Project: Palisades Episcopal School

Date: October 18, 2023

Allied #: 22319

Reviewed by: Scott Howard

Stamp:

Allied Consulting Engineers, PLLC
SHOP DRAWING REVIEW
Review is for general compliance with the intent of the Contract documents. Contractor shall assume responsibility for correctness, dimensions, details and quantities. Any changes due to substitution of equipment shall be at the expense of the Mechanical Contractor. Approval of shop drawings does not relieve the contractor from compliance with drawings, design intent, specs or code requirements. Shop drawings are reviewed for performance any deviations shall be approved by the/architect/owner for aesthetics.

Reviewed Item	No Exceptions Noted	Approve as Noted	Revise and Resubmit	Rejected	Remarks
Air Distribution		X			1
Bi-Polar Ionization	X				
Electric Wall Heater	X				
Exhaust Fans & Hoods		X			1
Insulation		X			1
HVAC Split Systems		X			1

Notes:

1. See comments on red each sheet

AH-1,2,3 PAGE 5
C1-C6 PAGE 27
CF-1 PAGE 35
CF-2 PAGE 40
CF-3,5,6 PAGE 45
CF-4 PAGE 50

Allied Consulting Engineers, PLLC
709 Catawba Street Belmont, NC
Phone: (704) 399-3943
www.allied-engineers.com

Submittal

Prepared For:
Action Mechanical Contractors, Inc.
Attn: Randy Minnich
Charlotte, NC

Engineer:
Allied Consulting Engineers
J. David Hood, P.E.
Belmont, NC

Date: October 10, 2023

Job Name:
Palisades Episcopal School New Education Bldg

Trane U.S. Inc. is pleased to provide the following submittal for your review and approval.

Product Summary

Qty	Product
3	Odyssey Split System - Indoor Unit AHU
3	Odyssey Split System - Outdoor Condensing Unit
6	Split System Air Conditioning Units (Small)
3	Duct Furnaces - Sterling

METROLINA BUILDERS
GENERAL CONTRACTORS

SHOP DRAWING & SUBMITTAL REVIEW

☒ REVIEWED ☐ REVISE AND RESUBMIT

☐ REJECTED ☐ REVISE AS NOTED

REVIEW DOES NOT RELIEVE SUBCONTRACTOR/SUPPLIER OF RESPONSIBILITY FOR DIMENSIONS, QUANTITIES, QUALITY ASSURANCE OR COMPLIANCE WITH SPECIFICATIONS

M Scott — REVIEWED BY

10.11.2023 — DATE

Michael Warmbold /bh
Trane U.S. Inc.
4501 South Tryon Street
Charlotte, NC 28217
Office Phone: (704) 525-9600

The attached information describes the equipment we propose to furnish for this project and is submitted for your approval.

Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

Product performance and submittal data is valid for a period of 6 months from the date of submittal generation. If six months or more has elapsed between submittal generation and equipment release, the product performance and submittal data will need to be verified. It is the customer's responsibility to obtain such verification.

Table of Contents

Tag Data - Odyssey Split System Indoor Unit (Qty: 3)

Item	Tag(s)	Qty	Description	Model Number	
A1	AH-1	1	10 Ton Unitary Split Systems Indoor AHU	TWE12041BAA**B1	
A2	AH-2, AH-3	2	7.5 Ton Unitary Split Systems Indoor AHU	TWE09041BAA**B1	

Product Data - Odyssey Split System Indoor Unit
All Units

Air Handler
R-410A
208-230/60/1
Dual Circuit
Generation B (2023 DOE)
Constant Volume
Standard Motor
No Auxiliary Heat
Rubber-in-sheer floor mount (**Field Installed**)
APR Valves (**Field Installed**)

Item: A1 Qty: 1 Tag(s): AH-1

10 Tons

Item: A2 Qty: 2 Tag(s): AH-2, AH-3

7.5 Ton

ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH E.C.

Performance Data - 6 - 25 Ton Unitary Split Systems Indoor (ODY_I)

Tags	AH-1	AH-2, AH-3
Airflow (cfm)	4000	3000
External Static Pressure (in H2O)	0.400	0.400
Cooling EDB (F)	80.00	80.00
Cooling EWB (F)	67.00	67.00
Summer outdoor ambient (F)	95.00	95.00
Winter EDB (F)	70.00	70.00
Winter outdoor ambient DB (F)	47.00	47.00
Hydronic Coil (for S.P. add)	No hydronic heat	No hydronic heat
Heat pump heating ambient relative humid (%)	70.00	70.00
Gross total capacity (MBh)	120.40	96.03
Gross sensible capacity (MBh)	98.57	76.05
Latent capacity (MBh)	21.93	20.10
Net total capacity (MBh)	115.77	92.79
Net sensible capacity (MBh)	93.84	72.69
Unit Leaving Dry Bulb (F)	58.50	57.76
Unit Leaving Wet Bulb (F)	57.80	57.09
Supply fan motor BHP (bhp)	1.47	1.03
Supply fan motor RPM (rpm)	799	777
MCA - A.H. (A)	13.00	9.00
MOP - A.H. (A)	20.00	15.00
MCA - A.H. for 230V w/elect. heat (A)	13.00	9.00
MOP - A.H. for 230V w/elect heat (A)	20.00	15.00
Supply Fan Motor FLA (A)	10.50	7.50
Evaporator face area (sq ft)	11.18	8.07
Evaporator face velocity (ft/min)	372	385
Evaporator fin spacing (Per Foot)	168	168
Evaporator Rows	4	4
Indoor motor power (kW)	1.34	0.94
Matched System EER (EER)	11.5	11.5
Matched System IEER (Number)	14.80	14.80
Min A.H. operating weight (lb)	406.0	336.0
Max A.H. operating weight (lb)	442.0	373.0
Fan motor heat (MBh)	3.19	2.29

Mechanical Specifications - Odyssey Split System Indoor Unit
Item: A1, A2 Qty: 3 Tag(s): AH-1, AH-2, AH-3

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

Constant Volume Airflow - *(TWE)*
- Factory installed high static 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

no electric heat scheduled

230V Heaters
- Internally delta connected
- Automatic reset of high limit controls through pilot duty with secondary backup fuse links

Vibration Isolators - *(TWE*)
- 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

Dimensional Drawings - Odyssey Split System Indoor Unit
Item: A1, A2 Qty: 3 Tag(s): AH-1, AH-2, AH-3

Condenser and Air Handler Pairings

Table 3. Model number descriptions

TWE Air Handler with Symbio
Digit 15 — Controls **1** = Constant Volume **C** = 2 Stage Airflow (Electromechanical Condenser Only) **D** = 2 Stage Airflow/Single Zone VAV (Symbio Condenser Only)

TWE Air Handler (pre-Symbio)
Digit 15 — Controls **0** = Constant Volume **A** = 2 Stage Airflow (Electromechanical Condenser Only) **B** = Single Zone VAV (ReliaTel Condenser Only)

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

Dimensional Drawings - Odyssey Split System Indoor Unit
Item: A1, A2 Qty: 3 Tag(s): AH-1, AH-2, AH-3

Condenser and Air Handler Pairings

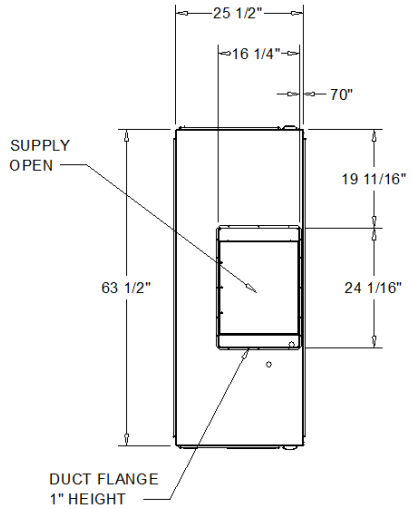
Table 4. Condenser and air handler pairing instructions (continued) (See document SS-SVN016A-EN)

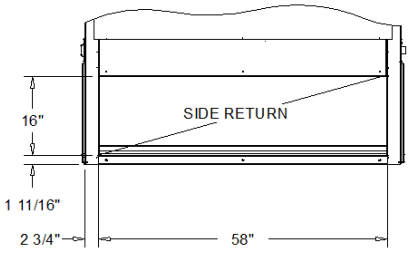
Condenser (model # digit)	Air Handler		Instructions
	Type	Supply Fan Type (model # digit)	
Odyssey Symbio (Digit 15 = S)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single Zone VAV operation (Trane IMC communication)
		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. 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, 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		

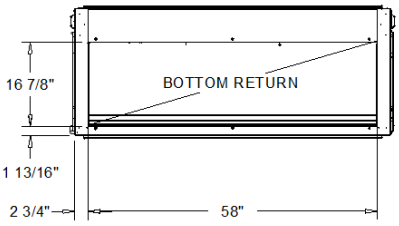
Dimensional Drawings - Odyssey Split System Indoor Unit
Item: A1 Qty: 1 Tag(s): AH-1

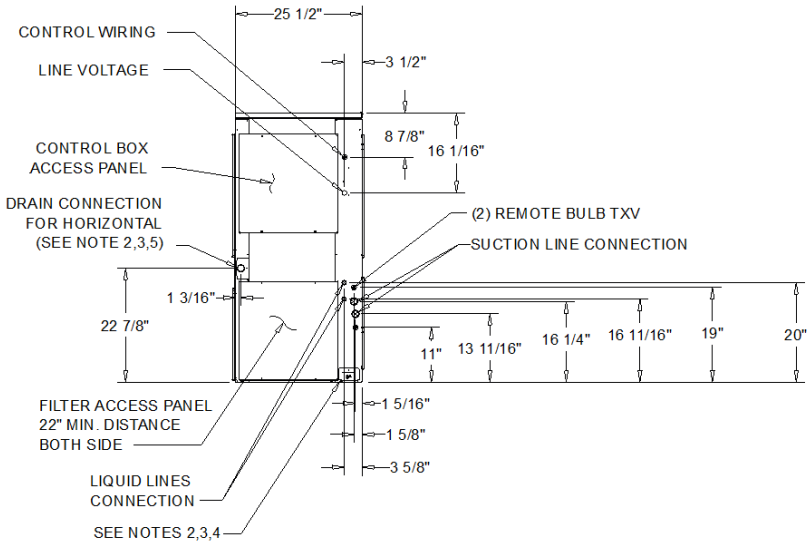
NOTES:
1 PANEL DEPTH 1/2" (TYP.ALL PANELS).
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION, PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF DRAIN PAN CONNECTION AT END OF UNIT.
4. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION VERTICAL CONFIGURATION.
5. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION HORIZONTAL CONFIGURATION.

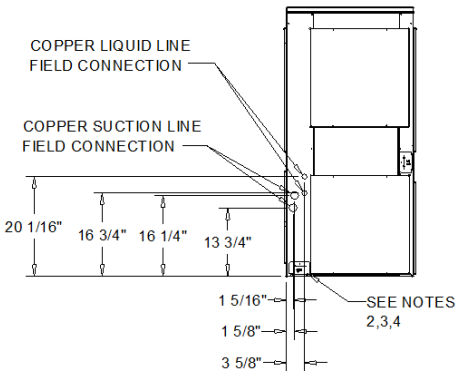
REFRIGERANT
1. SUCTION CONNECTION (1 1/8"OD) AND LIQUID CONNECTION (1/2" OD)

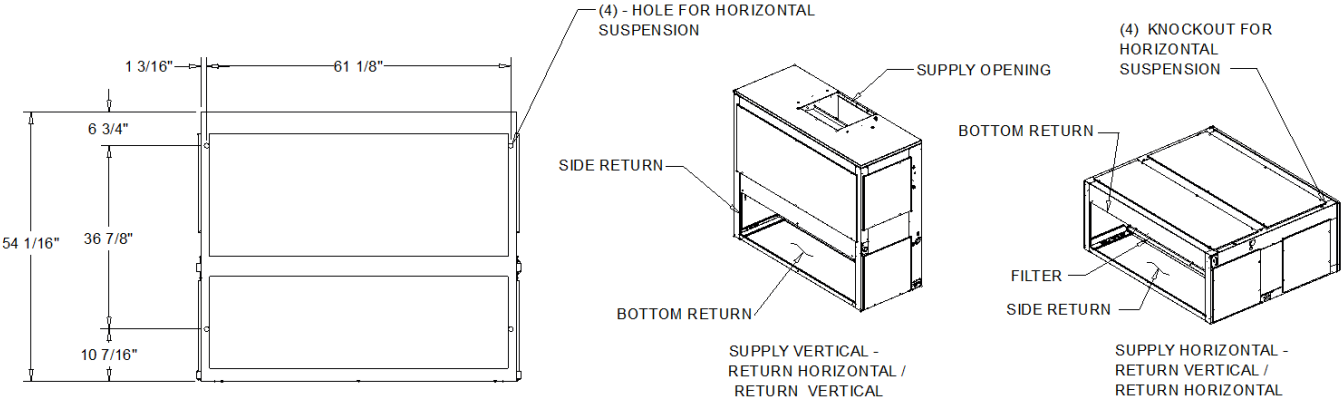






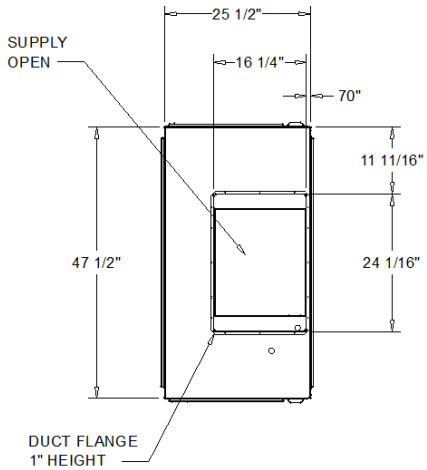






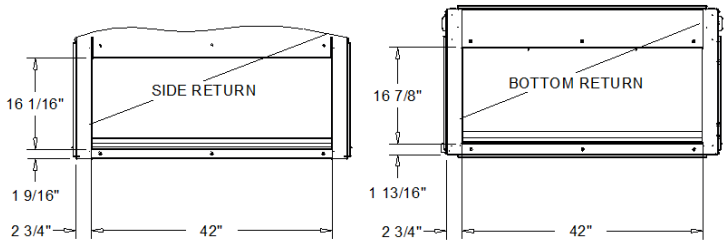
10 TON AIR HANDLER (DUAL CIRCUIT)
DIMENSIONAL DRAWING

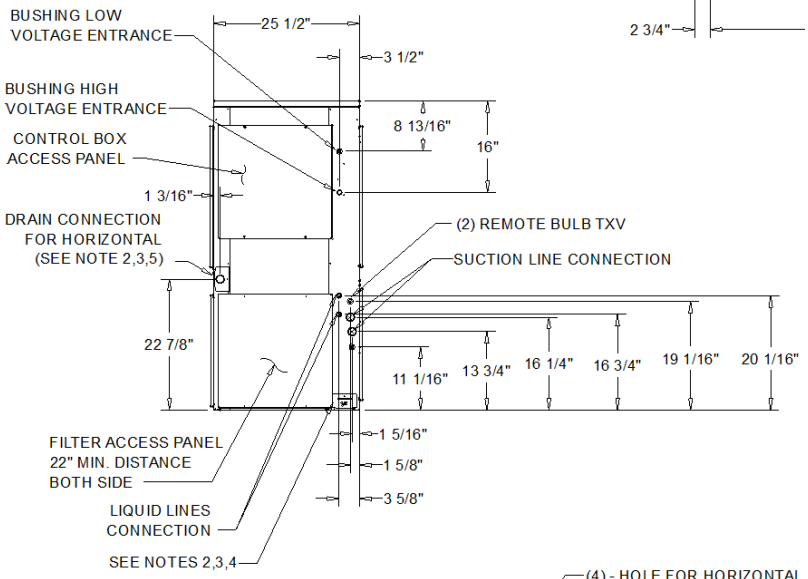
Dimensional Drawings - Odyssey Split System Indoor Unit
Item: A2 Qty: 2 Tag(s): AH-2, AH-3

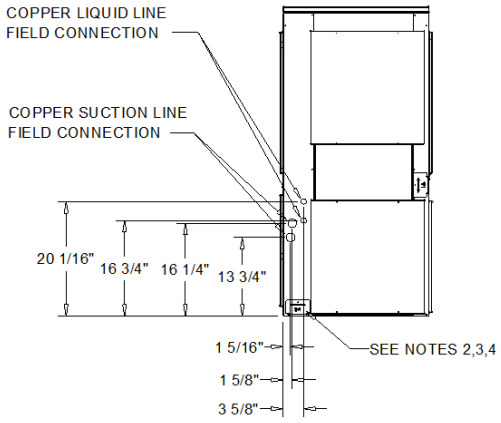


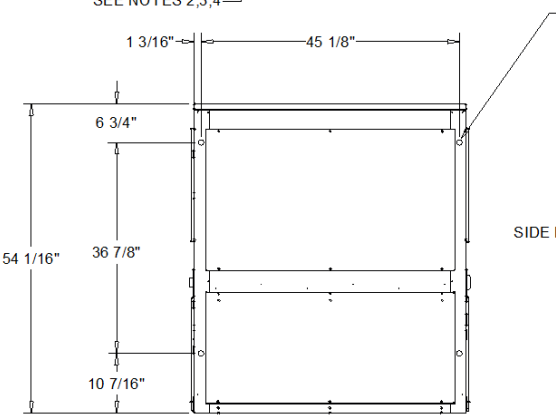
NOTES:
1 PANEL DEPTH 1/2" (TYP.ALL PANELS).
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION, PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF DRAIN PAN CONNECTION AT END OF UNIT.
4. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION VERTICAL CONFIGURATION.
5. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION HORIZONTAL CONFIGURATION.

