

PRMH20260372

# HVAC Submittals

Full-Sized legible color report must be on site and made available by the Permittee for all inspections.

## Puyallup Medical Building

220 15<sup>th</sup> Ave SE

Puyallup, WA 98371

ASEI Job No. X13536

March 17, 2026

Prepared by:

**Air Systems  
Engineering Inc.**

3602 S. Pine St.  
Tacoma, WA 98409  
Phone (253) 572-9484



**City of Puyallup  
Building  
REVIEWED  
FOR  
COMPLIANCE**

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City of Puyallup  
Development & Permitting Services  
**ISSUED PERMIT**

Building	Planning
Engineering	Public Works
Fire	Traffic



# 6 - 25 Ton Unitary Split Systems Outdoor

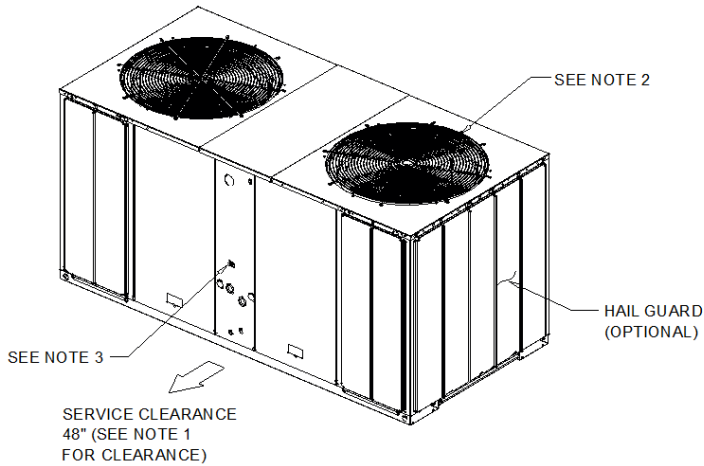
## Unit Overview

<b>Model</b>	TWA24044DAA**BS010000000000 00000000000000
<b>Unit Tonnage</b>	20 Tons
<b>Controls</b>	Symbio (Heat Pump)
<b>Unit Voltage</b>	460/60/3
<b>Refrigeration Circuit / Stage</b>	Dual Compressors / Dual Circuit
<b>Unit Function</b>	Heat Pump
<b>Max. Cond. Operating Weight</b>	902.0 lb



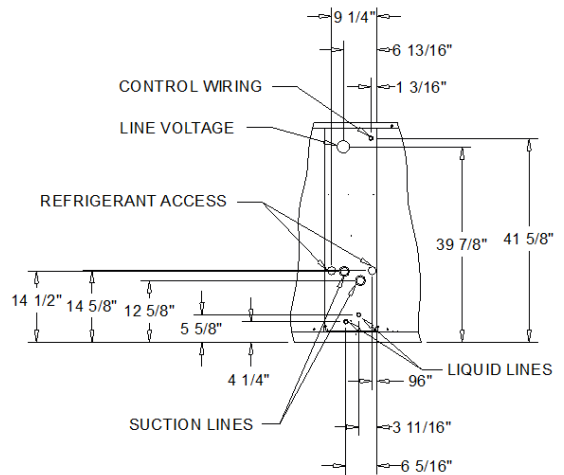
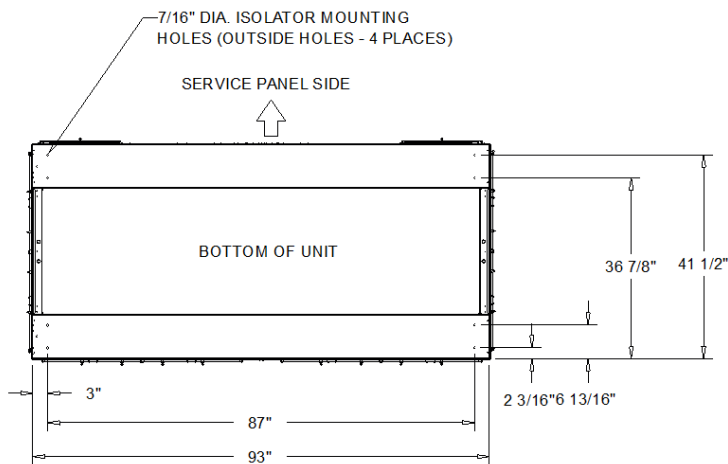
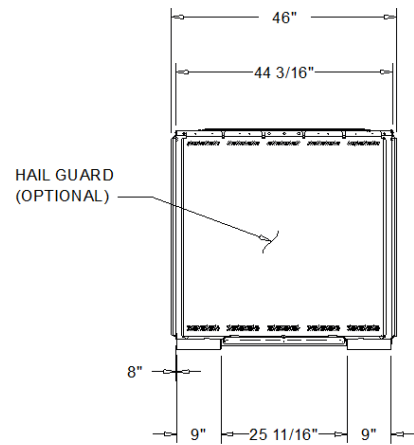
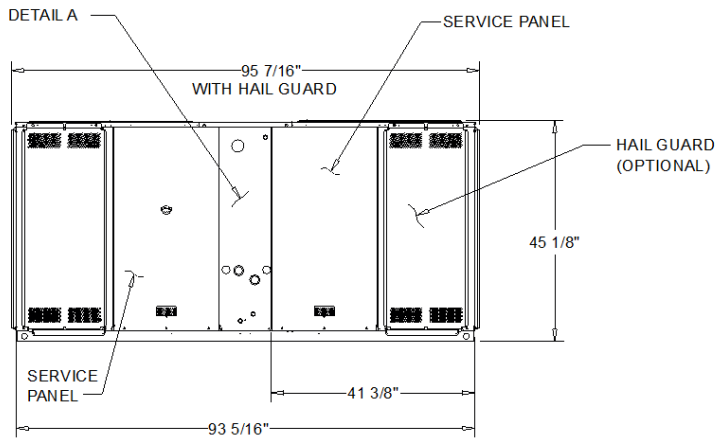
## Electrical Information

