



Split System Heat Pump

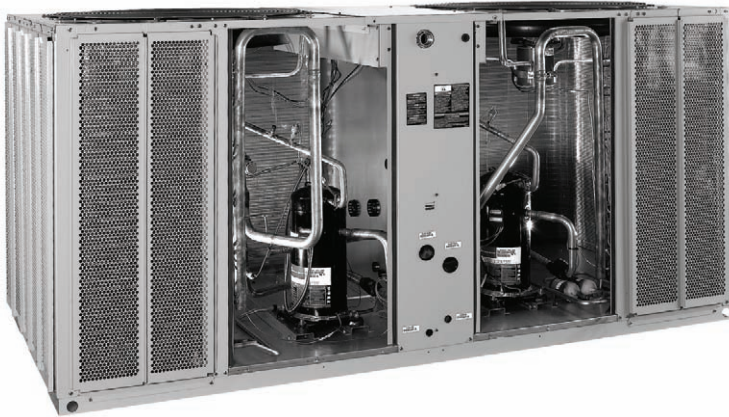
Heat Pump Units
6 to 20 Ton, 60 Hz, R-410A

Air Handlers
5 to 20 Ton, 60 Hz, R-410A





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, Trane's 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.

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Features & Benefits

Standard Features

- 5-year Limited Compressor Warranty¹
- 1-year Limited Parts Warranty
- Anti-Short Cycle Timer
- Colored and Numbered Wiring
- Convertible Airflow
- Crankcase Heaters
- Easy Access Low Voltage Terminal Board (LTB)
- ReliaTel™ Microprocessor Controls
- Filters are Standard on all Units
- Foil-Faced and Edge Captured Insulation
- High Pressure Control
- IAQ Dual Sloped and Removable Drain Pans
- Liquid Line Refrigerant Drier
- Low Ambient Cooling to 0°F
- Low Pressure Control
- Belt Drive Motors
- Phase Loss/Reversal Monitor
- Quick Access Panels
- Single Point Power
- Single Side Service
- Standardized Components
- Thermal Expansion Valve
- Scroll Compressors
- FrostStat™ - Evaporator Defrost Control (EDC)
- Low Voltage Circuit Protection
- Compressor Discharge Temperature Limit (DLT)

Options

Note: Refer to Model Number Description for option availability.

Factory Installed Options

- Black Epoxy Pre-Coated Coils

Factory or Field Installed Options

- LonTalk® Communications Interface (LCI)
- Hail/Vandal Guards

¹ Not available for 20 Ton.

Field Installed Options

- High Static Motor Kit
- Low Static Motor Kit
- Electric Heaters
- Trane Communications Interface (TCI)
- Vibration Isolators
- Hot Gas Bypass
- Zone Sensor
- Thermostat
- Low Ambient

Other Benefits

- Cabinet design ensures water integrity
- Ease of Service, Installation and Maintenance
- Mixed model build enables “fastest in the industry” ship cycle times
- Outstanding Airflow Distribution
- ReliaTel Controls
- Unmatched Product Support is 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

Standard Features**Anti-Short Cycle Timer**

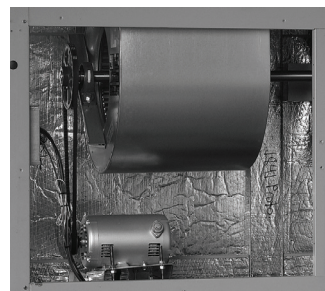
Provides a 3 minute minimum “ON” time and 3 minute “OFF” time for compressors to enhance compressor reliability by assuring proper oil return.

Belt Drive Motors

For additional static requirements, Odyssey 5-20 ton units offer standard belt drive motors to meet and exceed a wide range of airflow needs.

Colored And Numbered Wiring

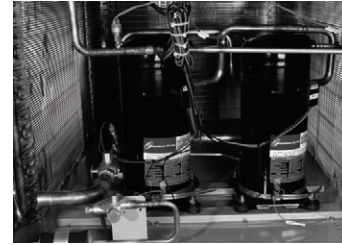
Save time and money tracing wires and diagnosing the unit.



Features & Benefits

Compressors

Odyssey contains 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 10-20 ton models and allow for efficient cooling utilizing 2-stages of compressor operation.

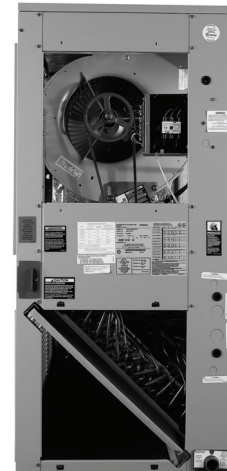


Controls – ReliaTel

ReliaTel microprocessor controls provide unit control for heating, cooling and ventilating utilizing input from sensors that measure indoor and outdoor temperature and other zone sensors. ReliaTel also provides outputs for building automation systems and expanded diagnostics. For a complete list of ReliaTel offerings, refer to the “Other Benefits” section within the Features and Benefits section of this catalog. For the simpler job that does not require a building automation system, or expanded diagnostics capabilities, Odyssey offers electromechanical controls. This 24-volt control includes the control transformer and contactor pressure lugs for power wiring.

Convertible Units

The units 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

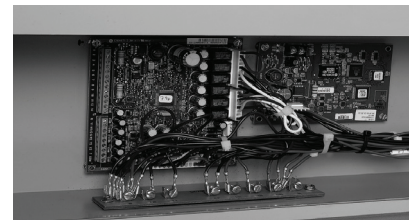
These band heaters provide improved compressor reliability by warming the oil to prevent migration during off-cycles or low ambient conditions.

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.



Foil Faced Insulation

All internal air handler surfaces have cleanable foil-faced insulation. All edges are either captured or sealed to ensure no insulation fibers get into the airstream.



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.

High Pressure Control

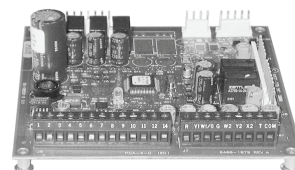
All units include High Pressure Control as standard.

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.

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 units.

Variety of Options

Factory Installed Options

Note: Refer to Model Number Description or Mechanical Specifications for availability.

Black Epoxy Pre-Coated Coils

The pre-coated coils are an economical option for protection in mildly corrosive environments.

Factory or Field Installed Options

Note: Refer to Model Number Description for option availability.

Features & Benefits

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.

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.



Field Installed Options

Note: Refer to Model Number Description or Mechanical Specifications for availability.

Trane Communication Interface (TCI)

This module, when applied with ReliaTel™, easily interfaces with Trane's Integrated Comfort™ System.

Electric Heaters

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

High/Low Static Motor

Available on many models, this high static motor accessory extends the capability of the standard unit.

Low Ambient

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

Zone Sensors/Thermostats

Available in programmable, automatic and manual styles.

Other Benefits

Airflow Distribution

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

Easy to Install, Service and Maintain

Because today's owners are very cost-conscious when it comes to service and maintenance, the Trane Odyssey 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. 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.

Flexibility

Odyssey offers ultimate flexibility. Units are built to order in our standard "shortest in the industry" ship cycle time.



ReliaTel™ Controls

ReliaTel controls provide unit control for heating and cooling, utilizing input from sensors that measure outdoor and indoor temperature.

ReliaTel Control Logic Enhances Quality and Reliability

- prevents the unit from short cycling, considerably improving compressor life.
- ensures that the compressor will run for a specific amount of time which allows oil to return for better lubrication, enhancing the reliability of the compressor.

Odyssey units with ReliaTel reduces the number of components required to operate the unit, thereby reducing possibilities for component failure.

ReliaTel Makes Installing and Servicing Easy

ReliaTel eliminates the need for field installed time delay relays.

ReliaTel controls provide these functions as an integral part of the unit. The contractor no longer has to purchase these controls as options and pay to install them.

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.

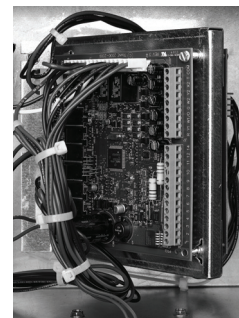
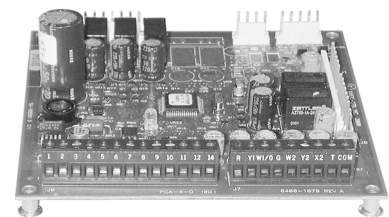
ReliaTel Makes Testing Easy

ReliaTel requires no special tools to run the Odyssey unit through its paces. Simply place a jumper between Test 1 (T1) and Test 2 (T2) 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" 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.



Features & Benefits

Some zone sensor options have central control panel lights which indicate the mode the unit is in and possible diagnostic information.

Other ReliaTel Benefits

The ReliaTel built-in anti-short cycle 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 fails, the unit will continue to operate at predetermined temperature setpoint.

Intelligent Anticipation is a standard ReliaTel 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 same ReliaTel Board fits all Split System Cooling and Heat Pump models. This provides standardization of parts for contractors. Less money is tied up in inventory with ReliaTel.

Unit Cabinet

The compact cabinet takes up less room and is less costly to ship.

Rigorous Testing

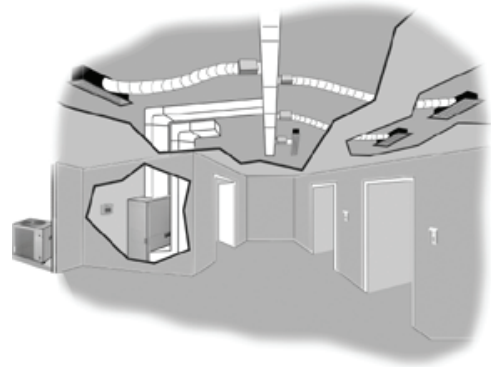
All of Odyssey’s designs are rigorously rain tested to ensure water integrity. Actual shipping tests are performed to determine packaging requirements. Units are test shipped around the country to determine the best packaging. Factory shake and drop tests are used as part of the package design process 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.

VariTrac – Building Automation System

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



Features & Benefits

Table 1. List of Available Accessories

MODEL		USED WITH	DESCRIPTION
Base (Subbase)			
BAYBASE009A		TWE061D/ TWE061E	Subbase
BAYBASE010A		TWE090D/ TWE090E	
BAYBASE011A		TWE120D/TWE120E	
BAYBASE012A		TWE150E/TWE180E	
BAYBASE013A		TWE240E	
Drip Kit			
BAYDRKT006A		TWE061	Drip Kit
BAYDRKT007A		TWE090	
BAYDRKT008A		TWE120	
BAYDRKT009A		TWE150/180	
BAYDRKT010A		TWE240	
Coil Guard			
BAYGARD058A	TTA073D, TWA073D, TTA090D, TWA090D		Hail Guard
BAYGARD059A	TTA120D/E/F		
BAYGARD060A	TWA120D, TTA150D		
BAYGARD061A	TTA180E/F, TWA180E, TTA24E, TWA240E		
Return Air Grille			
BAYGRLE001A		TWE061D/E	Return Air Grille
BAYGRLE002A		TWE090D/E	
BAYGRLE003A		TWE120D/E	
BAYGRLE004A		TWE150E, TWE180E	
BAYGRLE005A		TWE240E	
HOT GAS BY-PASS			
BAYHGBP010A	TTA090D - TTA240F		Universal Hot Gas Bypass Kit
High Static Motor			
BAYHSMT104A	TWE061D1/E1	1.5HP (230/1) w/ 1VL44 motor sheave w/ AK54 fan sheave w/ A44 belt	
BAYHSMT105A	TWE061D3-4/E3-4	1.5HP (230-460/3) w/ 1VL44 motor sheave w/ AK54 fan sheave w/ A44 belt	
BAYHSMT106A	TWE061DW/EW	1.5HP (575/3) w/ 1VL44 motor sheave w/ AK54 fan sheave w/ A44 belt	
BAYHSMT107A	TWE090D1/E1	2 HP (230/1) w/ 1VL44 motor sheave w/ AK66 fan sheave w/ A50 belt	
BAYHSMT108A	TWE090D3/E3	2 HP (230/460/3) w/ 1VL44 motor sheave w/ AK66 fan sheave w/ A50 belt	
BAYHSMT109A	TWE090DW/EW	2 HP (575/3) w/ 1VL44 motor sheave w/ AK66 fan sheave w/ A50 belt	
BAYHSMT110A	TWE090D3/E3	3 HP (230/460/3) w/ 1VP44 motor sheave w/ AK54 fan sheave w/ AX48 belt	
BAYHSMT111A	TWE090DW/EW	3 HP (575/3) w/ 1VP44 motor sheave w/ AK54 fan sheave w/ AX48 belt	
BAYHSMT112A	TWE120D3/E3	3 HP (230/460/3) w/ 1VP44L motor sheave w/ AK74 fan sheave w/ A51 belt	
BAYHSMT113A	TWE120DW/EW	3 HP (575/3) w/ 1VP44L motor sheave w/ AK74 fan sheave w/ A51 belt	
BAYHSMT114A	TWE150E3	3 HP (230/460/3) w/ 1VP44L motor sheave w/ BK72 fan sheave w/ A51 belt	
BAYHSMT115A	TWE150EW	3 HP (575/3) w/ 1VP44L motor sheave w/ BK72 fan sheave w/ A51 belt	
BAYHSMT116A	TWE150E3	5 HP (230/3) w/ 1VP50L motor sheave w/ BK72 fan sheave w/ BX55 belt	
BAYHSMT117A	TWE150E4	5 HP (460/3) w/ 1VP50L motor sheave w/ BK72 fan sheave w/ BX55 belt	

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Features & Benefits

Table 1. List of Available Accessories (continued)

MODEL	USED WITH	DESCRIPTION
BAYHSMT118A	TWE150EW	5 HP (575/3) w/ 1VP50L motor sheave w/ BK72 fan sheave w/ BX55 belt
BAYHSMT119A	TWE180E3	5 HP (230/3) w/ 1VP50L motor sheave w/ BK85 fan sheave w/ BX58 belt
BAYHSMT120A	TWE180E3(a)	5 HP (460/3) w/ 1VP50L motor sheave w/ BK85 fan sheave w/ BX58 belt
BAYHSMT121A	TWE180EW	5 HP (575/3) w/ 1VP50L motor sheave w/ BK85 fan sheave w/ BX58 belt
BAYHSMT122A	TWE240E3(a)	7.5 HP (230/460/3) w/ 1VP60 motor sheave w/ BK90 fan sheave w/ BX60 belt
BAYHSMT123A	TWE240EW	7.5 HP (575/3) w/ 1VP60 motor sheave w/ BK90 fan sheave w/ BX60 belt
Electric Heaters		
BAYHTRL106A	TWE061D1-TWE120E1	4.33/5.76 KW Heater 208/240/1 Phase
BAYHTRL112A	TWE061D1-TWE120E1	8.65/11.52 KW Heater 208/240/1 Phase
BAYHTRL117A	TWE061D1-TWE120E1	12.98/17.28 KW Heater 208/240/1 Phase
BAYHTRL123A	TWE061D1-TWE120E1	17.30/23.04 KW Heater 208/240/1 Phase
BAYHTRL129A	TWE061D1-TWE120E1	21.65/28.80 KW Heater 208/240/1 Phase
BAYHTRL305A	TWE061D3-TWE120E3	3.75/5.00 KW Heater 208/240/3 Phase
BAYHTRL310A	TWE061D3-TWE120E3	7.45/9.96 KW Heater 208/240/3 Phase
BAYHTRL315A	TWE061D3-TWE120E3	11.25/14.96 KW Heater 208/240/3 Phase
BAYHTRL325A	TWE061D3-TWE120E3	18.71/24.92KW Heater 208/240/3 Phase
BAYHTRL335A	TWE061D3-TWE120E3	26.20/34.88 KW Heater 208/240/3 Phase
BAYHTRL405A	TWE061D4-TWE120E4	5.00 KW Heater 460/3 Phase
BAYHTRL410A	TWE061D4-TWE120E4	9.96 KW Heater 460/3 Phase
BAYHTRL415A	TWE061D4-TWE120E4	14.96 KW Heater 460/3 Phase
BAYHTRL425A	TWE061D4-TWE120E4	24.92 KW Heater 460/3 Phase
BAYHTRL435A	TWE061D4-TWE120E4	34.88 KW Heater 460/3 Phase
BAYHTRLW05A	TWE061DW-TWE120EW	5 KW Heater 575/3 Phase
BAYHTRLW10A	TWE061DW-TWE120EW	9.96 KW Heater 575/3 Phase
BAYHTRLW15A	TWE061DW-TWE120EW	14.96 KW Heater 575/3 Phase
BAYHTRLW25A	TWE061DW-TWE120EW	24.92 KW Heater 575/3 Phase
BAYHTRLW35A	TWE061DW-TWE120EW	34.88 KW Heater 575/3 Phase
BAYHTRM310A	TWE150E3-TWE240E3	7.50/10.0 KW Heater 208/230 3 Phase
BAYHTRM320A	TWE150E3-TWE240E3	14.96/19.92 KW Heater 208/230 3 Phase
BAYHTRM330A	TWE150E3-TWE240E3	22.50/29.92 KW Heater 208/230 3 Phase
BAYHTRM350A	TWE150E3-TWE240E3	37.42/49.84 KW Heater 208/230 3 Phase
BAYHTRM410A	TWE150E4-TWE240E4	10.0 KW Heater 460/3 Phase
BAYHTRM420A	TWE150E4-TWE240E4	19.92 KW Heater 460/3 Phase
BAYHTRM430A	TWE150E4-TWE240E4	29.92 KW Heater 460/3 Phase
BAYHTRM450A	TWE150EW-TWE240EW	49.84 KW Heater 460/3 Phase
BAYHTRMW10A	TWE150EW-TWE240EW	10.0 KW Heater 575/3 Phase
BAYHTRMW20A	TWE150EW-TWE240EW	19.92 KW Heater 575/3 Phase
BAYHTRMW30A	TWE150EW-TWE240EW	29.92 KW Heater 575/3 Phase
BAYHTRMW50A	TWE150EW-TWE240EW	49.84 KW Heater 575/3 Phase
Trane Communication Interface		
BAYICSI003A	TTA090D-TTA240F, TWA090D-TWA240E	Comm 3/4 Communications Interface

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Features & Benefits

Table 1. List of Available Accessories (continued)

MODEL	USED WITH	DESCRIPTION
Isolators		
BAYISLT004A	TTA073D-TTA090D, TWE061D-TWE120E	Rubber Isolator Kit
BAYISLT005A	TTA120D/E/F, TWA073D-TWA120D	
BAYISLT009A	TTA150E, TTA180E/F, TWA180E, TWE150E, TWE180E	
BAYISLT010A	TTA240E/F, TWA240E, TWE240E	
BAYISLT012B	TWE150E, TWE180E	
BAYISLT013B	TWE061D/E	
BAYISLT014A	TWE090D/E	
BAYISLT015B	TWE120D/E	
BAYISLT016B	TWE240E	
BAYISLT019A	TWE061D/E, TWE090D/E, TWE120D/E	
BAYISLT021A	TWE150E, TWE180E	Steel Spring Isolator Kit
BAYISLT023A	TTA073D, TTA086D, TTA090D, TTA120D, TWA073D, TWA090D, TWA120D	
BAYISLT024A	TTA120E/F, TTA150E, TTA180E/F, TWA180E	
BAYISLT025A	TTA240E/F, TWA240E	
BAYISLT028A	TWE061D/E	
BAYISLT029A	TWE090D/E, TWE120D/E	
BAYISLT030A	TWE150E, TWE180E	
BAYISLT031B	TWE240E	
BAYISLT032A	TWE240E	
Low Ambient		
BAYLOAMU01A	TTA073, TWA073, TTA090A, TWA090A	On/Off Fan Control Mounted in External Enclosure (small cabinets)
BAYLOAMU02A	TTA120, TWA120, TTA150, TTA180, TWA180, TTA240, TWA240	On/Off Fan Control Mounted in Unit Control Box large cabinets)
BAYLOAM332A	TTA073D3, TWA073D3, TTA090D3, TWA090D3	Modulating P-66 Head Pressure Control w/ 208-230V 0.5 HP Hi-Eff Motor (external mount)
BAYLOAM333A	TTA120D3/E3/F3, TWA120D3, TTA150E3	Modulating P-66 Head Pressure Control w/ 208-230V 1 HP Hi-Eff Motor (external mount)
BAYLOAM334A	TTA180E3/F3, TWA180E3, TTA240E3/F3, TWA240E3	Modulating P-66 Head Pressure Control w/ 208-230V 1 HP Hi-Eff Motor (internal mount)
BAYLOAM432A	TTA073D4, TWA073D4, TTA090D4, TWA090D4	Modulating P-66 Head Pressure Control w/ 460V 0.5 HP Hi-Eff Motor (external mount)
BAYLOAM433A	TTA120D4/E4/F4, TWA120D4, TTA150E4	Modulating P-66 Head Pressure Control w/ 460V 1.0 HP Hi-Eff Motor (external mount)
BAYLOAM434A	TTA180E4/F4, TWA180E4, TTA240E4/F4, TWA240E4	Modulating P-66 Head Pressure Control w/ 460V 1.0 HP Hi-Eff Motor (internal mount)
Low Static Drive Kit		
BAYLSMT001A	TWE240E	Low Static Drive Kit
LonTalk Communications Interface		
BAYLTCI002B	TTA090D-TTA240F, TWA090D-TWA240E	LonTalk Communications Interface
Plenum		
BAYPLNM015B	TWE061D/E	Discharge Plenum & Grille
BAYPLNM016B	TWE090D/E	
BAYPLNM017B	TWE120D/E	
BAYPLNM018B	TWE150/180E	
BAYPLNM019B	TWE240E	
BAYPLNM020B	TWE061D/E	Hydronic Coil Discharge Plenum & Grille
BAYPLNM021B	TWE090D/E	
BAYPLNM022B	TWE120D/E	

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Features & Benefits

Table 1. List of Available Accessories (continued)

MODEL	USED WITH	DESCRIPTION
BAYPLNM030A	TWE061D/E	Electric Heat Discharge Plenum & Grille
BAYPLNM031A	TWE090D/E	
BAYPLNM032A	TWE120D/E	
BAYPLNM033A	TWE150/180E	
BAYPLNM034A	TWE240E	
Time Delay Relay		
BAYRLAY002	TTA090D-TTA240F, TWA090D-TWA240E	Time Delay Relay
Heat Pump Relay		
BAYRLAY005A	TWA090D-TWA240E W/ BAYLOAM****	Heat Pump Low Ambient Control Relay
Transformer		
BAYTFMR011A	TWE090D3, TWE090E3, TWE120D3, TWE120E3	75va transformer (230V)
BAYTFMR012A	TWE090D4/W, TWE090E4/W, TWE120D4/W, TWE120E4/W	75va transformer
BAYTFMR013A	TWE075DD, TWE075ED, TWE090DK, TWE090EK, TWE100DD, TWE100ED, TWE120DK, TWE120EK	
Water Kits		
BAYWATR022A	TWE061D/E	Steam Coil Enclosure
BAYWATR023A	TWE090D/E	
BAYWATR024A	TWE120D/E	
BAYWATR025A	TWE150E, TWE180E	
BAYWATR026A	TWE240E	
BAYWATR027A	TWE061D/E	Hot Water Coil Enclosure
BAYWATR028A	TWE090D/E	
BAYWATR029A	TWE120D/E	
BAYWATR030A	TWE150E, TWE180E	
BAYWATR031A	TWE240E	
Wire Kit		
BAYWRKT002A	TWE061D-TWE120E	180 Blower Discharge Reversal Kit

(a) When used with 460V application.

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 a local Trane Representative.

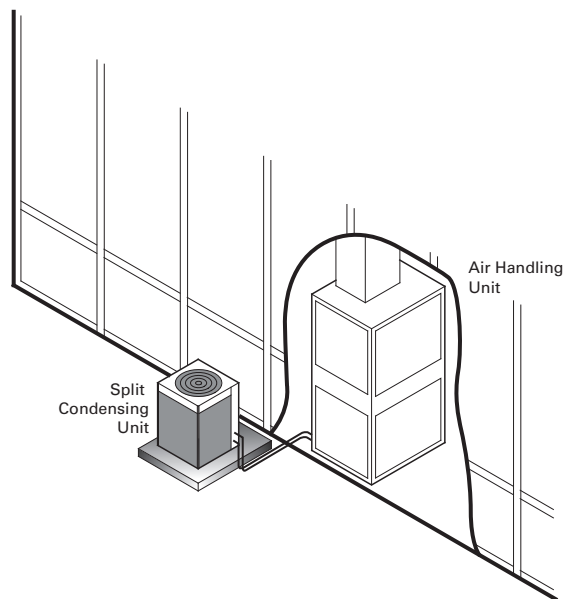
180° Blower Rotation

The 5, 7½ and 10 ton 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 installer's guide.

