

# Precedent Gas/Electric/Cooling Only Packaged Rooftop

Unit Overview - YSJ090A3S0H**0000000000000000000000000000000000										
Application	Unit Size	Supp	ly Fan	External Dimensions (in.)		Operating Weight	EER	IEER/SEER	Elevation	
DX Cooling / Gas Heat	7.5 Ton	Airflow	Total External Static Pressure	Height	Width	Length	1010.0 lb	11.00	14.60	0.00 ft
		3000 cfm	0.600 in H2O	4.24 ft	4.44 ft	7.34 ft				

Unit Electrical						
Voltage/phase/hertz	208-230/60/3					
MCA	42.00 A					
MOP	50.00 A					
Condenser Fan FLA	3.30 A					
Evaporator Fan FLA	8.80 A					
Compressor 1 RLA	16.40 A					
Compressor 2 RLA	9.20 A					
Compressor Power	6.11 kW					
System Power	8.59 kW					



### **Controls**

# Unit Controls Symbio 700

Cooling Section				
Entering Dry Bulb	80.00 F	Capacity		
Entering Wet Bulb		Gross Total	94.42 MBh	
Ambient Temp	95.00 F	Gross Latent	21.39 MBh	
Leaving Coil Dry Bulb		Gross Sensible	73.03 MBh	
Leaving Coil Wet Bulb		Net Total	91.75 MBh	
Leaving Unit Dry Bulb	58.85 F	Net Sensible	70.36 MBh	
Leaving Unit Wet Bulb	57.35 F	Net Sensible Heat Ratio	76.69 %	
Saturated Discharge Temperature	116.44 F	Fan Motor Heat	0.46 MBh	
Saturated Suction Temperature	51.34 F	Refrig Charge-Circuit 1	9.0 lb	

Heating Section	
Heatin	High Gas Heat
Input Heating Capacit	200.00 MBh
Output Heating Capacit	/ 162.00 MBh
Heating EA	「60.00 F
Heating LA	T 109.51 F
Heating Temp Ris	49.51 F

Fan Section							
Indoor F	Fan Data	Indoor Fan Performance					
Airflow Application	Downflow	Airflow	3000 cfm				
Design ESP	0.05 ft H2O	Supply Motor Horsepower	3.100 hp				
Component SP	0.000 in H2O	Indoor Motor Operating Power	0.814 hp				
Heat SP	0.000 in H2O	Indoor RPM	1063 rpm				
Total External SP	0.600 in H2O	Outdoor	Fan Data				
Supply Fan Count	1.00 Number	Outdoor Fan Drive Type	Direct				
Indoor Fan Drive Type	Variable Direct	Outdoor Fan Quantity	1.00 Number				
Indoor Fan Quantity	1.00 Number	Outdoor Fan Type	Propeller				
Indoor Fan Type	BC Plenum						

Acoustics								
Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	79 dB	74 dB	72 dB	66 dB	61 dB	58 dB	57 dB	56 dB
Ducted Inlet	76 dB	68 dB	67 dB	58 dB	53 dB	49 dB	48 dB	47 dB
Outdoor Noise	85 dB	90 dB	91 dB	91 dB	89 dB	83 dB	79 dB	74 dB

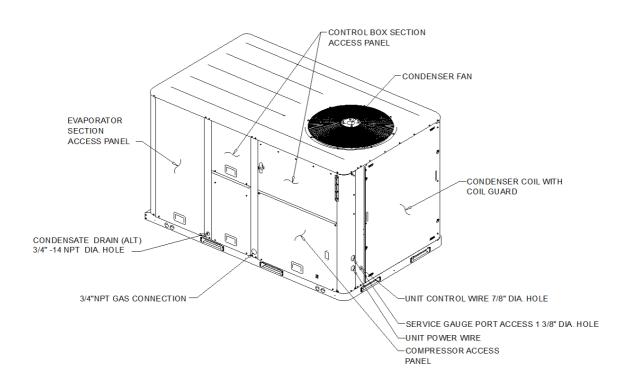
Note: Ducted Discharge and Ducted Inlet Sound in accordance with AHRI 260-2017

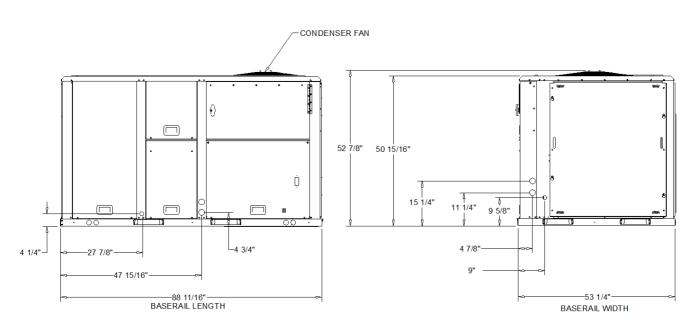
Note:Outdoor Sound in accordance with AHRI 270-2015