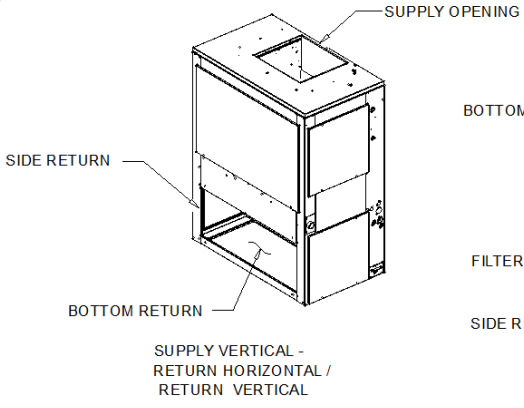
REFRIGERANT
1. SUCTION CONNECTION (1 1/8" OD) AND LIQUID CONNECTION (1/2" OD)



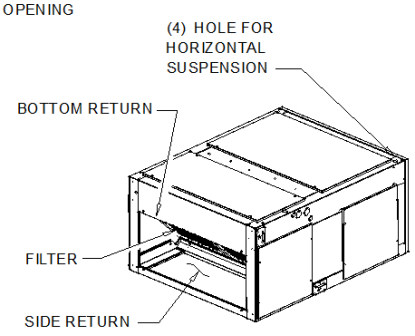








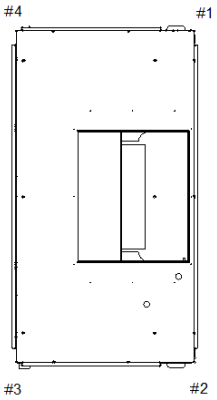
SUPPLY VERTICAL - RETURN HORIZONTAL / RETURN VERTICAL



SUPPLY HORIZONTAL - RETURN VERTICAL / RETURN HORIZONTAL

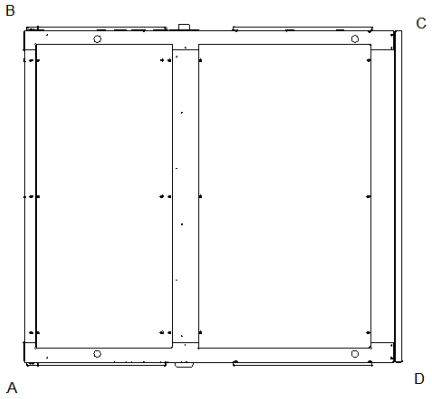
6 - 7.5 TON AIR HANDLER (DUAL CIRCUIT)
DIMENSIONAL DRAWING

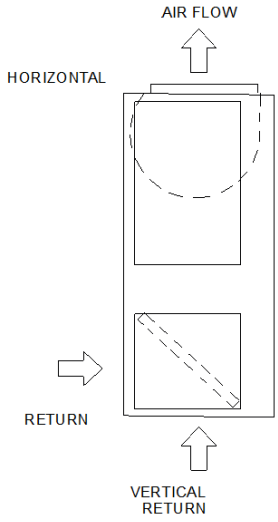
Weight, Clearance & Rigging - Odyssey Split System Indoor Unit
Item: A1 Qty: 1 Tag(s): AH-1

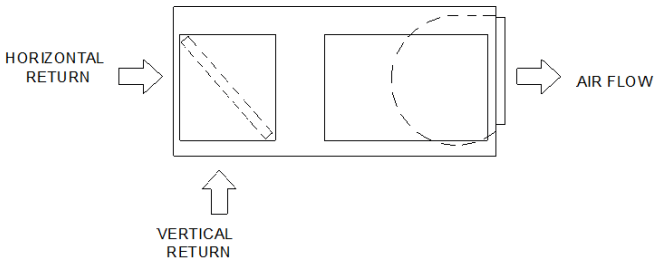


WEIGHTS AND CORNER WEIGHTS

Shipping:	441.0 lb
Net	393.0 lb
VERTICAL	
Corner 1:	77.0 lb
Corner 2:	121.0 lb
Corner 3:	110.0 lb
Corner 4:	85.0 lb
HORIZOTNAL	
Corner A:	79.0 lb
Corner B:	118.0 lb
Corner C:	77.0 lb
Corner D:	119.0 lb



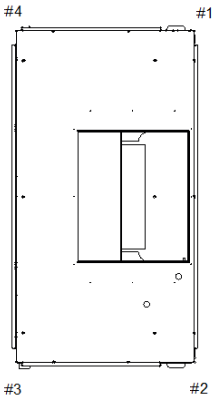




WEIGHTS AND LOAD POINT LOCATION FOR CONDENSOR

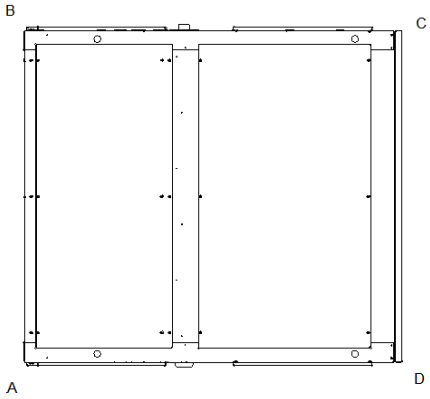
WEIGHT AND RIGGING

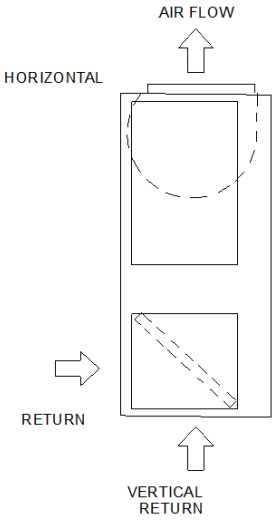
Weight, Clearance & Rigging - Odyssey Split System Indoor Unit
Item: A2 Qty: 2 Tag(s): AH-2, AH-3

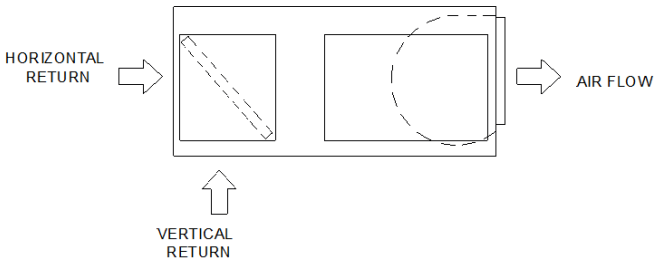


WEIGHTS AND CORNER WEIGHTS

Shipping:	385.0 lb
Net	323.0 lb
VERTICAL	
Corner 1:	67.0 lb
Corner 2:	99.0 lb
Corner 3:	75.0 lb
Corner 4:	82.0 lb
HORIZOTNAL	
Corner A:	56.0 lb
Corner B:	92.0 lb
Corner C:	87.0 lb
Corner D:	88.0 lb



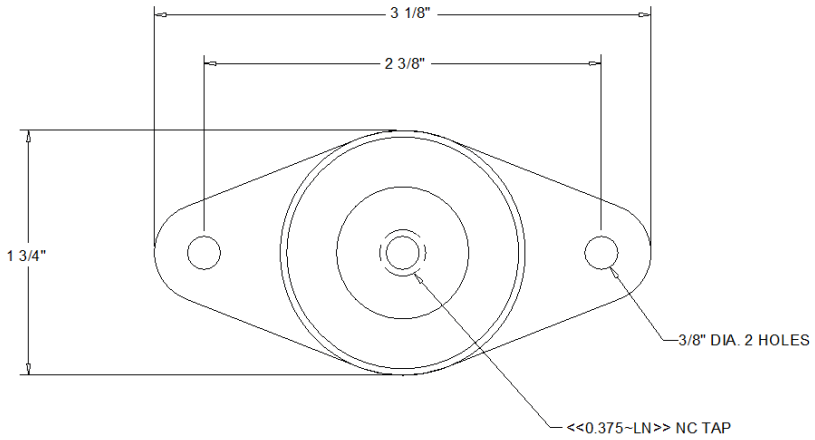


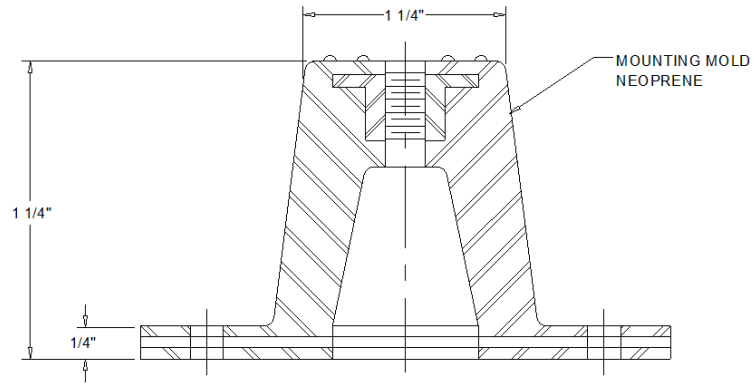


WEIGHTS AND LOAD POINT LOCATION FOR CONDENSOR

WEIGHT AND RIGGING

Accessory - Odyssey Split System Indoor Unit
Item: A1, A2 Qty: 3 Tag(s): AH-1, AH-2, AH-3





NOTE S
1. VERIFY WEIGHT, TYPE, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.
2. VERIFY NUMBER OF ISOLATORS AND LOCATION BEFORE INSTALLATION.

RUBBER FLOOR ISOLATOR

BAYISLT004, 005, 009, 010

Tag Data - Odyssey Split System Outdoor Unit (Qty: 3)

Item	Tag(s)	Qty	Description	Model Number
B1	ACC-1	1	10 Ton Unitary Split Systems Outdoor	TTA12043DAA**BS01000000000000000000000000
B2	ACC-2, ACC-3	2	7.5 Ton Unitary Split Systems Outdoor	TTA09043DAA**BS01000000000000000000000000

Product Data - Odyssey Split System Outdoor Unit
All Units

Standard Ship Cycle
Cooling (TTA)
R-410A Refrigerant
208-230/60/3
Dual Compressors / Dual Circuit
Generation B (2023 DOE)
Symbio (Cooling)
STD Coil w/ Guards
Touchscreen Programmable dehum 4H/C2 (Field Installed)
Rubber-in-shear isolators (Field Installed)
Ext. mount Small cabinets (Symbio) (Field Installed)
Service Valve accessory kit (Field Installed)

Item: B1 Qty: 1 Tag(s): ACC-1
10 Tons

Item: B2 Qty: 2 Tag(s): ACC-2, ACC-3
7.5 Tons

ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH E.C.

Performance Data - 6 - 25 Ton Unitary Split Systems Outdoor (ODY_O)

Tags	ACC-1	ACC-2, ACC-3
MCA (A)	41.00	34.00
MOP (A)	50.00	45.00
Compressor 1 RLA (A)	16.20	14.00
Compressor 2 RLA (A)	16.20	14.00
Cond. Motor 1 FLA (A)	4.30	2.30
Cond. Motor 2 FLA (A)	0.00	0.00
Max. Cond. Operating Weight (lb)	391.0	343.0

Mechanical Specifications - Odyssey Split System Outdoor Unit
Item: B1, B2 Qty: 3 Tag(s): ACC-1, ACC-2, ACC-3

General - *(TTA)*
- Weatherproofed steel mounting/lifting rails
- Hermetic scroll compressors
- Microchannel condenser coils
- Fans and motors
- Standard operating range 50.0 F-125.0 F (min. 0.0 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.
- Capacities and efficiencies for split system cooling condensers are rated within the scope of the Air-Conditioning, Heating, & Refrigeration
Institute (AHRI) certification program and display the AHRI Standard 365 (I-P) mark. This standard applies to cooling units between
135,000 and 250,000 btu/hr.

PROVIDE LOW AMBIENT KIT

Casing - *TTA*
- 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 - Dual Compressor (TTA0724*D, TTA0904*D, TTA1204*D, TTA1504*D, TTA1804*D, TTA2404*D)
- Two (2) separate and independent refrigerant circuits
- Each refrigeration circuit equipped with integral subcooling circuit
- Front or rear refrigerant line connections (TTA180**D/240**D)
- Two (2) direct drive hermetic scroll compressor
- Suction gas-cooled motors w/ ± 10% voltage utilization range of unit nameplate voltage
- Crankcase Heaters
- Internal temperature and current sensitive motor overloads
- Factory installed liquid line filter driers
- Phase loss/reverse rotation monitor
- 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 limits)

Condenser Coil (Microchannel) - *(TTA)*
- Microchannel coils burst tested by the manufacturer
- Coils shall be leak tested to ensure the pressure integrity
- Factory pressure and leak tested to 660 psig

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

Controls - *(TTA)*
- 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
- Front or rear electrical connections (TTA 1804*C/D, 2404*C/D, 3004*C only)

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.

Condenser Motor(s) - *(TTA)*
- Permanently lubricated totally enclosed or open construction
- Built-in current and thermal overloads
- Ball or sleeve bearing type

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

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

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.

Service Valves
- Liquid line service valve (with gauge port)
- Suction line service valve (with gauge port)

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

Dimensional Drawings - Odyssey Split System Outdoor Unit
Item: B1, B2 Qty: 3 Tag(s): ACC-1, ACC-2, ACC-3

Condenser and Air Handler Pairings

Table 3. Model number descriptions

TWE Air Handler with Symbio
Digit 15 — Controls **1** = Constant Volume **C** = 2 Stage Airflow (Electromechanical Condenser Only) **D** = 2 Stage Airflow/Single Zone VAV (Symbio Condenser Only)

TWE Air Handler (pre-Symbio)
Digit 15 — Controls **0** = Constant Volume **A** = 2 Stage Airflow (Electromechanical Condenser Only) **B** = Single Zone VAV (ReliaTel Condenser Only)

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	
		2-Speed Airflow (Digit 15 = C)		
		Single Zone VAV (Digit 15 = D)	"Pairing D," p. 12	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.
Odyssey ReliaTel (Digit 15 = R)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	"Pairing 4," p. 14	
		2-Speed Airflow (Digit 15 = C)	"Pairing E," p. 16	
		Single Zone VAV (Digit 15 = D)	"Pairing F," p. 16	Pairing F, D or G require wire harness kit WIR010190 (required) and WIR010185 (optional) to connect Air Handler Relay Board to VFD.