<b>MCA</b>	40.00 A	<b>Compressor 2 RLA</b>	16.00 A
<b>MOP</b>	50.00 A	<b>Cond. Motor 1 FLA</b>	2.20 A
<b>Compressor 1 RLA</b>	16.00 A	<b>Cond. Motor 2 FLA</b>	2.20 A



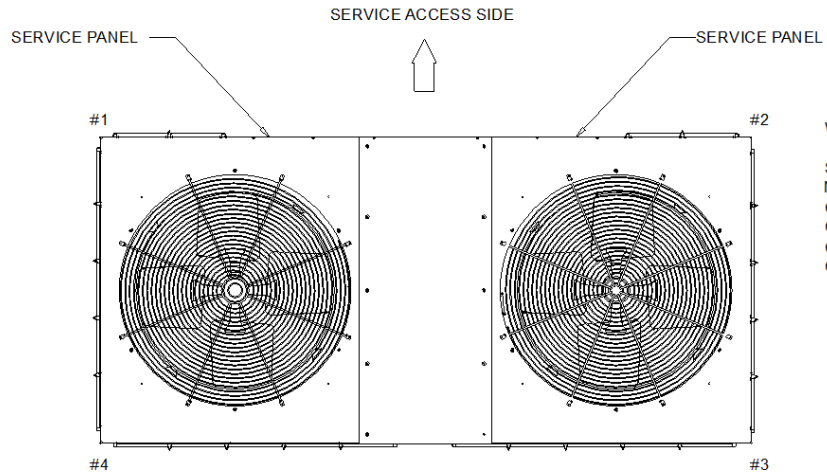
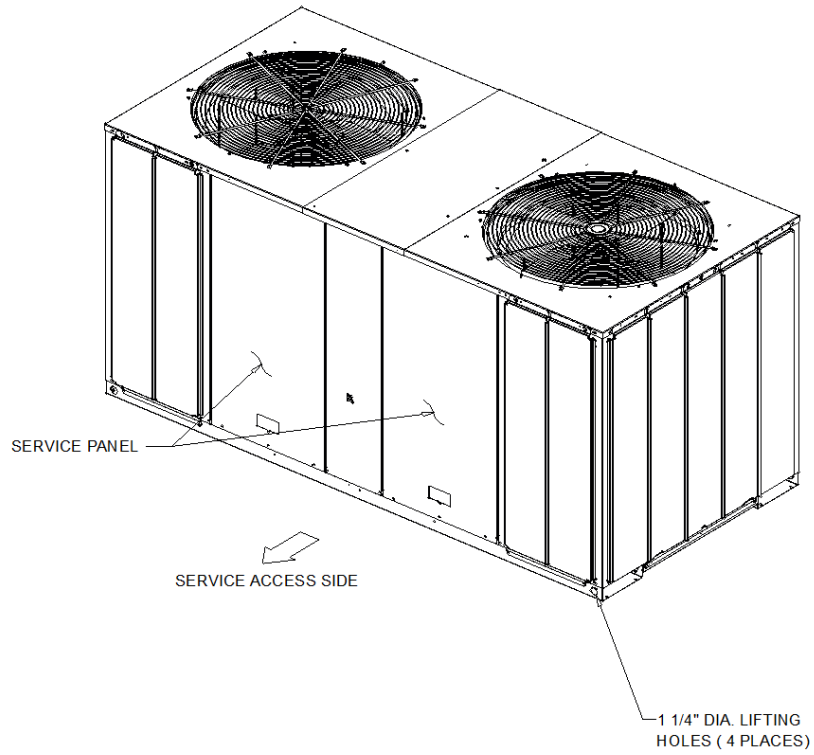
NOTES:

