Submittal

Prepared For:
Quality Plumbing

Date: *September 1, 2021*

Job Name:
Gladstone Fire Station 2

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

Product Summary

Qty	Product
1	Packaged Gas/Electric Rooftop Units
4	3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
1	Split System Air Conditioning Units (Small)

Notes: Please confirm Voltage

RTU Exclusions: Installation, Testing, Adjusting or Balancing, Labor or Extended Parts Warranties, Factory Startup, Power or Control Wiring, Anything Not Listed

Split System Exclusions: Installation, Testing, Adjusting or Balancing, Labor or Extended Parts Warranties, Factory Startup, Power or Control Wiring, Refrigerant or Piping, Condenser Pads, Disconnects

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Lenexa, KS 66219

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

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 - Packaged Gas/Electric Rooftop Units (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	12 1/2 -25 Ton Packaged Unitary Gas/Elec	YHD150G3RHD--D6E1A10600A1000001000000000

Product Data - Packaged Gas/Electric Rooftop Units

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

Gas/Electric
High efficiency
Downflow
12.5 Ton
208-230/60/3
Reliatel
Gas Heat - High
Economizer Dry Bulb 0-100% with barometric relief
Single zone VAV standard motor
Hinged panels/2" Pleated Filters MERV 13
Standard condenser coil with hail guard
Through the base electric
Unit mounted non-fused disconnect
BACnet communications interface
Return air smoke detector
Clogged filter switch
Human Interface
Digital display zone sensor (Fld)
High static drive (Fld)

Performance Data - Packaged Gas/Electric Rooftop Units

Tags	RTU-1
Design Airflow (cfm)	4185
Cooling Entering Dry Bulb (F)	77.40
Cooling Entering Wet Bulb (F)	64.80
Ent Air Rel Humidity (%)	50.91
Ambient Temp (F)	105.00
Cooling Leaving Unit DB (F)	56.77
Cooling Leaving Unit WB (F)	54.73
Gross Total Capacity (MBh)	134.19
Gross Sensible Capacity (MBh)	102.77
Gross Latent Capacity (MBh)	31.42
Net Total Capacity (MBh)	126.77
Net Sensible Capacity (MBh)	95.35
Net Sensible Heat Ratio (Number)	0.75
Heating EAT (F)	62.80
Heating LAT (F)	106.85
Heating Temp Rise (F)	44.05
Output Htg Capacity (MBh)	200.00
Output Htg Capacity w/Fan (MBh)	207.42
Design ESP (in H2O)	1.000
Component SP Add (in H2O)	0.267
Indoor Mtr. Operating Power (bhp)	2.36
Indoor RPM (rpm)	750
Indoor Motor Power (kW)	1.76
Outdoor Motor Power (kW)	0.85
Compressor Power (kW)	11.24
System Power (kW)	13.85
IPLV @ AHRI (IPLV)	15.0
MCA (A)	63.00
MOP (A)	90.00
Condenser Fan FLA (A)	2.20
Evaporator Fan FLA (A)	10.60
Evaporator Face Area (sq ft)	26.00
Evaporator Face Velocity (ft/min)	161
Evaporator Fin Spacing (Per Foot)	180
Evaporator Rows ( )	4
Min. Unit Operating Weight (lb)	2003.0
Max Unit Operating Weight (lb)	2655.0
Fan Motor Heat (MBh)	7.42
Evap Coil Leav Air Temp (DB) (F)	54.66
Evap Coil Leav Air Temp (WB) (F)	53.86
Dew Point Temp (F)	53.30
Rated capacity (AHRI) (MBh)	144.00
ASHRAE 90.1	Yes
IEER Rating ( )	15.00
EER @ AHRI Conditions (EER)	12.1
Total Static Pressure (in H2O)	1.267
Indoor Fan Type	FC Centrifugal
Indoor Fan Drive Type	Belt
Outdoor Fan Type	Propeller
Outdoor Fan Drive Type	Direct
Outdoor Fan Quantity ( )	2
Heating Type	Gas
Heating Stages	2

Mechanical Specifications - Packaged Gas/Electric Rooftop Units
Item: A1 Qty: 1 Tag(s): RTU-1

General - 60 Hz Downflow Unit
The units shall be dedicated downflow airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for all units. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation and control sequence, before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. 60 Hz units shall be UL listed and labeled, classified in accordance to UL 1995/C 22.2, 236-05 3rd Edition.

Packaged Rooftop units cooling, heating capacities, and efficiencies are AHRI certified within scope of AHRI Standard 340/360 (I-P) and ANSIZ21.47 and 10 CFR Part 431 pertaining to Commercial Warm
Air Furnaces (gas heating units).

Casing - Downflow
Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. In order to ensure a water and air tight seal, service panels shall have lifting handles and no more than three screws to remove. All exposed vertical panels and top covers in the indoor air section shall be insulated with a 1/2 inch, 1 pound density foil-faced, fire-resistant, permanent, odorless, glass fiber material. The base of the downflow unit shall be insulated with 1/2 inch, 1 pound density foil-faced, closed-cell material. The downflow unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 11/8 inch high supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting.

Unit Top
The top cover shall be one piece, or where seams exist, double hemmed and gasket sealed to prevent water leakage.

Filters
Two inch standard filters shall be factory supplied on all units

Compressors
All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of nameplate voltage. Internal overloads shall be provided with the scroll compressors. All models shall have crankcase heaters, phase monitors and low and high pressure control as standard. Dual compressors are available on all standard efficiency models and 12.5 to 20 tons high efficiency models and allow for efficient cooling utilizing 3 stages of compressor operation (high efficiency models only). 25 tons high efficiency units have 3 compressors for up to 4 stages of compressor operation.

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

Refrigerant Circuits
Each refrigerant circuit shall have service pressure ports, and refrigerant line filter driers factory installed as standard. An area shall be provided for replacement suction line driers.

Evaporator and Condenser Coils
Evaporator Coils (only on T/YS*150, 180, 210, 240, 300G models)-
Microchannel evaporator coils will be burst tested by the manufacturer. Internally finned, 5/16"copper tubes mechanically bonded to a configured aluminum plate fin shall be standard for evaporator coils.
Coils shall be leak tested to ensure the pressure integrity. The evaporator coil shall be leak tested to 225 psig and pressure tested to 450 psig.

Condenser Coils (available on T/Y**150, 180, 210, 240, 300G models) - Microchannel condenser coils shall be standard on all units. Coils shall be leak tested to ensure the pressure integrity. The condenser coil shall be leak tested to 225 psig and pressure tested to 450 psig.

Gas Heating Section
The heating section shall have a drum and tube heat exchanger design using corrosion resistant steel components. A forced combustion blower shall supply premixed fuel to a single burner ignited by a pilotless hot surface ignition system.

In order to provide reliable operation, a negative pressure gas valve shall be used on standard furnaces and a pressure switch on furnaces with modulating heat that requires blower operation to initiate gas flow. On an initial call for heat, the combustion blower shall purge the heat exchanger 45 seconds before ignition.

After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat. Units shall be suitable for use with natural gas shall also comply with California requirements for low NOx emissions.

Condenser Coil
The microchannel type condenser coil is standard for the standard efficiency models.
Due to flat streamlined tubes with small ports, and metallurgical tube-tofin bond, microchannel coil has better heat transfer performance. Microchannel condenser coil can reduce system refrigerant charge by up to 50% because of smaller internal volume, which leads to better compressor reliability. Compact all-aluminum microchannel coils also help to reduce the unit weight. All-aluminum construction improves re-cyclability. Galvanic corrosion is also minimized due to all aluminum construction. Strong aluminum brazed structure provides better fin protection. In addition, flat streamlined tubes also make microchannel coils more dust resistant and easier to clean. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig.

Outdoor Fans
The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor(s) shall be permanently lubricated and shall have built-in thermal overload protection.

Indoor Fan
Units above shall have belt driven, FC centrifugal fans with adjustable motor sheaves. Units with standard motors shall have an adjustable idler-arm assembly for quick-adjustment of fan belts and motor sheaves. All motors shall be thermally protected. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Single Zone VAV - One Zone Variable Air Volume Mode
Single zone VAV is designed for use in single zone applications like gymnasiums, auditoriums, manufacturing facilities, retail box stores, and any large open spaces, where there is a lot of diversity in the load profile. Single Zone VAV (SZ VAV) is an ideal replacement to yesterday?s constant volume (CV) systems, by reducing operating costs while improving occupant comfort. SZ VAV systems combine Trane application, control and system integration knowledge to exactly match fan speed with cooling and heating loads, regardless of the operating condition. Trane algorithms meet/exceed ASHRAE 90.1- 2010, SZ VAV energy-saving recommendations, and those of CA Title 24. The result is an optimized balance between zone temperature control and system energy savings. Depending on your specific application, energy savings can be as much as 20+%.

Variable Frequency Drive
Variable Frequency Drives are factory installed and tested to provide supply fan motor speed Modulation. VFDs on the supply fan, as compared to inlet guide vanes or discharge dampers, are quieter, more efficient, and are eligible for utility rebates. All VFDs are designed to allow bypass if required. Bypass control will simply provide full nominal airflow in the event of drive failure. Bypass mode is indicated in the unit wiring manual. Modulating gas heat models with SZVAV allow tighter space temperature control with less temperature swing.

Controls
Unit shall be completely factory wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. ReliaTel controls shall be provided for all 24 volt control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized control shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

High Pressure Cutout
This option is offered for units that do not have High Pressure cutout as standard.

Discharge Line Thermostat
A bi-metal element discharge line thermostat is installed as a standard option on the discharge line of each system. This standard option provides extra protection to the compressors against high discharge temperatures in case of loss of charge, extremely high ambient and other conditions which could drive the discharge temperature higher. Discharge line thermostat is wired in series with high pressure control. When the discharge temperature rises above the protection limit, the bi-metal disc in the thermostat switches to the off position, opening the 24 VAC circuit. When the temperature on the discharge line cools down, the bi-metal disc closes the contactor circuit, providing power to the compressor. When the thermostat opens the fourth time, the ReliaTel control must be manually reset to resume operation on that stage.

Tool-less Hail Guards
Tool-less, hail protection quality coil guards are available for condenser coil protection.

Through the Base Electrical with Disconnect Switch
Three-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. The disconnect switch will be installed in the unit in a water tight RT-PRC028-EN 121 enclosure with access through a swinging door. Factory wiring will be provided from the switch to the unit high voltage terminal block. The switch will be UL/CSA agency recognized.

Note: The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection.

Hinged Access Doors
Sheet metal hinges are available on the Filter/Evaporator Access Door and the Compressor/Control Access Door. This option is available on all downflow models.

Two-Inch Pleated Filters (MERV 8 & 13)
Two inch pleated media filters shall be available on all models.

BACnet Communications
The BACnet communications interface allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation System Controls.

Supply and/or Return Air Smoke Detector
With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. Return Air Smoke Detectors require minimum allowable airflow when used with certain models. See the Installation, Operation, and Maintenance (IOM) manual for the models affected and the minimum allowable airflow required.

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Differential Pressure Switches
These options allow for individual fan failure and dirty filter indication. The fan failure switch will disable all unit functions and "flash" the Service LED on the zone sensor. The dirty filter switch will light the Service LED on the zone sensor and will allow continued unit operation.

Clogged Filter/Fan Failure Switch
A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication. These indications will be registered with either a zone sensor with status indication lights or an Integrated Comfort System.

Accessory - High Static Drive
The high static drive option shall allow the standard motor on the 12½ and 20 ton units to operate with improved external static capabilities.

Accessory - Digital Display Zone Sensor
The Digital LCD (Liquid Crystal Display) zone sensor has the look and functionality of standard zone sensors. This sensor includes a digital display of set point adjustment and space temperature in F (Fahrenheit) or C (Celsius). Includes FAN and SYSTEM buttons (supports the service functions of the standard sensor). E-squared memory stores last programmed set points. Requires 24 VAC (Volts AC). This sensor should be utilized with ReliaTel¿ controls.

Human Interface
The Trane Human Interface shall have a 5 inch color touchscreen display that conforms to FCC Part 15 Class B with an Ingress Protection Rating of IP24. The display text shall be readable by a person with 20/20 vision at a distance of 3 feet and 60° angle at lighting levels ranging from 100 lux - 25,000 lux. Also, the display shall operate at temperatures of -40°C to 70°C. Firmware and unit configurations shall be able to be restored via a USB storage device.

Control Specification (if applied in a system with a system-level controller)

A. CONTROL SYSTEM OVERVIEW:
Control System shall include a System Controller, all controllers for HVAC equipment and ancillary devices (such as lights and exhaust fans), wireless communication between the System Controller, equipment controllers, and space sensors, and all wiring and end devices required. Control System to be fully programmed and commissioned by the installing contractor.

B. TOUCH SCREEN DISPLAY:
Control System shall include a 10" color Touch Screen Display for use by building occupants to adjust zone temperature setpoints, override lighting and HVAC equipment for after-hours use, modify schedules, and view service notifications. This display shall have PIN access for users and provide setpoint adjustment limits.

C. MOBILE APP:
Control System manufacturer shall provide a Mobile App for iOS and Android devices to allow occupants to perform the same functions (listed above) as the Touch Screen Display.

D. WEB BROWSER INTERFACE:
System Controller shall have an embedded Web Browser Interface to allow the installer and service providers to make adjustments to system control parameters and view trend logs and other service information.

F. SYSTEM CONTROLLER:
System Controller shall provide scheduling and coordination of all HVAC equipment, exhaust fans, and controlled lighting devices. The System Controller shall include a software application that coordinates the operation of rooftop units and VAV terminals. The System Controller shall support multiple system types, including Single-Zone Constant Volume, Single-Zone VAV, Changeover Bypass, Changeover VAV, and Multiple-Zone VAV with Terminal Heat (electric or hot water). The System Controller shall provide energy optimization strategies including Night Setback, Optimal Start, Fan Pressure Optimization, Discharge Air Temperature Reset, and Demand-Controlled Ventilation.

E. REMOTE ACCESS/NETWORK SECURITY:
Installer shall provide secure remote access to the Control System to enable the owner or service provider to access the system remotely using the Mobile App or Web Browser Interface. The Control System must be secured behind a firewall and not allow any inbound ports to be open or exposed to the internet. Control System manufacturer shall provide a remote access portal accessible by the owner and/or a service provider (as authorized by the owner).

Sequence of Operation (if applied in a SINGLE-ZONE VAV SYSTEM)

A. SYSTEM OPERATING MODES:

The System Controller shall send the equipment controllers Occupied/Unoccupied, Morning Warm-up/Pre-cool, and Heat/Cool modes. If communication is lost, the equipment controllers shall operate using default modes and setpoints.

1. NIGHT SETBACK:

During unoccupied mode, the system shall shut off. If the zone temperature drifts to the unoccupied heating or cooling setpoint, the system shall start up to heat or cool the zone, while the OA damper remains closed (unless economizing).

2. OPTIMAL START:

The System Controller shall automatically determine the optimal start time, such that each zone reaches its occupied setpoint just in time for scheduled occupancy.

3. DEMAND-CONTROLLED VENTILATION:

For those zones equipped with an occupancy sensor or CO2 sensor, outdoor airflow shall be reset based on occupancy status and/or measured CO2 concentration.

C. SINGLE-ZONE VAV SYSTEM

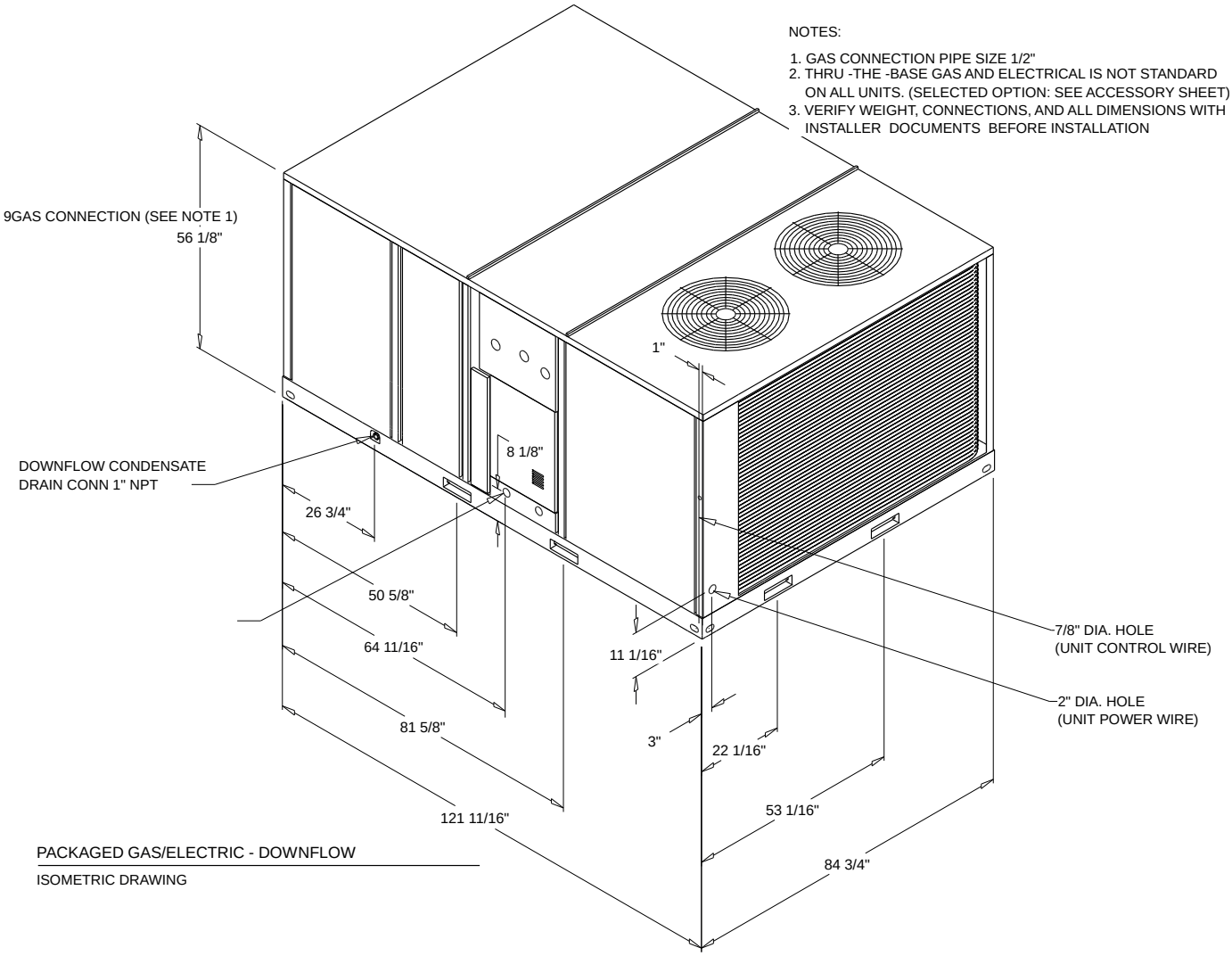
1. OCCUPIED HEAT/COOL:

The RTU shall modulate the supply fan, modulate (or cycle) compressors, modulate (or stage) heat, and/or enable airside economizing to maintain zone temperature at setpoint. The OA damper shall modulate, in proportion to changing supply fan speed, to bring in the required amount of ventilation.