Low Ambient Cooling

As manufactured, these 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 1. Typical Split System Application



Application Considerations

Figure 2. Typical Horizontal Air Handler Application

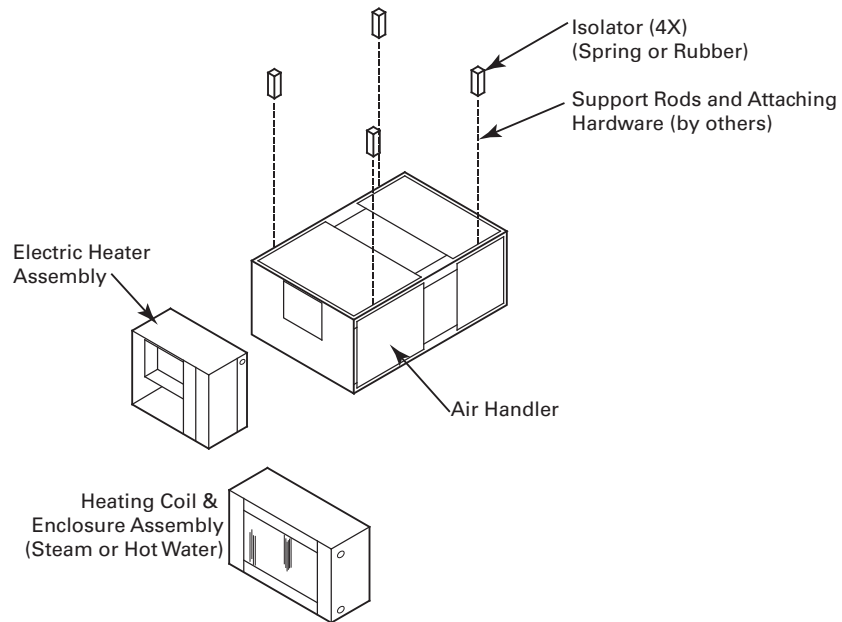
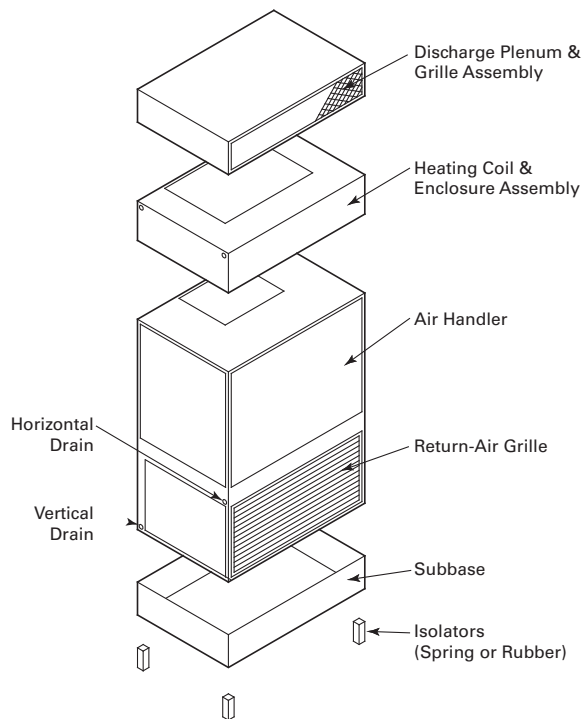


Figure 3. Typical Vertical Air Handler Application





Selection Procedure

Cooling Capacity

Step 1.

Calculate the building's total and sensible cooling loads at design conditions.

Step 2.

Size the equipment using Table 7, p. 25. Match the cooling loads at design conditions.

Example: The following are the building cooling requirements:

- a. Electrical Characteristics: 460/60/3
- b. Summer Design Conditions:
Entering Evaporator Coil:
80°F DB/67°F WB Outdoor Ambient: 95°F
Total Cooling Load: 82 MBh
- c. Sensible Cooling Load: 60 MBh
- d. Airflow: 3000 cfm
External Static Pressure: 0.77 inches of water gauge

Table 7, p. 25 shows that TWA090D with TWE090D has a gross cooling capacity of 93.0 MBh and 72.9 MBh sensible capacity at 95°F DBambient and 30000 cfm with 80°F DB/67°F WB air entering the evaporator.

To find the net cooling capacities, fan motor heat must be subtracted. Determine the total unit static pressure:

External Static Duct System	0.77 in.
Standard Filter 1 in.	0.10 in.
Supplementary Electric Heat	0.23 in.
Total Static Pressure	1.1 in.

Note: The Evaporator Fan Performance Table has included the effect of a 1 in. filter already. Therefore, the actual Total Static Pressure is $1.1 - 0.10 = 1$ in. with 2500 cfm and 1 in., Table 22, p. 38 shows a 1.97 bhp (high static drive).

Note: The formula below the table can be used to calculate Fan Motor Heat:

$$3.15 \times \text{bhp} = \text{MBh}$$

$$3.15 \times 1.97 = 6.2 \text{ MBh}$$

$$\begin{aligned} \text{Net Total Cooling Capacity} &= \\ 93 \text{ MBh} - 6.2 &= 86.8 \text{ MBh} \end{aligned}$$

$$\begin{aligned} \text{Net Sensible Cooling Capacity} &= \\ 72.9 \text{ MBh} - 6.2 &= 66.7 \text{ MBh} \end{aligned}$$

Heating Capacity

Step 1.

Calculate the building heating load using the Trane calculation form or any other standard accepted method.

Step 2.

Size the equipment using Table 17, p. 34 to match the heating loads at design conditions. The following are building heating requirements:

- a. Total Heating Load: 95.0 MBh
- b. Outdoor Ambient (Winter): 17°F DB
- c. Indoor Return Temperature: 70°F DB
- d. Airflow: 3000 cfm



Selection Procedure

Table 17, p. 34 indicates the mechanical heating portion of the heat pump will provide 48 MBh for the winter design conditions.

Step 3.

Full heat load must be carried by the supplementary heater in the unlikely event the heat pump malfunctions. From Table 34, p. 48, the 34.88 kW heater at 460V has a capacity of 119,045.

From Table 40, p. 56, the 34.88 kW heater at 460V indicates the heater model is BAYHTRL435A.

Air Delivery Selection

External static pressure drop through the air distribution system has been calculated to be 0.77 in. of water gauge.

From Table 33, p. 47 static pressure drop through the electric heater is 0.23 in. of water (0.77 + 0.23 = 1 in.)

Enter Table 22, p. 38 for TWE090D4 at 2500 cfm and 1.0 static pressure. The ultra high static motor at 1020 RPM will give the desired airflow.



Model Number Description

T W A	0 9 0	D	3	0 R	A	A
1 2 3	4 5 6	7	8	9 10	11	12

Model Number Description

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. An explanation of the alphanumeric identification code is provided. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit.

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

090 = 7½ Tons

120 = 10 Tons

180 = 15 Tons

240 = 20 Tons

DIGIT 7: Major Development Sequence

D = Single Circuit

E = Dual Circuit

DIGIT 8: Electrical Characteristics

3 = 208-230/60/3

D = 380-415/50/3

4 = 460/60/3

K = 380/60/3

W = 575/60/3

DIGITS 9 - 10: Factory Installed Options

0R = ReliaTel, no LCI Board

0T = ReliaTel, no LCI Board with Black Epoxy Coated Coil

0U = ReliaTel, with LCI Board

0W = ReliaTel, with LCI Board and Black Epoxy Coated Coil

HR = Hail Guard with ReliaTel, no LCI Board

HT = Hail Guard with ReliaTel, no LCI Board with Black Epoxy Coated Coil

HU = Hail Guard with ReliaTel, with LCI Board

HW = Hail Guard with ReliaTel, with LCI Board and Black Epoxy Coated Coil

DIGITS 11: Minor Design Sequence

A = Current Design Sequence

DIGITS 12: Service Digit

A = Current Service Digit



Model Number Description

<u>T W E</u>	<u>2 4 0</u>	<u>E</u>	<u>3</u>	<u>0 0</u>	<u>A</u>	<u>A</u>
1 2 3	4 5 6	7	8	9 10	11	12

DIGITS 1 - 3: Product Type

TWE = Split System Heat Pump/Cooling Air Handler

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

061 = 5 Tons
090 = 7½ Tons
120 = 10 Tons
150 = 12½ Tons
180 = 15 Tons
240 = 20 Tons

DIGIT 7: Major Development Sequence

D = Single Circuit
E = Dual Circuit

DIGIT 8: Electrical Characteristics

1 = 208-230/60/1	W = 575/60/3
3 = 208-230/60/3	D = 380-415/50/3
4 = 460/60/3	K = 380/60/3

DIGITS 9 - 10: Factory Installed Options

00 = Packed Stock

DIGITS 11: Minor Design Sequence

A = Current Design Sequence

DIGITS 12: Service Digit

A = Current Service Digit



General Data

Table 2. R-410A Combinations - 60 Hz

TWE060D	TWE060E	TWE090D	TWE090E	TWE120D	TWE120E	TWE150E	TWE180E	TWE240E
See Note	See Note	TWA073D TWA090D	See Note	TWA120D	See Note	(2) TWA073D	(2) TWA090D TWA180E	(2) TWA120D TWA240E

Note: See ComfortSite for more information on small outdoor unit combinations.

Table 3. General Data — 6 - 20 Ton Condensing Units— 60 Hz

	6 Tons Single Compressor TWA073D	7 ½ Tons Single Compressor TWA090D	10 Tons Single Compressor TWA120D	15 Tons Dual Compressor TWA180E	20 Tons Dual Compressor TWA240E
Cooling Performance					
Gross Cooling Capacity					
Matched Air Handler	80,000	93,000	123,000	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)	11.0	11.0	11.0	10.6	10.0
Condensing Unit Only (EER)	12.5	12.2	12.7	12.2	12.2
System Integrated Part Load Value (IPLV)	N/A	N/A	N/A	12.6	10.6
System (IEER)	12.6	11.7	11.8	12.3	10.5
Condensing Unit Only (IPLV)	N/A	N/A	N/A	N/A	N/A
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 Heating and Matched Air Handler					
High Temperature Capacity	69,000	82,000	105,000	174,000	236,000
System kW	6.13	7.28	9.32	15.93	21.61
COP	3.3	3.3	3.3	3.2	3.2
Low Temperature Capacity	40,000	49,000	75,000	109,000	134,000
System kW	5.10	6.24	9.98	13.89	19.63
COP	2.3	2.3	2.2	2.3	2.0
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					
No. Refrigerant Circuits	1	1	1	2	2
Suction Line (in.) OD	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8
Liquid Line (in.) OD	1/2	1/2	5/8	1/2	5/8
Outdoor Coil - Type					
Tube Size (in.) OD	Lanced	Lanced	Lanced	Lanced	Lanced
Face Area (sq ft)	0.375	0.375	0.375	0.375	0.375
Rows/FPI	19.24	19.24	29.02	52.6	52.6
Outdoor Fan - Type					
No. Used/Diameter (in.)	2/18	2/18	2/18	2/18	2/18
Drive Type/No. Speeds	Propeller	Propeller	Propeller	Propeller	Propeller
CFM	1/26	1/26	1/28	2/28	2/28
No. Motor/HP	Direct/1	Direct/1	Direct/1	Direct/1	Direct/1
Motor RPM	6530	6530	9800	19500	19500
	1/0.5	1/0.5	1/1	2/1	2/1
	1100	1100	1100	1100	1100
Refrigerant Charge (Field Supplied) (lbs of R410A)					
	20.6	19.6	29.0	47.1	47.0
Shipping Dimensions (HxWxD)					
	43.54" x 43" x 36.5"	43.54" x 43" x 36.5"	49.48" x 53.25" x 41"	49.48" x 94.75" x 47"	49.48" x 94.75" x 47"



General Data

Table 4. General Data — 5-10 Ton Air Handler — 60 Hz

	5 Tons		7 ½ Tons		10 Tons			
	Single Circuit TWE061D1, Dual Circuit, D3, D4, DW, TWE061E1, DK E3, E4		Single Circuit TWE090D1, Dual Circuit, D3, DW TWE090E1, E3		Single Circuit TWE120D1	Single Circuit, TWE120D3, Dual Circuit, DW, DK TWE120E1	Dual Circuit, TWE120E3, EW, EK	
System Data								
No. Refrigerant Circuits	1	2	1	2	1	1	2	2
Suction Line Connection (in.) OD	1 1/8	1 1/8	1 3/8	1 1/8	1 3/8	1 3/8	1 1/8	1 1/8
Liquid Line Connection (in.) OD	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Indoor Coil - Type	Lanced	Lanced	Lanced	Lanced	Lanced	Lanced	Lanced	Lanced
Tube Size (in.)	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375
Face Area (sq. ft.)	5.0	5.0	8.1	8.1	11.2	11.2	11.2	11.2
Rows/FPI	4/14	4/14	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	Expansion Valve	Expansion Valve
Drain Connection Size (in.)	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC	1 PVC
Indoor Fan - Type	Centrifugal	Centrifugal	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	1/15 x 15	1/15 x 15
Drive Type/ No. Speeds	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable	Belt/ Adjustable
CFM	2000	2000	3000	3000	4000	4000	4000	4000
No. Motors	1	1	1	1	1	1	1	1
Motor HP - Standard/Oversized	0.75/1.0	0.75/1.0	1.5/2.0/3.0	1.5/2.0/3.0	2.0	2.0/3.0	2.0	2.0/3.0
Motor RPM	1725	1725	1725	1725	1725	1725	1725	1725
Motor Frame Size	56	56	56H	56H	56HZ	56HZ	56HZ	56HZ
Filters - Type/ Furnished	Throwaway/ Yes	Throwaway/ Yes	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 (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	(4) 16 X 25 X 1 (4) 16 X 25 X 1	(4) 16 X 25 X 1 (4) 16 X 25 X 1	
Shipping Dimensions (HxWxD)								

Table 5. General Data — 12½ - 20 Ton Air Handler — 60 Hz

	12 ½ Tons	15 Tons	20 Tons
	Dual Circuit, TWE150E3, EW, EK	Dual Circuit, TWE180E3, EW, EK	Dual Circuit, TWE240E3, E4, EW, EK
System Data			
No. Refrigerant Circuits	2	2	2
Suction Line Connection (in.) OD	1 3/8	1 3/8	1 3/8
Liquid Line Connection (in.) OD	1/2	1/2	5/8
Indoor Coil - Type	Lanced	Lanced	Lanced
Tube Size (in.)	0.375	0.375	0.375
Face Area (sq. ft.)	16.3	16.3	21.7
Rows/FPI	4/14	4/14	3/14
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.)	1 PVC	1 PVC	1 PVC
Indoor Fan - Type	Centrifugal	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	2/15 x 15	2/15 x 15	2/15 x 15
Drive Type/No. Speeds	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable
CFM	5000	6000	8000
No. Motors	1	1	1
Motor HP - Standard/Oversized	2.0/3.0/5.0	3.0/5.0	3.0/5.0/7.5
Motor RPM	1755	1728/1750	1750/3470
Motor Frame Size	145T	56HZ	184T
Filters - Type /Furnished	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
Shipping Dimensions (HxWxD)			

Performance Data

Table 6. Gross Cooling Capacities (MBH) 6 Tons TWA073D Heat Pump with 7.5 Tons TWE090D Air Handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		85						95						105					
		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						125											
		Entering Wet Bulb (°F)																	
		61		67		73		61		67		73		61		67		73	
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	Notes: 1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat. 2. MBH = Total Gross Capacity 3. SHC = Sensible Heat Capacity					
	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. MBH = Total Gross Capacity
 3. SHC = Sensible Heat Capacity

Performance Data

Table 7. Gross Cooling Capacities (MBH) 7.5 Tons TWA090D Heat Pump with 7.5 Tons TWE090D Air Handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		85						95						105					
		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						125											
		Entering Wet Bulb (°F)																	
		61		67		73		61		67		73		61		67		73	
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	Notes: 1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat. 2. MBH = Total Gross Capacity 3. SHC = Sensible Heat Capacity					
	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. MBH = Total Gross Capacity
 3. SHC = Sensible Heat Capacity



Performance Data

Table 8. Gross Cooling Capacities (MBH) 10 Tons TWA120D Heat Pump with 10 Tons TWE120D Air Handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		85						95						105					
		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	116.3	99.2	128.0	77.7	140.1	51.7	110.9	96.6	121.9	75.2	133.3	49.3	105.2	93.9	115.5	72.7	126.2	46.8
	80	118.3	118.2	128.3	94.3	140.3	70.3	113.3	113.3	122.2	91.7	133.6	67.8	108.3	108.3	115.8	89.0	126.4	65.2
	85	124.3	124.3	128.8	112.5	140.6	88.7	119.5	119.5	122.9	109.9	133.8	86.2	114.3	114.3	116.6	107.2	126.7	83.5
	90	130.7	130.7	130.6	130.6	140.9	107.0	125.6	125.6	125.5	125.5	134.1	104.4	120.1	120.1	120.0	120.0	127.0	101.8
4000	75	118.3	104.3	129.8	81.3	141.8	52.6	112.8	101.6	123.5	78.9	134.8	50.2	106.9	98.9	116.9	76.3	127.5	47.7
	80	121.3	121.3	130.1	99.0	142.1	72.8	116.4	116.4	123.8	96.4	135.1	70.3	111.2	111.2	117.2	93.4	127.8	67.6
	85	127.9	127.9	131.0	118.9	142.4	93.0	122.7	122.7	124.9	116.2	135.4	90.4	117.3	117.3	118.5	113.5	128.1	87.7
	90	134.4	134.4	134.3	134.3	142.6	112.7	129.0	129.0	129.0	129.0	135.7	110.0	123.2	123.2	123.2	123.2	128.5	107.3
4400	75	120.0	109.2	131.3	84.9	143.2	53.5	114.4	106.5	124.9	82.5	136.1	51.1	108.5	103.8	118.2	79.9	128.6	48.6
	80	124.2	124.2	131.5	103.3	143.6	75.3	119.1	119.1	125.1	100.6	136.5	72.7	113.6	113.6	118.5	97.8	129.0	70.0
	85	131.0	131.0	132.9	125.0	143.9	97.0	125.6	125.6	126.7	122.3	136.7	94.4	119.9	119.9	120.3	119.6	129.3	91.7
	90	137.6	137.6	137.6	137.6	144.2	118.2	132.0	132.0	131.9	131.9	137.2	115.6	126.0	126.0	125.9	125.9	129.8	112.8
4800	75	121.6	113.9	132.6	88.5	144.4	54.4	115.9	111.3	126.1	86.0	137.1	52.0	109.9	108.5	119.2	83.4	129.6	49.4
	80	126.7	126.7	132.9	107.5	144.8	77.6	121.4	121.4	126.4	104.8	137.6	75.0	115.7	115.7	119.7	101.9	130.0	72.3
	85	133.6	133.6	134.7	130.9	145.1	101.0	128.1	128.1	128.5	128.2	137.9	98.4	122.1	122.1	122.0	122.0	130.2	95.7
	90	140.4	140.4	140.3	140.3	145.7	123.6	134.6	134.6	134.4	134.4	138.5	120.9	128.3	128.3	128.3	128.3	131.1	118.1
CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		115						125											
		Entering Wet Bulb (°F)																	
		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	99.1	91.0	108.7	70.0	118.7	44.3	92.6	87.9	101.3	67.1	110.7	41.5						
	80	102.9	102.9	108.9	86.2	118.9	62.4	96.9	96.9	101.6	83.0	110.9	59.6						
	85	108.6	108.6	110.0	104.4	119.2	80.7	102.4	102.4	103.0	101.4	111.1	77.9						
	90	114.2	114.2	114.1	114.1	119.5	98.7	107.7	107.7	107.7	107.7	111.6	95.7						
4000	75	100.7	96.0	110.0	73.6	119.9	45.1	94.1	93.0	102.4	70.7	111.7	42.4						
	80	105.5	105.5	110.2	90.5	120.2	64.9	99.3	99.3	102.8	87.5	112.0	62.0						
	85	111.3	111.3	111.8	110.6	120.4	84.9	104.9	104.9	104.9	104.9	112.2	82.0						
	90	117.1	117.1	116.9	116.9	120.9	104.4	110.3	110.3	110.3	110.3	112.9	101.4						
4400	75	102.2	100.9	111.0	77.1	120.9	46.0	95.6	95.6	103.4	74.3	112.6	43.3						
	80	107.7	107.7	111.5	94.8	121.2	67.2	101.4	101.4	103.9	91.7	112.9	64.3						
	85	113.7	113.7	113.6	113.6	121.4	88.9	107.0	107.0	107.0	107.0	113.0	85.7						
	90	119.5	119.5	119.5	119.5	122.2	109.9	112.5	112.5	112.5	112.5	114.0	106.9						
4800	75	103.6	103.6	111.9	80.7	121.7	46.9	97.3	97.3	104.2	77.8	113.3	44.1	Notes: 1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat. 2. MBH = Total Gross Capacity 3. SHC = Sensible Heat Capacity					
	80	109.7	109.7	112.5	99.0	122.1	69.5	103.2	103.2	104.9	95.9	113.6	66.6						
	85	115.8	115.8	115.7	115.7	122.2	92.4	108.8	108.8	108.8	108.8	113.8	89.4						
	90	121.6	121.6	121.6	121.6	123.3	115.2	114.4	114.4	114.4	114.4	115.1	112.2						

Performance Data

Table 9. Gross Cooling Capacities (MBH) 15 Tons TWA180E Heat Pump with 15 Tons TWE180E Air Handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		85				95								105					
		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	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						125											
		Entering Wet Bulb (°F)																	
		61		67		73		61		67		73		61		67		73	
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	Notes: 1. All capacities shown are gross and have not considered indoor fan heat. To obtain net cooling, subtract indoor fan heat. 2. MBH = Total Gross Capacity 3. SHC = Sensible Heat Capacity					
	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. MBH = Total Gross Capacity
 3. SHC = Sensible Heat Capacity



Performance Data

Table 10. Gross Cooling Capacities (MBH) 20 Tons TWA240E Heat Pump with 20 Tons TWE240E Air Handler (IP)

CFM	Ent DB (°F)	Ambient Temperature (°F)																	
		85						95						105					
		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						125											
		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. MBH = Total Gross Capacity

3. SHC = Sensible Heat Capacity

Performance Data

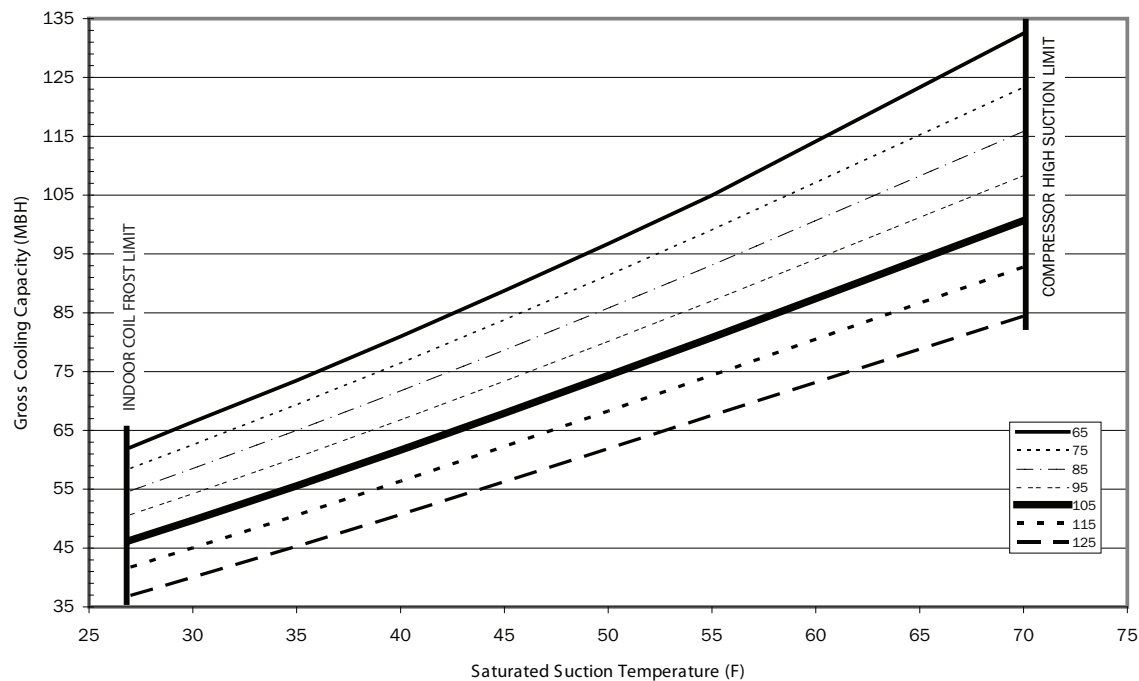
Table 11. Gross Cooling Capacities (MBH) 6 Tons TWA073D Condensing Unit Only (IP)

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 4. TWA073D Capacity Curves

Capacity Curves - Condensing Unit Only





Performance Data

Table 12. 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 5. TTA090D Capacity Curves

