/10.00	208-230/3/60	1	44.1/49.0	60.0/60.0
		BAYHTRM320*	14.96/19.92		1	71.0/79.0	80.0/90.0
		BAYHTRM330*	22.47/29.92		2	97.0/109.0	100.0/110.0
		BAYHTRM350*	37.44/49.84		2	149.0/169.0(b)	150.0/175.0
20	TWE240E4	BAYHTRM410*	10.00	460/3/60	1	24.0	30.0
		BAYHTRM420*	19.92		1	39.0	40.0
		BAYHTRM430*	29.92		2	54.0	60.0
		BAYHTRM450*	49.84		2	84.0	90.0
20	TWE240EW	BAYHTRMW10*	10.00	575/3/60	1	20.0	25.0
		BAYHTRMW20*	19.92		1	32.0	35.0
		BAYHTRMW30*	29.92		2	45.0	45.0
		BAYHTRMW50*	49.84		2	70.0	70.0

Notes:

1. kW ratings are at: 208/240V for 208-230V air handlers; 480V for 460V air handlers; 600V for 575V air handlers. For other than rated voltage, capacity = (voltage/rated voltage)^2 x rated capacity.
2. Any power supply and circuits must be wired and protected in accordance with local codes.
3. Electric heat not available with 380/60 Hz models.
4. The HACR circuit breaker is for U.S.A. installations only.

(a) Field wire must be rated at least 75°C.
(b) Field wire must be rated at least 90°C.
(c) With motor field wired for 460V.

Table 51. Unit wiring with electric heat (single point connection) — 7.5-25 ton SZVAV air handlers — 60 Hz

Tons	Used With	Heater Model Number	Heater KW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
7.5	TWE090E3*3	BAYHTRL305*	3.76/5.00	208-230/3/60	1	21/23	25/25
		BAYHTRL310*	7.48/9.96		1	34/38	35/40
		BAYHTRL315*	11.24/14.96		1	47/53	50/60
		BAYHTRL325*	18.72/24.92		2	73/83	80/90
		BAYHTRL335*	26.20/34.88		2	99/113	100/125
7.5	TWE090E3*4	BAYHTRL305*	3.76/5.00	208-230/3/60	1	25/27	30/30
		BAYHTRL310*	7.48/9.96		1	38/42	40/45
		BAYHTRL315*	11.24/14.96		1	51/57	60/60
		BAYHTRL325*	18.72/24.92		2	77/87	80/90
		BAYHTRL335*	26.20/34.88		2	103/117	110/125
7.5	TWE090E4*3	BAYHTRL405*	5.00	460/3/60	1	12	15
		BAYHTRL410*	9.96		1	19	20
		BAYHTRL415*	14.96		1	27	30
		BAYHTRL425*	24.92		2	42	45
		BAYHTRL435*	34.88		2	57	60
7.5	TWE090E4*4	BAYHTRL405*	5.00	460/3/60	1	14	15
		BAYHTRL410*	9.96		1	21	20
		BAYHTRL415*	14.96		1	29	30
		BAYHTRL425*	24.92		2	44	45
		BAYHTRL435*	34.88		2	59	60
7.5	TWE090EW*3	BAYHTRLW05*	5.00	575/3/60	1	9	15
		BAYHTRLW10*	9.96		1	16	20
		BAYHTRLW15*	14.96		1	22	25
		BAYHTRLW25*	24.92		2	34	35
		BAYHTRLW35*	34.88		2	47	50
7.5	TWE090EW*4	BAYHTRLW05*	5.00	575/3/60	1	11	15
		BAYHTRLW10*	9.96		1	18	20
		BAYHTRLW15*	14.96		1	24	25
		BAYHTRLW25*	24.92		2	36	40
		BAYHTRLW35*	34.88		2	49	50
10	TWE120D3*3, E3*3	BAYHTRL305*	3.76/5.00	208-230/3/60	1	21/23	25/25
		BAYHTRL310*	7.48/9.96		1	34/38	35/40
		BAYHTRL315*	11.24/14.96		1	47/53	50/60
		BAYHTRL325*	18.72/24.92		2	73/83	80/90
		BAYHTRL335*	26.20/34.88		2	99/113	100/125
10	TWE120D3*4, E3*4	BAYHTRL305*	3.76/5.00	208-230/3/60	1	25/27	30/30
		BAYHTRL310*	7.48/9.96		1	38/42	40/45
		BAYHTRL315*	11.24/14.96		1	51/57	60/60
		BAYHTRL325*	18.72/24.92		2	77/87	80/90
		BAYHTRL335*	26.20/34.88		2	103/117	110/125
10	TWE120D4*3, E4*3	BAYHTRL405*	5.00	460/3/60	1	12	15
		BAYHTRL410*	9.96		1	19	20
		BAYHTRL415*	14.96		1	27	30
		BAYHTRL425*	24.92		2	42	45
		BAYHTRL435*	34.88		2	57	60

Table 51. Unit wiring with electric heat (single point connection) — 7.5-25 ton SZVAV air handlers — 60 Hz (continued)

Tons	Used With	Heater Model Number	Heater KW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
10	TWE120D4*4, E4*4	BAYHTRL405*	5.00	460/3/60	1	14	15
		BAYHTRL410*	9.96		1	21	25
		BAYHTRL415*	14.96		1	29	30
		BAYHTRL425*	24.92		2	44	45
		BAYHTRL435*	34.88		2	59	60
10	TWE120DW*3, EW*3	BAYHTRLW05*	5.00	575/3/60	1	9	15
		BAYHTRLW10*	9.96		1	16	20
		BAYHTRLW15*	14.96		1	22	25
		BAYHTRLW25*	24.92		2	34	35
		BAYHTRLW35*	34.88		2	47	50
10	TWE120DW*4, EW*4	BAYHTRLW05*	5.00	575/3/60	1	11	15
		BAYHTRLW10*	9.96		1	18	20
		BAYHTRLW15*	14.96		1	24	25
		BAYHTRLW25*	24.92		2	36	40
		BAYHTRLW35*	34.88		2	49	50
12.5	TWE150E3*3	BAYHTRM310*	7.51/10.00	208-230/3/60	1	34/38	35/40
		BAYHTRM320*	14.96/19.92		1	60/68	60/70
		BAYHTRM330*	22.47/29.92		2	86/98	90/100
		BAYHTRM350*	37.44/49.84		2	138/158	150/175
12.5	TWE150E3*4	BAYHTRM310*	7.51/10.00	208-230/3/60	1	43/47	45/50
		BAYHTRM320*	14.96/19.92		1	69/77	70/80
		BAYHTRM330*	22.47/29.92		2	95/107	100/110
		BAYHTRM350*	37.44/49.84		2	147/167	150/175
12.5	TWE150E4*3	BAYHTRM410*	10.00	460/3/60	1	19	20
		BAYHTRM420*	19.92		1	34	35
		BAYHTRM430*	29.92		2	49	50
		BAYHTRM450*	49.84		2	79	80
12.5	TWE150E4*4	BAYHTRM410*	10.00	460/3/60	1	23	25
		BAYHTRM420*	19.92		1	38	40
		BAYHTRM430*	29.92		2	53	60
		BAYHTRM450*	49.84		2	83	90
12.5	TWE150EW*3	BAYHTRMW10*	10.00	575/3/60	1	16	20
		BAYHTRMW20*	19.92		1	28	30
		BAYHTRMW30*	29.92		2	41	45
		BAYHTRMW50*	49.84		2	66	70
12.5	TWE150EW*4	BAYHTRMW10*	10.00	575/3/60	1	19	20
		BAYHTRMW20*	19.92		1	32	35
		BAYHTRMW30*	29.92		2	44	45
		BAYHTRMW50*	49.84		2	69	70
15	TWE180E3*3	BAYHTRM310*	7.51/10.00	208-230/3/60	1	38/42	40/45
		BAYHTRM320*	14.96/19.92		1	64/72	70/80
		BAYHTRM330*	22.47/29.92		2	90/102	90/110
		BAYHTRM350*	37.44/49.84		2	142/162	150/175
15	TWE180E3*4	BAYHTRM310*	7.51/10.00	208-230/3/60	1	43/47	45/50
		BAYHTRM320*	14.96/19.92		1	69/77	70/80
		BAYHTRM330*	22.47/29.92		2	95/107	100/110
		BAYHTRM350*	37.44/49.84		2	147/167	150/175

Table 51. Unit wiring with electric heat (single point connection) — 7.5-25 ton SZVAV air handlers — 60 Hz (continued)

Tons	Used With	Heater Model Number	Heater KW Rating	Unit Power Supply	Control Stages	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size
15	TWE180E4*3	BAYHTRM410*	10.00	460/3/60	1	21	25
		BAYHTRM420*	19.92		1	36	40
		BAYHTRM430*	29.92		2	51	60
		BAYHTRM450*	49.84		2	81	90
15	TWE180E4*4	BAYHTRM410*	10.00	460/3/60	1	23	25
		BAYHTRM420*	19.92		1	38	40
		BAYHTRM430*	29.92		2	53	60
		BAYHTRM450*	49.84		2	83	90
15	TWE180EW*3	BAYHTRMW10*	10.00	575/3/60	1	18	20
		BAYHTRMW20*	19.92		1	30	30
		BAYHTRMW30*	29.92		2	43	45
		BAYHTRMW50*	49.84		2	68	70
15	TWE180EW*4	BAYHTRMW10*	10.00	575/3/60	1	19	20
		BAYHTRMW20*	19.92		1	32	35
		BAYHTRMW30*	29.92		2	44	45
		BAYHTRMW50*	49.84		2	69	70
20	TWE240E3*3	BAYHTRM310*	7.51/10.00	208-230/3/60	1	43/47	45/50
		BAYHTRM320*	14.96/19.92		1	69/77	70/80
		BAYHTRM330*	22.47/29.92		2	95/107	100/110
		BAYHTRM350*	37.44/49.84		2	147/167	150/175
20	TWE240E3*4	BAYHTRM310*	7.51/10.00	208-230/3/60	1	51/55	60/60
		BAYHTRM320*	14.96/19.92		1	77/85	80/90
		BAYHTRM330*	22.47/29.92		2	103/115	110/125
		BAYHTRM350*	37.44/49.84		2	155/175	175/175
20	TWE240E4*3	BAYHTRM410*	10.00	460/3/60	1	23	25
		BAYHTRM420*	19.92		1	38	40
		BAYHTRM430*	29.92		2	53	60
		BAYHTRM450*	49.84		2	83	90
20	TWE240E4*4	BAYHTRM410*	10.00	460/3/60	1	26	30
		BAYHTRM420*	19.92		1	41	45
		BAYHTRM430*	29.92		2	56	60
		BAYHTRM450*	49.84		2	86	90
20	TWE240EW*3	BAYHTRMW10*	10.00	575/3/60	1	19	20
		BAYHTRMW20*	19.92		1	32	35
		BAYHTRMW30*	29.92		2	44	45
		BAYHTRMW50*	49.84		2	69	70
20	TWE240EW*4	BAYHTRMW10*	10.00	575/3/60	1	22	25
		BAYHTRMW20*	19.92		1	34	35
		BAYHTRMW30*	29.92		2	47	50
		BAYHTRMW50*	49.84		2	72	80

Notes:

1. kW ratings are at: 208/240V for 208-230V air handlers; 480V for 460V air handlers; 600V for 575V air handlers. For other than rated voltage, capacity = $(\text{voltage/rated voltage})^2$ x rated capacity.
2. Any power supply and circuits must be wired and protected in accordance with local codes.
3. Electric heat not available with 380/60 Hz models.
4. The HACR circuit breaker is for U.S.A. installations only.

