Unit Rating

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 348.1

B3 B4 B5 1 2 3A 3B 3C 3D 3E 4A 4B 4C 5A 5B 5C 5D 5E 6A 6B 6C 6D 6E 7 8 9A 9B 9C 9D 10A

RNA-020-C-A-3-GAB0B-CB3L0:00-0AG0J-D00-00000-00000-0A-A00
A-00-F0-0-AN0-EB-EA0A-00-000-0A0B00-G0000B-000000B

10B 11A 11B 12 13A 13B 13C 14 15 16A 16B 16C 16D 17A 17B 18A 18B 18C 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 SIZ1 SIZ2

Tag: RTU #1

Job Information

Job Name:	*24hrFitness Nanuet*
Job Number:	*Job #25*
Site Altitude:	*0 ft*
Refrigerant:	*R-454B*
System Charges (oz):	*458 / 458*

Unit Information

Approx. Op./Ship Weights:	*2825 lbs / 2825 lbs (±5%)*
Ambient Temperature (DB/WB):	*89.0 °F / 68.0 °F*
Coil Filter FV / Qty:	*393.6 fpm / 6*
Min. Room Area/Height/Airflow**:	*430.0 ft² / 7.2 ft / 775 SCFM*
Supply Airflow/ESP:	*8200 SCFM / 1.15 in. w.g.*
Outside Airflow:	*0 SCFM*
Return Temperature (DB/WB):	*78.0 °F / 64.0 °F*

Static Pressure

External:	*1.15 in. w.g.*	Heating:	*0.34 in. w.g.*
Cooling Coil:	*0.50 in. w.g.*	Cabinet:	*0.14 in. w.g.*
Filters Clean:	*0.17 in. w.g.*	Total:	*2.73 in. w.g.*
Dirt Allowance:	*0.35 in. w.g.*		
Reheat Coil:	*0.09 in. w.g.*		

Cooling Section

	Gross	Net
Total Capacity:	*271.8 MBH*	*254.9 MBH*
Sensible Capacity:	*222.6 MBH*	*205.7 MBH*
Latent Capacity:	*49.2 MBH*	
Circuit Total Gross Capacities:	*136.1 MBH / 135.7 MBH*	
Mixed Air Temp (DB/WB):	*78.0 °F / 64.0 °F*	
Entering Air Temp (DB/WB):	*78.0 °F / 64.0 °F*	
Lv Air Temp (Coil) (DB/WB):	*52.7 °F / 52.3 °F*	
Lv Air Temp (Unit) (DB/WB):	*54.5 °F / 53.1 °F*	

Supply Air Fan:	*1 x 270 @ 5.99 BHP Ea.*
SA Fan RPM / Width:	*1225 RPM / 6.130 in*
SA Fan FEI:	*1.11*
Evaporator Coil:	*19.9 ft² / 6 Rows / 12 FPI*
Evaporator Face Velocity:	*412.9 fpm*

Heating Section

Preheat Type:	*Std (No Preheat)*
Auxiliary Heating Type:	*Nat. Gas Heat*
Heating Airflow:	*8200 SCFM*
Total Capacity:	*432.0 MBH*
Entering Air Temp (DB/WB):	*65.0 °F / 62.0 °F*
Leaving Air Temp (DB/WB):	*112.8 °F / 76.4 °F*
Input:	*540 MBH*
Consumption:	*540.0 MBH*
Total Turndown Ratio:	*18.0:1*

Re-heat Coil:

Capacity:	*196.0 MBH*
Leaving Air Temp (DB/WB):	*75.0 °F / 61.0 °F*
Relative Humidity:	*44.7%*

Rating Information

Listing Model	*RN-020-3-0-GABY-V0-21-000-A*
Cooling Capacity:	*235.0 MBH*
Cooling EER:	*11.86 BTU/h·W*
Cooling IEER:	*15.19 BTU/h·W*

**Rated in accordance with AHRI Standard 340/360 (I-P)*

Application EER @ Op. Conditions: ***10.6 BTU/h·W***

Electrical Data

Circuit 1

Rating:	*460V/3Ø/60Hz*	*Minimum Circuit Amp:*	*54*
Unit FLA:	*50*	*Maximum Overcurrent:*	*70*
SCCR:	*10 KAIC*		

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	2		460	3	3500		16.0
Condenser Fan:	2	1.00	460	1	1100	3.6	
Supply Fan:	1	7.50	460	3	1170	11.0	
Combustion:	2	0.25	460	1	3200	0.9	

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Ecat Version: 348.1

*Cabinet Sound Power Levels**

Octave Bands:	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Discharge LW (dB):	*89*	*88*	*91*	*92*	*87*	*84*	*82*	*79*
Return LW (dB):	*76*	*75*	*73*	*67*	*69*	*64*	*58*	*50*

**Sound power levels are given for informational purposes only. The sound levels are not guaranteed.*

*****The minimum floor area for the Lower Flammability Limit (LFL) is calculated in accordance with UL60335-2-40 4th ed. (operating or storage).***

27.4" STAR Plenum

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Ecat Version: 348.1

JOB INFORMATION:

Job Name:	*24hrFitness Nanuet*
Job Tag:	*RTU #1*
Date:	*7/16/2024 12:00:00 AM*

WHEEL SPECIFICATION:

Max RPM:	*1800*
Diameter x Qty:	*27.4 in. x 1*
CFM:	*8200*
Inertia:	*16WR²*

OPERATING CONDITIONS

Air Flow:	*8200*
Fan Energy Index (FEI):	*1.11*
Static Pressure:	*2.73 in. Wg*
Relief Dampers DP:	*0 in. Wg*
TSP:	*2.73 in. Wg*
Site Altitude	*0 ft*
TSP @ Sea Level:	*2.73 in. Wg*

MOTOR SELECTION

Rated HP / Bypass:	*7.5 x 1 / No*
Frame Size:	*254T*
Nominal RPM:	*1170*
VAC/PH/HZ:	*460V/3Ø/60Hz*
Enclosure Type:	*ODP*
Max Inertial Load:	*0 WR²*

FAN PERFORMANCE:

RPM:	*1225*
BHP:	*5.99*
Efficiency:	*58.91%*
Max Duct SP with Blocked Airway:	*0 in. Wg @1225 RPM*

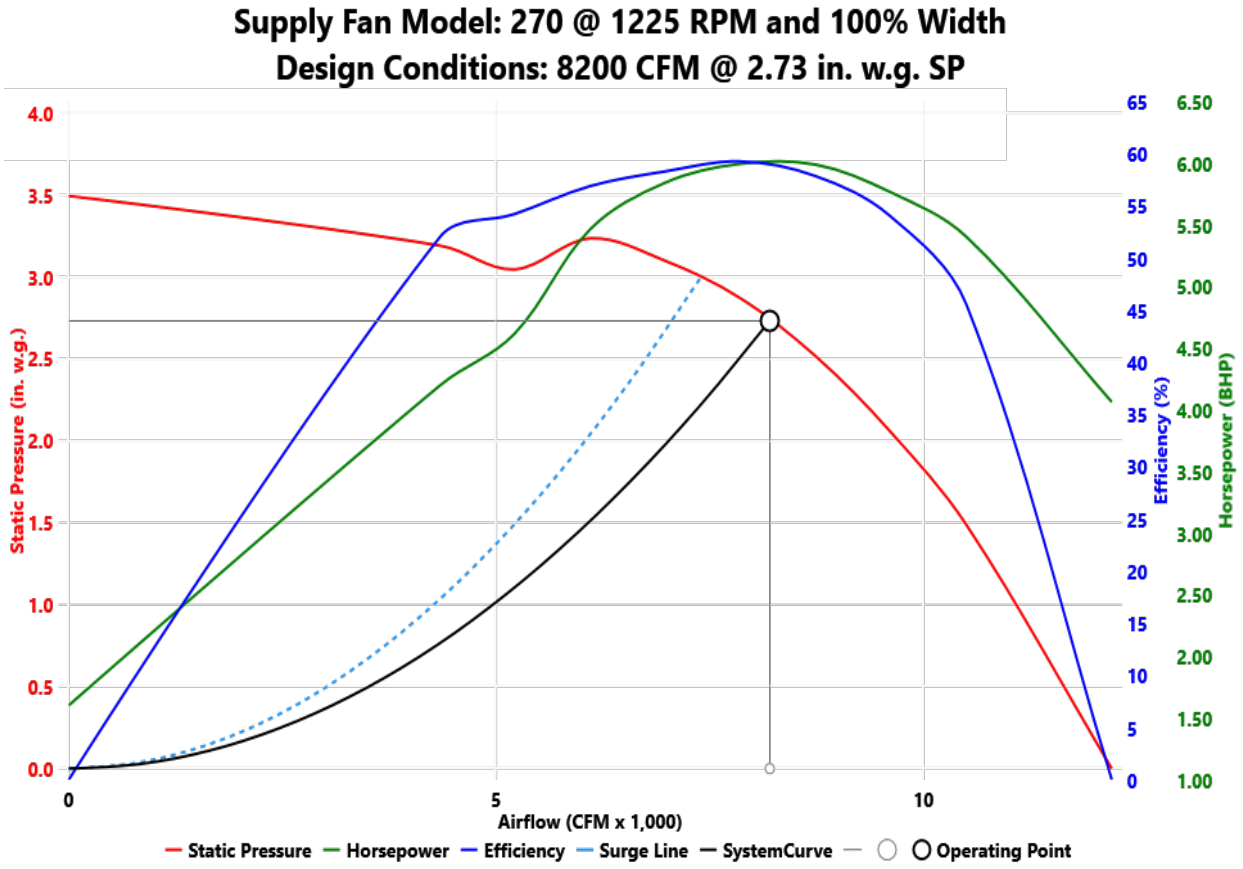
Max Duct SP with Blocked Airway:

FAN SOUND POWER (Inlet/Outlet)

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
87	85	84	83	82	82	82	81
89	88	91	93	89	87	85	82

SOUND POWER A-Weighted: 82 dB



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10B 11A 11B 12 13A 13B 13C 14 15 16A 16B 16C 16D 17A 17B 18A 18B 18C 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 SIZ1 SIZ2

Tag: RTU #1

Job Name: 24hrFitness Nanuet
Job Number: Job #25
Unit Worksheet For:
Unit Worksheet Date: 7/16/2024