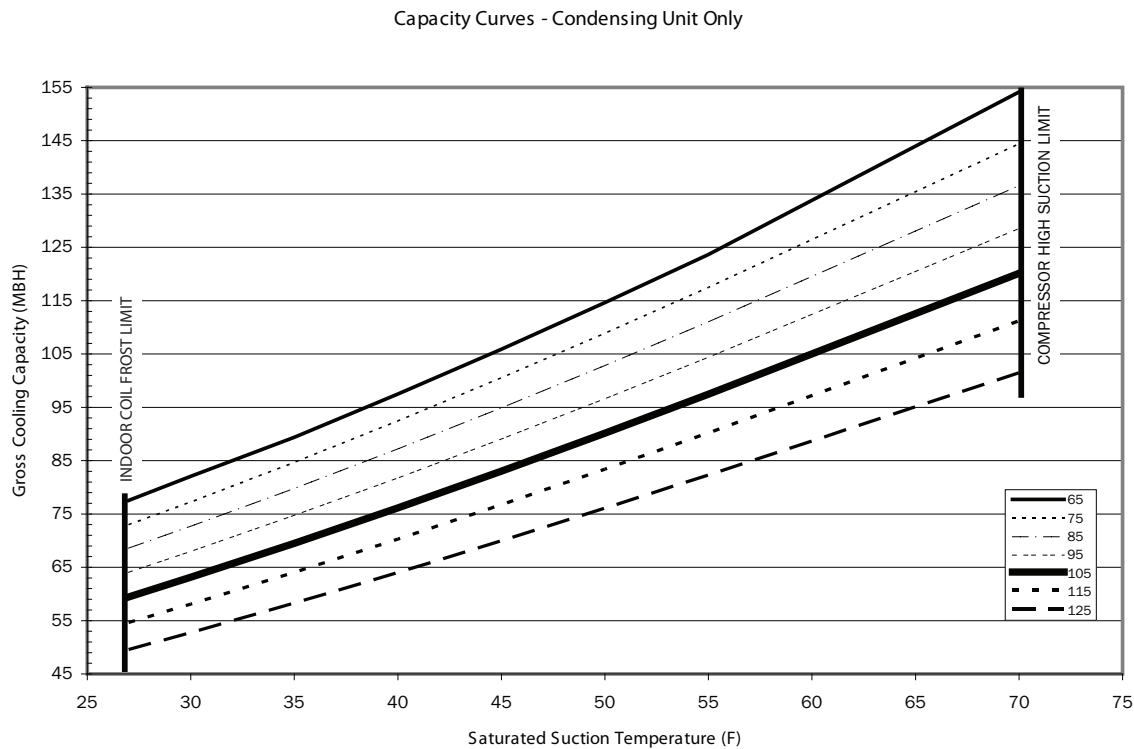
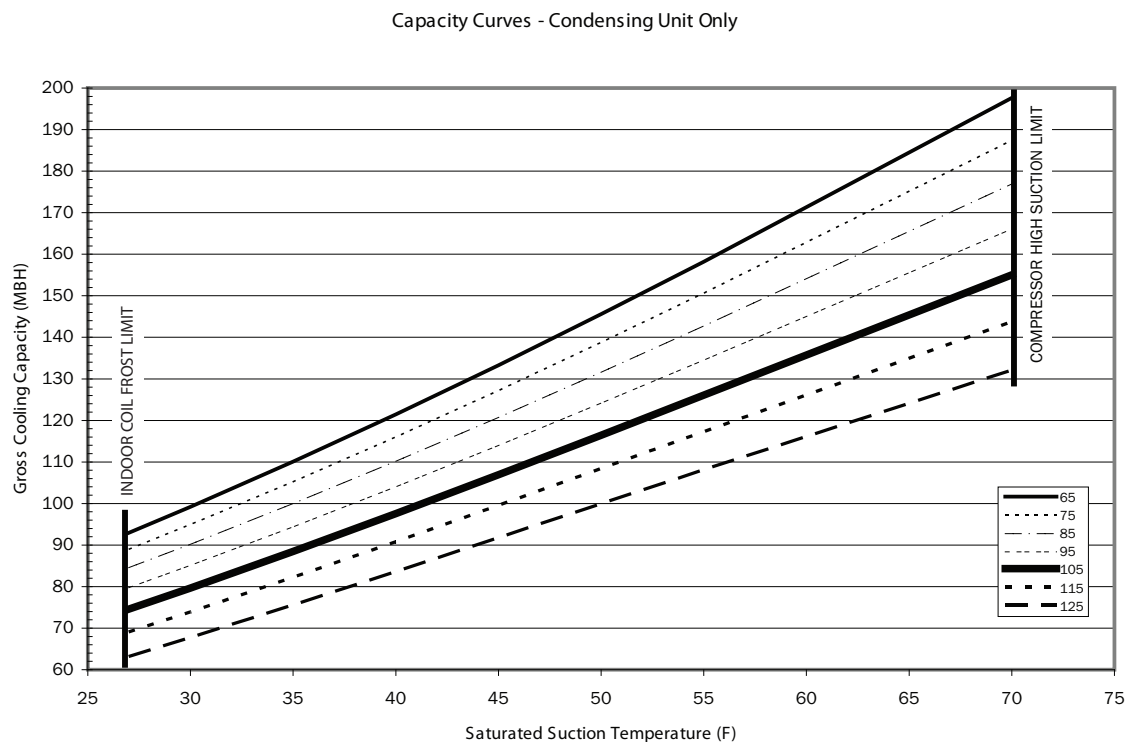


Table 13. Gross Cooling Capacities (MBH) 10 Tons TWA120D Condensing Unit Only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	257.6	264.8	272.3	280.2	288.4	297.0
	Capacity (Btuh/1000)	99.2	110.1	121.4	133.3	145.6	158.2
	Unit Power (kW)	6.5	6.6	6.8	6.9	7.1	7.3
75	Head Press (psig)	293.8	301.0	308.6	316.5	324.7	333.2
	Capacity (Btuh/1000)	94.9	105.2	116.0	127.2	138.7	150.6
	Unit Power (kW)	7.0	7.2	7.3	7.5	7.7	7.8
85	Head Press (psig)	333.4	340.8	348.4	356.4	364.5	372.9
	Capacity (Btuh/1000)	90.2	100.0	110.2	120.7	131.6	142.7
	Unit Power (kW)	7.7	7.9	8.0	8.2	8.3	8.5
95	Head Press (psig)	376.6	384.1	391.8	399.8	407.9	416.2
	Capacity (Btuh/1000)	85.1	94.4	104.0	114.0	124.2	134.5
	Unit Power (kW)	8.5	8.7	8.8	9.0	9.1	9.3
105	Head Press (psig)	423.4	431.1	438.9	446.9	455.1	463.3
	Capacity (Btuh/1000)	79.6	88.5	97.6	106.9	116.4	126.1
	Unit Power (kW)	9.4	9.6	9.7	9.8	10.0	10.1
115	Head Press (psig)	474.3	482.2	490.2	498.3	506.3	514.4
	Capacity (Btuh/1000)	73.9	82.2	90.8	99.5	108.4	117.3
	Unit Power (kW)	10.4	10.6	10.7	10.8	10.9	11.0
125	Head Press (psig)	529.4	537.5	545.6	553.8	561.8	569.8
	Capacity (Btuh/1000)	67.7	75.6	83.6	91.7	99.9	108.1
	Unit Power (kW)	11.5	11.7	11.8	11.9	12.0	12.1

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

Figure 6. TWA120D Capacity Curves




Performance Data

Table 14. 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 7. TWA180E Capacity Curves

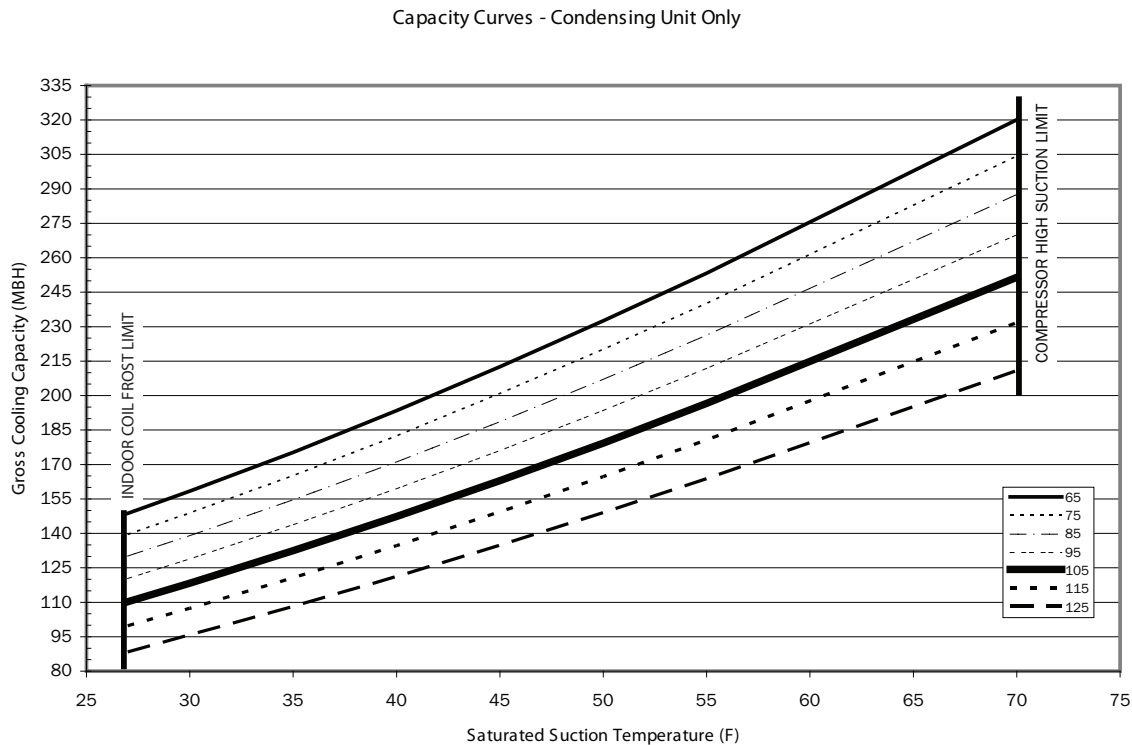
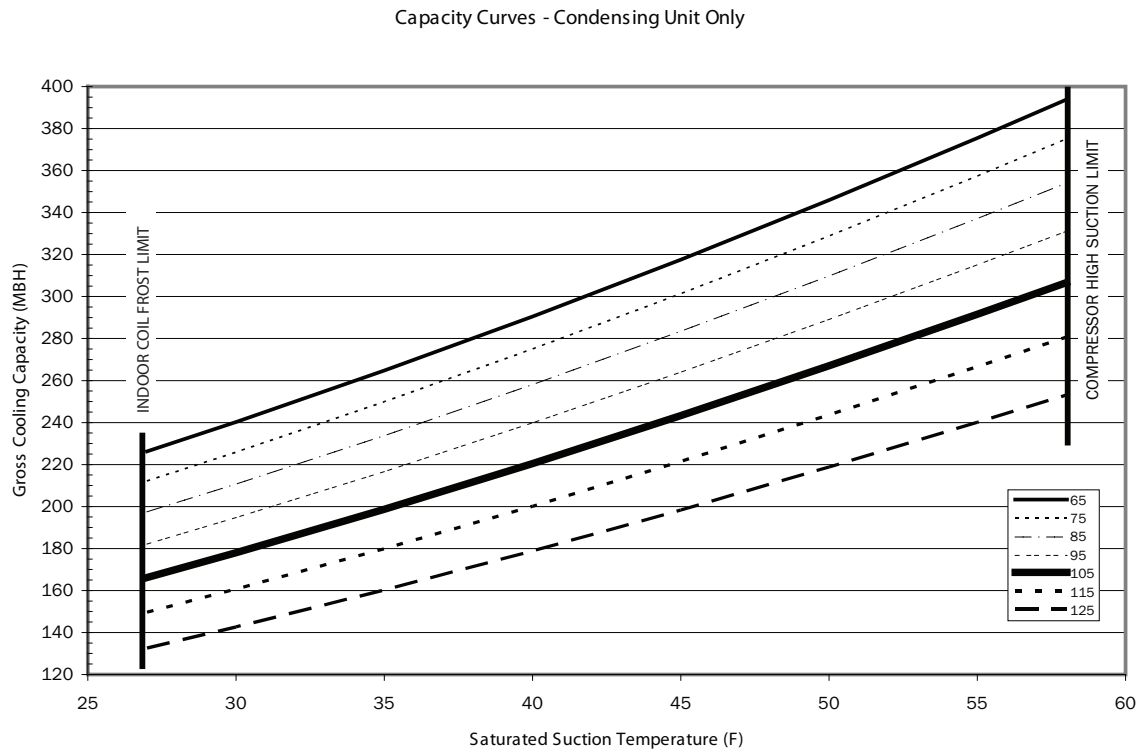


Table 15. Gross Cooling Capacities (MBH) 20 Tons TWA240E Condensing Unit Only (IP)

Outdoor Temp (°F)		Suction Temperature (°F)					
		30	35	40	45	50	55
65	Head Press (psig)	269.1	277.0	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)	16.0	16.3	16.7	17.0	17.4	17.9
75	Head Press (psig)	304.6	312.9	321.7	331.1	341.0	351.6
	Capacity (Btuh/1000)	225.9	249.9	275.0	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	19.0	19.4	19.8	20.3	20.9
95	Head Press (psig)	385.9	394.7	404.0	413.9	424.2	435.2
	Capacity (Btuh/1000)	194.7	216.6	239.8	264.0	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	482.0
	Capacity (Btuh/1000)	178.0	198.7	220.5	243.3	267.0	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	521.0	532.2
	Capacity (Btuh/1000)	160.7	179.9	200.1	221.4	243.6	266.5
	Unit Power (kW)	25.0	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	240.0
	Unit Power (kW)	27.7	28.0	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 8. TWA240E Capacity Curves



Performance Data

Table 16. Gross Heating Capacities (MBH) 6.25 Tons TWA073D Heat Pump with 7.5 Tons TWE090D 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	23.0	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	27.0	27.0	26.8	26.5	5.1	5.5	5.7	6.0
-3	29.5	29.3	29.1	28.8	5.2	5.5	5.8	6.0
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	6.0	6.2
22	44.6	43.5	42.9	42.3	5.4	5.8	6.0	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	6.0	6.2	6.5
42	65.2	63.0	61.9	60.7	5.6	6.0	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	80.0	78.6	77.1	5.9	6.4	6.7	7.0
67	87.6	84.5	82.8	81.2	6.0	6.5	6.8	7.1
72	92.0	88.7	87.0	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 17. Gross Heating Capacities (MBH) 7.5 Tons TWA090D Heat Pump with 7.5 Tons TWE090D 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	36.0	35.6	35.2	5.9	6.3	6.6	6.8
2	40.0	38.7	38.2	37.8	5.9	6.4	6.6	6.9
7	42.9	41.6	41.1	40.6	6.0	6.4	6.7	7.0
12	46.1	44.7	44.1	43.6	6.1	6.5	6.8	7.1
17	49.5	48.0	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	7.0	7.3
27	56.9	55.3	54.5	53.8	6.3	6.8	7.1	7.4
32	61.0	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	7.0	7.3	7.6
42	76.7	74.3	73.1	72.0	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	92.0	89.3	88.0	86.7	7.0	7.6	7.9	8.3
62	97.8	94.9	93.5	92.0	7.2	7.8	8.1	8.5
67	103.5	100.4	98.8	97.3	7.4	8.0	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.

Performance Data

Table 18. Gross Heating Capacities (MBH) 10 Tons TWA120D Heat Pump with 10 Tons TWE120D 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	34.4	34.0	33.6	33.0	7.5	7.9	8.2	8.5
-13	37.1	36.7	36.2	35.7	7.5	7.9	8.2	8.5
-8	40.1	39.7	39.3	38.8	7.5	8.0	8.3	8.6
-3	43.6	43.1	42.6	42.1	7.6	8.1	8.4	8.7
2	47.1	46.5	46.0	45.5	7.6	8.1	8.5	8.8
7	51.2	50.4	50.0	49.4	7.7	8.2	8.6	8.9
12	55.7	54.8	54.2	53.6	7.8	8.3	8.7	9.0
17	60.6	59.4	58.8	58.1	7.9	8.4	8.8	9.2
22	65.7	64.3	63.6	62.8	8.0	8.6	8.9	9.3
27	71.1	69.5	68.6	67.8	8.1	8.7	9.1	9.5
32	76.7	74.8	73.8	72.8	8.2	8.8	9.2	9.6
37	91.3	88.8	87.6	86.4	8.3	9.0	9.4	9.8
42	97.4	94.6	93.2	91.9	8.4	9.1	9.5	10.0
47	103.7	100.7	99.2	97.6	8.6	9.3	9.7	10.1
52	110.4	107.2	105.7	104.2	8.8	9.5	9.9	10.4
57	117.9	114.5	112.8	111.2	9.0	9.7	10.1	10.6
62	125.6	121.9	120.0	118.1	9.2	10.0	10.4	10.8
67	132.4	128.8	126.7	124.6	9.4	10.2	10.6	11.0
72	140.5	135.9	133.5	131.1	9.6	10.4	10.8	11.2

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 19. Gross Heating Capacities (MBH) 15 Tons TWA180E Heat Pump with 15 Tons TWE180E Air 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	62.0	61.0	13.0	13.8	14.3	14.9
-8	71.8	68.6	67.3	66.2	13.0	13.9	14.4	15.0
-3	77.9	74.6	73.3	72.0	13.1	14.0	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	85.0	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	127.0	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	197.0	192.4	15.8	17.0	17.6	18.3
67	222.7	213.0	208.0	203.1	16.2	17.4	18.0	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.



Performance Data

Table 20. Gross Heating Capacities (MBH) 20 Tons TWA240E Heat Pump with 20 Tons TWE240E 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	69.0	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	85.0	82.1	79.9	16.6	17.9	18.8	19.7
-3	101.1	93.8	91.0	88.8	16.9	18.3	19.1	20.0
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	120.0	117.6	17.9	19.2	20.0	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	21.0	21.8
32	175.4	167.4	163.8	160.3	19.1	20.5	21.3	22.2
37	208.0	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	22.0	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	22.0	22.9	23.9
57	266.7	256.1	251.0	245.9	21.0	22.6	23.5	24.4
62	283.9	273.0	267.5	262.0	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	299.0	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 21. Evaporator Fan Performance — TWE061 — Air Handler

External Static Pressure (Inches of Water Gauge)																					
		.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
3/4 HP Standard Motor & Drive																					
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	
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	
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	
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	
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	
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	
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	
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	
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	
1.5 HP High Static Kit																					
External Static Pressure (Inches of Water Gauge)																					
		1.10"		1.20"		1.30"		1.40"													
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP													
1.5 HP High Static Kit																					
1600	1152	0.91	1191	0.99	1229	1.07	1264	1.14													
1700	1170	0.98	1208	1.06	1246	1.14	1281	1.22													
1800	1187	1.05	1226	1.13	1263	1.22	1300	1.30													
1900	1207	1.13	1245	1.21	1281	1.30	1317	1.39													
2000	1227	1.21	1265	1.30	1300	1.39	1335	1.48													
2100	1250	1.31	1285	1.39	1319	1.48	—	—													
2200	1274	1.42	1308	1.50	—	—	—	—													
2300	1299	1.53	—	—	—	—	—	—													
2400	—	—	—	—	—	—	—	—													

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Trane's 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.
4. For TWE061 Standard Drive use Table 28, p. 43, for High Static Drive use Table 29, p. 44.



Performance Data

Table 22. Evaporator Fan Performance — TWE090 — Air Handler

External Static Pressure (Inches of Water Gauge)																				
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
			1.5 HP Standard Drive												2 HP High Static Drive Kit					
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
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
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
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
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
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
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
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
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
3 HP Ultra High Static Drive Kit																				
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
2 HP High Static Drive Kit									3 HP Ultra High Static Drive Kit											
2400	1023	1.62	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	1032	1.74	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	1040	1.86	1079	2.01	1117	2.17	1154	2.32	1189	2.47	1223	2.62	1255	2.77	1288	2.93	—	—	—	—
2850	1048	1.99	1087	2.14	1126	2.31	1161	2.47	1198	2.63	1232	2.79	1264	2.95	—	—	—	—	—	—
3000	1058	2.12	1096	2.29	1135	2.46	1171	2.63	1206	2.80	1239	2.96	—	—	—	—	—	—	—	—
3150	1069	2.27	1105	2.43	1142	2.60	1179	2.79	1214	2.96	—	—	—	—	—	—	—	—	—	—
3300	1082	2.45	1118	2.61	1154	2.78	1187	2.95	—	—	—	—	—	—	—	—	—	—	—	—
3450	1094	2.63	1130	2.79	1164	2.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	1107	2.84	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. Trane's 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.
4. For TWE090 Standard Drive use Table 28, p. 43, for High Static Drive use Table 29, p. 44, for Ultra High Static Drive use Table 30, p. 45.

Performance Data

Table 23. Evaporator Fan Performance — TWE120 — Air Handler

External Static Pressure (Inches of Water Gauge)																					
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
					2 HP Standard Drive																
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	
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	
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	
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	
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	
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	
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	
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	—	—	—	—	—	—	
3 HP Hi Static Drive Kit																					
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	
3 HP Hi Static Drive Kit												3 HP High Static Drive w/ Field Supplied Sheave & Belt									
3200	839	1.58	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	
3400	854	1.75	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	
3600	871	1.96	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	887	2.18	912	2.28	937	2.38	961	2.48	985	2.58	1008	2.70	1030	2.81	1053	2.93	—	—	—	—	
4000	905	2.40	930	2.52	953	2.62	977	2.73	1000	2.83	1022	2.94	—	—	—	—	—	—	—	—	
4200	923	2.63	947	2.76	970	2.89	993	3.00	—	—	—	—	—	—	—	—	—	—	—	—	
4400	942	2.88	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
4600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
4800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
External Static Pressure (Inches of Water Gauge)																					
	2.10"		2.20"																		
CFM	RPM	BHP	RPM	BHP																	
3 HP High Static Drive w/ Field Supplied Sheave & Belt																					
3200	1088	2.64	1109	2.75																	
3400	1098	2.86	1120	2.97																	
3600	—	—	—	—																	
3800	—	—	—	—																	
4000	—	—	—	—																	
4200	—	—	—	—																	
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. Trane's 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.
4. For TWE120 Standard Drive use Table 28, p. 43, for High Static Drives use Table 29, p. 44.



Performance Data

Table 24. Evaporator Fan Performance — TWE150 — Air Handler

External Static Pressure (Inches of Water Gauge)																						
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
							2 HP Standard Drive															
4000	—	—	—	—	—	—	614	0.85	658	0.98	698	1.12	728	1.22	756	1.32	786	1.43	817	1.56		
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		
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		
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		
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		
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		
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		
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		
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		
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		
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		
							2 HP Hi Static Drive w/ Field Supplied Sheave & Belt															
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		
2 HP Hi Static Drive w/ Field Supplied Sheave & Belt												3 HP High Static Drive Kit										
4000	849	1.70	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		
4200	858	1.80	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		
4400	867	1.92	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		
4600	880	2.05	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		
4800	896	2.22	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		
5000	911	2.39	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		
5200	927	2.57	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		
5400	943	2.76	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		
5600	956	2.92	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		
5800	969	3.09	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		
6000	980	3.25	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		
							5 HP Ultra High Static Drive															
External Static Pressure (Inches of Water Gauge)																						
	2.10"		2.20"		2.30"		2.40"															
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP														
5 HP Ultra High Static Drive																						
4000	1126	3.38	1148	3.54	1170	3.73	1191	3.89														
4200	1132	3.51	1155	3.69	1179	3.88	1200	4.06														
4400	1141	3.66	1163	3.84	1186	4.03	1208	4.23														
4600	1150	3.81	1172	4.00	1193	4.18	1215	4.37														
4800	1157	3.96	1179	4.15	1202	4.36	—	—														
5000	1161	4.09	1186	4.30	1210	4.52	—	—														
5200	1164	4.21	1189	4.44	1214	4.66	—	—														
5400	1170	4.38	1193	4.58	1218	4.81	—	—														
5600	1176	4.55	1198	4.74	1222	4.97	—	—														
5800	1184	4.74	1206	4.94	—	—	—	—														
6000	1194	4.96	—	—	—	—	—	—														

Notes:

1. Data includes pressure drop due to wet coil and 1" filter.
2. Fan motor heat (MBh) = 3.15 x BHP.
3. Trane's 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.
4. For TWE150 Standard Drive use Table 28, p. 43, for High Static Drive use Table 29, p. 44, for Ultra High Static Drive (3 HP) use Table 30, p. 45.

Performance Data

Table 25. Evaporator Fan Performance — TWE180 — Air Handler

External Static Pressure (Inches of Water Gauge)																				
	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.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 Drive w/ Field Supplied Sheave & Belt												3 HP Standard Drive								
4500	468	0.68	517	0.80	563	0.94	606	1.06	646	1.19	686	1.34	725	1.50	760	1.65	793	1.80	825	1.94
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
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
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
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
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
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
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
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
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
5 HP High Static Drive Kit																				
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 Motor & Sheaves												5 HP Ultra High Static w/ Field Supplied Sheave & Belt								
4500	856	2.09	885	2.24	912	2.38	939	2.53	965	2.67	990	2.81	1015	2.96	1039	3.10	1062	3.24	1085	3.39
4800	869	2.30	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
5100	883	2.52	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
5400	897	2.75	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
5700	910	2.99	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
6000	924	3.25	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	939	3.52	967	3.73	995	3.95	1022	4.17	1046	4.37	1071	4.59	1095	4.79	1119	5.01	—	—	—	—
6600	954	3.81	981	4.02	1009	4.25	1035	4.48	1061	4.71	1085	4.93	—	—	—	—	—	—	—	—
6900	971	4.13	998	4.35	1022	4.57	1049	4.81	1074	5.04	—	—	—	—	—	—	—	—	—	—
7200	988	4.48	1014	4.70	1039	4.93	1063	5.15	—	—	—	—	—	—	—	—	—	—	—	—
External Static Pressure (Inches of Water Gauge)																				
	2.10"		2.20"		2.30"		2.40"													
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP												
5 HP Ultra High Static w/ Field Supplied Sheave & Belt																				
4500	1106	3.52	1128	3.66	1149	3.80	1171	3.95												
4800	1120	3.84	1141	3.99	1162	4.14	1183	4.30												
5100	1132	4.17	1154	4.33	1175	4.49	1196	4.66												
5400	1146	4.52	1167	4.69	1188	4.86	1209	5.04												
5700	1159	4.87	1180	5.06	—	—	—	—												
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. Trane's 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.
4. For TWE180 Low Static Drive use Table 27, p. 43, for Standard Drive use Table 28, p. 43, for High Static Drive use Table 29, p. 44.



