Submittal

Prepared For:
Review

Date: February 14, 2022

Job Name:
Miami Morris & Emerson DOAS Pre-Purchase

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

Product Summary

Qty	Product
4	Performance Climate Changer (CSAA)

Notes:

1. **Confirm door, motor wiring, coil connection, and drain connection handing prior to release. Reference supply air hitting you in the face for handing.**
2. **Startup and owner training by Trane is included.**
3. **Technical assistance on disassembly/reassembly by Trane is included. Disassembly and reassembly installation labor to be provided by others.**
4. **DOAS units to ship with 8 shipping splits. Additional shipping splits beyond factory standard shipping splits were added to assist with installation into the space through the dormer window.**
5. **Energy wheel, supply fan, and exhaust fan sections will need to be disassembled by the installing contractor.**
    a. **Reference disassembly/reassembly engineering bulletin that is attached to the end of this submittal for additional details on disassembly/reassembly process for these sections only.**
6. **All controls, controls end devices, valves, actuators, etc. are not included and are by others.**
7. **VFDs for supply and exhaust fans are not included and are by others.**
    a. **External junction boxes to extend motor leads to exterior of AHU fan sections is included.**
8. **Current estimated lead times are 17 weeks from release date. Lead time does not included transit time from Columbia, SC.**

Brad Bruns,
Trane U.S. Inc.
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☒ APPROVED	☐ FURNISH AS CORRECTED
☐ REJECTED	☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM	

This review was performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Modifications or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item does not include approval of the assembly of which the item is a component. Contractor is responsible for the confirmation and correction of all dimensions at the job site. Information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work of all trades; and for the performing of all work in a safe and satisfactory manner.

Prater Engineering Associates, Inc.

Date: 2-18-22 By: B. OGLE

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.

APPROVED AS NOTED:

1. TAG UNITS AND CONFIRM HANDING AS FOLLOWS: MOR.DOAS.1 (LH), MOR.DOAS.2 (RH), EMR.DOAS.1 (LH), EMR.DOAS.2 (LH).

2. CONFIRM IF CROSS BRACING IS REQUIRED AT SHIPPING SPLITS FOR INSTALLATION.
   (PLANNED SUPPORT IS W6X12 FULL LENGTH OF UNIT BOTH SIDES, C6X10.5 ACROSS BOTH ENDS).

Table of Contents

Tag Data - Performance Climate Changer (CSAA) (Qty: 4)

Item	Tag(s)	Qty	Description	Model Number
A1	DOAS-1, DOAS-2, DOAS-2, DOAS-3	4	Performance Climate Changer (CSAA)	CSAA008UA

Unit level options
- Indoor unit
- Unit size 8
- 2.5in. integral base frame
- UL listed unit

Controls and Electrical
- Freezestat factory installed
- External junction box for supply and exhaust fans
- Energy wheel starter

Warranty
- 1 year parts only warranty

Fan section (Pos #1)
- Exhaust fan
- Door – right side
- Outward swing
- 16.5in. dd plenum, full width, M press
- NEMA premium compliant ODP
- Voltage 200-208/3
- 5 max applied hp
- Inverter balance with shaft grounding
- Back rectangular discharge

Air mixing section (Pos #2)
- Door- right side
- Back damper - parallel blade
- Front full face opening
- 2in./4in. combo filter rack
- 4” MERV 13 cartridge - standard (Field Installed) – (2) Total sets provided per DOAS
- 2" MERV 8 Pleated media (Field Installed) – (3) Total sets provided per DOAS

Wheel (Pos #4)
- Dedicated outside air application
- Variable effectiveness
- Exhaust air bypass damper
- Outside air bypass damper
- Doors - right side
- 2" MERV 8 Pleated media (Field Installed) – (3) Total sets provided per DOAS

Coil section (Pos #5)
- Horizontal coil
- Small
- Heating coil
- Hot water
- 2 rows

Coil section (Pos #6)
- Horizontal coil
- Medium
- Cooling coil
- Chilled water
- 6 rows

Coil section (Pos #7)
- Horizontal coil
- Small
- Heating coil
- Hot water
- 2 rows

Fan section (Pos #8)
- Supply fan
- Door- right side

Outward swing
16.5in. dd plenum, full width, M press
NEMA premium compliant ODP
Voltage 200-208/3
7.5 max applied hp
Inverter balance with shaft grounding
Front rectangular discharge

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Trane Performance Climate Changer Air Handler

Unit Overview - DOAS-1, DOAS-2, DOAS-2, DOAS-3

Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	CSAA008	75.8 in	50.5 in	206.6 in	3013 lb	2926 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split	Elevation
	Height	Width	Length		
8 piece(s)	75.8 in	50.5 in	52.3 in	766 lb	0.00 ft

Supply Fan				Return/Exhaust Fan			
Airflow	4061 cfm	Total Static Pressure	5.538 in H2O	Airflow	4323 cfm	Total Static Pressure	3.053 in H2O

Construction Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	All unit inner panels - galvanized
Integral Base Frame	2.5in. integral base frame
Short Circuit Current Rating	5 kA
Agency Approval	UL listed unit

Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Max Fuse Size
Circuit number 1 Supply fan motor(s)	200-208/3/60	23.30 A	29.13 A	50.00 A
Circuit number 2 Exhaust fan motor(s)	200-208/3/60	15.30 A	19.13 A	30.00 A
Circuit number 3 Energy wheel	115/1/60	1.90 A	2.38 A	15.00 A

Unit Controls

Factory Controls Package	Unwired end devices
Controller Type	No controller

Warranty

Warranty section	Extd. warranty
Parts - whole unit	2nd yr only additional

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Exhaust fan section - Position: 1

Fan Data	
Wheel Diameter/Type/Class	16.5in. dd plenum, full width, M press
Fan Quantity	1
Discharge Location	Back top
Motor Location	Right side drive
Blades	Higher eff.(some bands lower,more spike)
Drive Service Factor	Direct drive
Fan Performance	
Airflow	4323 cfm
Total Static Pressure	3.053 in H2O
Total Brake Power	4.007 hp
Operating Speed	2591 rpm
Total Brake HP	4.007 hp
AMCA FEG	FEG85
Bare fan peak total efficiency	73.00 %
Unit Static Efficiency	51.94 %
Motor Interface Options	
Selection Type	External junction box
Voltage	200-208/3
VFD Frequency	88.00 Hz

Motor Data	
Power / Fan	5 hp
Voltage	200-208/3
Speed	1800
Class	NEMA premium compliant ODP
Efficiency	89.82 %
Part Load Efficiency	84.60 %
Fan Electrical Power	3.32 kW
AHRI VFD HP	5.000 hp

Note: DOL motor fan electrical power calculated in accordance with AHRI 430.