	Base Option	Description
RN	Generation	RN Series
A	Major Revision	Major Revision A
020	Unit Size	Twenty
C	Series	C Series
A	Minor Revision	Minor Revision A
3	Voltage	460V/3φ/60Hz
G	Compressor Style	R-454B Variable Capacity Scroll Compressor
A	Condenser Style	Microchannel Air-Cooled Condenser
B	Indoor Coil Configuration	6 Row Evaporator
0	Cooling Heat Exchanger Construction	Standard
B	Cooling Staging	2 Variable Capacity Comp
C	Heat Type	Natural Gas (Vertical Unit Configuration)
B	Heat Construction	Stainless Steel Heat Exchanger, Gas Piping to the Valve
3	Heat Designation	540 MBH
L	Heat Staging	High Turndown Modulating Gas Heat - Temperature Control
0	Heat Pump Auxiliary Heating	No Auxiliary Heat

	Feature Option		Decription
0	F1.	Unit Orientation	Standard Access - Hinged Access Doors with Lockable Handles
0	F2.	Supply & Return Locations	Bottom Supply--Bottom Return
0	F3A.	Supply Fan Quantity	1 Fan
A	F3B.	Supply Fan Configuration	1 Fan per VFD + Full Width Fan
G	F3C.	Supply Fan Size	27" Direct Drive Backward Curved Aluminum
0	F3D.	Supply Fan Motor Type	High Efficiency Open Motor (1,200 nominal rpm)
J	F3E.	Supply Fan Motor Size	7.5 hp
D	F4A.	Outside Air Section	100% Return Air
0	F4B.	Energy Recovery Type	No Energy Recovery
0	F4C.	Energy Recovery Size	No Energy Recovery
0	F5A.	Return Fan Quantity	0 Return Fans
0	F5B.	Return Fan Configuration	No Return Fan
0	F5C.	Return Fan Size	No Return Fan
0	F5D.	Return Fan Motor Type	No Return Fan
0	F5E.	Return Fan Motor Size	No Return Fan
0	F6A.	Exhaust Fan Quantity	0 Exhaust Fans
0	F6B.	Exhaust Fan Configuration	No Exhaust Fan
0	F6C.	Exhaust Fan Size	No Exhaust Fan
0	F6D.	Exhaust Fan Motor Type	No Exhaust Fan
0	F6E.	Exhaust Fan Motor Size	No Exhaust Fan
0	F7.	Outside Air Control	Standard
A	F8.	Return and Exhaust Air Options	Standard Return Opening without EA Opening
A	F9A.	Unit Filter Type	4" Pleated - MERV 8
0	F9B.	Unit Filter Size & Location	Standard Filters in Standard Position
0	F9C.	Final Filter Type	No Final Filters
A	F9D.	Filter Options	Clogged Filter Switch - Unit Filters
0	F10A.	Refrigeration Control A	Standard - Adj Comp. Cooling Lock Out Through Unit Controls
0	F10B.	Refrigeration Control B	Standard

	Feature Option		Decription
F	F11A.	Refrigeration Options A	Modulating Hot Gas Reheat Microchannel Coil [MHGR-MC] - Dual Circuit
0	F11B.	Refrigeration Options B	Standard Packaged Unit
0	F12.	Refrigeration Accessories	None
A	F13A.	Unit Disconnect Type	Single Point Power - Non-fused Disconnect Power Switch
N	F13B.	Disconnect 1 Size	100 Amps
0	F13C.	Disconnect 2 Size	Standard - None
E	F14.	Safety Options	Remote Safety Shutdown Terminals
B	F15.	Electrical Accessories	Phase & Brown Out Protection
E	F16A.	Control Sequence	Constant Air Volume Unit Controller - CAV Cool + CAV Heat
A	F16B.	Control Supplier	AAON Controls
0	F16C.	Control Supplier Options	None
A	F16D.	BMS Connection & Diagnostics	BACnet IP
0	F17A.	Preheat Configuration	Standard - None
0	F17B.	Preheat Sizing	Standard - None
0	F18A.	Option Box Location	None
0	F18B.	Option Box Size	None
0	F18C.	Option Box Accessories	None
0	F19.	Outside Air Accessories	No Outside Air Hood - 100% Return Air
A	F20.	Cabinet Options	Base Insulation
0	F21.	Accessories	Standard
B	F22.	Maintenance Accessories	Field Wired 115V Convenience Outlet
0	F23.	Code Options	Standard - ETL U.S.A. Listing
0	F24.	Shipping Splits	Standard
G	F25.	Air-Cooled Condenser Accessories	Cond Coil Guards + ECM Condenser Fan Head Pressure Control
0	F26.	Evap-Cooled Condenser Accessories	Standard
0	F27.	Water-Cooled Condenser Accessories	None
0	F28.	Energy Recovery Accessories	None
0	F29.	VFD Options	Standard
B	F30.	Miscellaneous Options	SCCR (10kA)
0	F31.	Blank	Standard
0	F32.	Blank	Standard
0	F33.	Blank	Standard
0	F34.	Blank	Standard
0	F35.	Warranty	Standard Warranty
0	F36.	Cabinet Material	Galvanized Cabinet - Double Wall + R-13 Foam Insulation
B	F37.	Specials & Paint	Premium AAON Gray Paint Exterior Paint

Controller Components

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RNA-020-C-A-3-GAB0B-CB3L0:00-0AG0J-D00-00000-00000-0A-A00
A-00-F0-0-AN0-EB-EA0A-00-000-0A0B00-G0000B-000000B