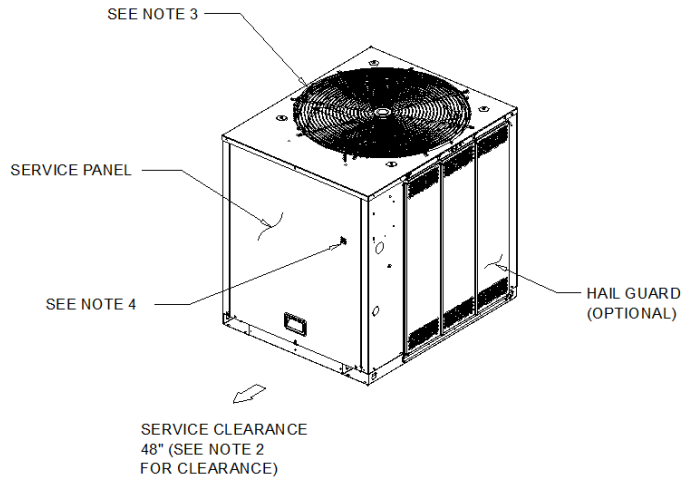
Dimensional Drawings - Odyssey Split System Outdoor Unit
Item: B1, B2 Qty: 3 Tag(s): ACC-1, ACC-2, ACC-3

Condenser and Air Handler Pairings

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

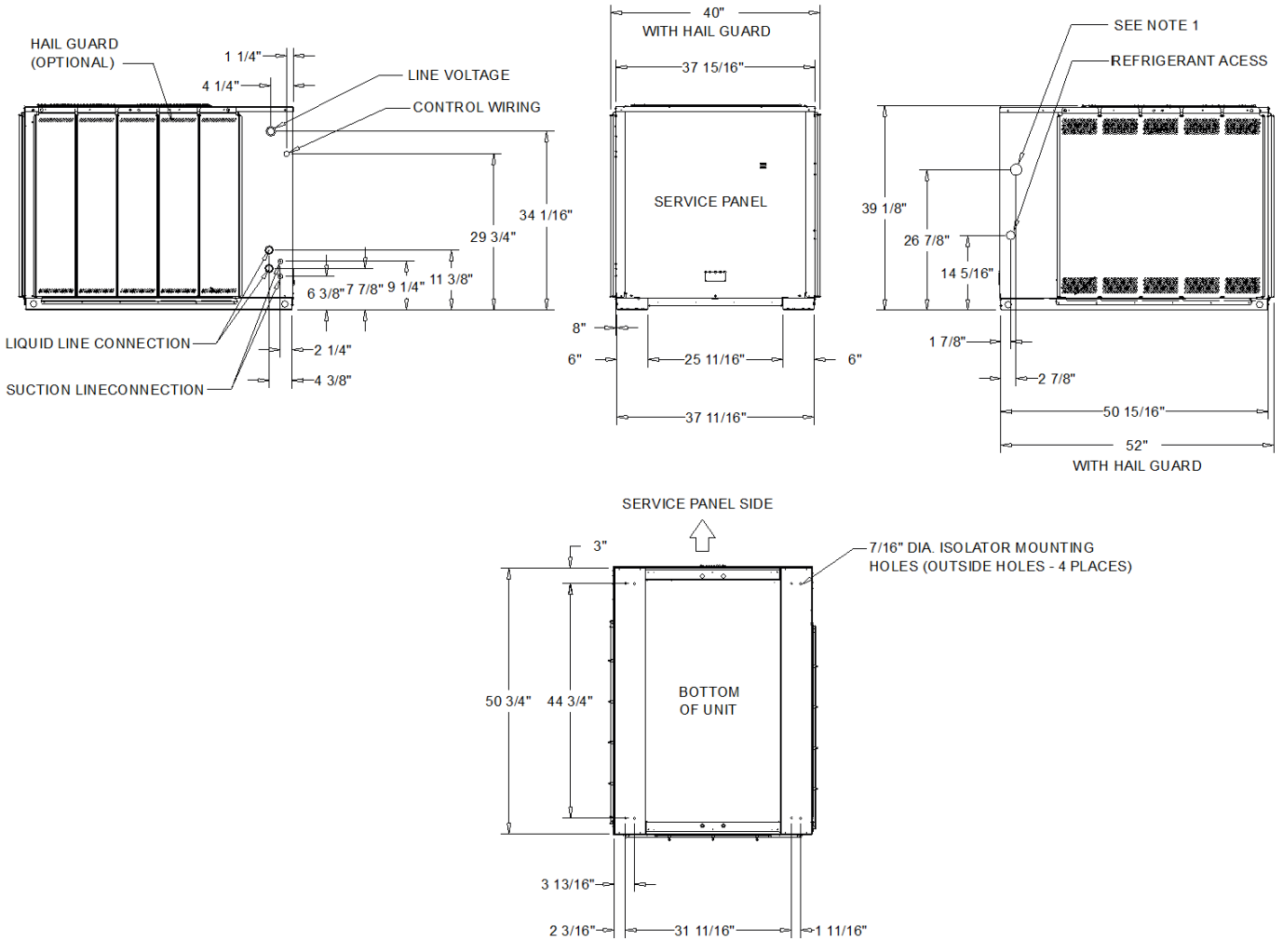
Condenser (model # digit)	Air Handler		Wiring Reference	Instructions
	Type	Supply Fan Type (model # digit)		
Odyssey Symbio (Digit 15 = S)	Odyssey Symbio	Constant Volume (Digit 15 = 1)	"Pairing A," p. 18	Install a shielded, twisted pair cable if the Air Handler has Electric Heat and/or requires Single 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	

Dimensional Drawings - Odyssey Split System Outdoor Unit
Item: B1 Qty: 1 Tag(s): ACC-1



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).

REFRIGERANT
1. SUCTION CONNECTION 1 1/8"OD) AND LIQUID CONNECTION (1/2" OD)



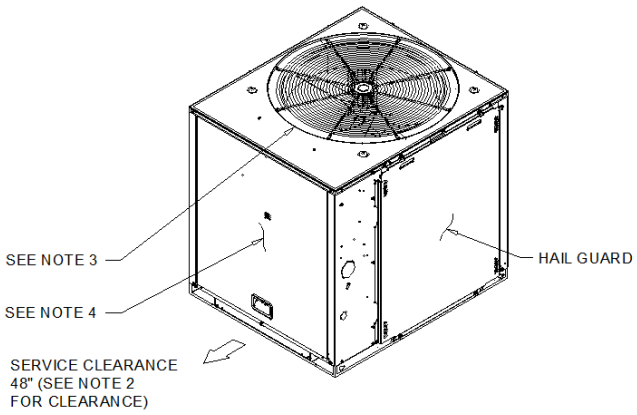
10 TON COOLING CONDENSER (DUAL COMPRESSOR)
DIMENSIONAL DRAWING

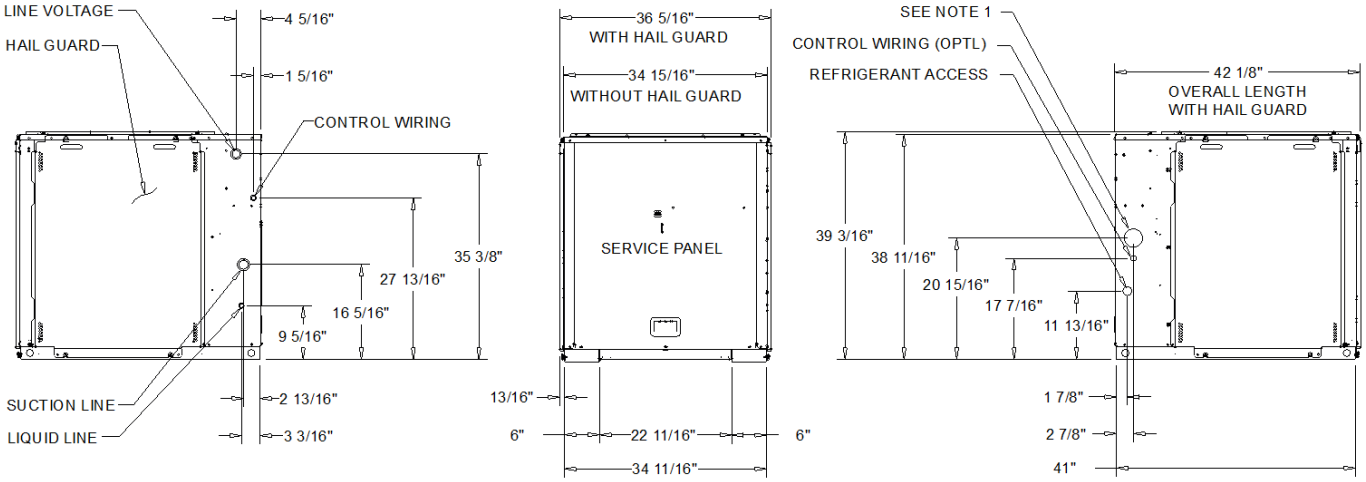
Dimensional Drawings - Odyssey Split System Outdoor Unit
Item: B2 Qty: 2 Tag(s): ACC-2, ACC-3

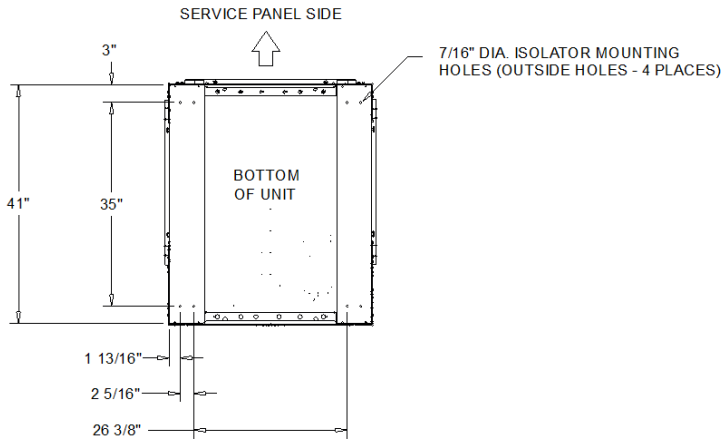
NOTES:
1. ACCESS OPENING IS FOR FIELD INSTALLED BAYLOAM ACCESSORY.
2. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72". RECOMMENDED SERVICE CLEARANCE 48"
3. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" MINIMUM.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

REFRIGERANT

5. SUCTION CONNECTION 1 1/8"OD) AND LIQUID CONNECTION (1/2" OD)



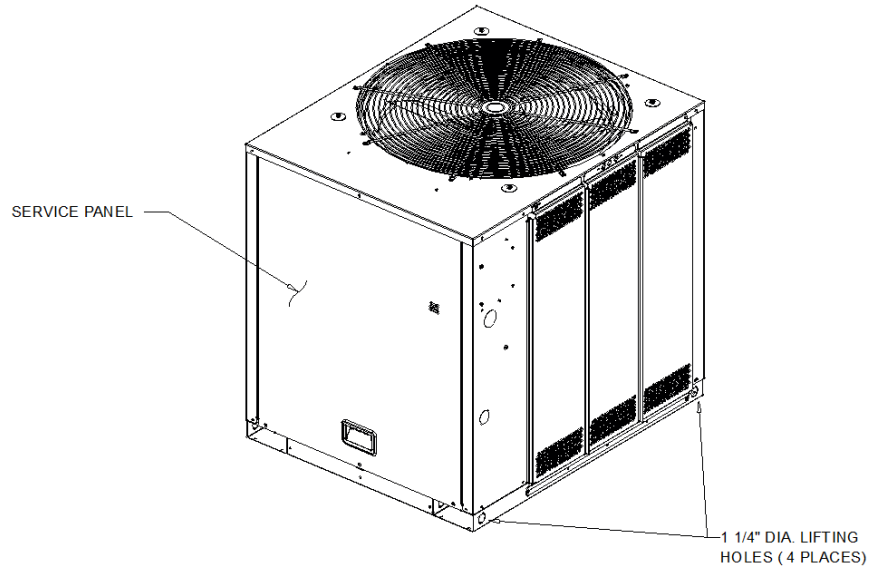


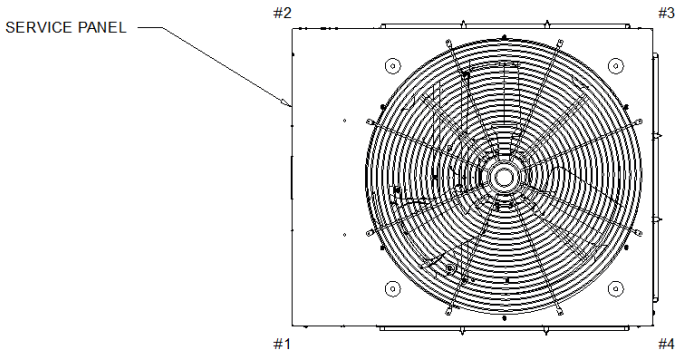


7.5 TON DUAL COMPRESSOR COOLING CONDENSER

DIMENSIONAL DRAWING

Weight, Clearance & Rigging - Odyssey Split System Outdoor Unit
Item: B1 Qty: 1 Tag(s): ACC-1





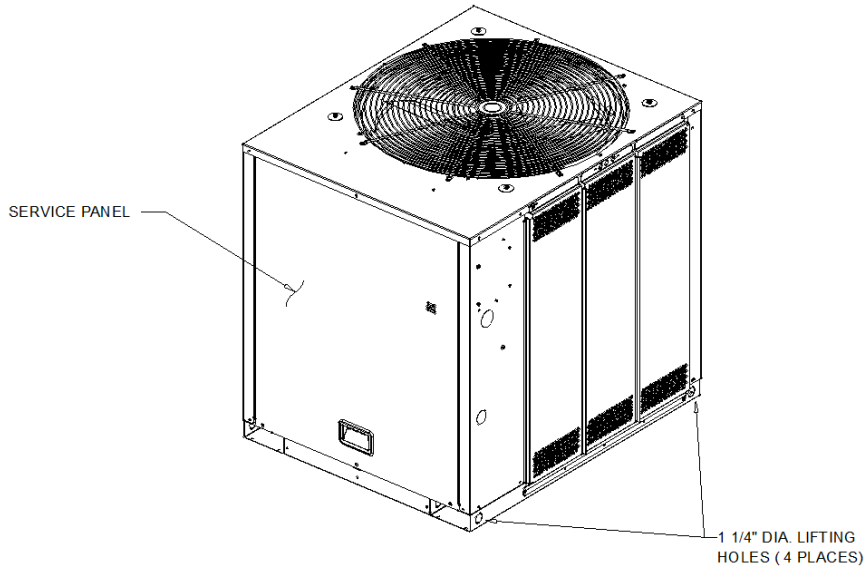
WEIGHTS AND CORNER WEIGHTS

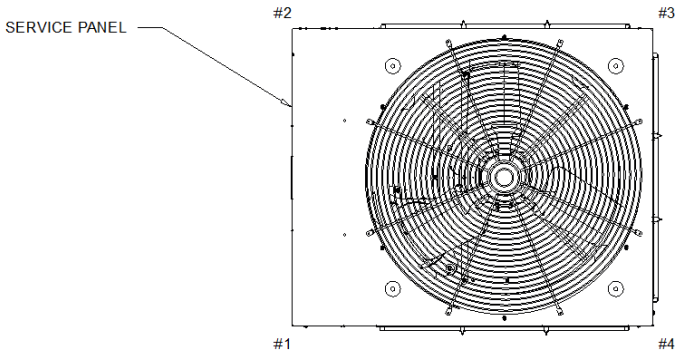
Shipping:	436.0 lb
Net	391.0 lb
Corner 1:	113.0 lb
Corner 2:	112.0 lb
Corner 3:	84.0 lb
Corner 4:	82.0 lb

WEIGHTS AND LOAD POINT LOCATION

WEIGHT AND RIGGING

Weight, Clearance & Rigging - Odyssey Split System Outdoor Unit
Item: B2 Qty: 2 Tag(s): ACC-2, ACC-3





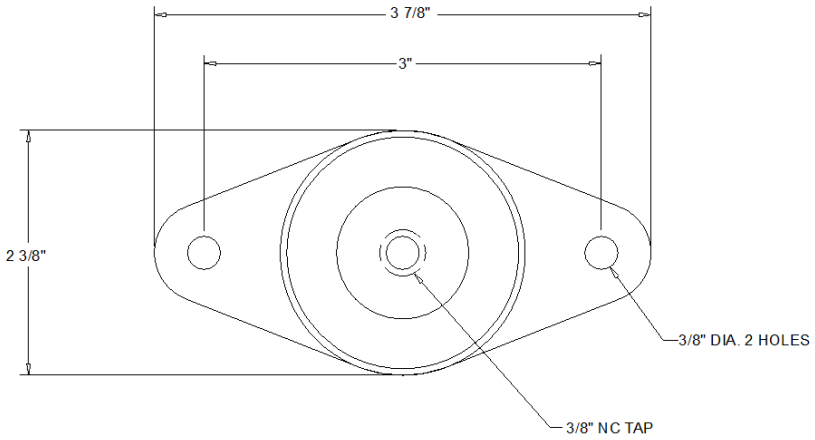
WEIGHTS AND CORNER WEIGHTS

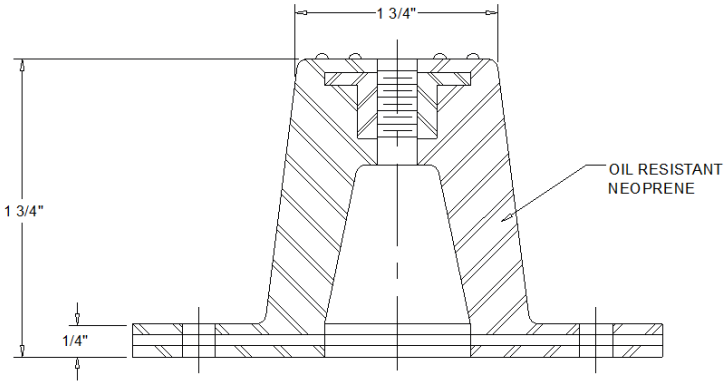
Shipping:	380.0 lb
Net	343.0 lb
Corner 1:	107.0 lb
Corner 2:	100.0 lb
Corner 3:	70.0 lb
Corner 4:	66.0 lb

WEIGHTS AND LOAD POINT LOCATION

WEIGHT AND RIGGING

Accessory - Odyssey Split System Outdoor Unit
Item: B1 Qty: 1 Tag(s): ACC-1



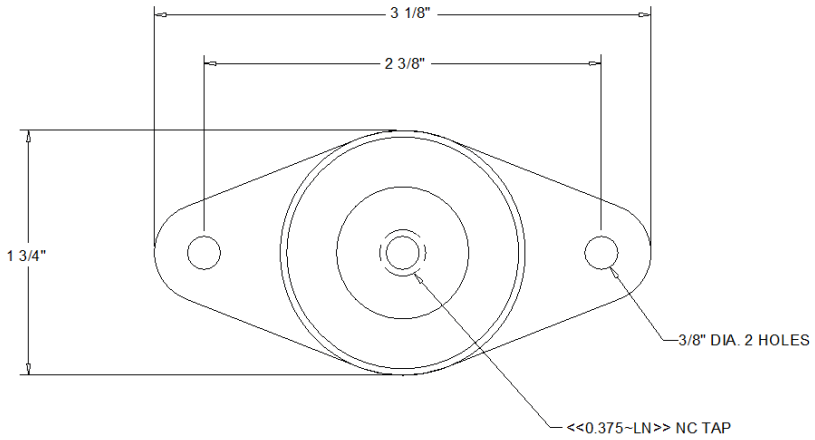


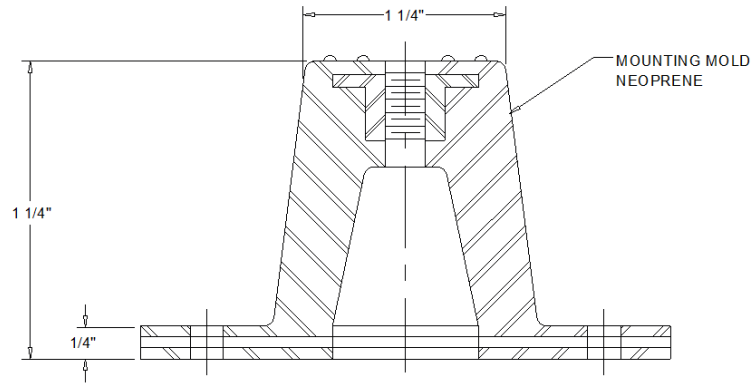
NOTE S
1. VERIFY WEIGHT, TYPE, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.
2. VERIFY NUMBER OF ISOLATORS AND LOCATION BEFORE INSTALLATION.