Fan Section Options	
Fan Wheel Balance	Inverter balance with shaft grounding
Door Location	Right
Door Guard	Yes

Fan Discharge Options

Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Damper Torque Requirement	Exhaust Hood
Back Face Feature	Sizeable rectangular opening	4000 cfm	1500 ft/min	2.67 sq ft	0.351 in H2O	N/A	N/A

Note: Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Pressure Drop in (in w.g.)	
Exhaust fan	
Wheel	1.70
Fan section	0.35
Internal Static Pressure	**2.05**
External Static Pressure	**1.00**
Total Static Pressure	**3.05**

Air mixing section - Position: 2

Openings

Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Hood
Back	Return	Parallel blade damper	4323 cfm	1298 ft/min	3.33 sq ft	0.361 in H2O	

Filter

Type	Frame	MERV Rating	Quantity	Size
4in. cartridge - MERV 13 - standard	2"/4" combo	MERV 13	1.00 1.00	20in.x24in. 24in.x24in.
Pressure Drop	**Condition**	**Face Velocity**	**Airflow**	**Area**
0.864	Mid-life	590 ft/min	4323 cfm	7.33 sq ft

Prefilter

Type	Frame	MERV Rating	Quantity	Size	Pressure Drop
2" Pleated media - MERV 8	2"/4" combo	MERV 8	1.00 1.00	20in.x24in. 24in.x24in.	0.687

Section Options

Door Location	Right

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Custom length section - Position: 3

Section Length	14.992 in

Dedicated outside air Energy wheel - Position: 4

Wheel			Motor		Dampers		
Size	**Efficiency**	**Model Number**	**Voltage**	**Interface Options**	**Exhaust Air Bypass**	**Outside Air Bypass**	**Recirculation**
3000	Standard	Wheel 3000 Poly S	115/1	Starter	Yes	Yes	

Design Airflow

Ventilation	Exhaust	Return	Supply
4000 cfm	4000 cfm	4061 cfm	4061 cfm

Pressure Drop @ Design Airflow			SA to RA Pressure Diff	OACF Ratio	OATR Flow	EATR	EATR Flow
Supply Side	**Exhaust Side**	**Recirculation Damper**					
1.03 in H2O	1.03 in H2O	N/A	0.500 in H2O	1.06 Number	323 cfm	1.5 %	61 cfm

Summer Conditions

Outside Air		Return Air		Supply Air		Exhaust Air		Effectiveness		
Dry Bulb	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Latent**	**Sensible**	**Total**
95.00 F	77.00 F	75.00 F	64.00 F	82.57 F	69.64 F	87.09 F	72.15 F	57.1 %	61.0 %	58.9 %

Winter Conditions

Outside Air		Return Air		Supply Air		Exhaust Air		Effectiveness		
Dry Bulb	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Dry Bulb**	**Wet Bulb**	**Latent**	**Sensible**	**Total**
0.00 F	-2.00 F	70.00 F	53.00 F	41.15 F	34.52 F	26.98 F	24.53 F	56.9 %	61.0 %	59.9 %

Energy Savings

Summer			Winter
Sensible	**Latent**	**Total**	**Sensible**
54.48 MBh	64.02 MBh	118.51 MBh	180.04 MBh

Economizing

Supply Airflow	Supply Side Pressure Drop	Exhaust Airflow	Exhaust Side Pressure Drop
4000 cfm	0.58 in H2O	4000 cfm	0.58 in H2O

Return/Exhaust Air Filter

Type	Frame	MERV Rating	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Quantity	Size
Pleated media - MERV 8	2"	MERV 8	4061 cfm	7.33 sq ft	554 ft/min	Mid-life	0.671 in H2O	1.00 1.00	20in.x24in. 24in.x24in.

Energy Wheel Section Options

Door Location	Right

AHRI 1060 Classification - Summer

AHRI 1060 Classification	AHRI ERV Certified
Data Generation Date	2/2/2022
Trane Select Assist update number	2550

Note: Purge is Not Included.

Note: Certified in accordance with the AHRI ERV Certification Program, which is based on AHRI Standard 1060. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

AHRI 1060 Classification - Winter

AHRI 1060 Classification	Outside Scope of AHRI 1060
Data Generation Date	2/2/2022
Trane Select Assist update number	2550

Note: Application Rating is outside of the scope of AHRI ERV Certification Program, but is rated in accordance with AHRI Standard 1060.

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Heating coil section - Position: 5

Coil Construction	
Model	Hot water - UW
Rows	2
Tube Diameter	1/2in. tube diameter (12.7 mm)
Coil Connection	Standard
Tube Matl/Wall Thickness	.016" (0.406 mm) copper tubes
Fin Spacing	145 Per Foot
Fin Material	Aluminum fins
Fin Type	Delta flo H (Hi efficient)
Face Area	7.99 sq ft
Coil (top/single) H x L	28 in. (711 mm) X 40" (1016 mm) finned length
Casing	Galvanized
Turbulators	Not Included
Rigging Weight	67.0 lb
Installed Weight	87.4 lb
Coil Section Options	
Extended Drain and Vent	Holes only
Drain Pan	Galvanized
Drain Pan Size	Small
Drain Connection	Right
Minimum Trap Height (L)	8.966 in
H Trap Dimension	5.311 in
J Trap Dimension	2.655 in
Door Location	Right

Coil Performance	
Capacity	
Total	303.66 MBh
Air	
Flow	4000 cfm
Entering Dry Bulb	-10.00 F
Leaving Dry Bulb	60.00 F
Pressure Drop	0.214 in H2O
Face Velocity	501 ft/min
Fluid	
Flow	30.44 gpm
Entering	130.00 F
Leaving	110.00 F
Pressure Drop	1.43 ft H2O
Tube Velocity	2.37 ft/s
Reynolds Number	16607.53
Type	Water
Concentration	100.00 %
Fouling Factor	0.00050 hr-sq ft-deg F/Btu
Volume	2.45 gal
AHRI 410 Classification	
AHRI 410 Classification	Outside Scope of AHRI 410
Data Generation Date	2/10/2022
Trane Select Assist update number	2561

Note: Coil is NOT certified by AHRI. Coil is outside the scope of AHRI Standard 410.

Cooling coil section - Position: 6

Coil Construction	
Model	Chilled water - UW
Rows	6
Tube Diameter	1/2in. tube diameter (12.7 mm)
Coil Connection	Standard
Tube Matl/Wall Thickness	.016" (0.406 mm) copper tubes
Fin Spacing	145 Per Foot
Fin Material	Aluminum fins
Fin Type	Delta flo H (Hi efficient)
Face Area	7.99 sq ft
Coil (top/single) H x L	28 in. (711 mm) X 40" (1016 mm) finned length
Casing	Stainless steel
Turbulators	Yes
Rigging Weight	145.1 lb
Installed Weight	191.7 lb
Coil Section Options	
Extended Drain and Vent	Holes only
Drain Pan	Stainless steel
Drain Pan Size	Medium
Drain Connection	Right
Minimum Trap Height (L)	10.291 in
H Trap Dimension	6.194 in
J Trap Dimension	3.097 in
Door Location	Right

Coil Performance	
Capacity	
Total	195.78 MBh
Sensible	125.97 MBh
Air	
Flow	4061 cfm
Entering Dry Bulb	82.57 F
Entering Wet Bulb	69.64 F
Leaving Dry Bulb	54.50 F
Leaving Wet Bulb	54.40 F
Pressure Drop	0.883 in H2O
Face Velocity	509 ft/min
Fluid	
Flow	26.02 gpm
Entering	44.00 F
Leaving	59.00 F
Pressure Drop	4.65 ft H2O
Tube Velocity	2.03 ft/s
Reynolds Number	6074.17
Type	Water
Concentration	100.00 %
Fouling Factor	0.00000 hr-sq ft-deg F/Btu
Volume	5.57 gal
AHRI 410 Classification	
AHRI 410 Classification	AHRI ACHC Certified
Data Generation Date	2/2/2022
Trane Select Assist update number	2550

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Heating coil section - Position: 7

Coil Construction	
Model	Hot water - UW
Rows	2
Tube Diameter	1/2in. tube diameter (12.7 mm)
Coil Connection	Standard
Tube Matl/Wall Thickness	.016" (0.406 mm) copper tubes
Fin Spacing	76 Per Foot
Fin Material	Aluminum fins
Fin Type	Delta flo E (energy efficient)
Face Area	7.99 sq ft
Coil (top/single) H x L	28 in. (711 mm) X 40" (1016 mm) finned length
Casing	Galvanized
Turbulators	Not Included
Rigging Weight	59.3 lb
Installed Weight	79.7 lb
Coil Section Options	
Extended Drain and Vent	Holes only
Drain Pan	Galvanized
Drain Pan Size	Small
Drain Connection	Right
Minimum Trap Height (L)	10.505 in
H Trap Dimension	6.337 in
J Trap Dimension	3.168 in
Door Location	Right