Performance Data

Table 26. Evaporator Fan Performance — TWE240 — Air Handler

External Static Pressure (Inches of Water Gauge)																				
CFM	.10"		.20"		.30"		.40"		.50"		.60"		.70"		.80"		.90"		1.00"	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3 HP Low Static Drive Kit														5 HP Standard Drive						
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
7.5 HP Ultra Hi Static Drive Kit														5 HP Hi Static Drive w/ Field Supplied Sheaves						
External Static Pressure (Inches of Water Gauge)																				
CFM	1.10"		1.20"		1.30"		1.40"		1.50"		1.60"		1.70"		1.80"		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5 HP Standard Drive							5 HP Hi Static Drive w/ Field Supplied Sheaves													
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	—	—	—	—	—	—	—	—
7.5 HP Ultra High Static Drive Kit									7.5 HP Ultra High Motor w/ Field Supplied Fan Sheave & Belt											
External Static Pressure (Inches of Water Gauge)																				
CFM	2.10"		2.20"		2.30"		2.40"													
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP												
7.5 HP Ultra High 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. Trane's 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.
4. For TWE240 Low Static Drive use Table 27, p. 43, for Standard Drive use Table 28, p. 43, for High Static Drives (5 HP and 7½ HP) use Table 29, p. 44.

Table 27. Low Static Fan Drives

15 Ton — TWE180 — Low Static Drive with Field Supplied Sheave and Belt^(a)		20 Ton — TWE240 Low Static Drive Kit	
Motor Sheave Turns Open	Nominal RPM	Motor Sheave Turns Open	Nominal RPM
0	649	0	855
1	613	1	812
2	557	2	769
3	500	3	726
4	444	4	683
5	469	5	640

(a)TWE180 3HP Lo-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (2.4 - 3.4 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VL40

Blower Sheave: Fixed Pitch (9.5 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning AX59

Table 28. Standard Fan Drives

5 Ton — TWE061 — Standard Drive		7.5 Ton — TWE090 — Standard Drive	
Motor Sheave Turns Open	Nominal RPM	Motor Sheave Turns Open	Nominal RPM
0	1071	0	847
1	1000	1	791
2	928	2	734
3	857	3	678
4	785	4	621
5	714	5	565

10 Ton — TWE120 — Standard Drive		12.5 Ton — TWE150 — Standard Drive	
Motor Sheave Turns Open	Nominal RPM	Motor Sheave Turns Open	Nominal RPM
0	818	0	768
1	773	1	725
2	727	2	683
3	682	3	640
4	636	4	598
5	591	5	555

15 Ton — TWE180 — Standard Drive		20 Ton — TWE240 — Standard Drive (5 HP)	
Motor Sheave Turns Open	Nominal RPM	Motor Sheave Turns Open	Nominal RPM
0	845	0	966
1	812	1	932
2	728	2	899
3	745	3	865
4	711	4	831
5	678	5	798
6	644	6	764



Performance Data

Table 29. High Static Fan Drives

5 Ton — TWE061 — High Static Drive	
Motor Sheave Turns Open	Nominal RPM
0	1346
1	1279
2	1212
3	1144
4	1077
5	1010

10 Ton — TWE120 — High Static Drive	
Motor Sheave Turns Open	Nominal RPM
0	972
1	923
2	875
3	826
4	778
5	729

12 ½ Ton — TWE150 — High Static Drive (3 HP)	
Motor Sheave Turns Open	Nominal RPM
0	1094
1	1039
2	991
3	942
4	893
5	820

15 Ton — TWE180 — High Static Drive	
Motor Sheave Turns Open	Nominal RPM
0	1024
1	989
2	953
3	918
4	882
5	847
6	811

20 Ton — TWE240 — High Static Drive with Field Supplied Sheave & Belt (5 HP)^(d)	
Motor Sheave Turns Open	Nominal RPM
0	1091
1	1053
2	1015
3	978
4	940
5	902
6	864

7 ½ Ton — TWE090 — High Static Drive	
Motor Sheave Turns Open	Nominal RPM
0	1094
1	1039
2	984
3	930
4	875
5	820

10 Ton — TWE120 — High Static Drive with Field Supplied Sheave and Belt^(a)	
Motor Sheave Turns Open	Nominal RPM
0	1129
1	1073
2	1016
3	960
4	903
5	847

12 ½ Ton — TWE150 — High Static Drive with Field Supplied Sheave and Belt^(b)	
Motor Sheave Turns Open	Nominal RPM
0	913
1	862
2	806
3	749
4	693
5	659

15 Ton — TWE180 — High Static Drive with Field Supplied Sheave^(c)	
Motor Sheave Turns Open	Nominal RPM
0	1217
1	1175
2	1118
3	1062
4	1006
5	964
6	964

See next page for notes on required field supplied components

(a) TWE120 3HP Hi-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (2.8 - 3.8 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VP44

Blower Sheave: Fixed Pitch (6.0 Inch Pitch Diameter), 1.0 Inch Bore, Single Groove, Browning AK64

Belt: Browning A50

(b) TWE150 2HP Hi-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (2.4 - 3.4 Inch Pitch Diameter), 0.875 Inch Bore, Single Groove, Browning 1VL40

Blower Sheave: Fixed Pitch (6.7 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning AK71

Belt: Browning A55

(c) TWE180 5HP Hi-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (3.4 - 4.4 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP50

Blower Sheave: Fixed Pitch (6.6 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK72

Belt: Browning BX58

(d) TWE240 5HP Hi-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (3.4 - 4.4 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP50

Blower Sheave: Fixed Pitch (7.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK115

Belt: Browning BX57

Table 30. Ultra High Static Fan Drives

7 ½ Ton — TWE090 Ultra High Static Drive Kit	
Motor Sheave Turns Open	Nominal RPM
0	1346
1	1241
2	1136
3	1030
4	925
5	820

12 ½ Ton — TWE150 Ultra High Static Drive (5 HP)	
Motor Sheave Turns Open	Nominal RPM
0	1217
1	1175
2	1133
3	1091
4	1048
5	1006
6	964

20 Ton — TWE240 — Ultra High Static Drive (7.5 HP Motor)	
Motor Sheave Turns Open	Nominal RPM
0	1294
1	1243
2	1191
3	1140
4	1089
5	1037
6	986

20 Ton — TWE240 — Ultra High Static Drive with Field Supplied Sheave (7.5 HP Motor)^(a)	
Motor Sheave Turns Open	Nominal RPM
0	1315
1	1281
2	1243
3	1205
4	1168
5	1100
6	1111

(a) TWE240 7.5HP Ultra Hi-Static w/ field installed belt and sheaves

Field Supplied Components Required:

Motor Sheave: Variable Pitch (2.8 - 3.8 Inch Pitch Diameter), 1.125 Inch Bore, Single Groove, Browning 1VP44

Blower Sheave: Fixed Pitch (10.4 Inch Pitch Diameter), 1.4375 Inch Bore, Single Groove, Browning BK110

Belt: Browning BX62



Performance Data

Table 31. Discharge Plenum and Grille Assembly Throw Distance (ft) — Air Handler

Tons	Model No.	CFM	Louver Angle Deflection Position			
			Straight	20°	40°	55°
5	TWE061D TWE061E	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
7½	TWE090D TWE090E	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 TWE120E	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
12½	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. Throw distance values are based on a terminal velocity of 75 FPM.
2. Throw distance values at other terminal velocities may be established by multiplying throw distances in the table above by throw factor.

Terminal Velocity	Throw Factor
50 FPM	x 1.50
100 FPM	x .75
150 FPM	x .50

Table 32. Electric Heat Discharge Plenum and Grille Airflow (CFM)

Tons	Unit Model No.	Electric Heater Model No.	Airflow (CFM)	
			Minimum	Maximum
5	TWE061D1, E1 TWE061D3, E3 TWE061D4, E4	BAYHTRL117A	2000	2400
		BAYHTRL315A	2000	2400
		BAYHTRL415A	2000	2400
7 1/2	TWE090D1, E1 TWE090D3, E3 ^(a) TWE090D3, E3 ^(a)	BAYHTRL117A	3000	3600
		BAYHTRL123A	3375	3600
		BAYHTRL315A	2625	3600
		BAYHTRL325A	3000	3600
		BAYHTRL415A	2625	3600
		BAYHTRL425A	2625	3600
10	TWE120D1, E1 TWE120D3, E3 ^(a) TWE120D3, E3 ^(a)	BAYHTRL117A	3500	4800
		BAYHTRL123A	4000	4800
		BAYHTRL315A	4000	4800
		BAYHTRL325A	3500	4800
		BAYHTRL415A	3500	4800
		BAYHTRL425A	3500	4800
12½	TWE150E3 TWE150E3 ^(a)	BAYHTRM330A	5250	6000
		BAYHTRM430A	5250	6000
15	TWE180E3 TWE180E3 ^(a)	BAYHTRM330A	5250	7200
		BAYHTRM430A	5250	7200
20	TWE240E3 TWE240E4	BAYHTRM330A	7000	9600
		BAYHTRM430A	7000	9600

(a) When wired for 460 volt, used with BAYHTRL4*** only.

Table 33. Static Pressure Drop Through Accessories (inches of water column)^(a) — Air Handlers

Tons	Unit Model No.	CFM	Return Grille	Discharge Plenum and Grille ^(b)	Electric Heaters (kW)				Hydronic Coils	
					5-10	15-20	25-30	35-50	Steam	Hot Water
5	TWE061D TWE061E	1600	0.12	0.21	0.08	0.08	0.14	—	.44	.31
		2000	0.18	0.33	0.13	0.13	0.19	—	.62	.44
		2400	0.28	0.47	0.19	0.19	0.37	—	.80	.59
7½	TWE090D TWE090E	2400	0.08	0.27	0.03	0.06	0.08	0.12	.38	.23
		3000	0.13	0.4	0.06	0.12	0.17	0.23	.50	.33
		3600	0.18	0.58	0.08	0.16	0.24	0.32	.66	.44
10	TWE120D TWE120E	3200	0.07	0.43	0.06	0.13	0.19	0.26	.42	.40
		4000	0.11	0.66	0.10	0.20	0.30	0.40	.59	.56
		4800	0.15	0.95	0.14	0.28	0.42	0.57	.76	.75
12½	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	.46	.38
		6000	0.15	0.34	0.06	0.06	0.12	0.17	.64	.54
		7200	0.2	0.49	0.08	0.08	0.16	0.24	.82	.72
20	TWE240	6400	0.11	0.43	0.06	0.06	0.13	0.19	.50	.41
		8000	0.17	0.66	0.10	0.10	0.20	0.30	.70	.58
		9600	0.23	0.95	0.14	0.14	0.28	0.42	.89	.78

(a) Return air filter ESP included in Fan Performance Table data.

(b) At louver opening angle of 42 degrees. For ESP at other angle openings, see accessory installation guide.



Performance Data

Table 34. Auxiliary Electric Heat Capacity - 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, D4, DW TWE061E3, E4	5.00	1	5.00	17,065	-	-	5.00	17,065
	9.96	1	9.96	33,993	-	-	9.96	33,993
	14.96	1	14.96	51,058	-	-	14.96	51,058
	24.92	2	14.96	51,058	9.96	33,993	24.92	85,051
TWE090 ^(a) ,120D3 ^(a) ,DW TWE090E3 ^(a) TWE120E3 ^(a) , EW	5.00	1	5.00	17,065	-	-	5.00	17,065
	9.96	1	9.96	33,993	-	-	9.96	33,993
	14.96	1	14.96	51,058	-	-	14.96	51,058
	24.92	2	14.96	51,058	9.96	33,993	24.92	85,051
TWE061,090,120D1 TWE060E1 TWE090E1 TWE120E1	5.76	1	5.76	19,659	-	-	5.76	19,659
	11.52	1	11.52	39,318	-	-	11.52	39,318
	17.28	1	17.28	58,977	-	-	17.28	58,977
	23.04	2	11.52	39,318	11.52	39,318	23.04	78,636
TWE090,120D1, E1	28.8	2	17.28	58,977	11.52	39,318	28.8	98,295
TWE090 ^(a) ,120D3 ^(a) , DW	34.88	2	19.92	67,987	14.96	51,058	34.88	119,045
TWE120E3 ^(a) , EW	10.00	1	10.00	34,130	-	-	10.00	34,130
TWE150E, 180E, 240E	10.00	1	10.00	34,130	-	-	10.00	34,130
	19.92	1	19.92	67,987	-	-	19.92	67,987
	29.92	2	19.92	67,987	10.00	34,130	29.92	102,117
	49.84	2	29.92	102,117	19.92	67,987	49.84	170,104

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

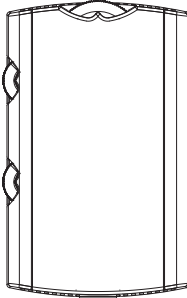
(a) Field converted to 460V

Controls

ReliaTel™ Controlled Units

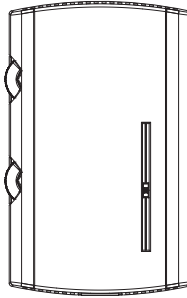
Zone Sensors are the building occupant's comfort control devices. The following zone sensor options are available for Odyssey units with ReliaTel control:

Manual Changeover



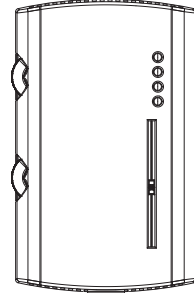
Heat, Cool or Off System Switch. Fan Auto or Off Switch. One temperature setpoint lever.

Manual/Automatic Changeover



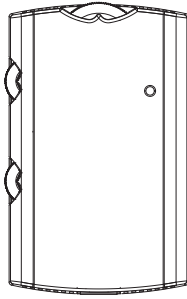
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers.

Manual/Automatic Changeover



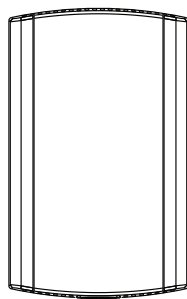
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers. Status Indication LED lights, System On, Heat, Cool, or Service.

Manual/Automatic Changeover



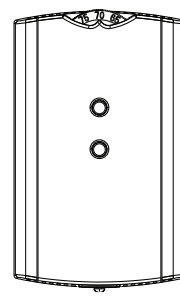
Auto, Heat, Cool or Off System Switch. Fan Auto or Off Switch. Two temperature setpoint levers.

Remote Sensor



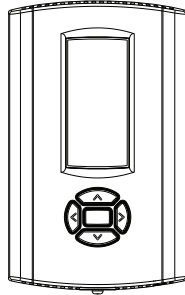
Sensor(s) available for all zone sensors to provide remote sensing capabilities.

Integrated Comfort™ System



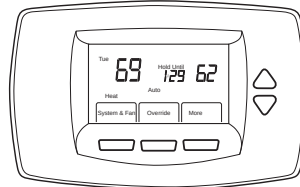
Sensor(s) available with optional temperature adjustment and override buttons to provide central control through a Trane Integrated Comfort™ system.

Programmable Night Setback



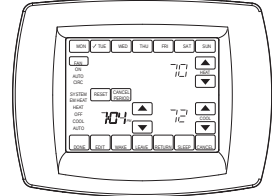
Auto or manual changeover with seven-day programming. Keyboard selection of Heat, Cool, Fan, Auto, or On. All programmable sensors have System On, Heat, Cool, Service LED/indicators as standard. Night Setback Sensors have one (1) Occupied, one (1) Unoccupied, and one (1) Override program per day.

Digital Display Programmable Thermostat (2H/2C)



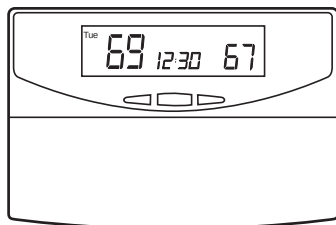
Two Heat/Two Cool digital display thermostat. 7-day programmable stat with night setback shall be available.

Touchscreen Programmable Thermostat (2H/2C)



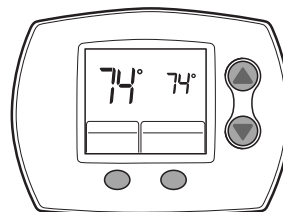
Two Heat/Two Cool programmable thermostat with touch screen digital display. Menu-driven programming. Effortless set-up. Program each day separately with no need to copy multiple days. All programming can be done on one screen. Easy to read and use. Large, clear backlit digital display.

Digital Display Programmable Thermostat with Built-In Relative Humidity Sensing (3H/2C)



Three Heat/Two Cool digital display thermostat with built-in humidity control and display. This thermostat combines both humidity and dry bulb into one. Fully programmable with night setback.

Digital Display Thermostat (3H/2C)



Three Heat, Two Cool digital display thermostat. Easy access battery replacement. Flip-out door for easy battery replacement without removing or disassembling the thermostat.

Dual Thermistor Remote Zone Sensor

This sensor will allow the customer to reduce the total number of remote sensors to obtain space temperature averaging. This sensor should be utilized with ReliaTel controls.

RA Remote Sensor

Return Air Remote Sensor which can be mounted in the return air duct to report return air temperature.

Room Remote Sensor

Space Remote Sensor which can be mounted on the wall to report/control from a remote location in the space.



Electrical Data

Table 35. Electrical Characteristics — Compressor and Condenser Fan Motors — Heat Pumps — 60Hz

Tons	Unit Model No.	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	2.7	7.0
	TWA073DW	1	575	3	8.3	54	1	575	1	1.2	3.0
7½	TWA090D3	1	208-230	3	25.0	164	1	208-230	1	3.1	8.1
	TWA090D4	1	460	3	13.0	100	1	460	1	1.6	3.8
	TWA090DK	1	380	3	14.3	94.3	1	380	1	2.7	7.0
	TWA090DW	1	575	3	10.8	78	1	575	1	1.2	3.0
10	TWA120D3	1	208-230	3	30.1	225	1	208-230	1	5.0	14.4
	TWA120D4	1	460	3	16.7	114	1	460	1	2.5	5.8
	TWA120DK	1	380	3	24.4	145	1	380	1	3.4	7.8
	TWA120DW	1	575	3	12.3	80	1	575	1	2.0	5.1
15	TWA180E3	2	208-230	3	25.0	164	2	208-230	1	5.0	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	2.0	5.1
20	TWA240E3	2	208-230	3	33.8	239	2	208-230	1	5.0	14.4
	TWA240E4	2	460	3	18.0	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	2.0	5.1

Electrical Data

Table 36. Unit Wiring — Heat Pumps — 60Hz

Tons	Unit Model No.	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker^(a)
6	TWA073D3	187-253	31.1	40
	TWA073D4	414-506	14.9	20
	TWA073DK	342-418	16.8	20
	TWA073DW	518-632	11.6	15
7½	TWA090D3	187-253	34.4	45
	TWA090D4	414-506	17.9	25
	TWA090DK	342-418	20.6	25
	TWA090DW	518-632	14.7	20
10	TWA120D3	187-253	42.6	60
	TWA120D4	414-506	23.4	30
	TWA120DK	342-418	33.9	45
	TWA120DW	518-632	17.4	25
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
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

(a) HACR type circuit breaker per NEC.

Electrical Data

Table 37. Electrical Characteristics — Standard and Low Static Motors — 60 Hz Air Handler^(a)

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
7½	TWE090D1, E1	1	208	1	1.50	6.8	31.5	8.5	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D1, E1	1	230	1	1.50	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	1.50	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	1.50	5.0	34.3	6.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3 ^(b)	1	460	3	1.50	2.5	17.0	3.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090DW	1	575	3	1.50	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	2.00	8.5	57.4	10.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D1, E1	1	230	1	2.00	7.7	57.4	9.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	208	3	2.00	6.2	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	2.00	5.8	33.9	7.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3 ^(b)	1	460	3	2.00	2.9	33.9	3.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120DW, EW	1	575	3	2.00	2.3	14.4	2.9	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12½	TWE150E3	1	208	3	2.00	5.95	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	2.00	5.5	23.0	6.9	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE150E3 ^(b)	1	460	3	2.00	2.75	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	2.00	2.2	18.0	2.8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	TWE180E3	1	208	3	3.00	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	3.00	9.2	74.9	11.5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3 ^(b)	1	460	3	3.00	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	3.00	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	5.00	14.5	98.0	18.1	25	1	208	3	3.00	9.4	74.9	11.8	20
	TWE240E3	1	230	3	5.00	14.3	98.0	17.9	25	1	230	3	3.00	9.2	74.9	11.5	20
	TWE240E4	1	460	3	5.00	6.7	47.0	8.4	15	1	460	3	3.00	4.6	39.3	5.8	15
	TWE240EW	1	575	3	5.00	5.2	-	6.5	15	1	575	3	3.00	3.4	24.6	4.3	15

Continued on next page

(a) For additional information contact product support.

(b) Field wired for 460V.



Electrical Data

Table 38. Electrical Characteristics — High and Ultra-High Static Motors — 60 Hz Air Handler^(a)

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	1.50	6.8	31.5	8.5	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061D1, E1	1	230	1	1.50	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	1.50	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	1.50	5.0	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	1.50	2.5	17.0	3.1	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE061DW	1	575	3	1.50	1.8	13.6	2.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7½	TWE090D1, E1	1	208	1	2.00	8.5	57.4	10.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D1, E1	1	230	1	2.00	7.7	57.4	9.6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE090D3, E3	1	208	3	2.00	6.2	33.9	7.8	15	1	208	3	3.00	9.4	74.9	11.8	20
	TWE090D3, E3	1	230	3	2.00	5.8	33.9	7.3	15	1	230	3	3.00	9.2	74.9	11.5	20
	TWE090D3, E3 ^(b)	1	460	3	2.00	2.9	33.9	3.6	15	1	460	3	3.00	4.6	39.3	5.8	15
	TWE090DW	1	575	3	2.00	2.3	14.4	2.9	15	1	575	3	3.00	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	3.00	9.4	74.9	11.8	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3	1	230	3	3.00	9.2	74.9	11.5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE120D3, E3 ^(b)	1	460	3	3.00	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	3.00	3.4	24.6	4.3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12½	TWE150E3	1	208	3	3.00	5.95	23.0	7.4	15	1	208	3	5.00	14.5	98.0	18.1	25
	TWE150E3	1	230	3	3.00	5.5	23.0	6.9	15	1	230	3	5.00	14.3	98.0	17.9	25
	TWE150E3 ^(b)	1	460	3	3.00	2.75	23.0	3.4	15	1	460	3	5.00	6.7	47.0	8.4	15
	TWE150EW	1	575	3	3.00	2.2	18.0	2.8	15	1	575	3	5.00	5.2	-	6.5	15
15	TWE180E3	1	208	3	5.00	14.5	98.0	18.1	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3	1	230	3	5.00	14.3	98.0	17.9	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180E3 ^(b)	1	460	3	5.00	6.7	47.0	8.4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE180EW	1	575	3	5.00	5.2	-	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	7.50	20	114.0	25.0	35
	TWE240E3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	230	3	7.50	17.6	126.0	22.0	35
	TWE240E4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	460	3	7.50	9.0	61.4	11.3	20
	TWE240EW	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	575	3	7.50	7.2	49.8	9.0	15

(a) For additional information contact product support.

(b) Field wired for 460V.

Table 39. Unit Wiring - Air Handler - 60Hz

Tons	Unit Model Number	Unit Operating Voltage Range	Minimum Circuit Ampacity	Maximum Fuse or HACR Circuit Breaker Size^(a)
5	TWE061D1, E1	187-253	7.5	15
	TWE061D3, E3	187-253	3.3	15
	TWE061D4, E4	414-506	1.6	15
	TWE061DK	342-418	1.8	15
	TWE061DW	518-632	1.6	15
7½	TWE090D1, E1	187-253	8.5	15
	TWE090D3, E3 ^(b)	187-253	6.6	15
	TWE090D4, E4 ^(c)	414-506	3.1	15
	TWE090DK	342-418	3.1	15
	TWE090DW	518-632	3.9	15
10	TWE120D1, E1	187-253	10.6	15
	TWE120D3, E3 ^(b)	187-253	7.8	15
	TWE120D4, E4 ^(c)	414-506	3.6	15
	TWE120DK	342-418	4.5	15
	TWE120DW, EW	518-632	2.9	15
12½	TWE150E3	187-253	6.9	15
	TWE150E3 ^(c)	414-506	3.4	15
	TWE150EK	342-418	4.1	15
	TWE150EW	518-632	2.8	15
15	TWE180E3	187-253	11.8	20
	TWE180E3 ^(c)	414-506	5.8	15
	TWE180EK	342-418	9.8	15
	TWE180EW	518-632	4.3	15
20	TWE240E3	187-253	18.1	25
	TWE240E4	414-506	8.4	15
	TWE240EK	342-418	10.4	15
	TWE240EW	518-632	6.5	15

(a) HACR type circuit breaker per NEC.