2. MORNING WARM-UP/PRE-COOL:

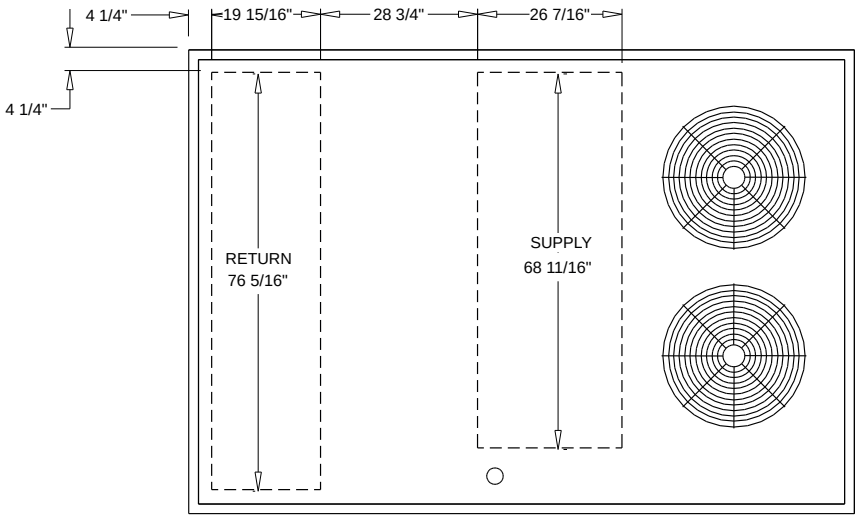
The RTU shall operate the supply fan and modulate (or cycle) compressors or modulate (or stage) heat to raise/lower zone temperature to its occupied setpoint. The OA damper shall remain closed, unless economizing.

Unit Dimensions - Packaged Gas/Electric Rooftop Units
Item: A1 Qty: 1 Tag(s): RTU-1



PACKAGED GAS/ELECTRIC - DOWNFLOW

ISOMETRIC DRAWING



PACKAGED GAS/ELECTRIC - DOWNFLOW

PLAN VIEW DRAWING

Unit Dimensions - Packaged Gas/Electric Rooftop Units

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

ELECTRICAL / GENERAL DATA

GENERAL PERFORMANCE

Model (Ton):	YHD150G (12.5)
Unit Operating Voltage Range:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage:	230
Unit Hertz:	60
Unit Phase:	3
EER: (5)	12.1

Standard Motor (1) (3)

Minimum Circuit Ampacity:	63.0
Maximum Fuse Size:	90.0
Maximum (HACR) Circuit Breaker:	90.0

Standard Oversized Motor (1) (4)

Minimum Circuit Ampacity:	"
Maximum Fuse Size:	
Maximum (HACR) Circuit Breaker:	

Accessory Oversized Motor (1) (4)

Minimum Circuit Ampacity:	
Maximum Fuse Size:	
Maximum (HACR) Circuit Breaker:	

GAS HEATING

Heating Models:	High
Heating and 1 Stage Input (Btu/h)	250,000 / 175,000
Heating and 1 Stage Output (Btu/h):	200,000 /140,000
Min./Max. Gas Input - Pressure Natural or LP (in w.c):	2.5/14.0
Gas Connection Pipe Size:	1/2"

COMPRESSOR

	Circuit(s)
Number:	2
Horsepower:	5.6/3.67
Phase:	3
Rated Load Amps:	27.5/13.6
Locked Rotor Amps:	191.0/100.0

INDOOR MOTOR

Standard Motor

Number: (3)	1
Horsepower:	3.0
Motor Speed (RPM):	1,740
Phase:	3
Full Load Amps:	10.6
Locked Rotor Amps:	81.0

Standard Oversized Motor (4)

Number:	"
Horsepower:	
Motor Speed (RPM):	
Phase:	
Full Load Amps:	
Locked Rotor Amps:	

Accessory Oversized Motor (4)

Number:	"
Horsepower:	
Motor Speed (RPM):	
Phase:	
Full Load Amps:	
Locked Rotor Amps:	

OUTDOOR MOTOR

Number:	2
Horsepower:	0.5
Motor speed (RPM):	1,100
Phase:	3
Full Load Amps:	2.2
Locked Rotor Amps:	8.4

POWER EXHAUST

(Field Installed Power Exhaust)

Horsepower:	N/A
Motor Speed (RPM):	N/A
Phase:	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

COMBUSTION BLOWER MOTOR

(Gas-Fired Heating only)

Horsepower:	0.05
Motor Speed (RPM):	3500/2800
Phase:	1
Full Load Amps:	0.5
Locked Rotor Amps:	0.78

FILTER

Type:	Throwaway
Furnished:	Yes
Number:	4/4
Recommended Size:	20"x20"x2" / 20"x25"x2"

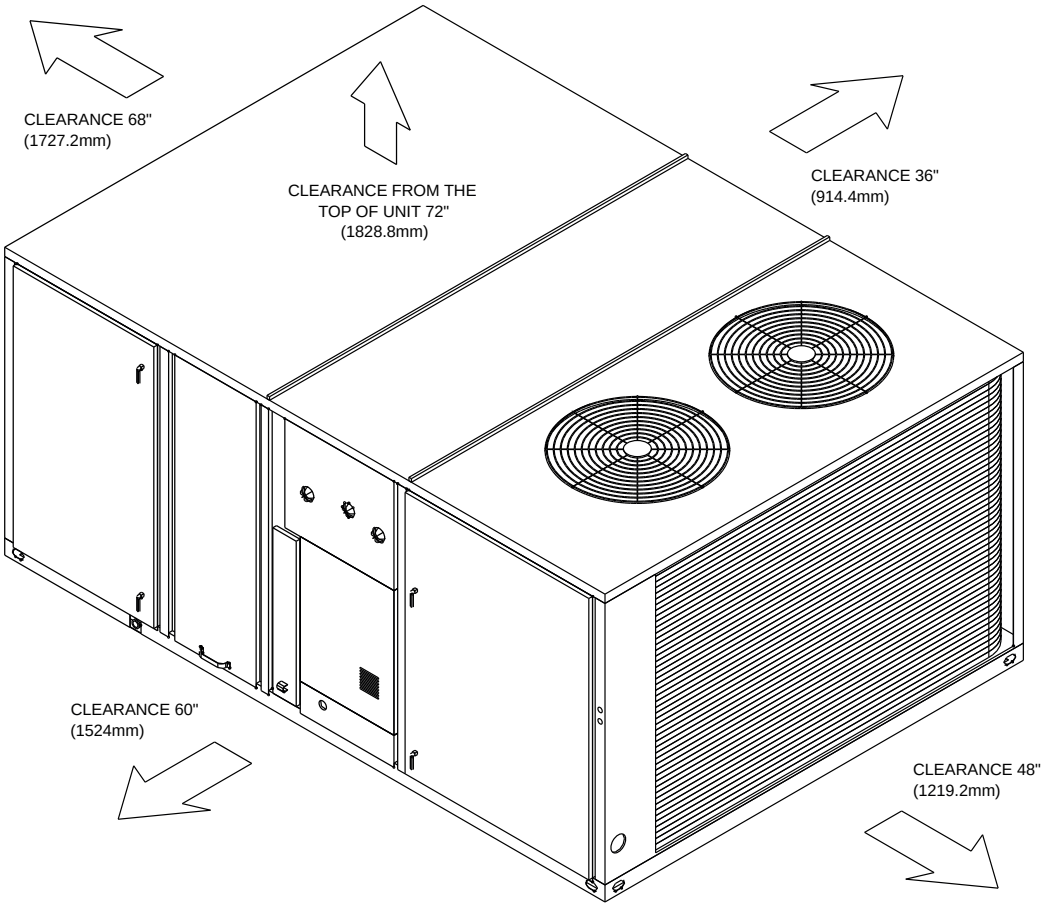
REFRIGERANT (2)

	Circuit #1 / 2
Type:	R - 410
Factory Charge Circuit #1 / 2:	12.5 lb / 7.1 lb

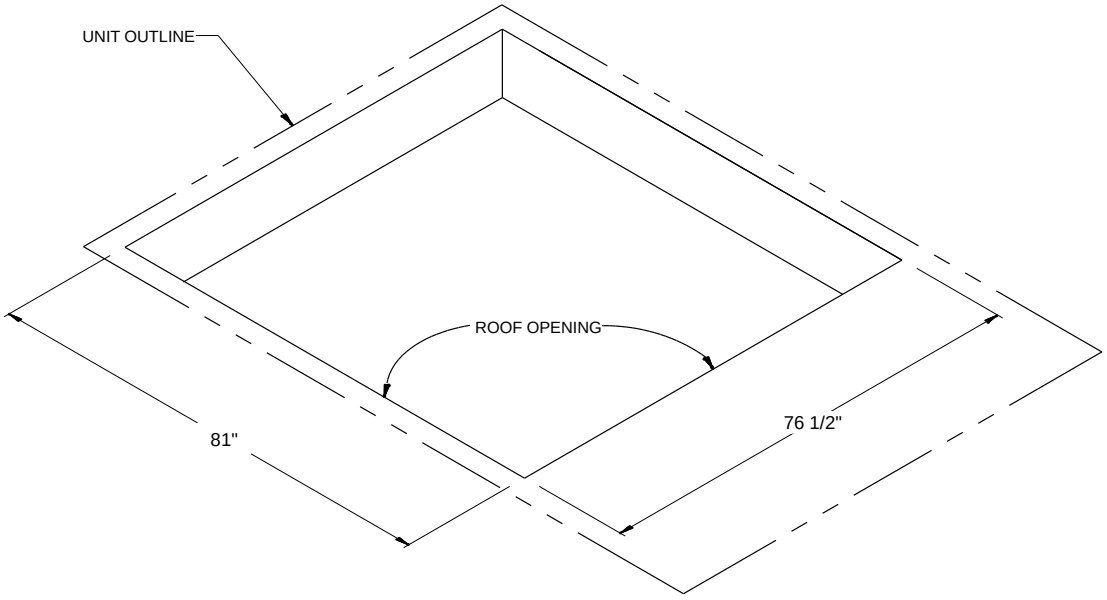
NOTES:

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value include Standard Motor.
4. Value include Oversized Motor
5. EER is rated at AHRI conditions and in accordance with DOE test procedures.

Weight, Clearance & Rigging Diagram - Packaged Gas/Electric Rooftop Units
Item: A1 Qty: 1 Tag(s): RTU-1



DOWNFLOW-PACKAGED GAS/ELECTRIC CLEARANCE



DOWNFLOW-PACKAGED GAS/ELECTRIC ROOF OPENING CLEARANCE

Weight, Clearance & Rigging Diagram - Packaged Gas/Electric Rooftop Units
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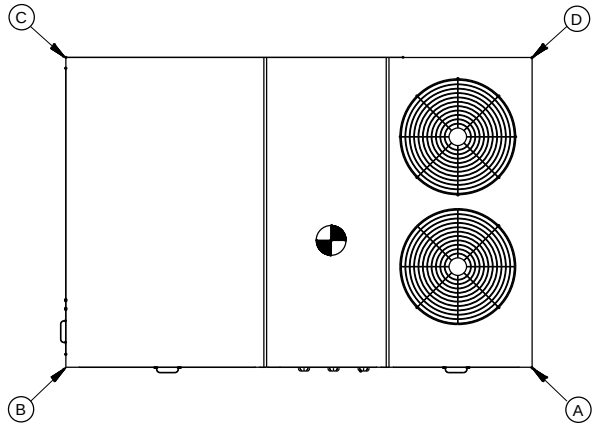


CORNER WEIGHT

Base Unit and Corner Weights Only

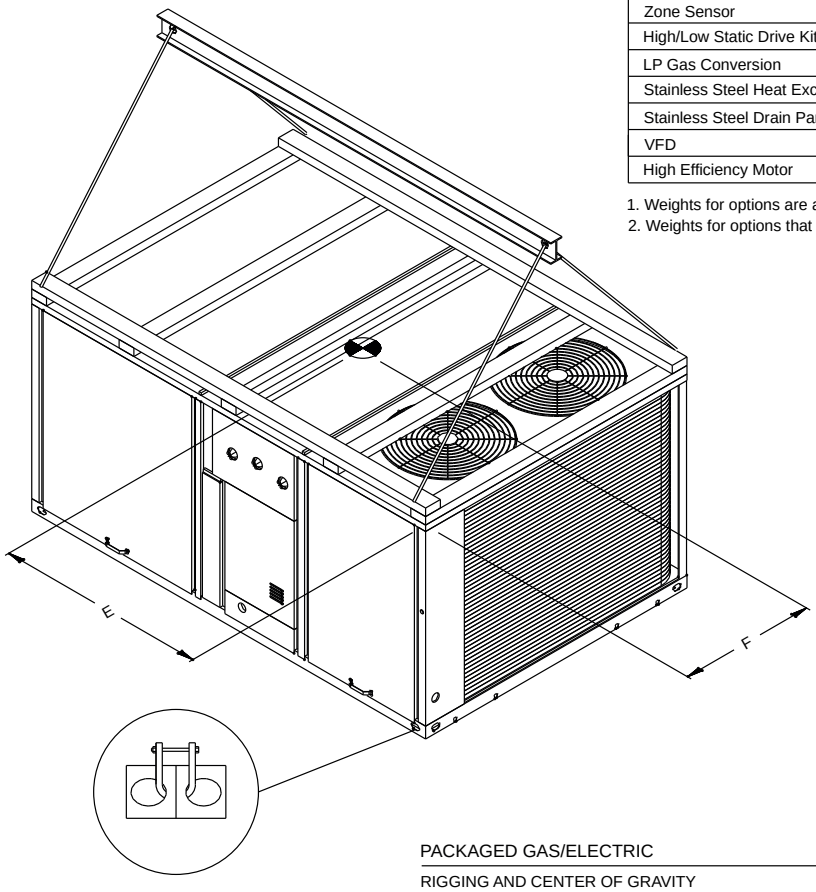
Base unit weights		Corner Weights				Center of Gravity	
SHIPPING	NET	(A)	(B)	(C)	(D)	E	F
2402.0 lb	1971.0 lb	680.0 lb	515.0 lb	352.0 lb	423.0 lb	50"	33"

1. All weights are approximate.
2. The actual weight are listed on the unit nameplate.
3. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
4. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
5. Verify weight, connection, and all dimension with installer documents before installation.
6. Corner weights are given for information only.
7. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.

Installed Options Net Weight Data

Accessory	Weight
Economizer, Manual and Motorized Outside Air Damper	80.0 lb
Power Exhaust	
Roof Curb	
Oversized Motor	
Hail Guard	43.0 lb
Hinged Access Doors	27.0 lb
Power Conv. Outlet	
Through the Base Electrical	23.0 lb
Circuit Breaker	
Disconnect	10.0 lb
Smoke Detector	5.0 lb
Novar	
Zone Sensor	1.0 lb
High/Low Static Drive Kit	2.0 lb
LP Gas Conversion	
Stainless Steel Heat Exchanger	
Stainless Steel Drain Pan	
VFD	32.0 lb
High Efficiency Motor	

1. Weights for options are approximate.
2. Weights for options that are not list refer to Installation guide.



PACKAGED GAS/ELECTRIC

RIGGING AND CENTER OF GRAVITY

Weight, Clearance & Rigging Diagram - Packaged Gas/Electric Rooftop Units
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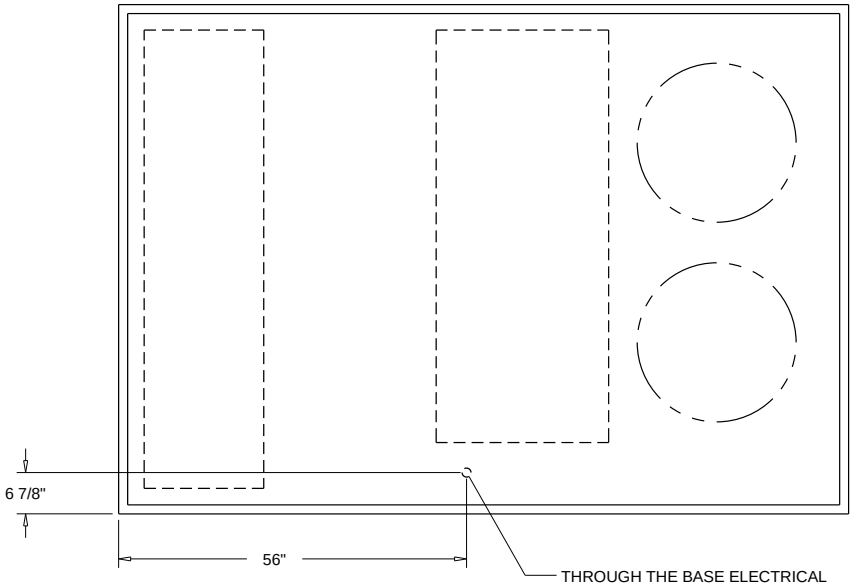
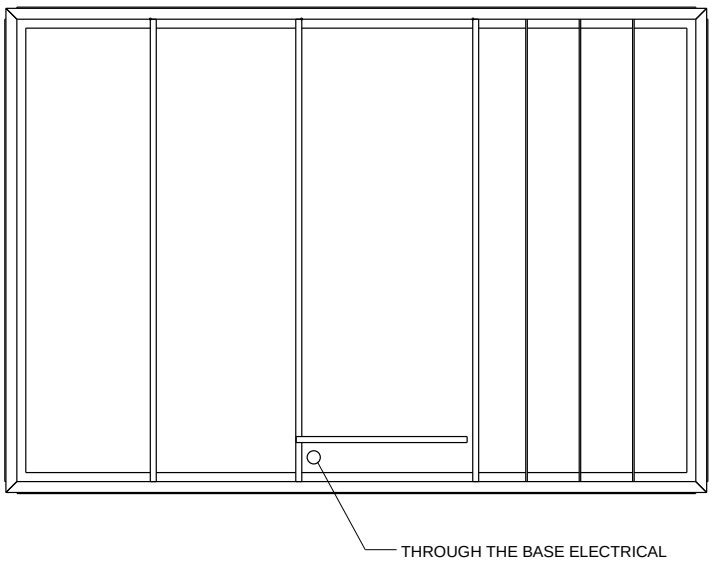