Coil Performance	
Capacity	
Total	86.76 MBh
Air	
Flow	4000 cfm
Entering Dry Bulb	55.00 F
Leaving Dry Bulb	75.00 F
Pressure Drop	0.139 in H2O
Face Velocity	501 ft/min
Fluid	
Flow	8.70 gpm
Entering	130.00 F
Leaving	110.00 F
Pressure Drop	0.13 ft H2O
Tube Velocity	0.68 ft/s
Reynolds Number	4745.01
Type	Water
Concentration	100.00 %
Fouling Factor	0.00025 hr-sq ft-deg F/Btu
Volume	2.45 gal
AHRI 410 Classification	
AHRI 410 Classification	AHRI ACHC Certified
Data Generation Date	2/2/2022
Trane Select Assist update number	2550

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Supply fan section - Position: 8

Fan Data	
Wheel Diameter/Type/Class	16.5in. dd plenum, full width, M press
Fan Quantity	1
Discharge Location	Front top
Motor Location	Right side drive
Blades	Higher eff.(some bands lower,more spike)
Drive Service Factor	Direct drive
Fan Performance	
Airflow	4061 cfm
Total Static Pressure	5.538 in H2O
Total Brake Power	5.745 hp
Operating Speed	2886 rpm
Total Brake HP	5.745 hp
AMCA FEG	FEG85
Bare fan peak total efficiency	73.00 %
Unit Static Efficiency	61.72 %
Motor Interface Options	
Selection Type	External junction box
Voltage	200-208/3
VFD Frequency	98.00 Hz

Motor Data	
Power / Fan	7.5 hp
Voltage	200-208/3
Speed	1800
Class	NEMA premium compliant ODP
Efficiency	91.19 %
Part Load Efficiency	85.84 %
Fan Electrical Power	4.68 kW
AHRI VFD HP	7.500 hp

Note: DOL motor fan electrical power calculated in accordance with AHRI 430.

Fan Section Options	
Fan Wheel Balance	Inverter balance with shaft grounding
Door Location	Right
Door Guard	Yes

Fan Discharge Options

Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Damper Torque Requirement	Exhaust Hood
Front Face Feature	Sizeable rectangular opening	4000 cfm	1500 ft/min	2.67 sq ft	0.351 in H2O	N/A	N/A

Note: Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Pressure Drop in (in w.g.)	
Supply fan	
Air mixing section	1.91
Wheel	1.03
Coil section	0.22
Coil section	0.88
Coil section	0.14
Fan section	0.35
Internal Static Pressure	**4.54**
External Static Pressure	**1.00**
Total Static Pressure	**5.54**

Mechanical Specifications - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

GENERAL

Per ASHRAE 62.1 recommendation, indoor air handling units will be shipped stretch-wrapped to protect unit from in-transit rain and debris.

Installing contractor is responsible for long term storage in accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07B-EN).

Unit shall be UL and C-UL Listed.

Supply fans within the scope of AHRI Standard 430 are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org".

Unit sound performance data shall be reported as sound power. Trane, in providing this program and data, does not certify or warrant NC levels. These levels are affected by factors specific to each application and/or installation and therefore unable to be predicted or certified by Trane. Refer to product data for specific fan footnote references.

Unit Construction

All unit panels shall be 2" solid, double-wall construction to facilitate cleaning of unit interior. Unit panels shall be provided with a mid-span, no-through-metal, internal thermal break. Casing thermal performance shall be such that under 55°F supply air temperature and design conditions on the exterior of the unit of 81°F dry bulb and 73°F wet bulb, condensation shall not form on the casing exterior.

All exterior and interior indoor AHU panels will be made of galvanized steel.

Unit Paint

Unit to ship unpainted from factory. If required, unit to be painted by 3rd party finisher, or by painting contractor at job site.

Casing Deflection
The casing shall not exceed 0.0042 inch deflection per inch of panel span at 1.50 times design static pressure. Total maximum static shall not exceed +8 inches w.g. in all positive pressure sections and -8 inches w.g. in all negative pressure sections.

Floor Construction
The unit floor shall be of sufficient strength to support a 300.0 lb load during maintenance activities and shall deflect no more than 0.0042 inch per inch of panel span.

Unit base
Manufacturer to provide a full perimeter integral base frame for either ceiling suspension of units or to support and raise all sections of the unit for proper trapping. Indoor unit base frame will either be bolted construction or welded construction. All outdoor unit base frames shall be welded construction. For indoor units, refer to schedule for base height and construction type. Contractor will be responsible for providing a housekeeping pad when unit base frame is not of sufficient height to properly trap unit. Unit base frames not constructed of galvanized steel shall be chemically cleaned and coated with both a rust-inhibiting primer and finished coat of rust-inhibiting enamel. Unit base height to be included in total height required for proper trap height.

Insulation
Panel insulation shall provide a minimum thermal resistance (R) value of 13 ft^2-h-^oF/Btu throughout the entire unit. Insulation shall completely fill the panel cavities in all directions so that no voids exist and settling of insulation is prevented. Panel insulation shall comply with NFPA 90A.

Drain Pan
In sections provided with a drain pan, the drain pan shall be designed in accordance with ASHRAE 62.1. To address indoor air quality (IAQ) the drain pan shall be sloped in two planes promoting positive drainage to eliminate stagnant

water conditions. Drain pan shall be insulated, and of double wall construction. The outlet shall be the lowest point on the pan, and shall be of sufficient diameter to preclude drain pan overflow under normally expected operating conditions. All drain pans connections shall have a threaded connection, extending a minimum of 2-1/2" beyond the unit base, and shall be made from the same material as the drain pan. Drain pan located under a cooling coil shall be of sufficient size to collect all condensate produced from the coil.
Refer to Product Data for specific information on which sections are supplied with a drain pan, the drain pan material and connection location.

Access Door Construction
Access doors shall be 2" double wall construction. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels respectively. All doors shall be provided with a thermal break construction of door panel and door frame. Gasketing shall be provided around the full perimeter of the doors to prevent air leakage. Surface mounted handles shall be provided to allow quick access to the interior of the functional section and to prevent through cabinet penetrations that could likely weaken the casing leakage and thermal performance. Handle hardware shall be designed to prevent unintended closure. Access doors shall be hinged and removable for quick easy access. Hinges shall be interchangeable with the door handle hardware to allow for alternating door swing in the field to minimize access interference due to unforeseen job site obstructions. Door handle hardware shall be adjustable and visually indicate locking position of door latch external to the section. Door hinges shall be galvanized.

All doors shall be a minimum of 60" high when sufficient height is available or the maximum height allowed by the unit height.

Door handles shall be provided for each latching point of the door necessary to maintain the specified air leakage integrity of the unit. Optionally for indoor AHUs and as standard on outdoor AHUs, outward swing doors are provided with a single handle linked to multiple latching points. An optional shatterproof window shall be provided in access doors where indicated on the plans. Window shall either be single pane, or thermal dual pane, as defined on schedule. Window shall be capable of withstanding unit operating pressures and shall be safe for viewing UV-C lamps.
Refer to Product Data for specific information on which sections are supplied with an access door, the door location, a single handle and a window.

MIXING SECTION
A mixing section shall be provided to support the damper assembly for outdoor, return, and/or exhaust air.

Dampers
Dampers shall modulate the volume of outdoor, return, or exhaust air. The dampers shall be of double-skin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. The dampers shall be rated for a maximum leakage rate of 3 cfm/ft² at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D. Dampers may be arranged in a parallel or opposed-blade configuration.

Title 24
The following specifications apply only to units with outside air and return air dampers, with actuators. The 5 year warranty applies only to these items.
This unit contains Economizer that meets or exceeds all mandatory requirements prescribed by Title 24, including but not limited to:
- 5 yr parts only warranty
- Successfully tested to 60,000 Actuations
- Less than 10 cfm/sq.ft. of damper leakage at 1" WG per AMCA 500L

Filters

Mixing sections shall be provided with a filter rack as indicated in the Product Data and As-Built sections of the submittal.