Jobsite Connections

ReliaTel Controls

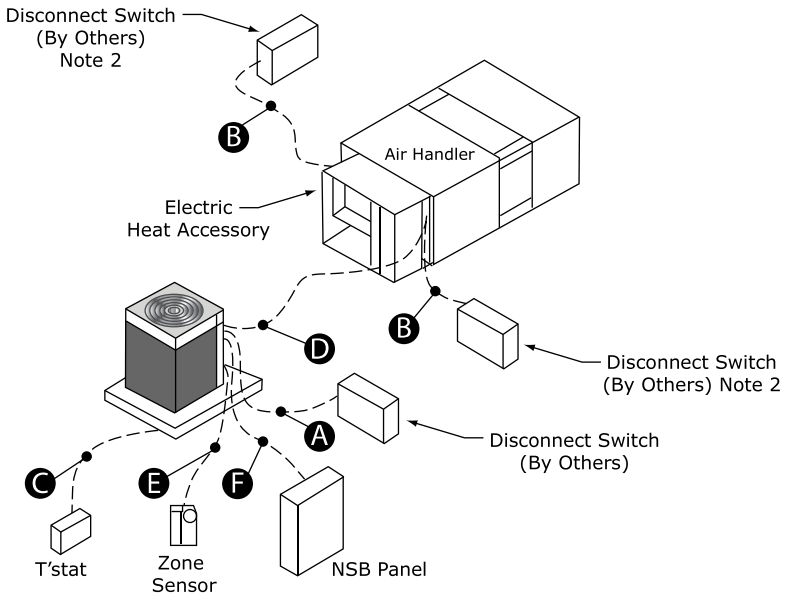
Wiring shown with dashed lines is to be furnished and installed by the customer. All customer supplied wiring must be copper only and must conform to NEC and local electrical codes. Codes may require line of sight between disconnect switch and unit.

Notes:

1. *When electric heater accessory is used, single point power entry or dual point power entry is field optional. Single point power entry option is through electric heater only.*
2. ****Choose only one of the following; Thermostat, Zone Sensor, or NSB Panel.*

Important: *For the EDC switch to be functional and thereby facilitate reliable unit operation, make the EDC connections from the indoor to the outdoor control boxes.*

Figure 14. ReliaTel jobsite connections



A. 3 power wires, line voltage for 3 phase, (2 power wires for single phase)

B. 3 power wires, line voltage for 3 phase, (2 power wires for single phase)

C. Heat Pump thermostat: 5 to 8 wires depending on stages of electric heat

D. 3 to 7 wires depending on type of outdoor unit(s)

E. Zone Sensor: 4 to 10 wires depending on zone sensor model[a]

F. Night Setback Panel: 7 wires

[a] For SZVAV air handlers: 4 additional wires are required (2 of which require twisted pair or shielded wire) in order to make connections between ReliaTel boards in the condenser and air handler.

Dimensional Data

Heat Pump Condenser

Figure 15. 6-7.5 ton heat pump, single compressor

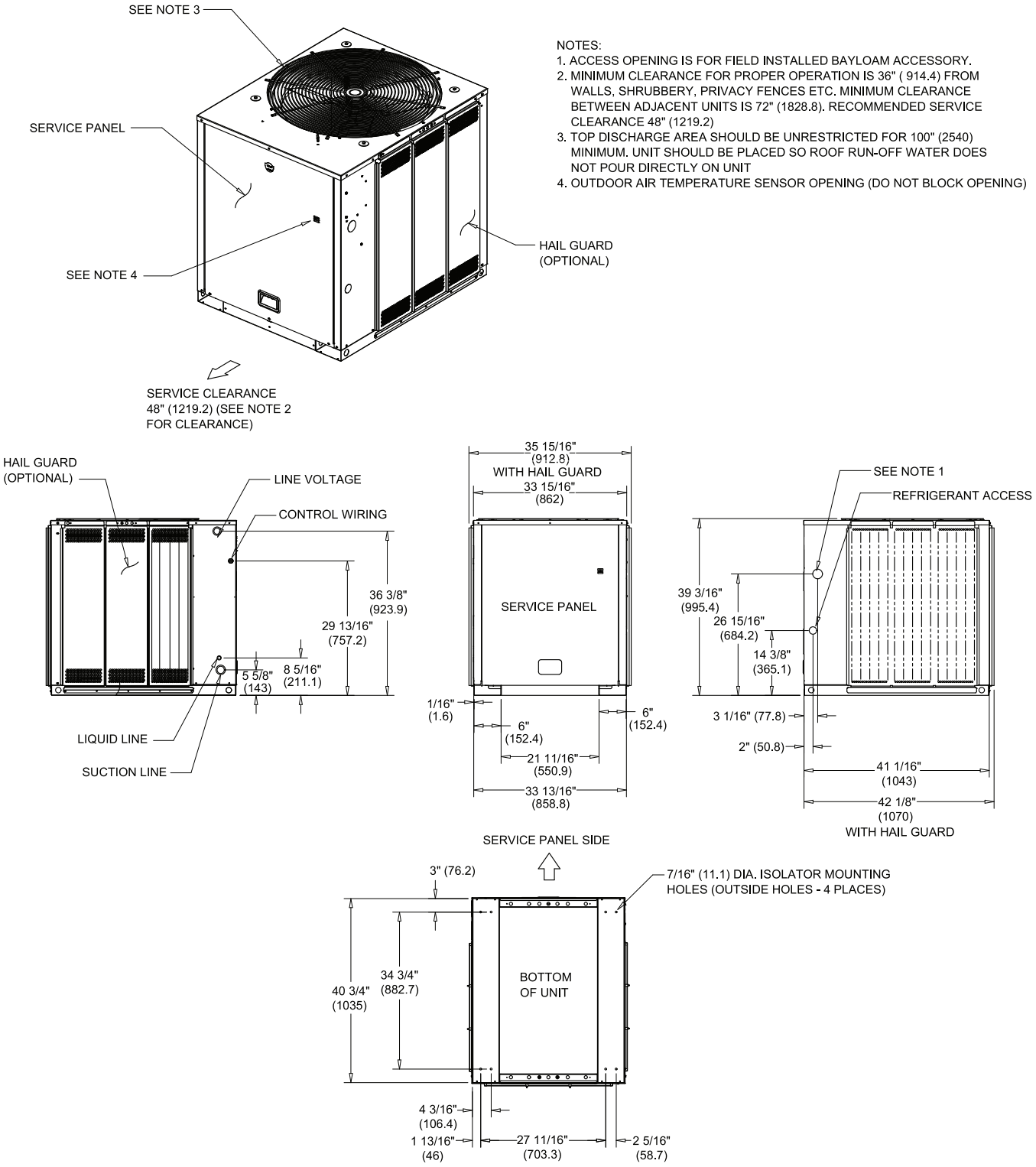
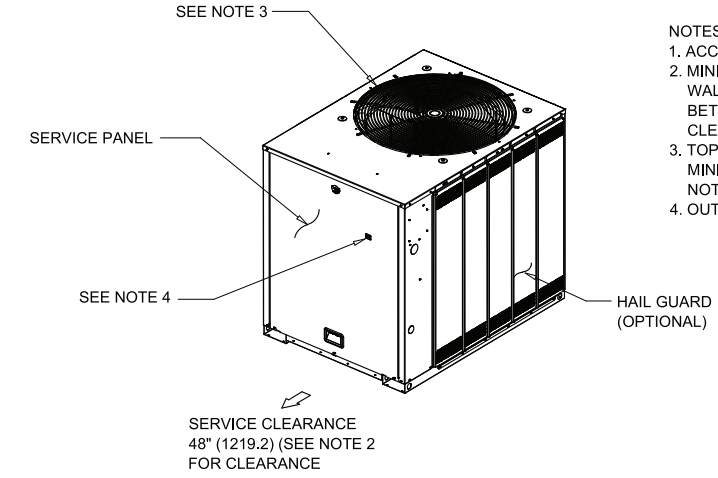


Figure 16. 10 ton heat pump, single compressor



NOTES:
1. ACCESS OPENING IS FOR FIELD INSTALLED BAYLOAM ACCESSORY.
2. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" (914.4) FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72" (1828.8). RECOMMENDED SERVICE CLEARANCE 48" (1219.2)
3. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" (2540) MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT
4. OUTDOOR AIR TEMPERATURE SENSOR OPENING (DO NOT BLOCK OPENING)

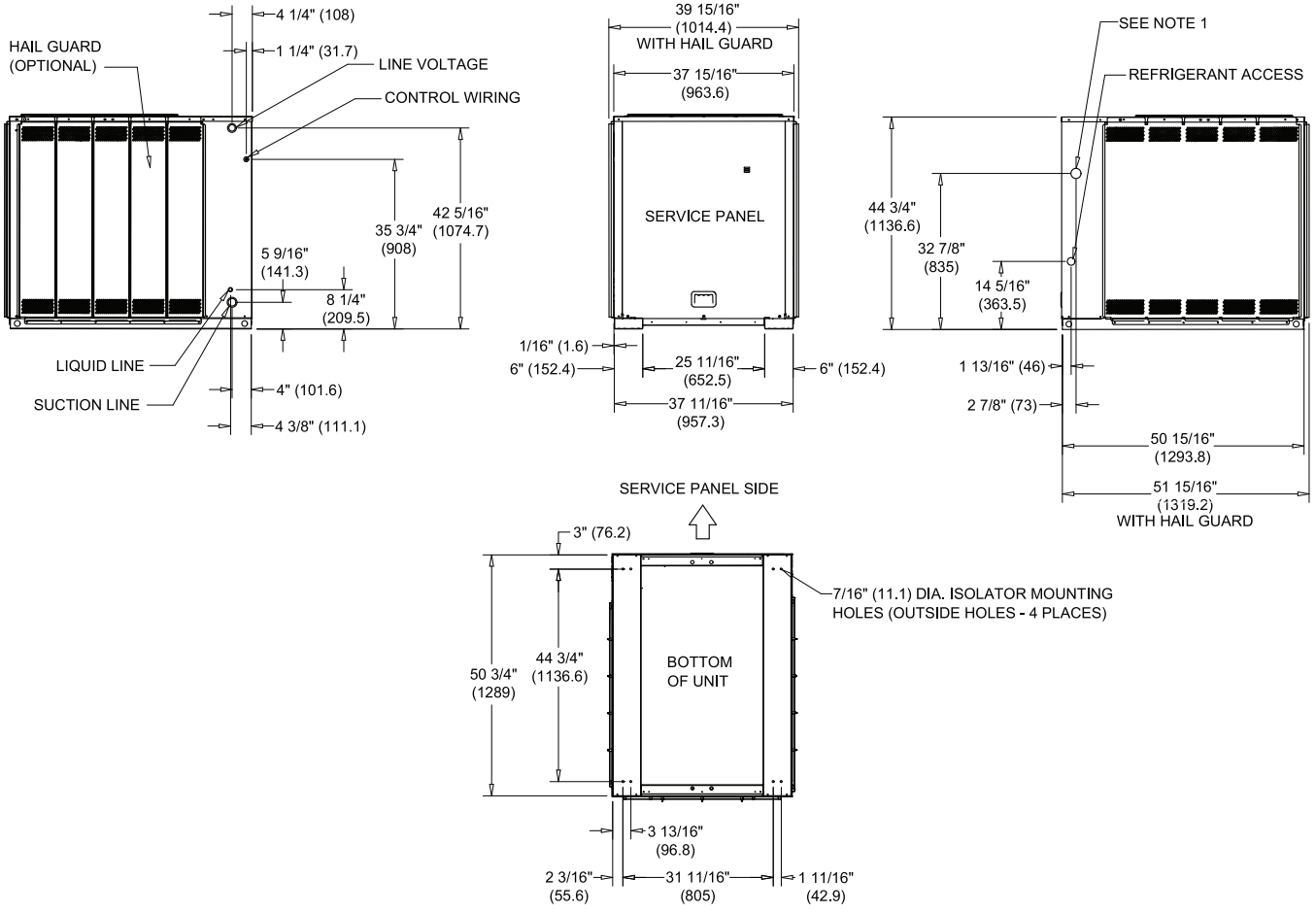
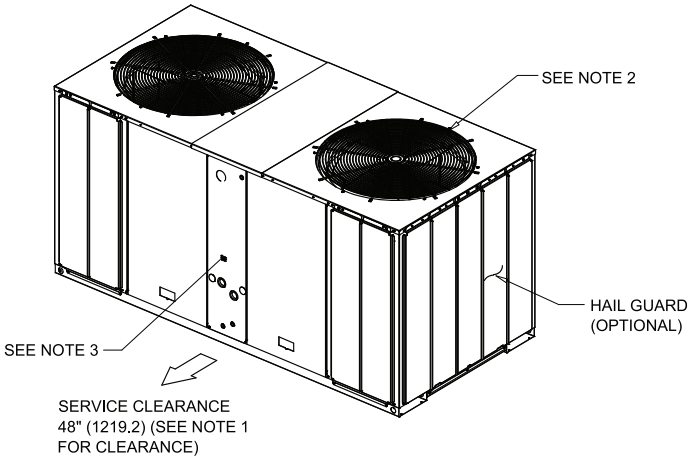
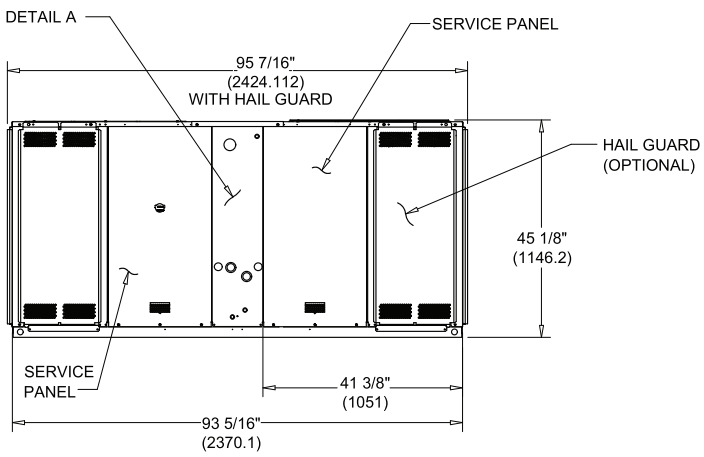
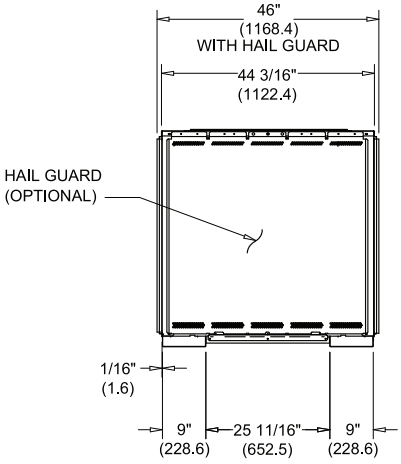