THROUGH THE BASE ELECTRICAL

ACCESSORY-PLAN VIEW



THROUGH THE BASE ELECTRICAL ROOF CURB

ACCESSORY-PLAN VIEW

Accessory - Packaged Gas/Electric Rooftop Units
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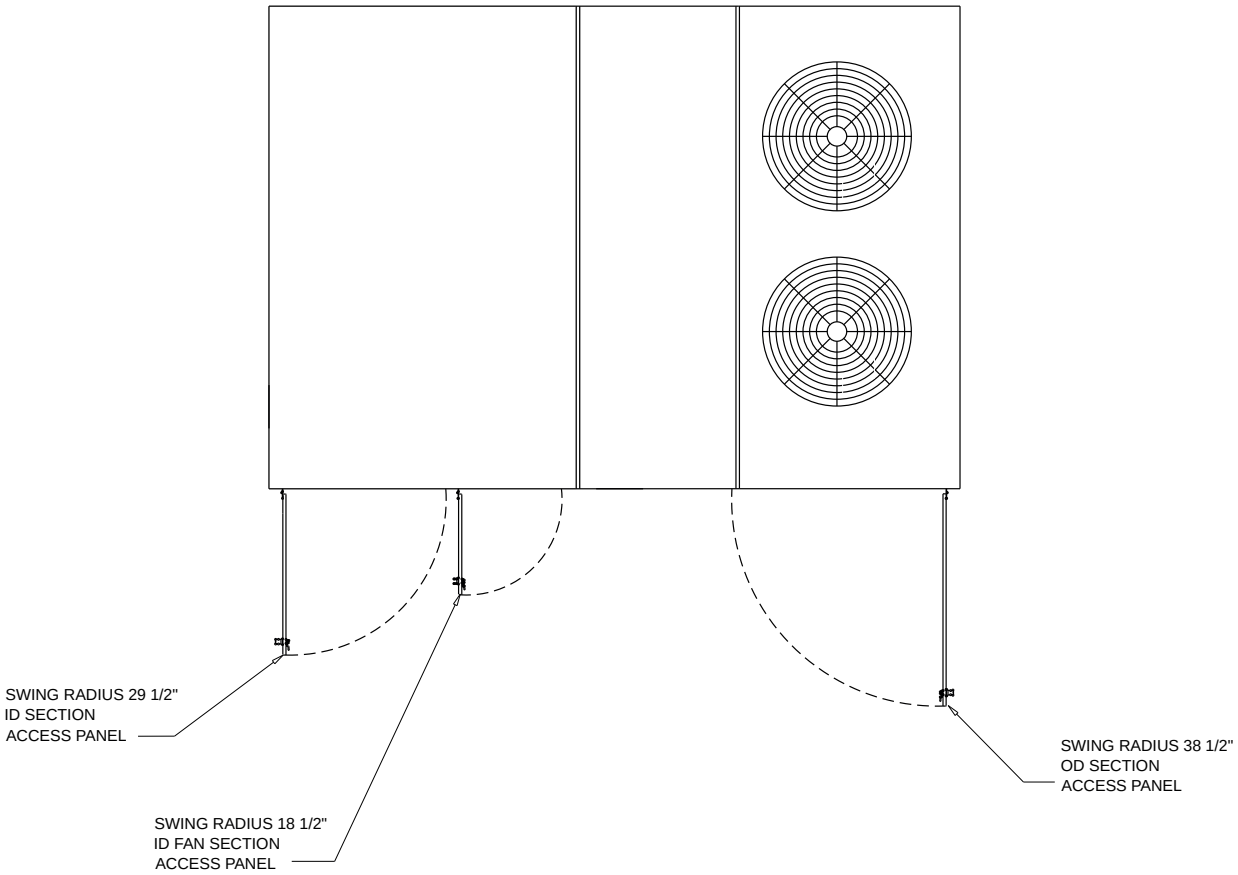
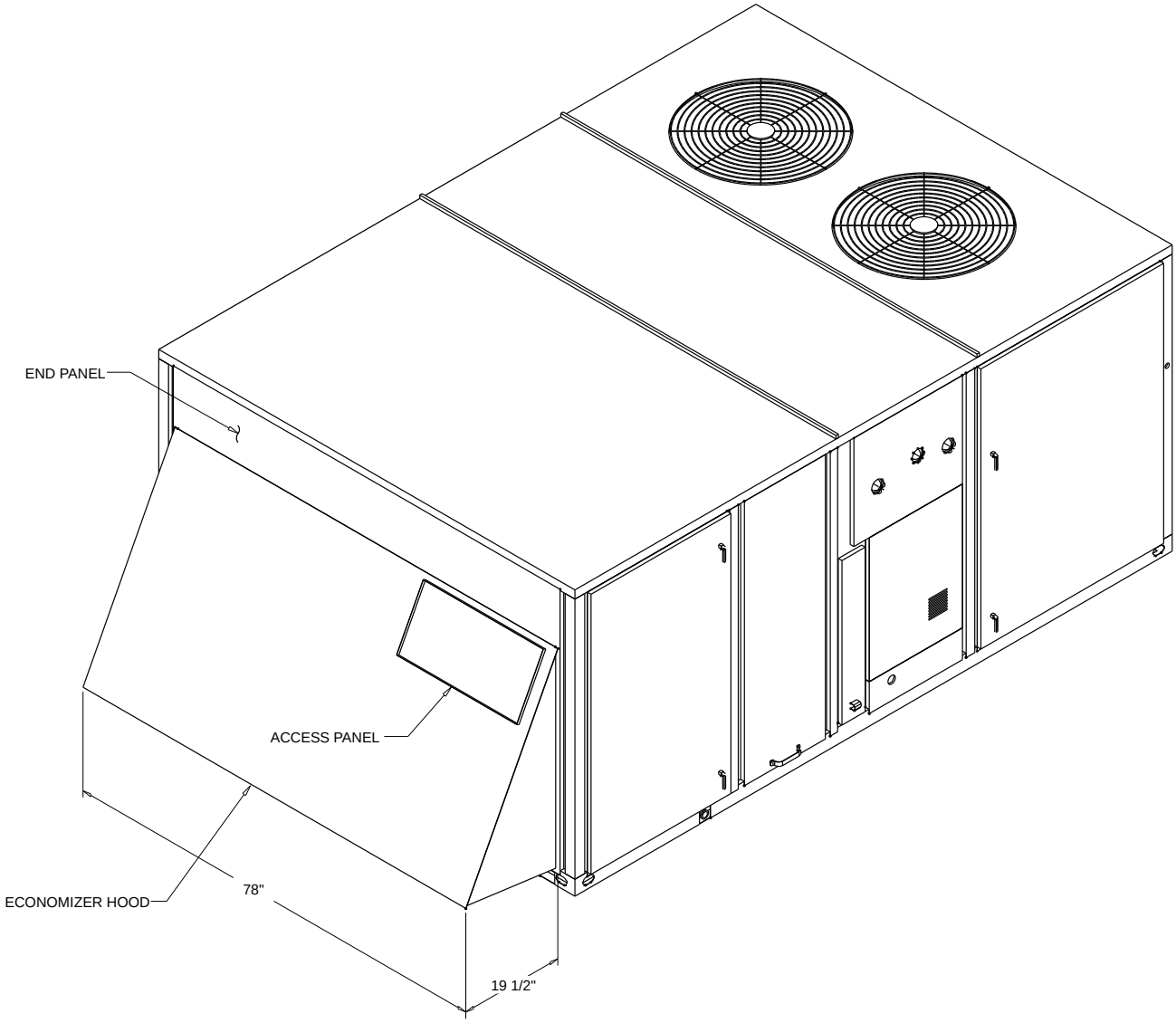


HINGING ACCESS DOORS

ACCESSORY

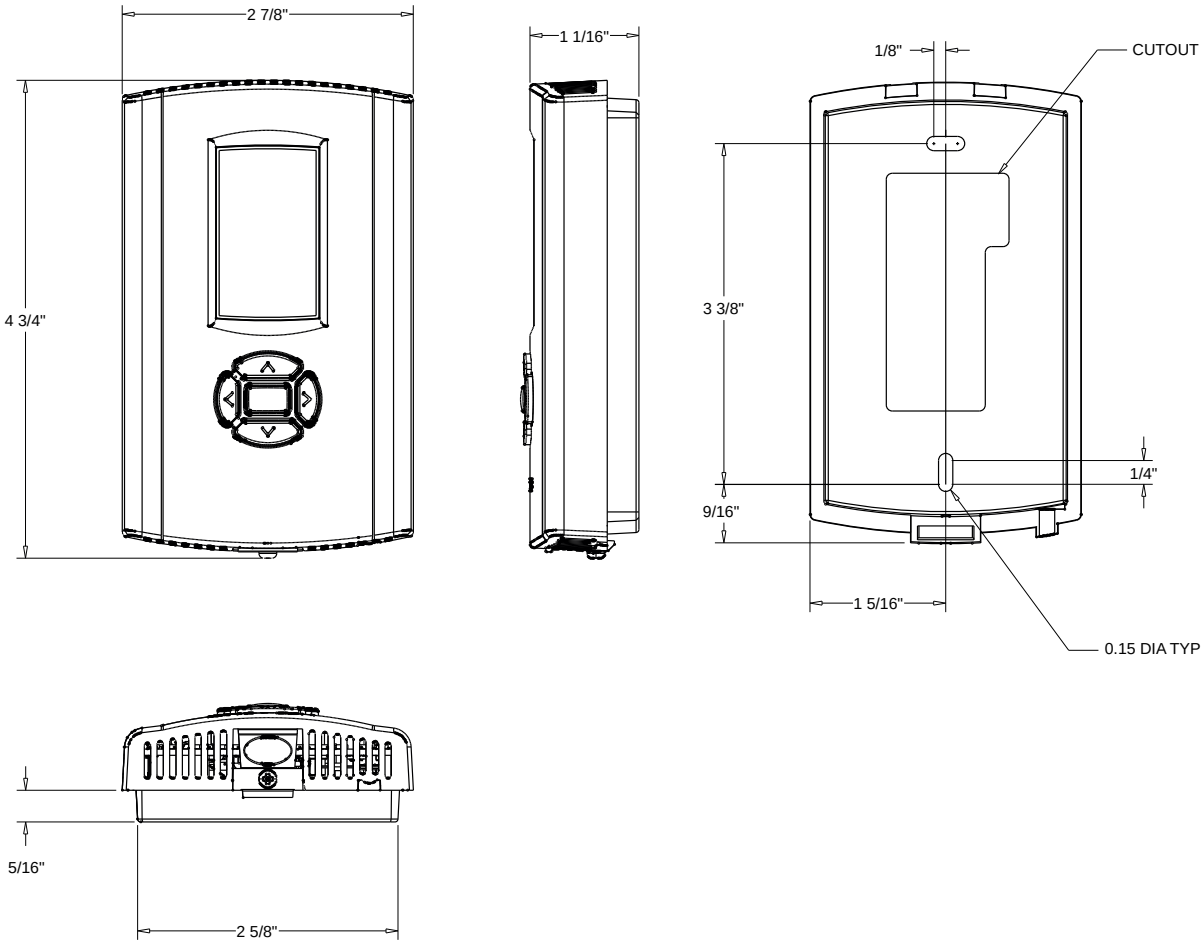
Accessory - Packaged Gas/Electric Rooftop Units
Item: A1 Qty: 1 Tag(s): RTU-1



ECONOMIZER HOOD

PLAN VIEW DRAWING

Accessory - Packaged Gas/Electric Rooftop Units
Item: A1 Qty: 1 Tag(s): RTU-1



BAYSEN135 - ZONE SENSOR
DIGITAL LCD

Tag Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop (Qty: 4)

Item	Tag(s)	Qty	Description	Model Number
B1	RTU-2	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC067E3RHA--D6E1A10600A1000001000000000
B2	RTU-3	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC102F3RHA--D6E1A10600A1000001000000000
B3	RTU-4	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC047E3RMA--D6E1A10600A1000001000000000
B4	RTU-5	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC092F3RMA--D6E1A10600A1000001000000000

Product Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

All Units

DX cooling, gas heat
High efficiency
Convertible configuration
208-230/60/3
Microprocessor controls
Economizer Dry Bulb 0-100% with Barometric Relief
Single Zone VAV
Hinged panels/2 in pleated filters MERV 13
Standard condenser coil w/hail guard
Through the base electrical
Non-fused disconnect
BACnet Communications Interface
Return air smoke detector
Clogged filter switch
Human Interface
Digital display zone sensor (Fld)

Item: B1 Qty: 1 Tag(s): RTU-2

5 Ton 17 SEER
High gas heat

Item: B2 Qty: 1 Tag(s): RTU-3

8.5 Ton
High gas heat

Item: B3 Qty: 1 Tag(s): RTU-4

4 Ton 17 SEER
Medium gas heat

Item: B4 Qty: 1 Tag(s): RTU-5

7.5 Ton Dual compressor
Medium gas heat

Performance Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Tags	RTU-2	RTU-3	RTU-4	RTU-5
Design Airflow (cfm)	1600	2750	1475	2400
Airflow Application	Downflow	Downflow	Downflow	Downflow
Cooling Entering DB (F)	79.50	80.30	77.50	77.70
Cooling Entering WB (F)	65.50	66.90	64.70	64.00
Ent Air Relative Humidity (%)	47.54	49.95	50.29	47.40
Ambient Temp (F)	105.00	105.00	105.00	105.00
Evap Coil Leaving Air Temp (DB) (F)	56.11	56.76	56.55	54.33
Evap Coil Leaving Air Temp (WB) (F)	54.58	56.23	54.44	52.60
Cooling Leaving Unit DB (F)	57.75	58.45	58.30	55.98
Cooling Leaving Unit WB (F)	55.24	56.89	55.15	53.29
Gross Total Capacity (MBh)	51.97	90.01	44.57	78.61
Gross Sensible Capacity (MBh)	40.41	69.91	33.38	60.56
Gross Latent Capacity (MBh)	11.56	20.10	11.19	18.05
Net Total Capacity (MBh)	49.90	86.22	42.38	75.64
Net Sensible Capacity (MBh)	38.34	66.13	31.19	57.60
Net Sensible Heat Ratio (Number)	0.77	0.77	0.74	0.76
Heating EAT (F)	55.20	52.90	56.40	63.60
Heating LAT (F)	115.60	107.00	96.80	110.10
Heating Delta T (F)	60.40	54.10	40.40	46.50
Input Heating Capacity (MBh)	130.00	200.00	80.00	150.00
Output Heating Capacity (MBh)	104.00	160.00	64.00	120.00
Output Heating Cap. w/Fan (MBh)	106.07	163.79	66.19	122.97
Design ESP (in H2O)	1.000	1.000	1.000	1.000
Component SP (in H2O)	0.170	0.254	0.128	0.230
Indoor mtr operating power (bhp)	0.69	1.31	0.73	1.01
Indoor RPM (rpm)	1030	1232	1026	1134
Indoor Motor Power (kW)	0.51	0.97	0.54	0.76
Outdoor Motor Power (kW)	0.37	0.69	0.33	0.70
Compressor Power (kW)	4.24	7.49	3.46	6.89
System Power (kW)	5.12	9.16	4.34	8.34
MCA (A)	33.00	42.00	30.00	42.00
MOP (A)	45.00	50.00	40.00	50.00
Evaporator face area (sq ft)	9.89	12.36	9.27	12.36
Evaporator rows (Each)	4.00	5.00	3.00	4.00
Evaporator fin spacing (Per Foot)	192	192	192	192
Evaporator face velocity (ft/min)	162	222	159	194
Min. unit operating weight (lb)	748.0	1035.0	725.0	1026.0
Max. unit operating weight (lb)	999.0	1300.0	976.0	1291.0
Fan motor heat (MBh)	2.07	3.79	2.19	2.97
Dew Point (F)	53.50	55.88	52.96	51.30
Rated capacity (AHRI) (MBh)	58.90	99.00	49.00	89.00
ASHRAE 90.1	Yes	Yes	Yes	Yes
IEER ( )	17.20	14.70	17.50	15.00
EER @ AHRI Conditions (EER)	13.0	12.5	13.0	12.6
Total Static Pressure (in H2O)	1.170	1.254	1.128	1.230
Indoor Fan Type	FC Centrifugal	BC Plenum	FC Centrifugal	BC Plenum
Indoor Fan Drive Type	Direct	Direct	Direct	Direct
Outdoor Fan Type	Propeller	Propeller	Propeller	Propeller
Outdoor Fan Drive Type	Direct	Direct	Direct	Direct
Outdoor Fan Quantity ( )	1	1	1	1
Heating Type	Gas Heat	Gas Heat	Gas Heat	Gas Heat
Heating Stages	1	2	1	2

Mechanical Specifications - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5

General
The units shall be convertible airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for units with microprocessor controls. Operating range for units with electromechanical controls shall be between 115°F and 40°F. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

General (Precedent 17 Plus)
The units shall be convertible airflow. The operating range shall be between 125°F and 0°F incooling as standard from the factory for units with microprocessor controls. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

Casing
Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing two fasteners while providing a water and air tight seal. All exposed vertical panels and top covers in the indoor air section shall be insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/8", foil-faced, closed-cell insulation. All insulation edges shall be either captured or sealed. The unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8" high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting, with forklift capabilities on three sides of the unit.

Unit Top
The top cover shall be one piece construction or, where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and enhances water removal from unit top.

Compressors
All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.

Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available on 7½-10 ton models and allow for efficient cooling utilizing 3-stages of compressor operation for all high efficiency models.

Compressors (Precedent 17 Plus)
All units shall have direct-drive and hermetic type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.
Crankcase heaters shall be included. Two-stage compressor is outstanding for humidity control and light load cooling conditions.

Indoor Fan
The following units shall be equipped with a direct drive plenum fan design (T/YSC120F,T/YHC074F, T/YHC092F,T/YHC102F, 120F). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

3 to 5 ton units (high efficiency 3-phase with optional motor) are belt driven, FC centrifugal fans with adjustable motor sheaves. 3 to 5 ton units (standard and high efficiency 3-phase) have multispeed, direct drive motors. All 6 to 8½ ton units (standard efficiency) shall have belt drive motors with an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All motors shall be thermally protected. All 10 tons, 6 ton (074), 7½ to 8½ (high efficiency) units have variable speed direct drive motors. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Indoor Fan (Precedent 17 Plus)
All motors shall be thermally protected. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Outdoor Fans
The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

Single Zone VAV - One Zone Variable Air Volume Mode
Single zone VAV is designed for use in single zone applications like gymnasiums, auditoriums, manufacturing facilities, retail box stores, and any large open spaces, where there is a lot of diversity in the load profile. Single Zone VAV (SZ VAV) is an ideal replacement to yesterdays constant volume (CV) systems, by reducing operating costs while improving occupant comfort. SZ VAV systems combine Trane application, control and system integration knowledge to exactly match fan speed with cooling and heating loads, regardless of the operating condition. Trane algorithms meet/exceed ASHRAE 90.1- 2010, SZ VAV energy-saving recommendations, and those of CA Title 24. The result is an optimized balance between zone temperature control and system energy savings. Depending on your specific application, energy savings can be as much as 20+%.

