



TRANE

Submittal

Prepared For:
Metro Air Conditioning

Date: March 23, 2016

Job Name:
Summit Church

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

Product Summary

Qty	Product
3	Packaged Gas/Electric Rooftop Units
1	Packaged Rooftop, Cooling / Heating Units
1	3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
7	Variable Air Volume Fan Powered Terminal Units
2	Variable Air Volume Single Duct Terminal Units
1	VAV Changeover/Bypass-System Controllers
1	Light Commercial Unitary System Panels
4	Vibration Curbs

-2015-158-

Planning & Codes Admin

APR 13 2016

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

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Tag Data - Packaged Gas/Electric Rooftop Units (Qty: 3)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	20 Ton Packaged Unitary	YSH240F4RHA--0001A1020000000000000000
A2	RTU-2, RTU-3	2	25 Ton Packaged Unitary	YSD300F4RHA--F001A1020000000000000000

Product Data - Packaged Gas/Electric Rooftop Units

All Units

Gas/Electric
Standard efficiency
460/60/3
Reliabel
Gas Heat - High
Standard condenser coil with hail guard
Through the base electric
Unit mounted non-fused disconnect
Lonalk(R) communications interface
Digital Display Wireless Zone Sensor (Fid)

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

Horizontal
20 Ton
0-100% Economizer, dry bulb control (Fid)
Reference enthalpy kit (Fid)

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

Downflow
25 Ton
Economizer Reference Enthalpy 0-100% with Barometric relief
CO2 wall mounted, field sensor kit (Fid)

Performance Data - Packaged Gas/Electric Rooftop Units

Tags			
RTU-1	RTU-2, RTU-3	Design Airflow (cfm)	8000
		Cooling Entering Dry Bulb (F)	78.00
		Cooling Entering Wet Bulb (F)	66.00
		Ent Air Rel Humidity (%)	53.31
		Ambient Temp (F)	100.00
		Cooling Leaving Unit DB (F)	59.12
		Cooling Leaving Unit WB (F)	56.81
		Gross Total Capacity (MBh)	242.71
		Gross Sensible Capacity (MBh)	181.19
		Gross Latent Capacity (MBh)	61.52
		Heating LAT (F)	36.87
		Output Htg Capacity (MBh)	320.00
		Output Htg Capacity w/Fan (MBh)	335.04
		Design ESP (in H2O)	0.750
		Component SP Add (in H2O)	0.000
		Indoor Mtr. Operating Power (bhp)	4.77
		Indoor RPM (rpm)	785
		Indoor Motor Power (kW)	3.56
		Outdoor Motor Power (kW)	1.74
		Compressor Power (kW)	21.11
		System Power (kW)	26.41
		IPLV @ AHRI (IPLV)	11.5
		MCA (A)	52.00
		MOP (A)	70.00
		Compressor 1 RLA (A)	20.00
		Compressor 2 RLA (A)	13.20
		Condenser Fan FLA (A)	2.90
		Evaporator Fan FLA (A)	7.60
		Evaporator Face Area (sq ft)	26.00
		Evaporator Face Velocity (ft/min)	308
		Evaporator Fin Spacing (Per Foot)	180
		Evaporator Rows ()	4
		Min. Unit Operating Weight (lb)	1909.0
		Max Unit Operating Weight (lb)	2323.0
		Fan Motor Heat (MBh)	15.04
		Evap Coil Leav Air Temp (DB) (F)	57.03
		Evap Coil Leav Air Temp (WB) (F)	55.99
		Dew Point Temp (F)	55.31
		Rated capacity (AHRI) (MBh)	240.00
		Exhaust fan power (kW)	0.56
		Refrig charge (HFC-410A) - ckt 1 (lb)	13.5
		Refrig charge (HFC-410A) - ckt 2 (lb)	7.0
		ASHRAE 90.1	Yes
		Saturated Suction Temp Circuit 1 (F)	51.60
		Saturated Discharge Temp Circuit 1 (F)	128.35
		Saturated Suction Temp Circuit 2 (F)	51.46
		Saturated Discharge Temp Circuit 2 (F)	132.62
		IEER Rating ()	11.50
		EER @ AHRI Conditions (EER)	10.0
		Total Static Pressure (in H2O)	0.750

General
The units shall be dedicated downflow or horizontal 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 AHRI 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 UL listed and labeled, classified in accordance to UL 1995/C 22.2, 236-05 3rd Edition.

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. 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, fire-resistant, permanent, odorless, glass fiber material. The base of the downflow unit shall have no penetrations within the perimeter of the curb other than the raised 1/8 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. Two inch standard filters shall be factory supplied on all units. Optional two inch pleated media filters shall be available.

Compressors
All units shall have direct-drive, 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.

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

Refrigerant Circuits
Each refrigerant circuit shall have independent fixed orifice or thermostatic expansion devices, 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
Microchannel 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. Microchannel condenser coils shall be standard on all units. Coils shall be leak tested to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 225 psig and pressure tested to 450 psig. Sloped condensate drain pans are standard.

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 or propane (field installed kit) and shall also comply with California requirements for low NOx emissions. The 12½- 25 tons shall have two stage heating (Gas/Electric Only).

Microchannel coils

The microchannel type condenser coil is standard for the T/YCD 12.5-25 ton standard efficiency models. 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. 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. Oversized motors shall be available for high static application. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

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.

FLOPS - LonTalk Communications Interface (R-410A)

The LonTalk communications interface, when installed in a Voyager unit, allows the unit to communicate as a Tracer LCI-V device or directly with generic LonTalk Network Building Automation System Controls.

Reference or Comparative Enthalpy

Reference Enthalpy is used to measure and communicate outdoor humidity. The unit receives and uses this information to provide improved comfort cooling while using the economizer. Comparative Enthalpy measures and communicates humidity for both outdoor and return air temperature. The unit receives and uses this information to maximize use of economizer cooling, and to provide maximum occupant comfort control. Reference or Comparative Enthalpy option shall be available when a factory or field installed Downflow Economizer is ordered. This option is available on all downflow models.

Reference Enthalpy-Factory Installed

This option will be factory installed to measure and communicate outdoor humidity. The unit will receive and use this information to provide improved comfort cooling while using the economizer.

Accessory - Economizer - Horizontal

The horizontal economizer shall contain the same features as the downflow economizer with the exception of barometric relief.

Accessory - Reference or Comparative Enthalpy

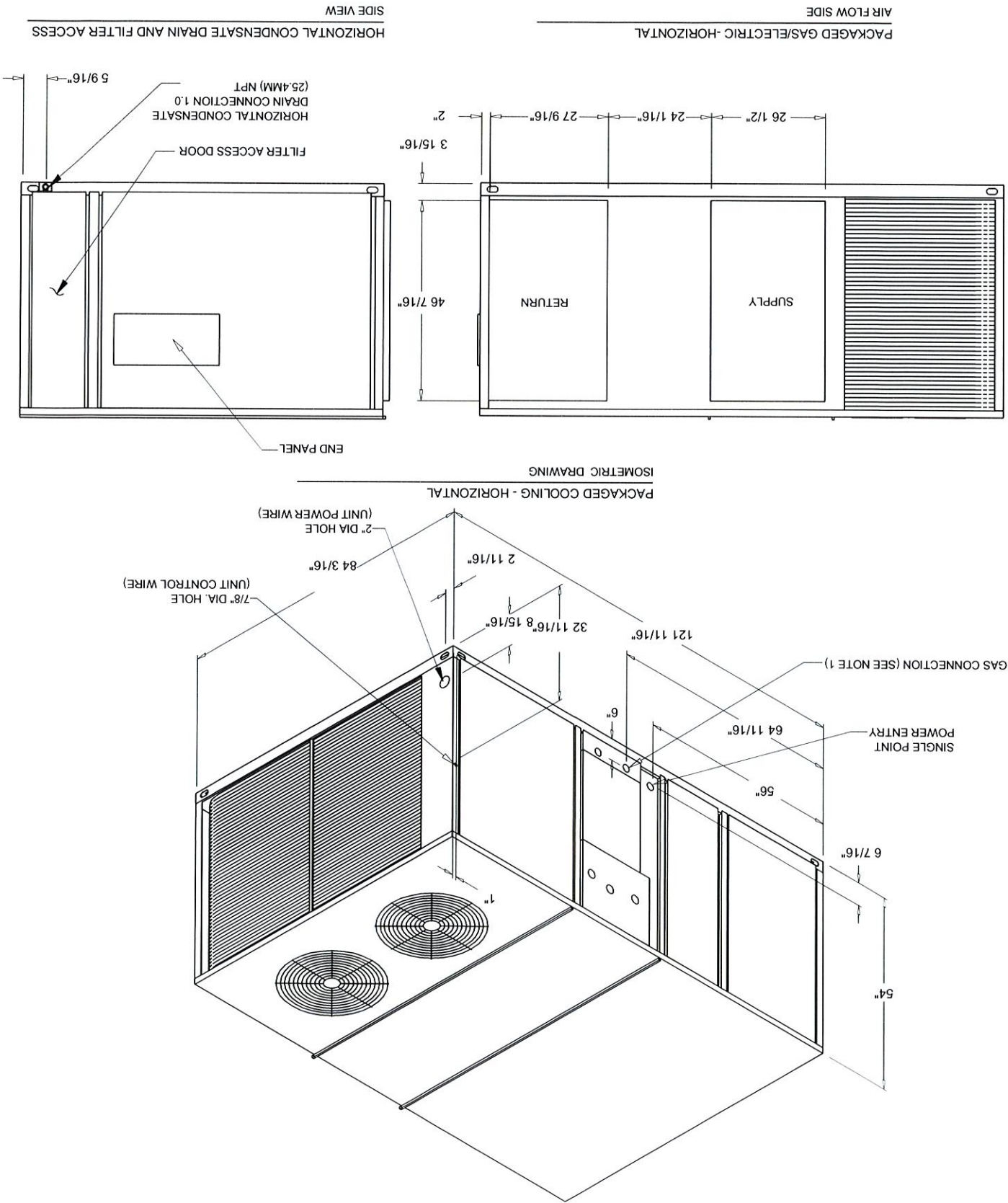
Reference Enthalpy is used to measure and communicate outdoor humidity. The unit receives and uses this information to provide improved comfort cooling while using the economizer. Comparative Enthalpy measures and communicates humidity for both outdoor and return air conditions, and return air temperature. The unit receives and uses this information to maximize use of economizer cooling, and to provide maximum occupant comfort control. Reference or Comparative Enthalpy option shall be available when a factory or field installed Downflow Economizer is ordered. This option is available on all downflow models.

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.

Accessory - CO2 Sensing

The CO2 sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO2 (Carbon Dioxide) in the air. As the CO2 levels increase, the outside air damper modulates to meet the CO2 space ventilation requirements.