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).
- REFRIGERANT
1. SUCTION CONNECTION (1 3/8" OD) AND LIQUID CONNECTION (5/8" OD)



FRONT DETAIL A  
 DIMENSIONAL DETAIL

20 TON HEAT PUMP CONDENSER (DUAL COMPRESSOR)  
 DIMENSIONAL DRAWING



**WEIGHTS AND CORNER WEIGHTS**

Shipping:	1003.0 lb
Net	902.0 lb
Corner 1:	269.0 lb
Corner 2:	268.0 lb
Corner 3:	183.0 lb
Corner 4:	182.0 lb

**WEIGHTS AND LOAD POINT LOCATION FOR CONDENSOR**

WEIGHT AND RIGGING



### **General - (TWA)**

- Weatherproofed steel mounting/lifting rails
- Hermetic scroll compressors
- Plate fin condenser coils
- Fans and motors
- Standard operating range 50-125°F (min. 0°F with low ambient accessory)
- Nitrogen holding charge
- Certified and rated in accordance with AHRI and DOE standards
- Certified to UL 1995
- Capacities and efficiencies for split systems are rated within the scope of the Air-Conditioning, Heating, & Refrigeration Institute (AHRI) certification program and display the AHRI Standard 340-360 (I-P) mark. This standard applies to units between 65,000 and 250,000 btu/hr.

### **Casing - (TWA)**

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

### **Refrigeration System - Single Compressor (TWA0724\*A, TWA0904\*A, TWA1204\*A)**

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

### **Condenser Coil (Fin and Tube) - TWA**

- 3/8" internally enhanced copper tube
- Mechanically bonded to lanced aluminum plate fins
- Factory pressure and leak tested to 660 psig

### **Condenser Fan - TWA**

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

### **Condenser Motor(s) - (TWA)**

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



### **Controls - (TWA)**

- 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
- Colored and keyed connectors and colored wires
- Contactor pressure lugs or terminal block
- Unit external mounting location for disconnect device
- Single point power entry

### **Note:**

*The 2-speed or SZVAV units should not be used with any single-speed, single-compressor condensing unit. The result of this selection will cause the SZVAV AHU to act as a CONSTANT VOLUME.*

### **Factory installed perforated steel hail guards**

- Condenser coil protection from hail, vandals, etc.
- Perforated, painted galvanized steel

### **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.

# Condenser and Air Handler Pairings

**Table 3. Model number descriptions**

TWE Air Handler with Symbio
<p><b>Digit 15 – Controls</b></p> <p><b>1</b> = Constant Volume  <b>C</b> = 2 Stage Airflow (Electromechanical Condenser Only)  <b>D</b> = 2 Stage Airflow/Single Zone VAV (Symbio Condenser Only)</p>

TWE Air Handler (pre-Symbio)
<p><b>Digit 15 – Controls</b></p> <p><b>0</b> = Constant Volume  <b>A</b> = 2 Stage Airflow (Electromechanical Condenser Only)  <b>B</b> = Single Zone VAV (ReliaTel Condenser Only)</p>

**Table 4. Condenser and air handler pairing instructions (See document SS-SVN016A-EN)**

Condenser (model # digit)	Air Handler		Wiring Reference	Instructions
	Type	Supply Fan Type (model # digit)		
Odyssey Electromechanical (Digit 15 = E)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	"Pairing C or 3," p. 10	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.
		2-Speed Airflow (Digit 15 = C)		
		Single Zone VAV (Digit 15 = D)	"Pairing D," p. 12	
Odyssey ReliaTel (Digit 15 = R)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	"Pairing 4," p. 14	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.
		2-Speed Airflow (Digit 15 = C)	"Pairing E," p. 16	
		Single Zone VAV (Digit 15 = D)	"Pairing F," p. 16	

Table 4. Condenser and air handler pairing instructions (continued) (See document SS-SVN016A-EN)