(b) When wired for 208-230 volt.

(c) When wired for 460 volt.



Electrical Data

Table 40. Unit Wiring with Electric Heat (Single Point Connection) — 5, 7½ and 10 Ton Air Handlers — 60 Hz

Tons	Used With	Heater Model No.	Maximum Fuse Heater KW Rating ^(a)	Unit Power Supply	Control Stages	Minimum Circuit Ampacity ^(b)	Maximum Fuse or HACR Circuit Breaker Size ^{(b)(c)}
5	TWE061D1 TWE061E1	BAYHTRL106A	4.33/5.76	208-230/1/60	1	33/37	35/40
		BAYHTRL112A	8.65/11.52		1	59/67	60/70
		BAYHTRL117A	12.98/17.28		1	85/97	90/100
		BAYHTRL123A	17.30/23.04		2	111/127 ^(d)	125/150
7½	TWE090D1 TWE090E1	BAYHTRL106A	4.33/5.76	208-230/1/60	1	34/38	35/40
		BAYHTRL112A	8.65/11.52		1	60/68 ^(d)	60/70
		BAYHTRL117A	12.98/17.28		1	86/98	90/100
		BAYHTRL123A	17.30/23.04		2	112/128 ^(d)	125/150
		BAYHTRL129A	21.65/28.80		2	138/158 ^(d)	150/175
10	TWE120D1 TWE120E1	BAYHTRL106A	4.33/5.76	208-230/1/60	1	37/41	40/45
		BAYHTRL112A	8.65/11.52		1	63/71 ^(d)	70/80
		BAYHTRL117A	12.98/17.28		1	89/101	90/110
		BAYHTRL123A	17.30/23.04		2	115/131 ^(d)	125/150
		BAYHTRL129A	21.65/28.80		2	141/161 ^(d)	150/175
5	TWE061D3 TWE061E3	BAYHTRL305A	3.75/5.00	208-230/3/60	1	17/19	20/20
		BAYHTRL310A	7.45/9.96		1	30/34	30/35
		BAYHTRL315A	11.25/14.96		1	43/49	45/50
		BAYHTRL325A	18.71/24.92		2	69/79 ^(d)	70/80
7½	TWE090D3 TWE090E3	BAYHTRL305A	3.75/5.00	208-230/3/60	1	20/22	20/25
		BAYHTRL310A	7.45/9.96		1	33/37	35/40
		BAYHTRL315A	11.25/14.96		1	46/52	50/60
		BAYHTRL325A	18.71/24.92		2	72/82 ^(d)	80/90
		BAYHTRL335A	26.20/34.88		2	97/113 ^(e)	100/125
10	TWE120D3 TWE120E3	BAYHTRL305A	3.75/5.00	208-230/3/60	1	21/23	25/25
		BAYHTRL310A	7.45/9.96		1	34/38	35/40
		BAYHTRL315A	11.25/14.96		1	47/53	50/60
		BAYHTRL325A	18.71/24.92		2	73/83 ^(d)	80/90
		BAYHTRL335A	26.20/34.88		2	98/113 ^(e)	100/125
5	TWE061D4 TWE061E4	BAYHTRL405A	5	460/3/60	1	10	15
		BAYHTRL410A	9.96		1	17	20
		BAYHTRL415A	14.96		1	25	25
		BAYHTRL425A	24.92		2	40	40
7½	TWE090D3 ^(f) TWE090E3 ^(f)	BAYHTRL405A	5	460/3/60	1	11	15
		BAYHTRL410A	9.96		1	19	20
		BAYHTRL415A	14.96		1	26	30
		BAYHTRL425A	24.92		2	41	45
		BAYHTRL435A	34.88		2	56	60
10	TWE120D3 ^(f) TWE120E3 ^(f)	BAYHTRL405A	5	460/3/60	1	12	15
		BAYHTRL410A	9.96		1	20	20
		BAYHTRL415A	14.96		1	27	30
		BAYHTRL425A	24.92		2	42	45
		BAYHTRL435A	34.88		2	57	60

Electrical Data

Table 40. Unit Wiring with Electric Heat (Single Point Connection) — 5, 7½ and 10 Ton Air Handlers — 60 Hz

Tons	Used With	Heater Model No.	Maximum Fuse Heater KW Rating ^(a)	Unit Power Supply	Control Stages	Minimum Circuit Ampacity ^(b)	Maximum Fuse or HACR Circuit Breaker Size ^{(b)(c)}
5	TWE061DW	BAYHTRLW05A	5	575/3/60	1	8	15
		BAYHTRLW10A	9.96		1	15	15
		BAYHTRLW15A	14.96		1	21	25
		BAYHTRLW25A	24.92		2	33	35
7½	TWE090DW	BAYHTRLW05A	5	575/3/60	1	11	15
		BAYHTRLW10A	9.96		1	17	20
		BAYHTRLW15A	14.96		1	23	25
		BAYHTRLW25A	24.92		2	36	40
		BAYHTRLW35A	34.88		2	48	50
10	TWE120DW TWE120EW	BAYHTRLW05A	5	575/3/60	1	10	15
		BAYHTRLW10A	9.96		1	16	20
		BAYHTRLW15A	14.96		1	22	25
		BAYHTRLW25A	24.92		2	35	35
		BAYHTRLW35A	34.88		2	47	50

(a) 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.

(b) Any power supply and circuits must be wired and protected in accordance with local codes.

(c) The HACR circuit breaker is for U.S.A. installations only.

(d) Field wire must be rated at least 75°C.

(e) Field wire must be rated at least 90°C.

(f) With motor field converted to 460V.



Electrical Data

Table 41. Unit Wiring with Electric Heat (Single Point Connection) — 12½ - 20 Ton Air Handlers

Tons	Used With	Heater Model No.	Heater KW Rating ^(a)	Unit Power Supply	Control Stages	Minimum Circuit Ampacity ^(b)	Maximum Fuse or HACR Circuit Breaker Size ^{(b)(c)}
12½	TWE150E3	BAYHTRM310A	7.50/10.00	208-230/3/60	1	33/37	35/40
		BAYHTRM320A	14.96/19.92		1	59/67	60/70
		BAYHTRM330A	22.50/29.92		2	85/97	90/100
		BAYHTRM350A	37.42/49.84		2	137/157	150/175
15	TWE180E3	BAYHTRM310A	7.50/10.00	208-230/3/60	1	38/42	40/45
		BAYHTRM320A	14.96/19.92		1	64/72	70/80
		BAYHTRM330A	22.50/29.92		2	90/102	90/110
		BAYHTRM350A	37.42/49.84		2	142/162 ^(d)	150/175
20	TWE240E3	BAYHTRM310A	7.50/10.00	208-230/3/60	1	45/49	50/50
		BAYHTRM320A	14.96/19.92		1	71/79	80/80
		BAYHTRM330A	22.50/29.92		2	97/109	100/110
		BAYHTRM350A	37.42/49.84		2	149/169 ^(d)	150/175
12½	TWE150E3 ^(e)	BAYHTRM410A	10	460/3/60	1	19	20
		BAYHTRM420A	19.92		1	34	35
		BAYHTRM430A	29.92		2	49	50
		BAYHTRM450A	49.84		2	79	80
15	TWE180E3 ^(e)	BAYHTRM410A	10	460/3/60	1	21	25
		BAYHTRM420A	19.92		1	36	40
		BAYHTRM430A	29.92		2	51	60
		BAYHTRM450A	49.84		2	81	90
20	TWE240E4	BAYHTRM410A	10	460/3/60	1	24	25
		BAYHTRM420A	19.92		1	39	40
		BAYHTRM430A	29.92		2	54	60
		BAYHTRM450A	49.84		2	84	90
12½	TWE150EW	BAYHTRMW10A	10	575/3/60	1	15	20
		BAYHTRMW20A	19.92		1	27	30
		BAYHTRMW30A	29.92		2	39	40
		BAYHTRMW50A	49.84		2	63	70
15	TWE180EW	BAYHTRMW10A	10	575/3/60	1	17	20
		BAYHTRMW20A	19.92		1	30	30
		BAYHTRMW30A	29.92		2	42	45
		BAYHTRMW50A	49.84		2	67	70
20	TWE240EW	BAYHTRMW10A	10	575/3/60	1	20	25
		BAYHTRMW20A	19.92		1	32	35
		BAYHTRMW30A	29.92		2	45	45
		BAYHTRMW50A	49.84		2	70	70

(a) 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.

(b) Any power supply and circuits must be wired and protected in accordance with local codes.

(c) The HACR circuit breaker is for U.S.A. installations only.

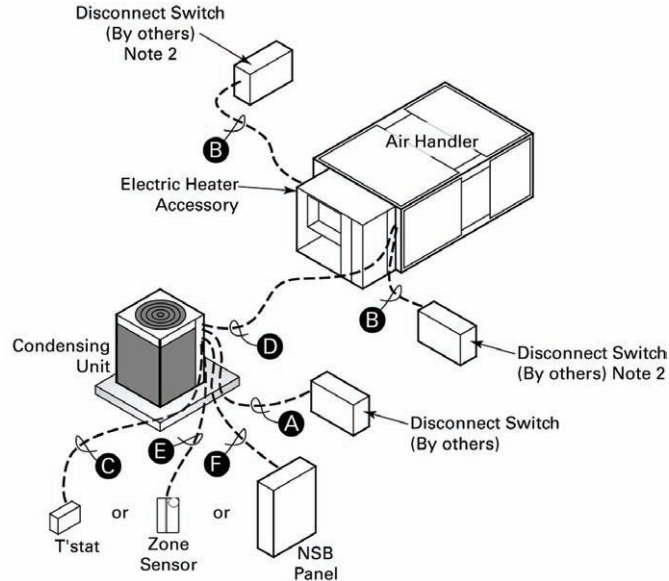
(d) Field wire must be rated at least 90°C.

(e) With motor field wired for 460V.

Jobsite Connections

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.

Note: 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.



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.

TWA073D/TWE090D
TWA090D/TWE090D
TWA120D/TWE120D

TWA180E/TWE180E
TWA240E/TWE240E
(2) TWA073D/TWE150E

(2) TWA090D/TWE180E
(2) TWA120D/TWE240E

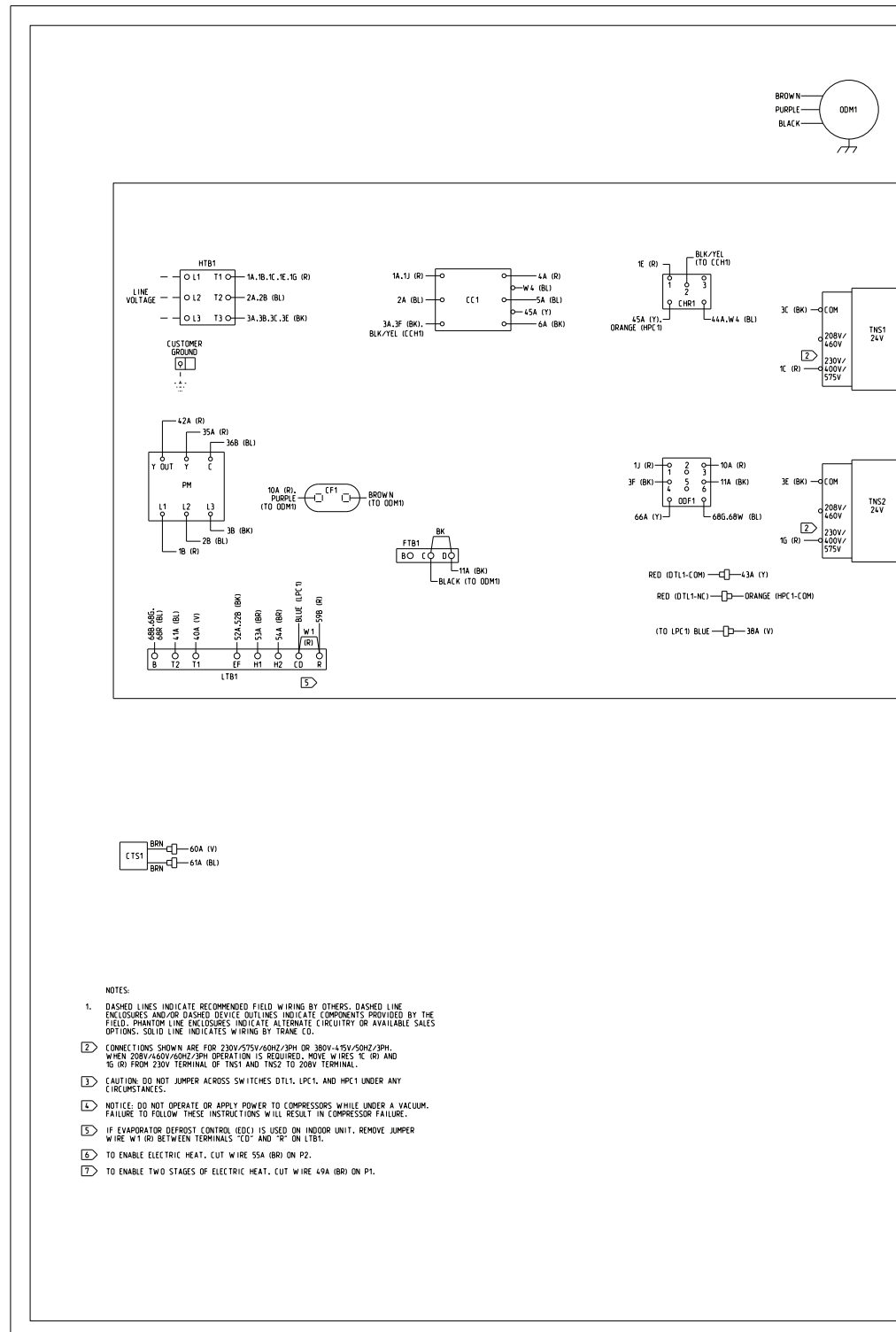
Field Wiring:

- 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. **Cooling only thermostat:** 3 to 7 wires depending on stages of electric heat
Zone Sensor: 4 to 10 wires depending on zone sensor model ¹
- D. 3 to 7 wires depending on type of outdoor unit(s).

¹ See Zone Sensor wiring instructions for wiring information (ReliaTel Controls only).

Typical Wiring

Figure 9. Typical Single Compressor - Connection Diagram



Typical Wiring

Figure 10. Typical Dual Compressor - Connection Diagram

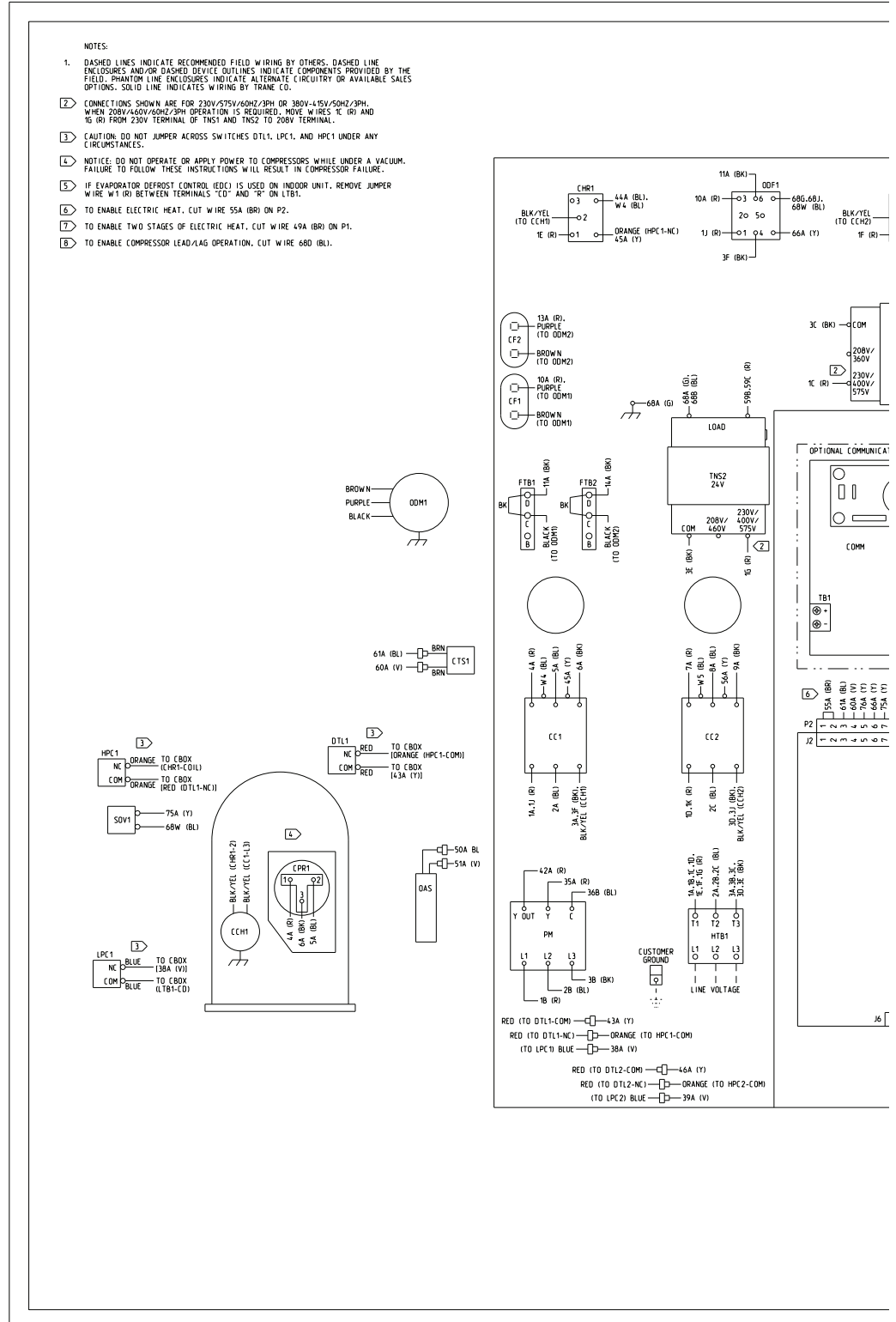


Figure 10. (continued from previous page) Typical Dual Compressor - Connection Diagram

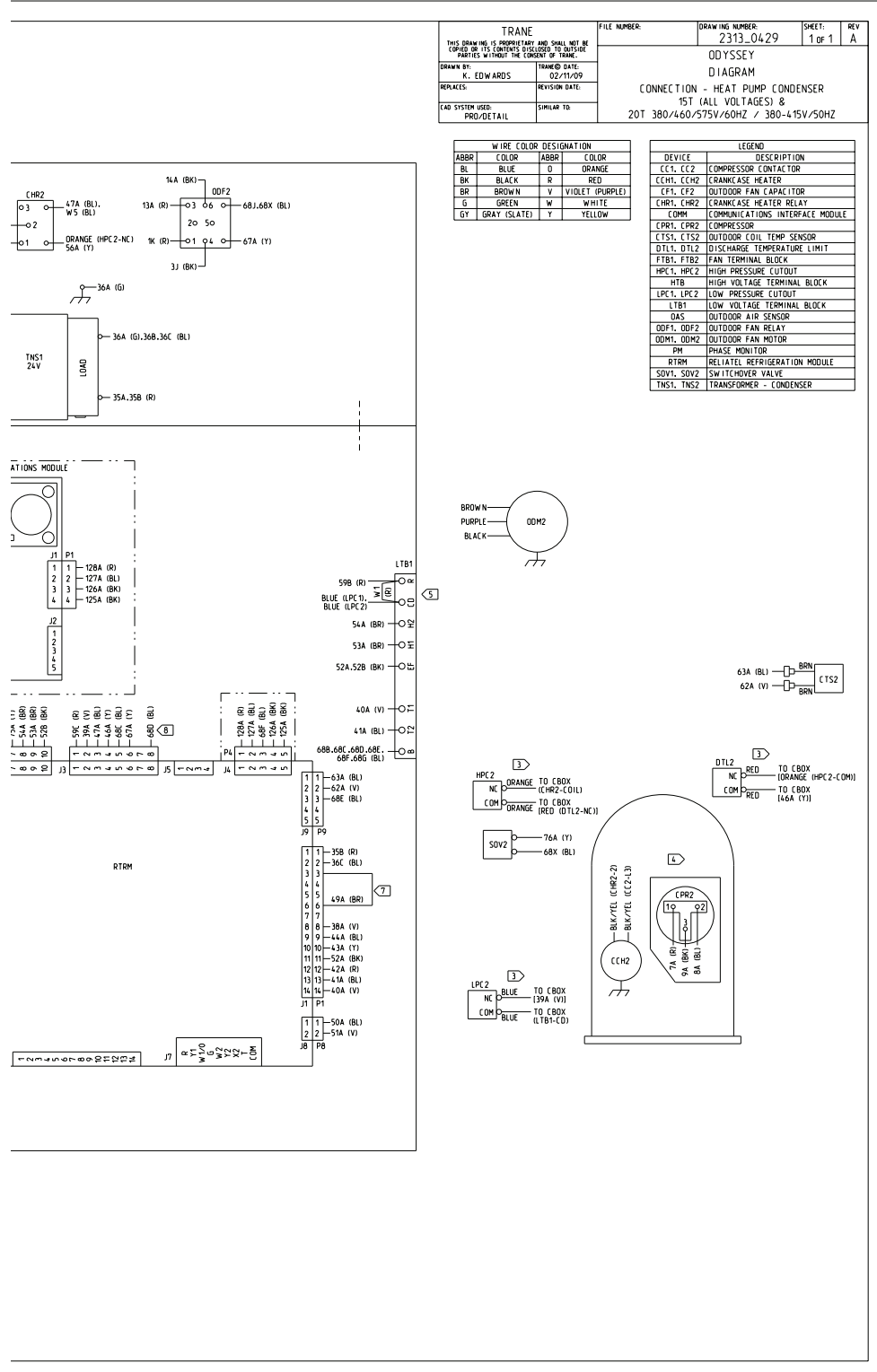


Figure 11. Typical Power/Control Diagram (Single and Dual Compressor)