10B 11A 11B 12 13A 13B 13C 14 15 16A 16B 16C 16D 17A 17B 18A 18B 18C 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 SIZ1 SIZ2

Tag: RTU #1

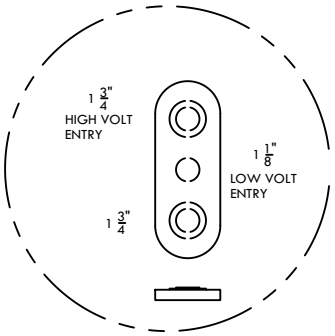
Job Name: 24hrFitness Nanuet
Job Number: Job #25
VCCX For:
VCCX Date: July 16, 2024

Part#	Included Parts	Assigned Channel	BACnet Point
ASM07503	VCCX-454 CONTROLLER		
R82890	Supply Temp Sensor - Field Installed	VCCX Control Point AI3	AI:9
ASM01820	Space Digital Temp/Hum Sensor	EBUS3 Communicating Sensor	AI:12,AI:13
	Supply Fan Control Signal 0-10VDC	VCCX Control Point AO1	AI:22
R62330	Proof of Air Flow	VCCX Control Point BI1	BI:6, BI:24
G150620	Clogged Filter Switch (Standard Filters)	VCCX Control Point BI2	BI:25
	A2L Airstream Leak Detect Status	VCCX Control Point BI5	BI:9
	A2L Cabinet Leak Detect Status	VCCX Control Point BI6	BI:10
	Safety Shut Down	VCCX Control Point BI8	BI:26
	Supply Fan	Configured Relay Point	BI:0
ASM01687	REHEAT EXPANSION MODULE		
	Reheat Enable	Reheat Expansion Module	
	Reheat HGR Valve	Reheat Expansion Module	AI:42
ASM07563	A2L MITIGATION BOARD 2		
G137750	Gas Sensor 1	A2L MB2 AI1	
G137750	Gas Sensor 2	A2L MB2 AI2	
	Alarm Output	A2L MB2 Fixed RO3	
ASM07563	A2L MITIGATION BOARD 1		
G137750	Gas Sensor 1	A2L MB1 AI1	
	Supply Fan Proof of Flow	A2L MB1 BI1	
	Alarm Output	A2L MB1 Fixed RO3	
ASM07716	REFRIGERATION MODULE		
V38391	Suction Pressure Sensor A	RM454-D SP-1	AI:48
V38410	Discharge Pressure Sensor A	RM454-D HP-1	AI:50
V38391	Suction Pressure Sensor B	RM454-D SP-2	AI:73
V38410	Discharge Pressure Sensor B	RM454-D HP-2	AI:75
	Comp Discharge Temp A	RM454-D TEMP1	AI:66
	Comp Discharge Temp B	RM454-D TEMP2	AI:67
	Modulated Condenser Signal A	RM454-D AOUT1	AI:46
	Modulated Condenser Signal B	RM454-D AOUT2	AI:47
	Comp Status Input A	RM454-D BIN1	BI:77
	Comp Status Input B	RM454-D BIN2	BI:78
	Emergency Shutdown	RM454-D BIN4	BI:83
	Comp Enable A	RM454-D RLY1	BI:84
	Comp Enable B	RM454-D RLY2	BI:85
	Comp Unload Signal A	RM454-D COMP1	AI:44
	Comp Unload Signal B	RM454-D COMP2	AI:45
ASM01670	MODULATING HOT GAS REHEAT MODULE		
	Reheat HGR Valve	MHGRV-X	AI:42
ASM01695	MODULATING GAS MODULE		
	Gas Valve Signal 1A	MODGAS-XWR Gas Valve 1	
	Gas Valve Signal 1B	MODGAS-XWR Gas Valve 2	
	Proof of Ignition 1A	MODGAS-XWR BI3	
	Proof of Ignition 1B	MODGAS-XWR BI4	
	Mod Heat Stage 1 (IGN 1)	MODGAS-XWR Heat 1 Relay	
	Mod Heat Stage 2 (IGN 1B)	MODGAS-XWR Heat 2 Relay	
	Heat Stage 3 (IGN 2L)	MODGAS-XWR Heat 3 Relay	
	Heat Stage 4 (IGN 2H)	MODGAS-XWR Heat 4 Relay	
	Low Speed Enable	MODGAS-XWR Low Speed Relay	

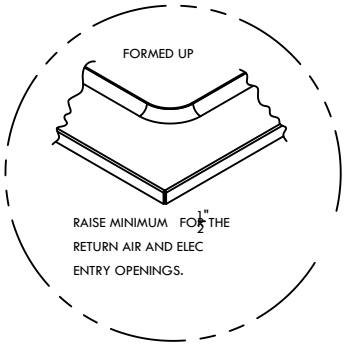
RN SERIES
C - CABINET STANDARD WITH 100% RETURN AIR
~ 16-30 TON

CLEARANCES

LOCATION	• UNIT SIZE • 16 - 30 TON
OUTSIDE AIR (BACK)	48
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	60
TOP	UNOBSTRUCTED