Condenser (model # digit)	Air Handler		Wiring Reference	Instructions	
	Type	Supply Fan Type (model # digit)			
Odyssey Symbio (Digit 15 = S)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	"Pairing A," p. 18	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)	
		2-Speed Airflow (Digit 15 = C)	"Pairing H," p. 20	Pairing G, H, and 2 will not have heat in defrost.  Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat  Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)	
		Single Zone VAV (Digit 15 = D)	"Pairing B," p. 18	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)  Install a shielded, twisted pair cable for Symbio Condenser control of the Air Handler supply fan VFD (Modbus communication)	
	Odyssey Electromechanical	Constant Volume (Digit 15 = 0)	"Pairing 1 or 2," p. 22	Pairing G, H, and 2 will not have heat in defrost.  Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.	
		2-Speed Airflow (Digit 15 = A)			
	Odyssey ReliaTel	Variable Speed, Single Zone VAV (Digit 15 = B)	"Pairing G (preferred)," p. 24	Pairing G, H, and 2 will not have heat in defrost.  Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.  Install a shielded, twisted pair cable for Symbio Condenser control of the Air Handler supply fan VFD (Modbus communication)	
			"Pairing G (optional)," p. 27	Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.  Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.  This pairing requires the replacement of the RTOM module with a Symbio Relay Board (MOD03105) and that the VFD wires 81B, 82B, 93B, 94B and 94D be replaced with wire harness kit WIR010190 (required) and WIR010185 (optional). The Air Handler will operate as a 2-speed fan.	
	Generic Air Handler	Constant Volume	"Pairing Y," p. 29		
	Two Symbio Condensers (2 condensers to 1 air handler)	Odyssey Electromechanical		"Pairing Z," p. 30	