Note:
Building system modeling in energy simulation software like TRACE is recommended to evaluate performance improvements for your application.

SZ VAV is fully integrated into the ReliaTel Control system and is available today. It provides thesimplest and fastest commissioning in the industry through proven factory-installed, wired, and tested system controllers. All control modules, logic and sensors are factory installed, and tested to assure the highest quality and most reliable system available. This means no special programming of algorithms, or hunting at the jobsite for sensors, boards, etc. that need to be installed in the field. Single zone VAV is a quick and simple solution for many applications and is available from your most trusted rooftop VAV system solution provider- Trane.

Evaporator and Condenser Coils
Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Evaporator coils are standard for all 3 to 10 ton standard efficiency models. Microchannel condenser coils are standard for all 3 to 10 ton standard efficiency models and 4, 5, 6, 7.5, 8.5 ton high efficiency models. The microchannel type condenser coil is not offered on the 4 and 5 ton dehumidification model. Due to flat streamlined tubes with small ports, and metallurgical tube-to-fin bond, microchannel coil has better heat transfer performance. Microchannel condenser coil can reduce system refrigerant charge by up to 50% because of smaller internal volume, which leads to better compressor reliability. Compact all-aluminum microchannel coils also help to reduce the unit weight. These all aluminum coils are recyclable. Galvanic corrosion is also minimized due to all aluminum construction. Strong aluminum brazed structure provides better fin protection. In addition, flat streamlined tubes also make microchannel coils more dust resistant and easier to clean. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig. The condenser coil shall have a patent pending 1+1+1 hybrid coil designed with slight gaps for ease of cleaning. A plastic, dual-sloped, removable and reversible condensate drain pan with through-the-base condensate drain is standard.

Tool-less Hail Guards
Tool-less, hail protection quality coil guards are available for condenser coil protection.

Controls
Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. A choice of microprocessor or electromechanical controls shall be available. Microprocessor controls provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection. 24-volt electromechanical control circuit shall include control transformer and contactor

Controls (Precedent 17 Plus)
Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. Microprocessor controls provide for volt control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized Microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

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

Phase monitor
Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitor is equipped with an LED that provides an ON or FAULT indicator. There are no field adjustments. The module will automatically reset from a fault condition.

BACnet Communications
The BACnet communications interface allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation System Controls.

Refrigerant Circuits
Each refrigerant circuit offer thermal expansion valve as standard. Service pressure ports, and refrigerant line filter driers are factory-installed as standard. An area shall be provided for replacement suction line driers.

Gas Heating Section
The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DSI) system. On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat/zone sensor. Units shall be suitable for use with natural gas or propane (field-installed kit) and also comply with the California requirement for low NOx emissions (Gas/Electric Only).

Plenum Fan
The following unit shall be equipped with a direct drive plenum fan design (all 10 tons and 7.5-8.5 ton high efficiency units). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

Economizer
This accessory shall be available with or without barometric relief. The assembly includes fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment off cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

Through the Base Electrical Access
An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field-installed disconnect switch.

Through the Base Electrical with Disconnect Switch
This 3-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. The disconnect switch will be installed in the unit in a water tight enclosure with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The switch will be UL/CSA agency recognized.

Note: The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection.

Clogged Filter/Fan Failure Switch
A dedicated differential pressure switch is available to achieve active fan failure indication and/or clogged filter indication. These indications will be registered with either a zone sensor with status indication lights or an Integrated Comfort System. This option is available for microprocessor controlled units.

Supply and/or Return Air Smoke Detector
Smoke detector shall be factory installed photoelectric smoke detector mounted in the return air section (with or without the economizer or motorized damper option), AND/OR in the supply air fan compartment. The detector will be wired for continuous power whenever the unit is energized. Upon detection of smoke, the detector will shut down all unit operations. Local codes may dictate the location of detectors. Note: Due to the shipping position of the economizer or motorized damper, the return air smoke detector will not be completely factory installed. The wiring harness for the detector will be routed and tied off in the fan compartment for shipping. The smoke detector and barometric damper hood will also be installed in a shipping position in the fan compartment.

Trane Single Zone Variable Air Volume Control Sequence of Operation (Precedent 17 Plus)
General Standby Mode
During normal occupied periods, when there is no space cooling or heating demands, the user will be able to choose Continuous or Cycling supply fan operation. During this period, if the supply fan is operating due to a Continuous Fan Mode selection or due to a ventilation request, the supply fan will operate at 50% of the user selected, application specific, maximum airflow. The unit controls will be compatible with BACnet and LonTalk Building Automation System communication interfaces.

Cooling Operation

Default Operation:
During Cooling operation, the control will monitor the Space Temperature and Space Cooling setpoint and with a PI control algorithm determine if active cooling capacity is required. As the Space Temperature deviates from the Space Cooling Setpoint, the unit controller will calculate an active Discharge Air Cooling setpoint that the economizer (if installed) and compressor outputs will be controlled to meet. This active Discharge Air Cooling setpoint will be calculated between the Space Cooling setpoint and a user adjustable minimum (65F Default for Single Zone Variable Air Volume Control). Once the control determines that a discharge air temperature equal to the user selected minimum (65F Default) is required to meet the space cooling demand, if the space demand continues to increase, the supply fan speed will be allowed to increase above its minimum speed proportionally to meet the additional demand.

Alternate Economizer Operation:
Under the Default Operation, as described above, the supply fan speed will remain at minimum speed, as determined by the active cooling stages, until the space demand requires an increase in supply airflow. The customer will have the ability to choose to allow the supply fan speed to increase when the economizer is enthalpy enabled in order to realize the maximum cooling capacity of the economizer, prior to energizing compressor outputs, when the space requires active cooling capacity. All cooling capacity demand decisions will function as described in the "Default Operation" section above with the exception of the supply fan speed when the unit has an active cooling demand and the economizer is enthalpy enabled.
Heating Operation
During Heating operation, the control will monitor the Space Temperature and Space Heating setpoint and with a PI control algorithm determine if active heating capacity is required. As the Space Temperature deviates from the Space Heating Setpoint, the unit controller will increase the supply airflow up to the user selected, application specific, maximum airflow and begin to stage heating outputs (gas or electric) to meet the space demand.The customer will also have the ability to enable Supply Air Tempering control which will allow the unit to bring on one stage of heating when the discharge air temperature falls below the Space Heating Setpoint - 10°F and the unit is operating in a minimum ventilation state with the supply fan running (not actively heating or cooling). The supply fan output will increase to the user selected, application specific, maximum airflow during Supply Air Tempering operation.

Supply, Return, and Plenum Air Smoke Detector
With this option installed, if smoke is detected, all unit operation will be shut down. Reset will be manual at the unit. In order for the supply air smoke detector or return air smoke detector to properly sense smoke in the supply air stream or the return air stream, the air velocity entering the smoke detector unit must be between 500 - 4000 feet per minute. Equipment covered in this manual will develop an airflow velocity that falls within these limits over the entire airflow range specified in the evaporator fan performance table. Supply and/or Return Smoke Detectors may not be used with the Plenum Smoke Detector.

ATTENTION
For installation in SCAQMD only: This furnace does not meet the SCAQMD Rule 1111 14 ng/J NOx emission limit, and thus is subject to a mitigation fee of up to $450. This furnace is not eligible for the Clean Air Furnace Rebate Program: www.CleanAirFurnaceRebate.com.

Control Specification (if applied in a system with a system-level controller)

A. CONTROL SYSTEM OVERVIEW:
Control System shall include a System Controller, all controllers for HVAC equipment and ancillary devices (such as lights and exhaust fans), wireless communication between the System Controller, equipment controllers, and space sensors, and all wiring and end devices required. Control System to be fully programmed and commissioned by the installing contractor.

B. TOUCH SCREEN DISPLAY:
Control System shall include a 10" color Touch Screen Display for use by building occupants to adjust zone temperature setpoints, override lighting and HVAC equipment for after-hours use, modify schedules, and view service notifications. This display shall have PIN access for users and provide setpoint adjustment limits.

C. MOBILE APP:
Control System manufacturer shall provide a Mobile App for iOS and Android devices to allow occupants to perform the same functions (listed above) as the Touch Screen Display.

D. WEB BROWSER INTERFACE:
System Controller shall have an embedded Web Browser Interface to allow the installer and service providers to make adjustments to system control parameters and view trend logs and other service information.

E .SYSTEM CONTROLLER:
System Controller shall provide scheduling and coordination of all HVAC equipment, exhaust fans, and controlled lighting devices. The System Controller shall include a software application that coordinates the operation of rooftop units and VAV terminals. The System Controller shall support multiple system types, including Single-Zone Constant Volume, Single-Zone VAV, Changeover Bypass, Changeover VAV, and Multiple-Zone VAV with Terminal Heat (electric or hot water). The System Controller shall provide energy optimization strategies including Night Setback, Optimal Start, Fan Pressure Optimization, Discharge Air Temperature Reset, and Demand-Controlled Ventilation.

F. REMOTE ACCESS/NETWORK SECURITY:
Installer shall provide secure remote access to the Control System to enable the owner or service provider to access the system remotely using the Mobile App or Web Browser Interface. The Control System must be secured behind a firewall and not allow any inbound ports to be open or exposed to the internet. Control System manufacturer shall provide a remote access portal accessible by the owner and/or a service provider (as authorized by the owner).

Sequence of Operation (if applied in a SINGLE-ZONE VAV SYSTEM)

A. SYSTEM OPERATING MODES:
The System Controller shall send the equipment controllers Occupied/Unoccupied, Morning Warm-up/Pre-cool, and Heat/Cool modes. If communication is lost, the equipment controllers shall operate using default modes and setpoints.

1. NIGHT SETBACK:
During unoccupied mode, the system shall shut off. If the zone temperature drifts to the unoccupied heating or cooling setpoint, the system shall start up to heat or cool the zone, while the OA damper remains closed (unless economizing).

2. OPTIMAL START:
The System Controller shall automatically determine the optimal start time, such that each zone reaches its occupied setpoint just in time for scheduled occupancy.

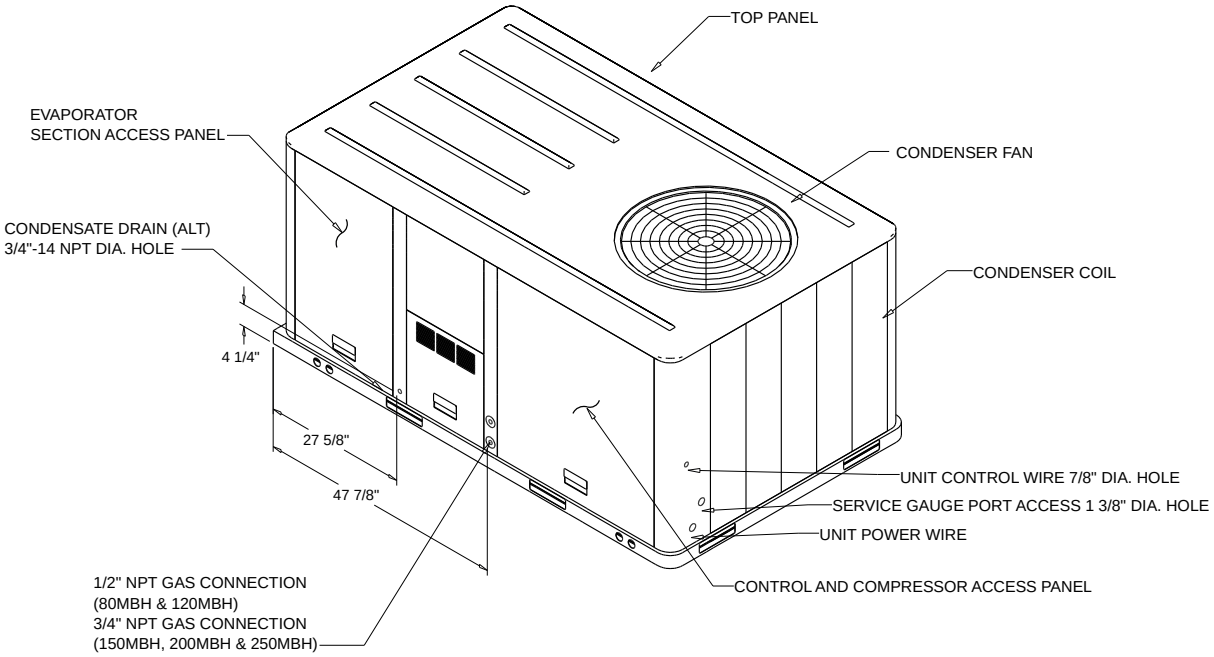
3. DEMAND-CONTROLLED VENTILATION:
For those zones equipped with an occupancy sensor or CO2 sensor, outdoor airflow shall be reset based on occupancy status and/or measured CO2 concentration.

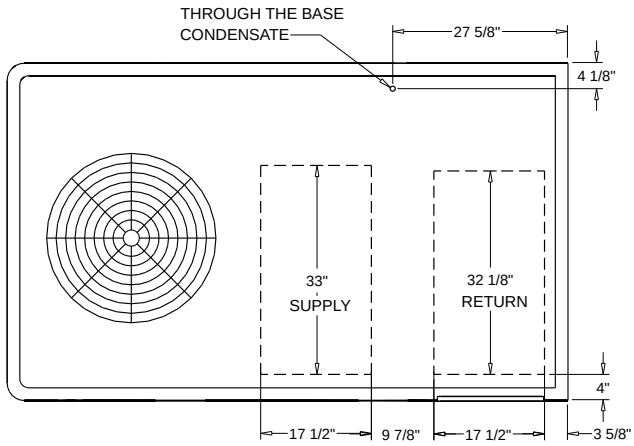
C. SINGLE-ZONE VAV SYSTEM

1. OCCUPIED HEAT/COOL:
The RTU shall modulate the supply fan, modulate (or cycle) compressors, modulate (or stage) heat, and/or enable airside economizing to maintain zone temperature at setpoint. The OA damper shall modulate, in proportion to changing supply fan speed, to bring in the required amount of ventilation.

2. MORNING WARM-UP/PRE-COOL:
The RTU shall operate the supply fan and modulate (or cycle) compressors or modulate (or stage) heat to raise/lower zone temperature to its occupied setpoint. The OA damper shall remain closed, unless economizing.

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1, B3 Qty: 2 Tag(s): RTU-2, RTU-4

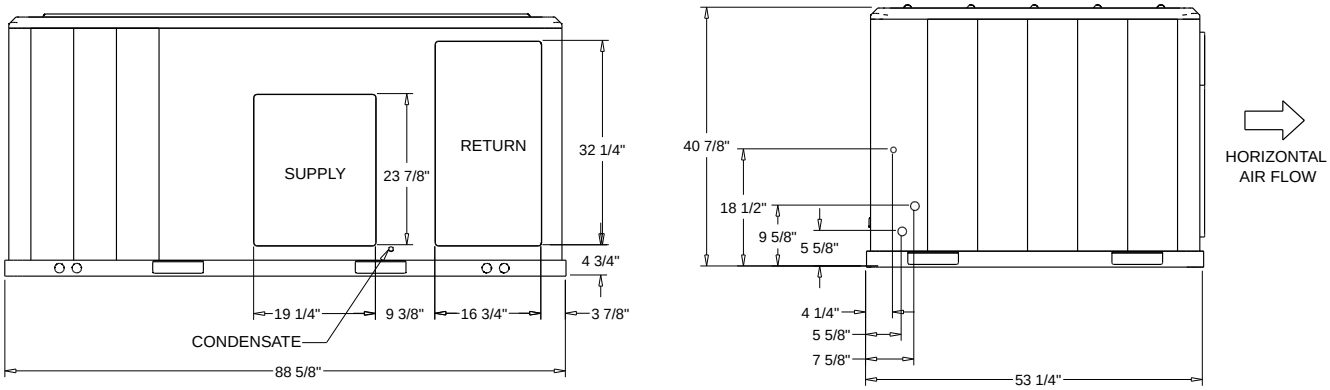




PLAN VIEW UNIT

DIMENSION DRAWING

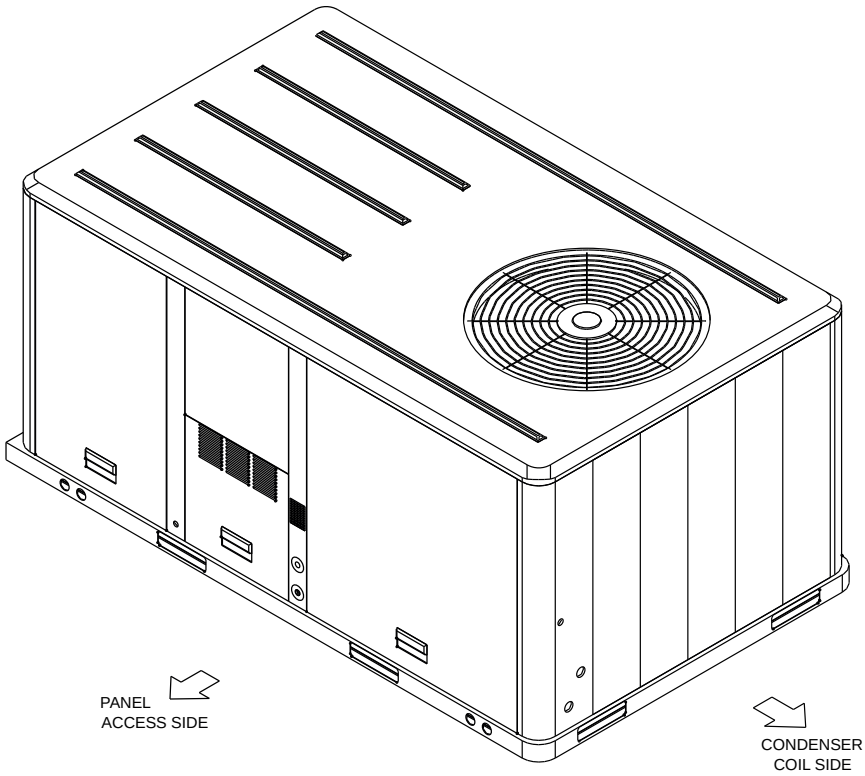
NOTES:
1. THRU -THE -BASE ELECTRICAL AND GAS IS NOT STANDARD ON ALL UNITS.
2. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