4 inch high efficiency filters constructed with a fine fiber media made into closely spaced pleats shall be provided. The filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filter media shall be sealed into a frame assembled in a rigid manner. The manufacturer shall supply a side access filter rack capable of holding 4 inch high efficiency filters.

The 4 inch high efficiency filters shall have a MERV 13 rating when tested in accordance with the ANSI/ASHRAE Standard 52.2.

Prefilter Type

2-inch pleated media filters made with 100% synthetic fibers that are continuously laminated to a supported steel-wire grid with water repellent adhesive shall be provided. Filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filters shall have a MERV 8 rating when tested in accordance with the ANSI/ASHRAE Standard 52.2.

COIL SECTION WITH FACTORY INSTALLED COIL
The coil section shall be provided complete with coil and coil holding frame. The coils shall be installed such that headers and return bends are enclosed by unit casings. If two or more cooling coils are stacked in the unit, an intermediate drain pan shall be installed between each coil and be of the same material as the primary drain pan. Like the primary drain pan, the intermediate drain pan shall be designed being of sufficient size to collect all condensation produced from the coil and sloped to promote positive drainage to eliminate stagnant water conditions. The intermediate pan shall begin at the leading face of the water-producing device and be of sufficient length extending downstream to prevent condensate from passing through the air stream of the lower coil. Intermediate drain pan shall include downspouts to direct condensate to the primary drain pan. The outlet shall be located at the lowest point of the pan and shall be sufficient diameter to preclude drain pan overflow under any normally expected operating condition.

Coil with Inspection
The coil section shall include an inspection section complete with a double-wall, removable door downstream of the coil for inspection, cleaning, and maintenance. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels, respectively. All doors shall be provided with a thermal break construction of door panel and door frame.

Casing penetrations supplied for hydronic drain and vents. Piping contractor shall provide extended piping.

Water Coils (UP, WP, UW, UU, UA, 3W, 3U, W, 5W, 5A, WD, 5D, D1, D2, P, or TT)
The coils shall have aluminum fins and seamless copper tubes. Copper fins may be applied to coils with 5/8-inch tubes. Fins shall have collars drawn, belled, and firmly bonded to tubes by mechanical expansion of the tubes. The coil casing may be galvanized or stainless steel. Refer to the Product Data section of the submittal for the coil casing material.
The coils shall be proof-tested to 300 psig and leak-tested under water to 200 psig. Coils containing water or ethylene glycol are certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org. Propylene glycol and calcium chloride, or mixtures thereof, are outside the scope of AHRI Standard 410 and, therefore, do not require AHRI 410 rating or certification.

Water Coils (UP, WP, UW, UU, UA, 3W, 3U, W, 5W, 5A, WD, 5D, D1, D2, P, or TT)
The coils shall have aluminum fins and seamless copper tubes. Copper fins may be applied to coils with 5/8-inch tubes. Fins shall have collars drawn, belled, and firmly bonded to tubes by mechanical expansion of the tubes. The coil casing may be galvanized or stainless steel. Refer to the Product Data section of the submittal for the coil casing material.
The coils shall be proof-tested to 300 psig and leak-tested under water to 200 psig. Coils containing water or ethylene glycol are outside of the scope of AHRI Standard 410. Propylene glycol and calcium chloride, or mixtures thereof, are outside the scope of AHRI Standard 410 and, therefore, do not require AHRI 410 rating or certification.

Coil connections are constructed of cast iron with female connections, steel block with female connections or steel pipe with male connections. Type P or TT coil connections do not extend out of unit casing. All other water coil types have connections that extend out beyond unit casing. Headers on downstream coil bank of staggered coil sections do not extend beyond the unit casing and must be completed by the on-site piping contractor.

Tubes are 1/2" [13 mm] OD 0.016" [0.406 mm] thick copper.

Low Limit
A double-pole single throw (1 NO, 1 NC) low limit switch shall be wired to a momentary push-button manual reset circuit (without Trane wiring the device is auto-resetting). Low Limit Switch circuit will be wired as Normally Closed, and will trip a lockout circuit upon temperature dropping below the set point, or general failure of the circuit. Lockout circuit will be factory wired into the Fan VFDs or Starters if present. Set point is default set to 35F at factory, but is adjustable if increased set point is needed due to installation site ducting to coil causing cold spot in a unique location

of the coil. Capillaries are serpentined across the entering or leaving side of the coil with routing Trane designed to maximize coil coverage and cover critical top and bottom 3 inches of the coil for any given capillary and coil area configuration (Trane designed and historically proven capillary routing does not necessarily match device manufacturer's generic installation recommendations). The bends of the capillaries shall be curved and fastened with capillary clips to prevent crimping and minimize wear. A separate low limit shall be provided for each coil in a coil stack.

DIRECT-DRIVE PLENUM FAN SECTION
The fan type shall be provided as required for stable operation and optimum energy efficiency. The fan shall be a single-width, single-inlet, multiblade-type direct-drive plenum fan. Motor bearing life of the direct-drive plenum fan shall be not less than L-10 250,000 hrs**.** *Refer to the Product Data section for fan quantity and number of blades selected within each unit*. Central Station Air Handling Unit Supply Fans are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org" Central Station Air Handling Unit Supply Fans shall be tested and rated in-accordance with AHRI Standard 260 for sound performance.

Fans that are selected with inverter balancing shall first be dynamically balanced at design RPM. The fans then will be checked in the factory from 25% to 100% of design RPM to insure they are operating within vibration tolerance specifications, and that there are no resonant frequency issues throughout this operating range. Inverter balancing that requires lockout frequencies inputted into a variable frequency drive to in order to bypass resonant frequencies shall not be acceptable. If supplied in this manner by the unit manufacturer, the contractor will be responsible for rebalancing in the field after unit installation. Fans selected with inverter balancing shall have a maintenance free grounding assembly installed on the fan motor to discharge both static and induced shaft currents to ground.

On units supplied with plenum or motorized impeller fans, door guard(s) shall be supplied on the access door(s) to the fan and those downstream access door(s) where unintended access to the plenum or motorized impeller fan could occur. Door guard is intended to deter unauthorized entry and incidental contact with rotating components. *Refer to the Product Data section for fans with access door guard(s)*.

Motor Frame
The motor shall be mounted integral to the isolated fan assembly and furnished by the unit manufacturer. The motor is mounted inside the unit casing on an adjustable base to permit adjustment of drive belt tension (not applicable for direct drive plenum fans). The motor shall meet or exceed all NEMA Standards Publication MG 1 requirements and comply with NEMA Premium efficiency levels when applicable except for fractional horsepower motors which are not covered by the NEMA classification. The motor shall be T-frame, squirrel cage with size, type, and electrical characteristics as shown on the equipment schedule. *Refer to the Product Data section for selected fan motors within each unit.*

Two-Inch Spring Isolators
Direct-drive fan and motor assemblies shall be internally isolated from the unit casing with 2-inch (50.8 mm) deflection spring isolators. The isolation system shall be designed to resist loads produced by external forces, such as earthquakes, and conform to the current IBC seismic requirements.

Indoor Units with an External Motor Junction Box
The fan section shall have motor leads extended to a factory-installed NEMA external junction box to facilitate field supplied starter or VFD wiring and to maintain air leakage integrity of the casing. For units with a full-load amp rating less than or equal to 110 amps, the enclosure shall be a NEMA 1 enclosure. For units with a full-load amp rating greater than 110 amps, the enclosure shall be a NEMA 4 enclosure. *Refer to the Product Data section for fans with an external motor junction box*.

Field Wired Control System
Factory-mounted direct-digital control (DDC) control points shall be engineered, and mounted by the air handler manufacturer to reduce installed costs, improve reliability, and save time at unit startup. The control points as selected by section will require field wiring at the job site. Review unit submittal drawings to verify there is sufficient space for access to control points for field wiring. All factory-mounted controls points shall be covered by the air handler manufacturer's standard warranty.