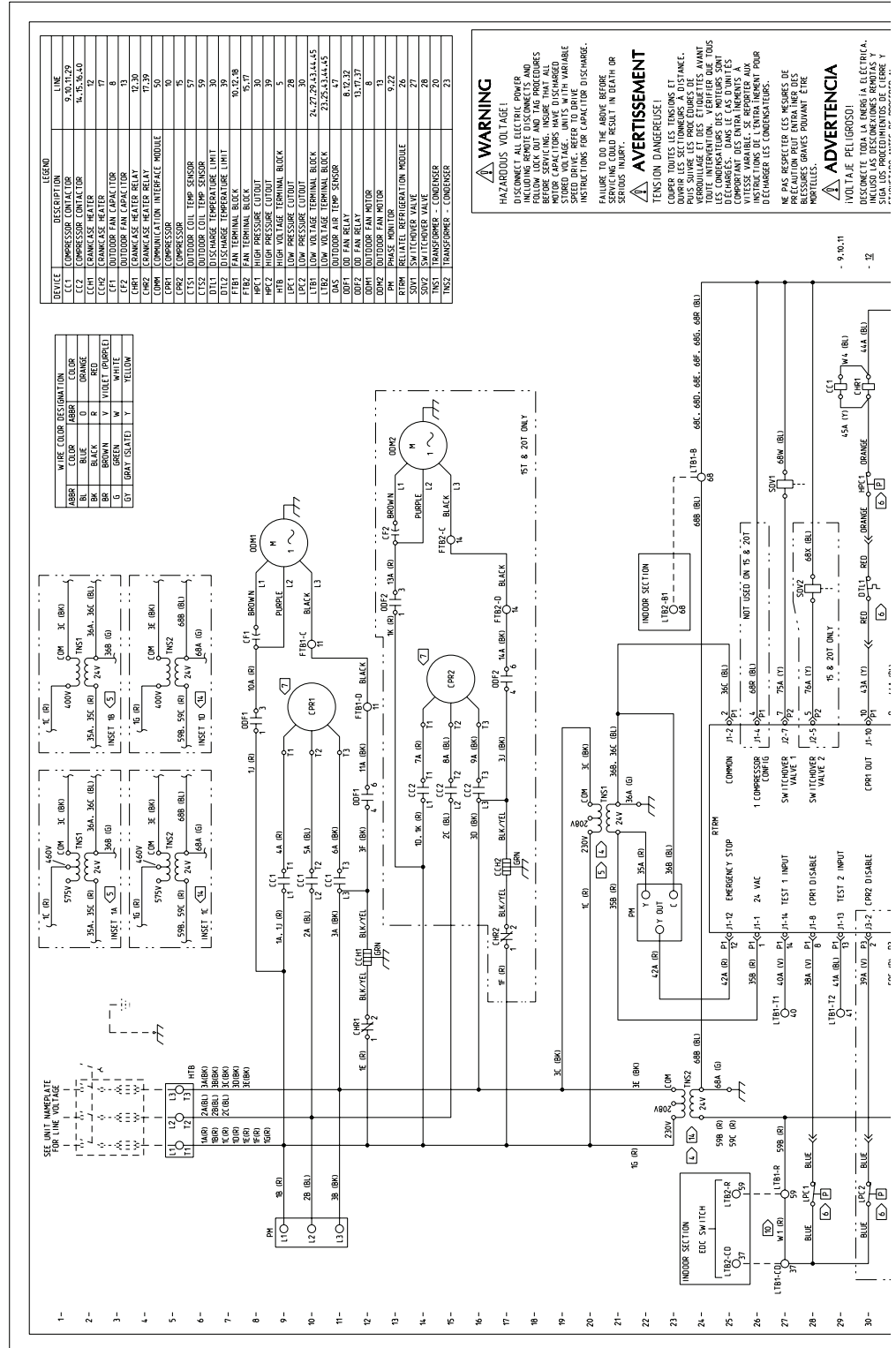
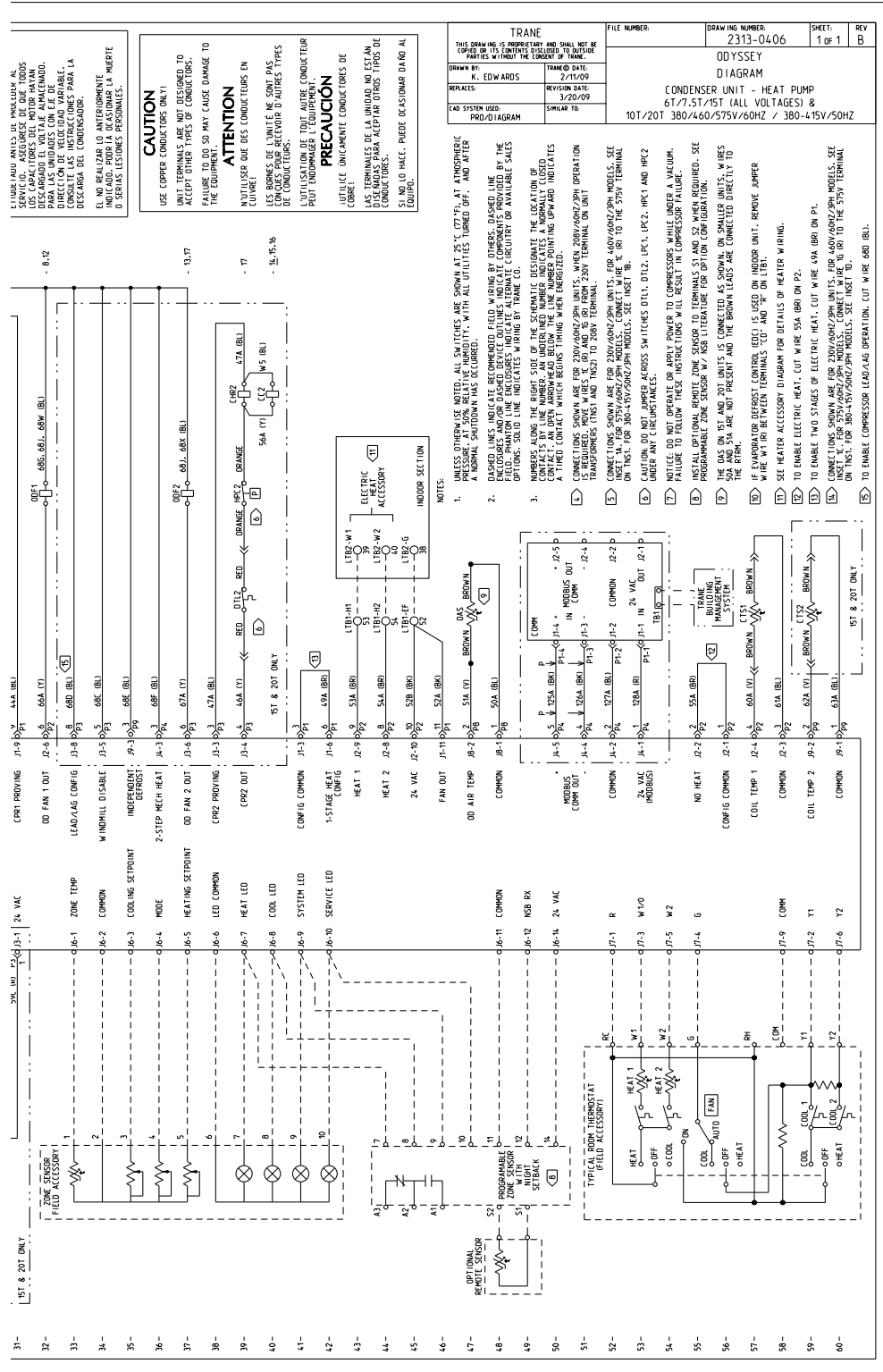


Figure 11. (continued from previous page) Typical Power/Control Diagram (Single and Dual Compressor)



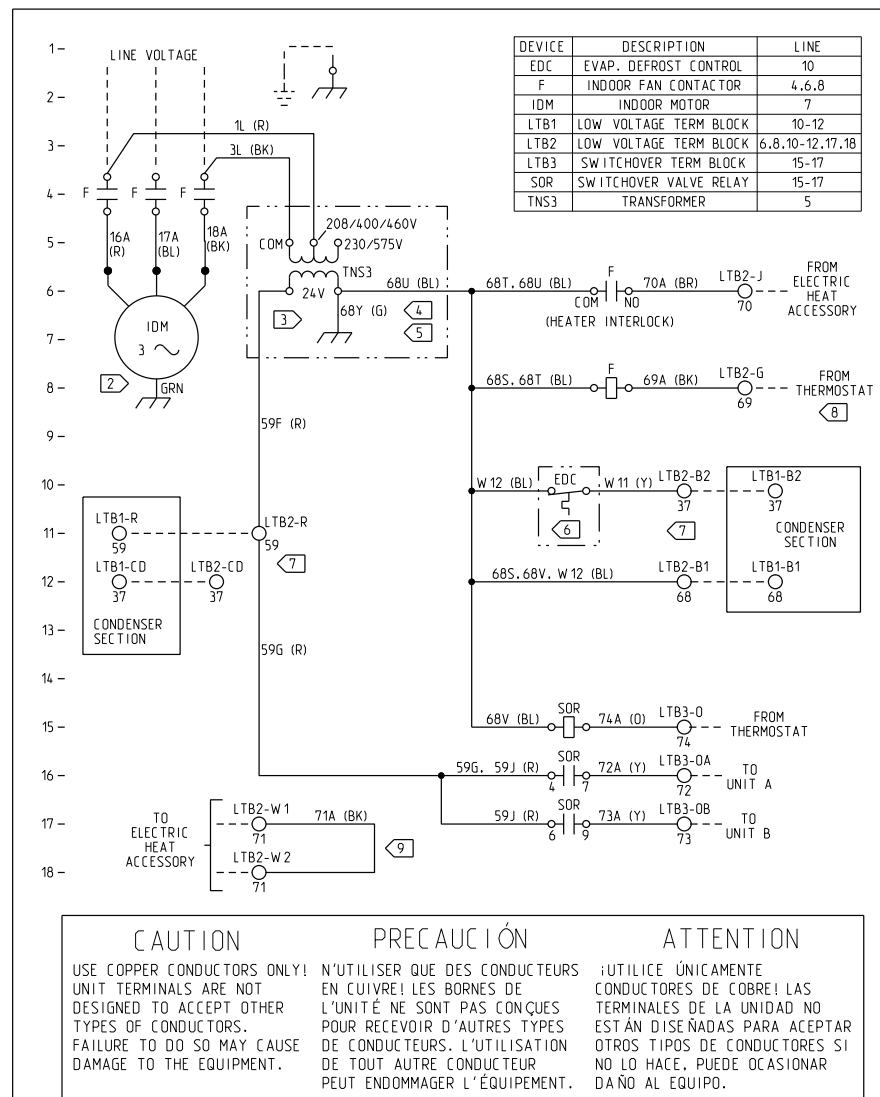
Typical Wiring

Figure 12. Typical Air Handler Power/Control and Connection Diagram

MATERIAL:
FLEXCON WHITE VINYL (2 MIL THICK) WITH PRESSURE SENSITIVE
ADHESIVE BACKING AND RELEASE PAPER, ADHESIVE FOR
OUTDOOR APPLICATION ON PAINTED OR GALVANIZED METAL.

SIZE: SHEET- 4-1/4" X 11". CUT AS SHOWN ON CUT LINE.
(2 FINISHED SHEETS TOTAL - 4-1/4" X 5-1/2" PER SHEET)

ALL PRINTING TO BE BLACK. TRANE CO. TO FURNISH PRINTER
WITH ELECTRONIC FILE OF THIS DRAWING. WIRING DIAGRAMS
TO BE SUPPLIED AS INDIVIDUAL SHEETS PER SIZE ABOVE.



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TRANE THIS DRAWING IS PROPRIETARY AND SHALL NOT BE COPIED OR ITS CONTENTS DISCLOSED TO OUTSIDE PARTIES WITHOUT THE CONSENT OF TRANE.		FILE NUMBER:	DRAWING NUMBER: 2313-0431	SHEET: 1 OF 1	REV C
DRAWN BY: K. EDWARDS REPLACES: CAD SYSTEM USED: PRO/DIAGRAM		ODYSSEY DIAGRAM AIR HANDLER - DUAL CIRCUIT W/3 PHASE POWER			
TRANE © DATE: 2/19/09 REVISION DATE: 7/30/09 SIMILAR TO:					

MODEL	MODEL
TWE061E3	TWE150EW
TWE061E4	TWE156ED
TWE090E3	TWE180E3
TWE101ED	TWE180EK
TWE120E3	TWE180EW
TWE120EK	TWE201ED
TWE120EW	TWE240E3
TWE126ED	TWE240E4
TWE150E3	TWE240EK
TWE150EK	TWE240EW

WIRE COLOR DESIGNATION

ABBR	COLOR	ABBR	COLOR
BL	BLUE	O	ORANGE
BK	BLACK	R	RED
BR	BROWN	V	VIOLET (PURPLE)
G or GRN	GREEN	W	WHITE
GY	GRAY (SLATE)	Y	YELLOW

CAUTION
USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT
DESIGNED TO ACCEPT OTHER
TYPES OF CONDUCTORS. FAILURE
TO DO SO MAY CAUSE DAMAGE
TO THE EQUIPMENT.

ATTENTION
N'UTILISER QUE DES
CONDUCTEURS EN CUIVRE! LES
BORNES DE L'UNITÉ NE SONT PAS
CONÇUES POUR RECEVOIR D'AUTRES
TYPES DE CONDUCTEURS.
L'UTILISATION DE TOUT AUTRE
CONDUCTEUR PEUT ENDOMMAGER
L'EQUIPEMENT.

PRECAUCIÓN
¡UTILICE ÚNICAMENTE
CONDUCTORES DE COBRE! LAS
TERMINALES DE LA UNIDAD NO
ESTÁN DISEÑADAS PARA ACEPTAR
OTROS TIPOS DE CONDUCTORES.
SI NO LO HACE, PUEDE OCASIONAR
DAÑO AL EQUIPO.

NOTE:

- SEE FIELD WIRING DIAGRAMS IN PRODUCT LITERATURE FOR PROPER FIELD CONNECTIONS.
- INDOOR FAN MOTOR (IDM) HAS INTERNAL OVERLOAD PROTECTION.
- TNS3 (AND ASSOCIATED WIRING) USED ON 5 TON MODELS ONLY.
- CONNECTIONS SHOWN ARE FOR 208V/400V/460V MODELS. FOR 230V/575V, WIRE 1L (R) IS CONNECTED TO THE APPROPRIATE TERMINAL ON THE TRANSFORMER.
- 208V/230V UNITS ARE FACTORY WIRED FOR 230V POWER. FOR 208V POWER, CONNECT WIRE 1L (R) TO THE 208V TERMINAL ON THE TRANSFORMER.
- THE EDC SWITCH IS NOT PROVIDED ON MODELS WITH CHILLED WATER COIL.
- IF AIR HANDLER HAS AN EVAPORATOR DEFROST CONTROL (EDC) ON MODELS WITH RELIATEL CONTROLS, INSTALLER MUST MOVE WIRES W11 (Y) AND W12 (BL) FROM LTB2 TERMINALS "B2" AND "B1" (ON AIR HANDLER) TO "R" AND "CD".
- ON ELECTRO-MECHANICAL UNITS, MAKE CONNECTION DIRECTLY FROM THERMOSTAT. ON RELIATEL UNITS, MAKE CONNECTION FROM LTB1-EF IN CONDENSER.
- REMOVE JUMPER WIRE 71A (BK) TO ALLOW TWO STAGES OF ELECTRIC HEAT.

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Dimensional Data

Figure 13. 6-7 1/2 Ton Heat Pump, Single Compressor

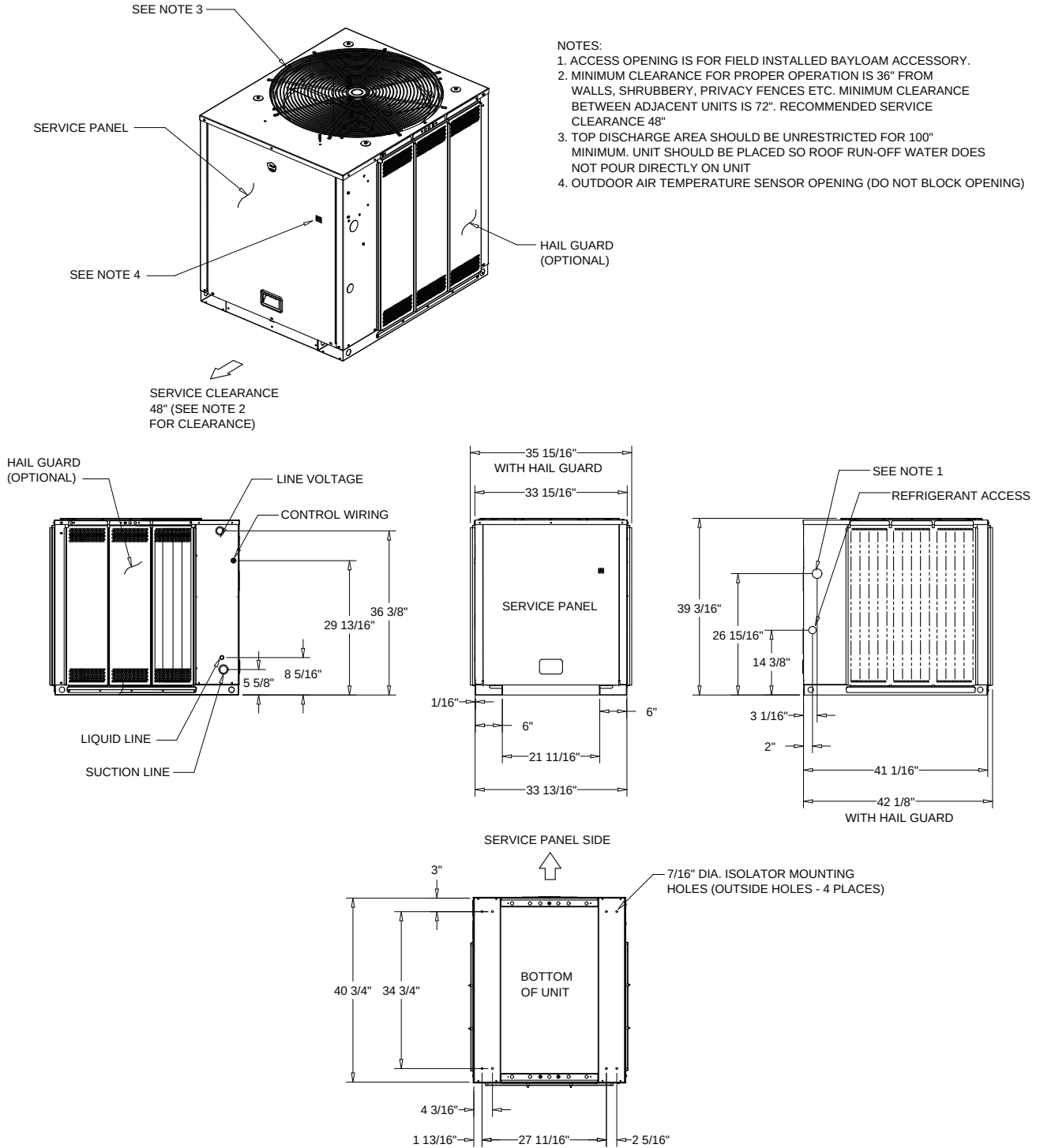
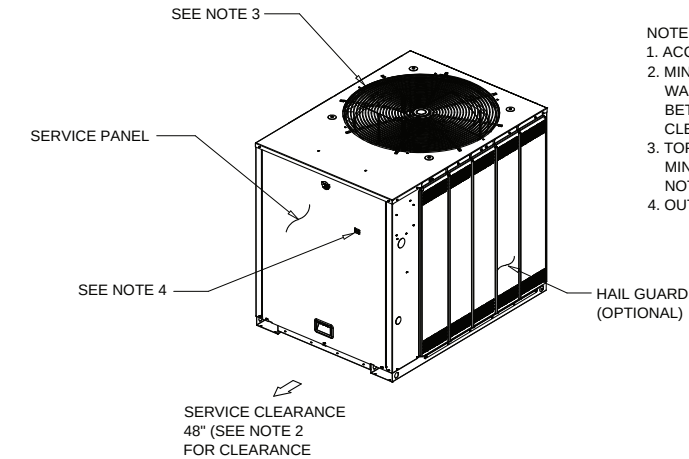
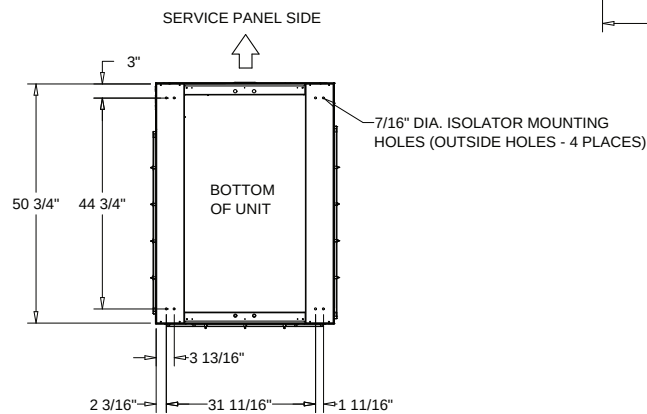
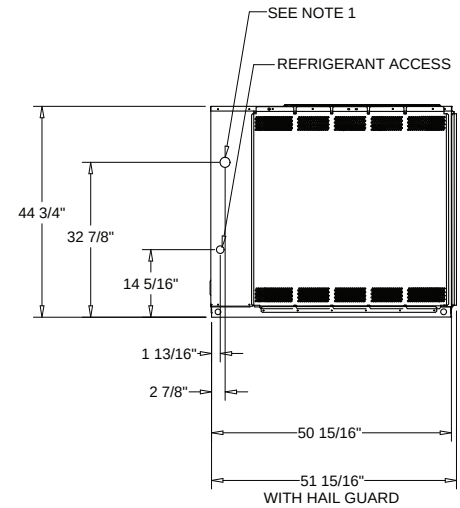
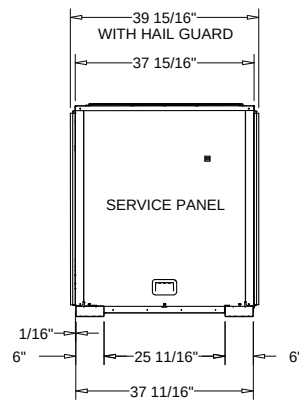
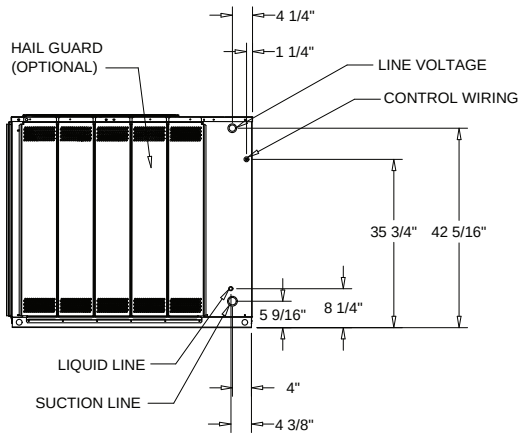


Figure 14. 10 Ton Heat Pump, Single Compressor



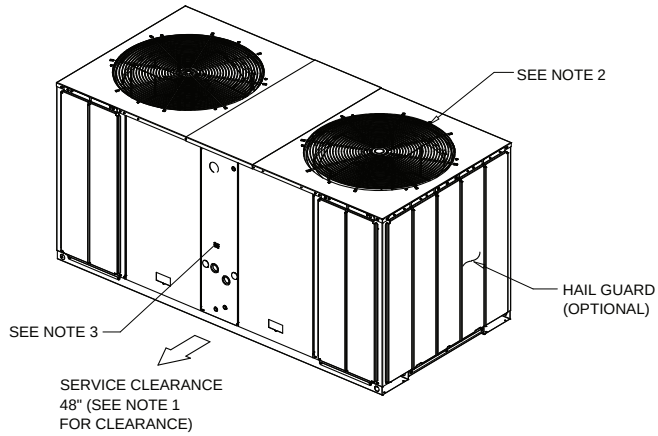
NOTES:

1. ACCESS OPENING IS FOR FIELD INSTALLED BAYLOAM ACCESSORY.
2. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72". RECOMMENDED SERVICE CLEARANCE 48"
3. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100' 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)



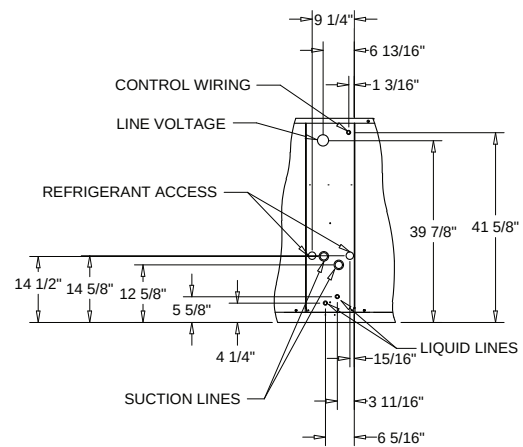
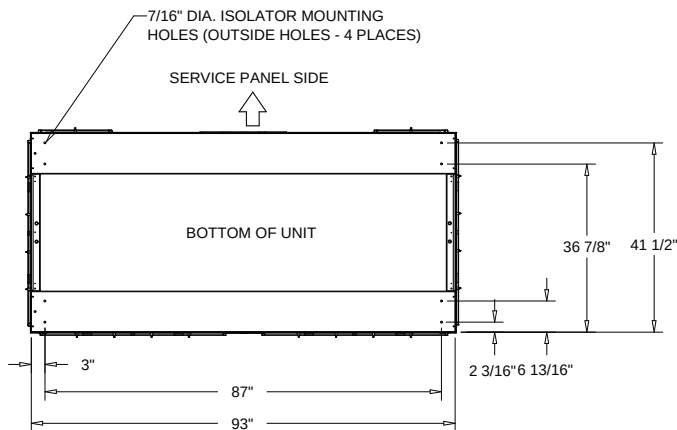
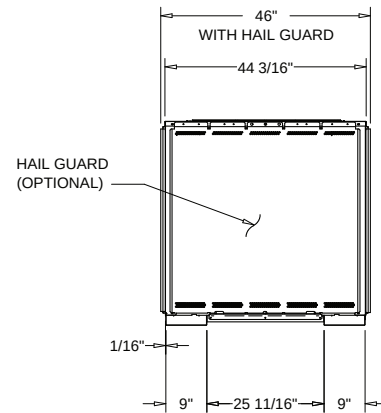
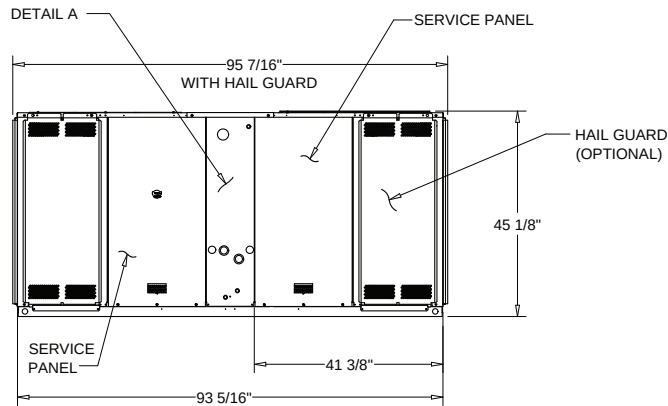
Dimensional Data

Figure 15. 15-20 Ton Heat Pump, Dual Compressor



NOTES:

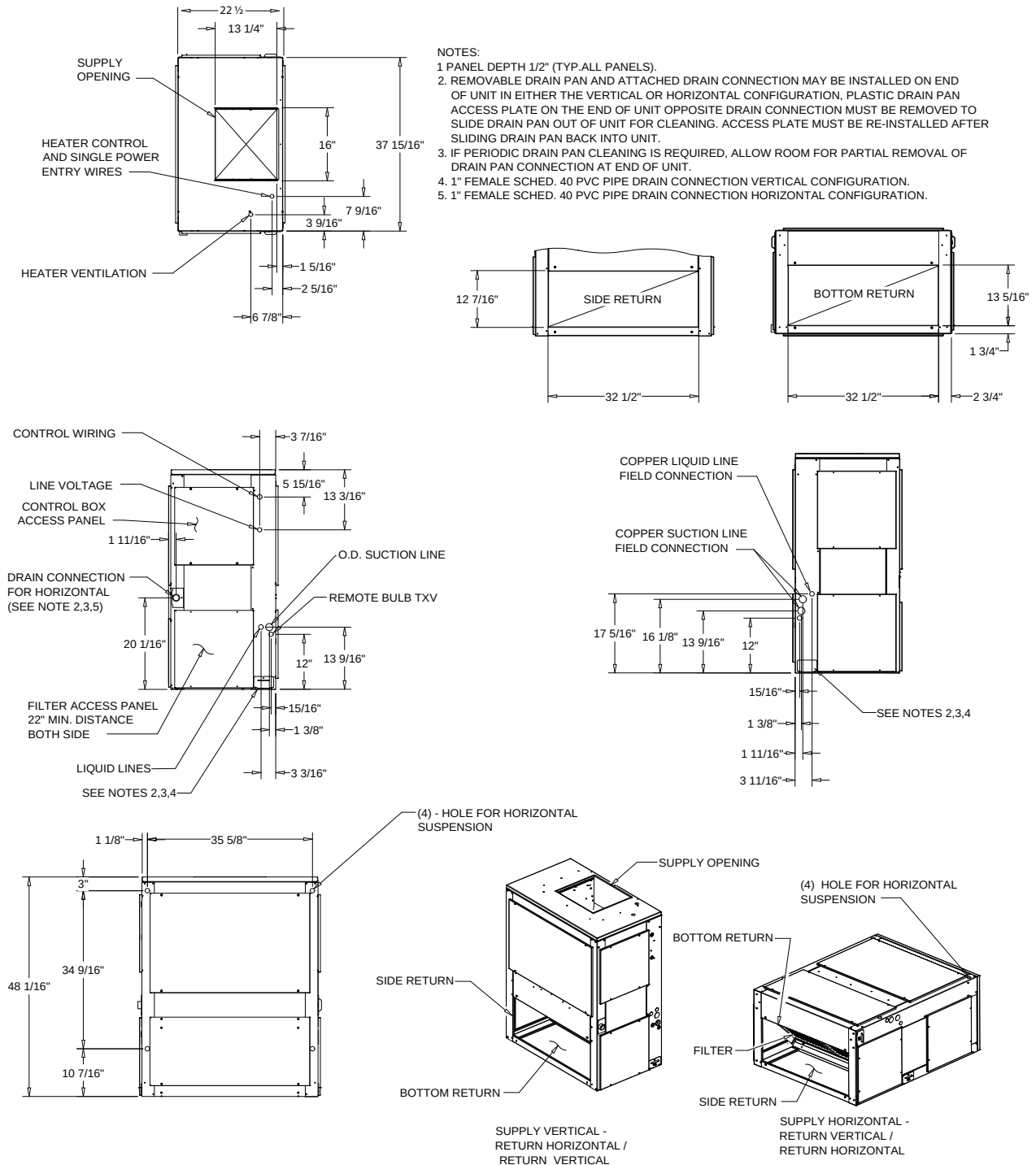
1. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72". RECOMMENDED SERVICE CLEARANCE 48"
2. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY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



FRONT DETAIL A

DIMENSIONAL DETAIL

Figure 16. 5 Ton Air Handler, Single Circuit



Dimensional Data

Figure 17. 5 Ton5 Ton Air Handler, Dual Circuit

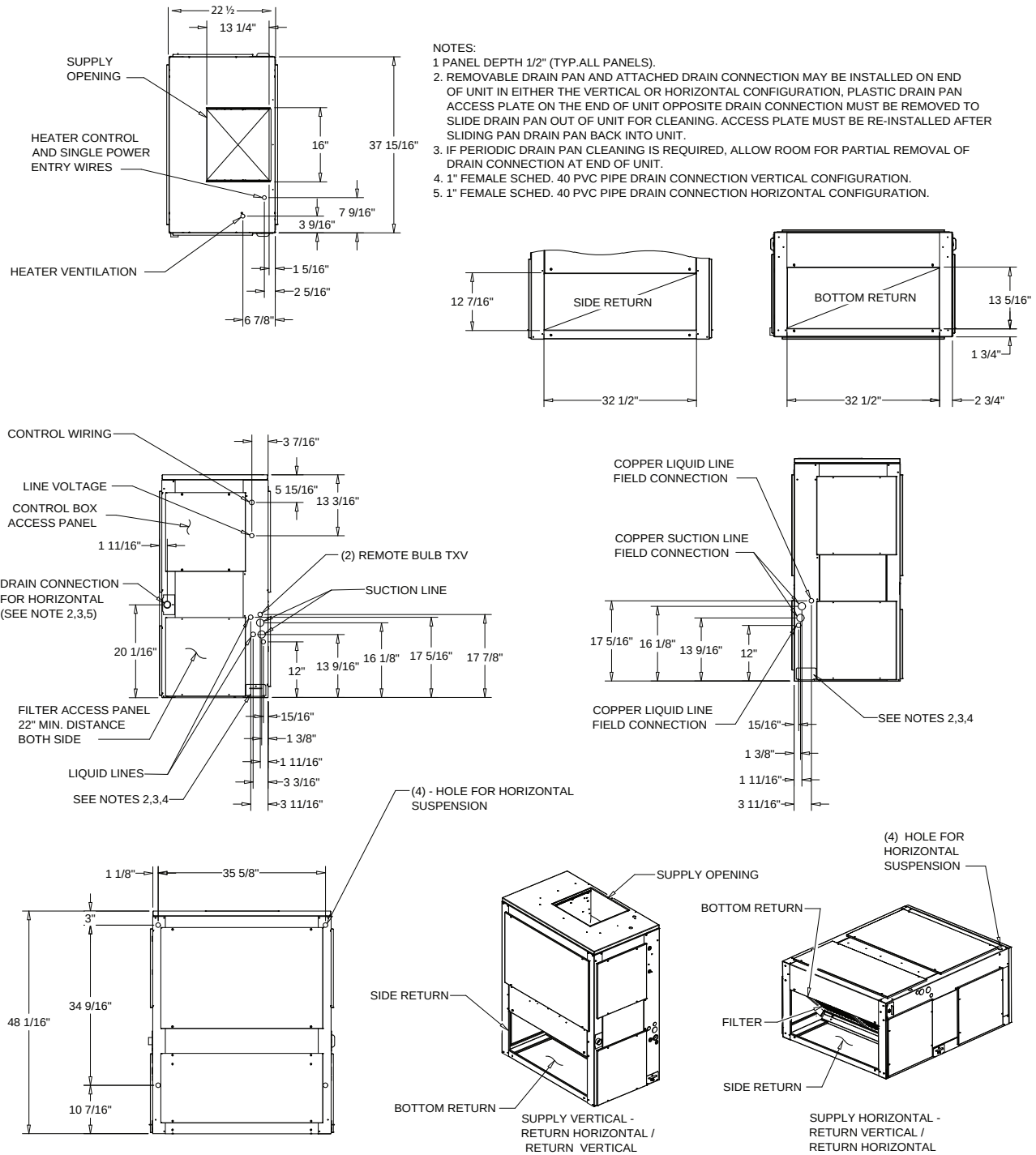
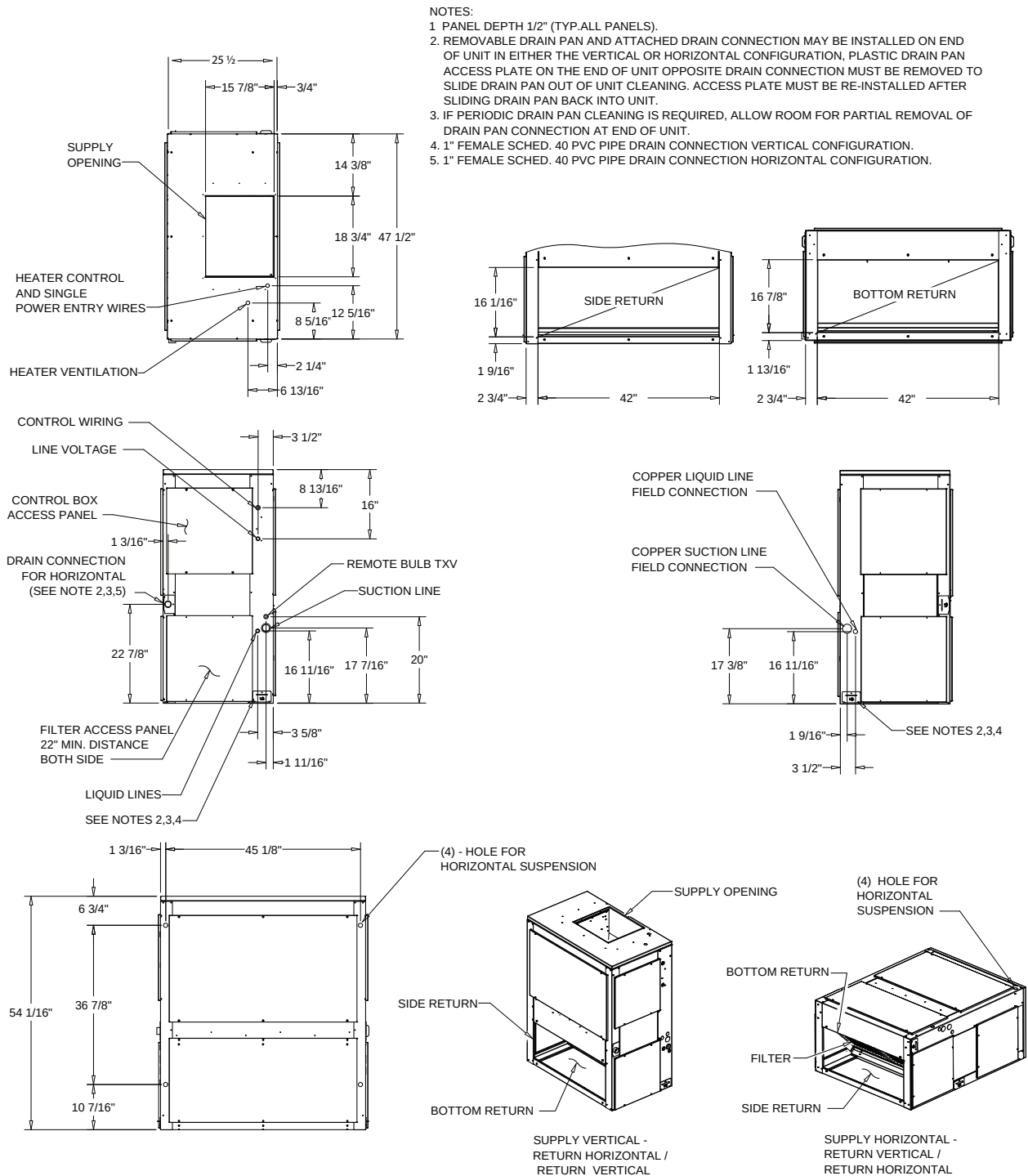


Figure 18. 7 1/2 Ton Air Handler, Single Circuit



Dimensional Data

Figure 19. 7 1/2 Ton 7 1/2 Ton Air Handler, Dual Circuit

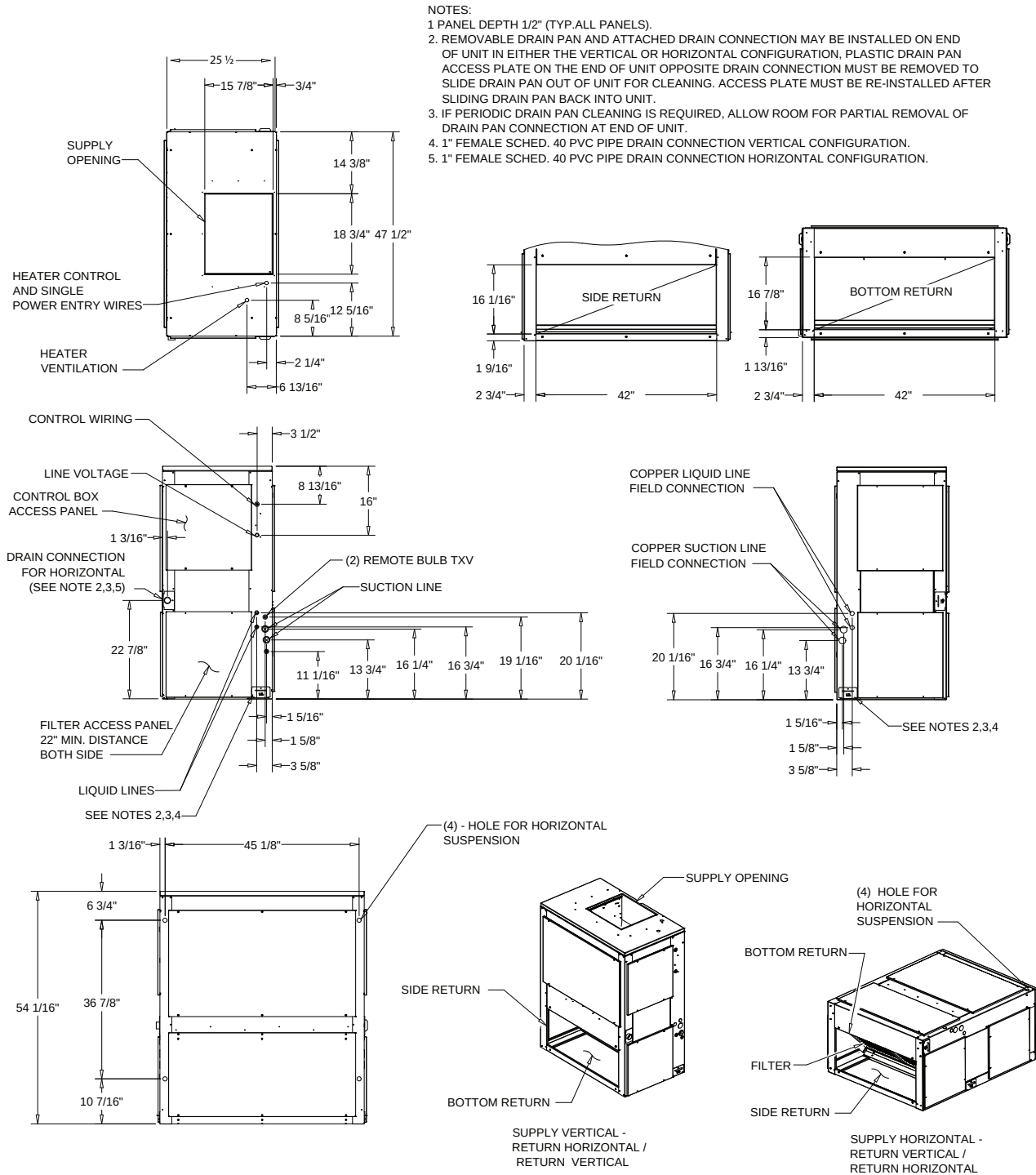
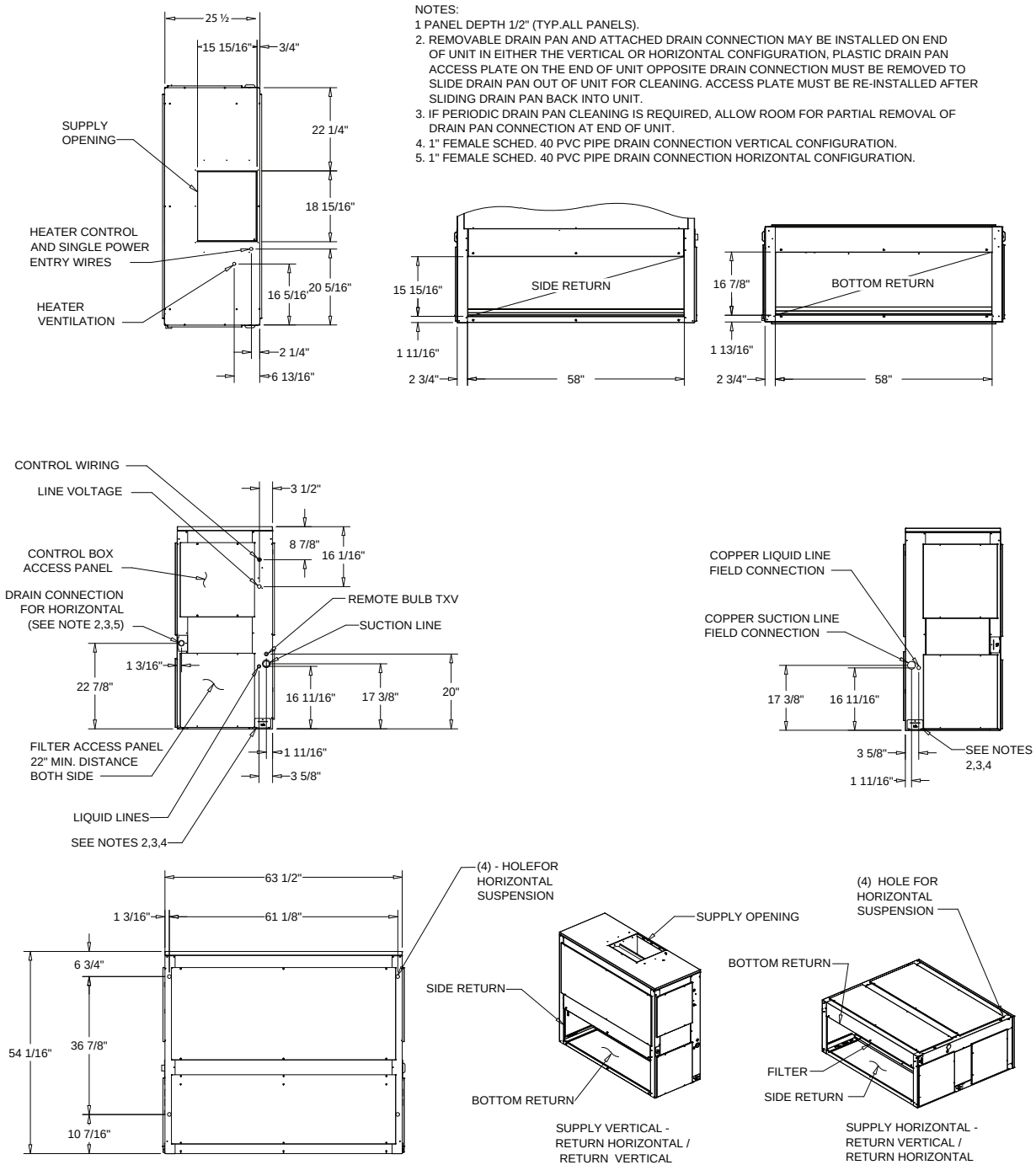


Figure 20. 10 Ton Air Handler, Single Circuit



Dimensional Data

Figure 21. 10 Ton Air Handler, Dual Circuit

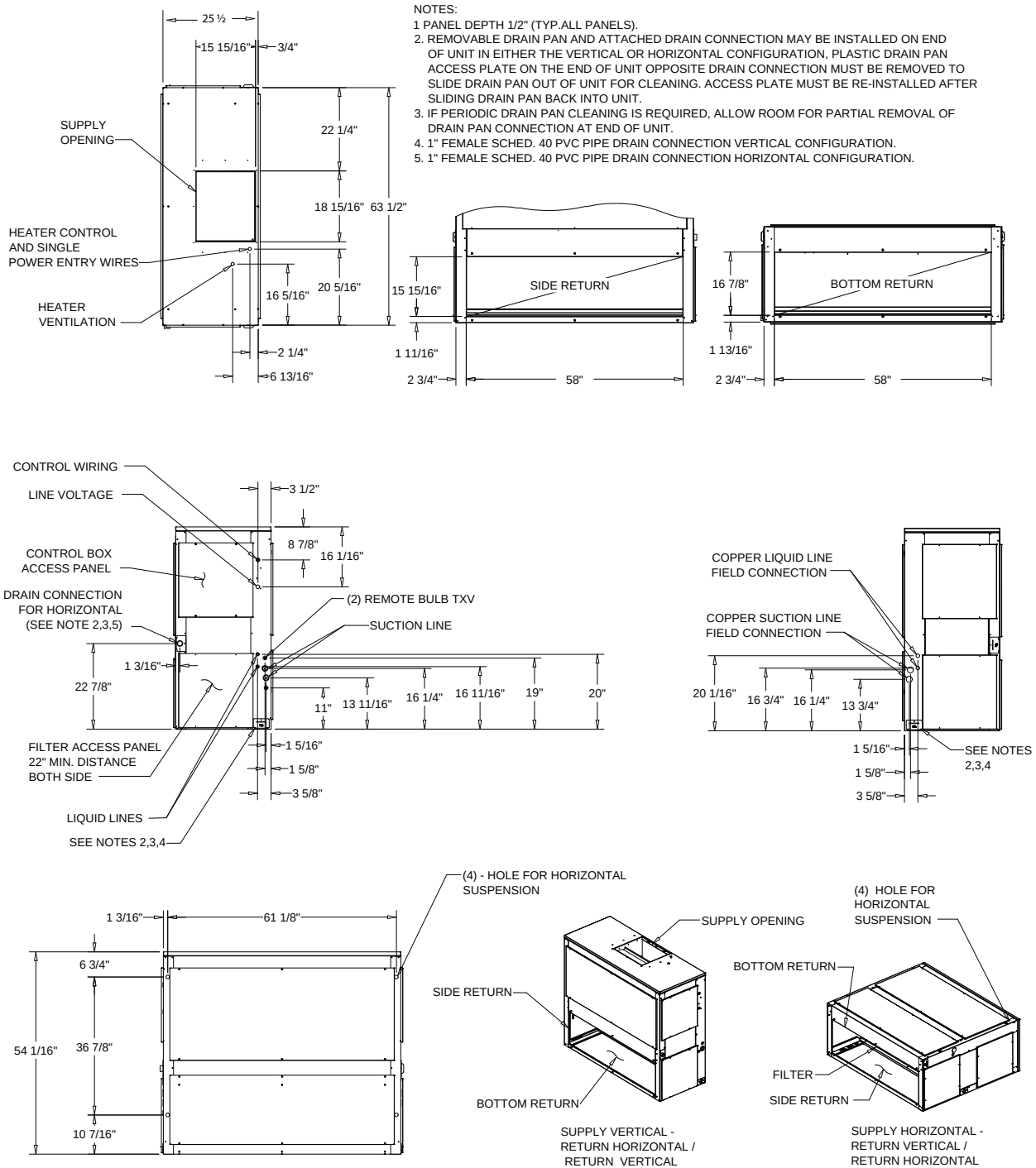
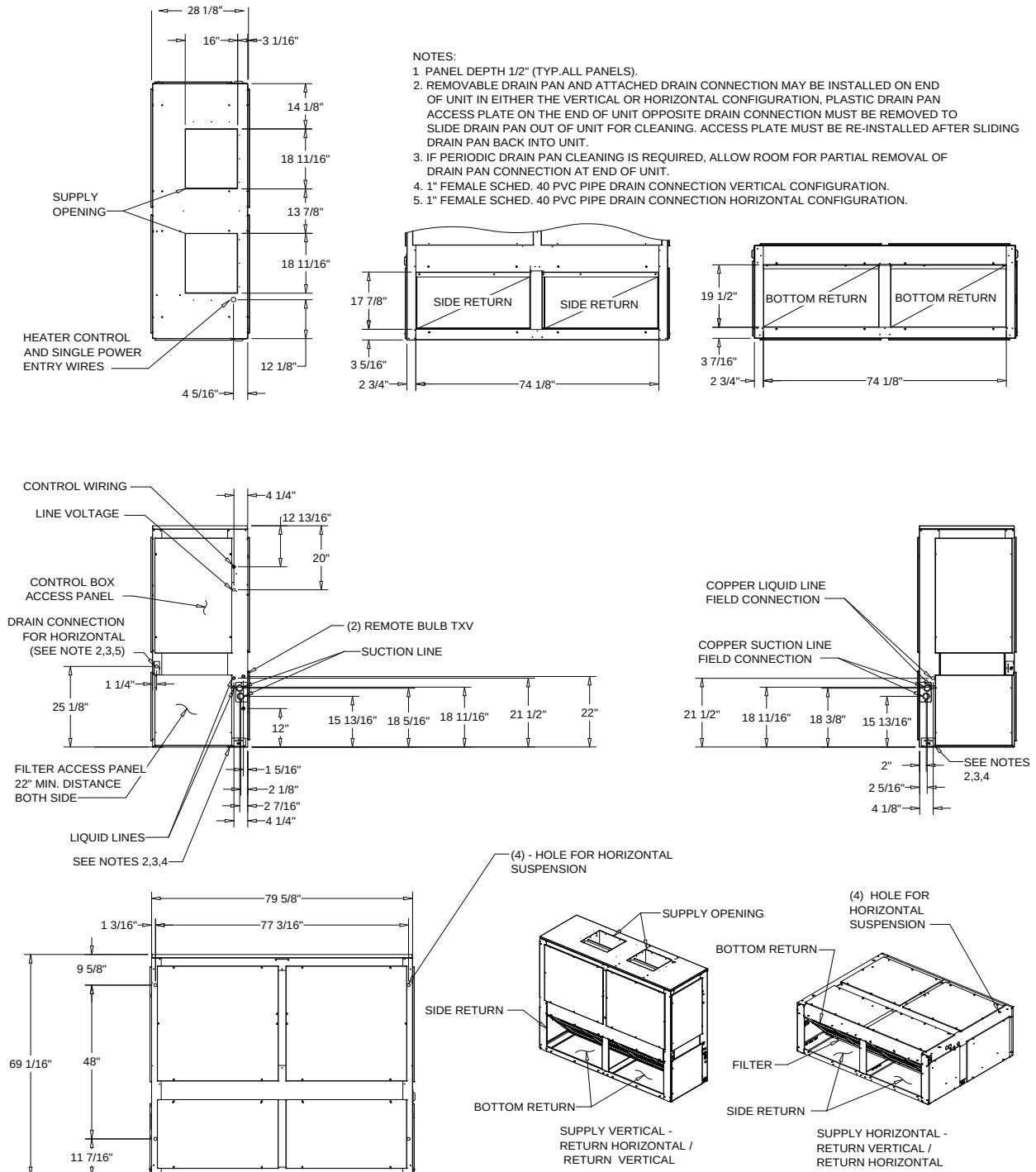