RUBBER FLOOR ISOLATOR

BAYISLT004, 005, 009, 010

Accessory - Odyssey Split System Outdoor Unit
Item: B2 Qty: 2 Tag(s): ACC-2, ACC-3





NOTE S
1. VERIFY WEIGHT, TYPE, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.
2. VERIFY NUMBER OF ISOLATORS AND LOCATION BEFORE INSTALLATION.

RUBBER FLOOR ISOLATOR

BAYISLT004, 005, 009, 010

Tag Data - Split System Air Conditioning Units (Small) (Qty: 6)

Item	Tag(s)	Qty	Description	Model Number
C1	CF/CU-1	1	5 Ton Unitary Split Systems (SSC)	4TTR4060N10000***S9X1D120U5PSB***4TXCD010DS3HC
C2	CF/CU-2	1	3 Ton Unitary Split System (SSC)	4TTR4036N10000***S9V2B080U4PSB***4TXCB006DS3HC
C3	CF/CU-3, CF/CU-5, CF/CU-6	3	4 Ton Unitary Split Systems (SSC)	4TTR4048N10000***S9V2C100U4VSA***4TXCC009DS3HC
C4	CF/CU-4	1	3.5 Ton Unitary Split System (SSC)	4TTR4042N10000***S9V2C100U5PSB***4TXCC009DS3HC

Product Data - Split System Air Conditioning Units (Small)

All Units

Split System Cooling Outdoor Unit
- 200 - 230 Volt 1 Phase 60 Hertz
- 3-Way (upflow, Horiz Right, Horiz Left)
- Standard 24 Volt

Cased upflow/dnflow/horiz left
- Brazed, Hi efficiency, TXV-Non bleed
- Conv-upflow/dnflw,left airflow coil

Low Ambient Control (Field Installed)
Touchscreen Programmable 4H/2C (Field Installed)
Evaporator defrost control (Field Installed)
Concentric vent kit (Field Installed)

Item: C1 Qty: 1 Tag(s): CF/CU-1

5 Ton Nominal Cooling Capacity
90%+ Eff, 1 Stg, Multi-speed, 24.5" Wide
120,000 Heating input BTUH
5 Ton Capacity
Permanent split capacitor Two Speed
24.5"/23.3" cabinet
60,000 Nominal cooling capacity

Item: C2 Qty: 1 Tag(s): CF/CU-2

3 Ton Nominal Cooling Capacity
90%+ Eff, 2 Stg, Var. speed, 17.5" Wide
80,000 Heating input BTUH
4 Ton Capacity
Permanent split capacitor Two Speed
17.5"/16.3"cabinet
48,000 Nominal cooling capacity ← SHOULD THIS BE 36,000

Item: C3 Qty: 3 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6

4 Ton Nominal Cooling Capacity
90%+ Eff, 2 Stg, Var. speed, 21" Wide
100,000 Heating input BTUH
4 Ton Capacity
Variable Speed
21.0"/19.8" cabinet
60,000 Nominal cooling capacity ← SHOULD THIS BE 48,000

Item: C4 Qty: 1 Tag(s): CF/CU-4

3.5 Ton Nominal Cooling Capacity
90%+ Eff, 2 Stg, Var. speed, 21" Wide
100,000 Heating input BTUH
5 Ton Capacity
Permanent split capacitor Two Speed
21.0"/19.8" cabinet
60,000 Nominal cooling capacity ← SHOULD THIS BE 42,000

Performance Data - 1.5 - 5 Ton Unitary Split Systems (SSC)

Tags	CF/CU-1	CF/CU-2	CF/CU-3, CF/CU-5, CF/CU-6	CF/CU-4
Design clg EDB (F)	80.00	80.00	80.00	80.00
Design clg EWB (F)	67.00	67.00	67.00	67.00
Cooling outdoor DB (F)	95.00	95.00	95.00	95.00
Cooling EDB (F)	80.00	80.00	80.00	80.00
Cooling EWB (F)	67.00	67.00	67.00	67.00
Capacity @ AHRI (Btuh)	56500.00	34000.00	47000.00	41000.00
Elevation (ft)	0.00	0.00	0.00	0.00
Clg net total capacity (Btuh)	58225.00	35496.00	49062.00	42738.00
Clg net sensible capacity (Btuh)	44724.00	26750.00	37022.00	31672.00
Clg net latent capacity (Btuh)	13501.00	8746.00	12040.00	11066.00
Calc clg LDB (F)	59.00	59.00	57.20	57.90
Calc clg LWB (F)	57.50	57.30	56.40	56.60
SEER @ AHRI (btuh/watt)	14.30	14.30	14.30	14.30
EER @ AHRI (EER)	11.7	11.7	11.7	11.7
Cooling airflow (cfm)	2000	1200	1525	1350
Min system airflow clg (cfm)	1675	925	1200	1050
Max system airflow clg (cfm)	2150	1200	1525	1350
AHRI airflow (cfm)	1690	940	1210	1070
AHRI reference number	-1	-	-	-
AHRI compressor power clg mode (W)	3933.0	2464.0	3389.0	2967.0
AHRI condenser fan power clg mode (W)	240.0	157.0	238.0	228.0
AHRI supply fan power clg mode (W)	656.0	285.0	390.0	309.0
ASHRAE 90.1 S6.4.1 compliant	Yes	Yes	Yes	Yes
Heating airflow (cfm)	2000	1200	1600	1400
Heating EDB (F)	70.00	70.00	70.00	70.00
80 to 90 second blower off delay	Not Required	Not Required	Not Required	Not Required
OD AHRI Model (Each)	-1.00	-1.00	-1.00	-1.00
ID AHRI Model (Each)	8109672.00	8108650.00	8109101.00	8115391.00

Mechanical Specifications - Split System Air Conditioning Units (Small)
Item: C1 - C4 Qty: 6 Tag(s): CF/CU-1, CF/CU-2, CF/CU-3, CF/CU-5, CF/CU-6, CF/CU-4

4TXC - General
Upflow, Downflow, or Horizontal coils shall be designed for cooling and heat pump applications. The coil shall be 3/8" seamless aluminum tubing me-chanically bonded to aluminum plate fin.
Refrigerant for the TXC coils shall be controlled with factory installed Non-Bleed TXV refrigerant control. Refrigerant connections are brazed fittings with an additional Schrader Valve for system service.
The coil cabinet shall have a removable front and interior access panel for evaporator coil entering air surface cleaning.
The coil includes a drain pan with drain connections for vertical or horizontal operation and a horizontal auxiliary drain pan.
These coils are A.R.I. certified with Trane's matching condensing units.

4TXC - Accessories
Evaporator Defrost Control installed on coil for lower ambient operating conditions.

4TTR4 - General
The Outdoor Units are fully charged from the factory for up to 15 feet of piping. This unit is designed to operate at outdoor ambient temperatures as high as 115F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

4TTR4 - Casing
Unit casing is constructed of heavy gauge, G60 galvanized steel and painted with a weather resistant powder paint on all louvered panels and prepaint on all other panels. Corrosion and weatherproof CMBP-G30 base.

4TTR4 - Refrigerant Controls
Refrigeration system controls include condenser fan, compressor contactor and high pressure switch. High and low pressure controls are inherent to the compressor. A factory supplied liquid line drier is standard. Some models may require field installation.

4TTR4 - Compressor
The compressor features internal over temperature, pressure protection and total dipped hermetic motor. Other features include: Centrifugal oil pump and low vibration and noise.

4TTR4 - Condenser Coil
The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

4TTR4 - Low Ambient Cooling
As manufactured, this system has a cooling capacity to 55F. The addition of an evaporator defrost control permits operation to 40F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30F.

S9V2 - FEATURES AND GENERAL OPERATION
The S-Series furnace utilizes a Silicon Nitride Hot Surface Ignition system, which eliminates the waste of a constant burning pilot. The integrated system control lights the main burners upon a demand for heat from the room thermostat. Complete front service access.
a. Low energy power venter
b. Vent proving pressure switches.

S9V2 - NATURAL GAS MODELS
Central Heating furnace designs are certified by the American Gas Association for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

S9V2 -SAFE OPERATION
The Integrated System Control is a solid state device which continuously monitors for presence of flame when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide additional safety.

S9V2 -QUICK HEATING

Durable, cycle tested, heavy gauge tubular stainless steel primary heat exchanger quickly transfers heat to provide warm conditioned air to the structure. Low energy power vent blower, to increase efficiency and provide a positive discharge of gas fumes to the outside.

S9V2 -BURNERS
Multiport Inshot burners will give years of quiet and efficient service. All models can be converted to L.P. gas with LP conversion kit.

S9V2 -INTEGRATED SYSTEM CONTROL
Exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self-diagnostics for ease of service. Also contains dry contacts for EAC and HUM.

S9V2 -ENERGY EFFICIENT OPERATION
Furnace is certified by the manufacturer to leak 1% or less of nominal air conditioning CFM delivered when pressurized to 1/2" water column with all inlets, outlets, and drains sealed.

S9V2 -AIR DELIVERY
The variable speed blower motor has sufficient airflow for most heating and cooling requirements and will switch from heating to cooling speeds on demand from room thermostat.

S9V2 - SECONDARY HEAT EXCHANGER
The S-Series furnace has a special type 29- 4C stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost.

S9V2 - STYLING
Heavy gauge steel and "wrap-around" cabinet construction is used in the cabinet with baked on enamel finish for strength and beauty. Every orientation has at least two venting options. There are no knockouts on cabinet.

Concentric Vent Kit
This field installed kit will allow vertical or horizontal termination of the direct vent furnaces. This kit can be used with 2, 2 1/2 and 3 inch [50.8, 63.5 and 76.2 mm] pvc pipe. This allows a single 5 inch [127.0 mm] hole for exiting the structure instead of two.

Head Pressure Control Accessory
The Head Pressure Control (BAYLOAM***) accessory is a low voltage (24 Volts) electronic head pressure control that cycles the condenser fan motor based on liquid temperature. The addition of this field installed Head Pressure Control accessory permits cooling operation to 0 deg F [-17.8 deg C] providing that non-bleed TXV's, quick start components, and compressor crankcase heat are provided with the system when required.

Head Pressure Control
Controls fan motor (on/off) in response to outdoor ambient temperature in conjunction with liquid line temperature. Accessory provides unit cooling operation to outdoor temperatures of 0F

Natural Gas Models
central heating furnace designs are certified by the american gas association for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using american national standards institute standards.

Safe Operation
the integrated system control is a solid state device which continuously monitors for presence of flame when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide additional safety.

Quick Heating
durable, cycle tested, heavy gauge tubular stainless steel primary heat exchanger quickly transfers heat to provide warm conditioned air to the structure. Low energy power vent blower, to increase efficiency and provide a positive discharge of gas fumes to the

Burners
multiport inshot burners will give years of quiet and efficient service. all models can be converted to L.P. gas with lp conversion kit.

Integrated System Control
exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self diagnostics for ease of service. Also contains dry contacts for eac and hum.

Energy Efficient Operation
furnace is certified by the manufacturer to leak 1% or less of nominal air conditioning cfm delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

Air Delivery
the variable speed blower motor has sufficient airflow for most heating and cooling requirements and will switch from heating to cooling speeds on demand from room thermostat.

Secondary Heat Exchanger
the s-series furnace has a special type 29- 4c? stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost.

Heavy Gauge Steel and "WrapAaround"Ccabinet
construction is used in the cabinet with baked-on enamel finish for strength and beauty. Every orientation has at least two venting options. There are no knockouts on cabinet.

Features and General Operation
the s-series furnace utilizes a silicon nitride hot surface ignition system, which eliminates the waste of a constant burning pilot. the integrated system control lights the main burners upon a demand for heat from the room thermostat. complete front service access.
a. low energy power venter
b. vent proving pressure switches.

97.0% AFUE Across all Models
Meets utility rebates lowers utility bills

Electrically Efficient
Efficient airflow design reduces electrical energy use

34 Inch Tall
Lighter, easier to move and fit into tight spaces like short basements or tight closets. Works great with larger, high-efficiency coils, no knockouts

3-Way Multi-Poise / Dedicated Downflow
9 sku?s - upflow / horizontal left / horizontal right
7 sku?s - downflow
Added application flexibility and reduction in specification errors

Airflow
At least 400 cfm/ton at 0.5 in. h20 external static pressure; setup airflow options down to 290 cfm/ton

Regulatory
All models are air tight; 1% or less air leakage as per

Ashrae 193
Open vestibule design provides a full 34" high open vestibule

Variable Speed Draft Inducer Motor
Increased efficiency

Integrated Furnace Control
Setup / status / diagnostics / digital display no dip switches last six errors stored dry contact eac and hum connections all molex connections; no spade terminals low voltage labeled above and belowrain shield over ifc keeps condensate off the control

Tubular Stainless Steel Primary Heat Exchanger 29-4c stainless steel secondary heat exchanger

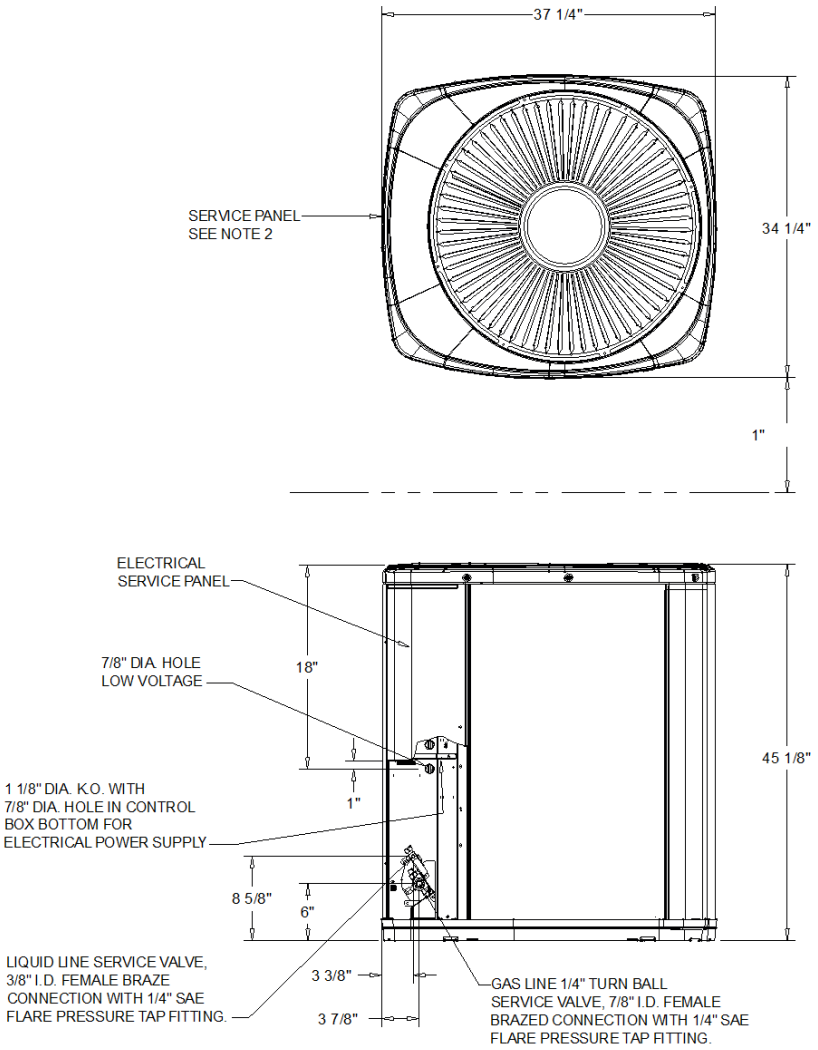
Stainless steel is a more durable, corrosive-resistant material than aluminumized steel integrated rail system for easy access if required reduces or eliminates need for baffles

Vortica II Blower, Designed Exclusively For the S-Series Furnace
Improved airflow efficiency durable, easy to clean, two piece housing single piece belly band/ motor arm assembly blower deck has full-length rails for easy removal and replacement, regardless of poise.