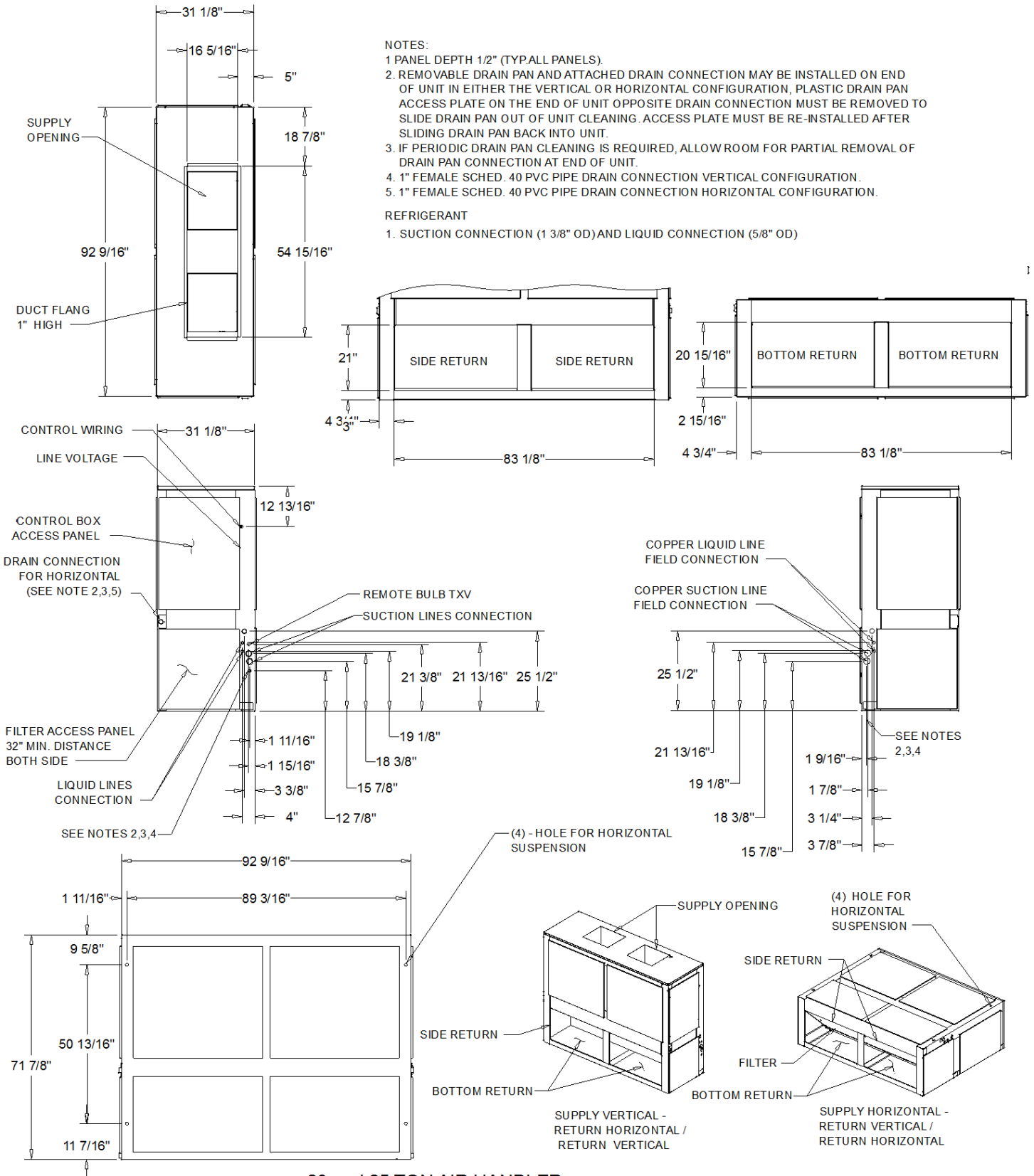


Job Name: ASE1  
Prepared For:  
Unit Tag: TWE24044BAAP0  
Quantity: 1

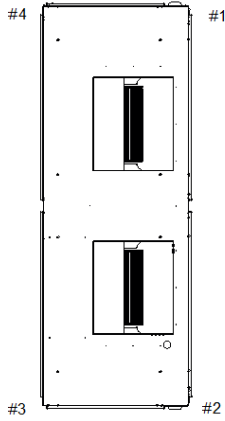
**AH-2**

### Refrigerant Information

Evaporator Rows	3
Evaporator Fin Spacing	168 Per Foot
Evaporator face velocity	384 ft/min
Evaporator Face Area	21.65 sq ft
Evaporator Motor FLA	7.10 A

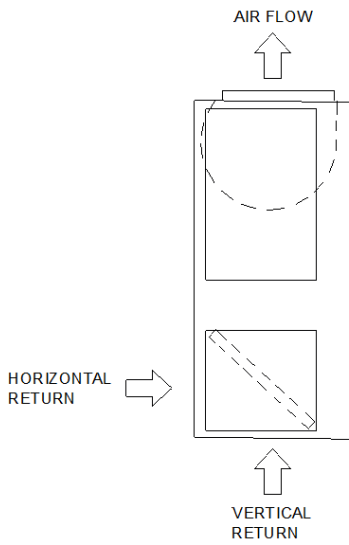
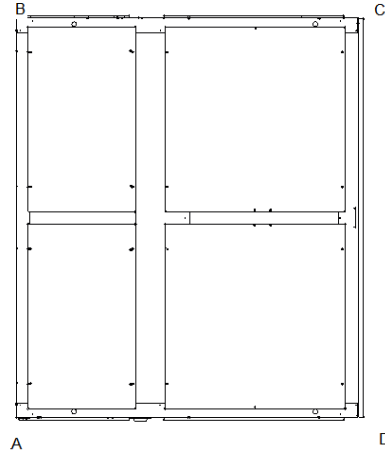


**20 and 25 TON AIR HANDLER (DUAL CIRCUIT)**  
 DIMENSIONAL DRAWING

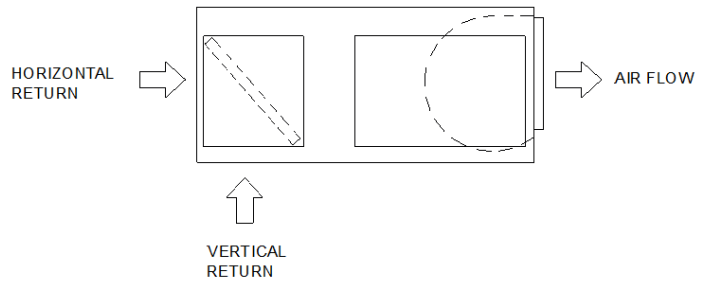


**WEIGHTS AND CORNER WEIGHTS**

Shipping:	925.0 lb
Net	831.0 lb
<b>VERTICAL</b>	
Corner 1:	261.0 lb
Corner 2:	171.0 lb
Corner 3:	164.0 lb
Corner 4:	235.0 lb
<b>HORIZONTAL</b>	
Corner A:	259.0 lb
Corner B:	184.0 lb
Corner C:	149.0 lb
Corner D:	239.0 lb