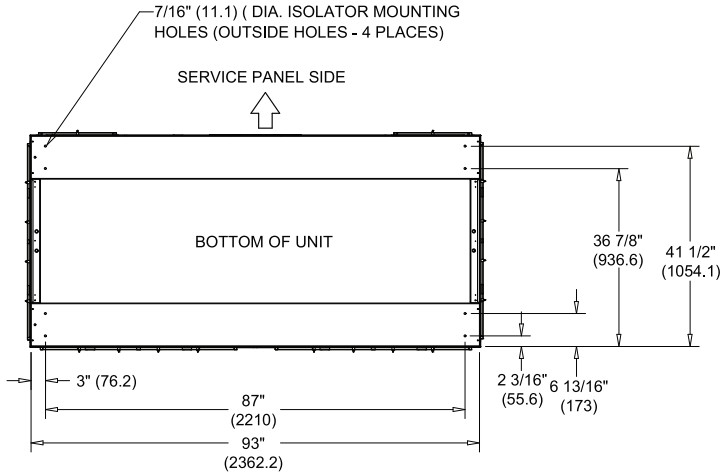
Figure 17. 15-20 ton heat pump, dual compressor

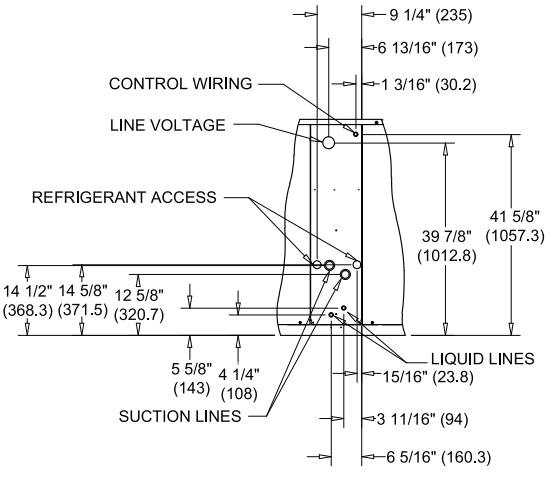


NOTES:
1. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" (914.4) FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72" (1829). RECOMMENDED SERVICE CLEARANCE 48" (1219.2)
2. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" (2540) MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT
3. OUTDOOR AIR TEMPERATURE SENSOR OPENING (DO NOT BLOCK OPENING).