Three-Way Multi-Poise (Upflow, Horizontal Left and Right) Plus Dedicated Downflow
Easier to specify shipped ready to install (no kits required) every model has at least two venting options when in horizontal, trap extends only about 2" . Barbed fitting on trap at hose connection and on cabinet transition for hose has barbed fitting and clamps at both ends for leak resistance. Vent table improvements including longer vent lengths; 2" pipe can be used up to 100k

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): CF/CU-1

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.



SPLIT SYSTEM COOLING - 4TTR4060

OUTLINE DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): CF/CU-1

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TTR4060	Minimum Circuit Ampacity:	34.0	Number:	1
Voltage:	208	Maximum Circuit Breaker:	60.0	Phase:	1
Unit Hertz:	230	Minimum Protection Rating:	60.0	Rated Load Amps:	26.3
Unit Phase:	60			Locked Rotor Amps:	140.6
	1				

OUTDOOR MOTOR	
Number:	1
Horsepower:	0.20
Motor Speed (RPM):	-
Phase:	1
Full Load Amps:	0.97
Locked Rotor Amps:	-

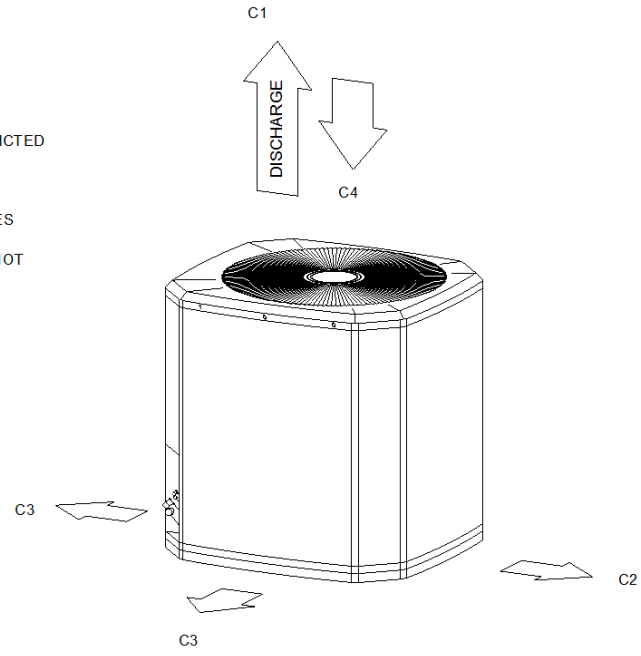
REFRIGERANT	
Type:	R-410
Charge:	9.5 lb
Line Size O.D. Gas:	1 1/8"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line. For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

COORDINATE ELECTRICAL REQUIREMENTS WITH E.C.

WEIGHT	
NET	277.0 lb
SHIPPING	302.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT



WEIGHT AND CLEARANCE

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): CF/CU-1

ELECTRICAL / GENERAL DATA

Furnace

GENERAL - POWER CONN

Model:	S9X1D120U5PSBA
Voltage:	120 / 1 /60
Ampacity (Amps):	14.1
Max Over. Pro. (Amps):	15.0

COMBUSTION FAN

Type:	Centrifugal
Motor HP:	0.50
Motor Speed RPM:	3300
Phase:	1
Full Load Amps:	0.66

BLOWER DRIVE

Drive:	Direct
No. Used:	1
Motor HP:	1.0
Speed RPM:	1075
Phase:	1

ORIFICES

Nat. Gas Qty - Drill Size:	6 - 45
L.P. Gas Qty. - Drill Size:	6 - 56
Gas Valve:	

RATINGS (b)

1 Stage input BTUH:	120000
1 Stage output BTUH:	116400
2 Stage input BTUH:	-
2 Stage output BTUH (c,d) :	-
1st Stage Temp. Rise (Min.-Max.) :	40 - 70
2nd Stage Temp. Rise (Min.-Max.):	-
AFUE (%) (c,d):	95.0 / 92.1

FILTERS

Type:	High Velocity
Furnished:	No
Recommended	(1) 24" X 25" X1"

BURNERS

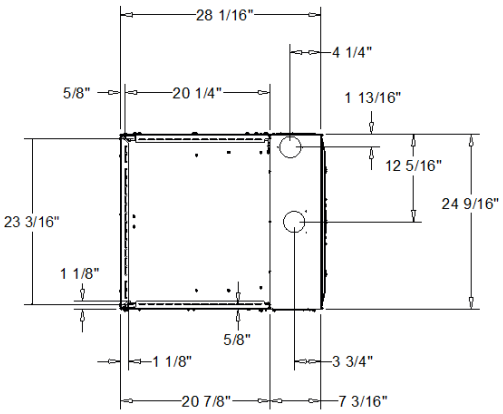
Type:	Multiport Inshot
Number:	6

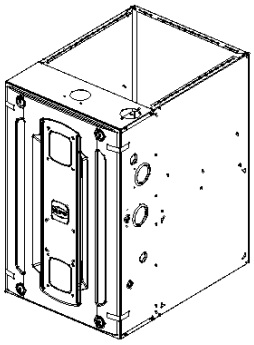
WEIGHT / DIMENSIONS

Shipping:	167.0 lb
Net:	156.0 lb
Dimension (Crated):	35 1/2" X 26 1/2" X 30 7/8"

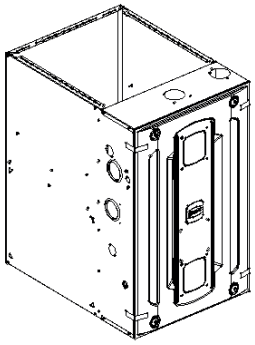
Notes:
(a) Meets Energy Star
(b) For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4 % per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4 % per 1,000 feet for elevations above 4,500 feet above sea level.
(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 latest edition.
(d) Based on U.S. government standard tests.
(e) Refer to the Vent Length Table in the Installer's Guide.
(f) All S9V2 furnace models have a vent outlet diameter that equals 2 in.
(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): CF/CU-1

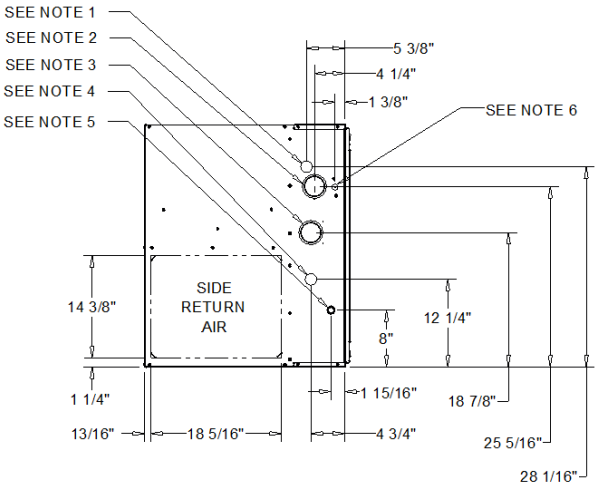


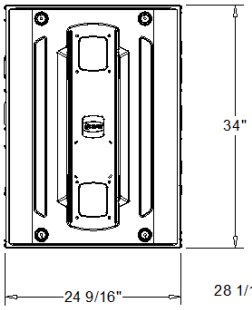


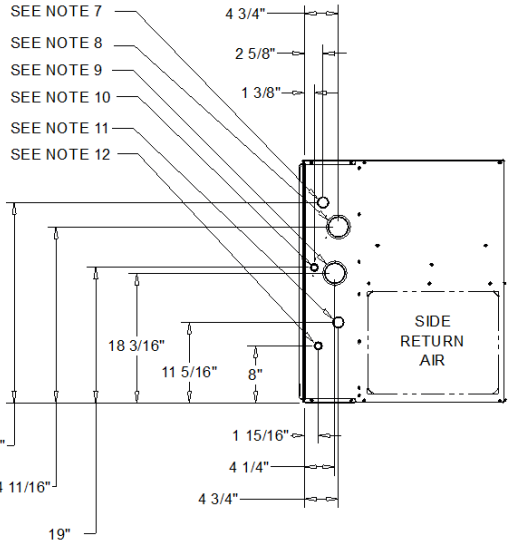
HORIZONTAL LEFT

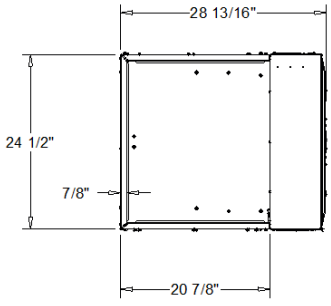


HORIZONTAL RIGHT









NOTES:
1) 1 5/8" DIA GAS SUPPLY
2) 3" FLUE OUTLET (HORIZONTAL RIGHT)
3) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL RIGHT)
4) 1 5/8" CONDENSATE DRAIN (UPFLOW)
5) 7/8" THERMOSTAT WIRES
6) 7/8" ELECTRICAL WIRES
7) 1 5/8" DIA GAS SUPPLY (ALTERNATE)
8) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL LEFT)
9) 3" FLUE OUTLET (HORIZONTAL LEFT)
10) 7/8" ELECTRICAL WIRES (ALTERNATE)
11) 1 5/8" CONDENSATE DRAIN (ALTERNATE)
12) 7/8" THERMOSTAT WIRES (ALTERNATE)
13) VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

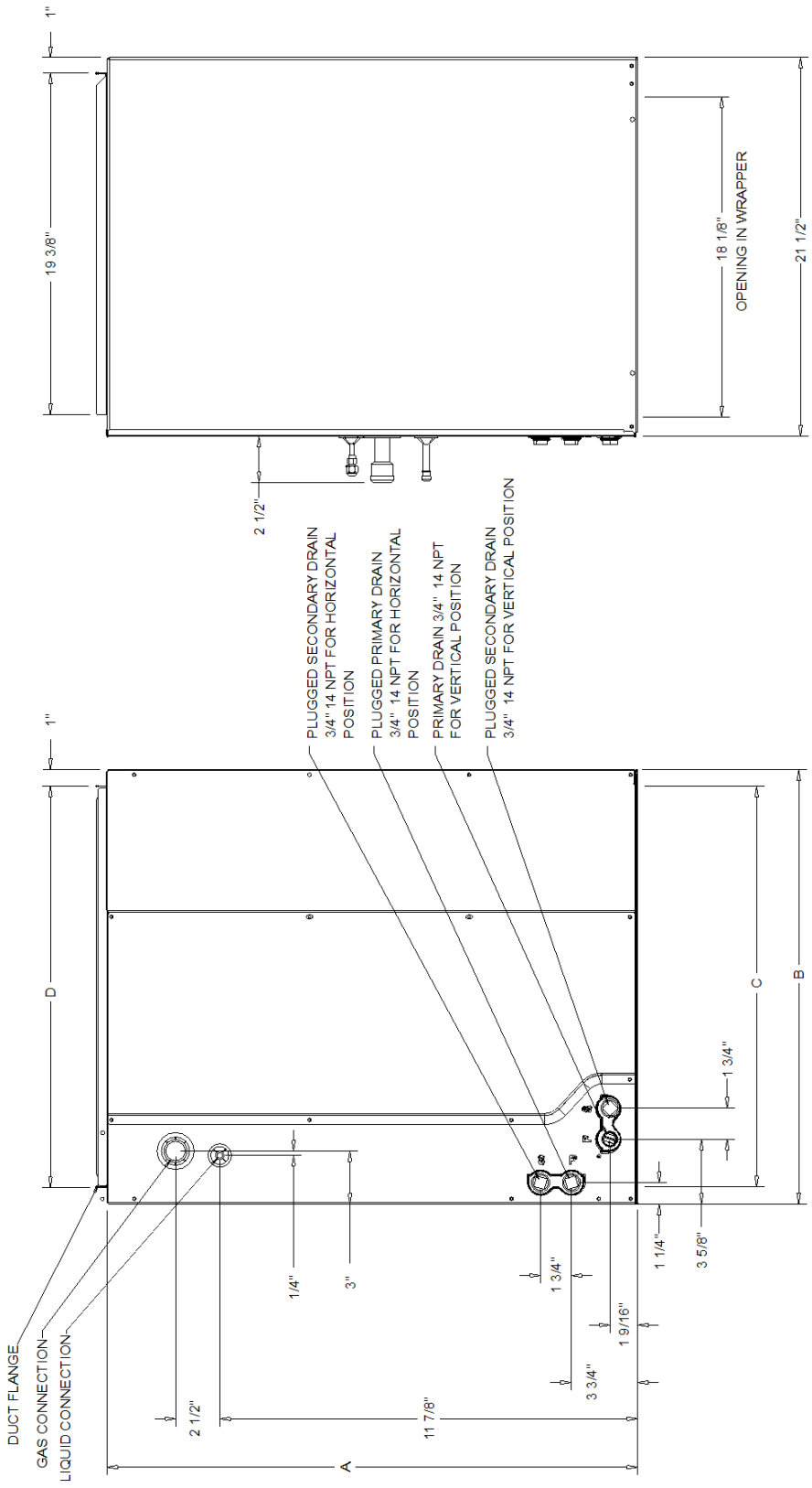
S - SERIES D - CABINET FURNACE - UPFLOW FURNACE

UNIT DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): CF/CU-1

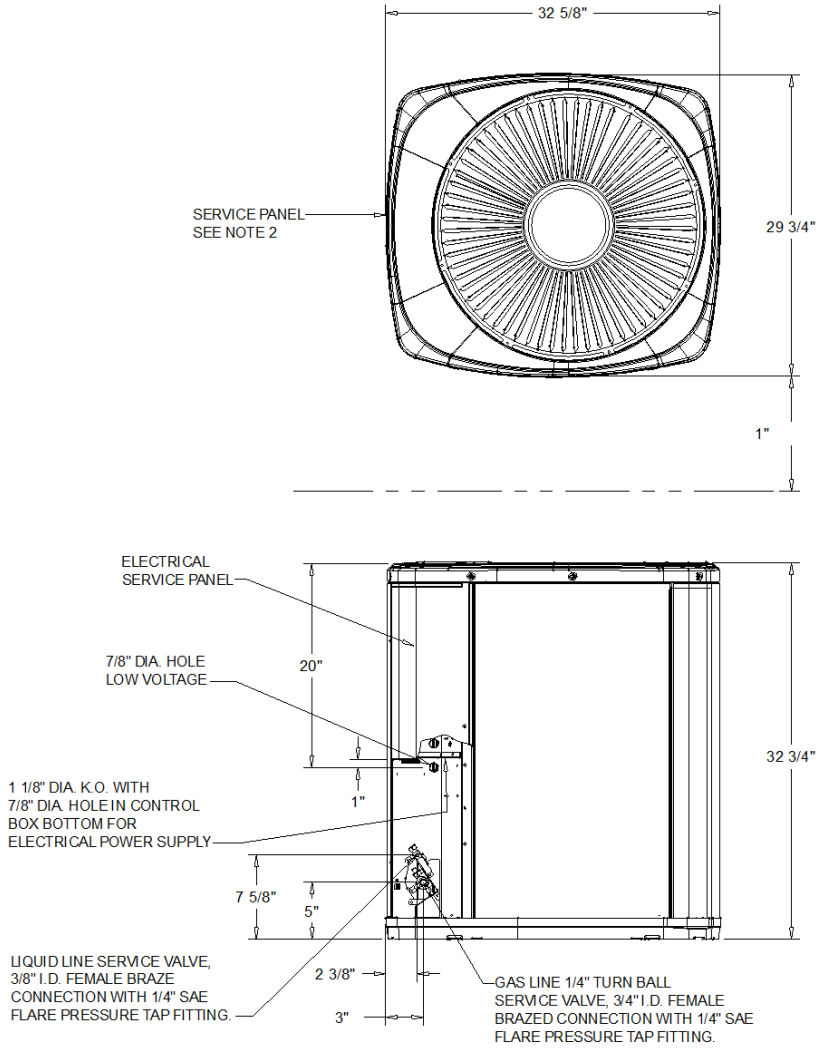
4TXCD010

DIMENSION (A):	30 11/16"
DIMENSION (B):	24 1/2"
DIMENSION (C):	23 5/8"
DIMENSION (D):	22 3/4"
MATCH FURNACE WIDTH:	24 1/2"
GAS:	7/8" BRAZE
LIQUID:	3/8" BRAZE
WEIGHT:	73.0 lb



Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C2 Qty: 1 Tag(s): CF/CU-2

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.