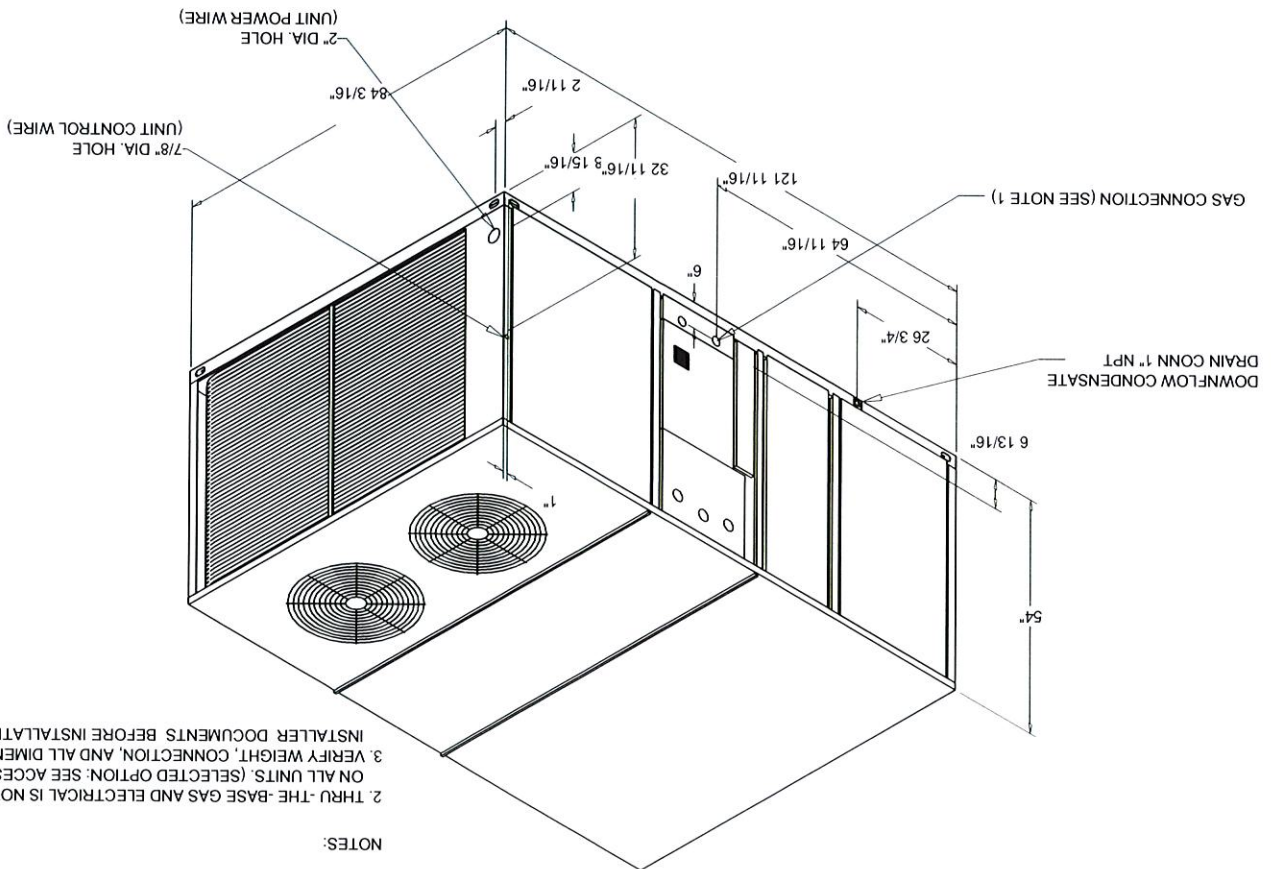


ELECTRICAL / GENERAL DATA

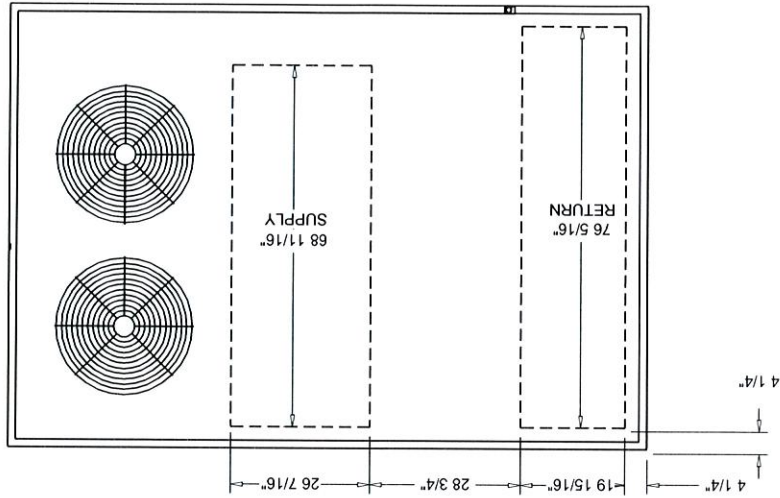
GENERAL PERFORMANCE Model (Ton): YSH240F (20.0) Unit Operating Voltage Range: 414-506 Unit Primary Voltage: 460 Unit Secondary Voltage: - Unit Hertz: 60 Unit Phase: 3 EER: (5) 10.0 MCB (HACR): N/A MFS: N/A MCA: N/A Field Installed Oversized Motor (1) (4) MCB (HACR): N/A MFS: N/A MCA: N/A			
GAS HEATING Heating Models: High Heating and 1 Stage Input (Btu/h): 400,000 / 300,000 Heating and 1 Stage Output (Btu/h): 324,000 / 243,000 Min./Max. Gas Input - Pressure Natural or LP: 2.5 / 14.0 Gas Connection Pipe Size: 3/4"		COMPRESSOR Number: 2 Horsepower: 11.7/6.9 Rated Load Amps: 20.0/13.2 Locked Rotor Amps: 147.0/100.0 Circuit(s)	
INDOOR MOTOR Number: (3) 1 Horsepower: 5.00 Motor Speed (RPM): 3,450 Phase: 3 Full Load Amps: 7.6 Locked Rotor Amps: 54.9		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 Field Installed Oversized Motor (4)	
OUTDOOR MOTOR Number: 2 Horsepower: 1.00 Motor Speed (RPM): 1,125 Phase: 1 Full Load Amps: 2.5 Locked Rotor Amps: 5.8		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: 0.1 Motor Speed (RPM): 3,500/2,800 Phase: 1 Full Load Amps: 0.8 Locked Rotor Amps: 2.00		REFRIGERANT (2) Type: R410 Circuit #1 / 2 Factory Charge Circuit #1 / 2: 13.5 lb / 7.0 lb	
FILTER Type: Throwaway Number: 8 Recommended Size: 20"x25"x2"			

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 includes oversized motor.
 4. Value does not include Power Exhaust Accessory.
 5. EER is rated at AHRI conditions and in accordance with DOE test procedures.

NOTES:
2. THRU - THE BASE GAS AND ELECTRICAL IS NOT STANDARD ON ALL UNITS. (SELECTED OPTION: SEE ACCESSORY SHEET)
3. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



PACKAGED GAS/ELECTRIC - DOWNFLOW
ISOMETRIC DRAWING

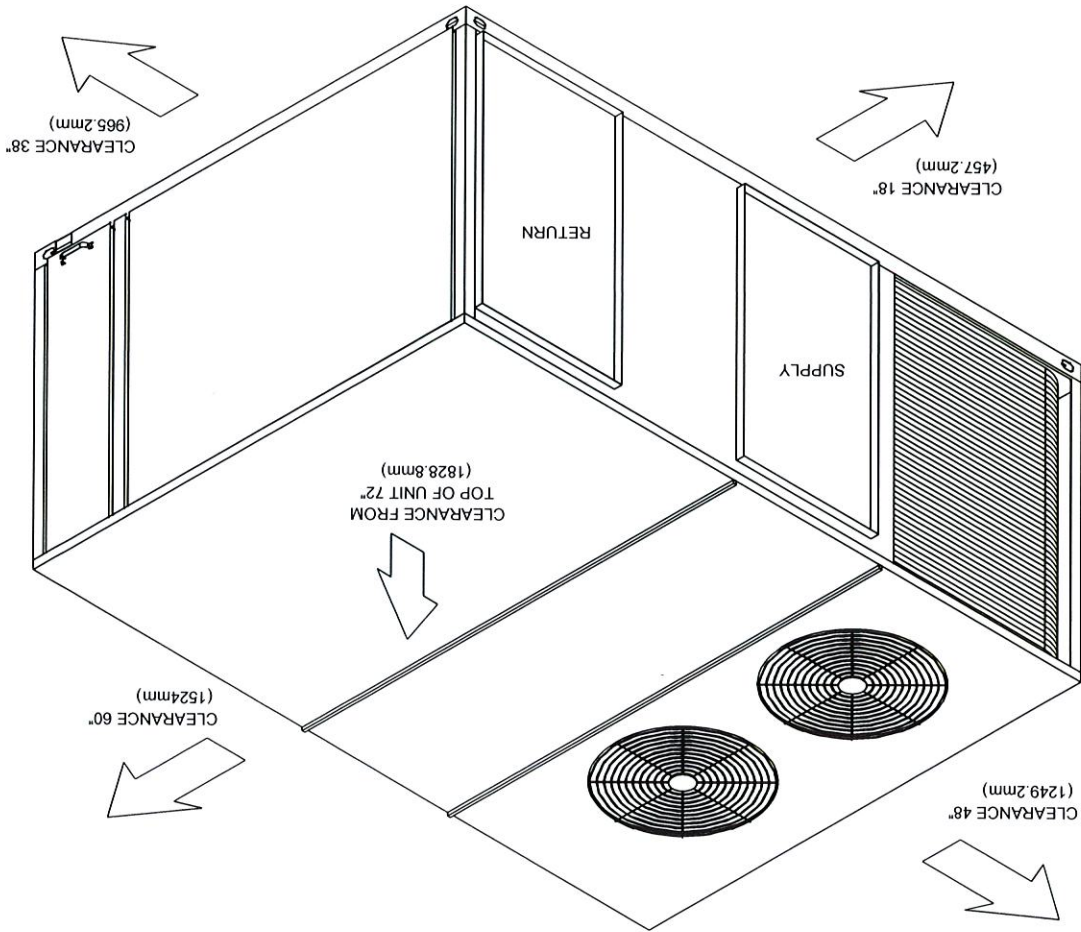


PACKAGED GAS/ELECTRIC - DOWNFLOW
PLAN VIEW DRAWING

GENERAL PERFORMANCE

NOTES:

5. EER is rated at AHRI conditions and in accordance with DOE test procedures.



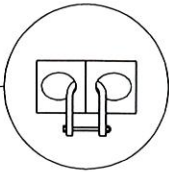
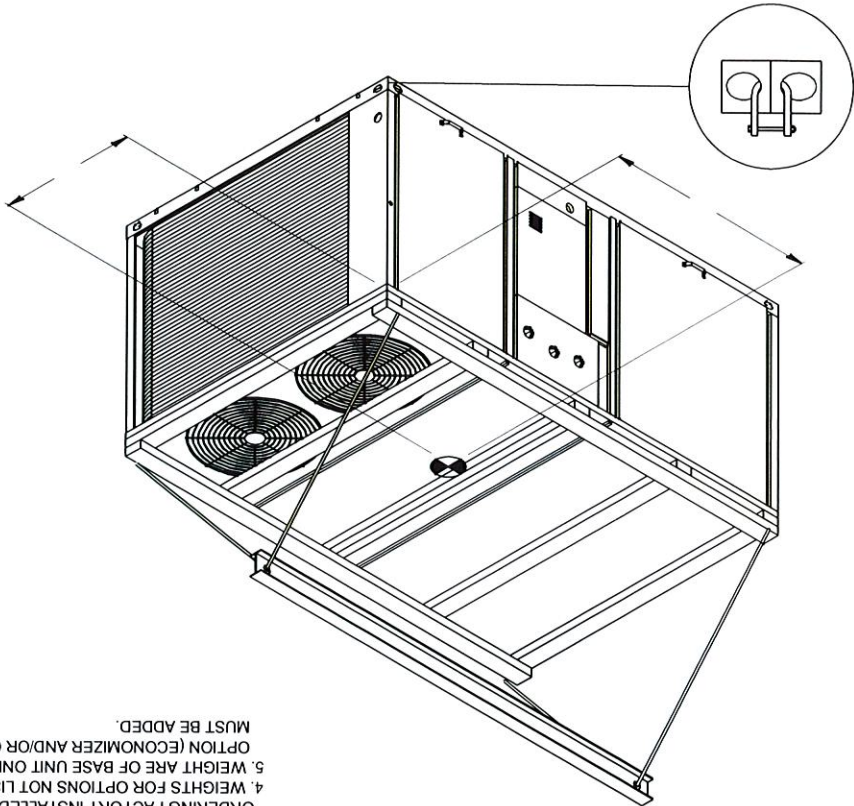
HORIZONTAL ISOMETRIC-PACKAGED GAS/ELECTRIC CLEARANCE

INSTALLED OPTIONS NET WEIGHT DATA

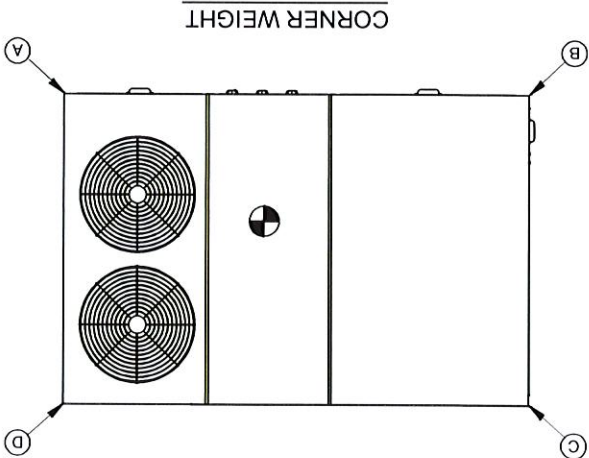
Accessory		
Economizer	80.0 lb	
Motorized Outside Air Damper		
Manual Outside air Damper		
Oversized Motor		
High Static Drive		
Thru the Base Electrical	23.0 lb	
Unit Mounted Circuit Breaker		
Unit Mounted Disconnect	10.0 lb	
Power Exhaust		
Hinged Doors		
Zone Sensor	1.0 lb	
LPG Conversion Kit		
Powered Convenience Outlet		
Roof Curb		
CORNER WEIGHTS		CENTER OF GRAVITY
SHIPPING	NET	
2353.0 lb	1925.0 lb	
(A)	614.0 lb	
(B)	514.0 lb	
(C)	375.0 lb	
(D)	422.0 lb	
E	57"	
F	35"	

NOTE:

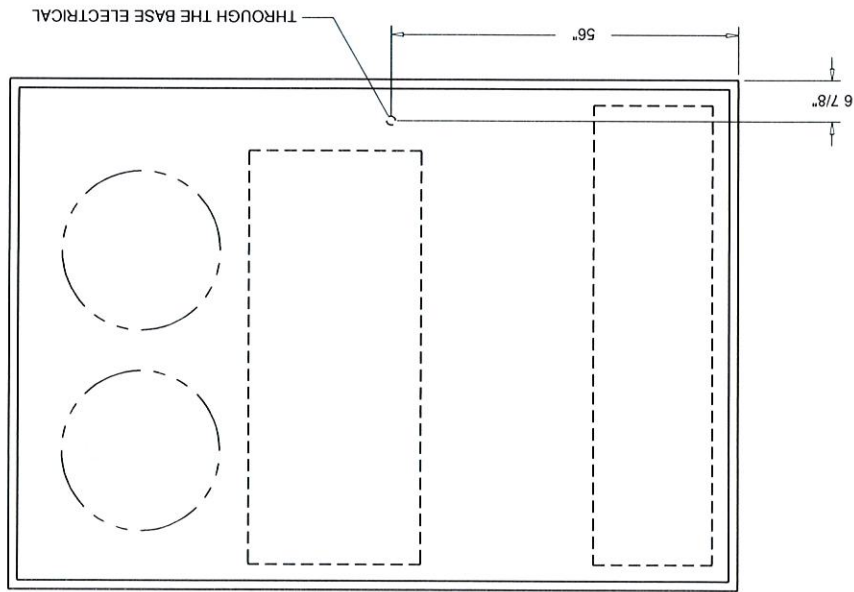
- 1. CORNER WEIGHTS ARE GIVEN FOR INFORMATION ONLY.
- 2. TO ESTIMATE SHIPPING WEIGHT OF OPTION/ACCESSORIES ADD 5 LBS TO NET WEIGHT.
- 3. NET WEIGHT OF OPTIONAL ACCESSORIES SHOULD BE ADD TO UNIT WEIGHT WHEN ORDERING FACTORY INSTALLED ACCESSORIES.
- 4. WEIGHTS FOR OPTIONS NOT LISTED ARE < 5 LBS.
- 5. WEIGHT ARE OF BASE UNIT ONLY. FOR TOTAL WEIGHT, 10 DIGIT FACTORY INSTALLED OPTION (ECONOMIZER AND/OR OVERSIZED MOTOR OR FIOP/ACCESSORY WEIGHT MUST BE ADDED.