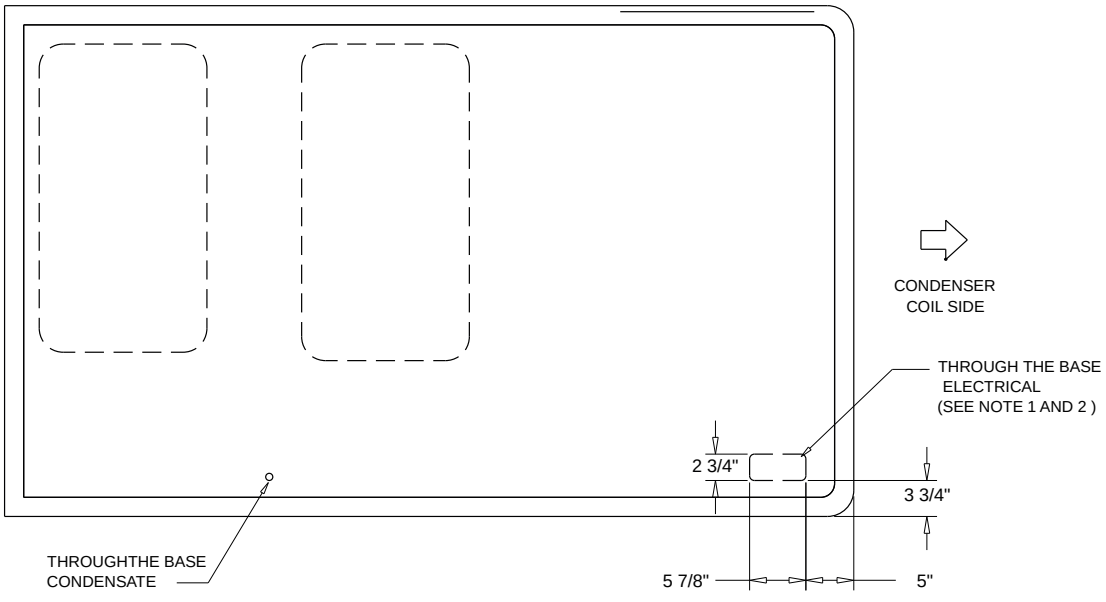


PACKAGED GAS / ELECTRICAL

DIMENSION DRAWING

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5





NOTES:
1. THRU -THE -BASE GAS AND ELECTRICAL IS NOT STANDARD. VERIFY OPTION IN PRODUCT DATA IN THIS DOCUMENT.
2. VERIFY WEIGHT, CONNECTION, OPTION CONFIGURATION AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

THRU THE BASE ELECTRICAL

PLAN / ISO VIEW DRAWING

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Item: B1 Qty: 1 Tag(s): RTU-2

ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YHC067E
Unit Operating Voltage:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage	230
Unit Hertz:	60
Unit Phase:	3
	13.0/17.2

Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

Standard Motor

MCA:	33.0
MFS:	45.0
MCB:	45.0

Field Installed Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	High
Heating Input (BTU):	130,000
Heating Output (BTU):	104,000
No. Burners:	3
No. Stages	1

Gas Inlet Pressure

Natural Gas (Min/Max):	4 1/2"/14"
LP (Min/Max)	11"/14"
Gas Pipe Connection Size:	1/2"

INDOOR MOTOR

Standard Motor

Number:	1
Horsepower:	1.0
Motor Speed (RPM):	--
Phase	1
Full Load Amps:	9.4
Locked Rotor Amps:	--

Oversized Motor

Number:	
Horsepower:	
Motor Speed (RPM):	
Phase	
Full Load Amps:	
Locked Rotor Amps:	

Field Installed Oversized Motor

Number:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Phase	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

COMPRESSOR Circuit 1/2

Number:	1
Horsepower:	4.3
Phase:	3
Rated Load Amps:	16.2
Locked Rotor Amps:	-

OUTDOOR MOTOR

Number:	1
Horsepower:	0.40
Motor Speed (RPM):	1075
Phase:	1
Full Load Amps:	2.5
	-

POWER EXHAUST ACCESSORY (3,7)

(Field Installed Power Exhaust)

Phase:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	16"x25"x2"

REFRIGERANT (2)

Type

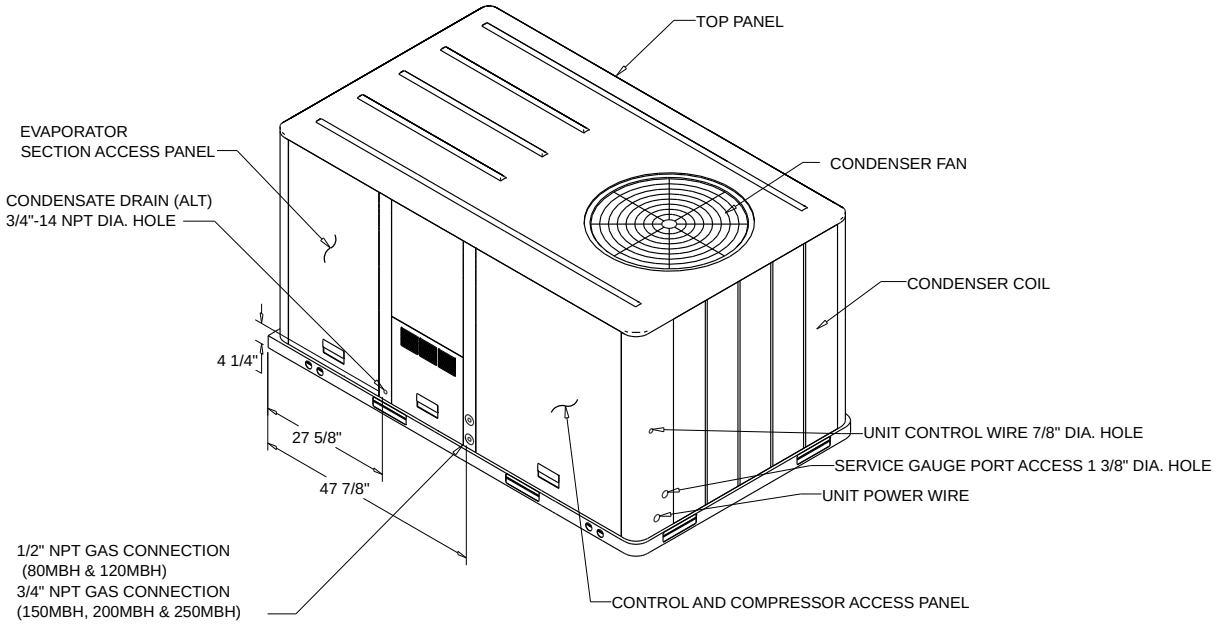
Factory Charge

Circuit #1	12.5 lb
Circuit #2	N/A

NOTES:

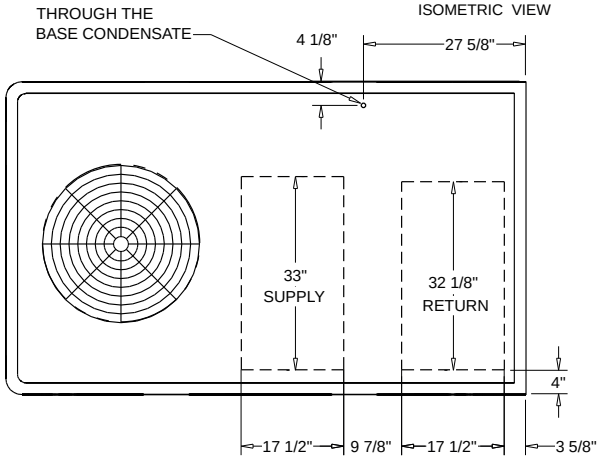
1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.
7. Installation of this power exhaust kit will affect unit level MCA and could affect MOP sizing having a direct impact on existing field wiring and unit protection devices. The change in MCA/MOP is the sole responsibility of the field installing party. Trane will not issue new nameplates as a result of this power exhaust accessory installation. FLA of the power exhaust kit option must be added to the MCA of the unit for building supply conductor sizing determination.

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B2, B4 Qty: 2 Tag(s): RTU-3, RTU-5



PACKAGED GAS / ELECTRICAL

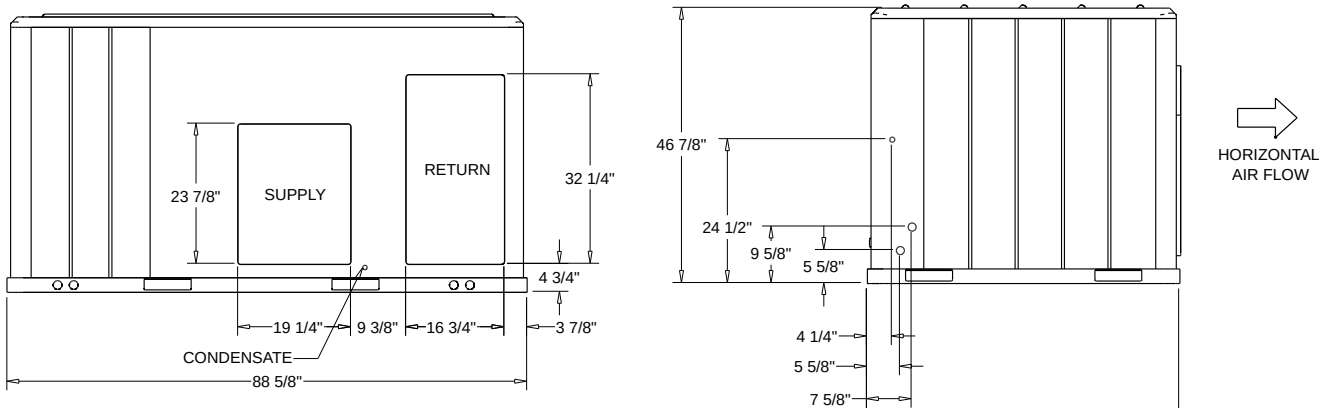
ISOMETRIC VIEW



NOTES:
1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.

PLAN VIEW UNIT

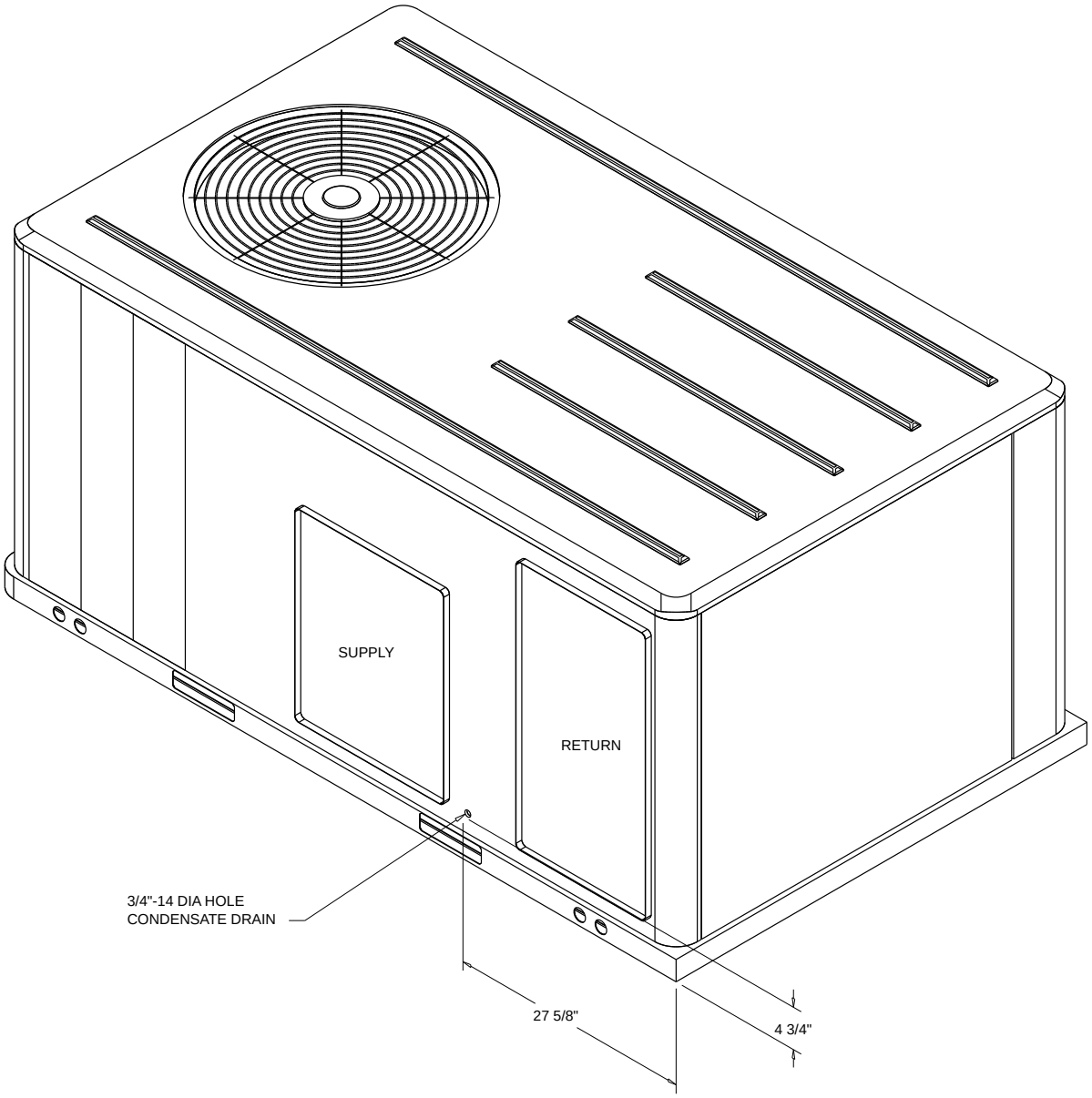
DIMENSION DRAWING



PACKAGED GAS / ELECTRICAL

DIMENSION DRAWING

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B2, B4 Qty: 2 Tag(s): RTU-3, RTU-5



ISOMETRIC-PACKAGED COOLING

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Item: B2 Qty: 1 Tag(s): RTU-3

ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YHC102F
Unit Operating Voltage:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage	230
Unit Hertz:	60
Unit Phase:	3
EER	12.5

Standard Motor

MCA:	42.0
MFS:	50.0
MCB:	50.0

Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

Field Installed Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	High
Heating Input (BTU):	200,000/140,000
Heating Output (BTU):	160,000/112,000
No. Burners:	4
No. Stages	2

Gas Inlet Pressure

Natural Gas (Min/Max):	4 1/2"/14"
LP (Min/Max)	11"/14"
Gas Pipe Connection Size:	3/4"

INDOOR MOTOR

Standard Motor

Number:	1
Horsepower:	2.75
Motor Speed (RPM):	--
Phase	3
Full Load Amps:	7.3
Locked Rotor Amps:	--

Oversized Motor

Number:	
Horsepower:	
Motor Speed (RPM):	
Phase	
Full Load Amps:	
Locked Rotor Amps:	

Field Installed Oversized Motor

Number:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Phase	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

COMPRESSOR Circuit 1/2

Number:	2
Horsepower:	4.5/2.4
Phase:	3
Rated Load Amps:	15.6/10.0
Locked Rotor Amps:	--

OUTDOOR MOTOR

Number:	1
Horsepower:	0.75
Motor Speed (RPM):	1100
Phase:	1
Full Load Amps:	4.0
	--

POWER EXHAUST ACCESSORY (3,7)

(Field Installed Power Exhaust)

Phase:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	20"x25"x2"

REFRIGERANT (2)

Type	R-410

Factory Charge

Circuit #1	6.3 lb
Circuit #2	4.9 lb

NOTES:

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.
7. Installation of this power exhaust kit will affect unit level MCA and could affect MOP sizing having a direct impact on existing field wiring and unit protection devices. The change in MCA/MOP is the sole responsibility of the field installing party. Trane will not issue new nameplates as a result of this power exhaust accessory installation. FLA of the power exhaust kit option must be added to the MCA of the unit for building supply conductor sizing determination.

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Item: B3 Qty: 1 Tag(s): RTU-4

ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YHC047E
Unit Operating Voltage:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage	230
Unit Hertz:	60
Unit Phase:	3
	13.0/17.5

Oversized Motor

MCA: N/A
MFS: N/A
MCB: N/A

Standard Motor

MCA:	30.0
MFS:	40.0
MCB:	40.0

Field Installed Oversized Motor

MCA: N/A
MFS: N/A
MCB: N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	Medium
Heating Input (BTU):	80,000
Heating Output (BTU):	64,000
No. Burners:	2
No. Stages	1

Gas Inlet Pressure

Natural Gas (Min/Max):	4 1/2"/14"
LP (Min/Max)	11"/14"
Gas Pipe Connection Size:	1/2"

INDOOR MOTOR

Standard Motor

Number:	1
Horsepower:	1.0
Motor Speed (RPM):	--
Phase	1
Full Load Amps:	9.4
Locked Rotor Amps:	--

Oversized Motor

Number:	
Horsepower:	
Motor Speed (RPM):	
Phase	
Full Load Amps:	
Locked Rotor Amps:	

Field Installed Oversized Motor

Number:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Phase	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

COMPRESSOR Circuit 1/2

Number:	1
Horsepower:	3.6
Phase:	3
Rated Load Amps:	14.0
Locked Rotor Amps:	-

OUTDOOR MOTOR

Number:	1
Horsepower:	0.40
Motor Speed (RPM):	1075
Phase:	1
Full Load Amps:	2.5
	-

POWER EXHAUST ACCESSORY (3,7)

(Field Installed Power Exhaust)

Phase:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	16"x25"x2"

REFRIGERANT (2)

Type

Factory Charge

Circuit #1	10.8 lb
Circuit #2	N/A

NOTES:

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.
7. Installation of this power exhaust kit will affect unit level MCA and could affect MOP sizing having a direct impact on existing field wiring and unit protection devices. The change in MCA/MOP is the sole responsibility of the field installing party. Trane will not issue new nameplates as a result of this power exhaust accessory installation. FLA of the power exhaust kit option must be added to the MCA of the unit for building supply conductor sizing determination.

Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Item: B4 Qty: 1 Tag(s): RTU-5

ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YHC092F
Unit Operating Voltage:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage	230
Unit Hertz:	60
Unit Phase:	3
EER	12.6

Standard Motor

MCA:	42.0
MFS:	50.0
MCB:	50.0

Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

Field Installed Oversized Motor

MCA:	N/A
MFS:	N/A
MCB:	N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	Medium
Heating Input (BTU):	150,000/105,000
Heating Output (BTU):	120,000/84,000
No. Burners:	3
No. Stages	2

Gas Inlet Pressure

Natural Gas (Min/Max):	4 1/2"/14"
LP (Min/Max)	11"/14"
Gas Pipe Connection Size:	3/4"

INDOOR MOTOR

Standard Motor

Number:	1
Horsepower:	2.75
Motor Speed (RPM):	--
Phase	3
Full Load Amps:	7.3
Locked Rotor Amps:	--

Oversized Motor

Number:	
Horsepower:	
Motor Speed (RPM):	
Phase	
Full Load Amps:	
Locked Rotor Amps:	

Field Installed Oversized Motor

Number:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Phase	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

COMPRESSOR Circuit 1/2

Number:	2
Horsepower:	4.1/2.4
Phase:	3
Rated Load Amps:	15.9/10.0
Locked Rotor Amps:	--

OUTDOOR MOTOR

Number:	1
Horsepower:	0.75
Motor Speed (RPM):	1100
Phase:	1
Full Load Amps:	4.0
	--

POWER EXHAUST ACCESSORY (3,7)

(Field Installed Power Exhaust)

Phase:	N/A
Horsepower:	N/A
Motor Speed (RPM):	N/A
Full Load Amps:	N/A
Locked Rotor Amps:	N/A

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	20"x25"x2"

REFRIGERANT (2)

Type	R-410

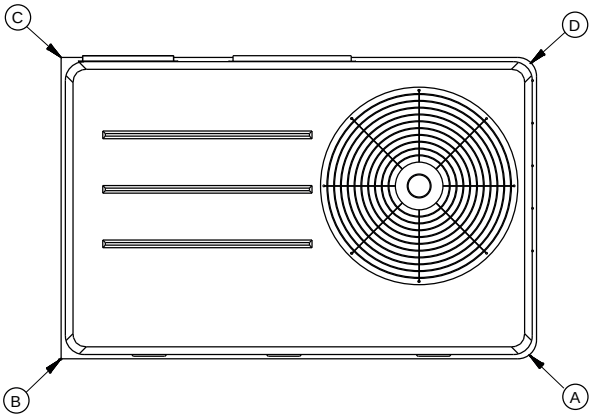
Factory Charge

Circuit #1	5.5 lb
Circuit #2	4.2 lb

NOTES:

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.
7. Installation of this power exhaust kit will affect unit level MCA and could affect MOP sizing having a direct impact on existing field wiring and unit protection devices. The change in MCA/MOP is the sole responsibility of the field installing party. Trane will not issue new nameplates as a result of this power exhaust accessory installation. FLA of the power exhaust kit option must be added to the MCA of the unit for building supply conductor sizing determination.

Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 Qty: 1 Tag(s): RTU-2



PACKAGED GAS / ELECTRICAL

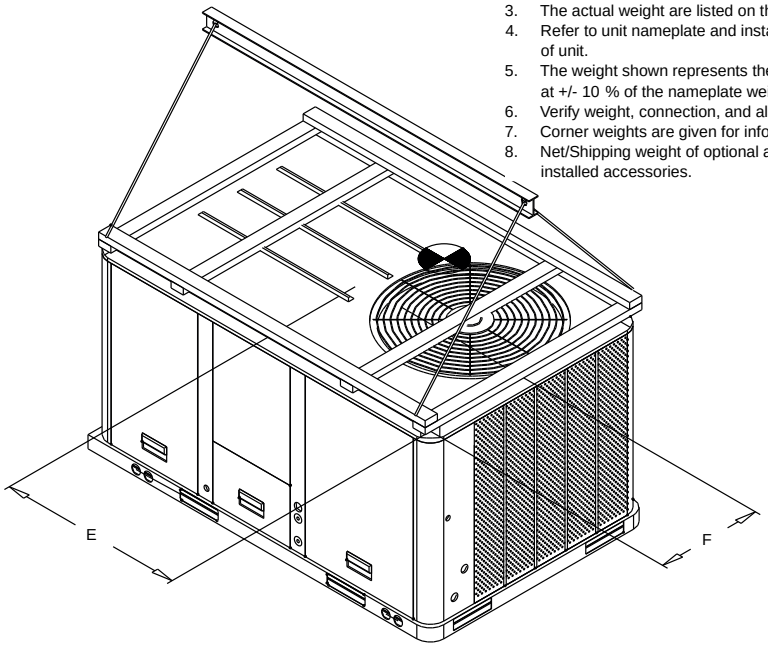
CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	13.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	
UNIT MOUNTED DISCONNECT (FIOPS)	5.0 lb
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	12.0 lb
HAIL GUARD	20.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	7.0 lb
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	261.0 lb	C	156.0 lb	(E) LENGHT	(F) WIDTH
917.0 lb	822.0 lb	B	218.0 lb	D	187.0 lb	40"	22"

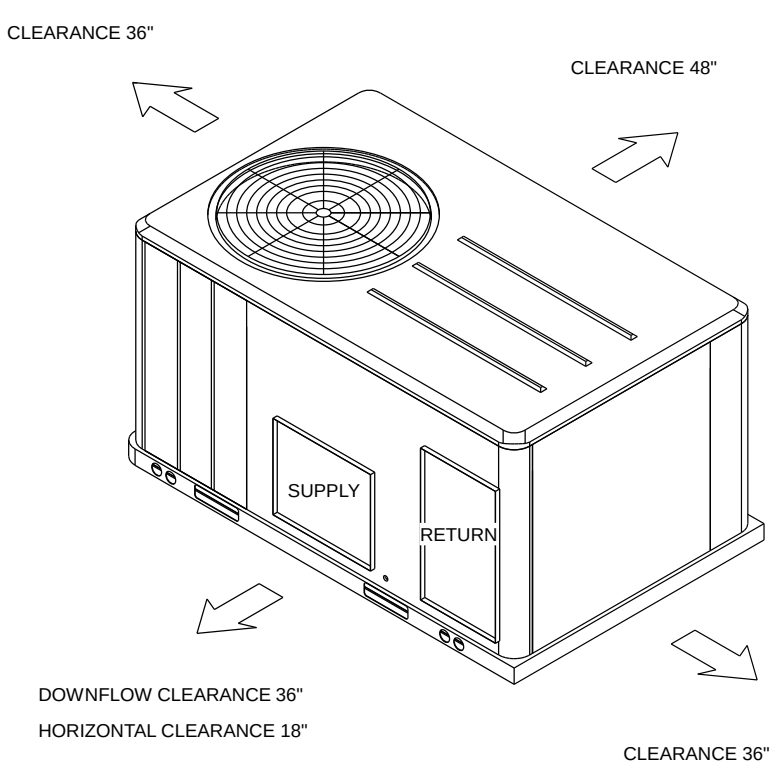
NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.



PACKAGED GAS / ELECTRICAL

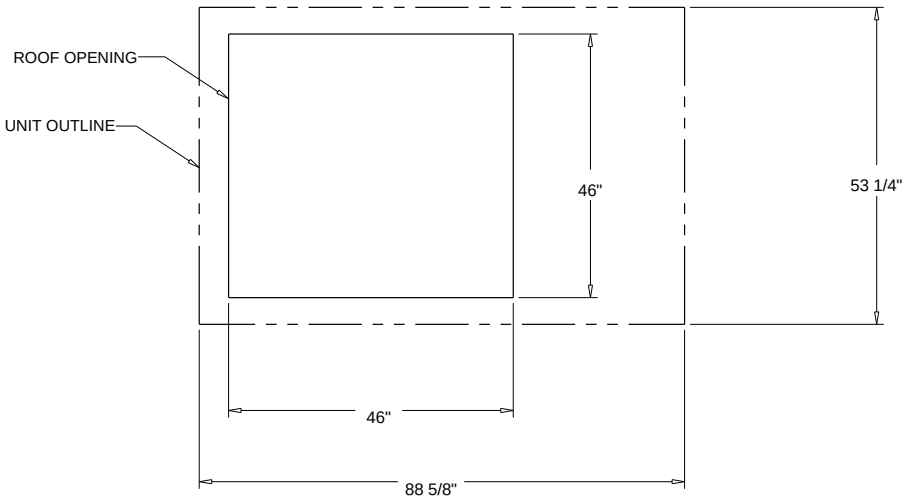
RIGGING AND CENTER OF GRAVITY

Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5



PACKAGED GAS / ELECTRIC

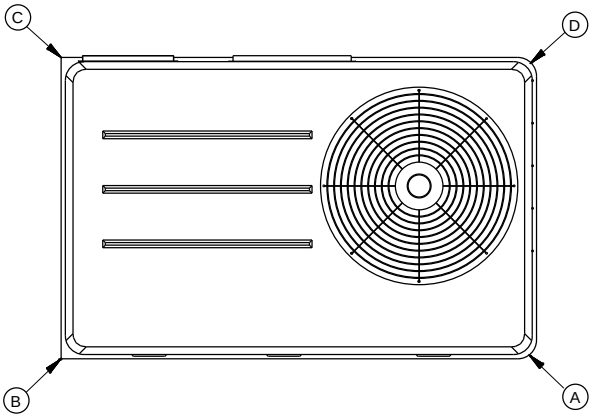
CLEARANCE



PACKAGED GAS / ELECTRIC

DOWNFLOW TYPICAL ROOF OPENING

Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B2 Qty: 1 Tag(s): RTU-3



PACKAGED GAS / ELECTRICAL

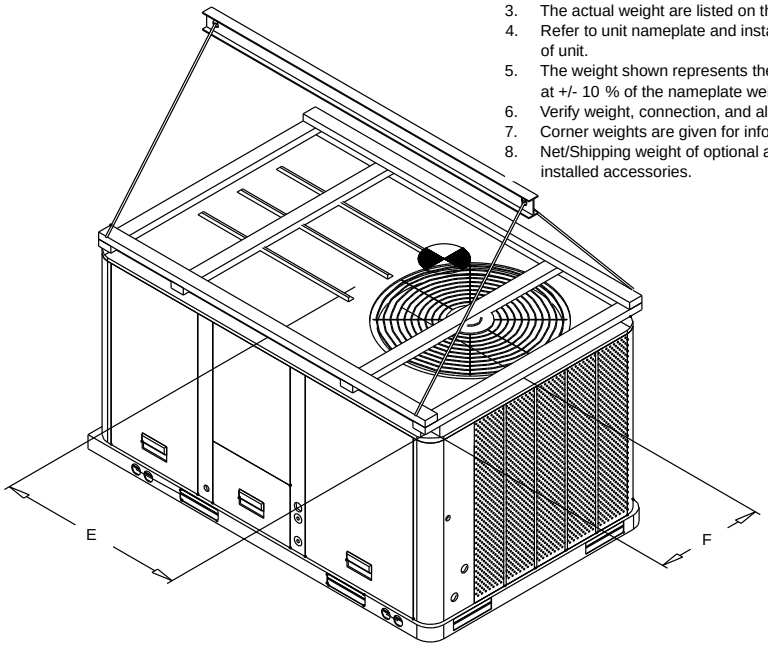
CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	13.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	
UNIT MOUNTED DISCONNECT (FIOPS)	5.0 lb
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	12.0 lb
HAIL GUARD	30.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	7.0 lb
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	341.0 lb	C	253.0 lb	(E) LENGHT	(F) WIDTH
1133.0 lb	1035.0 lb	B	236.0 lb	D	205.0 lb	49"	23"

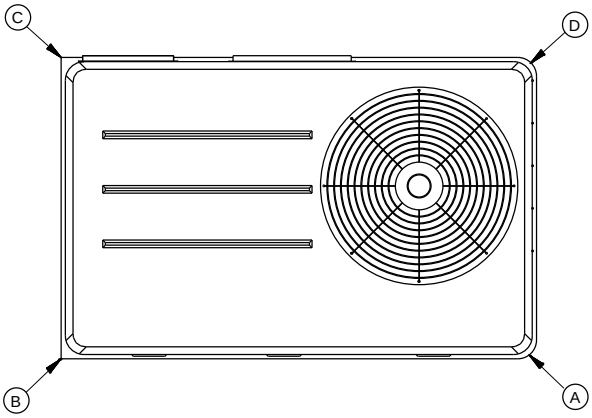
NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.



PACKAGED GAS / ELECTRICAL

RIGGING AND CENTER OF GRAVITY

Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B3 Qty: 1 Tag(s): RTU-4



PACKAGED GAS / ELECTRICAL

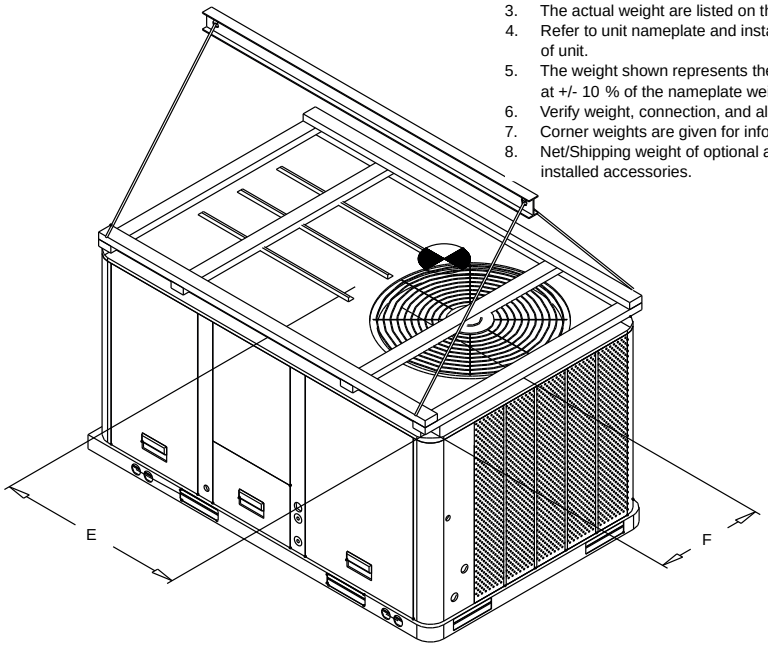
CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	13.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	
UNIT MOUNTED DISCONNECT (FIOPS)	5.0 lb
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	12.0 lb
HAIL GUARD	20.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	7.0 lb
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	238.0 lb	C	148.0 lb	(E) LENGHT	(F) WIDTH
858.0 lb	763.0 lb	B	200.0 lb	D	176.0 lb	40"	23"

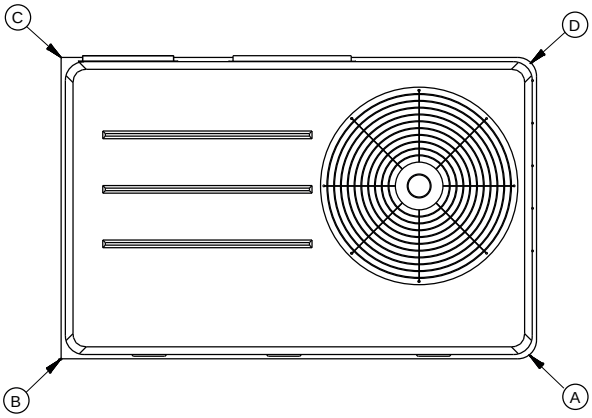
NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.



PACKAGED GAS / ELECTRICAL

RIGGING AND CENTER OF GRAVITY

Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B4 Qty: 1 Tag(s): RTU-5



PACKAGED GAS / ELECTRICAL

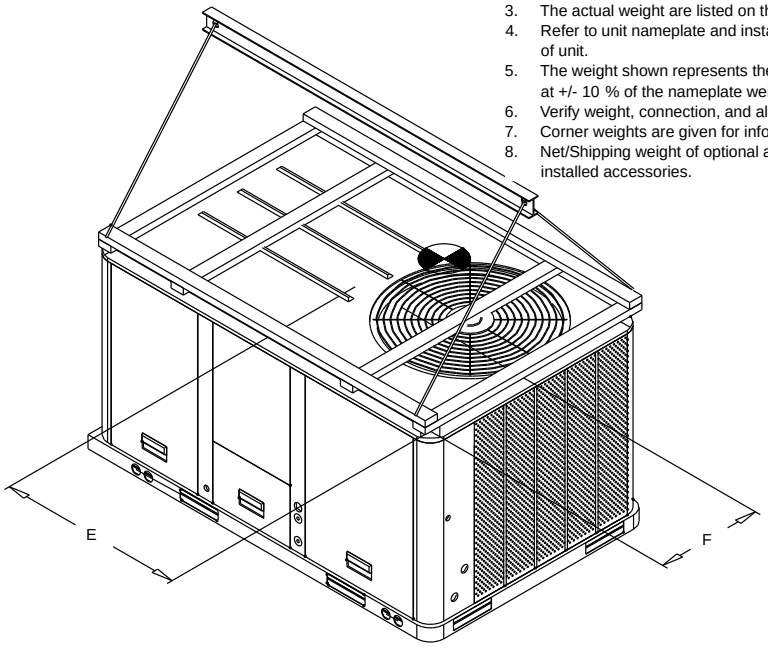
CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	13.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	
UNIT MOUNTED DISCONNECT (FIOPS)	5.0 lb
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	12.0 lb
HAIL GUARD	20.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	7.0 lb
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	340.0 lb	C	249.0 lb	(E) LENGHT	(F) WIDTH
1124.0 lb	1026.0 lb	B	233.0 lb	D	204.0 lb	41"	23"

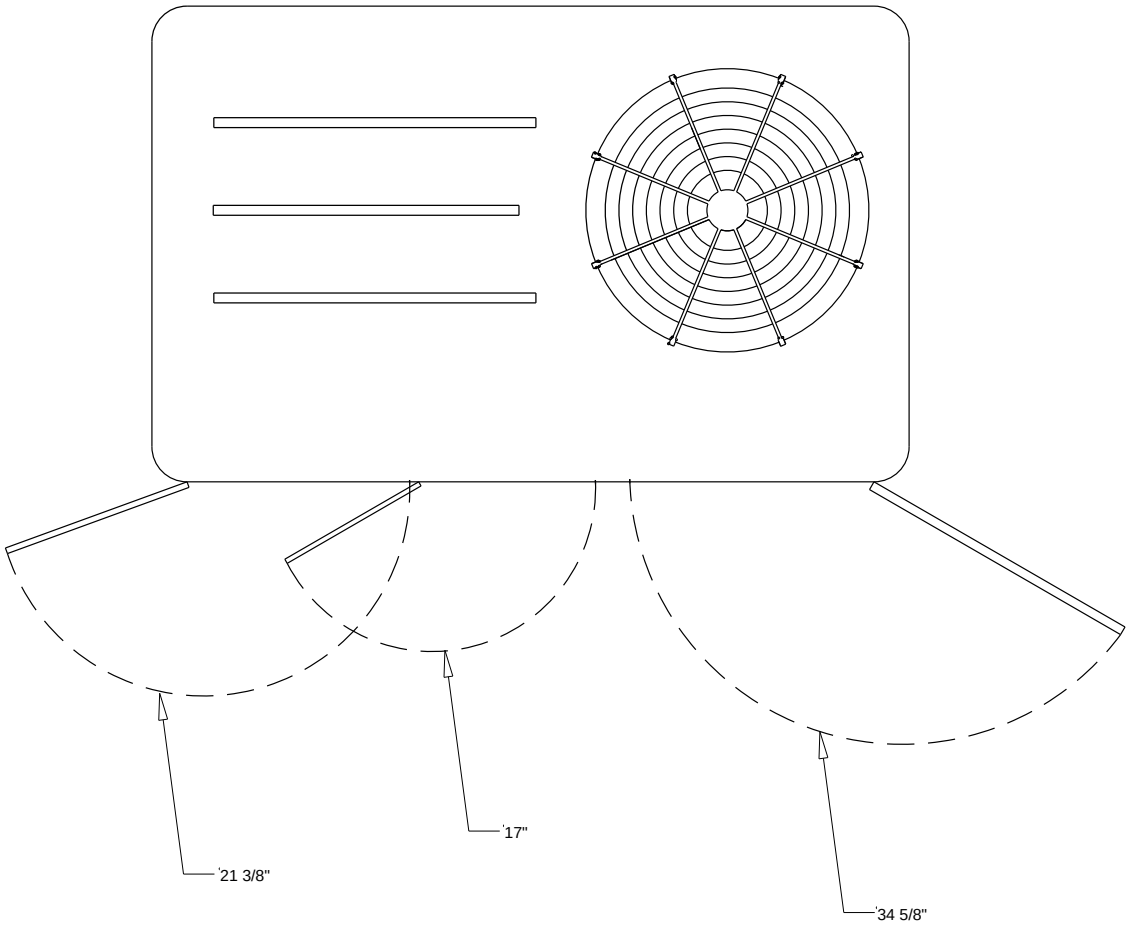
NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.