SPLIT SYSTEM COOLING - 4TTR4036

OUTLINE DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C2 Qty: 1 Tag(s): CF/CU-2

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TTR4036	Minimum Circuit Ampacity:	18.0	Number:	1
Voltage:	208	Maximum Circuit Breaker:	30.0	Phase:	1
Unit Hertz:	230	Minimum Protection Rating:	30.0	Rated Load Amps:	14.1
Unit Phase:	60			Locked Rotor Amps:	87.4
	1				

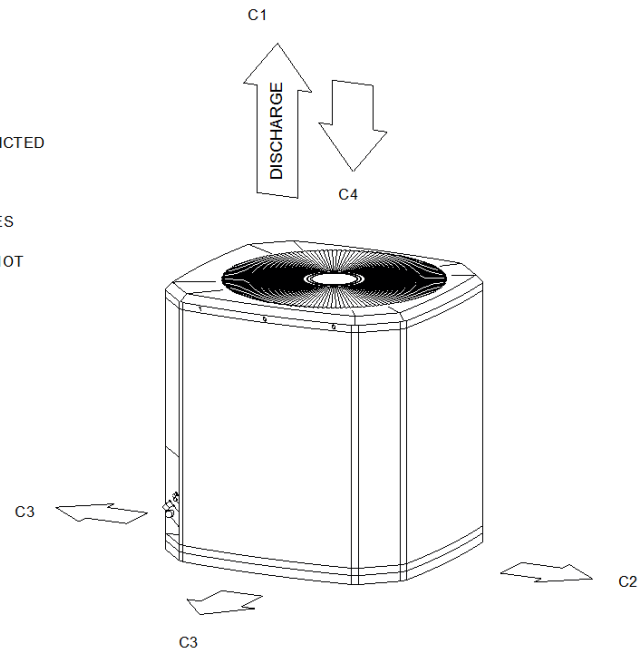
OUTDOOR MOTOR	
Number:	1
Horsepower:	0.125
Motor Speed (RPM):	-
Phase:	1
Full Load Amps:	0.77
Locked Rotor Amps:	-

REFRIGERANT	
Type:	R-410
Charge:	5.7 lb
Line Size O.D. Gas:	3/4"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line. For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

WEIGHT	
NET	156.0 lb
SHIPPING	183.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT



WEIGHT AND CLEARANCE

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C2 Qty: 1 Tag(s): CF/CU-2

ELECTRICAL / GENERAL DATA

Furnace

GENERAL - POWER CONN

Model:	S9V2B080U4PSB
Voltage:	120/1/60
Ampacity (Amps):	10.8
Max Over. Pro. (Amps):	15.0

COMBUSTION FAN

Type:	Centrifugal
Motor HP:	-
Motor Speed RPM:	3300/2600
Phase:	60
Full Load Amps:	0.66

BLOWER DRIVE

Drive:	Direct
No. Used:	1
Motor HP:	0.75
Speed RPM:	Variable
Phase:	1

ORIFICES

Nat. Gas Qty - Drill Size:	4 - 45
L.P. Gas Qty. - Drill Size:	4 - 56
Gas Valve:	Redundant - Two Stage

RATINGS (b)

1 Stage input BTUH:	52,000
1 Stage output BTUH:	50,440
2 Stage input BTUH:	80,000
2 Stage output BTUH (c,d) :	77,600
1st Stage Temp. Rise (Min.-Max.) :	30 - 60
2nd Stage Temp. Rise (Min.-Max.):	35 - 65
AFUE (%) (c,d):	96.0

FILTERS

Type:	High Velocity
Furnished:	No
Recommended	(1) 16"x25"x1"

BURNERS

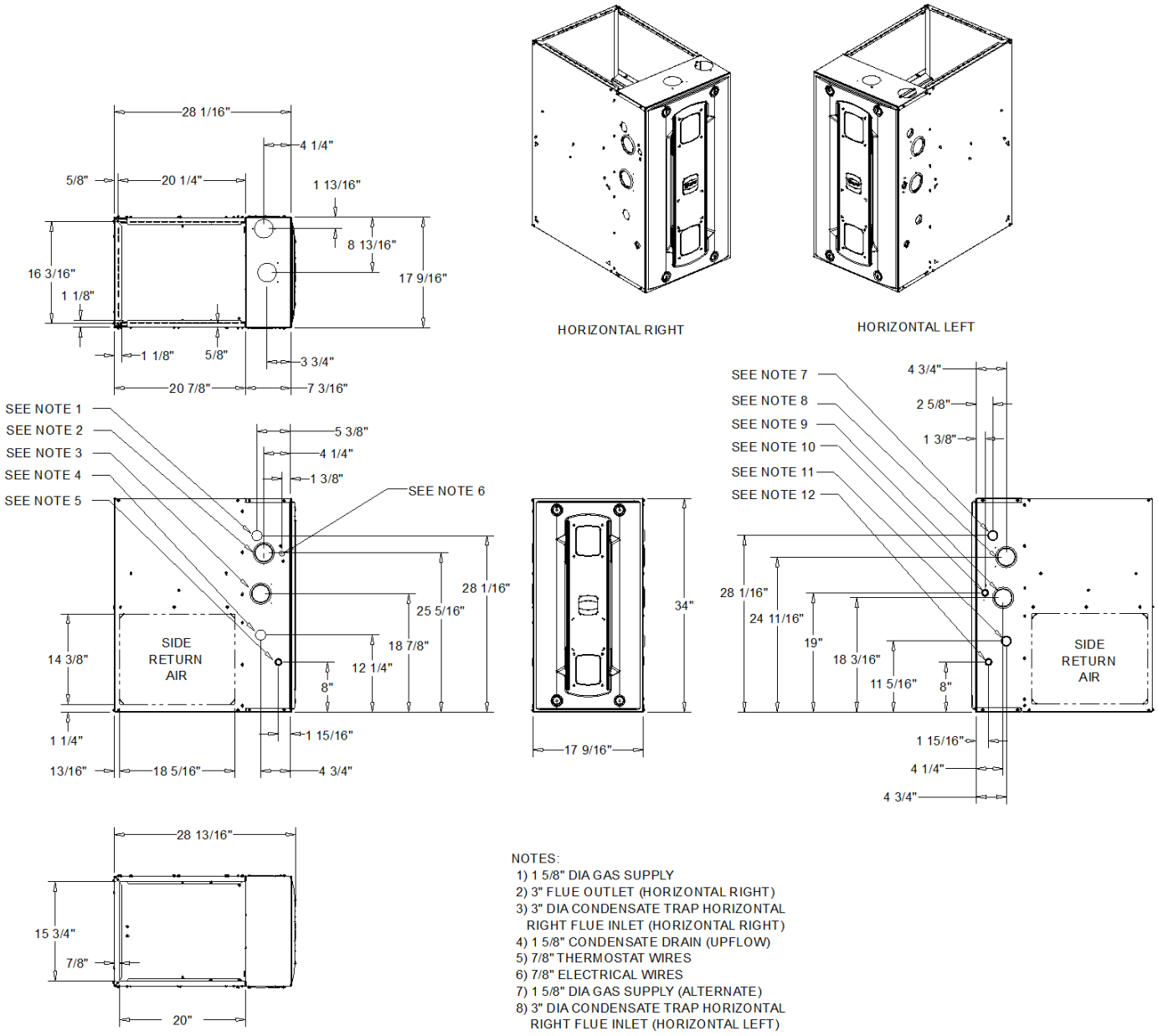
Type:	Multiport Inshot
Number:	4

WEIGHT / DIMENSIONS

Shipping:	135.0 lb
Net:	127.0 lb
Dimension (Crated):	35 1/2" x 19 1/2" x 30 7/8"

Notes:
(a) Meets Energy Star
(b) For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4 % per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4 % per 1,000 feet for elevations above 4,500 feet above sea level.
(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 latest edition.
(d) Based on U.S. government standard tests.
(e) Refer to the Vent Length Table in the Installer's Guide.
(f) All S9V2 furnace models have a vent outlet diameter that equals 2 in.
(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C2 Qty: 1 Tag(s): CF/CU-2



NOTES:
1) 1 5/8" DIA GAS SUPPLY
2) 3" FLUE OUTLET (HORIZONTAL RIGHT)
3) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL RIGHT)
4) 1 5/8" CONDENSATE DRAIN (UPFLOW)
5) 7/8" THERMOSTAT WIRES
6) 7/8" ELECTRICAL WIRES
7) 1 5/8" DIA GAS SUPPLY (ALTERNATE)
8) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL LEFT)
9) 3" FLUE OUTLET (HORIZONTAL LEFT)
10) 7/8" ELECTRICAL WIRES (ALTERNATE)
11) 1 5/8" CONDENSATE DRAIN (ALTERNATE)
12) 7/8" THERMOSTAT WIRES (ALTERNATE)
13) VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

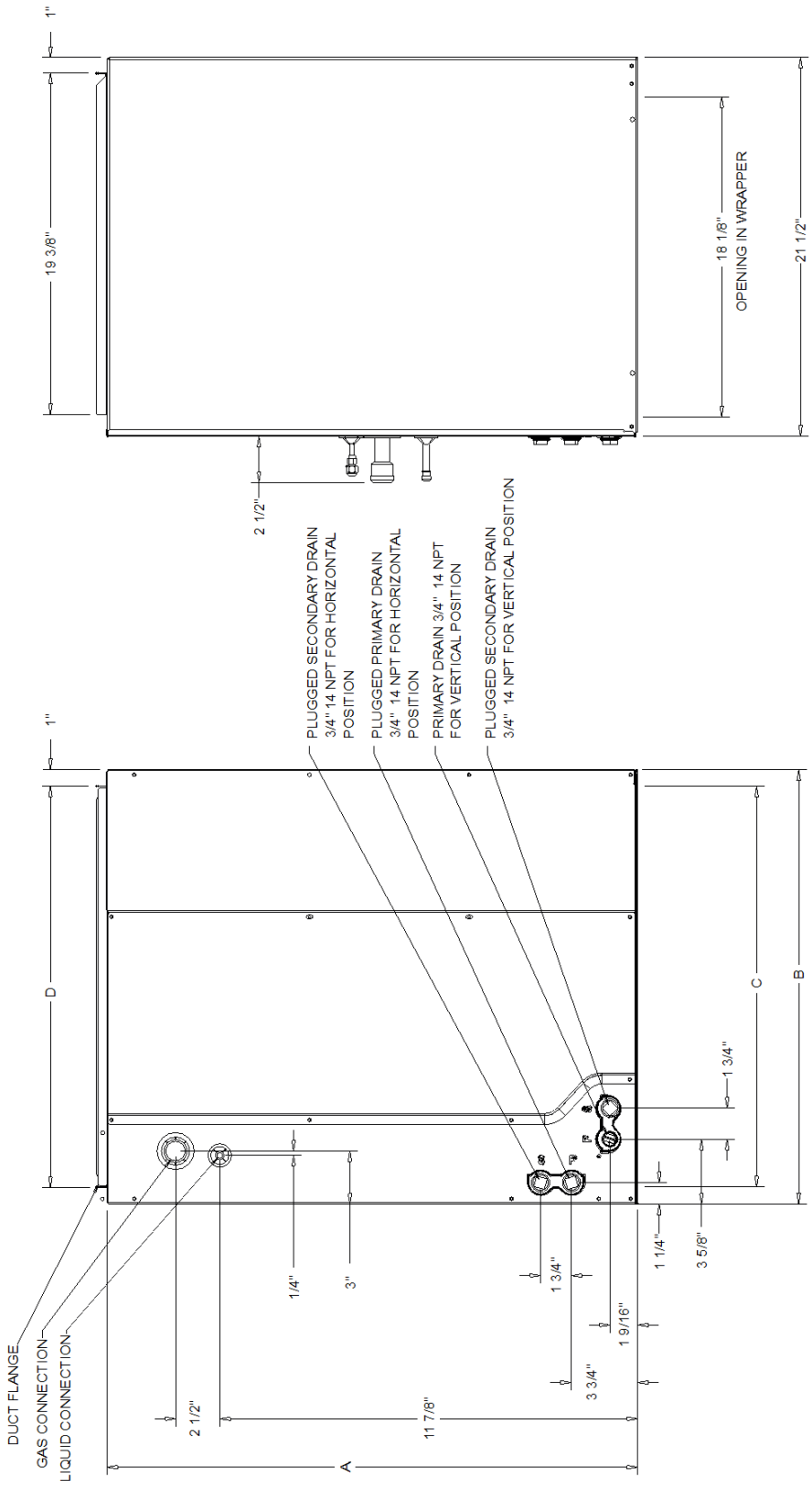
S - SERIES B - CABINET FURNACE - UPFLOW FURNACE

UNIT DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C2 Qty: 1 Tag(s): CF/CU-2

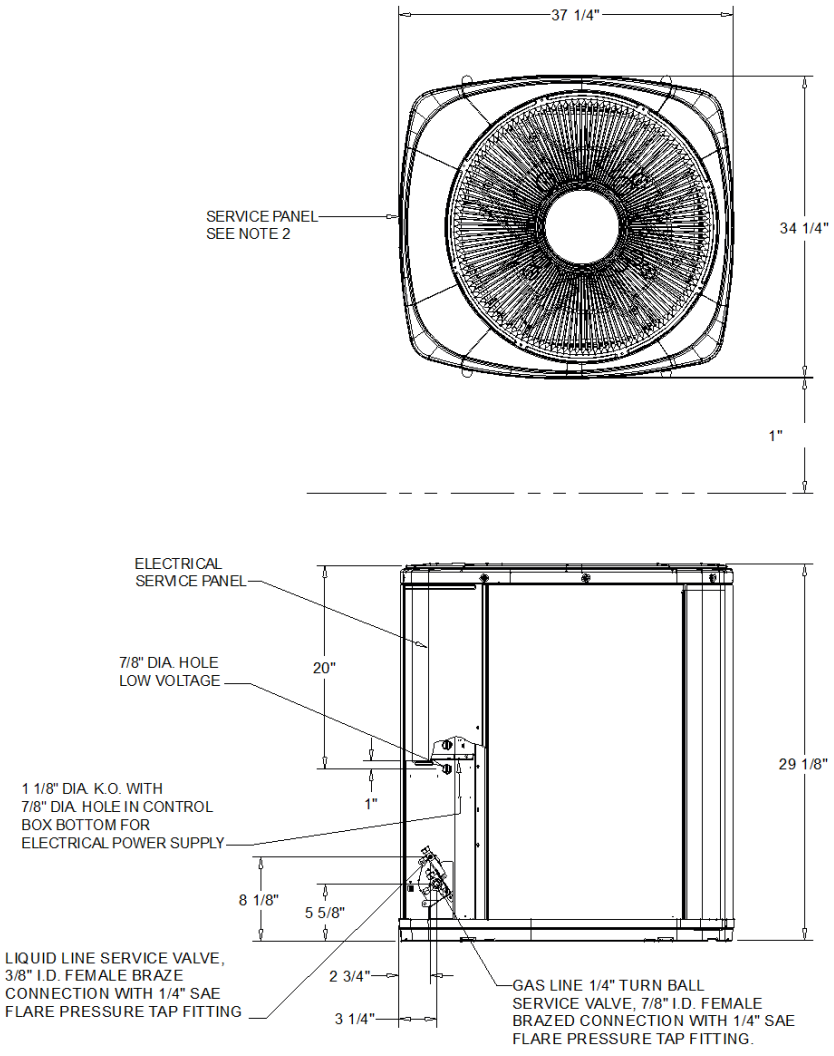
4TXCC006

DIMENSION (A):	26 7/8"
DIMENSION (B):	17 1/2"
DIMENSION (C):	16 5/8"
DIMENSION (D):	15 3/4"
MATCH FURNACE WIDTH:	17 1/2"
GAS:	7/8" BRAZE
LIQUID:	3/8" BRAZE
WEIGHT:	52.0 lb



Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C3 Qty: 3 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.