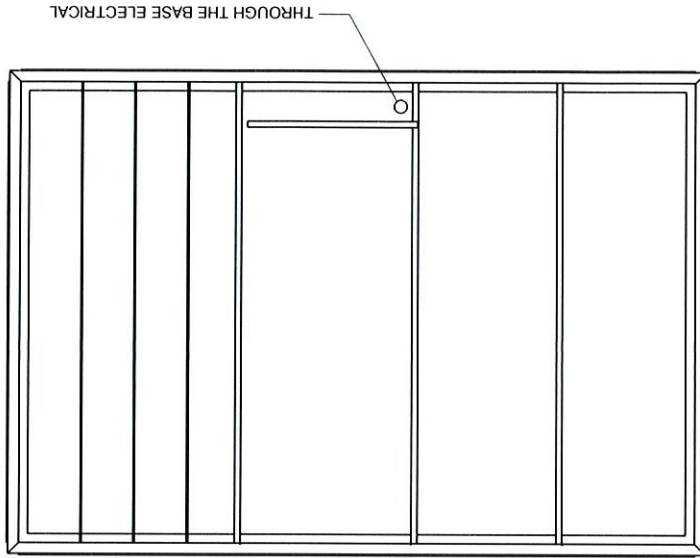
RIGGING AND CENTER OF GRAVITY



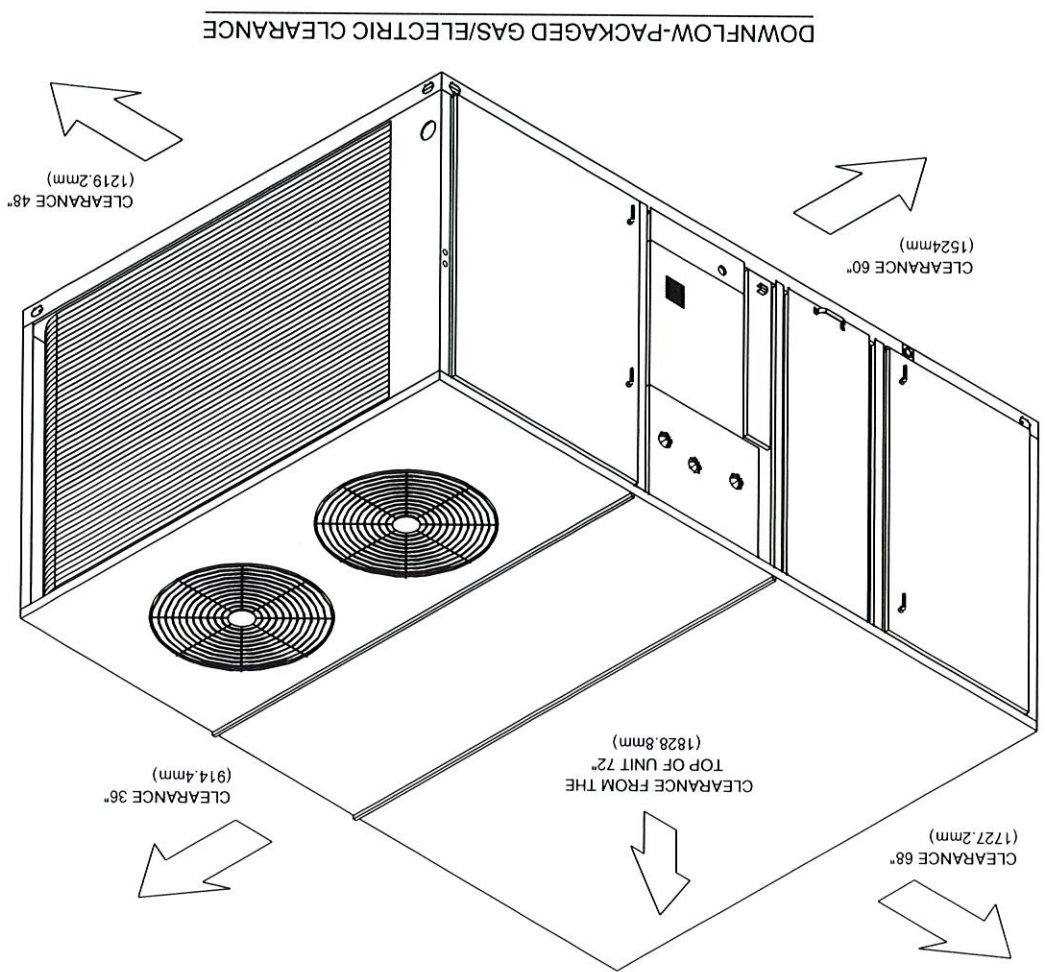
CORNER WEIGHT



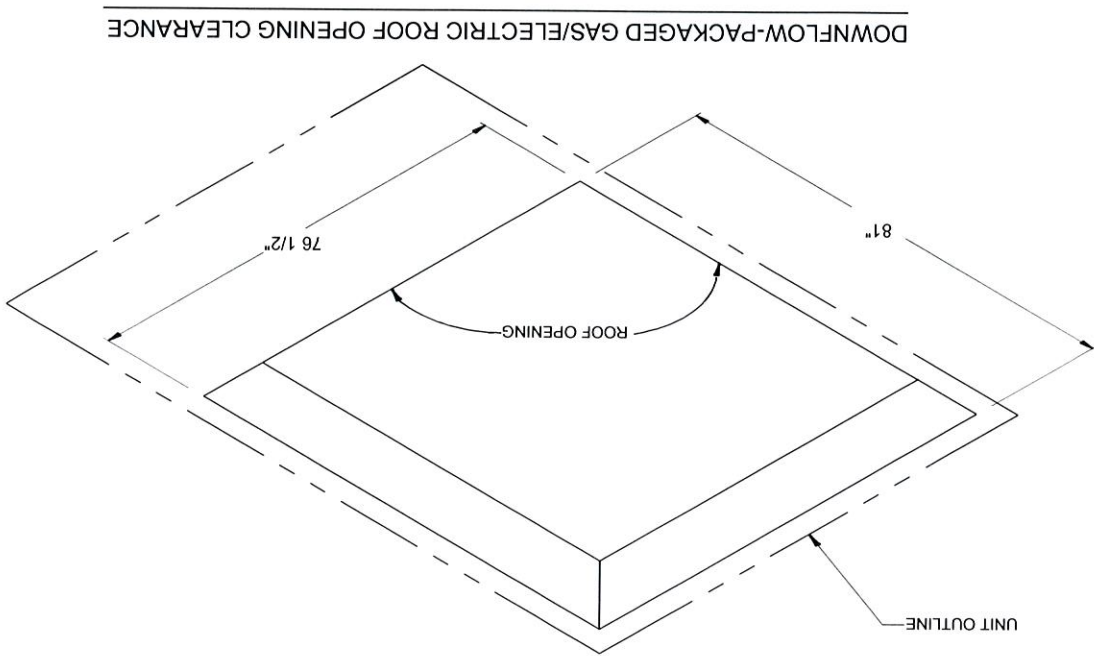
THROUGH THE BASE ELECTRICAL
ACCESSORY-PLAN VIEW



THROUGH THE BASE ELECTRICAL ROOF CURB
ACCESSORY-PLAN VIEW

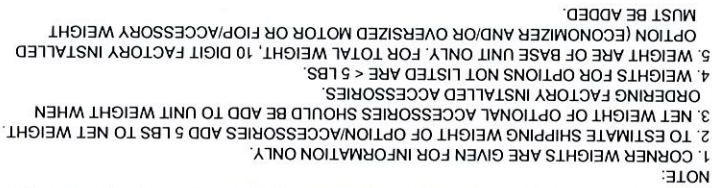


DOWNFLOW-PACKAGED GAS/ELECTRIC CLEARANCE



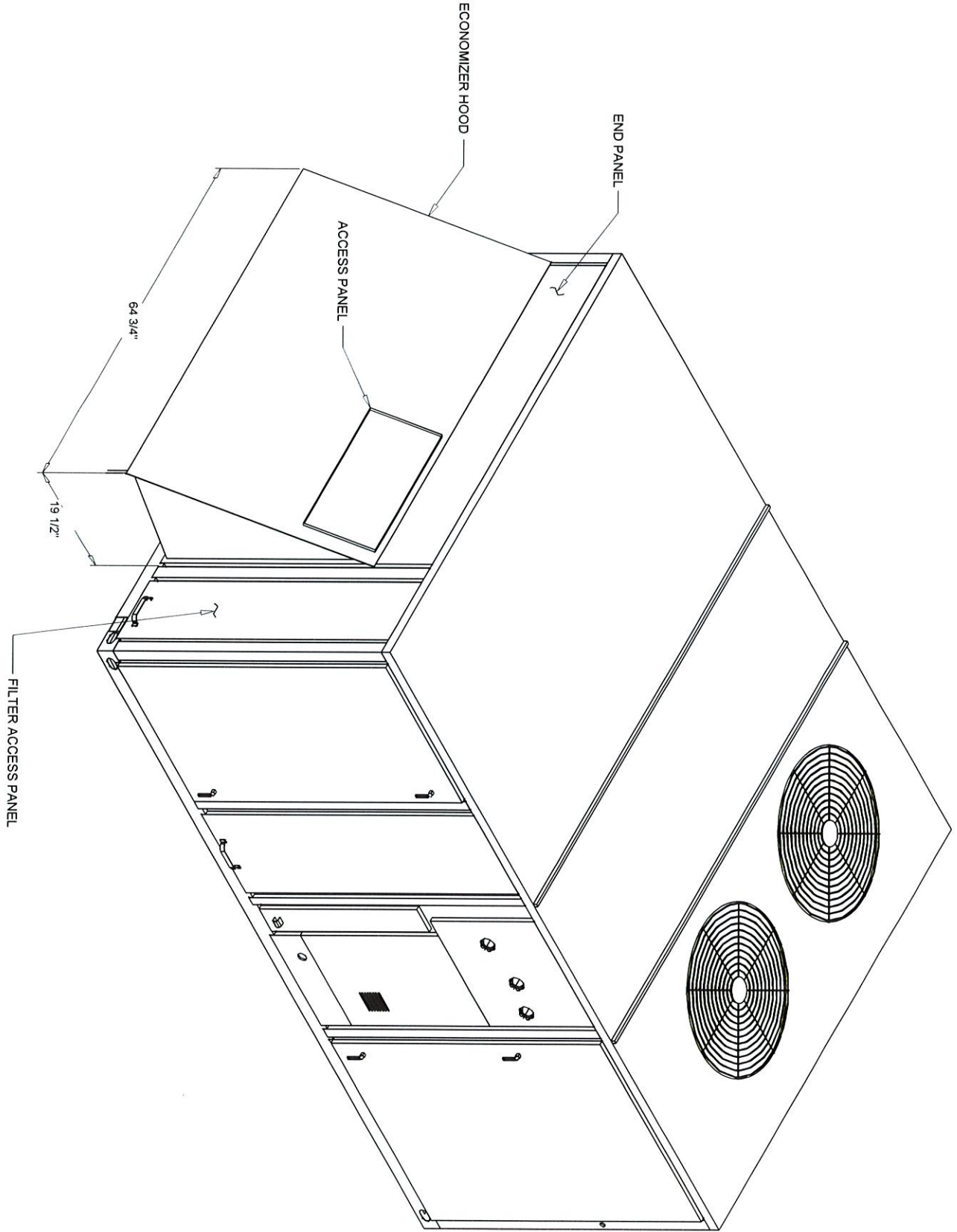
DOWNFLOW-PACKAGED GAS/ELECTRIC ROOF OPENING CLEARANCE

RIGGING AND CENTER OF GRAVITY

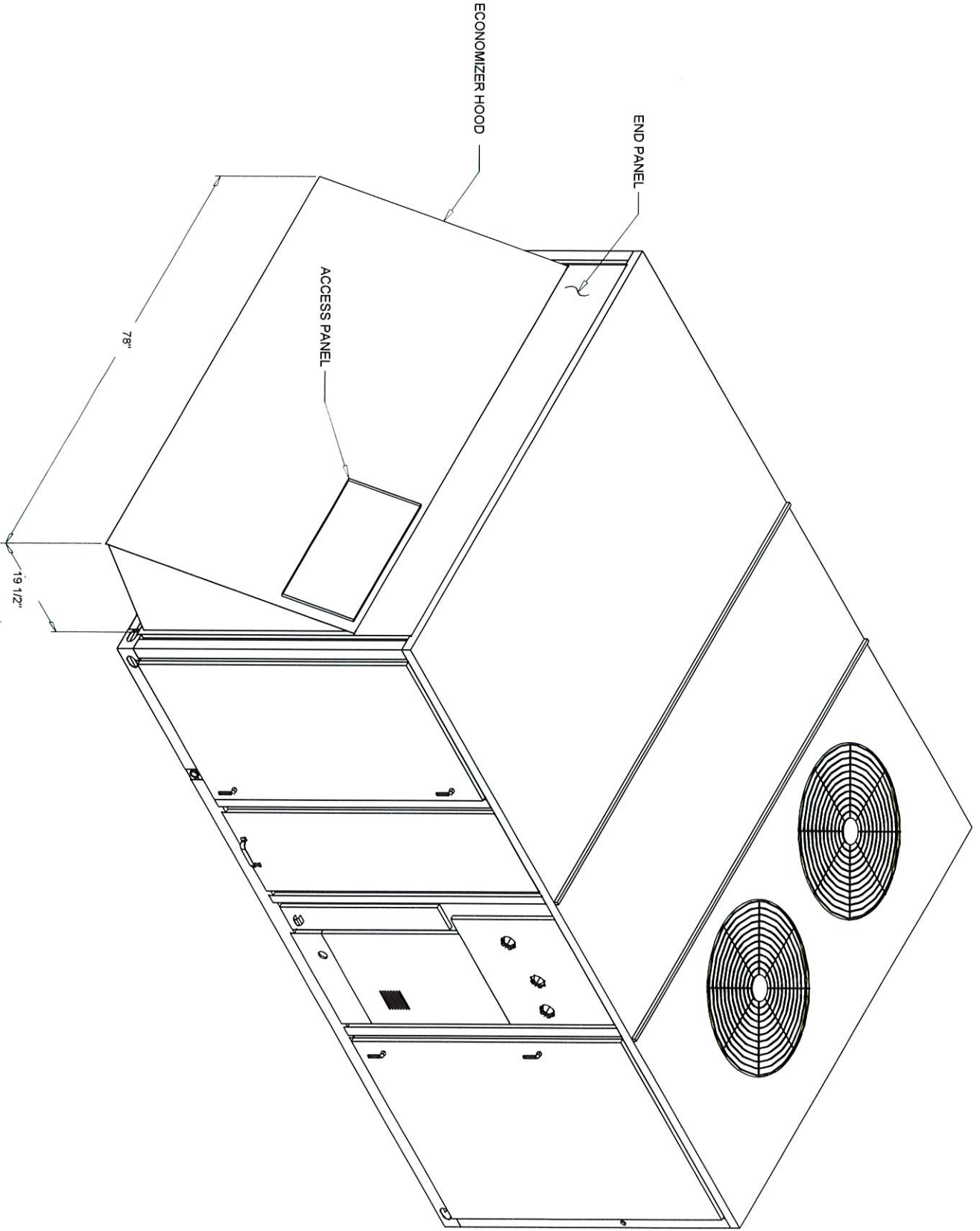


Accessory	Economizer	80.0 lb	Motorized Outside Air Damper	Manual Outside air Damper	Oversized Motor	High Static Drive	Thru the Base Electrical	Unit Mounted Circuit Breaker	Unit Mounted Disconnect	Power Exhaust	Hinged Doors	Zone Sensor	LPG Conversion Kit	Powered Convenience Outlet	Roof Curb	CORNER WEIGHTS			CENTER OF GRAVITY
(A)	(B)	(C)	(D)	E	F	60"	35"												
SHIPPING	NET	595.0 lb	510.0 lb	372.0 lb	402.0 lb	60"	35"												
12337.0 lb	1878.0 lb																		

A diagram of the rear panel of the device. It shows a rectangular panel with four ports labeled A, B, C, and D at the corners. Port A is at the top-left, B at the top-right, C at the bottom-right, and D at the bottom-left. The panel is divided into three vertical sections. The leftmost section contains two circular ports, each with a fan-like grille. The middle section contains a single circular port with a black and white checkered pattern. The rightmost section is empty.