FRONT DETAIL A
DIMENSIONAL DETAIL

Air Handler

Figure 18. 5 ton air handler, single circuit

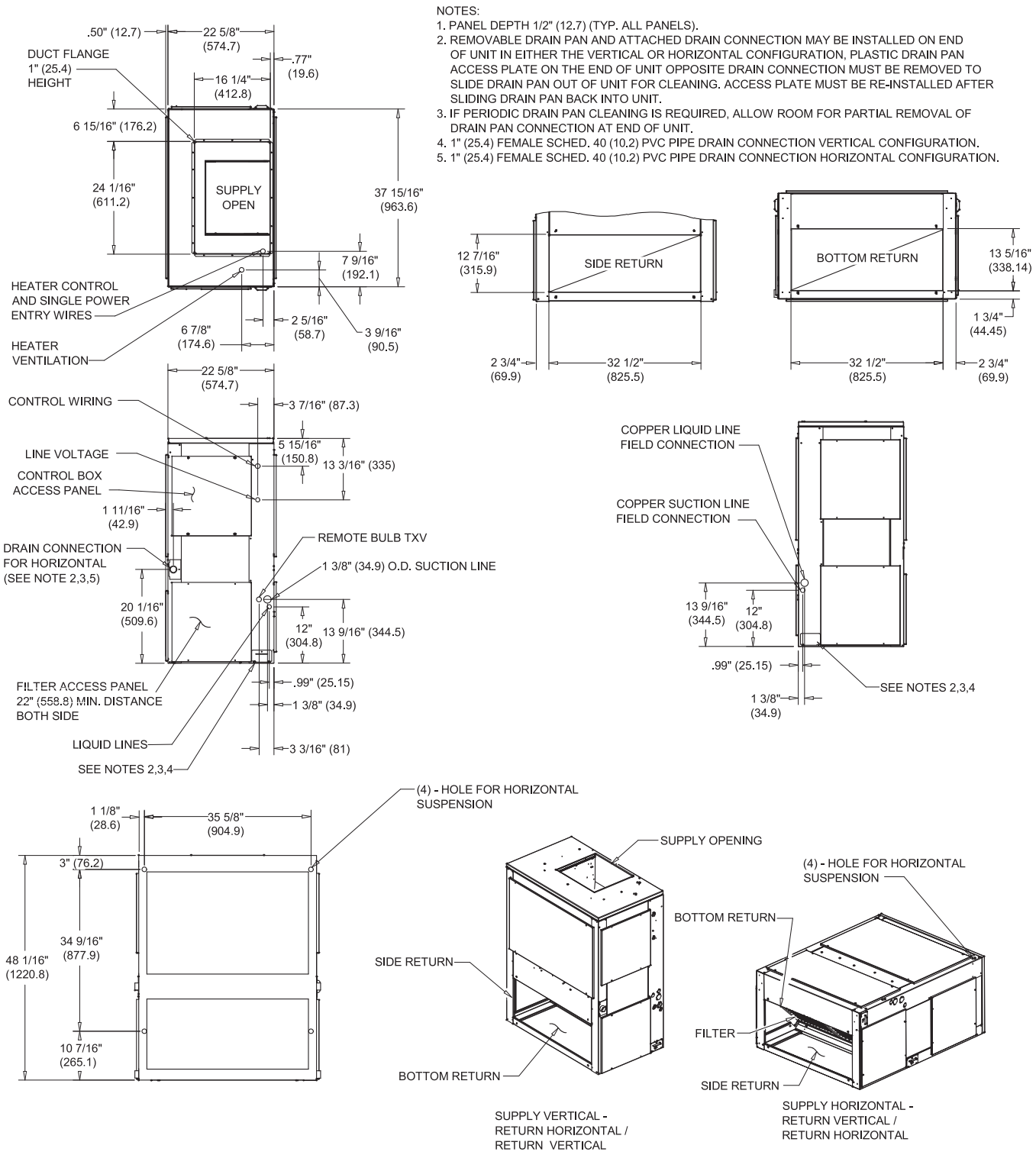


Figure 19. 5 ton air handler, dual circuit

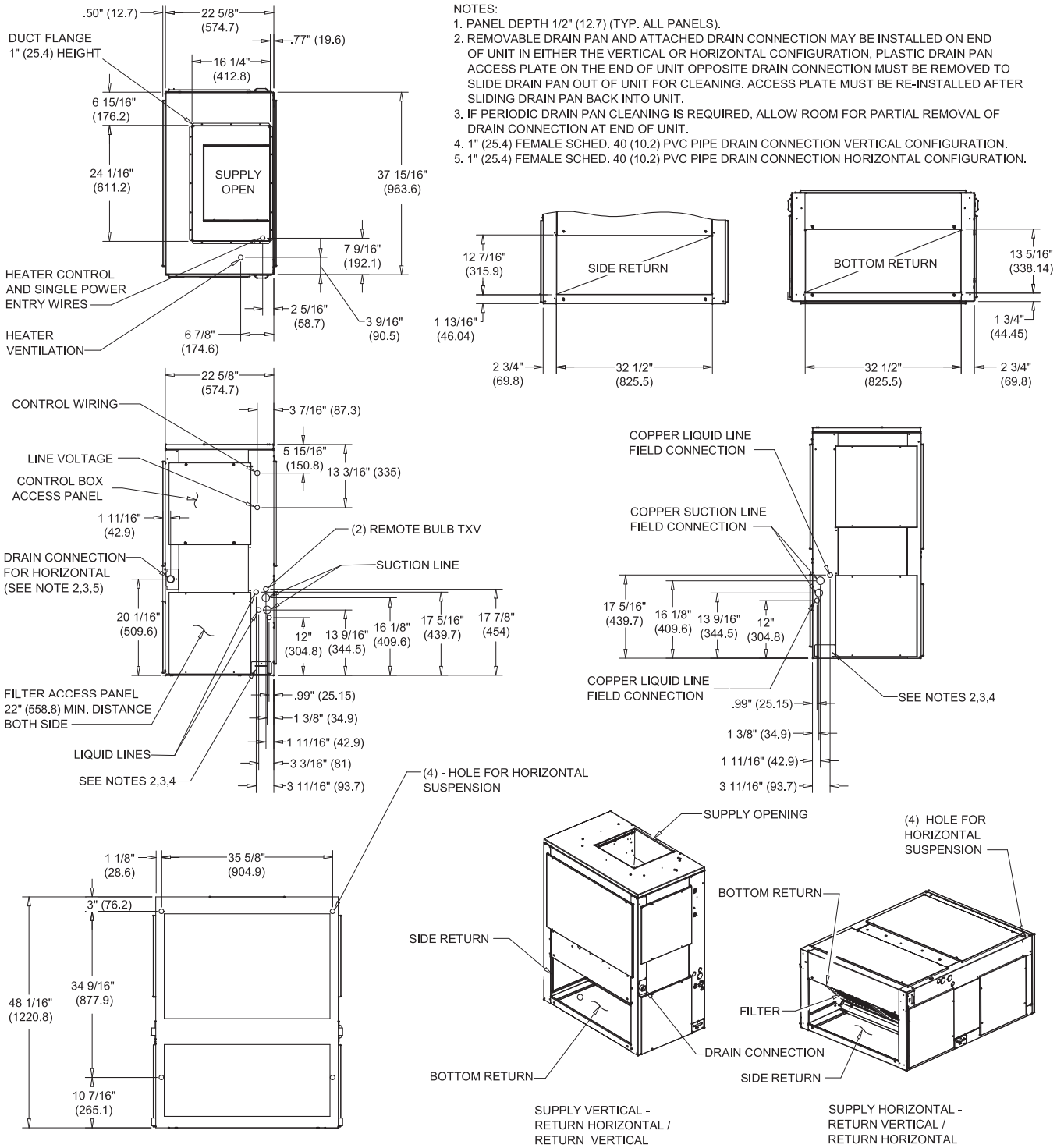


Figure 20. 7.5 ton air handler, single circuit

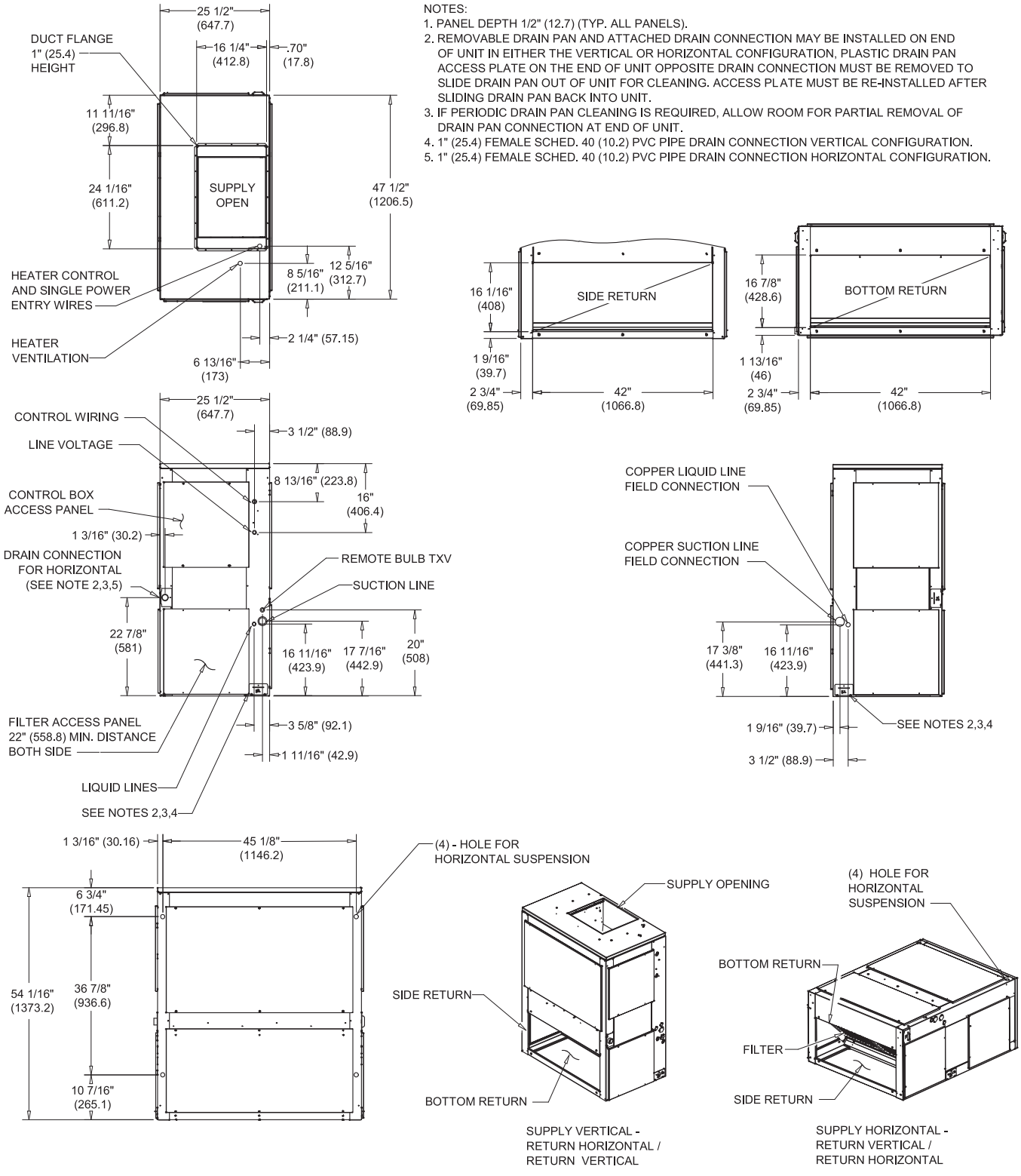


Figure 21. 7.5 ton air handler, dual circuit