SPLIT SYSTEM COOLING - 4TTR4048

OUTLINE DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C3 Qty: 3 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TTR4048	Minimum Circuit Ampacity:	24.0	Number:	1
Voltage:	208	Maximum Circuit Breaker:	40.0	Phase:	1
Unit Hertz:	230	Minimum Protection Rating:	40.0	Rated Load Amps:	18.5
Unit Phase:	60			Locked Rotor Amps:	124.0
	1				

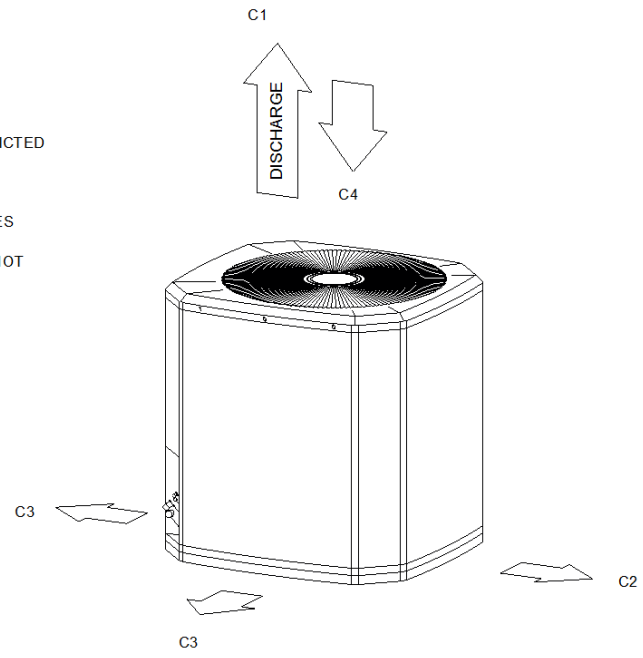
OUTDOOR MOTOR	
Number:	1
Horsepower:	0.20
Motor Speed (RPM):	-
Phase:	1
Full Load Amps:	1.05
Locked Rotor Amps:	-

REFRIGERANT	
Type:	R-410
Charge:	5.2 lb
Line Size O.D. Gas:	7/8"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line. For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

WEIGHT	
NET	189.0 lb
SHIPPING	212.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT



WEIGHT AND CLEARANCE

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C3 Qty: 3 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6

ELECTRICAL / GENERAL DATA

Furnace

GENERAL - POWER CONN

Model:	S9V2C100U4VSA
Voltage:	120/1/60
Ampacity (Amps):	10.8
Max Over. Pro. (Amps):	15.0

COMBUSTION FAN

Type:	Centrifugal
Motor HP:	1/50
Motor Speed RPM:	5000
Phase:	60
Full Load Amps:	1.0

BLOWER DRIVE

Drive:	Direct
No. Used:	1
Motor HP:	0.75
Speed RPM:	Variable
Phase:	1

ORIFICES

Nat. Gas Qty - Drill Size:	5- 45
L.P. Gas Qty. - Drill Size:	5- 56
Gas Valve:	Redundant - Two Stage

RATINGS (b)

1 Stage input BTUH:	65,000
1 Stage output BTUH:	64,036
2 Stage input BTUH:	100,000
2 Stage output BTUH (c,d) :	96,362
1st Stage Temp. Rise (Min.-Max.) :	25 - 55
2nd Stage Temp. Rise (Min.-Max.):	35 - 65
AFUE (%) (c,d):	97.0

FILTERS

Type:	
Furnished:	
Recommended	

BURNERS

Type:	Multiport Inshot
Number:	5

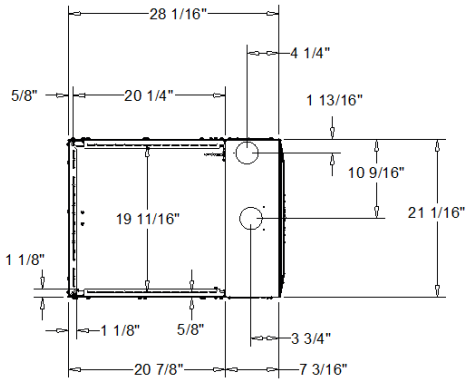
WEIGHT / DIMENSIONS

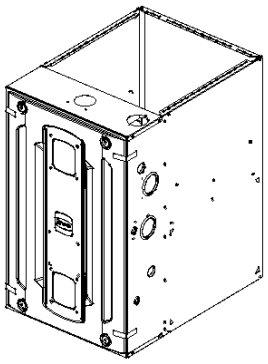
Shipping:	154.0 lb
Net:	144.0 lb
Dimension (Crated):	35 1/2" x 23" x 30 7/8"

Notes:
(a) Meets Energy Star
(b) For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4 % per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4 % per 1,000 feet for elevations above 4,500 feet above sea level.
(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 latest edition.
(d) Based on U.S. government standard tests.
(e) Refer to the Vent Length Table in the Installer's Guide.
(f) All S9V2 furnace models have a vent outlet diameter that equals 2 in.
(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

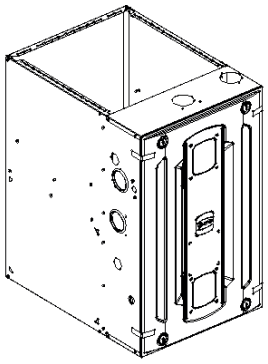
COORDINATE ELECTRICAL REQUIREMENTS
WITH E.C.

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C3, C4 Qty: 4 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6, CF/CU-4





HORIZONTAL LEFT



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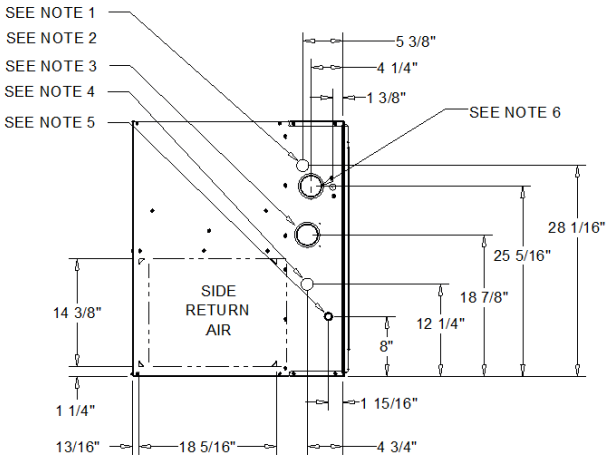
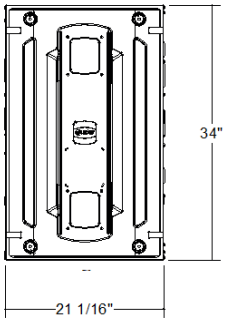
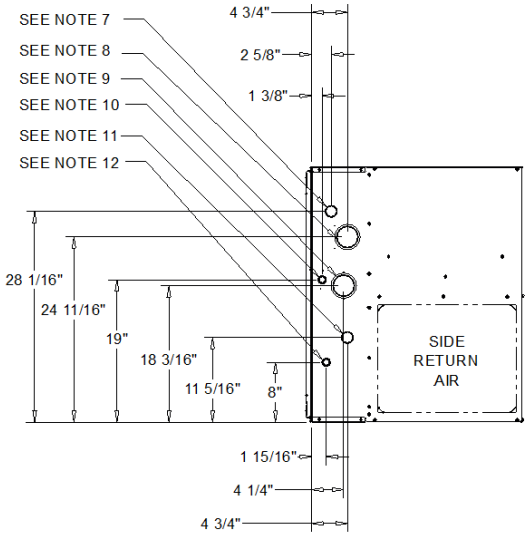
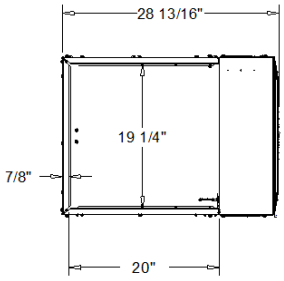








NOTES:
1) 1 5/8" DIA GAS SUPPLY
2) 3" FLUE OUTLET (HORIZONTAL RIGHT)
3) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL RIGHT)
4) 1 5/8" CONDENSATE DRAIN (UPFLOW)
5) 7/8" THERMOSTAT WIRES
6) 7/8" ELECTRICAL WIRES
7) 1 5/8" DIA GAS SUPPLY (ALTERNATE)
8) 3" DIA CONDENSATE TRAP HORIZONTAL RIGHT FLUE INLET (HORIZONTAL LEFT)
9) 3" FLUE OUTLET (HORIZONTAL LEFT)
10) 3/4" ELECTRICAL WIRES (ALTERNATE)
11) 1 5/8" CONDENSATE DRAIN (ALTERNATE)
12) 7/8" THERMOSTAT WIRES (ALTERNATE)
13) VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

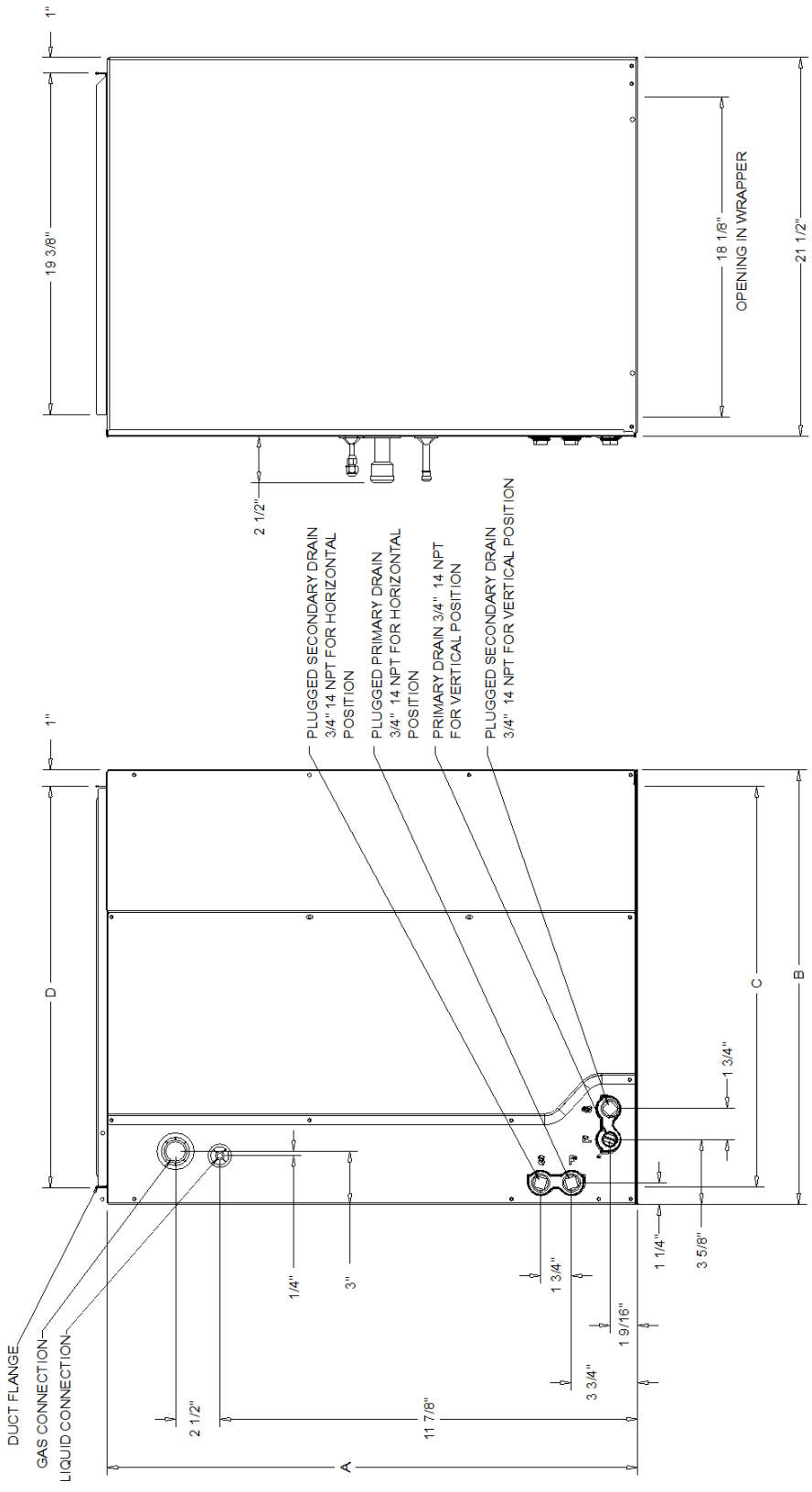
S - SERIES C - CABINET FURNACE - UPFLOW FURNACE

UNIT DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C3, C4 Qty: 4 Tag(s): CF/CU-3, CF/CU-5, CF/CU-6, CF/CU-4

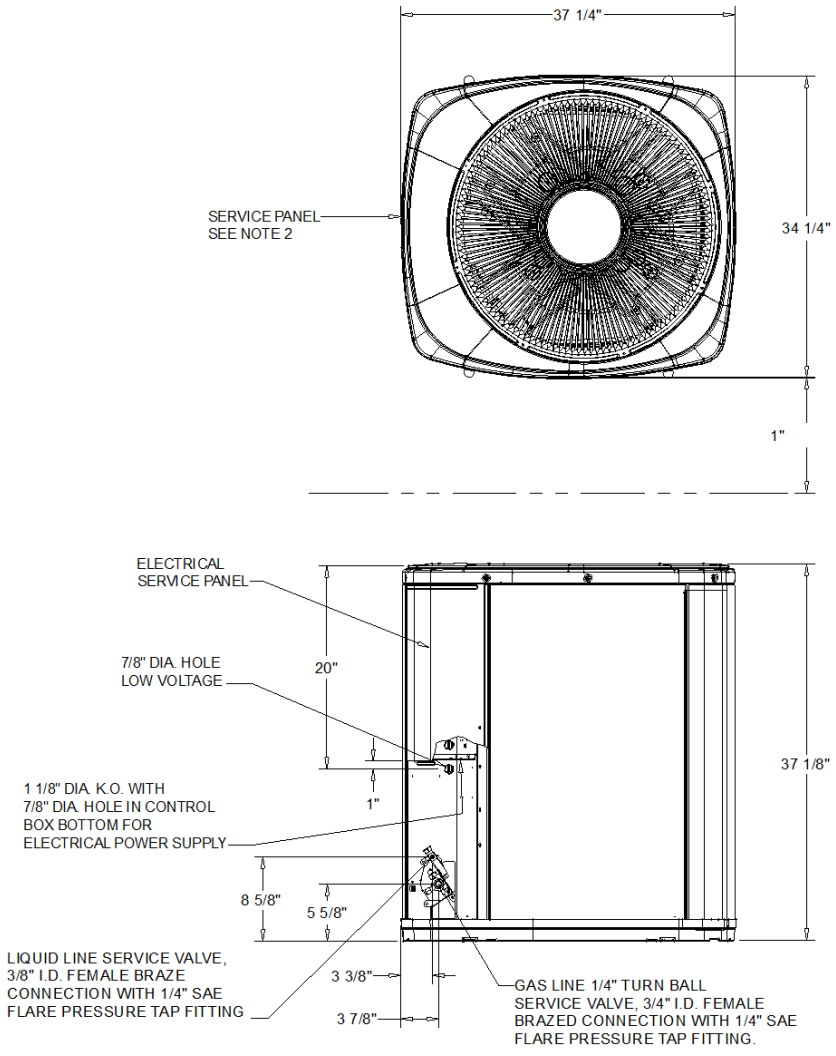
4TXCD009

DIMENSION (A):	30 11/16"
DIMENSION (B):	21"
DIMENSION (C):	20 1/8"
DIMENSION (D):	19 1/4"
MATCH FURNACE WIDTH:	24 1/2"
GAS:	3/4" BRAZE
LIQUID:	3/8" BRAZE
WEIGHT:	168.0 lb



Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C4 Qty: 1 Tag(s): CF/CU-4

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.



SPLIT SYSTEM COOLING - 4TTR4042

OUTLINE DRAWING

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C4 Qty: 1 Tag(s): CF/CU-4

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TTR4042	Minimum Circuit Ampacity:	20.0	Number:	1
Voltage:	208	Maximum Circuit Breaker:	35.0	Phase:	1
Unit Hertz:	230	Minimum Protection Rating:	35.0	Rated Load Amps:	15.4
Unit Phase:	60			Locked Rotor Amps:	92.1
	1				

OUTDOOR MOTOR	
Number:	1
Horsepower:	0.20
Motor Speed (RPM):	-
Phase:	1
Full Load Amps:	1.05
Locked Rotor Amps:	-

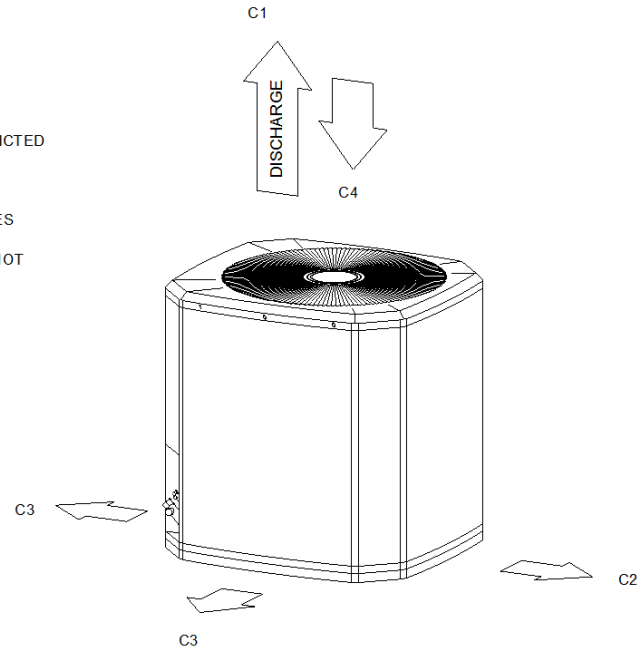
REFRIGERANT	
Type:	R-410
Charge:	6.4 lb
Line Size O.D. Gas:	7/8"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line. For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

COORDINATE ELECTRICAL REQUIREMENTS WITH E.C.