HORIZONTAL ACCESSORY - ECONOMIZER



DOWNFLOW ACCESSORY - ECONOMIZER

Tag Data - Packaged Rooftop, Cooling / Heating Units (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
B1	RTU-4	1	50 Ton Packaged Commercial Rooftop	YCD600B4L-1B4ND4-BC--F--J-0-00-----X

Summit Church
Product Data - Packaged Roo, Cooling / Heating Units
Item: B1 Qty: 1 Tag(s): RTU-4

Dx Cooling with Natural Gas Heat
Downflow Supply and Upflow Return
50 ton 60 Hertz
460 Volt 60 Hertz 3 Phase
Low Heat
Barometric Relief
2" MERV 8 High Efficiency, Throwaway Filter
20 Hp Supply Motor
725/604 (60/50 hz) Supply Fan Drive
0-100% Economizer, Reference Enthalpy Control
VAV - discharge temp control with VFD w/o bypass
Thru-The-Base Electrical Provision
Non-Fused Disconnect Switch
Trane communication interface
Condenser coil guards
Standard efficiency unit
Duct mounted CO2 sensor kit (Fld)
2nd-5th Year Replacement Compressor Warranty

Performance Data - Packaged Rooftop, Cooling / Heating Units

Tags	RTU-4
Leaving coil DB (F)	57.50
Leaving coil WB (F)	56.78
Design airflow (cfm)	17500
Cooling EDB (F)	78.00
Cooling EWB (F)	67.00
Ambient temp (F)	100.00
Ent air relative humidity (%)	56.77
Cooling LDB (F)	60.48
Cooling LWB (F)	57.93
Gross total capacity (MBh)	553.46
Gross sensible capacity (MBh)	386.80
Gross latent capacity (MBh)	166.65
Input htg capacity (MBh)	400.00
Output htg capacity (MBh)	320.00
Heating EAT (F)	60.00
Heating LAT (F)	77.30
Heating delta T (F)	17.30
ESP (in H2O)	1.750
Actual Supply Motor BHP (hp)	16.369
Supply Motor Power (kW) (rpm)	722
Indoor motor power (kW)	13.28
Outdoor motor power (kW)	4.24
Compressor power (kW)	42.61
System power (kW)	60.13
EER @ AHRI (EER)	10.3
IEER @ AHRI (EER)	12.3
IPLV @ AHRI (IPLV)	10.5
Minimum circuit ampacity (A)	119.07
Maximum overcurrent protection (A)	125.00
Minimum disconnect switch size (A)	129.00
Compressor 1 RLA (A)	23.00
Compressor 2 RLA (A)	23.00
Compressor 3 RLA (A)	27.50
Supply fan FLA (A)	24.70
Condenser fan FLA (A)	3.50
Condenser fan count (Each)	4.00
Min. unit operating weight (lb)	4905.0
Max. unit operating weight (lb)	6925.0
Fan motor heat (MBh)	45.32
HFCF-410A refrigerant charge - circuit 1 (lb)	20.0
HFCF-410A refrigerant charge - circuit 2 (lb)	38.8

General R-410A

The units shall be downflow, horizontal, or mixed 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 refrigerant and 100% run tested to check cooling operation, fan and blower rotation and control sequence before leaving the factory. Wiring internal to the unit shall be numbered for simplified identification. Units shall be UL listed to U.S. and Canadian safety standards.

Compressors R410A

The Trane 3-D-TM Scroll compressors have a simple mechanical design with only three major moving parts. Scroll type compression provides inherently low vibration. The 3-D Scroll provides a completely enclosed compressor chamber with optimized scroll profiles which leads to increased efficiency. The 3-D Scroll includes a direct-drive, 3600 rpm, suction gas cooled hermetic motor. Dependent on the compressor model, motor protection is provided by either a patented motor cap and integral line break motor protector or an external 24 VAC module which provides protection against incorrect phase sequence, excess motor temperatures, over current protection, and phase loss. Trane 3-D compressor includes centrifugal oil pump, scroll tips seals, internal heat shield that lowers the heat transfer from discharge and suction gas, oil level sight glass and oil charge valve. Some compressor models also provide a dip tube that allows for oil draining, in addition to a low leakage internal discharge check valve to help prevent refrigerant migration. Each compressor shall have a crankcase heater installed, properly sized to minimize the amount of liquid refrigerant present in the oil sump during off cycles.

Evaporator and Condenser Coils - R410A

Condenser coils shall have all Aluminum Microchannel coils. Evaporator coils shall be internally finned Copper tubes mechanically bonded to high performance Aluminum plate fins. All coils shall be leak tested at the factory to ensure pressure integrity. The evaporator coil is pressure tested to 450 psig and the condenser coil at 650 psig. All dual circuit evaporator coils shall be of intermingled configuration. Sloped condensate drain pans are standard.

Refrigerant Circuits

Each refrigerant circuit shall have independent thermostatic expansion devices, service pressure ports and refrigerant line filter driers factory-installed as standard. An area shall be provided for replacement suction line driers.

2" High Efficiency Filters - MERV 8

2" High Efficiency MERV 7 filters will be standard.

Indoor Fan, 60 Hz Supply Motor

Unit will have belt driven, forward curve, centrifugal fans with fixed motor sheaves. The supply fan motors will be circuit breaker protected. All 60 Hz supply fan motors meet the Energy Independence and Security Act of 2009 (EISA).

High/Low 2 Stage Gas Heat

The heating section shall have a drum and tube heat exchanger(s) design with primary and secondary surfaces of corrosion resistant aluminumized steel or optional stainless steel. 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 regulated gas valve shall be used that requires blower operation to initiate gas flow. On an initial call for heat, the combustion blower shall purge the heat exchanger(s) 45 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat. Two stage gas heat units shall be suitable for use with natural gas or propane (field installed kit). Gas heat units comply with California requirements for low NOx emissions.

Controls

Unit shall be completely factory wired with necessary controls and terminal block for power wiring. Units shall provide an external location for mounting 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. ReliaTel controls shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

Phase and Voltage Monitor

Standard on all Voyager Commercial units. Protects 3-phase equipment from phase loss, phase reversal, and low voltage. Any fault condition will send the unit into an auto stop condition. cLus approved.

Outdoor Fans

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

Variable Frequency Drive*General Description:*

The AC Drive and all associated optional equipment are UL listed according to Power Conversion Equipment cLus. The AC Drive is designed, constructed and tested in accordance with NEMA ICS, NFPA, and IEC standards. The Drive is housed in a metal NEMA 1 enclosure. All standard and optional features are included within the Drive enclosure, unless otherwise specified. The Drive converts incoming fixed frequency three-phase AC power into a variable frequency and voltage for controlling the speed of three-phase AC motors. DC link reactors are provided on both the positive and negative rails of the DC bus equal to 3% impedance to minimize power line harmonics. Full load amp ratings meet or exceed NEC Table 430-150. The Drive provides full rated output current continuously, 110% of rated current for 60 seconds and 160% of rated current for up to 0.5 second while starting. Isolation is provided between the Drive's power circuitry and control circuitry to ensure operator safety and to protect connected electronic control equipment from damage caused by voltage spikes, current surges, and ground loop currents. Audible motor noise is minimized through the use of an adjustable carrier frequency. Carrier frequency is automatically adjusted to optimize motor and AC Drive efficiencies while reducing motor noise. Operating range, ambient temperature, -10 to 50°C (14 to 104°F), 0 to 95% relative humidity, non-condensing, AC line voltage variation, -10 to +10% of nominal with full output.

Protective Features

Class 10 12t electronic motor overload protection for single motor applications is provided. Protection against input transients, loss of AC line phase, output short circuit, output ground fault, over-voltage, under voltage, AC Drive over-temperature and motor over-temperature. All faults are displayed in plain English. Protection from AC Drive sustained power or phase loss. Full rated output with an input voltage as low as 90% of nominal. Continuous operation with reduced output with an input voltage as low as 164 V AC for 208/230 volt units, 313 V AC for 460 volt units, and 394 volts for 600 volt units. Semi-conductor rated input fuses to protect power components. A "signal loss detection" circuit senses the loss of an analog input signal such as 4 to 20 mA or 0 to 10 V DC, and is programmable to react as desired in such an instance. Default: After 10-second time out the Drive will shut off. Will function normally when the keypad is removed while the AC Drive is running and continue to follow remote commands. AC Drive catches rotating motor operating forward or reverse up to full speed. The AC Drive is rated for 100,000 amperes interrupting capacity (AIC). Includes current sensors on three output phases to detect and report phase loss to the motor. Identifies which of the output phases is low or lost. Continues to operate without faulting until input voltage reaches 300 V AC on 208/230 volt units, 539 V AC on 460 volt units, and 690 volts on 600 volt units

Interface Features

Off/Stop and Auto/Start selector switches provided to start and stop the AC Drive and determine the speed reference. On units with bypass, an AC Drive/Off/Bypass Hand selector switch will be provided in the unit control box. In case of an external current overload, a normally closed dry contact will stop the motor whether in DRIVE or BYPASS mode. In DRIVE mode speed reference is provided by a 0 to 10 V DC analog input. The display is programmable to display in 9 languages including English, Spanish and French. The display has four lines, with 20 characters on three lines and eight large characters on one line. The following points are controlled and/or accessible: AC Drive Start/Stop. Speed reference, Fault diagnostics, Meter points to include - Motor power in HP, Motor power in kW, Motor kW-hr, Motor current, Motor voltage, Hours run, DC link voltage, Thermal load on motor, Thermal load on AC Drive and Heatsink temperature. The AC Drive stores in memory the last 10 faults and related operational data. Four simultaneous displays are available, frequency or speed, run time, output amps and output power. The following displays are accessible from the keypad. Reference Signal Value, Output Frequency in Hz or percent, Output Amps, Motor HP, Motor kW, kW hour, Output Voltage, DC Bus Voltage, AC Drive Temperature in degrees, and Motor Speed in RPM.

Barometric Relief

The barometric relief damper shall be optional with the economizer. Option shall provide a pressure operated damper for the purpose of space pressure equalization and be gravity closing to prohibit entrance of outside air during the equipment off cycle.

An electrical service entrance shall be provided which allows access to route all high and low voltage electrical wiring inside the curb, through the bottom of the outdoor section of the unit and into the control box area.

Non-Fused Disconnect Switch

A factory installed non-fused disconnect switch with external handle shall be provided and shall satisfy NEC requirements for a service disconnect. The non-fused disconnect shall be mounted inside the unit control box.

Economizer with Reference Enthalpy Control

An economizer will be factory installed. The assembly includes: 0-100% fully modulating dampers, minimum position setting, preset linkage, wiring harness and reference enthalpy control.

Trane Communication Interface (TCI)

Shall be provided to interface with the Trane Integrated Comfort System and shall be available field or factory-installed. The TCI shall allow control and monitoring of the rooftop unit via a two-wire communication link.

Discharge Air Sensing

Provides true discharge air sensing in heating and cooling models. This sensor is a status indicator readable through Tracer, Tracker or LCI-R. Discharge air sensing is standard with Variable Air Volume (VAV) units, optional with Constant Volume (CV) units.

Condenser Coil Guards

Factory installed condenser vinyl coated wire mesh coil guards shall be available to provide full area protection against debris and vandalism.