ENERGY WHEEL SECTION
The air-handling unit shall have an AHRI 1060-certified total energy recovery wheel sized per the ventilation requirement of the unit. The air-handling unit nameplate shall bear the AHRI 1060 certification label. The energy

recovery cassette shall be an Underwriters Laboratories (UL) Recognized Component certified for mechanical, electrical, and fire safety in accordance with UL Standard 1812.

The energy recovery wheel cassette frame shall be insulated and incorporate a rotary wheel with all necessary seals, drive motor, and drive belts. The total energy recovery wheel shall incorporate a desiccant without the use of binders or adhesives. Coated segments shall be washable using standard detergent or alkaline-based coil cleaners. The desiccant shall not dissolve in the presence of water or high humidity. The rim shall be of continuous rolled stainless steel and forms an even concentric circle, preventing leakage around the rim and minimizing the wear of components. All diameter and perimeter seals shall be provided as part of the cassette assembly. Perimeter seals shall be self-adjusting; diameter seals are adjustable. The wheel drive motor shall be thermally protected and UL Component Recognized. Drive belts shall not require belt tensioners. Wheel bearings shall be permanently sealed and lubricated and have a minimum L-10 life of 400,000 hours.

The energy recovery wheel shall be provided in the form of removable segments. The segments shall be removable without the use of tools to facilitate maintenance and cleaning as required. The cassette shall be removable through the energy recovery section side panel. Access doors shall be provided immediately upstream and downstream of the energy recovery wheel cassette. Adequate space shall be provided for cleaning, service, and maintenance of the wheel, motor, bearing, and belt.

Mixed Airflow Wheel
The air-handling unit shall be constructed with internal bypass dampers to bypass air around the wheel during economizing. The pressure drop across the wheel does not increase during economizing.

Wheel Control
The energy recovery wheel section shall incorporate a variable effectiveness / exhaust air bypass damper to control the energy wheel recovery capacity. The variable effectiveness control shall have the ability to modulate the total energy recovery effectiveness to 40 percent of the initial total recovery capacity.

Frost Control
Frost control prevention shall be achieved by either outside air bypass, or return air preheat. Frost setpoint temperatures based on scheduled design air conditions shall be provided by the air handling manufacturer. Winter design supply and exhaust air conditions leaving the energy wheel provided by the unit manufacturer shall include any derate in performance due to frost protection measures.

Wheel Warranty
In conjunction with the Trane standard unit warranty, the energy recovery wheel shall be warranted for a period of five years. Warranty applies to all parts and components of the energy recovery cassette with the exception of the motor. Applying a VFD to an energy wheel motor can cause premature motor failure and could void the warranty.

Primary Filters

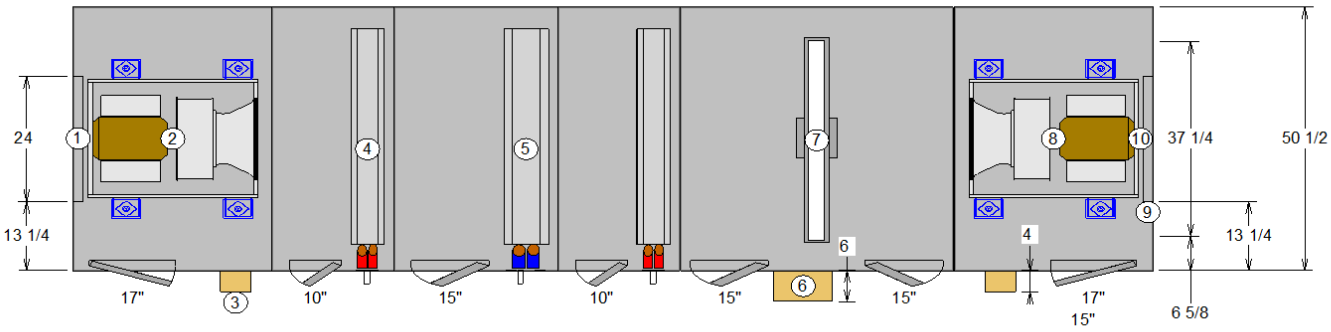
2 inch pleated media filters made with 100% synthetic fibers that are continuously laminated to a supported steel wire grid with water repellent adhesive shall be provided. Filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filters shall have a MERV 8 rating when tested in accordance with the ANSI/ASHRAE Standard 52.2.

Lifting Instructions
The air handling units must be rigged, lifted, and installed in strict accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07G-EN). The units are also to be installed in strict accordance with the specifications. Units may be shipped fully assembled or disassembled to the minimum functional section size in accordance with shipping and job site requirements.

Indoor units shall be shipped on an integral base frame (variable from the standard 2.5" to 8" height) for the purpose of mounting units to a housekeeping pad and providing additional height to properly trap condensate from the unit. The integral base frame may be used for ceiling suspension, external isolation, or as a housekeeping pad. Indoor sizes 3 to 30 will also be shipped with a shipping skid designed for forklift transport. Refer to the unit As-Built or Product Data section of the submittal for the base frame height of each unit.

All units will be shipped with an integral base frame designed with the necessary number of lift points for safe installation. All lifting lugs are to be utilized during lift. The lift points will be designed to accept standard rigging devices and be removable after installation. Units shipped in sections will have a minimum of four points of lift.

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



1 Opening front
16 x 24
2 Plenum fan - 16.5in. dd
plenum, full width, M press
Supply fan 7.5 hp
200-208/3 None
3 External junction box RH
(2)
4 Heating coil - 2 Coil type
UW (2)
5 Cooling coil - 6 Coil type
UW
6 External starter RH
7 Energy wheel - 3000
8 Plenum fan - 16.5in. dd
plenum, full width, M press
Exhaust fan 5 hp
200-208/3 None
9 Opening back
16 x 24
10 Damper back-parallel
blade
17 x 37.25

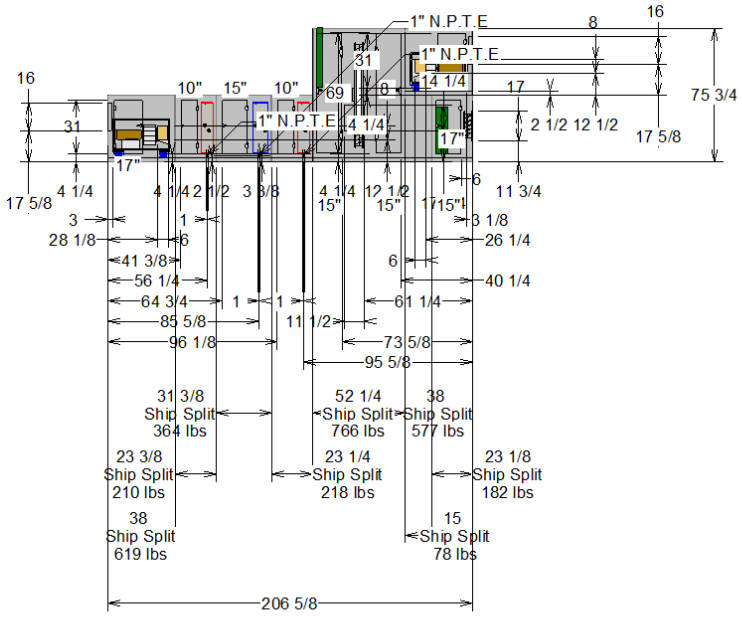
Doors
17 width x 31 height
10 width x 31 height
15 width x 31 height
15 width x 69 height

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



1 Opening front
16 x 24
2 Plenum fan - 16.5in. dd plenum, full width, M press Supply fan 7.5 hp 200-208/3 None
3 External junction box RH (2)
4 Heating coil - 2 Coil type UW (2)
5 Cooling coil - 6 Coil type UW
6 External starter RH
7 Energy wheel - 3000
8 Plenum fan - 16.5in. dd plenum, full width, M press Exhaust fan 5 hp 200-208/3 None
9 Opening back
16 x 24
10 Damper back-parallel blade
17 x 37.25
11 1" N.P.T.E