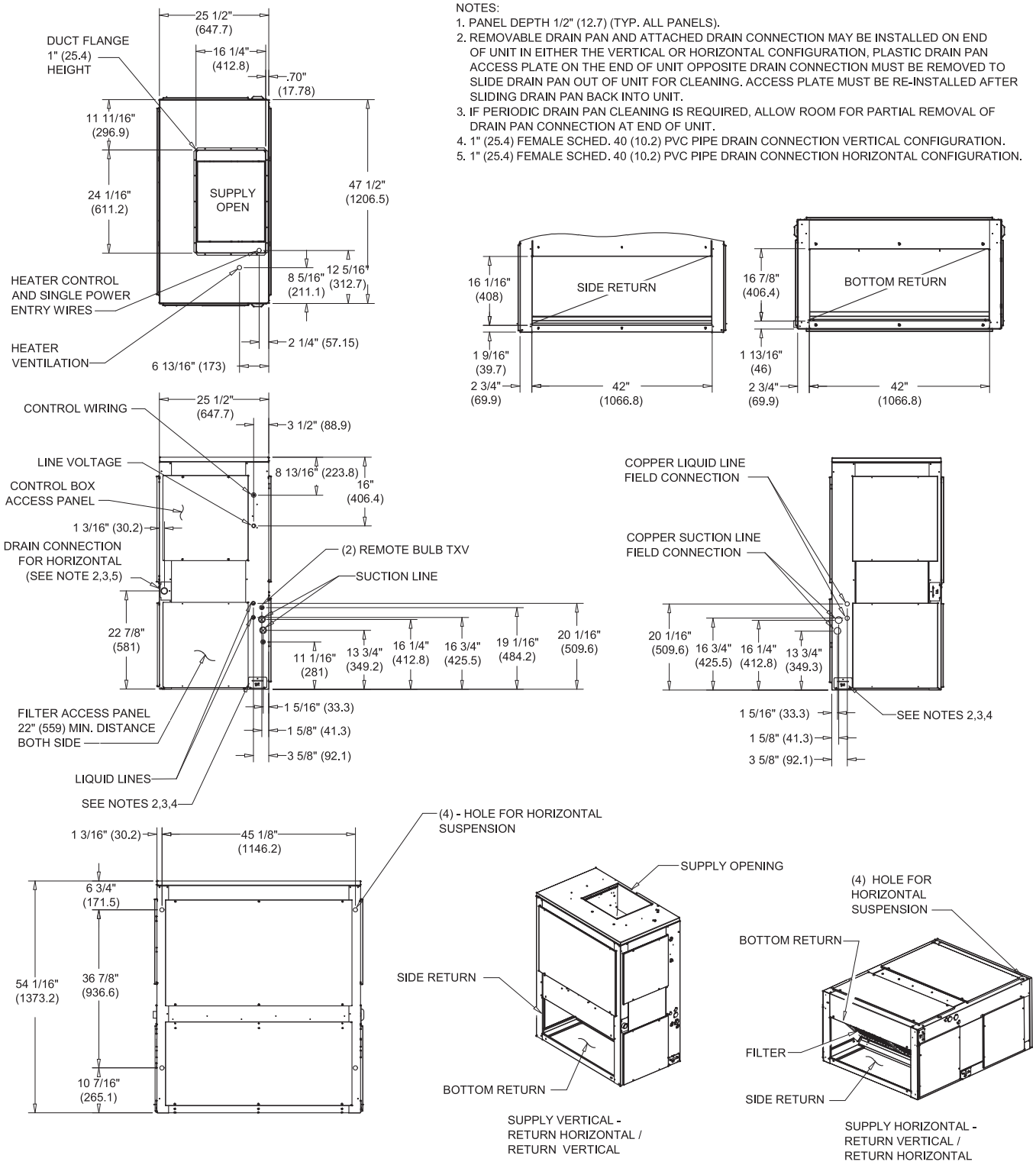


Figure 22. 10 ton air handler, single circuit

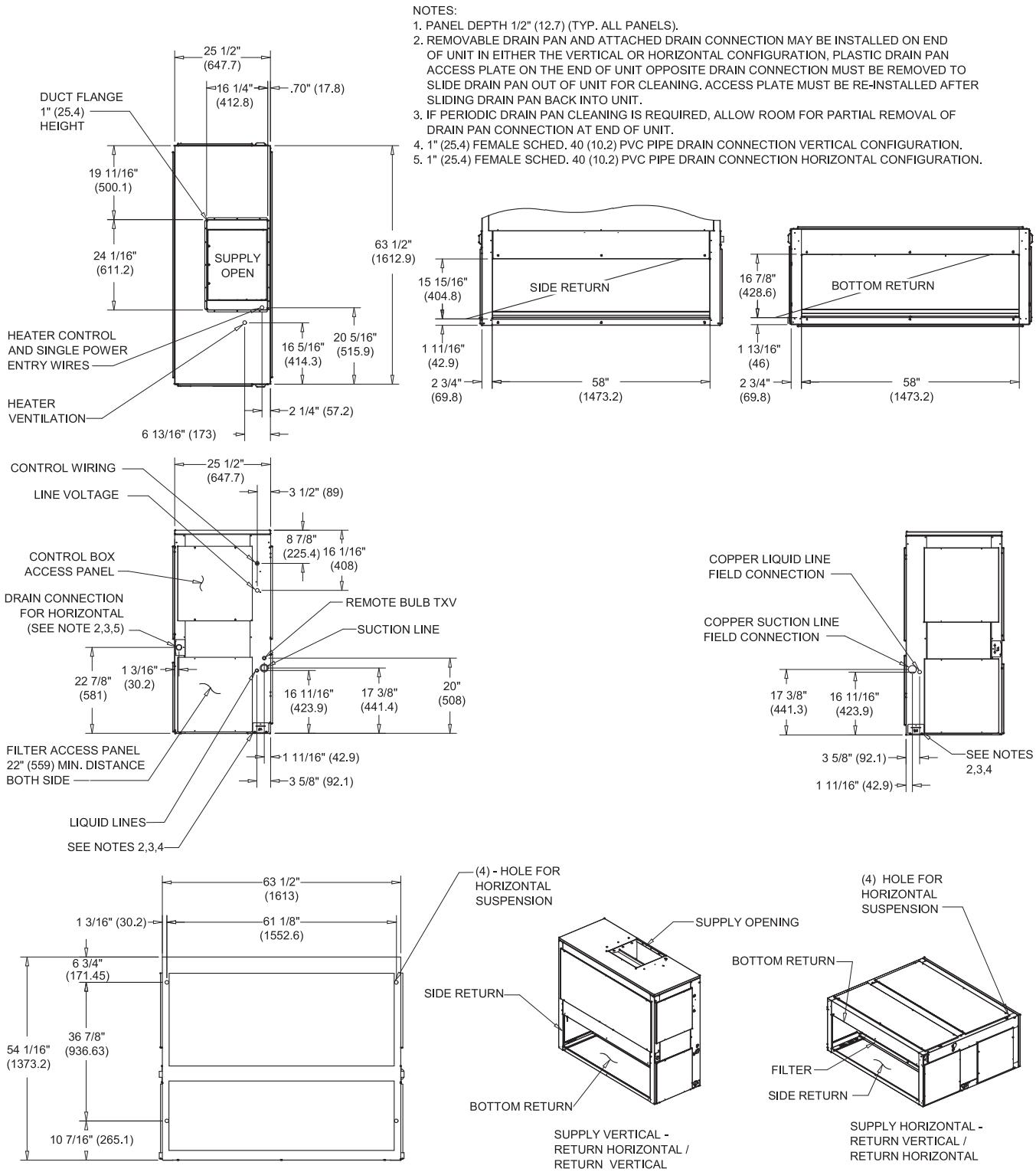


Figure 23. 10 ton air handler, dual circuit

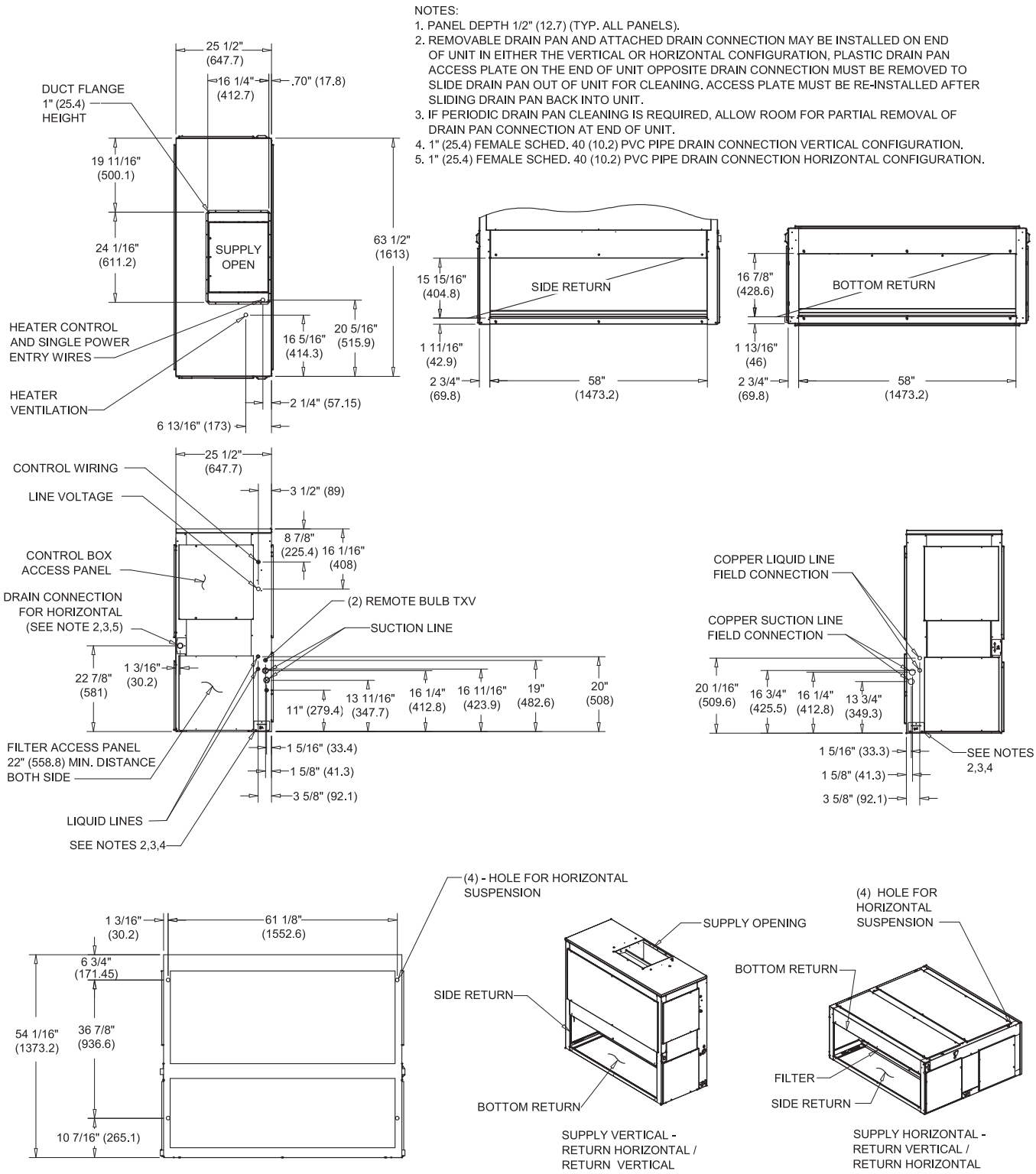


Figure 24. 12.5, 15 ton air handler, dual circuit

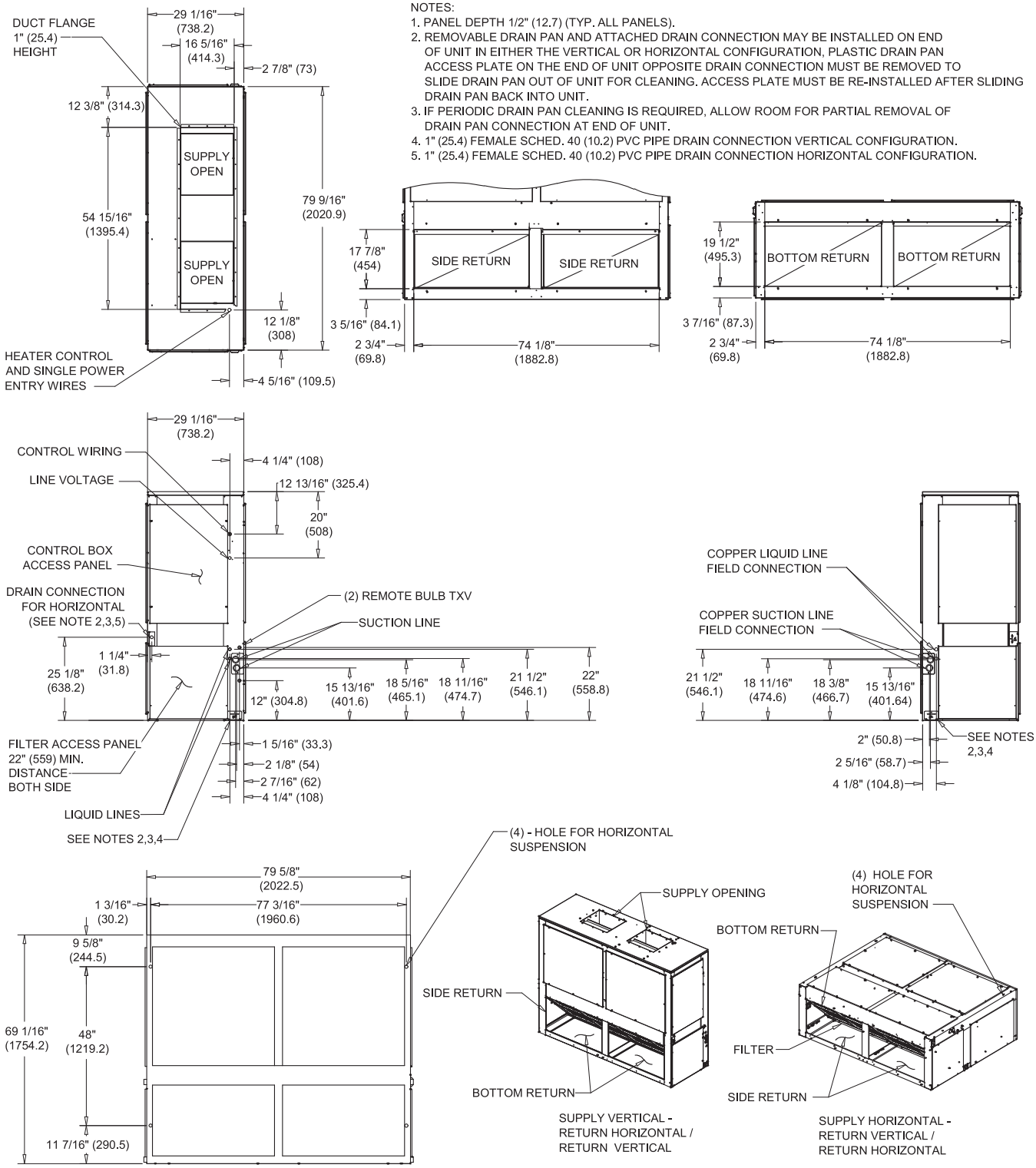
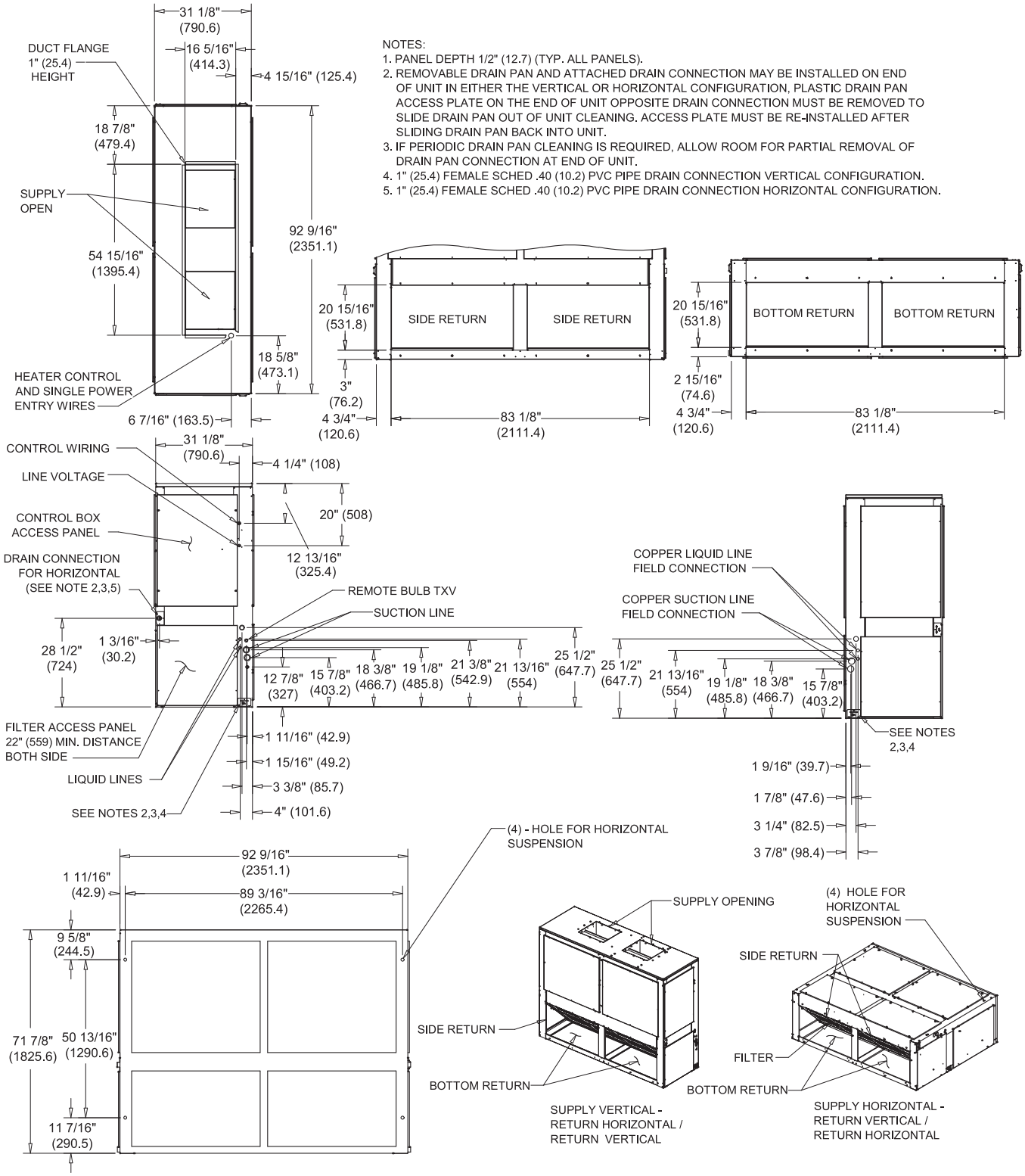
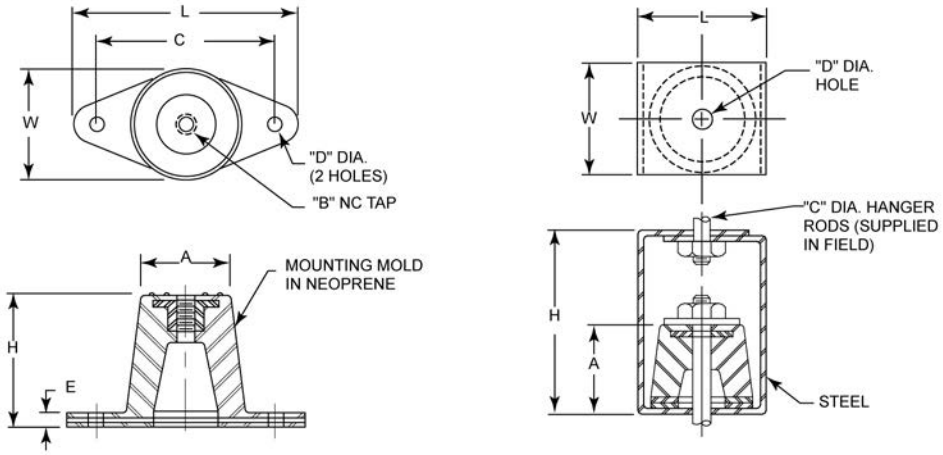