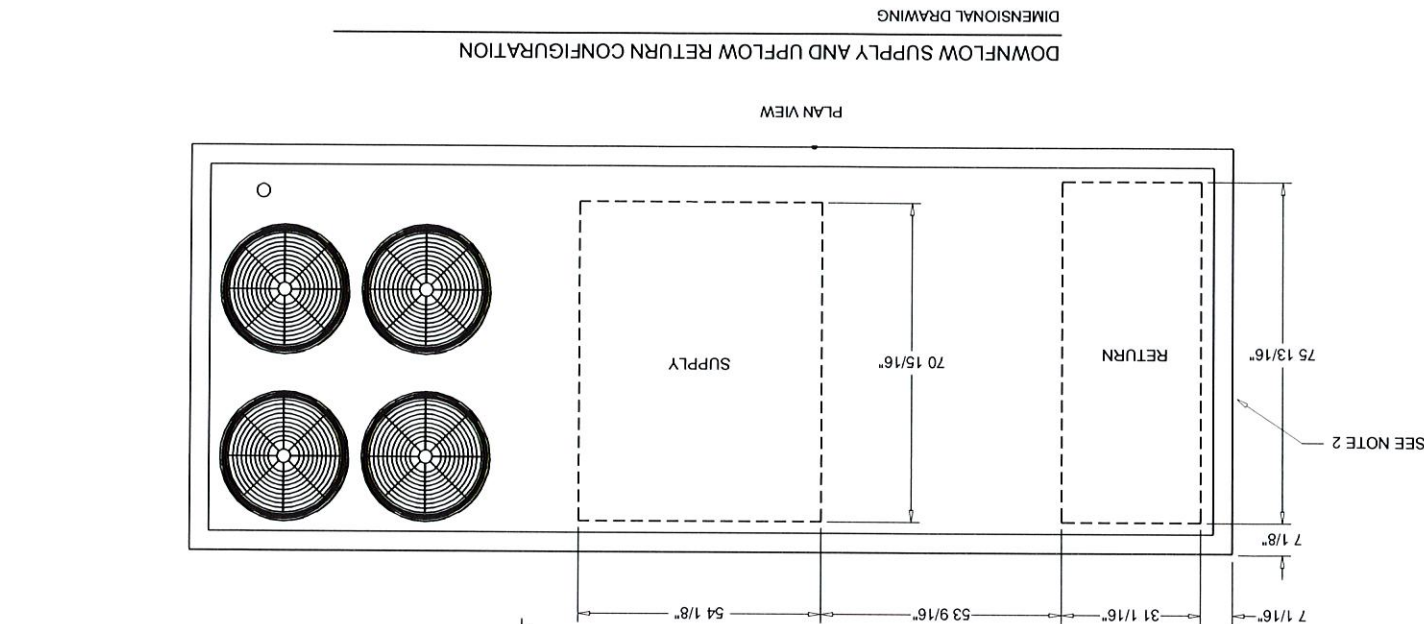
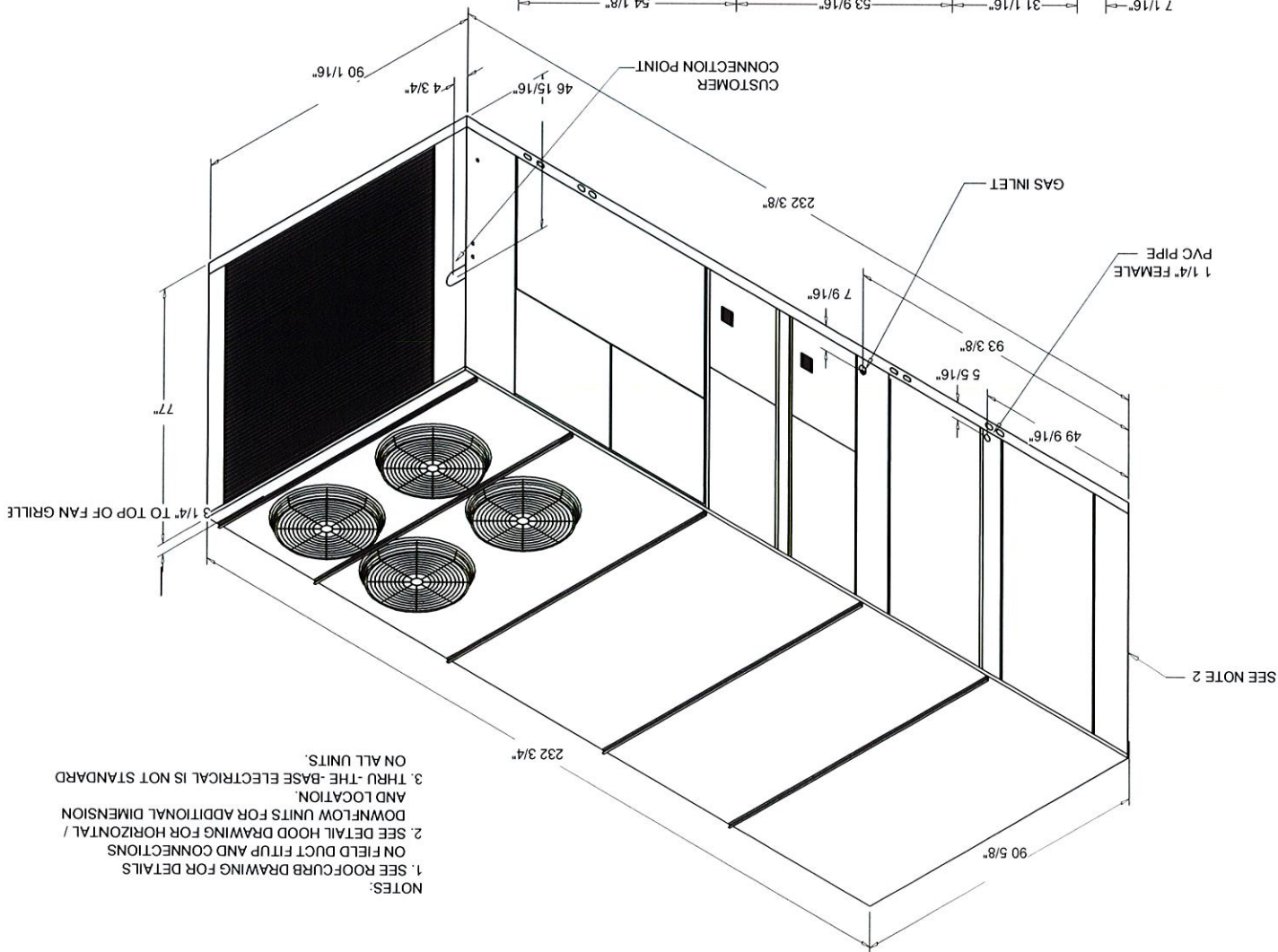
CO2 Sensor Economizer Control

CO2 sensor has the ability to monitor space occupancy levels within the building by measuring the parts per million of CO2 (Carbon Dioxide) in the air. As the CO2 levels increase, the outside air damper modulates to meet the CO2 space ventilation requirements.

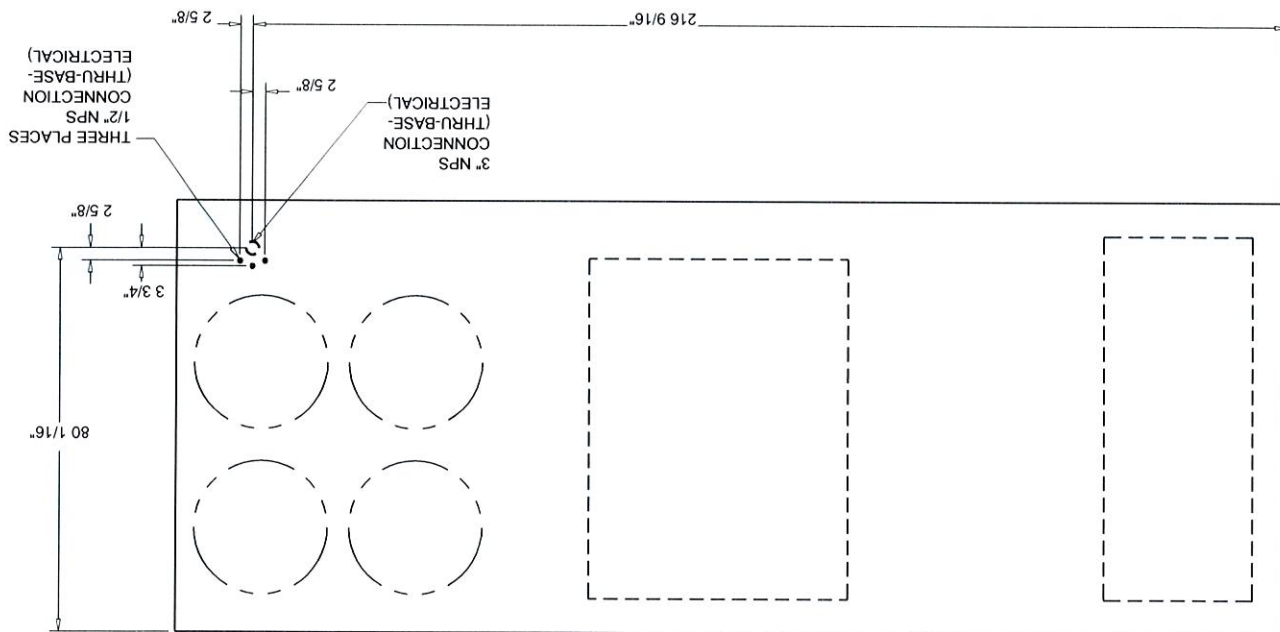
Unit Interrupt Rating (Standard Short Circuit Current Rating-SCCR)

A 5,000 Amp rating shall be applied to the unit enclosure using a non-fused circuit breaker for disconnect switch purposes. Fan motors, compressors, and electric heat circuits shall be provided with series rated circuit breakers that will provide the unit rated level of protection. The unit shall be marked with approved cULus markings and will adhere to cULus regulations.

- NOTES:
1. SEE ROOFTOP DRAWING FOR DETAILS ON FIELD DUCT FITUP AND CONNECTIONS
 2. SEE DETAIL HOOD DRAWING FOR HORIZONTAL / DOWNFLOW UNITS FOR ADDITIONAL DIMENSION AND LOCATION.
 3. THRU - THE - BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.



DOWNFLOW SUPPLY AND UPFLOW RETURN CONFIGURATION
DIMENSIONAL DRAWING



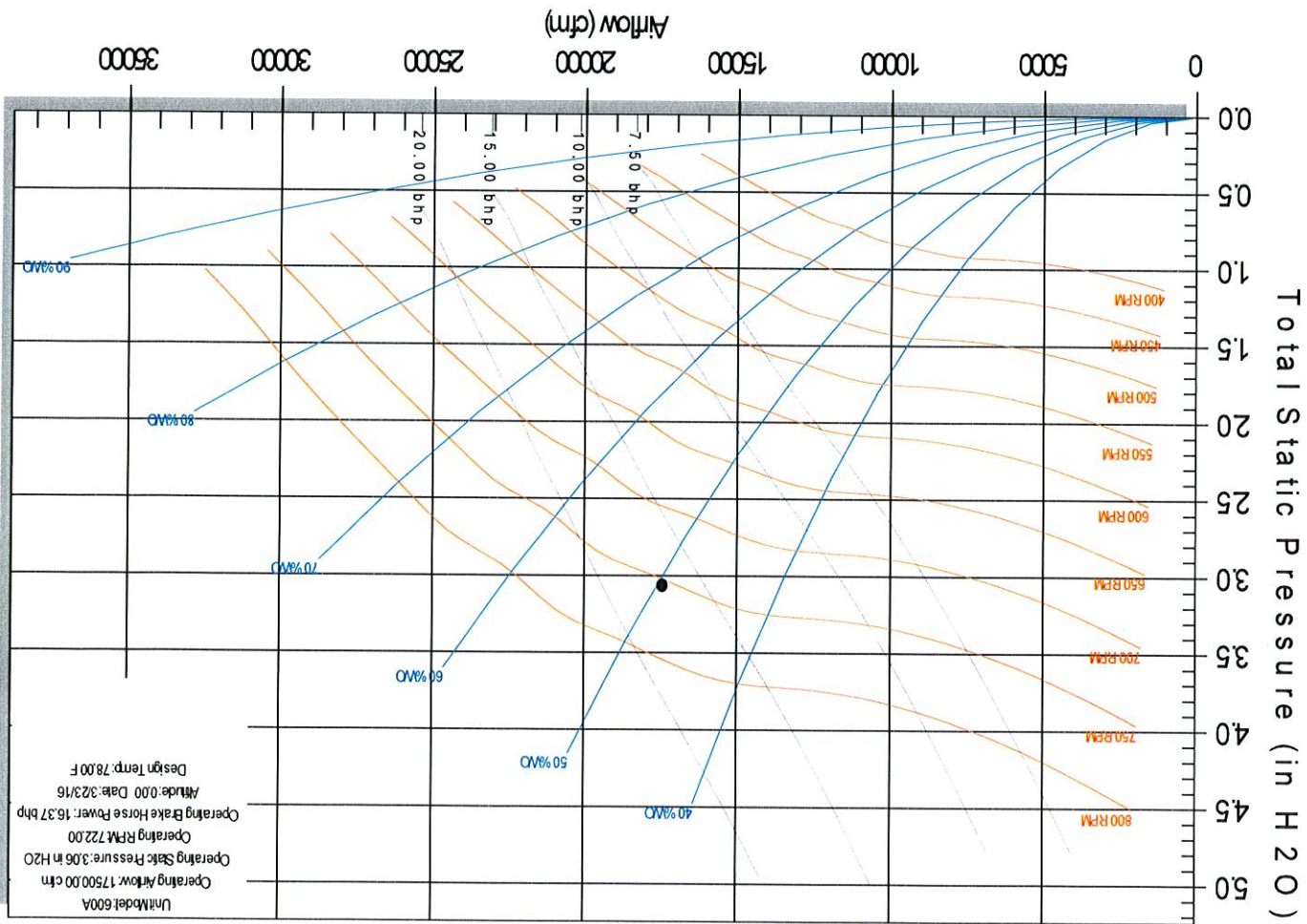
NOTES:
1. THRU - THE - BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY ALL DIMENSIONS WITH INSTALLER DOCUMENTS
BEFORE INSTALLATION.