DETAIL A

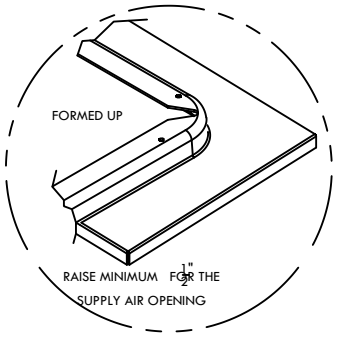


DETAIL B

NUMBER OF CONDENSER FANS

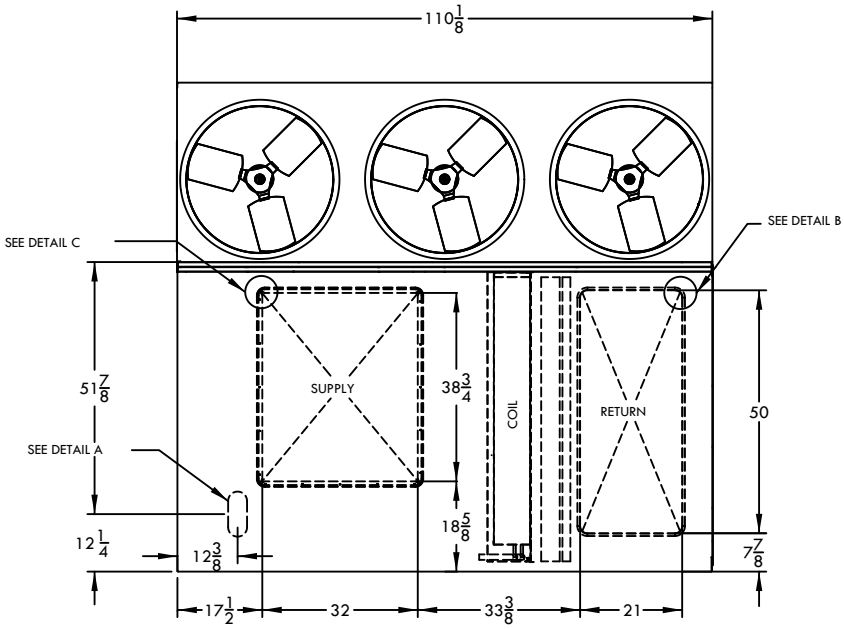
16,18 & 20 TON - 2 FANS

25 & 30 TON - 3 FANS

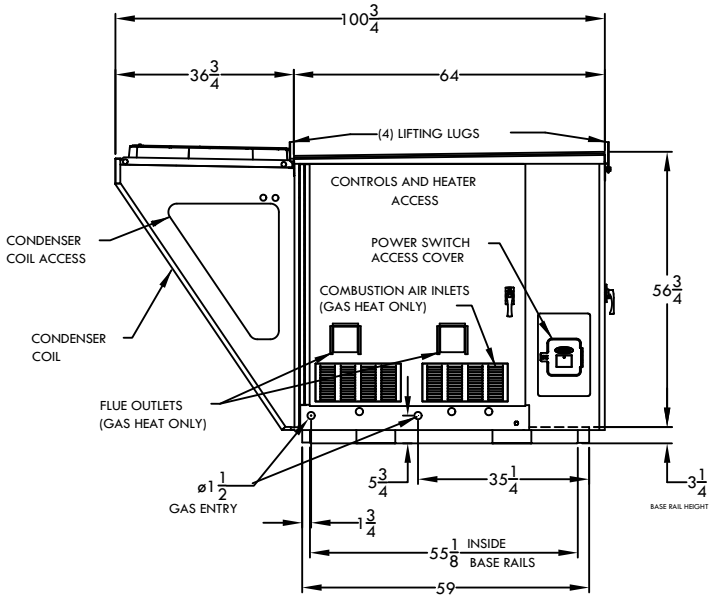


DETAIL C

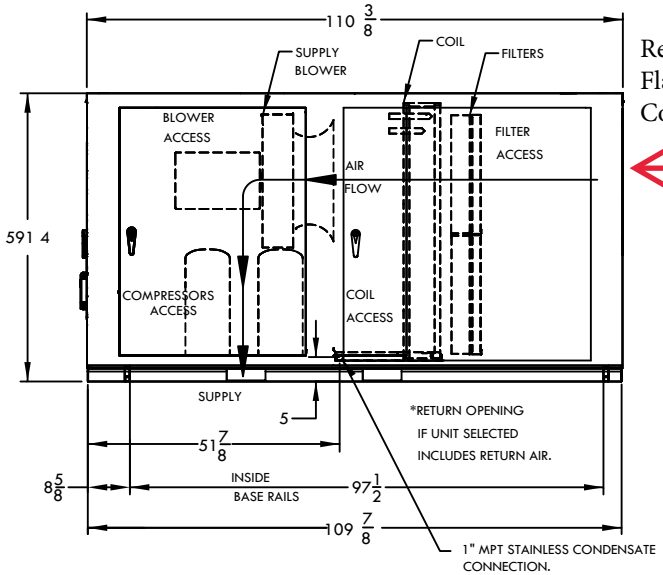
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW



Return Air Flanged Connection

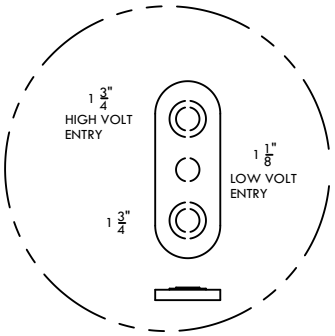
RNC-00117 REV:B 12/27/22

NOTE: ALL DIMENSIONS ARE IN INCHES

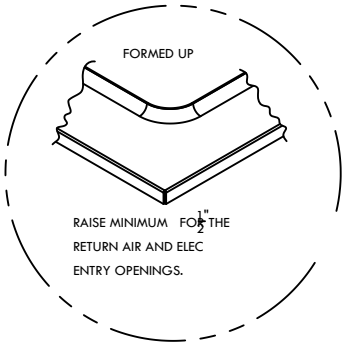
RN SERIES
C - CABINET STANDARD WITH 100% RETURN AIR
~ 16-30 TON

CLEARANCES

LOCATION	• UNIT SIZE • 16 - 30 TON
OUTSIDE AIR (BACK)	48
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	60
TOP	UNOBSTRUCTED



DETAIL A

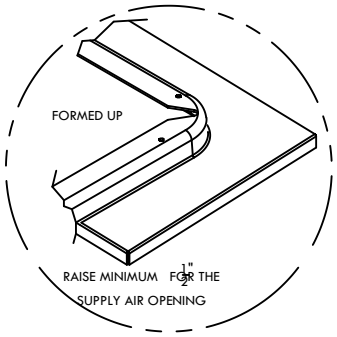


DETAIL B

NUMBER OF CONDENSER FANS

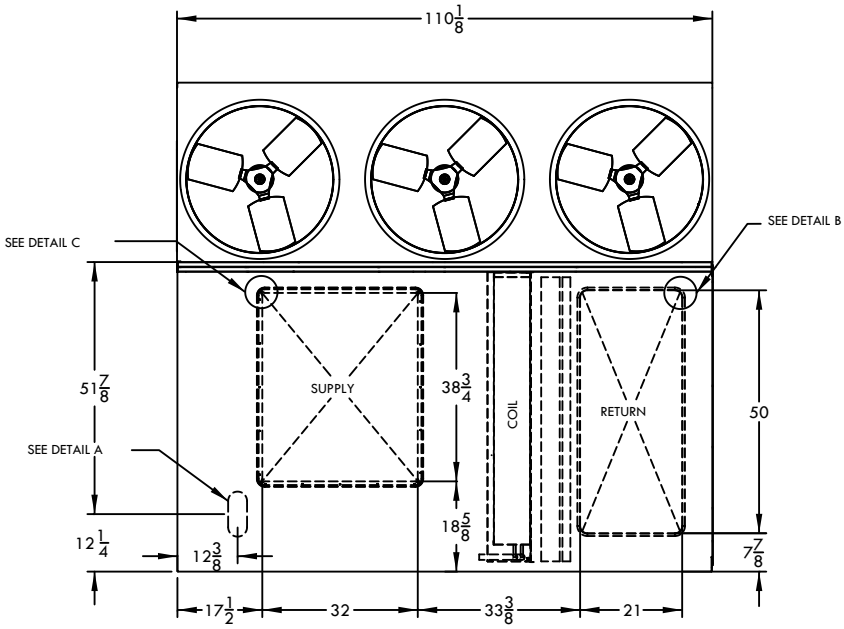
16,18 & 20 TON - 2 FANS

25 & 30 TON - 3 FANS

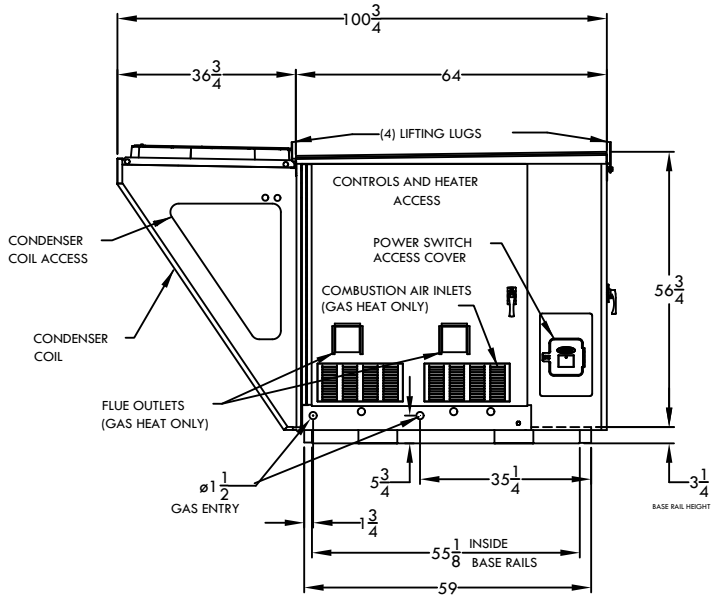


DETAIL C

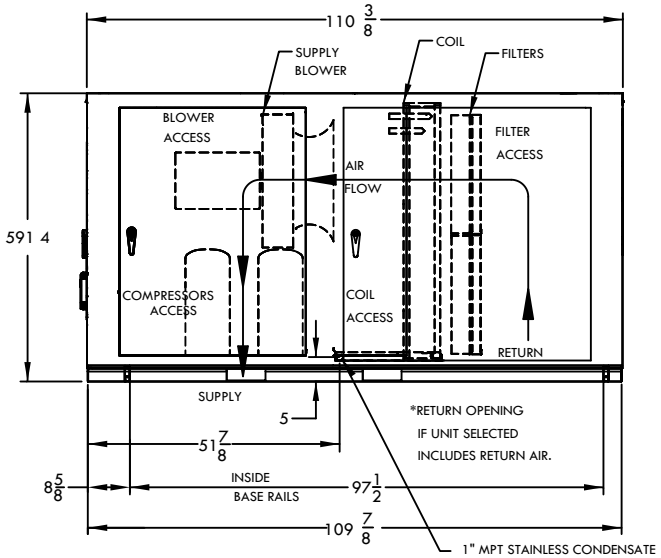
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW



RNC-00117 REV:B 12/27/22

NOTE: ALL DIMENSIONS ARE IN INCHES

FIELD GAS PIPING DETAILS

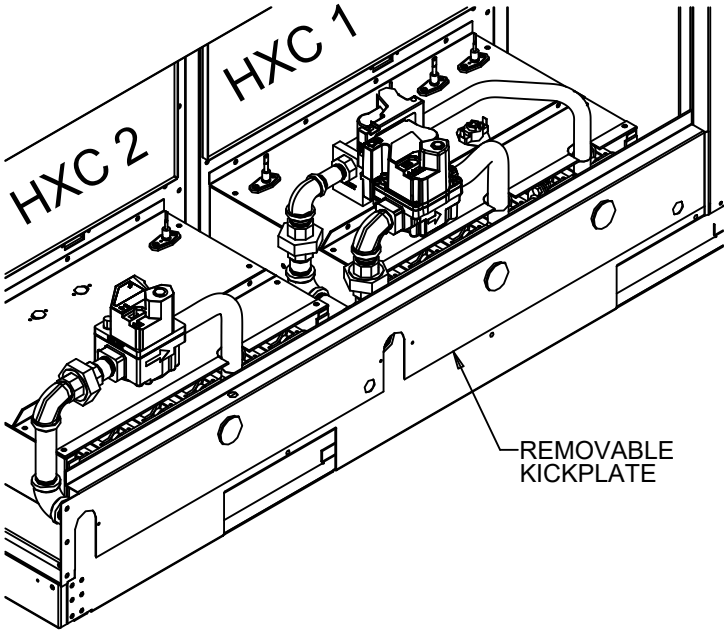
RN SERIES C - CABINET
16-30 TON

405/540 MBH
HIGH TURNDOWN

CAT000430 RNC REV A 04/25/23 JAS
ALL DIMENSIONS ARE IN INCHES

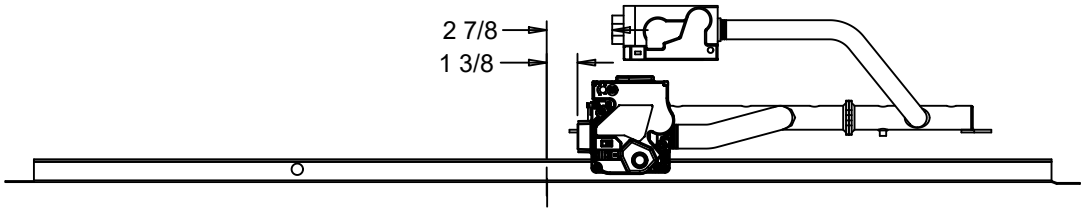
Field gas piping is required to the internal gas valves.
Piping should be installed adhering to building codes.
Perform leak check prior to operation.

Reference IOM for additonal information,
and details on optional gas entry through base.



HEAT EXCHANGER 1

TOP



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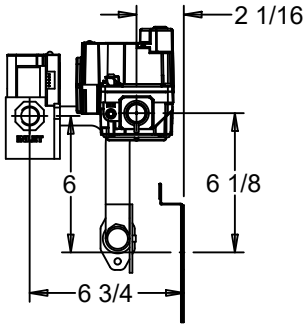
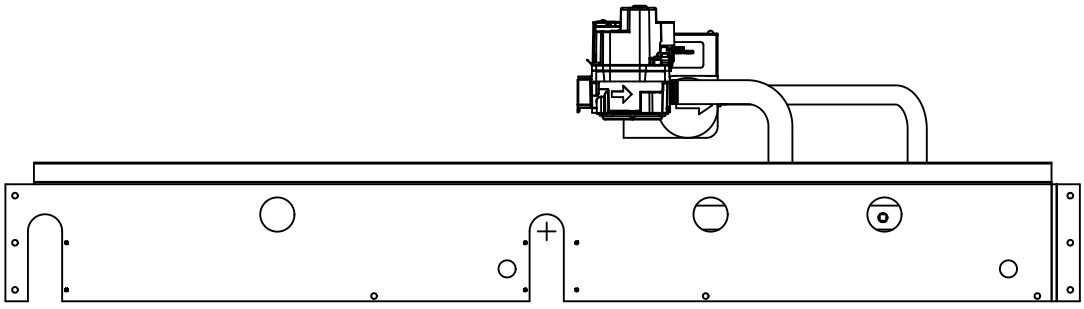