Figure 25. 20 ton air handler, dual circuit



Accessories

Figure 26. Rubber isolator accessory dimensions



BAYISLT004, 005, 009, 010

BAYISLT012, 013, 014, 015, 016

Table 52. Rubber isolator accessory dimensions

Model No.	L	W	H	A	B	C	D	E
BAYISLT004	3-1/8 (79.375)	1-3/4 (44.45)	1-1/4 (31.75)	1-1/4 (31.75)	3/8 (9.525)	2-3/8 (60.325)	3/8 (9.525)	1/4 (6.35)
BAYISLT005	3-7/8 (98.425)	2-3/8 (60.325)	1-3/4 (44.45)	1-3/4 (44.45)	3/8 (9.525)	3 (76.2)	3/8 (9.525)	1/4 (6.35)
BAYISLT009	3-7/8 (98.425)	2-3/8 (60.325)	1-3/4 (44.45)	1-3/4 (44.45)	3/8 (9.525)	3 (76.2)	3/8 (9.525)	1/4 (6.35)
BAYISLT010	3-7/8 (98.425)	2-3/8 (60.325)	1-3/4 (44.45)	1-3/4 (44.45)	3/8 (9.525)	3 (76.2)	3/8 (9.525)	1/4 (6.35)
BAYISLT013	2-1/4 (57.15)	2 (50.8)	3 (76.2)	1-3/8 (34.925)	3/4 (19.05)	3/8 (9.525)	1/2 (12.7)	—
BAYISLT014	2-1/4 (57.15)	2 (50.8)	3 (76.2)	1-3/8 (34.925)	3/4 (19.05)	3/8 (9.525)	1/2 (12.7)	—
BAYISLT015	2-1/4 (57.15)	2 (50.8)	3 (76.2)	1-3/8 (34.925)	3/4 (19.05)	3/8 (9.525)	1/2 (12.7)	—
BAYISLT012	3 (76.2)	2-1/4 (57.15)	4-1/2 (114.3)	1-7/8 (47.625)	1/4 (6.35)	5/8 (15.875)	3/4 (19.05)	—
BAYISLT015 (a)	3 (76.2)	2-1/4 (57.15)	4-1/2 (114.3)	1-7/8 (47.625)	1/4 (6.35)	5/8 (15.875)	3/4 (19.05)	—
BAYISLT016	3 (76.2)	2-1/4 (57.15)	4-1/2 (114.3)	1-7/8 (47.625)	1/4 (6.35)	5/8 (15.875)	3/4 (19.05)	—

Note: BAYISLT015 contains a quantity 2 of the 2-1/4 x 2 x 3 isolators and quantity of 3 of the 3 x 2-1/4 x 4-1/2 isolators.

Figure 27. Spring isolator accessory dimensions – inches (millimeters)

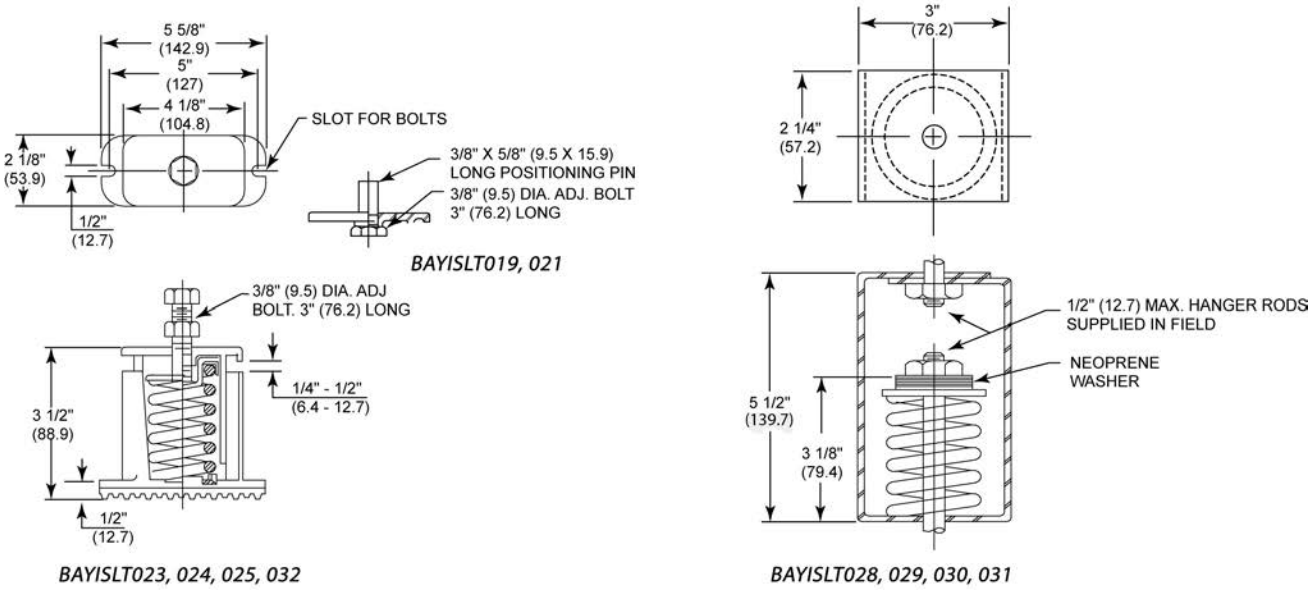


Figure 28. Electric heater accessory for 5-10 ton air handlers – inches (millimeters)

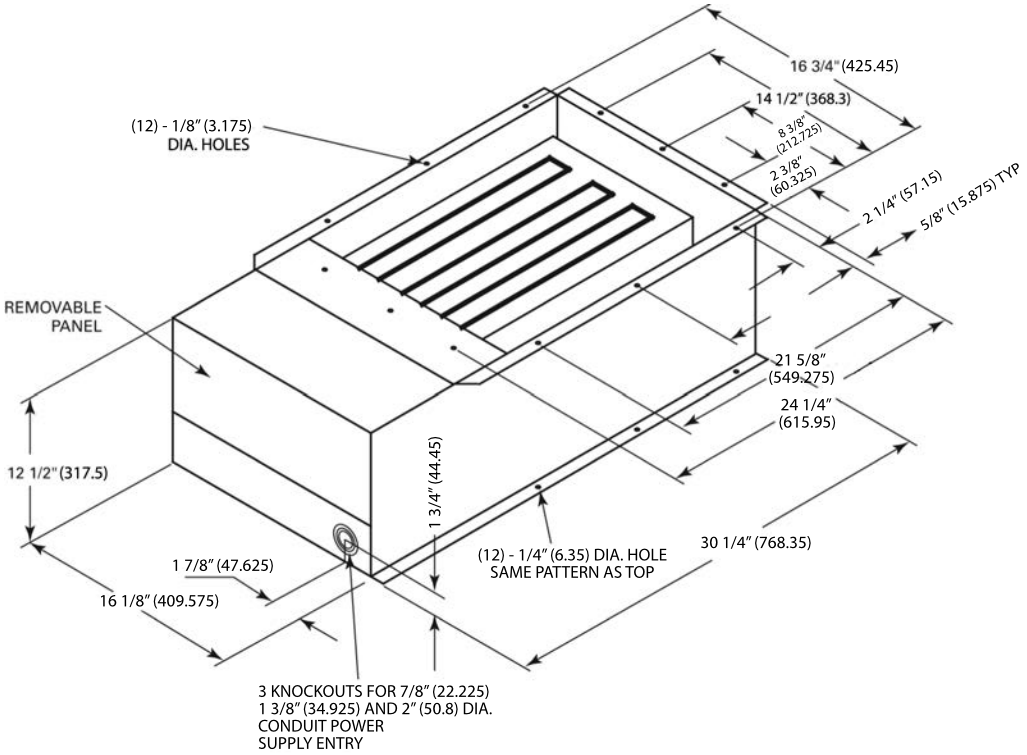


Figure 29. Electric heater accessory for 12.5-20 ton air handlers – inches (millimeters)

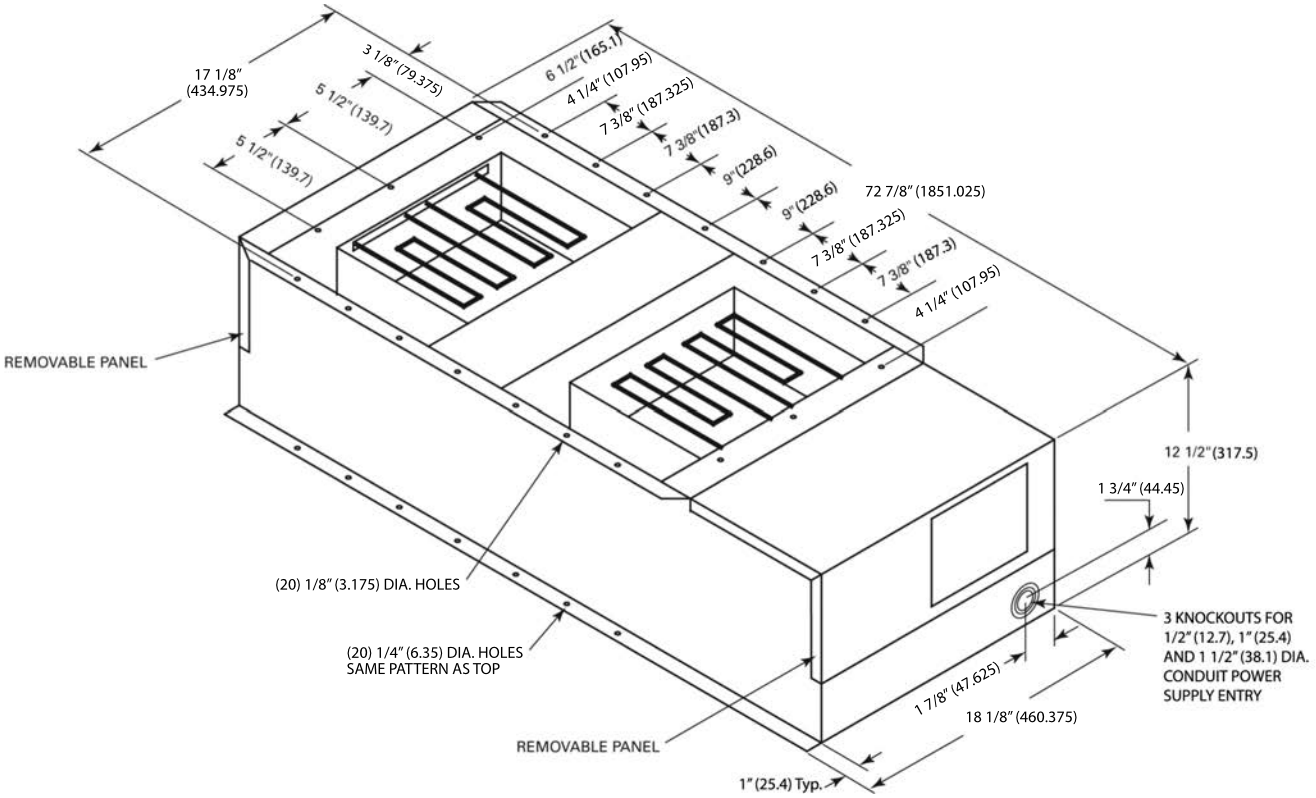


Table 53. Hot water coil accessory – inches (millimeters)

Model No.	A	B	C	D	E	F	G	H	J	K	L
BAYWATR027	38.14 (969)	22.74 (576)	13.74 (349)	5 (127)	9 (229)	13.65 (347)	16 (406)	26 (660)	12 (305)	6 (152)	4.94 (125)
BAYWATR028	47.74 (1213)	25.74 (654)	15.95 (405)	5 (127)	10.84 (275)	17.17 (436)	16 (406)	30 (762)	18 (457)	8.88 (225)	8.45 (215)
BAYWATR029	63.84 (1621)	25.74 (654)	15.95 (405)	6 (152)	11.84 (301)	17.16 (436)	18 (457)	36 (914)	18 (457)	13.88 (352)	8.45 (215)
BAYWATR030	79.74 (2025)	29.18 (741)	14.36 (365)	8 (203)	10.85 (276)	19.67 (500)	22 (559)	51 (1295)	18 (457)	14.25 (362)	6.86 (174)
BAYWATR031	92.74 (2356)	31.24 (793)	16.48 (419)	8 (203)	10.85 (276)	19.67 (500)	22 (559)	64 (1626)	18 (457)	14.25 (362)	8.98 (228)

Model No.	M	N	P	Q
BAYWATR027	7.79 (198)	2.88 (73)	10.24 (260)	2 NPT (51) NPTI (a)
BAYWATR028	10.27 (261)	2.88 (73)	7.77 (197)	2.5 NPTI (64) NPTI
BAYWATR029	10.03 (255)	2.88 (73)	7.58 (192)	2.5 NPTI (64) NPTI
BAYWATR030	9.91 (252)	1.88 (48)	7.41 (188)	2.5 NPTI (64) NPTI
BAYWATR031	9.88 (251)	3.75 (95)	7.38 (187)	2.5 NPTI (64) NPTI