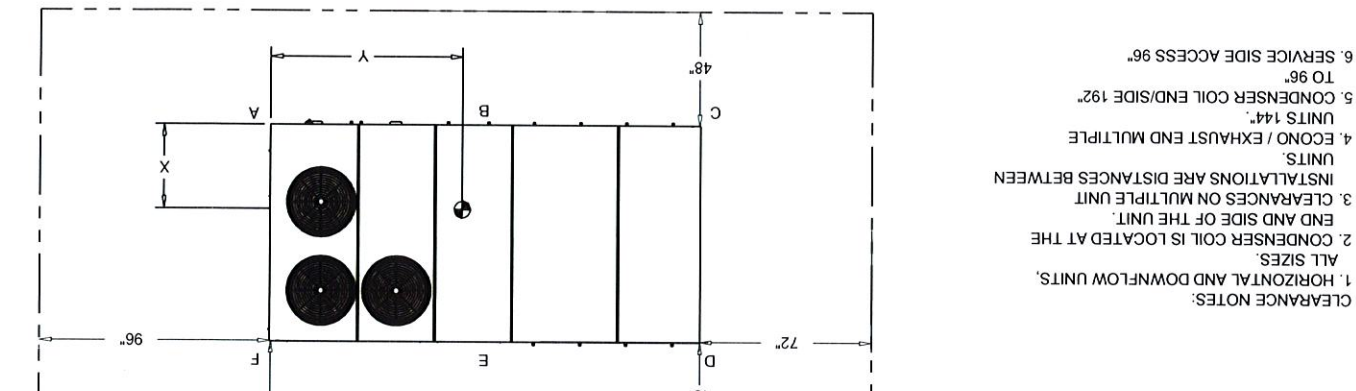
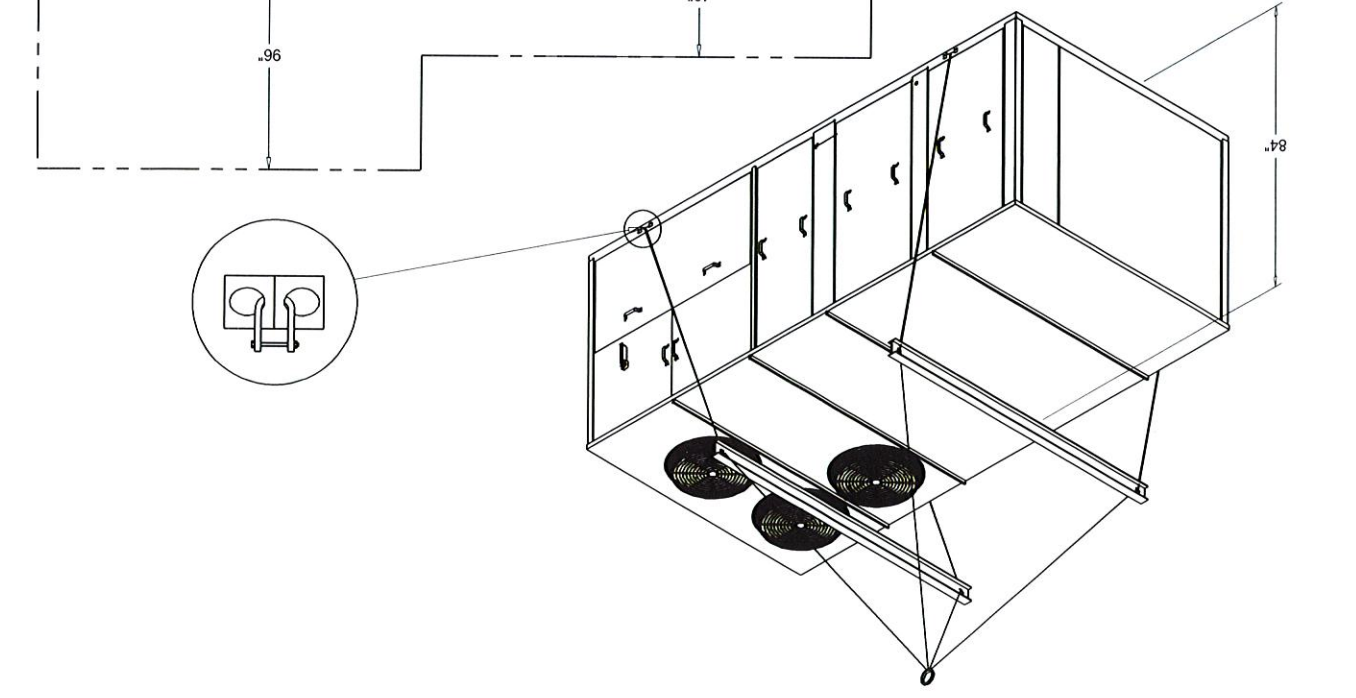
THRU - THE - BASE ELECTRICAL PROVISION
PLAN VIEW

ELECTRICAL / GENERAL DATA

UNIT		Model (Tonnage) YCD600 (50.0)	Operating voltage range: 414 - 506	Primary voltage: 460	Hertz: 60	Phase: 3	EER / IEER: 10.3 EER/12.3 EER
HEATING - PERFORMANCE							
Heat:		Low					
Heating Input (Btu/h):		400,000					
First Stage (Btu/h):		300,000					
Heating Output (Btu/h):		324,000					
First Stage (Btu/h):		243,000					
No Burners:		1					
No. Stages / Turn Down Rate:		2					
Gas Supply Pressure (in w.c.):		2.5/14.0					
Natural or LP:		3/4"					
Gas Connection Pipe Size:							
INDOOR MOTOR							
Horsepower		20.0					
Motor speed (rpm)		1,760					
Indoor motor full load amps		24.7					
EXHAUST MOTOR							
Number		N/A					
Horsepower		N/A					
Phase		N/A					
Exhaust motor full load amps		N/A					
REFRIGERANT TYPE							
Type		R-410A					
Factory Charge (Circuit #1)		20.0 lb					
Factory Charge (Circuit #2)		38.8 lb					
Cooling MCA = (1.25 x Load 1) + Load 2 + Load 4							
Cooling MOP = (2.25 x Load 1) + Load 2 + Load 4							

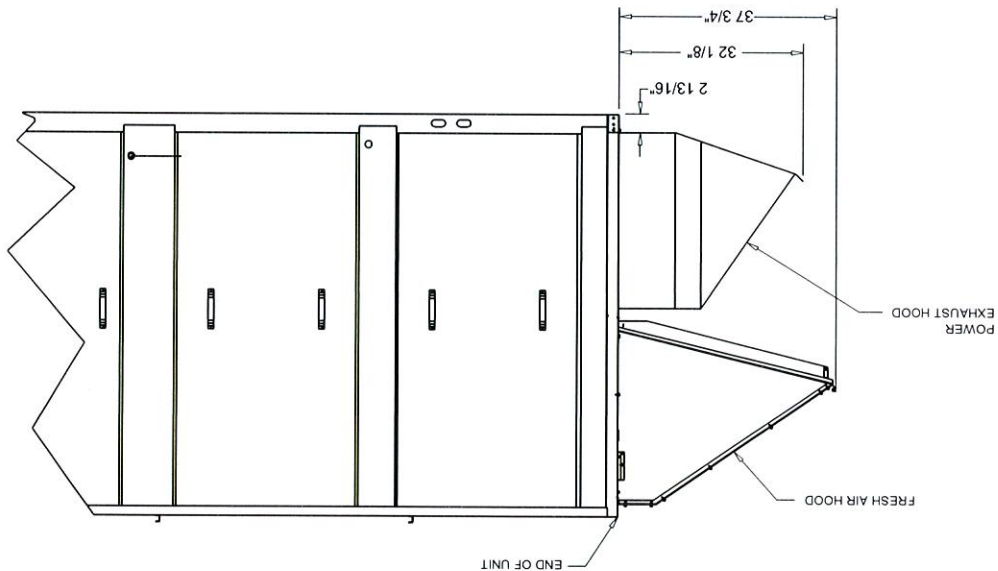
V60



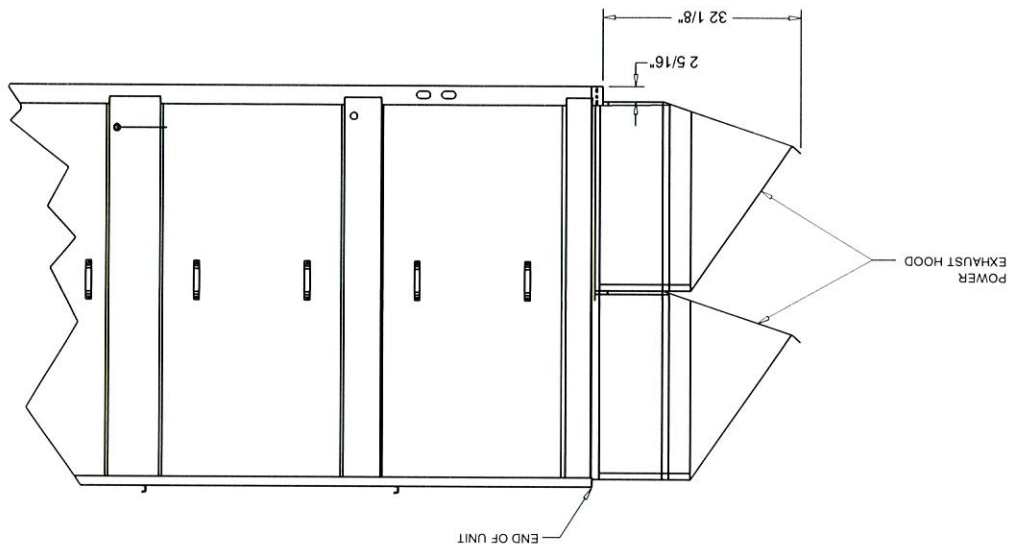


MAXIMUM OPERATION WEIGHT: 6925.0 lb MINIMUM OPERATION WEIGHT: 4905.0 lb		CENTER OF GRAVITY							OPTIONAL COMPONENTS																
		X	43"	Y	108"	POWER EXHAUST	I	BARO. RELIEF	110.0 lb	SERVICE VALVES	.														
CORNER LOADING PERCENTS																									
A	B	C	D	E	F	ECONOMIZER					290.0 lb	THRU-BASE ELECTRICAL	6.0 lb	HI-EFF SUP. FAN	.										
MANUAL DAMPERS						.	GFI WITH DISCON. SWITCH					N/A	DISC. SWITCH	30.0 lb											
INLET GUIDE VANES						.						HI-EFF COND COIL	N/A	VFD	115.0 lb										
COIL HAIL GUARD																130.0 lb	MOD. HOT GAS REHEAT								

NOTE:
1. THE TWO HORIZONTAL POWER EXHAUST HOODS AND
THE THREE HORIZONTAL FRESH AIR HOODS ARE LOCATED
SIDE BY SIDE. THE FRESH AIR HOODS (NOT SHOWN) EXTEND
ONLY 23 15/16" FROM THE END OF THE UNIT.



FRESH AIR POWER EXHAUST
DOWNFLOW UNITS



POWER EXHAUST HOODS
HORIZONTAL UNITS

HOOD DRAWING FOR HORIZONTAL / DOWNFLOW UNITS
UNIT DETAIL

Tag Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
C1	RTU-5	1	7.5 Ton R410A PKGD Unitary	YSC092F4RMA--F001A1020000000000000

Product Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: C1 Qty: 1 Tag(s): RTU-5

DX cooling, gas heat
Standard efficiency
Convertible configuration
7.5 Ton Dual compressor
460/60/3
Microprocessor controls
Medium gas heat
Economizer Reference Enthalpy 0-100% with Barometric Relief
Standard condenser coil w/hail guard
Through the base electrical
Non-fused disconnect
LonTalk(R) communications interface

Performance Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

RTU-5	Tags
3000	Design Airflow (cfm)
Downflow	Airflow Application
78.00	Cooling Entering DB (F)
66.00	Cooling Entering WB (F)
100.00	Ambient Temp (F)
57.72	Evap Coil Leaving Air Temp (DB) (F)
56.12	Evap Coil Leaving Air Temp (WB) (F)
59.00	Cooling Leaving Unit DB (F)
56.63	Cooling Leaving Unit WB (F)
89.97	Gross Total Capacity (MBh)
65.72	Gross Sensible Capacity (MBh)
24.26	Gross Latent Capacity (MBh)
50.00	Heating EAT (F)
87.80	Heating LAT (F)
150.00	Input Heating Capacity (MBh)
124.55	Output Heating Cap. w/Fan (MBh)
0.750	Design ESP (in H2O)
0.140	Component SP (in H2O)
1.28	Indoor mtr operating power (bhp)
793	Indoor RPM (rpm)
0.95	Indoor Motor Power (kW)
0.69	Outdoor Motor Power (kW)
7.12	Compressor Power (kW)
8.77	System Power (kW)
13.0	IPLV @ AHRI (IPLV)
18.50	MCA (A)
20.00	MOP (A)
6.30	Compressor 1 RLA (A)
6.10	Compressor 2 RLA (A)
1.70	Evaporator fan FLA (A)
2.80	Condenser fan FLA (A)
12.36	Evaporator face area (sq ft)
3.00	Evaporator rows (Each)
192	Evaporator fin spacing (Per Foot)
243	Evaporator face velocity (ft/min)
847.0	Min. unit operating weight (lb)
1115.0	Max. unit operating weight (lb)
3.05	Fan motor heat (MBh)
55.07	Dew Point (F)
89.00	Rated capacity (AHRI) (MBh)
0.65	Exhaust fan power (kW)
3.9	Refrig charge (HFC-410A) - ckt 1 (lb)
3.6	Refrig charge (HFC-410A) - ckt 2 (lb)
Yes	ASHRAE 90.1
50.39	Saturated Suction Temp Circuit 1 (F)
122.40	Saturated Discharge Temp Circuit 1 (F)
52.02	Saturated Suction Temp Circuit 2 (F)
122.62	Saturated Discharge Temp Circuit 2 (F)
13.00	IEER ()
11.2	EER @ AHRI Conditions (EER)
0.890	Total Static Pressure (in H2O)

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.

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 inch, 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 inch 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.

Filters

Throwaway filters shall be standard on all units. Optional 2-inch MERV 8 and MERV 13 filters shall also be available.

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.

Notes:

Crankcase heaters are optional on YSC (036, 048, 060, 072, 090, 102, 120); standard on YHC (036, 048, 060, 072, 092, 102, 120).

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).

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.

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 and 4, 5, 6, 7, 8, 9 ton high efficiency models. The microchannel type for all 3 to 10 ton standard efficiency models and 4, 5, 6, 7, 8, 9 ton high efficiency models. The microchannel type 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.

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.

LonTalk Communication Interface

This option shall be provided to allow the unit to communicate as a Tracer LCI-R device or directly with generic LonTalk 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).

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.