PACKAGED GAS / ELECTRICAL

RIGGING AND CENTER OF GRAVITY

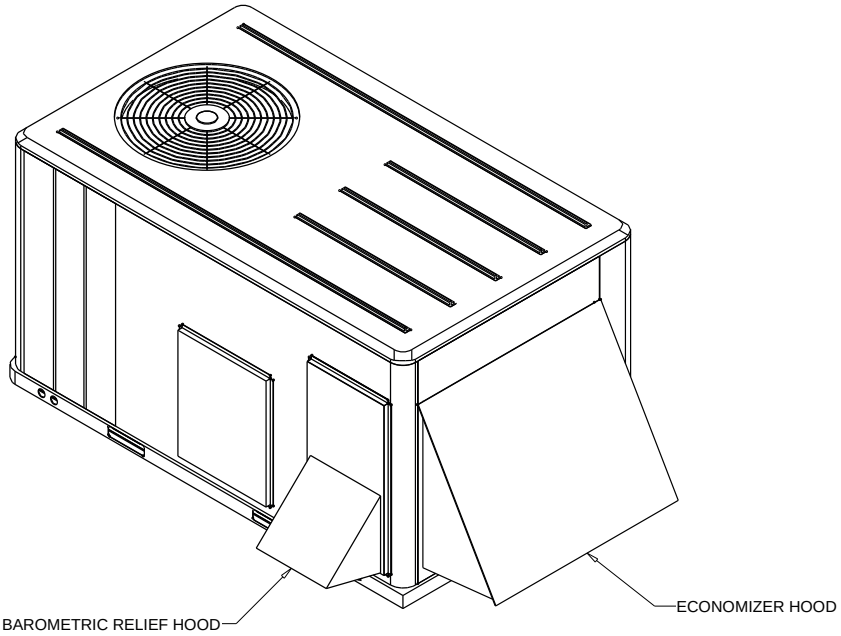
Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1, B2, B4 Qty: 3 Tag(s): RTU-2, RTU-3, RTU-5

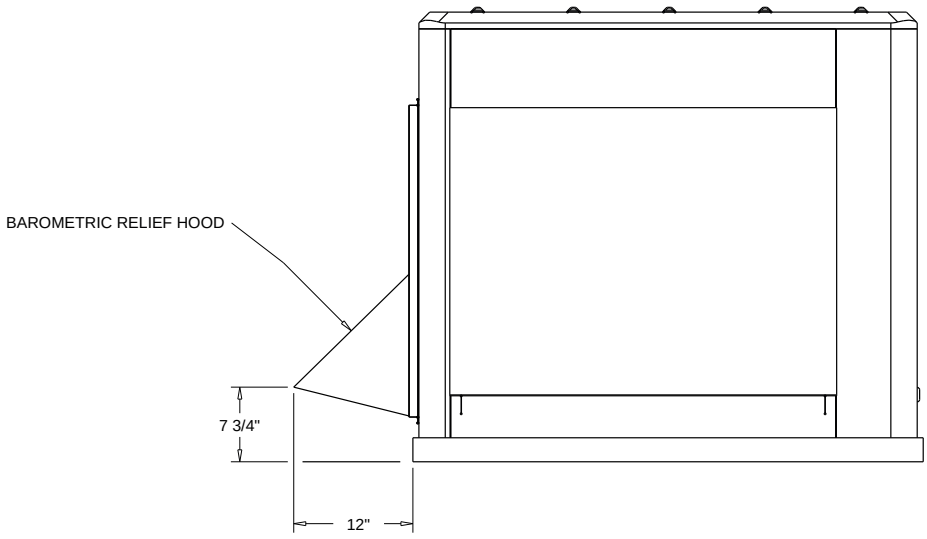


SWING DIAMETER - HINGED DOOR(S) OPTION

ACCESSORY

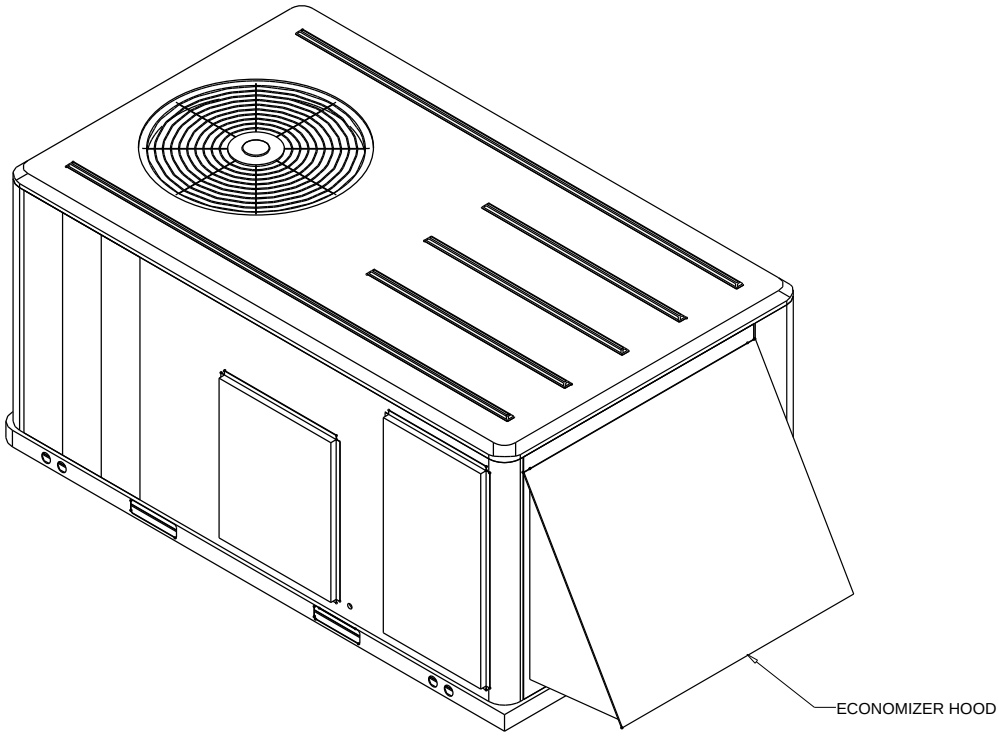
Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5

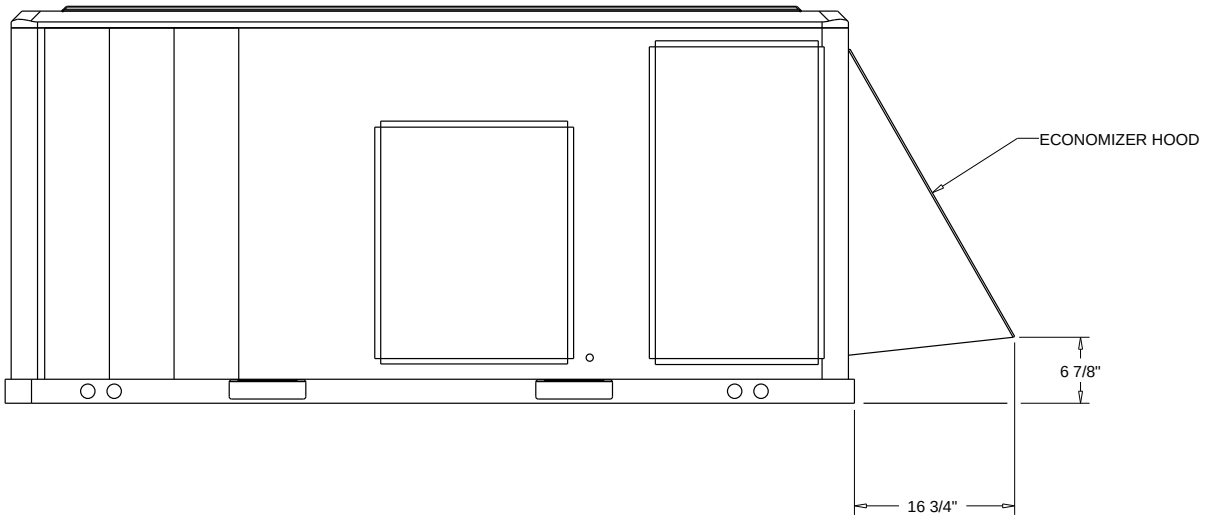




ACCESSORY - BAROMETRIC RELIEF DAMPER HOOD

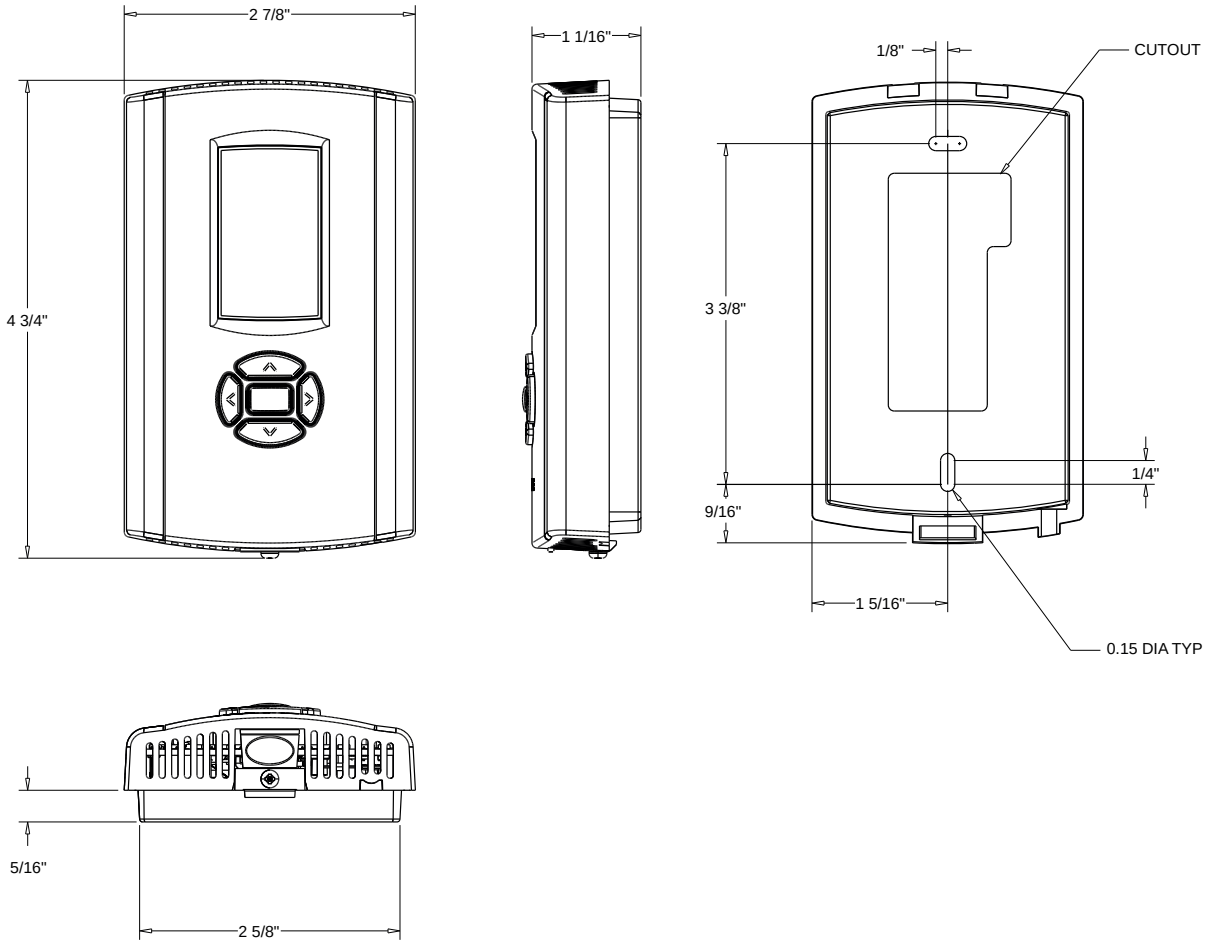
Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5





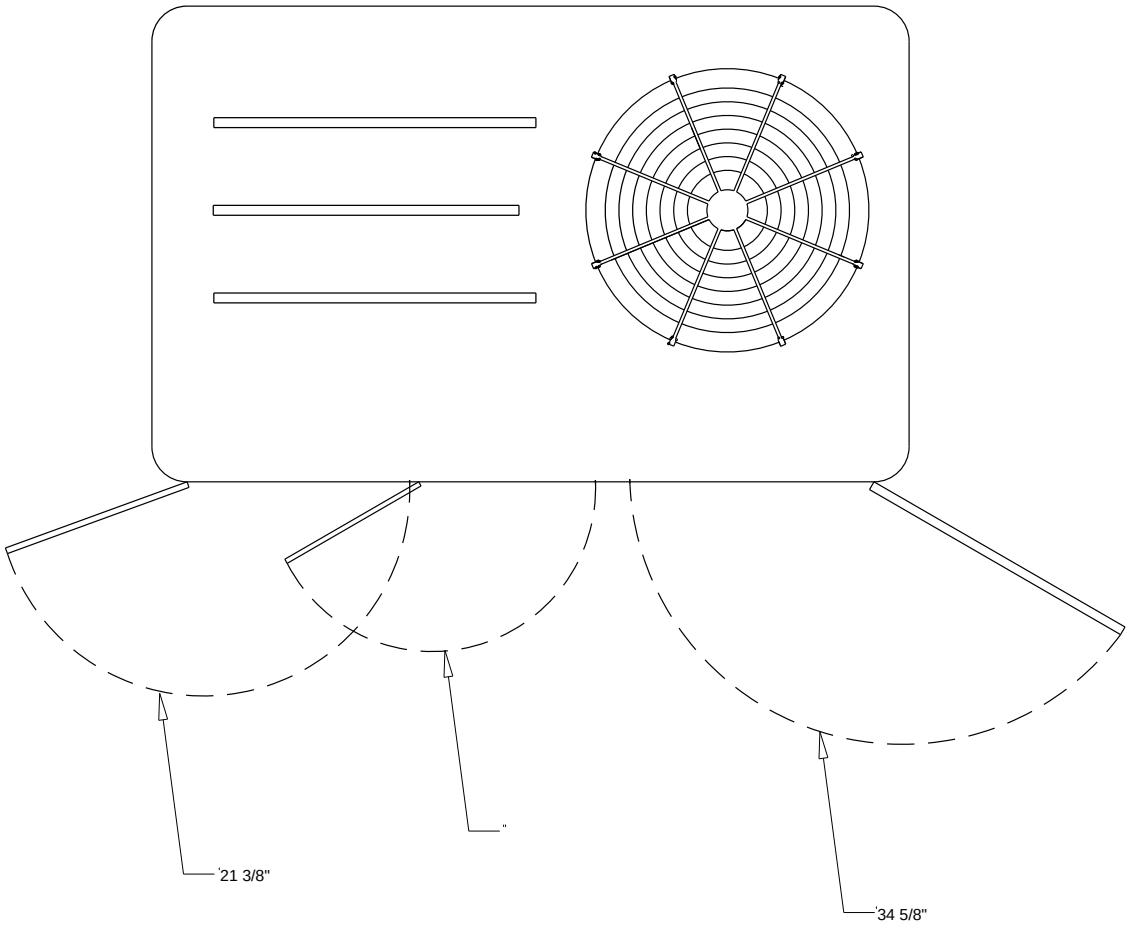
ACCESSORY - ECONOMIZER HOOD

Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B1 - B4 Qty: 4 Tag(s): RTU-2, RTU-3, RTU-4, RTU-5



BAYSEN135 - ZONE SENSOR
DIGITAL LCD

Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop
Item: B3 Qty: 1 Tag(s): RTU-4



SWING DIAMETER - HINGED DOOR(S) OPTION

ACCESSORY

Tag Data - Split System Air Conditioning Units (Small) (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
C1	AC/CU-2	1	1.5 - 5 Ton Unitary Split Systems (SSC)	4TTA7036A3--------0-0000000000-00----------0000---- -S9X1B060U4PSB4TXCB003DS3HC

Product Data - Split System Air Conditioning Units (Small)

Item: C1 Qty: 1 Tag(s): AC/CU-2

Split System Cooling Outdoor Unit
3 Ton Nominal Cooling Capacity
200 - 230 Volt 3 Phase 60 Hertz
90%+ Eff, 1 Stg, Multi-speed, 17.5" Wide
60,000 Heating input BTUH
3-Way (upflow, Horiz Right, Horiz Left)
4 Ton Capacity
Permanent split capacitor Two Speed
Standard 24 Volt
Cased upflow/dnflow/horiz left
17.5"/16.3"cabinet
Brazed
30,000 Nominal cooling capacity
Hi efficiency
TXV-Non bleed
Heat pump
Conv-upflow/dnflw,left airflow coil
Touchscreen Programmable 4H/2C (Fld)

Performance Data - Split System Air Conditioning Units (Small)

Tags	AC/CU-2
Design clg EDB (F)	80.00
Design clg EWB (F)	67.00
Design clg outdoor DB (F)	105.00
Cooling EDB (F)	79.80
Cooling EWB (F)	68.50
Rated gross capacity (AHRI) (Btuh)	35000.00
Elevation (ft)	0.00
Clg net total capacity (Btuh)	34483.00
Clg net sensible capacity (Btuh)	21183.00
Clg net latent capacity (Btuh)	13300.00
Calc clg LDB (F)	59.40
Calc clg LWB (F)	57.10
SEER @ AHRI (btuh/watt)	16.00
EER @ AHRI (EER)	12.2
Cooling airflow (cfm)	975
Min system airflow clg (cfm)	975
Max system airflow clg (cfm)	1250
AHRI airflow (cfm)	996
AHRI reference number ( )	-1
Compressor power @ (specific Ambient) (W)	2469.0
Condenser fan power @ (specific SP) (W)	139.0
Supply fan power @ (specified SP) (W)	261.0
ASHRAE 90.1 S6.4.1 compliant	Yes
Cooling unit MCA (A)	15.00
Cooling unit Max Fuse Size (A)	25.00
Heating airflow (cfm)	975
Heating EDB (F)	60.00
80 to 90 second blower off delay	Not Required
OD AHRI Model (Each)	-1.00
ID AHRI Model (Each)	5716296.00
Annual Fuel Utilization Efficiency (%)	95.00
Heating input @ sea level (Btuh)	60000.00
Heating output @ sea level (Btuh)	58000.00

Mechanical Specifications - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): AC/CU-2

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.