Table 54. Steam coil accessory – inches (millimeters)

Model No.	A	B	C	D	E	F	G	H	J	K	L
BAYWATR012	38.14 (969)	22.74 (577)	14.32 (364)	5 (127)	9 (229)	13.67 (347)	16 (406)	10.88 (276)	11.17 (284)	2 (51)	1.5 (38)
BAYWATR013	47.74 (1212)	25.74 (654)	20.14 (511)	5 (127)	10.84 (275)	17.17 (436)	16 (406)	10.88 (276)	11.17 (284)	2 (51)	2 (51)
BAYWATR014	63.84 (1621)	25.74 (654)	20.14 (511)	6 (152)	11.87 (301)	17.16 (436)	18 (457)	13.70 (348)	10.57 (268)	2.5 (64)	2 (51)
BAYWATR015	79.74 (2025)	29.18 (741)	18.55 (471)	8 (203)	10.85 (275)	19.67 (500)	22 (559)	12.11 (308)	10.05 (255)	2.5 (64)	2 (51)
BAYWATR016	92.74 (2355)	31.24 (793)	20.67 (525)	8 (203)	10.85 (275)	19.67 (500)	22 (559)	14.23 (361)	10.01 (254)	2.5 (64)	2 (51)

Table 54. Steam coil accessory – inches (millimeters) (continued)

Model No.	M	N	P	Q	R
BAYWATR012	26 (660)	12 (305)	6 (152)	2.87 (73)	9.95 (253)
BAYWATR013	30 (762)	18 (457)	8.87 (225)	2.87 (73)	9.95 (253)
BAYWATR014	36 (914)	18 (457)	13.87 (352)	2.87 (73)	9.13 (232)
BAYWATR015	51 (1295)	18 (457)	14.12 (359)	1.87 (48)	8.61 (219)
BAYWATR016	64 (1626)	18 (457)	14.12 (359)	3.75 (95)	8.58 (218)

Figure 30. Discharge plenum and grille accessory

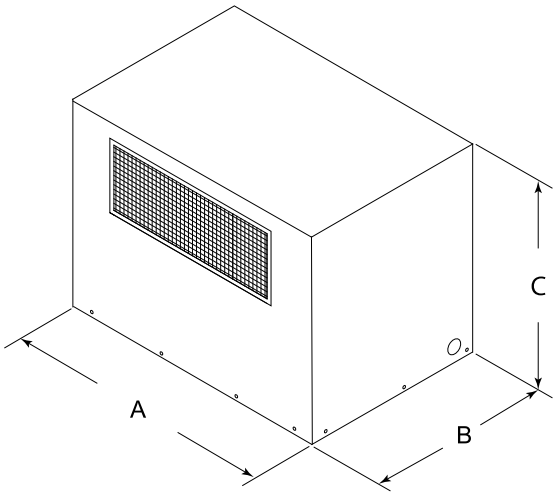


Table 55. Discharge plenum and grille dimensions – no heat – inches (millimeters)

Unit	Model No.[a]	A	B	C
TWE061	BAYPLNM015	37.94 (963.6)	21.94 (557.2)	28 (711.2)
TWE090	BAYPLNM016	47.5 (1206.5)	24.99 (634.7)	28 (711.2)
TWE120	BAYPLNM017	63.5 (1612.9)	24.99 (634.7)	28 (711.2)
TWE150, TWE180	BAYPLNM018[b]	79.5 (2019.3)	27.63 (701.8)	22 (558.8)
TWE240	BAYPLNM019[b]	92.5 (2349.5)	30.43 (772.9)	24 (609.6)

[a] When installed horizontally, plenum/water coil must be self-supported.
[b] For use with hydronic heat or no heat.

Figure 31. Discharge plenum and grille accessory

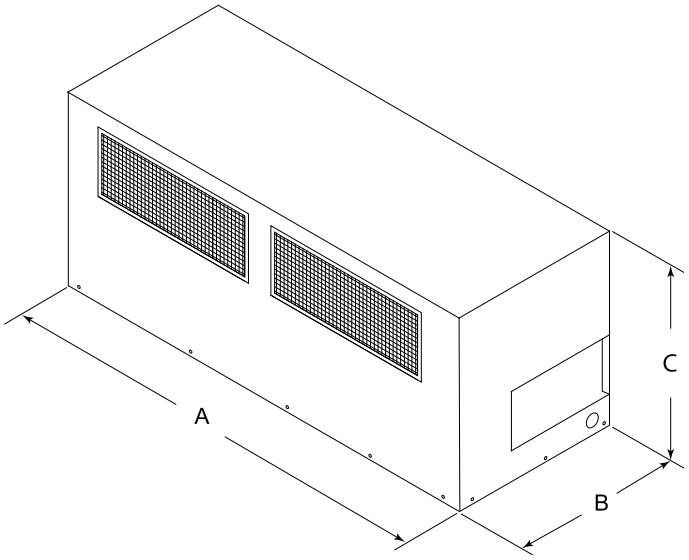


Table 56. Discharge plenum and grille dimensions – inches (millimeters) – (for use with electric heat)

Tons	Model No.	A	B	C
TWE061	BAYPLNM030	38.07 (967)	22.69 (576.3)	29.05 (738)
TWE090	BAYPLNM031	47.86 (1216)	25.69 (652.5)	29.05 (738)
TWE120	BAYPLNM032	63.86 (1622)	25.69 (652.5)	29.05 (738)
TWE150, TWE180	BAYPLNM033	80.14 (2036)	29.10 (739.1)	35.11 (892)
TWE240	BAYPLNM034	92.96 (2361)	31.10 (789.9)	35.05 (890)

Figure 32. Subbase accessory – inches (millimeters)

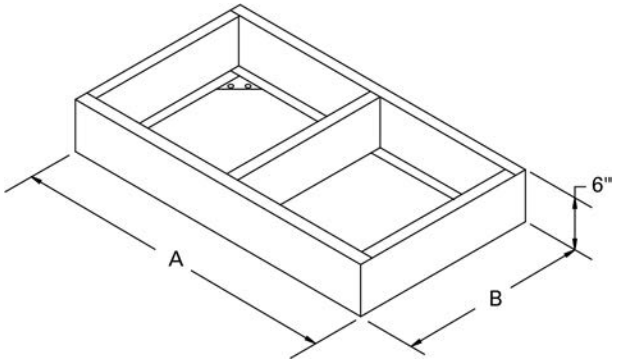


Table 57. Subbase dimensions – inches (millimeters)

Tons	Model No.	A	B
TWE061	BAYBASE009	38 (965.2)	22.63 (574.8)
TWE090	BAYBASE010	47.5 (1206.5)	25.51 (648.0)
TWE120	BAYBASE011	63.5 (1612.9)	25.52 (648.2)
TWE150, TWE180	BAYBASE012	79.5 (2019.3)	29.04 (737.6)
TWE240	BAYBASE013	92.5 (2349.5)	31.14 (791.0)

Weights

Heat Pump Condenser

Table 58. TWA unit and corner weights — lbs (60 Hz)

Tons	Model No.	Shipping Max (lbs)	Net Max (lbs)	Corner Weights			
				1	2	3	4
6	TWA073D	386	328	113	83	56	76
7.5	TWA090D	398	340	117	86	58	79
10	TWA120D	524	467	166	109	116	76
15	TWA180E	923	765	202	192	181	190
20	TWA240E	1006	848	254	266	147	181

Figure 33. TWA073, 090, 120

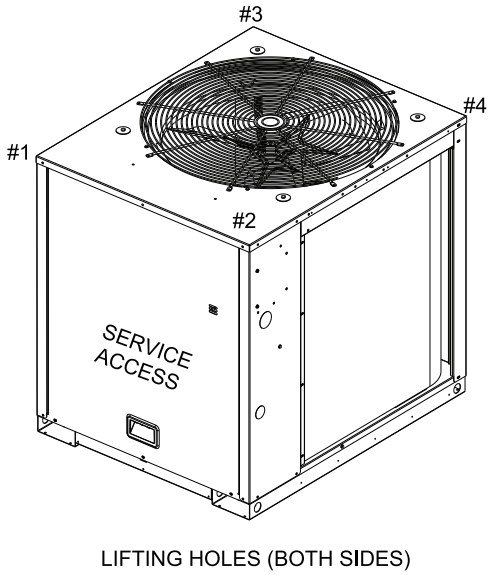
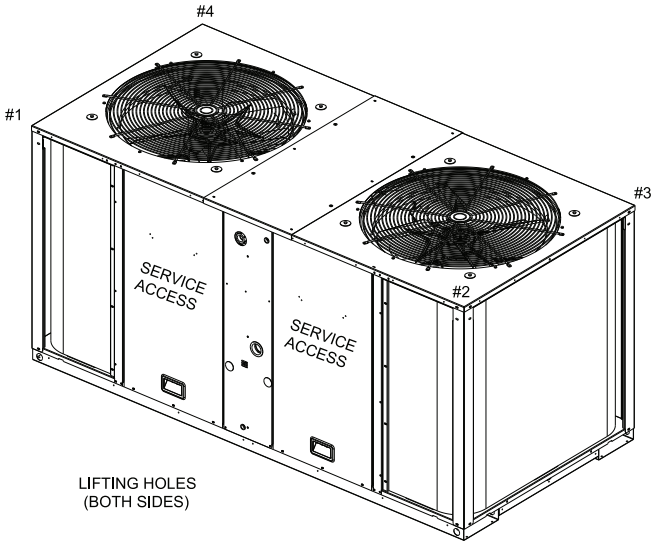


Figure 34. TWA180, 240



Air Handler

Table 59. Standard air handler (TWE) — unit and corner weights - (60 Hz)

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
5	TWE061D/E	285	232	55	71	51	55	54	67	50	61
7.5	TWE090D/E	385	323	67	99	75	82	56	92	87	88
10	TWE120D/E	441	393	77	121	110	85	79	118	77	119
12.5	TWE150E	753	676	168	192	181	135	196	164	145	171
15	TWE180E	752	675	167	192	181	135	196	163	145	171
20	TWE240E	912	818	258	168	161	231	256	181	146	235

Table 60. SZVAV and 2-Speed VFD air handler (TWE) — unit and corner weights - (60 Hz)

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
7.5	TWE090E	385	323	67	99	75	82	56	92	87	88

Table 60. SZVAV and 2-Speed VFD air handler (TWE) — unit and corner weights - (60 Hz) (continued)

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
10	TWE120D/E	441	393	77	121	110	85	79	118	77	119
12.5	TWE150E	753	676	168	192	181	135	196	164	145	171
15	TWE180E	752	675	167	192	181	135	196	163	145	171
20	TWE240E	912	818	258	168	161	231	256	181	146	235