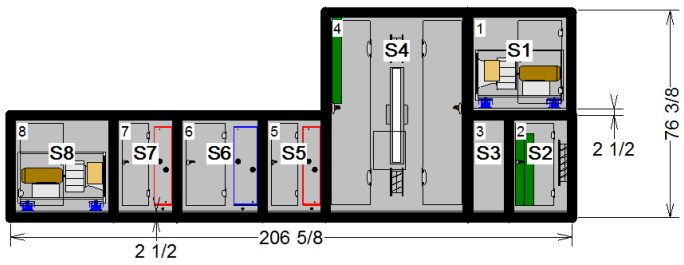
Doors
17 width x 31 height
10 width x 31 height
15 width x 31 height
15 width x 69 height

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb

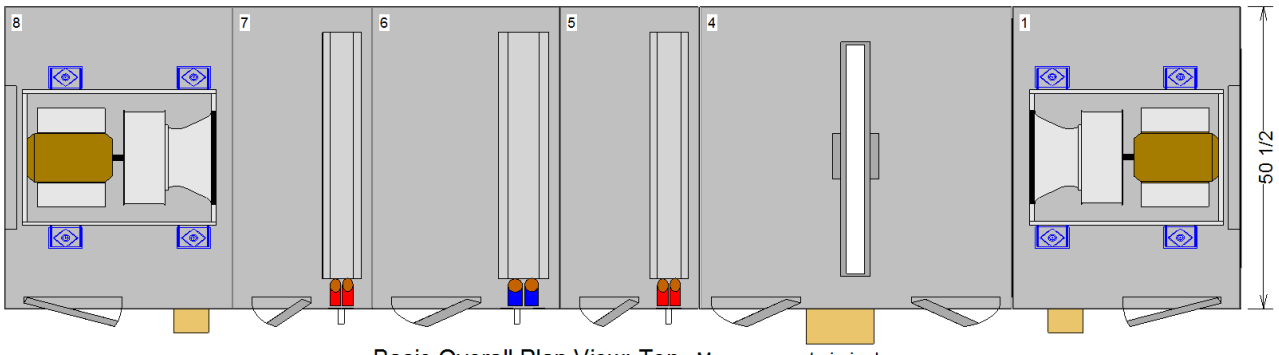
Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length sh

Pos #	Module	Length	Weight
1	Fan section	38	576.82
2	Air mixing section	23 1/8	181.70
3	Custom length section	15	77.88
4	Wheel	52 1/4	765.70
5	Coil section	23 1/4	217.87
6	Coil section	31 3/8	364.19
7	Coil section	23 3/8	210.17
8	Fan section	38	618.82

Installed Unit Weight 3013.13 lbs

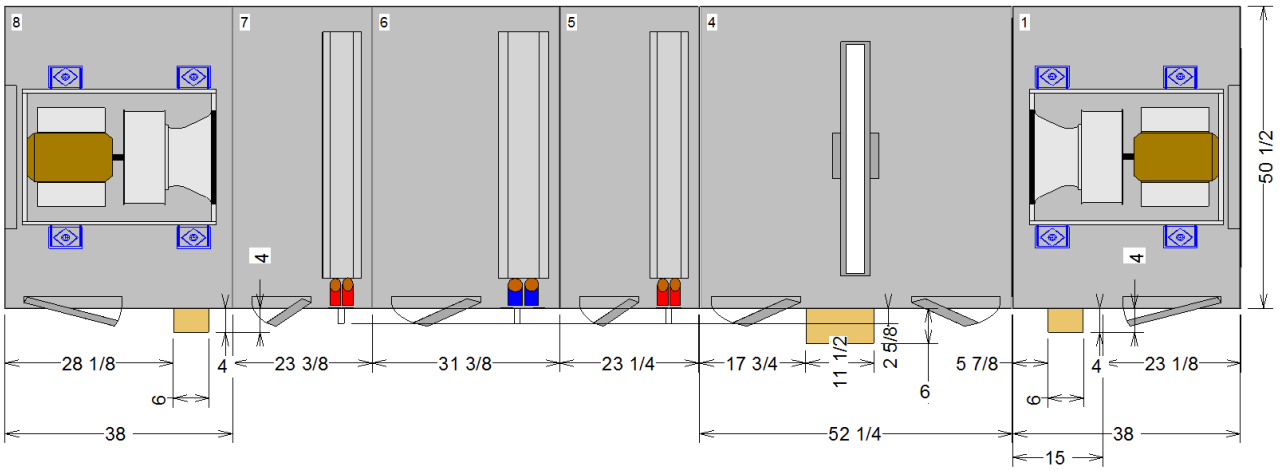


Basic Overall Plan View: Top - Measurements in inches

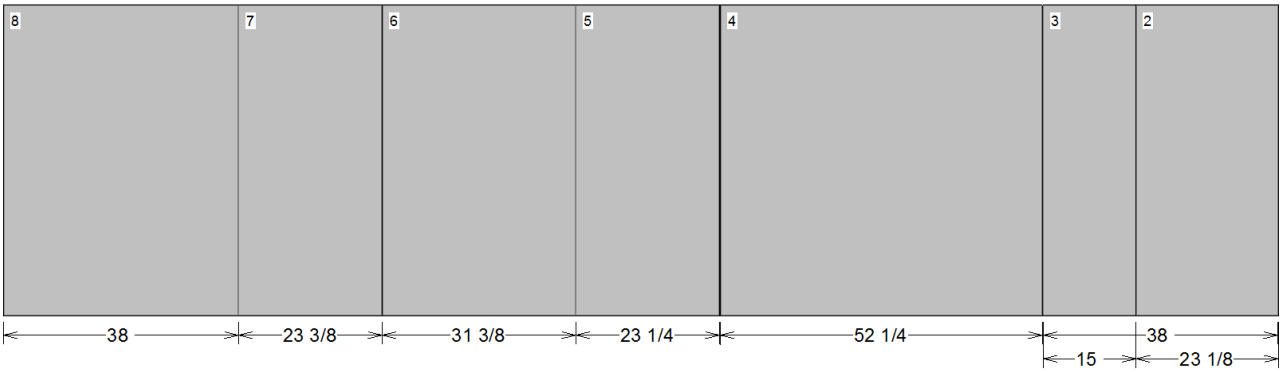
OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam	TRANE
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:	
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3	
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb	

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Right Side of Unit Detailed Plan View: Top - Measurements in inches



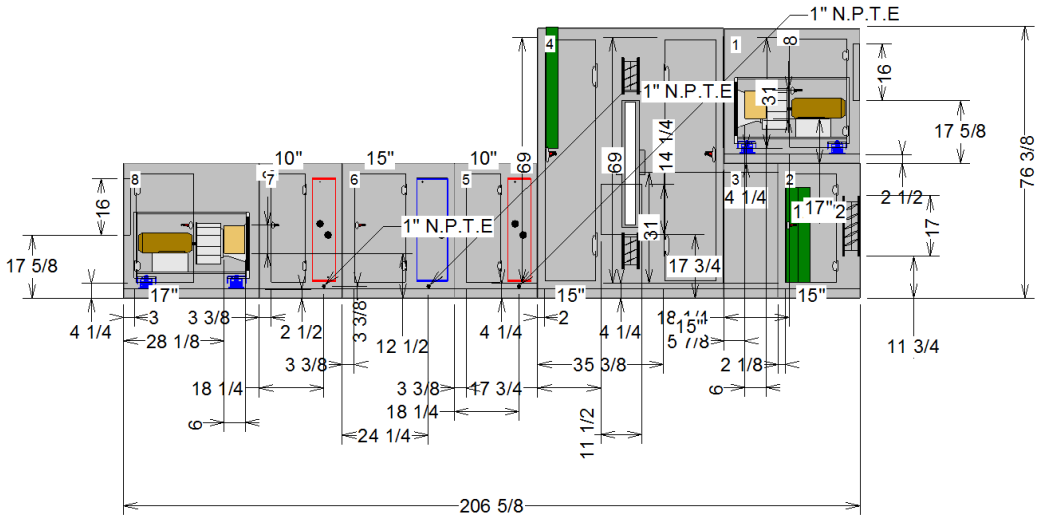
Left Side of Unit Detailed Plan View: Bottom - Measurements in inches