4TTA7- 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 115°F. 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.

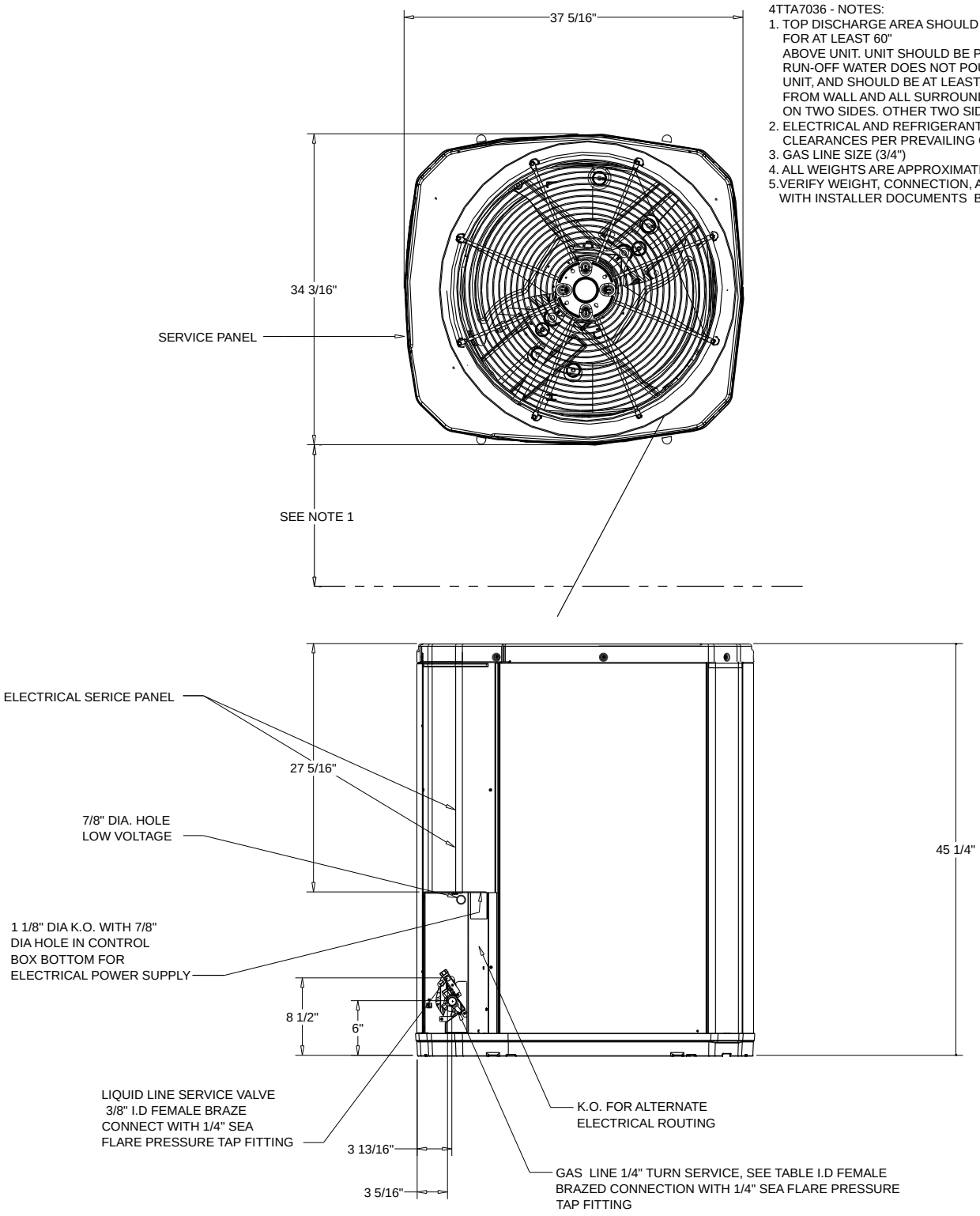
4TTA7 - Casing
Unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint finish on all louvered panels and the fan top panel. The corner panels are prepainted. All panels are subjected to our 1,000 hour salt spray test . The base is made of a CMBP-G30 weatherproof material to resist corrosion.

4TTA7 - 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.

4TTA7 - 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.

4TTA7 - Condenser Coil
The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): AC/CU-2



4TTA7036 - 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.
3. GAS LINE SIZE (3/4")
4. ALL WEIGHTS ARE APPROXIMATE.
5. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

Unit Dimensions - Split System Air Conditioning Units (Small)

Item: C1 Qty: 1 Tag(s): AC/CU-2

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TTA7036A3000A	Minimum Circuit Ampacity:	15.0	Number:	1
Operating Voltage:	187-253	Maximum Circuit Breaker:	25.0	Phase:	3
Unit Primary Voltage:	208	Minimum Protection Rating:	25.0	Rated Load Amps:	11.6
Unit Secondary Voltage	230			Locked Rotor Amps:	73.0
Unit Hertz:	60				
Unit Phase:	3				

OUTDOOR MOTOR	
Number:	1
Horsepower:	0.125
Motor Speed (RPM):	-
Phase:	1
Full Load Amps:	0.74
Locked Rotor Amps:	-

REFRIGERANT	
Type:	R-410A
Charge:	9.8 lb
Line Size O.D. Gas:	3/4"
Line Size O.D. LIQ:	3/8"

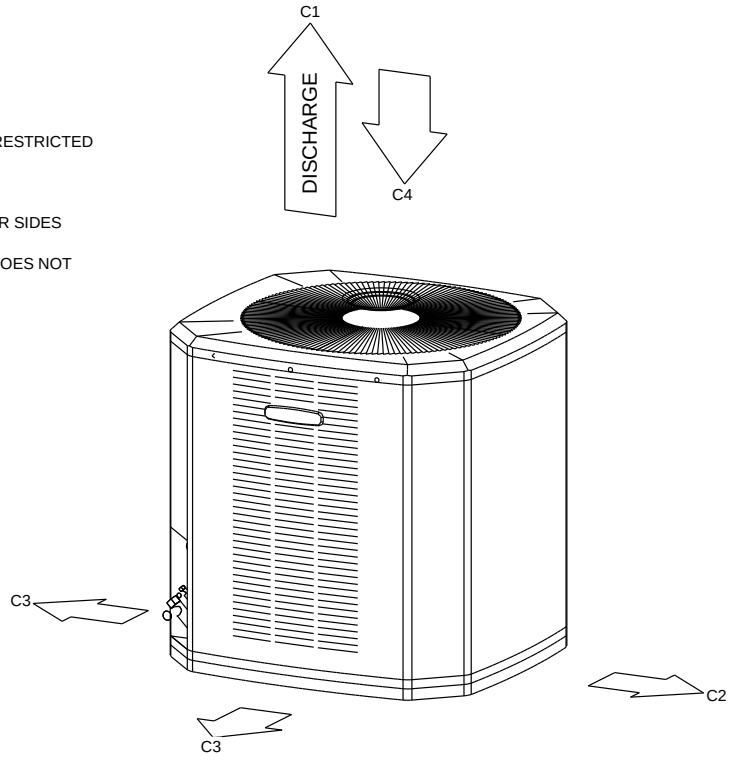
NOTES:

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	245.0 lb
SHIPPING	283.0 lb

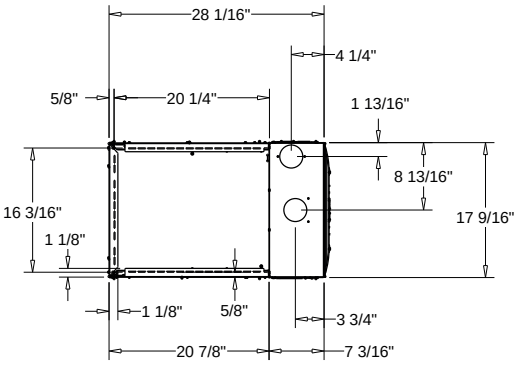
NOTES:

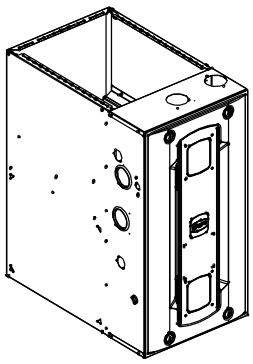
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT



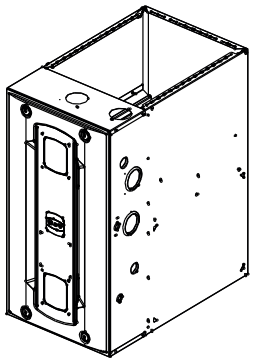
WEIGHT AND CLEARANCE

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): AC/CU-2

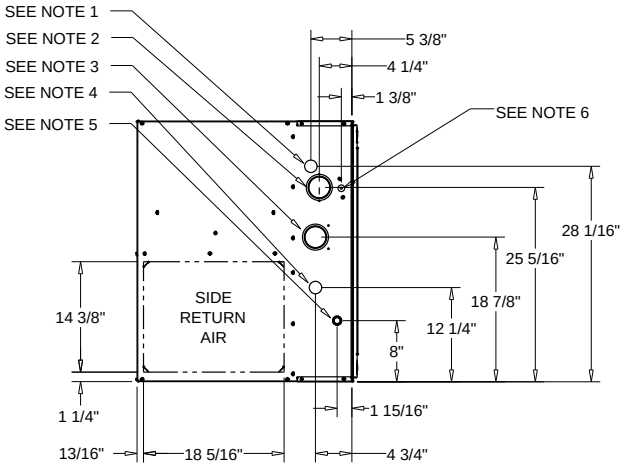


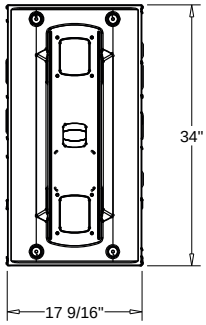


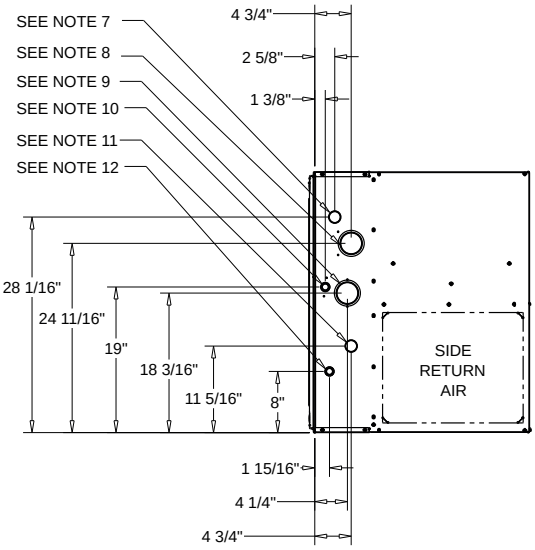
HORIZONTAL RIGHT

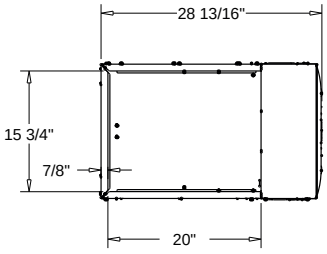


HORIZONTAL LEFT









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

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): AC/CU-2

ELECTRICAL / GENERAL DATA

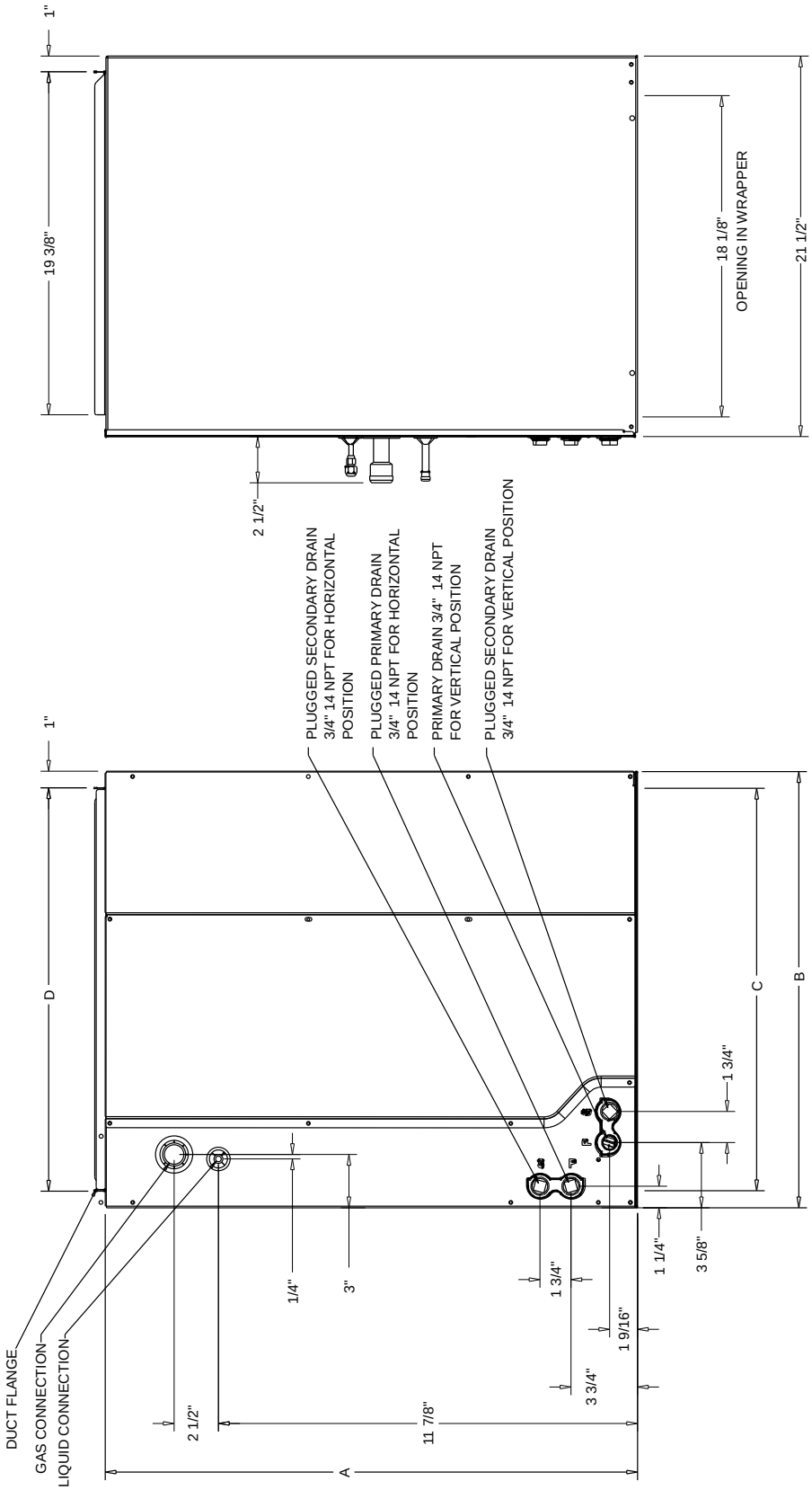
Furnace

GENERAL - POWER CONN		COMBUSTION FAN		BLOWER DRIVE	
Model:	S9X1B060U4PSBA	Type:	Centrifugal	Drive:	Direct
Voltage:	120 / 1 /60	Motor HP:	0.50	No. Used:	1
Ampacity (Amps):	10.3	Motor Speed RPM:	3300	Motor HP:	0.75
Max Over. Pro. (Amps):	15.0	Phase:	1	Speed RPM:	1075
		Full Load Amps:	0.66	Phase:	1
ORIFICES		**RATINGS (b)**		**FILTERS**	
Nat. Gas Qty - Drill Size:	3-45	1 Stage input BTUH:	60000	Type:	High Velocity
L.P. Gas Qty. - Drill Size:	3-56	1 Stage output BTUH:	58200	Furnished:	No
Gas Valve:		2 Stage input BTUH:	-	Recommended	(1) 16" X 25" X1"
		2 Stage output BTUH (c,d) :	-		
BURNERS		1st Stage Temp. Rise (Min.-Max.) :	35 -65	**WEIGHT / DIMENSIONS**	
Type:	Multiport Inshot	2nd Stage Temp. Rise (Min.-Max.):	-	Shipping:	130.0 lb
Number:	3	AFUE (%) (c,d):	96.0 / 92.1	Net:	122.0 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.

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: C1 Qty: 1 Tag(s): AC/CU-2

4TXCB003
DIMENSION (A): 17 1/2"
DIMENSION (B): 17 1/2"
DIMENSION (C): 16 5/8"
DIMENSION (D): 15 3/4"
MATCH FURNACE WIDTH: 17 1/2"
GAS: 3/4" BRAZE
LIQUID: 3/8" BRAZE
WEIGHT: 42.0 lb



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 - Packaged Gas/Electric Rooftop Units

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	12 1/2 -25 Ton Packaged Unitary Gas/Elec	YHD150G3RHD--D6E1A10600A1000001000000000

Field Installed Option Description	Part/Ordering Number
Digital display zone sensor	BAYSENS135A
High static drive	BAYHSDR052A

Product Family - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Item	Tag(s)	Qty	Description	Model Number
B1	RTU-2	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC067E3RHA--D6E1A10600A1000001000000000
B2	RTU-3	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC102F3RHA--D6E1A10600A1000001000000000
B3	RTU-4	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC047E3RMA--D6E1A10600A1000001000000000
B4	RTU-5	1	3-10 Ton R-410A PKGD Unitary Gas/Electri	YHC092F3RMA--D6E1A10600A1000001000000000

Field Installed Option Description	Part/Ordering Number
Digital display zone sensor	BAYSENS135A

Product Family - Split System Air Conditioning Units (Small)

Item	Tag(s)	Qty	Description	Model Number
C1	AC/CU-2	1	1.5 - 5 Ton Unitary Split Systems (SSC)	4TTA7036A3----------0-0000000000-00----------0000----------S9X1B060U4PSB4TXCB003DS3HC

Field Installed Option Description	Part/Ordering Number
Touchscreen Programmable 4H/2C	TCONT302AS42DA