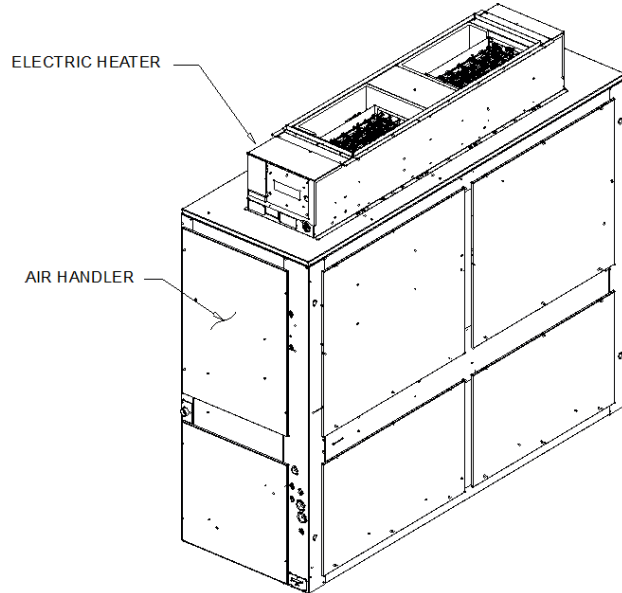
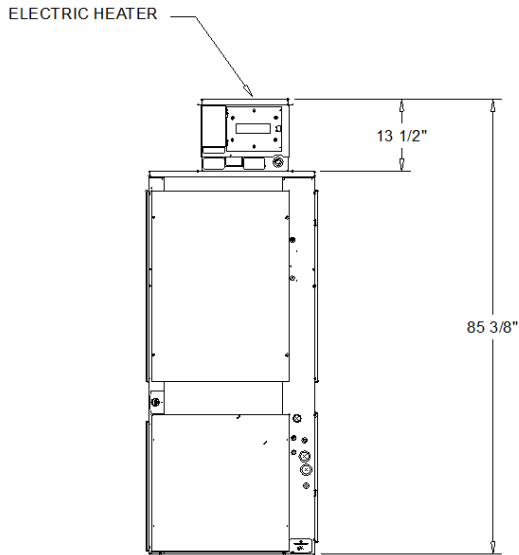
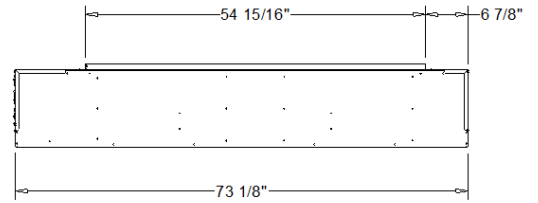
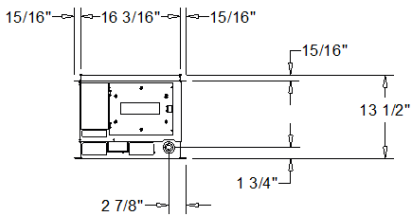
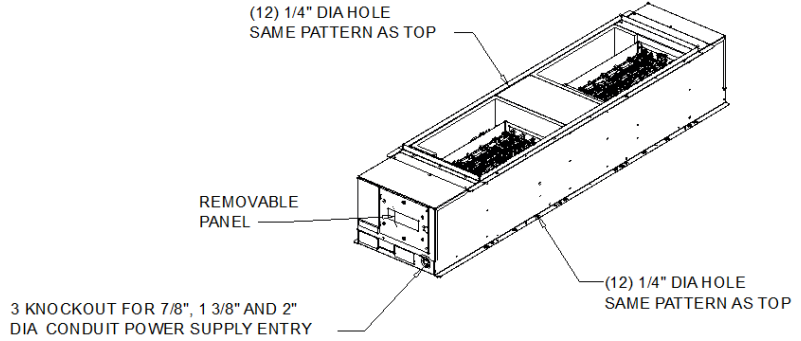
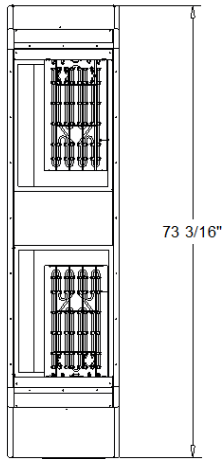
VERTICAL APPLICATION



HORIZONTAL APPLICATION

**WEIGHTS AND LOAD POINT LOCATION FOR CONDENSOR**

WEIGHT AND RIGGING



**20 - 25 TON ELECTRIC HEATER**  
 DIMENSIONAL DRAWING



### **General - (TWE)**

- 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 - (TWE)**

- 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 - (TWE)**

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

### **Evaporator Coil - (TWE)**

- 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 - (TWE)**

- Double inlet, double width, forward curved, centrifugal type fan
- Dual fans on 12.5-25 ton air handlers-Adjustable belt drive
- Permanently lubricated bearings

### **Indoor Motor - (TWE)**

- Adjustable motor sheaves (constant volume units)
- Fixed motor sheaves (SZVAV and 2-Speed VFD)
- Thermal overload protection
- Permanently lubricated bearings
- Meet energy policy of 1992 (EPACT)
- Optional oversized motors for high static applications

### **Controls - (TWE)**

- Completely internally wired
- Colored and keyed connectors, colored wires
- Magnetic indoor fan contactor
- Detachable low voltage connectors
- Single point power entry
- Evaporator defrost control



### **Single Zone Variable Air Volume / 2-Speed Airflow - TWE**

- Variable Frequency Drive (VFD)
- Motor soft start - avoids start up belt noise and increases belt life
- Programmable VFD keypad accessible outside of airstream
- Airflow adjustment via display/keypad on Symbio™ 700 controller in condenser
- Discharge air sensor
- Symbio 700 Options Module
- VFD rated motor
- Factory installed oversized motor available

### **Filters - (TWE)**

- 2 inch, MERV 13 high efficiency filters

### **Electric Heaters - (TWE)**

- Heavy duty nickel chromium elements
- Agency approved
- Installs directly on fan discharge
- One or two stage control (dependent upon capacity)
- Single point power entry
- Terminal strip connections