WEIGHT	
NET	212.0 lb
SHIPPING	246.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT



WEIGHT AND CLEARANCE

Dimensional Drawings - Split System Air Conditioning Units (Small)
Item: C4 Qty: 1 Tag(s): CF/CU-4

ELECTRICAL / GENERAL DATA

Furnace

GENERAL - POWER CONN		COMBUSTION FAN		BLOWER DRIVE	
Model:	S9V2C100U5PSB	Type:	Centrifugal	Drive:	Direct
Voltage:	120/1/60	Motor HP:	-	No. Used:	1
Ampacity (Amps):	13.9	Motor Speed RPM:	3300/2600	Motor HP:	1.00
Max Over. Pro. (Amps):	15.0	Phase:	60	Speed RPM:	Variable
		Full Load Amps:	0.66	Phase:	1
ORIFICES		**RATINGS (b)**		**FILTERS**	
Nat. Gas Qty - Drill Size:	5- 45	1 Stage input BTUH:	65,000	Type:	High Velocity
L.P. Gas Qty. - Drill Size:	5- 56	1 Stage output BTUH:	63,050	Furnished:	No
Gas Valve:	Redundant - Two Stage	2 Stage input BTUH:	100,000	Recommended	(1) 20"x25"x1"
		2 Stage output BTUH (c,d) :	97,000		
BURNERS		1st Stage Temp. Rise (Min.-Max.) :	25 - 55	**WEIGHT / DIMENSIONS**	
Type:	Multiport Inshot	2nd Stage Temp. Rise (Min.-Max.):	30 - 60	Shipping:	155.0 lb
Number:	5	AFUE (%) (c,d):	96.0	Net:	145.0 lb
				Dimension (Crated):	35 1/2" x 23" x 30 7/8"

Notes:
(a) Meets Energy Star
(b) For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4 % per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4 % per 1,000 feet for elevations above 4,500 feet above sea level.
(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 latest edition.
(d) Based on U.S. government standard tests.
(e) Refer to the Vent Length Table in the Installer's Guide.
(f) All S9V2 furnace models have a vent outlet diameter that equals 2 in.
(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Tag Data - Duct Furnaces (Qty: 3)

Item	Tag(s)	Qty
D1	DH-1, 2, & 3	3

Product Data - Duct Furnaces
Item: D1 Qty: 3 Tag(s): DH-1, 2, & 3

STERLING HVAC PRODUCTS

		Mark / Tag = DH-1 thru DH-3
Approx. Shipping Weight = 277 lbs. each		
Model Number:		
QVSD200A1N2AH100K5		
QVSD	Unit Type (UT)	QVSD Separated Combustion Duct Furnace
200	Capacity (CA)	200-200,000 BTU/HR
A	Furnace Type (FT)	A - Right Side Access
1	Heat Exchanger Material (FM)	1-Aluminized Steel
N	Gas Type (GT)	N-Natural Gas
2	Ignition Control (IC)	2-Spark Ignition
A	Altitude (AL)	A-0 - 1,999 ft.
H	Gas Control (GC)	H-Electronic Modulation w/ Room Sensing
1	Supply Voltage (SV)	1-115/1/60
0	Motor Type (MT)	0-None / Not Applicable
0	Motor Size (MS)	0-None / Not Applicable
K5	Factory Accessory	Air Flow Proving Switch
M4	Field Accessory	Vertical Concentric Flue Kit

"QVSD" SEPARATED COMBUSTION INDOOR DUCT FURNACE

Sterling Separated Combustion Indoor Duct Furnace is designed for installation in mildly hostile environments. The Separated Combustion Duct Furnace is available in sizes ranging from 100 to 400 MBTU (29.3 to 117.1 kW) inputs and offers a variety of optional equipment.

APPLICATIONS

The QVSD Separated Combustion Duct Furnace is designed to be installed in dusty, dirty or mildly corrosive environments, or where high humidity or slightly negative pressures exist. Ideal applications include HVAC equipment rooms, manufacturing facilities, automotive garages and greenhouses.

DESCRIPTIONS

The QVSD Combustion Duct Furnace "separates" the combustion process from the environment where the unit is installed. A power venting system draws controlled amount of combustion air from outside of the building. The same system exhausts the flue gases to the outside. The burners, pilot and flue system are totally enclosed within the unit, thus the entire combustion process is literally unaffected by the atmosphere in the space where the Duct Furnace is located.

ADDITIONAL FEATURES

- ETL certified as 80% efficient.
- Unit's interior components fully accessible via bottom access door.
- Factory equipped with an electronic spark ignition system.
- Rugged 20 gauge heat exchanger and jacketry.
- Available in both right or left hand control access configurations.
- 2 styles of ETL approved venting systems: two pipe or concentric. Two pipe system allows for two (4", 5" or 6") individual building terminations. The concentric adapter kit utilizes one 8" termination in which both the flue gas and combustion air passes.

SPECIFICATION GUIDE - MODEL QVSD

Sterling Model QVSD Separated Combustion Duct Furnaces are completely factory assembled, piped, wired and test fired. All models are ETL certified as having 80% thermal efficiency. This certification includes operation on either natural of LP (propane) gas. All models conform to the latest ANSI Standards for safe operation.

Casings are die-formed 20-gauge bonderized steel, finished in baked enamel. Heat exchangers consist of 20-gauge tubes and 18-gauge headers. Heat exchangers are available in aluminized steel, 409 stainless steel and type 321 stainless steel. Burners are individually removable, die-formed and feature stainless steel port protectors. Burners are available in aluminized or type 409 stainless steel.

All models are equipped with electronic spark ignition (100% safety shutoff on LP models), 115 volt power, vent system pressure switch, high limit switch and 24 volt control transformer.

All models are factory assembled with a horizontal flue discharge position. A vertical flue position may be altered in the field.

All models must be vented utilizing our certified standard two-pipe method or optional concentric adaptor kit.

CAUTIONS

- Combustion air and vent systems must be installed in accordance with National Fuel Gas Code or Installation Code for Natural Gas Burning Appliances and Equipment (Canada).
- Local and State authorities should also be consulted to determine their requirements.
- Units should not be installed where negative pressures are significant.
- Units should not be installed where vapors containing chlorine or fluorine may be present. Care should be taken not to draw combustion air from or near a contaminated environment.
- Units should not be installed in areas classified as "hazardous".

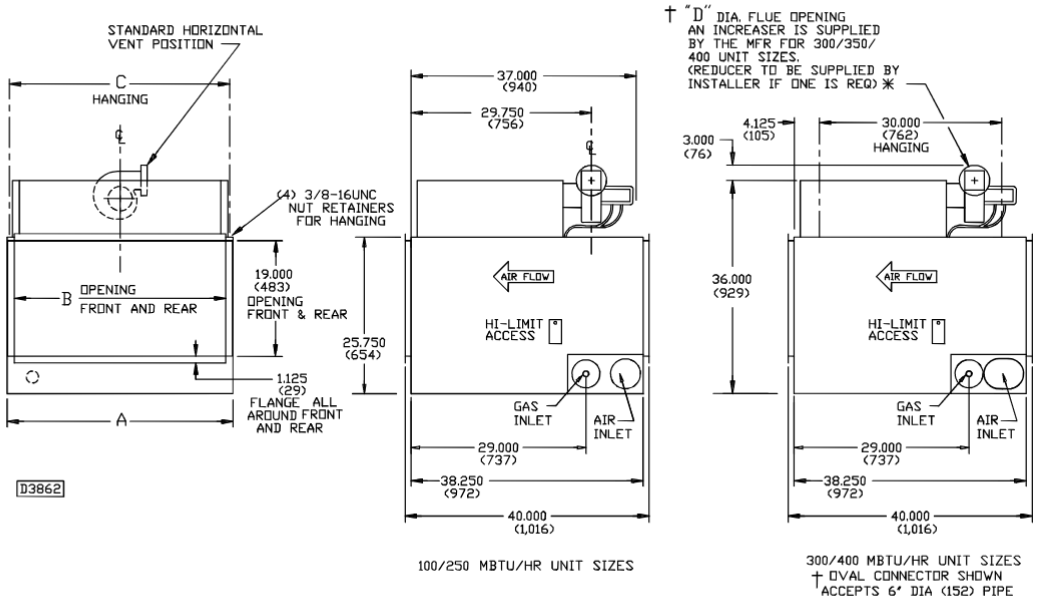
DETAILS AND DIMENSIONS

Separated Combustion Indoor Duct Furnace (QVSD)

UNIT SIZE	A in. (mm)	B in. (mm)	C in. (mm)	D (Dia)*† in. (mm)	GAS INLET in. NAT.	GAS INLET in. LP	WEIGHT lb. (kg)
100	17-7/8 (454)	15-1/2 (394)	17-1/8 (435)	4 (102)	1/2	1/2	161 (73)
125	20-5/8 (524)	18-1/4 (464)	19-7/8 (505)	4 (102)	1/2	1/2	180 (82)
150	20-5/8 (524)	18-1/4 (464)	19-7/8 (505)	4 (102)	1/2	1/2	188 (85)
175	23-3/8 (594)	21 (533)	22-5/8 (575)	4 (102)	1/2	1/2	207 (93)
200	26-1/8 (664)	23-3/4 (603)	25-3/8 (645)	5 (127)	1/2	1/2	227 (103)
225	28-7/8 (733)	26-1/2 (673)	28-1/8 (714)	5 (127)	3/4	1/2 OR 3/4	246 (116)
250	31-5/8 (803)	29-1/4 (743)	30-7/8 (784)	5 (127)	3/4	1/2 OR 3/4	266 (121)
300	37-1/8 (943)	34-3/4 (883)	36-3/8 (924)	6 (152)	3/4	1/2 OR 3/4	305 (138)
350	42-5/8 (1083)	40-1/4 (1022)	41-7/8 (1064)	6 (152)	3/4	1/2 OR 3/4	344 (156)
400	48-1/8 (1222)	45-3/4 (1162)	47-3/8 (1203)	6 (152)	3/4	1/2 OR 3/4	383 (174)

†**NOTE:** "D" diameter equals the air inlet opening and the flue discharge opening.

QVSD Separated Combustion Duct Furnace — Bottom Service Access Only



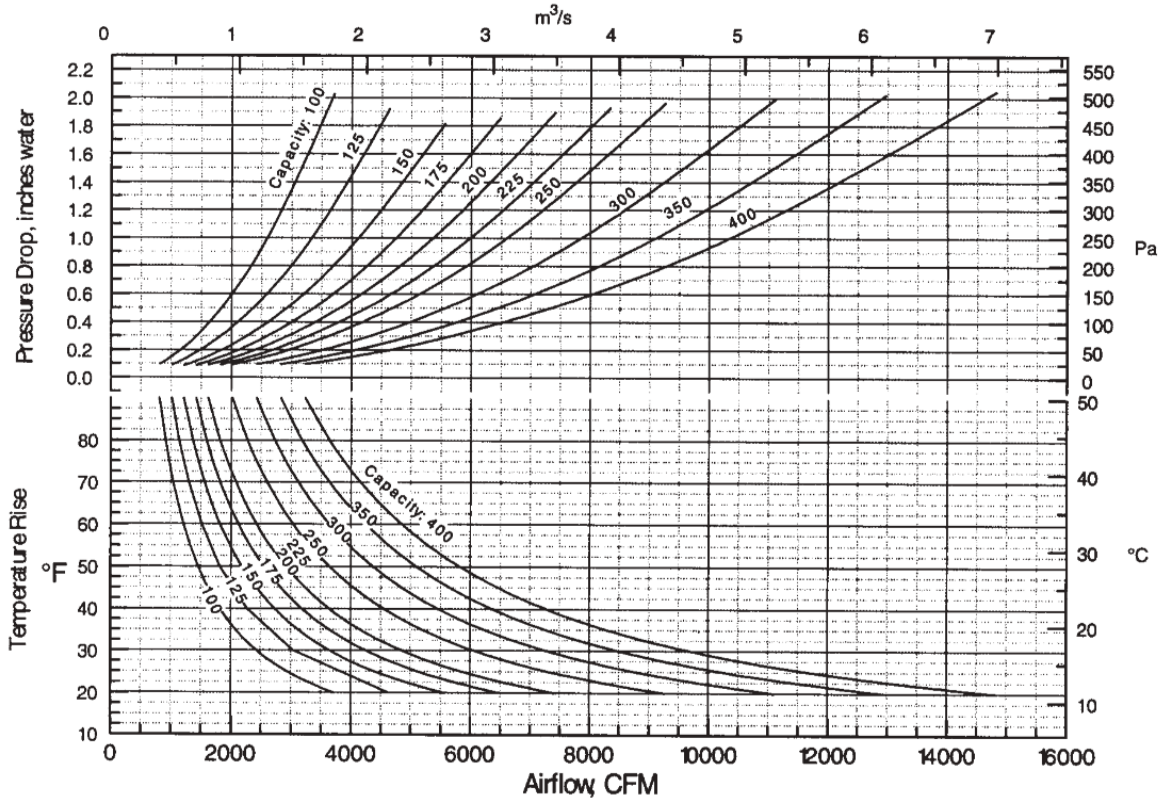
DIMENSIONS XXX STANDARD UNITS
DIMENSIONS IN PARENTHESIS (XXX) MILLIMETERS

SEPARATED COMBUSTION DUCT FURNACE – PERFORMANCE DATA

UNIT SIZE	INPUT (MAX) MBH (kW)	INPUT (MIN) MBH (kW)	OUTPUT MBH (kW)	MIN. CFM (cu. m/s)	Temp. Rise Deg. F. (Deg. C.)	P.D. in. of W.C. (kPa)	MAX. CFM (cu. m/s)	Temp. Rise Deg. F. (Deg. C.)	P.D. in. of W.C. (Pascals)
100	100 (29.3)	50 (14.6)	80 (23.4)	822 (0.388)	90 (50)	0.10 (0.20)	3700 (1.746)	20 (11)	2.03 (0.51)
125	125 (36.6)	62.5 (18.3)	100 (29.3)	1028 (0.485)	90 (50)	0.10 (0.20)	4625 (2.183)	20 (11)	1.92 (0.48)
150	150 (43.9)	75 (22.0)	120 (35.1)	1233 (0.582)	90 (50)	0.10 (0.20)	5550 (2.620)	20 (11)	1.81 (0.45)
175	175 (51.2)	87.5 (25.6)	140 (41.0)	1439 (0.679)	90 (50)	0.10 (0.20)	6475 (3.056)	20 (11)	1.86 (0.46)
200	200 (58.6)	100 (29.3)	160 (46.9)	1645 (0.776)	90 (50)	0.10 (0.20)	7401 (3.493)	20 (11)	1.90 (0.47)
225	225 (65.9)	112.5 (32.9)	180 (52.7)	1850 (0.873)	90 (50)	0.10 (0.20)	8326 (3.930)	20 (11)	1.93 (0.48)
250	250 (73.2)	125 (36.6)	200 (58.6)	2056 (0.097)	90 (50)	0.10 (0.20)	9251 (4.366)	20 (11)	1.96 (0.49)
300	300 (87.8)	150 (43.9)	240 (70.3)	2467 (1.164)	90 (50)	0.10 (0.20)	11,101 (5.240)	20 (11)	2.00 (0.50)
350	350 (102.5)	175 (51.2)	280 (82.0)	2878 (1.358)	90 (50)	0.10 (0.20)	12,951 (6.113)	20 (11)	2.02 (0.50)
400	400 (117.1)	200 (58.6)	320 (93.7)	3289 (1.552)	90 (50)	0.10 (0.20)	14,801 (6.986)	20 (11)	2.05 (0.51)

NOTE: Ratings shown are for unit installations at elevations between 0 and 2000 ft. (610m). For unit installations in USA above 2000 ft. (610m), the unit input must be derated 4% for each 1000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the National Fuel Gas Code, the latest edition of ANSI Standard Z223.1 (N.F.P.A. No. 54). For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal altitude rating, and be so marked in accordance with the ETL certification.

TEMPERATURE RISE AND PRESSURE DROP GRAPH



Field Installed Options - Part/Order Number Summary
This is a report to help you locate field installed options that arrive at the jobsite. This report provides part or order numbers for each field installed option, and references it to a specific product tag. It is NOT intended as a bill of material for the job.

Product Family - Odyssey Split System Indoor Unit

Item	Tag(s)	Qty	Description	Model Number
A1	AH-1	1	6 - 25 Ton Unitary Split Systems Indoor	TWE12041BAA**B10000000000000000000000
A2	AH-2, AH-3	2	6 - 25 Ton Unitary Split Systems Indoor	TWE09041BAA**B10000000000000000000000

Field Installed Option Description	Part/Ordering Number
Rubber-in-sheer floor mount	BAYISLT004A

Product Family - Odyssey Split System Outdoor Unit

Item	Tag(s)	Qty	Description	Model Number
B1	ACC-1	1	6 - 25 Ton Unitary Split Systems Outdoor	TTA12043DAA**BS010000000000000000000000
B2	ACC-2, ACC-3	2	6 - 25 Ton Unitary Split Systems Outdoor	TTA09043DAA**BS010000000000000000000000

Field Installed Option Description	Part/Ordering Number
Touchscreen Programmable dehum 4H/C2	TCONT303AS42DA
Rubber-in-shear isolators	BAYISLT005A
Ext. mount Small cabinets (Symbio)	BAYLOAMS10B
Service Valve accessory kit	BAYVALV003A

Product Family - Split System Air Conditioning Units (Small)

Item	Tag(s)	Qty	Description	Model Number
C1	CF/CU-1	1	5 Ton Unitary Split Systems (SSC)	4TTR4060N10000*00000*0000000000*00**********S9X1D120U5PSB4TXCD010DS3HC
C2	CF/CU-2	1	3 Ton Unitary Split System (SSC)	4TTR4036N10000*00000*0000000000*00**********S9V2B080U4PSB4TXCB006DS3HC
C3	CF/CU-3, CF/CU-5, CF/CU-6	3	4 Ton Unitary Split Systems (SSC)	4TTR4048N10000*00000*0000000000*00**********S9V2C100U4VSA4TXCC009DS3HC
C4	CF/CU-4	1	3.5 Ton Unitary Split System (SSC)	4TTR4042N10000*00000*0000000000*00**********S9V2C100U5PSB4TXCC009DS3HC

Field Installed Option Description	Part/Ordering Number
Low Ambient Control	BAYLOAM107A
Touchscreen Programmable 4H/2C	TCONT302AS42DA
Evaporator defrost control	AY28X079
Concentric vent kit	BAYAIR30AVENTA