Figure 22. 12½ and 15 Ton Air Handler, Dual Circuit



Dimensional Data

Figure 23. 20 Ton Air Handler, Dual Circuit

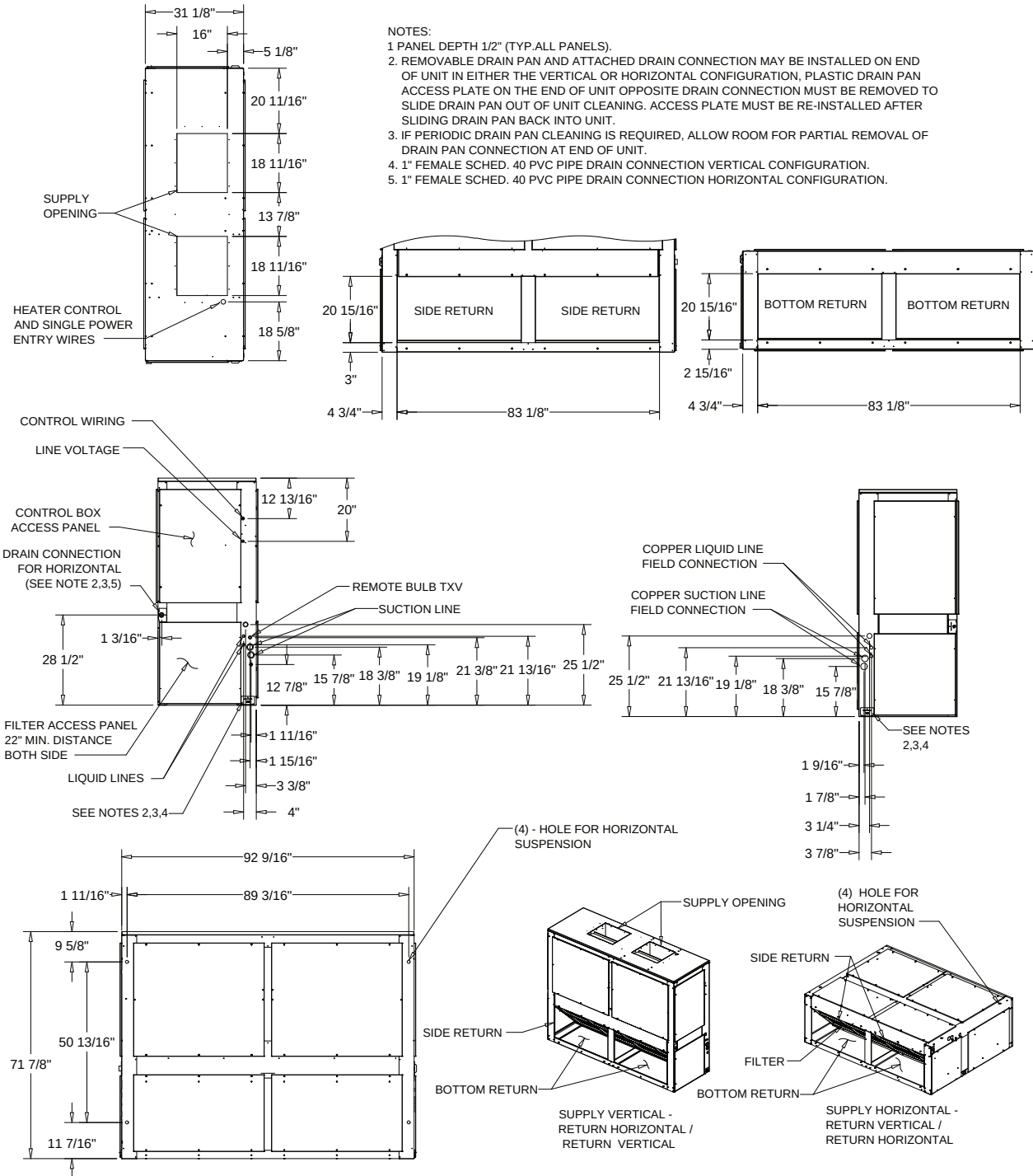


Figure 24. 5-20 Tons Rubber Isolator Accessory Dimensions

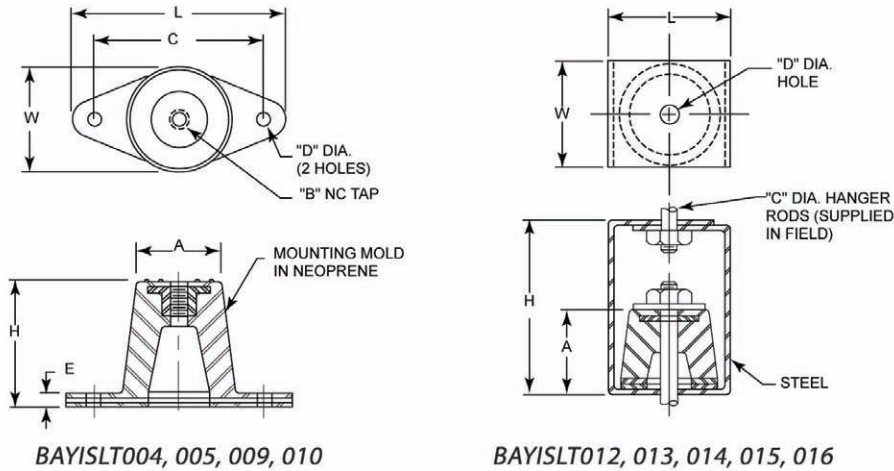
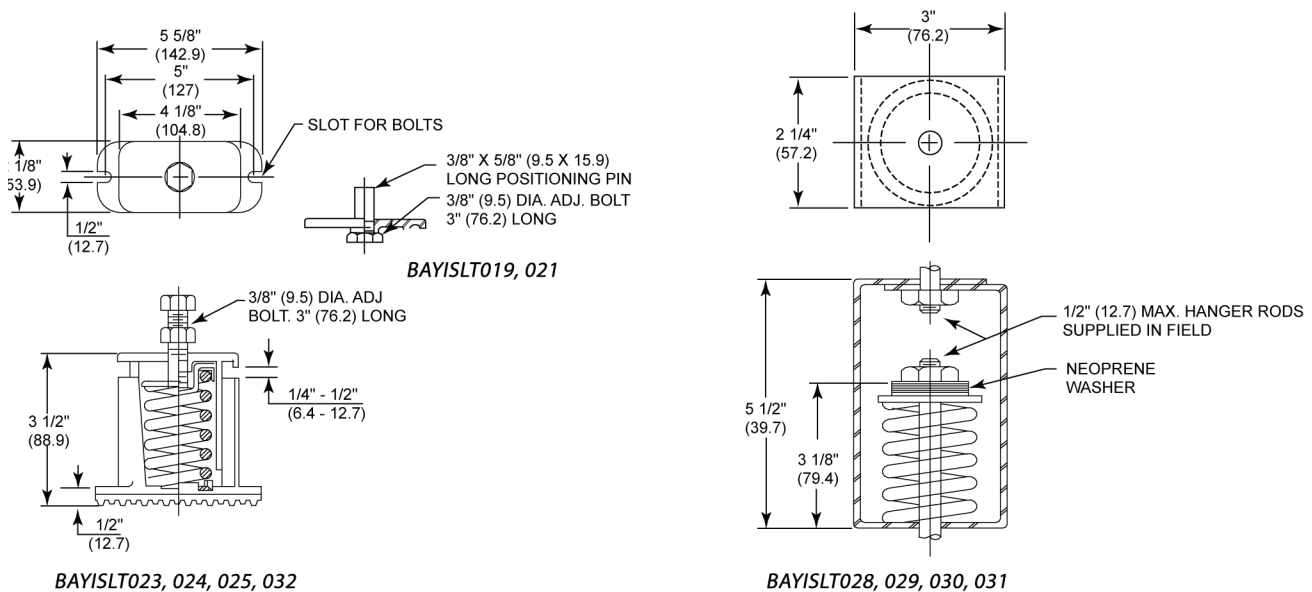


Table 42. Rubber Isolator Dimensions (in.)

Model No.	L	W	H	A	B	C	D	E
BAYISLT004	3-1/8	1-3/4	1-1/4	1-1/4	3/8	2-3/8	3/8	1/4
BAYISLT005								
BAYISLT009	3-7/8	2-3/8	1-3/4	1-3/4	3/8	3	3/8	1/4
BAYISLT010								
BAYISLT013	2-1/4	2	3	1-3/8	3/4	3/8	1/2	—
BAYISLT014								
BAYISLT015 ^(a)								
BAYISLT012	3	2-1/4	4-1/2	1-7/8	1/4	5/8	3/4	—
BAYISLT015 ^(a)								
BAYISLT016								

(a) BAYISLT015 contains quantity 2 of the 2 1/4 x 2 x 3 isolators and quantity 3 of the 3 x 2 1/4 x 4 1/2 isolators.

Figure 25. 5-20 Tons Spring Isolator Accessory Dimensions



Dimensional Data

Figure 26. Electric Heater Accessory for 10 Ton and Under Air Handlers. All dimensions are in inches.

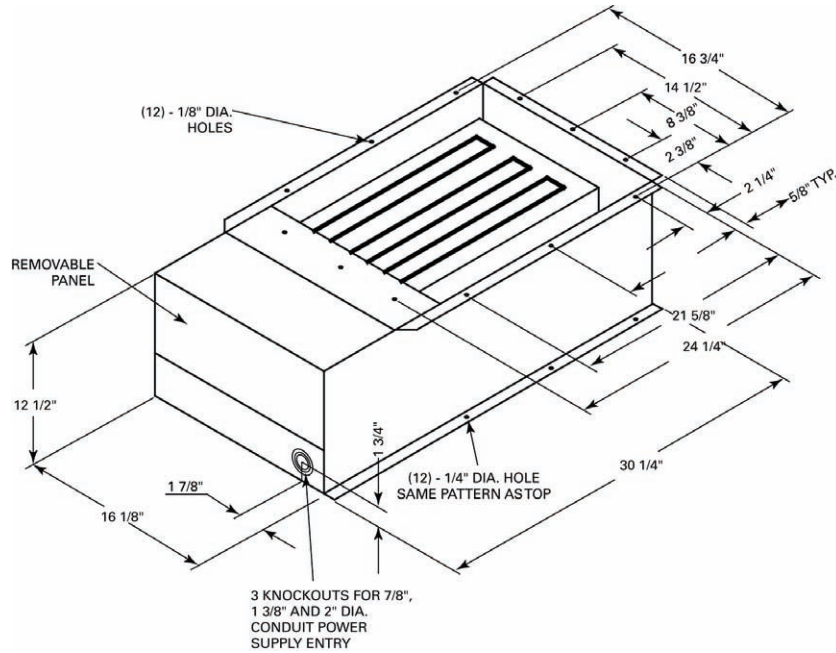


Figure 27. Electric Heater Accessory for over 10 Ton Air Handlers. All dimensions are in inches.

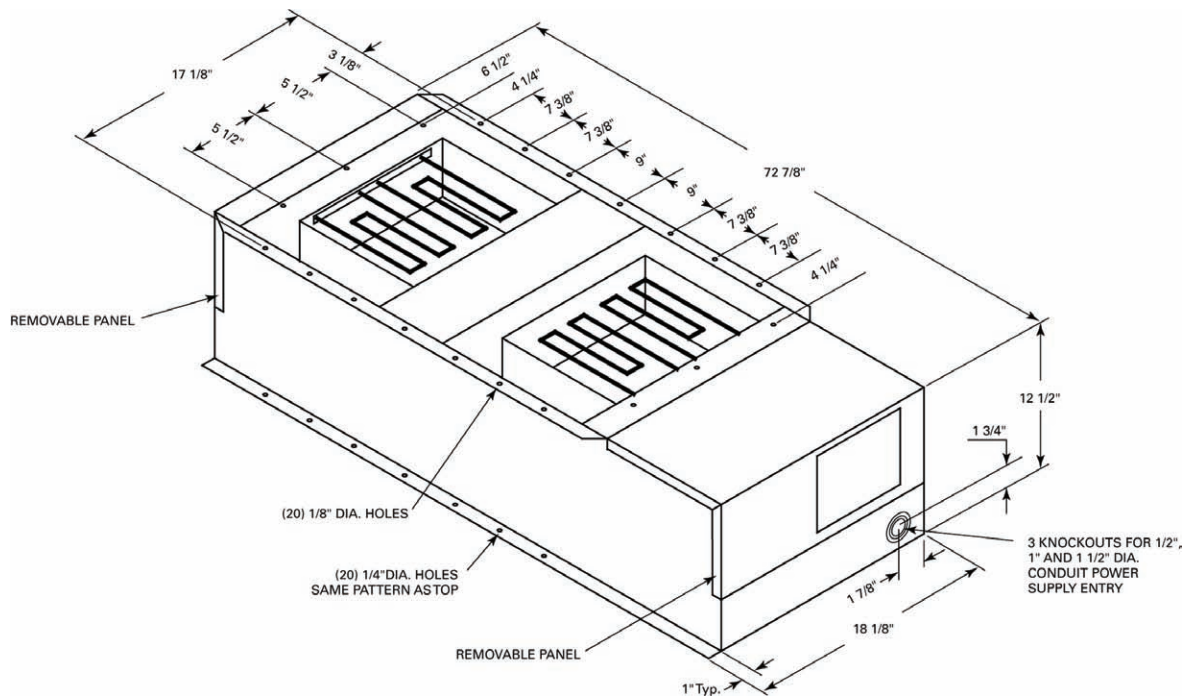
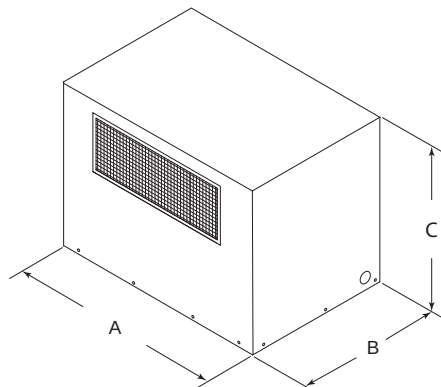
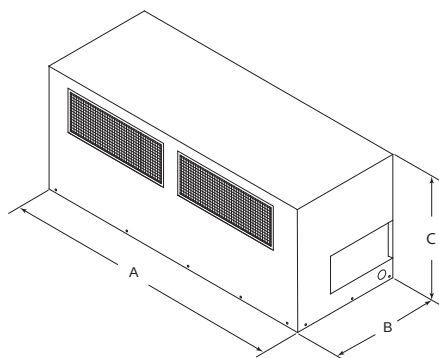


Figure 28. Discharge Plenum and Grille Accessory

Table 43. Discharge Plenum and Grille Dimensions (in.) - No Heat

Tons	Model No.	A	B	C
5	BAYPLNM015	37 15/16	21 15/16	28
7½	BAYPLNM016	47 1/2	25	28
10	BAYPLNM017	63 1/2	25	28
12½	BAYPLNM018 ^(a)	79 1/2	27 11/16	22
15	BAYPLNM018 ^(a)	79 1/2	27 11/16	22
20	BAYPLNM019 ^(a)	92 1/2	30 7/16	24

(a) For use with hydronic heat or no heat.

Figure 29. Discharge Plenum and Grille Accessory

Table 44. Discharge Plenum and Grille Dimensions (in.). For use with Electric Heat.

Tons	Model No.	A	B	C
5	BAYPLNM030	37 15/16	22 7/8	29
7½	BAYPLNM031	47 1/2	25 7/8	29
10	BAYPLNM032	63 1/2	25 7/8	29
12½	BAYPLNM033	79 1/2	29 3/8	35
15	BAYPLNM033	79 1/2	29 3/8	35
20	BAYPLNM034	92 1/2	31 3/8	35

Dimensional Data

Figure 30. Subbase Accessory

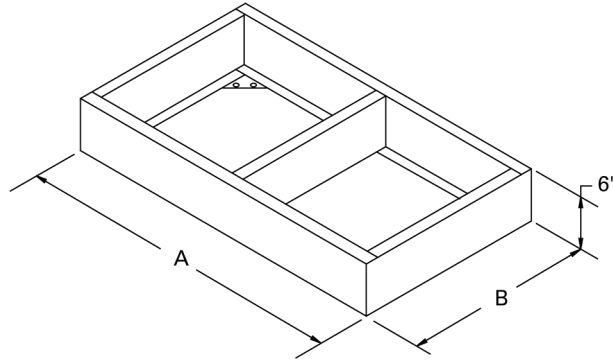


Table 45. Subbase Dimensions (in.)

Tons	Model No.	A	B
5	BAYBASE009	38	22.63
7½	BAYBASE010	47 1/2	25.51
10	BAYBASE011	63 1/2	25.52
12½	BAYBASE012	79 1/2	29.04
15	BAYBASE012	79 1/2	29.04
20	BAYBASE013	92 1/2	31.14



Weights

Table 46. TWA Unit & Corner Weights — lbs (60 Hz)

Tons	Model No.	Shipping Max (lbs)	Net Max (lbs)	Corner Weights			
				1	2	3	4
6	TWA073D	382	328	113	83	56	76
7.5	TWA090D	394	340	117	86	58	79
10	TWA120D	509	438	127	121	72	118
15	TWA180E	898	765	202	192	181	190
20	TWA240E	981	848	254	266	147	181

Figure 31. TWA073, 090, 120

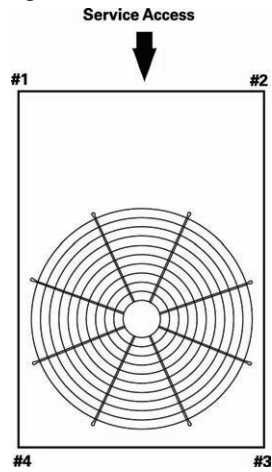
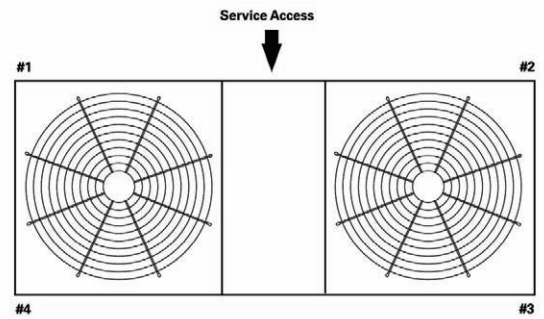


Figure 32. TWA180, 240



Weights

Table 47. TWE Unit and Corner Weights - lbs - 60 Hz

Tons	Model No.	Shipping Max (kg)	Net Max (kg)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	A	B	C	D
5	TWE061D/E	263	232	55	71	51	55	54	67	50	61
7½	TWE090D/E	360	323	67	99	75	82	56	92	87	88
10	TWE120D/E	429	393	77	121	110	85	79	118	77	119
12½	TWE150E	730	676	168	192	181	135	196	164	145	171
15	TWE180E	729	675	167	192	181	135	196	163	145	171
20	TWE240E	891	818	258	168	161	231	256	181	146	235

Figure 33. Vertical - TWE061, 090, 120

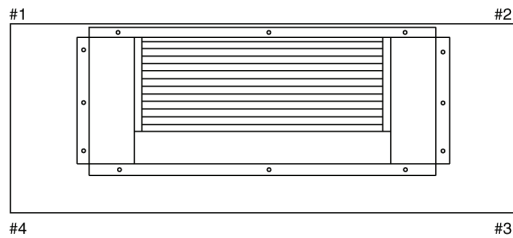


Figure 34. Vertical - TWE150, 180, 240

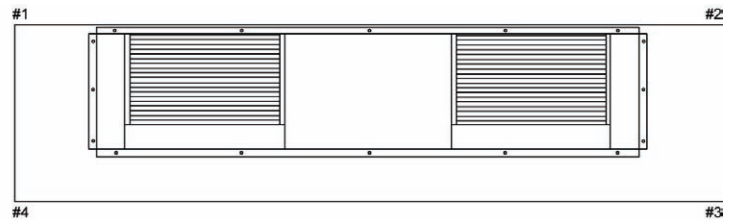


Figure 35. Horizontal - TWE061, 090, 120

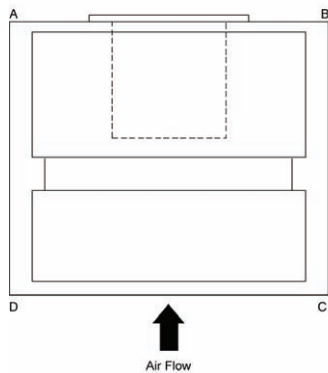


Figure 36. Horizontal - TWE150, 180, 240

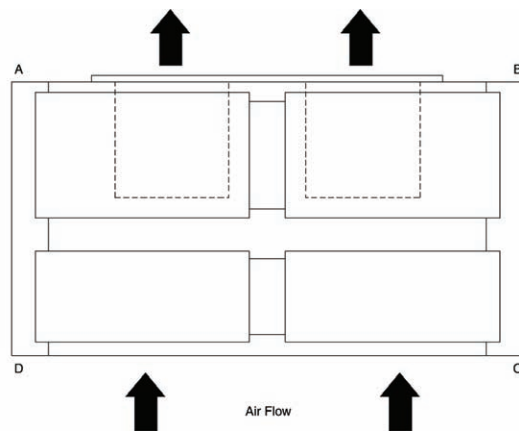


Table 48. Accessory Weights (net lbs.) - 60 Hz

Unit Used With Tons	Discharge Plenum and Grille ^(a)	Discharge Plenum and Grille ^(b)	Return Air Grille	Electric Heat Min/Max	Subbase	Oversized Motor	RIS Isolator Floor Mount	RIS Isolator Suspended Mount
5	58	115	3	32/43	14.4	31	2	9
7½	73	160	5	27/45	19.4	48	2	6
10	92	195	7	27/45	23.5	50	2	7
12½	230	235	10	79/100	28.4	80	2	7
15	230	235	10	79/100	28.4	80	2	7
20	145	265	12	79/100	31.7	88	2	9

Continued

Table 48. Accessory Weights (net lbs.) - 60 Hz (continued)

Unit Used With Tons	Steel Spring Isolator Floor Mount	Steel Spring Isolator Suspended Mount	Control Transformer	Anti Short Cycle Timer	Coil Guard	Sensors	Modulating Low Ambient	On / Off Low Ambient
5	12	6	—	1	8	1	23	2
7½	12	6	4	1	11	1	23	2
10	12	6	4	1	20	1	23	2
12½	12	6	—	1	22	1	23	2
15	12	6	—	1	34	1	23 (req. qty 2)	1 (req. qty 2)
20	12	6	—	1	45	1	42 (req. qty 2)	1 (req. qty. 2)

(a) For use when no heat is supplied.

(b) For use with electric heat.

Mechanical Specifications

TWA Condensing Units

General

- Weatherproofed Steel Mounting/Lifting Rails
- Hermetic Scroll Compressors
- Plate Fin Condenser Coils
- Fans and Motors
- Standard Operating Range 50-125F (Min. 0°F with Low Ambient Accy)
- Nitrogen Holding Charge
- Certified and Rated in Accordance with AHRI
- Certified to UL 1995

Casing

- Zinc Coated, Heavy Gauge, Galvanized Steel
- Weather Resistant Baked Enamel Finish
- Meets 672 hr 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/ $\pm 10\%$ 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/ $\pm 10\%$ Voltage Utilization Range of Unit Nameplate Voltage
- Reversing Valves

Mechanical Specifications

- 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

- 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

Mechanical Specifications

- Factory or Field Installed

Black Epoxy Coated Condenser Coil

- Thermoset Vinyl Coating
- Bonded to Aluminum Fin Stock (Prior to Fin-Stamping Process)
- Economical Protectant in Mildly Corrosive Environments

Lon Talk® 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

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

Thermostat

- 1H/1C Available
- 2H/1C Available
- Manual or Automatic Changeover Available
- Automatic Programmable Electronic with Night Setback Available

Lon Talk® 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

TWE Air Handlers

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 12.5-20T Air Handlers
- Adjustable Belt Drive
- Permanently Lubricated Bearings

Indoor Motor

- Adjustable Motor Sheaves



Mechanical Specifications

- Thermal Overload Protection
- Permanently Lubricated Bearings
- Meet Energy Policy of 1992 (EPACT)
- Optional Over Sized 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"), Throw-Away Filters on 5-10 Ton Units
- Filter Rack Convertible to Two Inch (2") Capability on 5-10 Ton Units
- Two Inch (2"), Throw-Away Filters on 12.5-20 Ton Units

Field Installed Accessories

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

Over Size Motors

- High Static Applications
- Motor, Sheaves, Belt Included



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For more information, contact your local Trane office or e-mail us at comfort@trane.com



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Date	September 2009
Supersedes	SSP-PRC023-EN (July 2009)

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