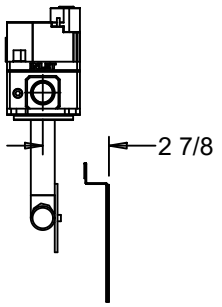
FRONT



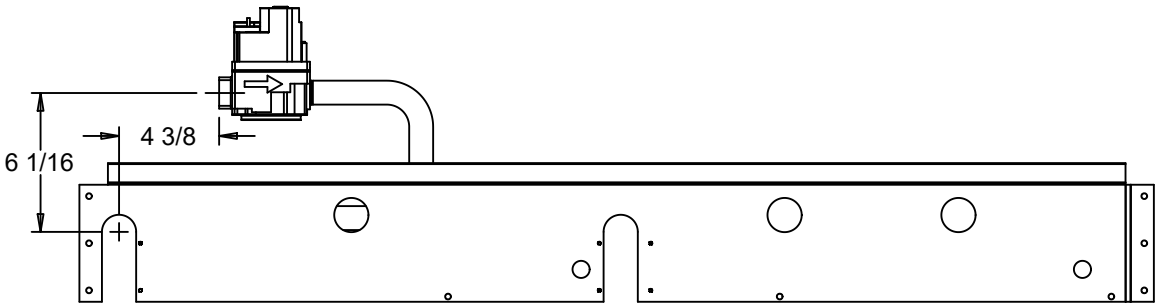
HEAT EXCHANGER 2

TOP

SIDE



FRONT



RNC CABINET
AIR COOLED CONDENSING UNIT

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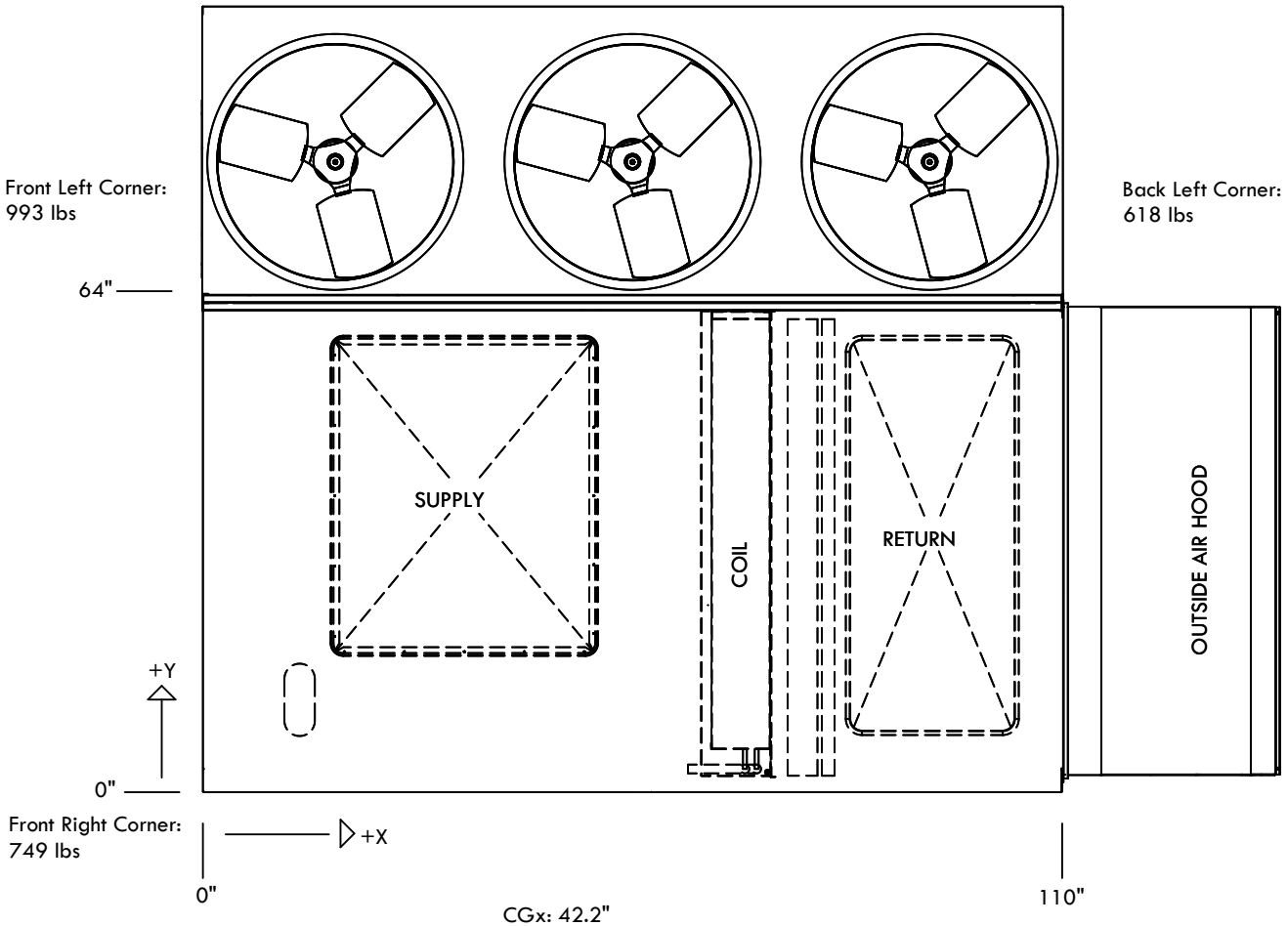

Disclaimer:
This weight estimate does not account for any SPAs.