### **230V Heaters**

- Internally delta connected
- Automatic reset of high limit controls through pilot duty with secondary backup fuse links

# Condenser and Air Handler Pairings

**Table 3. Model number descriptions**

TWE Air Handler with Symbio
<p><b>Digit 15 – Controls</b></p> <p><b>1</b> = Constant Volume  <b>C</b> = 2 Stage Airflow (Electromechanical Condenser Only)  <b>D</b> = 2 Stage Airflow/Single Zone VAV (Symbio Condenser Only)</p>
TWE Air Handler (pre-Symbio)
<p><b>Digit 15 – Controls</b></p> <p><b>0</b> = Constant Volume  <b>A</b> = 2 Stage Airflow (Electromechanical Condenser Only)  <b>B</b> = Single Zone VAV (ReliaTel Condenser Only)</p>

**Table 4. Condenser and air handler pairing instructions (See document SS-SVN016A-EN)**

Condenser (model # digit)	Air Handler		Instructions
	Type	Supply Fan Type (model # digit)	
Odyssey Electromechanical (Digit 15 = E)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.
		2-Speed Airflow (Digit 15 = C)	
		Single Zone VAV (Digit 15 = D)	
Odyssey ReliaTel (Digit 15 = R)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.
		2-Speed Airflow (Digit 15 = C)	
		Single Zone VAV (Digit 15 = D)	

# Condenser and Air Handler Pairings

AH-2

**Table 4. Condenser and air handler pairing instructions (continued) (See document SS-SVN016A-EN)**

Condenser (model # digit)	Air Handler		Instructions	
	Type	Supply Fan Type (model # digit)		
Odyssey Symbio (Digit 15 = S)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)	
		2-Speed Airflow (Digit 15 = C)	Pairing G, H, and 2 will not have heat in defrost.  Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat  Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)	
		Single Zone VAV (Digit 15 = D)	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)  Install a shielded, twisted pair cable for Symbio Condenser control of the Air Handler supply fan VFD (Modbus communication)	
	Odyssey Electromechanical	Constant Volume (Digit 15 = 0)	Pairing G, H, and 2 will not have heat in defrost.	
		2-Speed Airflow (Digit 15 = A)	Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.	
	Odyssey ReliaTel	Variable Speed, Single Zone VAV (Digit 15 = B)	Pairing G, H, and 2 will not have heat in defrost.  Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.  Install a shielded, twisted pair cable for Symbio Condenser control of the Air Handler supply fan VFD (Modbus communication)	
			Pairing G, H, and 2; electric heat will not operate if zone sensor installed, only with a thermostat.  Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.  This pairing requires the replacement of the RTOM module with a Symbio Relay Board (MOD03105) and that the VFD wires 81B, 82B, 93B, 94B and 94D be replaced with wire harness kit WIR010190 (required) and WIR010185 (optional). The Air Handler will operate as a 2-speed fan.	
	Generic Air Handler	Constant Volume		
	Two Symbio Condensers (2 condensers to 1 air handler)	Odyssey Electromechanical		