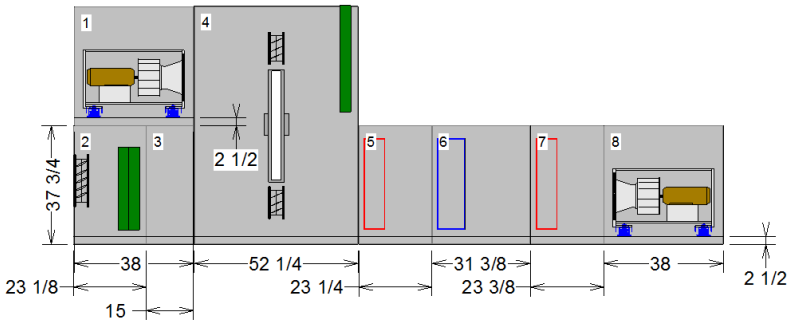
****Placement of electrical conduit may vary by a tolerance of 8" in any direction.**

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam	TRANE
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:	
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3	
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb	

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



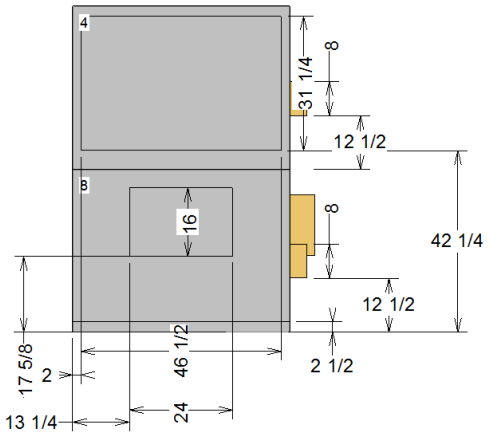


Detailed Elevation View: Left - Measurements in inches

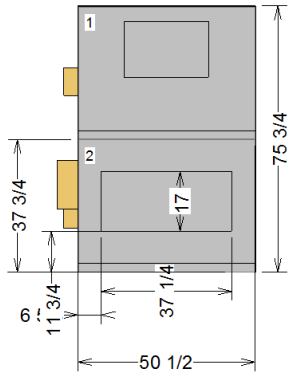
OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam	TRANE
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:	
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3	
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb	

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Detailed Elevation View: Front - Measurements in inches

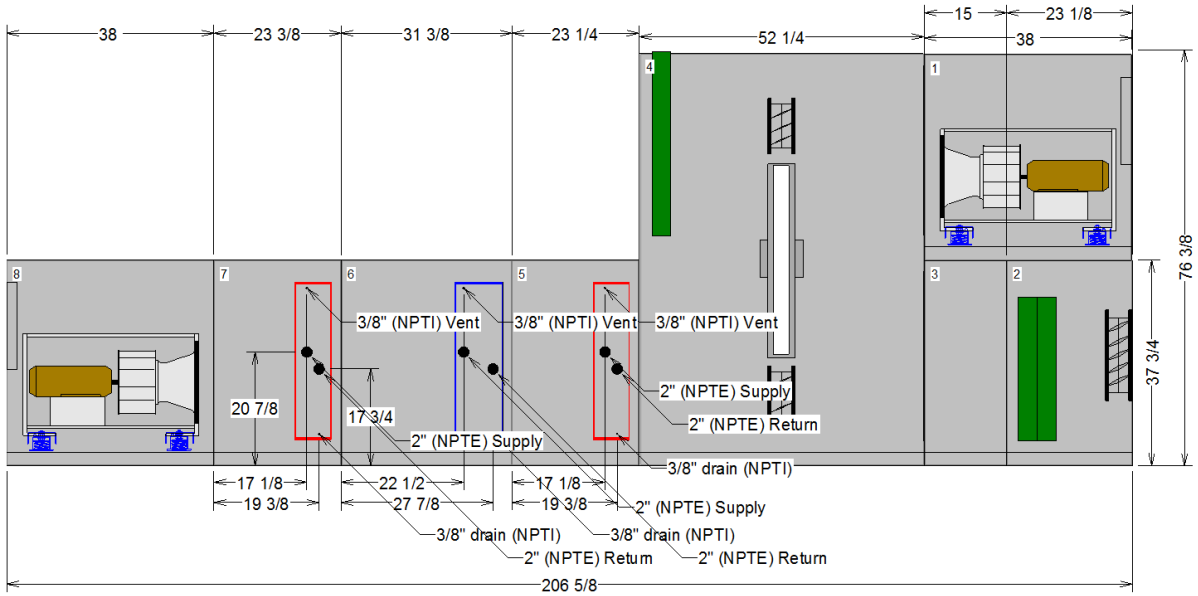


Detailed Elevation View: Back - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam	TRANE
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:	
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3	
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb	

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

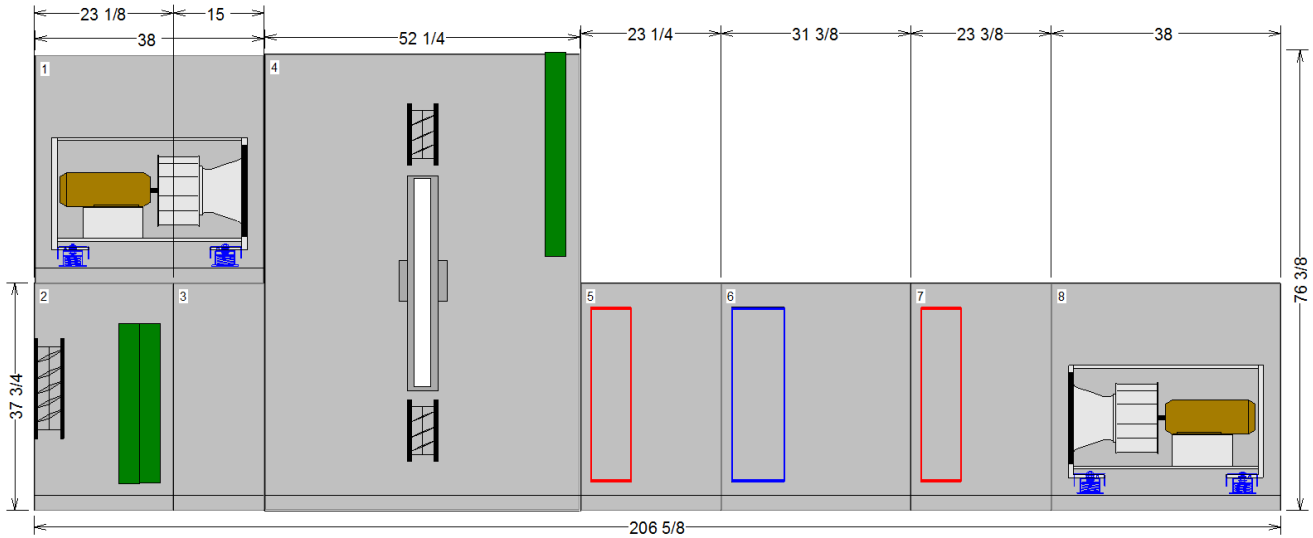


NPTI : National Pipe Thread Internal Connection
NPTE : National Pipe Thread External Connection