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NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

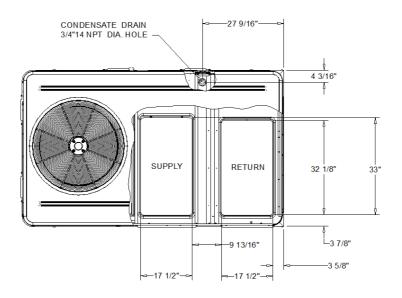




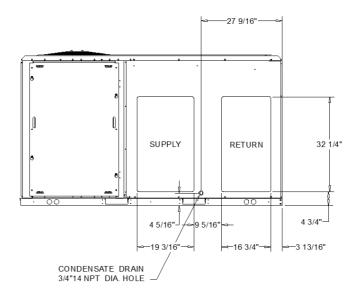
# DX COOLING / GAS HEAT STANDARD EFFICIENCY

DIMENSION DRAWING

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PLAN VIEW OF DOWNFLOW OPENINGS



# HORIZONTAL AIR FLOW OPENING

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DIMENSION DRAWING

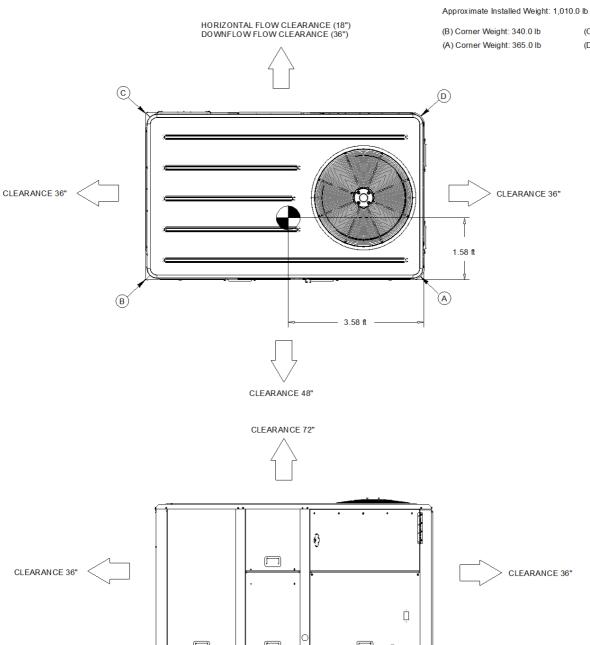
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- NOTES: 1. APPROX. INSTALLED WEIGHT INCLUDES ALL SELECTED OPTIONS AND ACCESSORIES. 2. CORNER WEIGHTS ARE FOR BASE UNIT ONLY AND DO
- NOT INCLUDE OPTIONS OR ACCESSORIES.

  3. WEIGHT INCLUDES BOTH FACTORY AND FIELD INSTALLED
- ACCESSORY.

(C) Corner Weight: 196.0 lb (D) Corner Weight: 210.0 lb



# DX COOLING / GAS HEAT STANDARD EFFICIENCY

WEIGHTS AND CLEARANCES

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# General

- Packaged rooftop units cooling, heating capacities, and efficiencies are AHRI Certified within scope of AHRI Standard 210-240 for 6 to 25 Tons and ANSIZ21.47 and 10 CFR Part 431 pertaining to Commercial Warm Air Furnaces (all gas heating units).
- -Convertible airflow.
- -Symbio controls operating range is from 0-125.0 F from factory; if designing for cooling mode operation below 40.0 F ambient temp, add low ambient kit to assure continuous and reliable operation.
- -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.
- -Colored and numbered wiring internal to the unit for simplified identification.
- -Units cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

# Casing

- -Zinc coated, heavy gauge, galvanized steel.
- -Weather resistant pre-painted metal with galvanized substrate.
- -Meets ASTM B117, 672 hour salt spray test.
- -Removable single side maintenance access panels.
- -Lifting handles in maintenance access panels (can be removed and reinstalled by removing fasteners while providing a water and air tight seal).
- -Exposed vertical panels and top covers in the indoor air section insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material.
- -Base pan shall have no penetrations within the perimeter of the curb other than the raised 1 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up.
- -Base of the unit insulated with 1/8 inch, foil-faced, closed-cell insulation.
- -Unit base provisions for forklift and/or crane lifting on three sides of unit.

# **Hail Guards**

-Provides condenser coil protection.