**EXISTING UNIT**

# Installation, Operation, and Maintenance

## Split System Air Conditioners Odyssey™

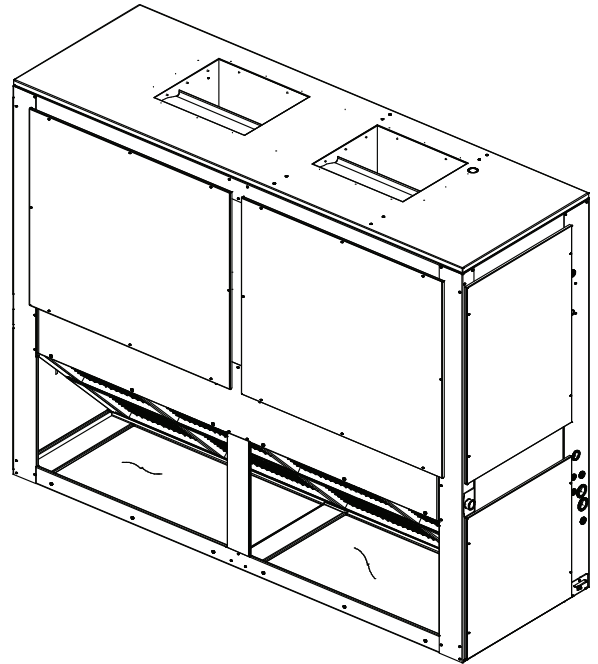
Air Handler — 5 to 25 Tons

**Model (60 Hz)**

TWE0604\*A/B  
TWE0724\*B  
TWE0904\*A/B  
TWE1204\*A/B  
TWE1504\*B  
TWE1804\*B  
**TWE2404\*B**  
TWE3004\*B

**Model (50 Hz)**

TWE0514DA  
TWE0724DB  
TWE0764DA/B  
TWE1014DA/B  
TWE1264DB  
TWE1564DB  
TWE2014DB  
TWE2514DB



### ⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

**SSA-SVX06G-EN**

**IR** Ingersoll Rand.

# EXISTING UNIT

## Model Number Description

### Air Handler

**Digit 1-3 – Unit Function**

**TWE** = Air Handler

**Digit 4-6 – Tonnage**

- 051** = 4.6 Tons (50Hz)
- 060** = 5 Tons (50Hz)
- 072** = 6 Tons (60Hz)(50Hz)
- 076** = 6.25 Tons (50Hz)
- 090** = 7.5 Tons (60Hz)
- 101** = 8.33 Tons (50Hz)
- 120** = 10 Tons (60Hz)
- 126** = 10.4 Tons (50Hz)
- 150** = 12.5 Tons (60Hz)
- 156** = 13.0 Tons (50Hz)
- 180** = 15 Tons (60Hz)
- 201** = 16.7 Tons (50Hz)
- 240** = 20 Tons (60Hz)
- 251** = 20.9 Tons (50Hz)
- 300** = 25 Tons (60Hz)

**Digit 7 – Refrigerant**

**4** = R-410A

**Digit 8 – Voltage**

- 1** = 208-230VAC - 1 PH (60Hz)
- 3** = 208-230VAC - 3 PH (60Hz)
- 4** = 460VAC - 3 PH (60Hz)
- W** = 575VAC - 3 PH (60Hz)
- D** = 380-415VAC - 3 PH (50Hz)
- K** = 380VAC - 3 PH (60Hz)

**Digit 9 – Refrigeration Circuit/Stage**

- A** = Single Circuit
- B** = Dual Circuit

**Digit 10 – Major Design Sequence**

**A** = Rev A

**Digit 11 – Minor Design Sequence**

**A** = Rev A

**Digit 12-13 – Service Digits**

**00** = 00

**Digit 14 – Efficiency Generation**

**A** = Generation A (2018 DOE)

**Digit 15 – Controls**

- 0** = Constant Volume
- A** = 2 Stage Airflow (Electromechanical Cond Only)
- B** = Single Zone VAV (ReliaTel Cond Only)

**Digit 16 – Indoor Fan Sizes**

- 0** = Standard Motor
- 4** = High Static – A (Oversized Motor for VFD Units)

**Digit 17-40 – None**

**0** = None

# EXISTING UNIT

## Weights

### Air Handler

**Table 1. Standard air handler (TWE) – unit and corner weights - (60 Hz)**

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
5	TWE0604*A/B	285	232	55	71	51	55	54	67	50	61
6	TWE0724*B	385	323	67	99	75	82	56	92	87	88
7.5	TWE0904*A/B	385	323	67	99	75	82	56	92	87	88
10	TWE1204*A/B	441	393	77	121	110	85	79	118	77	119
12.5	TWE1504*B	753	676	168	192	181	135	196	164	145	171
15	TWE1804*B	752	675	167	192	181	135	196	163	145	171
20	TWE2404*B	912	818	258	168	161	231	256	181	146	235
25	TWE3004*B	993	899	211	229	184	275	272	176	228	223

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

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
6	TWE0724*B	385	323	67	99	75	82	56	92	87	88
7.5	TWE0904*B	385	323	67	99	75	82	56	92	87	88
10	TWE1204*A/B	441	393	77	121	110	85	79	118	77	119
12.5	TWE1504*B	753	676	168	192	181	135	196	164	145	171
15	TWE1804*B	752	675	167	192	181	135	196	163	145	171
20	TWE2404*B	912	818	258	168	161	231	256	181	146	235
25	TWE3004*B	993	899	211	229	184	275	272	176	228	223

**Table 3. Standard air handler (TWE) – unit and corner weights - (50 Hz)**

Tons	Model Number	Shipping Max (lbs)	Net Max (lbs)	Corner Weights - Vertical				Corner Weights - Horizontal			
				1	2	3	4	1	2	3	4
4.6	TWE0514DA	285	232	55	71	51	55	54	67	50	61
6	TWE0724DB	385	323	67	99	75	82	56	92	87	88
6.25	TWE0764DA/B	385	323	67	99	75	82	56	92	87	88
8.33	TWE1014DA/B	441	393	77	121	110	85	79	118	77	119
10.4	TWE1264DB	753	676	168	192	181	135	196	164	145	171
13	TWE1564DB	752	675	167	192	181	135	196	163	145	171
16.7	TWE2014DB	912	818	258	168	161	231	256	181	146	235
20.9	TWE2514DB	993	899	211	229	184	275	272	176	228	223

**Figure 14. Vertical – TWE051, 072, 076, 101, 060, 072, 090, 120**