Figure 35. Vertical — TWE061, 090, 120

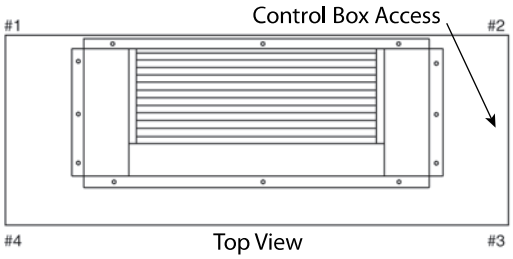


Figure 36. Vertical — TWE150, 180, 240

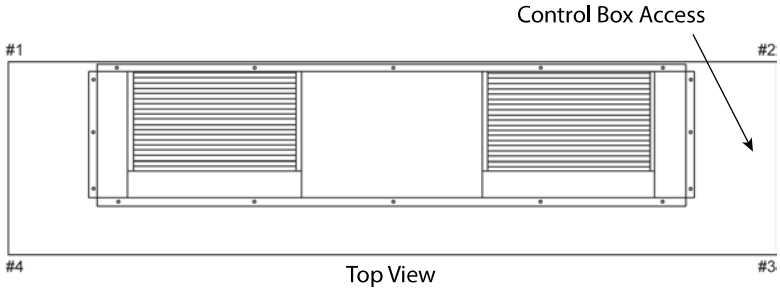


Figure 37. Horizontal — TWE061, 090, 120

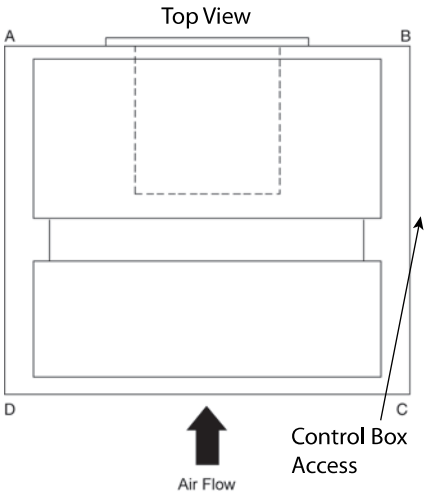
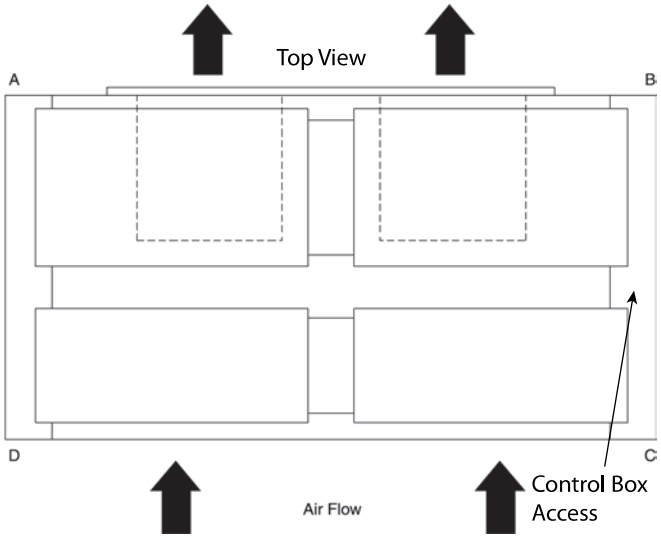


Figure 38. Horizontal — TWE150, 180, 240



Accessories

Table 61. Accessory weights (net lbs.) - 60 Hz

Unit Used with Tons	Hot Water Coil	Steam Coil	Discharge Plenum and Grille with Hydronic Heat	Discharge Plenum and Grille without Heat	Discharge Plenum and Grille with Electric Heat	Return Air Grille	Electric Heat Min/ Max	Subbase	Oversized Motor
5	86	94	63	58	115	3	32/43	14.4	31
7.5	116	131	78	73	160	5	27/45	19.4	48
10	165	148	97	92	195	7	27/45	23.5	50
12.5	211	234	—	230	235	10	79/100	28.4	80
15	211	234	—	230	235	10	79/100	28.4	80
20	242	261	—	145	265	12	79/100	31.7	88

Unit Used with Tons	RIS Isolator Floor Mount	RIS Isolator Suspend-ed Mount	Steel Spring Isolator Floor Mount	Steel Spring Isolator Suspend-ed Mount	Control Trans-former	Hail Guard	Sensors	Modulat-ing Low Ambient	On/Off Low Ambient
5	2	9	12	6	—	21	1	23	2
7.5	2	6	12	6	4	21	1	23	2
10	2	7	12	6	4	28	1	23	2
12.5	2	7	12	6	—	33	1	23	2
15	2	7	12	6	—	55	1	23 (req. qty 2)	1 (req. qty 2)
20	2	9	12	6	—	55	1	42 (req. qty 2)	1 (req. qty. 2)

Mechanical Specifications

Condensing Units

Standard Options

General

- Weatherproofed steel mounting/lifting rails
- Hermetic scroll compressors
- Plate fin condenser coils
- Fans and motors
- Standard operating range 50-125°F (min. 0°F with low ambient accessory)
- Nitrogen holding charge
- Certified and rated in accordance with AHRI and DOE standards
- Certified to UL 1995

Casing

- Zinc coated, heavy gauge, galvanized steel
- Weather resistant baked enamel finish
- Meets ASTM B117, 672 hour salt spray test
- Removable single side maintenance access panels
- Lifting handles in maintenance access panels
- Unit base provisions for forklift and/or crane lifting

Refrigeration System - Single Compressor (TWA073D, TWA090D, TWA120D)

- Single refrigeration circuit with integral subcooling circuit
- Single direct drive hermetic scroll compressor
- Suction gas-cooled motor w/ ± 10% voltage utilization range of unit nameplate voltage
- Reversing valve
- Crankcase heater
- Internal temperature and current sensitive motor overloads
- No compressor suction and/or discharge valves (reduced vibration/sound)
- Factory installed liquid line filter drier
- Phase loss/reverse rotation monitor
- Liquid line service valve (with gauge port)
- Suction line service valve (with gauge port)
- External high pressure cutout device
- External low pressure cutout device
- Evaporator defrost control
- Loss of charge protection (discharge temperature limit)

Refrigeration System - Dual Compressor (TWA180E, TWA240E)

- Two (2) separate and independent refrigerant circuits
- Each refrigeration circuit equipped with integral subcooling circuit
- Two (2) direct drive hermetic scroll compressor
- Suction gas-cooled motors w/ ± 10% voltage utilization range of unit nameplate voltage
- Reversing valves
- Crankcase Heaters
- Internal temperature and current sensitive motor overloads
- Factory installed liquid line filter driers
- Phase loss/reverse rotation monitor
- Liquid line service valves (with gauge port)
- Suction line service valves (with gauge port)
- No compressor suction and/or discharge valves (reduced vibration/sound)
- External high pressure cutout devices

- External low pressure cutout devices
- Evaporator defrost control
- Loss of charge protection (discharge temperature limit)

Condenser Coil (Fin and Tube)

- 3/8” internally enhanced copper tube
- Mechanically bonded to lanced aluminum plate fins
- Factory pressure and leak tested to 660 psig
- Perforated steel hail guards available (factory installed option or field installed accessory)

Condenser Fan

- 26" or 28" propeller fan(s)
- Direct drive
- Statically and dynamically balanced

Condenser Motor(s)

- Permanently lubricated totally enclosed or open construction
- Built-in current and thermal overloads
- Ball or sleeve bearing type

Controls

- Centralized microprocessor
- Indoor and outdoor temperature sensors drive algorithms, making decisions for all heating, cooling, and ventilation
- Integrated anti-short cycle timer
- Integrated time delay between compressors
- Completely internally wired
- Numbered and colored wires
- Contactor pressure lugs or terminal block
- Unit external mounting location for disconnect device
- Single point power entry

Factory Installed Options

Hail Guards

- Condenser coil protection from hail, vandals, etc.
- Perforated, painted galvanized steel
- Factory or field installed

Black Epoxy Coated Condenser Coil (Fin and Tube)

- Thermoset vinyl coating
- Bonded to aluminum fin stock (prior to fin-stamping process)
- Economical protectant in mildly corrosive environments

LonTalk Communication Interface

- Factory or field installed
- Communications board
- Allows unit communication as a Tracer™ LCI-R device
- Allows unit communication with generic LonTalk® Network building automation controls

Controls: Microprocessor

- Centralized processor
- Indoor and outdoor temperature sensors drive algorithms, making decisions for all heating, cooling, and ventilation
- Integrated anti-short cycle timer
- Integrated time delay between compressors

Field Installed Options

Low Ambient (Fan ON/OFF)

- Provides unit cooling operation to outdoor ambient of 0°F
- Low cost solution
- Liquid line temperature controls condenser fan operation
- 1 kit per condenser fan required

Low Ambient (Modulating)

- Provides unit cooling operation to outdoor ambient of 0°F
- "Wave-chopper"
- Discharge line pressure controls condenser fan operation
- 1 kit per condenser fan required

Vibration Isolators

- Neoprene-in-shear or spring flex choice
- Reduce vibration transmission to building structures, equipment, and adjacent spaces
- Reduce noise transmission to building structures, equipment, and adjacent spaces

Zone Sensor

- Interfaces with microprocessor units
- Manual or automatic programmable
- System malfunction lights
- Remote sensor options
- Wireless option

Thermostat

- 1H/1C available
- 2H/1C available
- Manual or automatic changeover available
- Programmable and non-programmable solutions available

LonTalk Communication Interface

- Factory or field installed
- Communications board
- Allows unit communication as a Tracer™ LCI-R device
- Allows unit communication with generic LonTalk® Network building automation controls

BACnet Communication Interface

- Communicates directly with a generic open protocol BACnet MS/TP Network building automation system control

Air Handlers

Standard Options

General

- Completely factory assembled
- Convertible for horizontal or vertical configuration
- Convertible for cooling only or heat pump application
- Convertible for left or right external connections (refrigerant and/or electrical)
- Convertible for front or bottom air return
- Nitrogen holding charge
- Certified to UL 1995 for indoor blower coil units

Casing

- Zinc coated, heavy gauge, galvanized steel
- Weather resistant baked enamel finish
- Access panels with captive screws
- Completely insulated with foil faced, cleanable, fire retardant, permanent, odorless glass fiber material
- Captured or sealed insulation edges
- Electrical connection bushings or plugs
- Refrigerant connection bushings or plugs
- Withstand elevated internal static pressure

Refrigeration System

- Single or dual circuit
- Distributor(s)
- Thermal expansion valves (TXVs)

Evaporator Coil

- 3/8” internally enhanced copper tube mechanically bonded to lanced aluminum plate fins
- Factory pressure and leak tested to 449 psig.
- Draw-through airflow
- Dual circuits are interlaced/intertwined
- Double sloped, removable, cleanable, composite drain pan
- Four drain pan positions

Indoor Fan

- Double inlet, double width, forward curved, centrifugal type fan
- Dual fans on 12.5 - 20 ton air handlers
- Adjustable belt drive
- Permanently lubricated bearings

Indoor Motor

- Adjustable motor sheaves (standard units)
- Fixed motors sheaves (SZVAV)
- Thermal overload protection
- Permanently lubricated bearings
- Meet energy policy of 1992 (EPACT)
- Optional oversized motors for high static applications

Controls

- Completely internally wired
- Numbered and colored wires
- Magnetic indoor fan contactor
- Low voltage terminal strip
- Single point power entry
- Evaporator defrost control

Filters

- Access from side coil panels
- Filters slide on rack
- One inch (1"), throwaway filters on 5 - 10 ton units
- Filter rack convertible to two inch (2") capability on 5 - 10 ton units
- Two inch (2"), throwaway filters on 12.5 - 20 ton units

Factory Installed Options

Single Zone Variable Air Volume

- Variable Frequency Drive (VFD)
- Motor soft start — avoids start up belt noise and increases belt life
- Programmable keypad accessible outside of airstream
- Airflow adjustment via potentiometer
- Discharge air sensor
- ReliaTel options module
- VFD rated motor
- Factory installed high static motor available

Field Installed Options

Electric Heaters

- Heavy duty nickel chromium elements
- ETL approved
- Installs directly on fan discharge
- One or two stage control (dependent upon capacity)
- Single point power entry
- Terminal strip connections
- 460V Heaters
  - Internally wye connected
  - Automatic line break high limit controls
- 230V Heaters
  - Internally delta connected
  - Automatic reset of high limit controls through pilot duty with secondary backup fuse links

Hydronic Heat Coils

- One row steam
- Two row hot water
- Installs directly on fan discharge
- Heavy gauge sheet metal casing matches air handler
- Convertible for horizontal or vertical configurations

Discharge Plenums and Grilles

- Vertical, free discharge applications
- Heavy gauge sheet metal casing matches air handler
- Satin-finished, 4-way adjustable louver grilles

Return Air Grilles

- Vertical, free discharge applications
- Satin-finished, non-adjustable louver grilles
- Replaces front lower access panel

Mounting Sub-Base

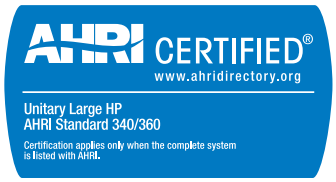
- Vertical floor mount configuration requirement
- Heavy gauge sheet metal casing matches air handler
- Provides additional clearance for condensate drain trapping
- Required when isolators are used

Vibration Isolators

- Neoprene-in-shear or spring flex choice
- Floor or suspended applications
- Reduce vibration transmission to building structures, equipment, and adjacent spaces
- Reduce noise transmission to building structures, equipment, and adjacent spaces

Oversize Motors

- High static applications
- Motor, sheaves, belt included



TRANE®

Trane optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, Trane offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit www.Trane.com.

Trane has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice.

SSP-PRC023G-EN 28 Aug 2015
Supersedes SSP-PRC023F-EN (May 2014)

We are committed to using environmentally conscious print practices that reduce waste.

IR Ingersoll Rand