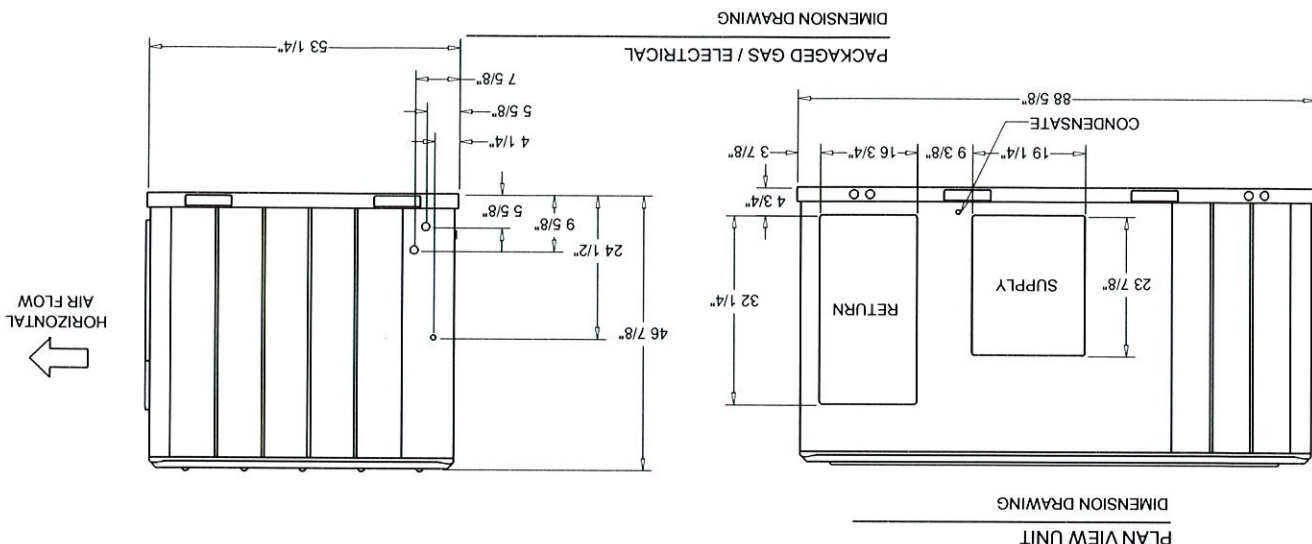
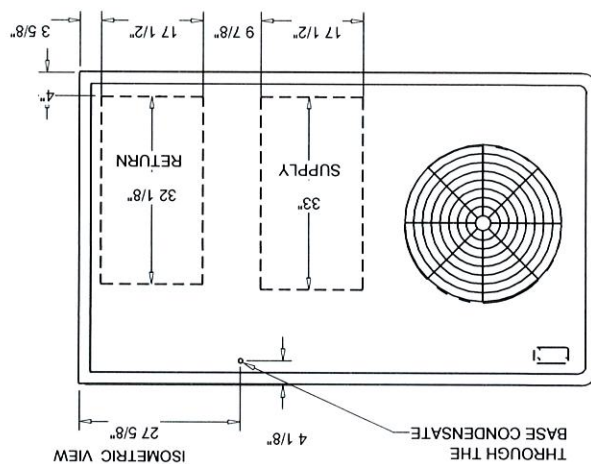
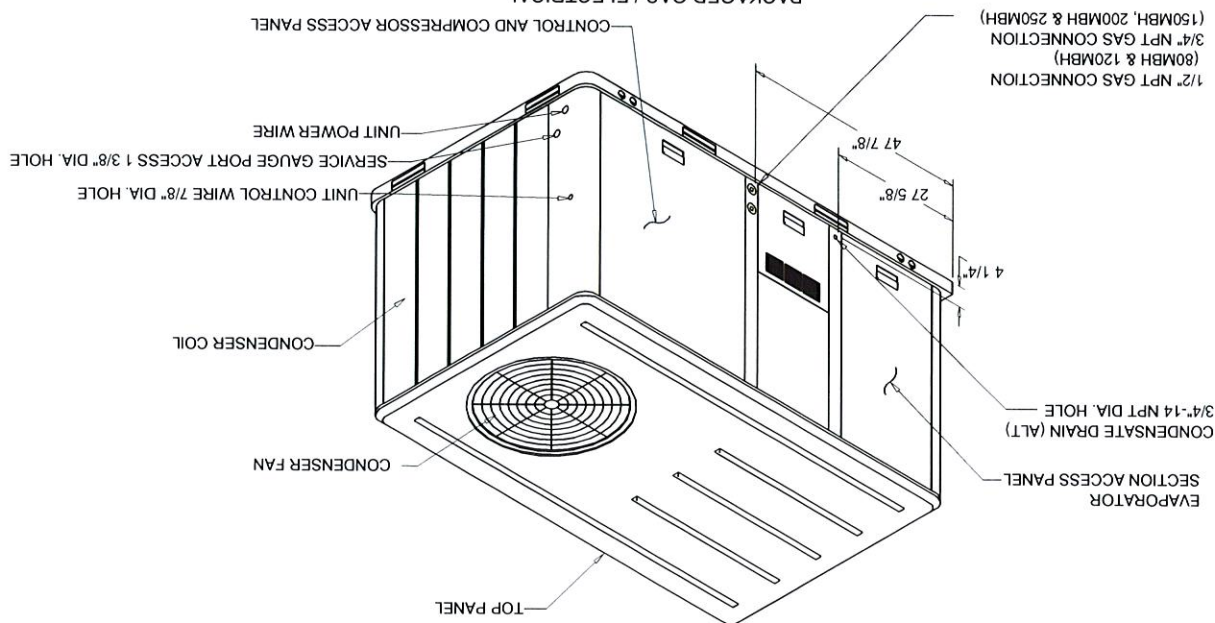
Through the Base Electrical Access

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.

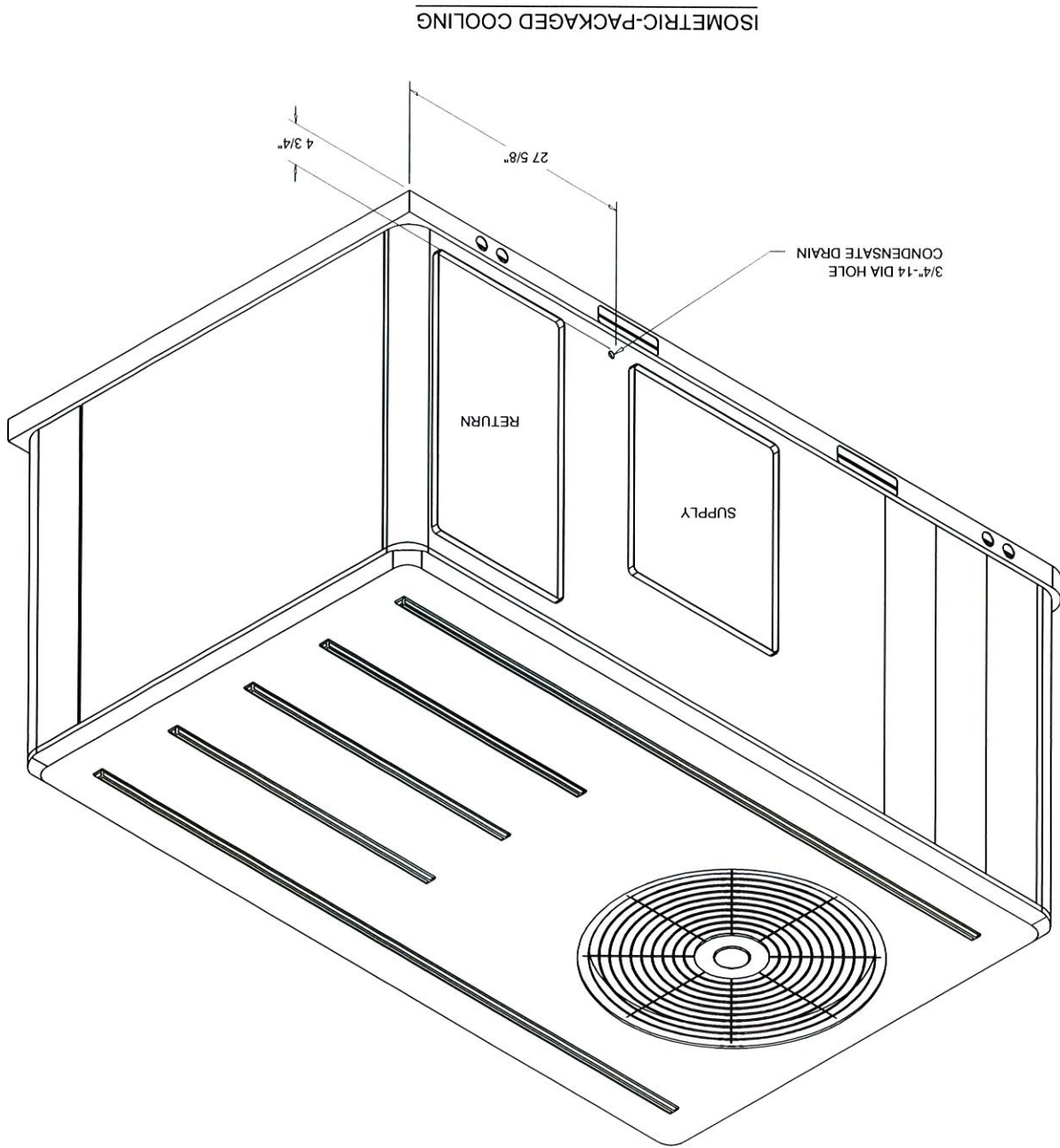
Through the Base Electrical with Disconnect Switch

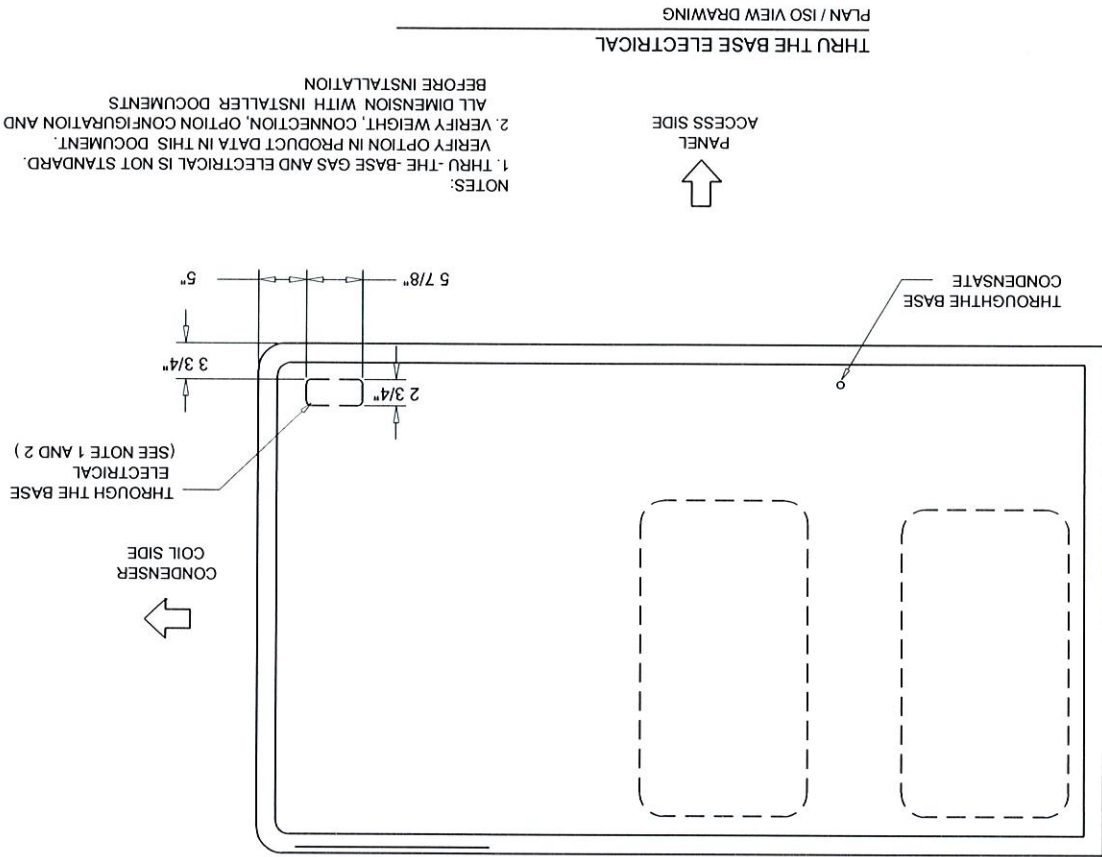
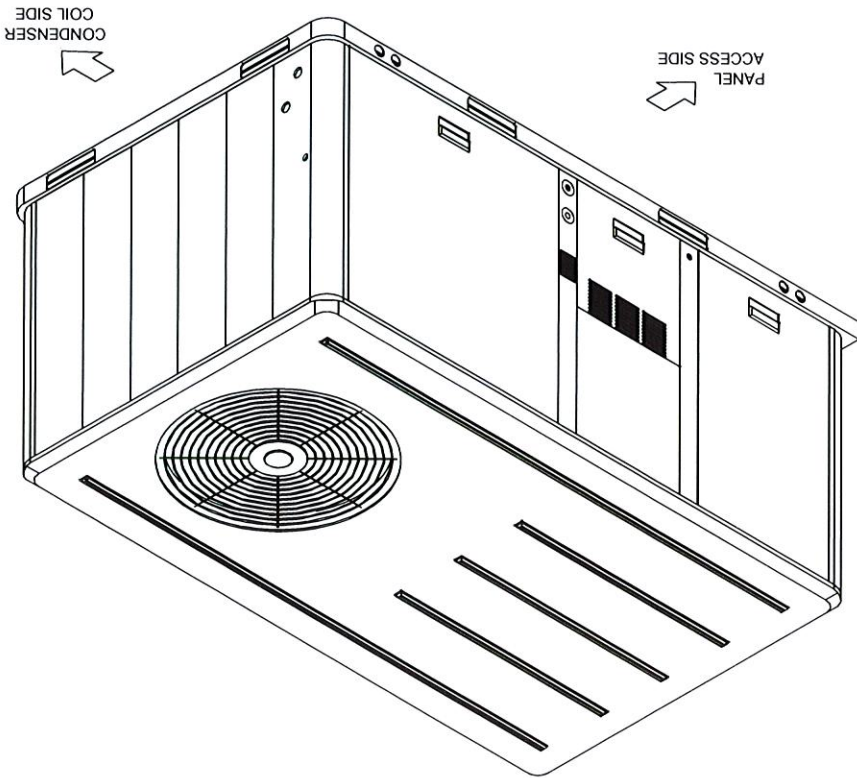
This 3-pole, molded case, disconnect switch with provisions for through the base electrical connections are available. The disconnect switch will be installed in the unit in a water tight enclosure with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal 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.