#### **Microchannel Coils**

- -Optimal heat transfer performance due to flat, streamlined tubes with small ports, and metallurgical tube-to-fin bond.
- -Reduce system refrigerant charge by up to 50% leading to better compressor reliability.
- -Compact all-aluminum microchannel coils reduce the unit weight.
- -Recyclable all aluminum coils All aluminium construction minimizes galvanic corrosion.
- -Strong aluminum brazed structure provides better fin protection.
- -Flat streamlined tubes more dust resistant and easy to clean.
- -Coils leak tested at the factory to ensure the pressure integrity.

### Compressors

- -All units have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps.
- -Suction gas-cooled motor with voltage utilization range of plus or minus 10 percent of unit nameplate voltage.
- -Internal overloads standard with scroll compressors.
- -Crankcase heaters are standard on all compressors.
- -All units have dual compressors.
- -Three stages of cooling available on 6 to 17.5 tons units and four stages of cooling available on 20 and 25 tons units.

### **Filters**

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

### **Frostat**

- -Utilized as a safety device.
- -Opens to prevent freezing temperatures on evaporator coil.
- -Temperature will need to rise to 50°F before closing.
- -Utilized in low airflow or high outside air applications (cooling only).

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# **Gas Heating Section**

- -The heating section shall have a progressive tubular heat exchanger with corrosion-resistant aluminized steel tubes and burners as standard on all models.
- -Stainless steel heat exchanger with 409 stainless steel tubes and 439 stainless steel burners shall be optional.
- -Induced draft combustion blower shall be used to pull the combustion products through the firing tubes.
- -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, 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).

# **Heat Exchanger**

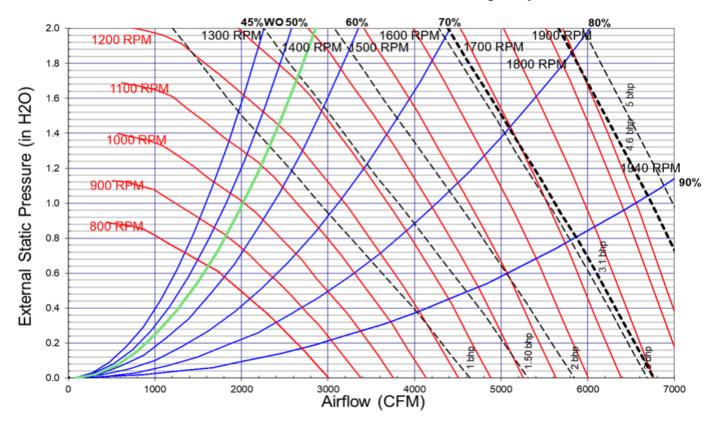
- -Compact cabinet features a tubular heat exchanger in low, medium and high heat capacities.
- -Corrosion-resistant aluminized steel tubes and burners are standard on all models.
- -Induced draft blower to pull the gas mixture through the burner tubes.
- -Direct spark ignition and a flame sensor as a safety device to validate the flame.

#### Indoor Fan

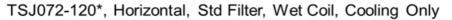
- Direct drive plenum fan design 6 to 25 tons units.
- Plenum fan design backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor.
- Supply fan speed adjustments can be made using the Symbio 700 or Mobile App.
- Motors are thermally protected.
- Variable speed direct drive motors are high efficiency 6 to 25 tons.

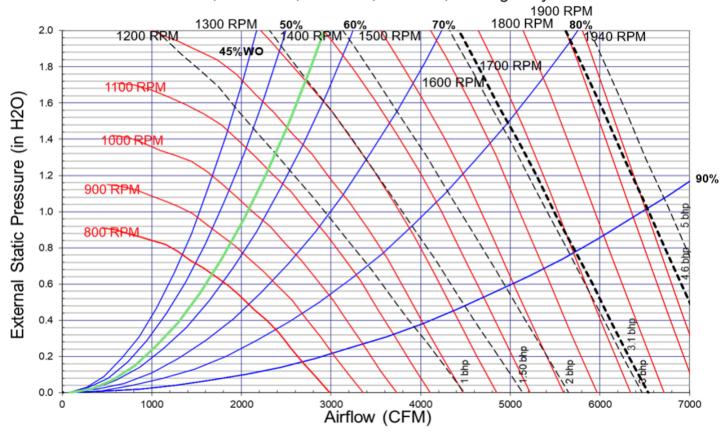
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TSJ072-120\*, Downflow, Std Filter, Wet Coil, Cooling Only



Note: Fan Curves are for TSJ/WSJ units. For YSJ units, add additional static pressure for Gas Heat Exchanger (ref. RT-PRC098\*, table 47)





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