Unit Dimensions - 3-10 Ton R A PKGD Unitary Gas/Electric Rooftop
Item: C1 Qty: 1 Tag(s): RTU-5



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





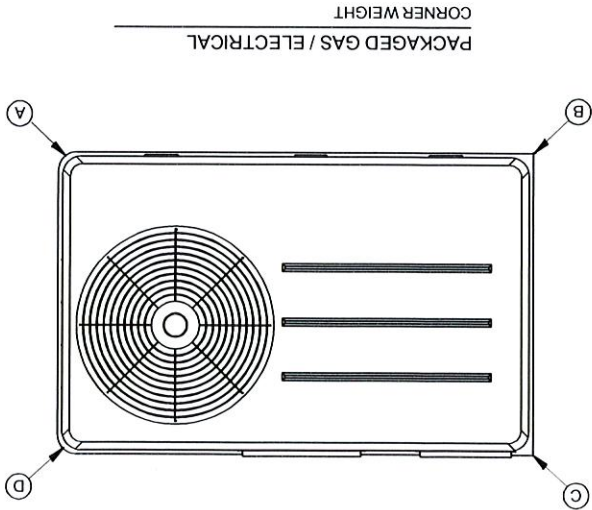
ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)		Model: YSC092F Unit Operating Voltage: 414-506 Unit Primary Voltage: 460 Unit Secondary Voltage: -- Unit Phase: 60 Unit Hertz: 3 EER: 11.2 Standard Motor MCA: 18.5 MFS: 20.0 MCB: 20.0 Oversized Motor MCA: N/A MFS: N/A MCB: N/A	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/Mix): 4.5/14 LP (Min/Max): 11.0/14.0 Gas Pipe Connection Size: 3/4"
INDOOR MOTOR Standard Motor Number: 1 Horsepower: 1.0 Motor Speed (RPM): -- Phase: 3 Rated Load Amps: 1.7 Locked Rotor Amps: 12.5 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 Field Installed Oversized Motor		COMPRESSOR Circuit 1/2 Number: 2 Horsepower: 3.7/3.1 Phase: 3 Rated Load Amps: 6.3/6.1 Locked Rotor Amps: 55.0/41.0	
OUTDOOR MOTOR Number: 1 Horsepower: 0.7 Motor Speed (RPM): 1100 Phase: 1 Full Load Amps: 2.8 Locked Rotor Amps: 6.8		POWER EXHAUST ACCESSORY (3) (Field Installed Power Exhaust) Phase: N/A Motor Speed (RPM): N/A Full Load Amps: N/A Locked Rotor Amps: N/A	
FILTERS Type: Throwaway Number: 4 Recommended 20"x25"x2"		REFRIGERANT (2) Type: R-410 Factory Charge: 3.5 lb Circuit #2: 3.3 lb	

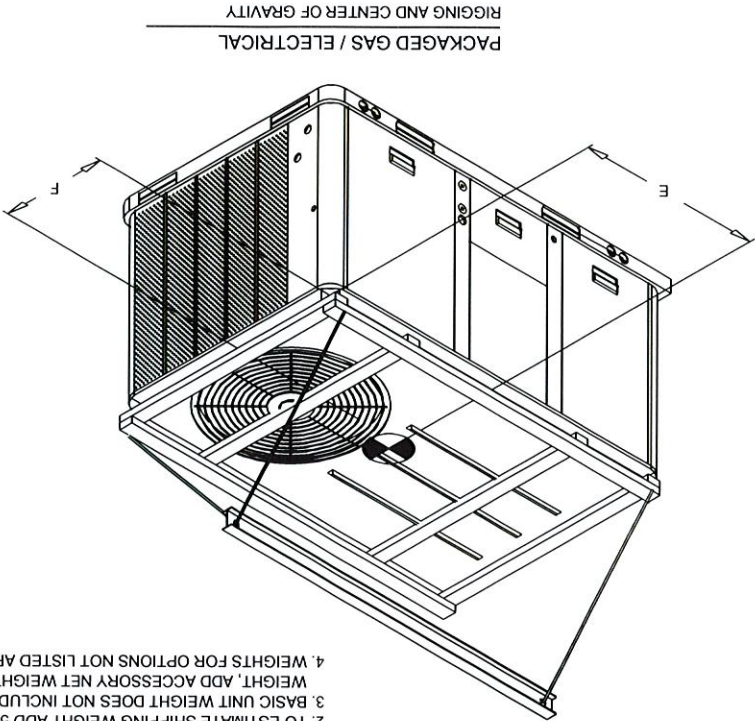
NOTES:
 1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
 2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
 3. Value does not include Power Exhaust Accessory.
 4. Value includes oversized motor.
 5. Value does not include Power Exhaust Accessory.
 6. EER is rated at AHRI conditions and in accordance with DOE test procedures.

ACCESSORY		WEIGHTS	
ECONOMIZER		36.0 lb	
MOTORIZED OUTSIDE AIR DAMPER			
MANUAL OUTSIDE AIR DAMPER			
BAROMETRIC RELIEF			
OVERSIZED MOTOR			
BELT DRIVE MOTOR			
POWER EXHAUST			
THROUGH 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)			
HAIR GUARD	20.0 lb		
SMOKE DETECTOR, SUPPLY / RETURN			
NOVAR CONTROL			
STAINLESS STEEL HEAT EXCHANGER			
REHEAT			
ROOF CURB			
BASIC UNIT WEIGHTS		CORNER WEIGHTS	
SHIPPING		NET	
	(A)	265.0 lb	(C)
	(B)	249.0 lb	(D)
990.0 lb	847.0 lb	160.0 lb	46"
			21"

INSTALLED ACCESSORIES NET WEIGHT DATA

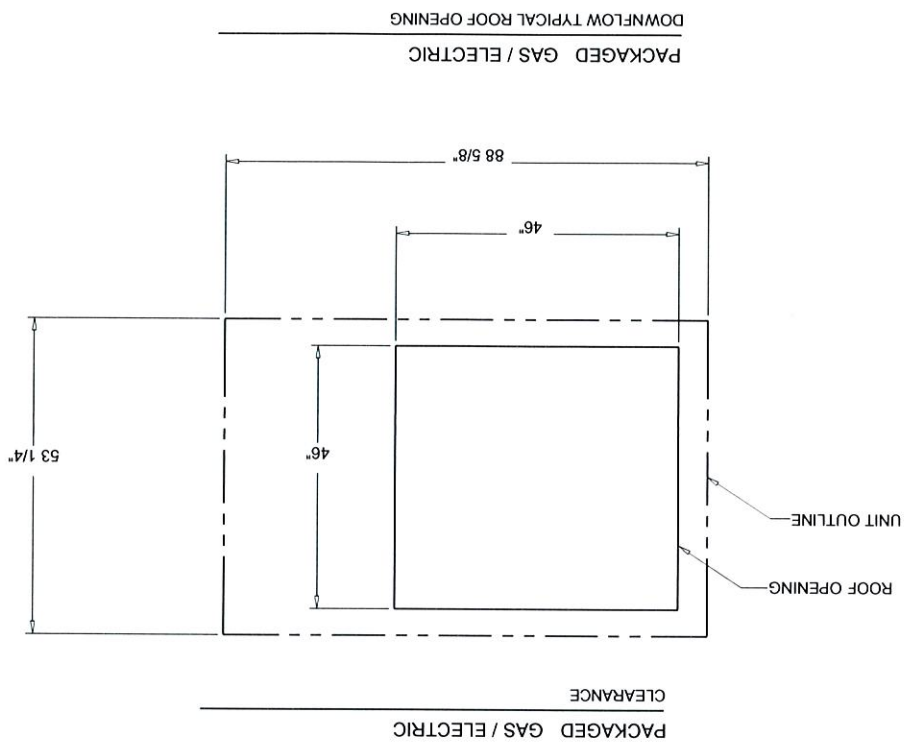
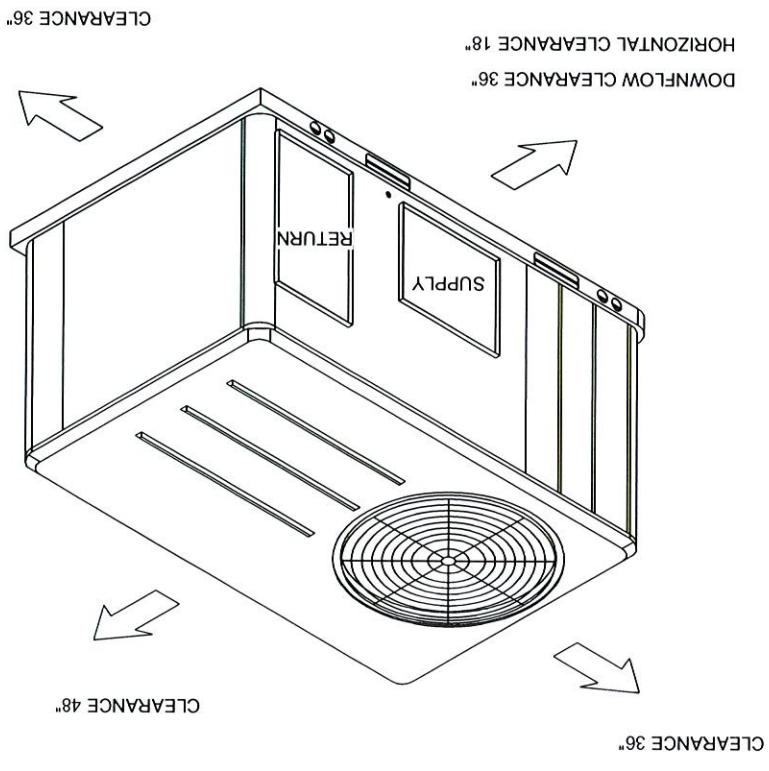


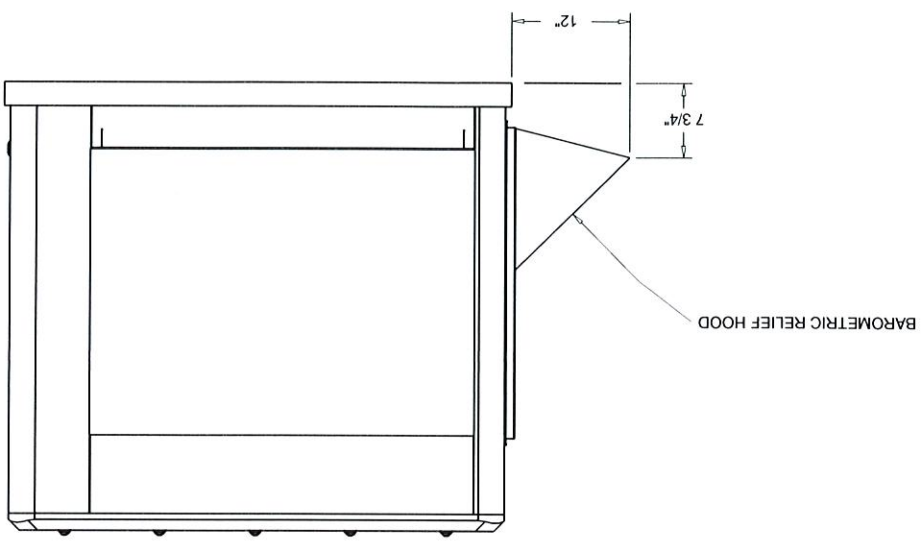
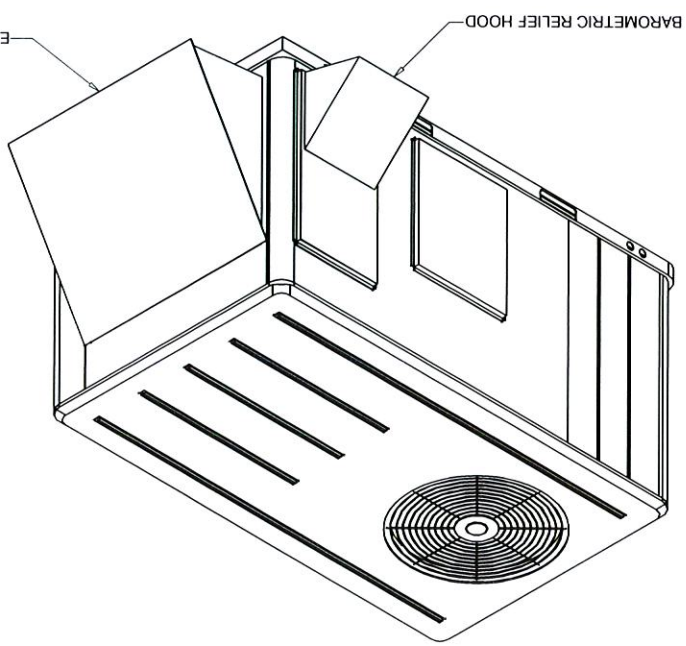
PACKAGED GAS / ELECTRICAL
 CORNER WEIGHT



PACKAGED GAS / ELECTRICAL
 RIGGING AND CENTER OF GRAVITY

NOTE:
 1. CORNER WEIGHTS ARE GIVEN FOR INFORMATION ONLY.
 2. TO ESTIMATE SHIPPING WEIGHT ADD 5 LBS TO NET WEIGHT.
 3. BASIC UNIT WEIGHT DOES NOT INCLUDE ACCESSORY WEIGHT. TO OBTAIN TOTAL WEIGHT, ADD ACCESSORY NET WEIGHT TO BASIC UNIT WEIGHT.
 4. WEIGHTS FOR OPTIONS NOT LISTED ARE <5 LBS.





ACCESSORY - BAROMETRIC RELIEF DAMPER HOOD