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



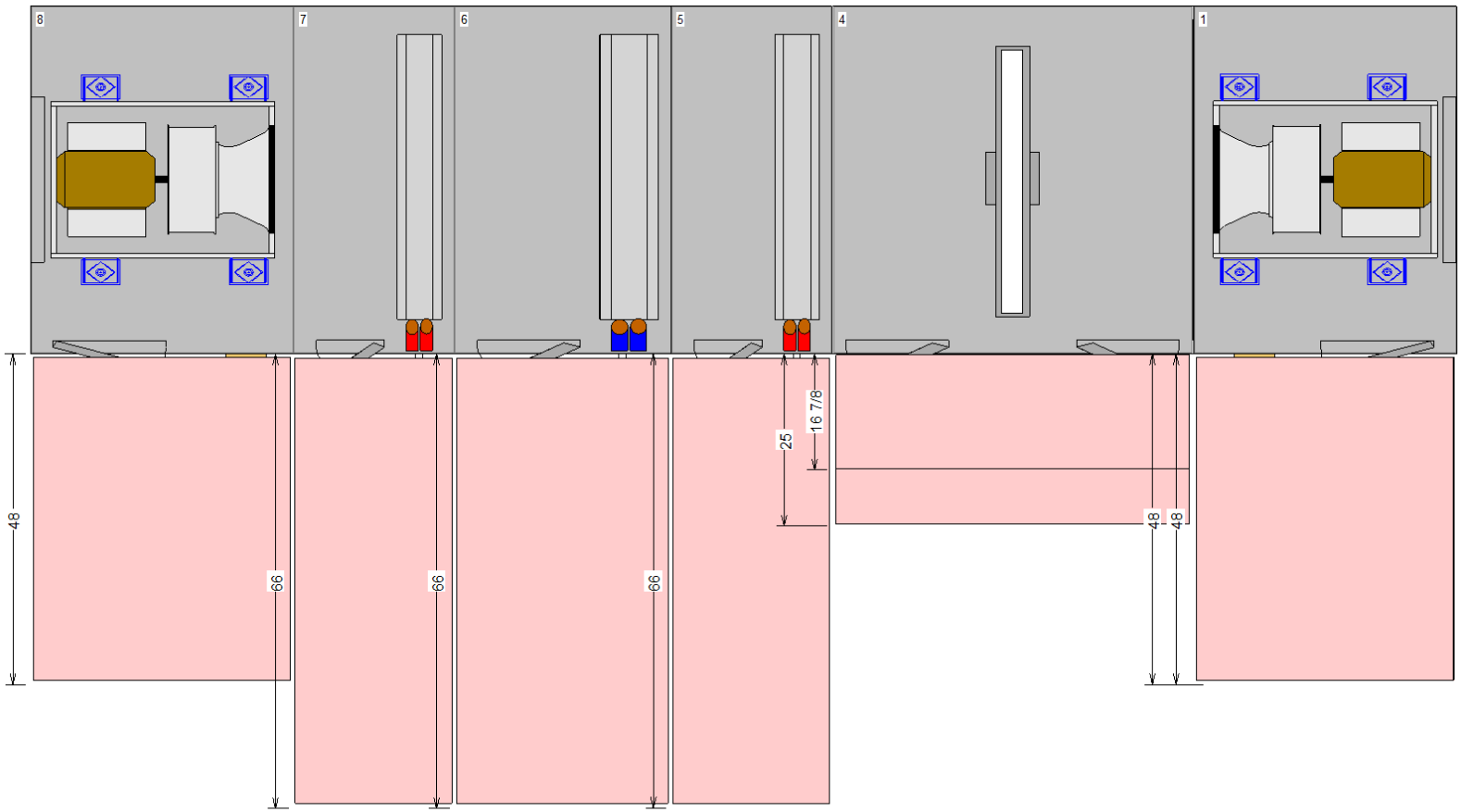
Coil connection view: Left - Measurements in inches

NPTI : National Pipe Thread Internal Connection
NPTE : National Pipe Thread External Connection

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

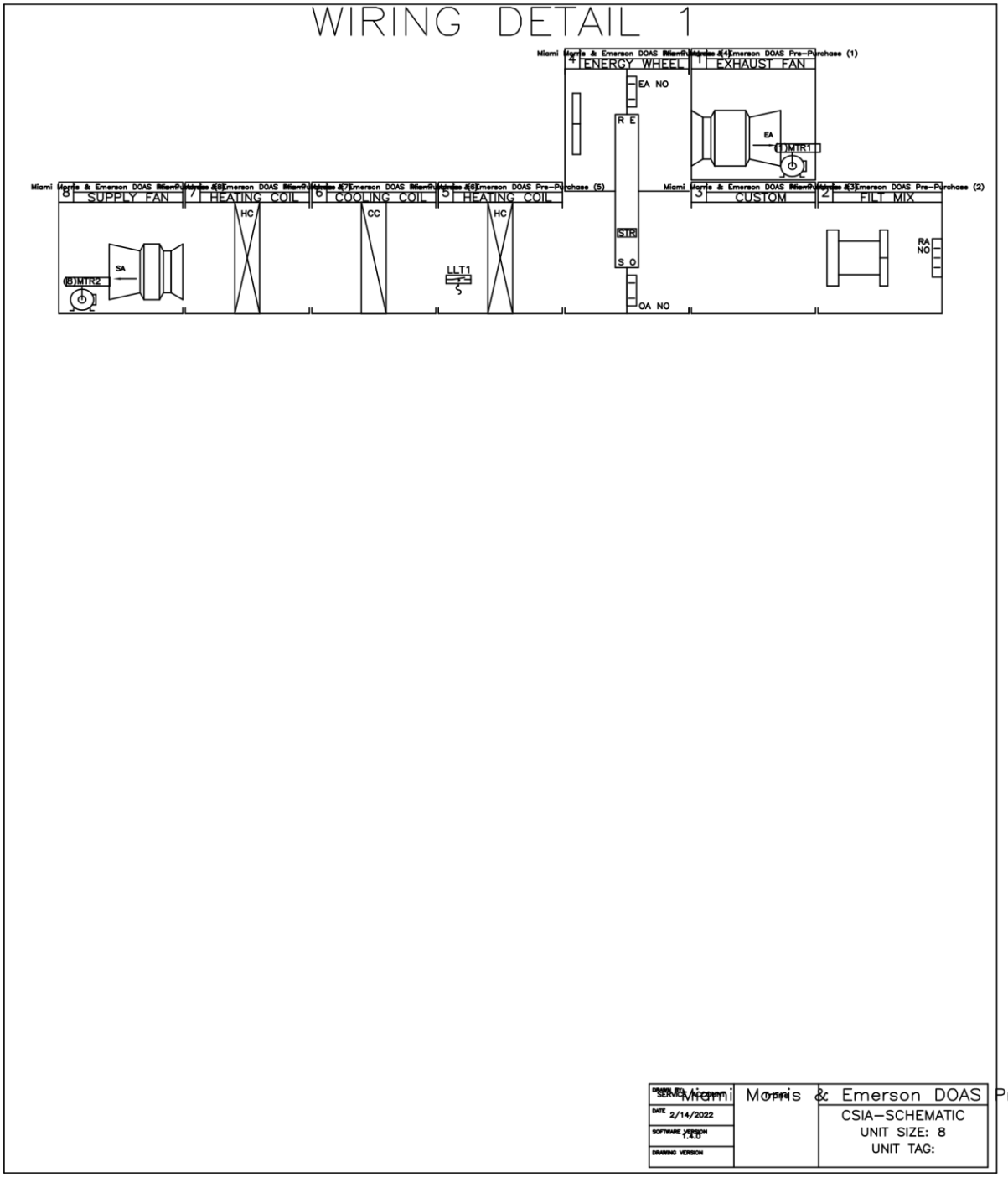


Basic Service Clearance - Plan - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 8	Job Name: Miami Morris & Emerson DOAS Pre-Purchase	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 4000 cfm	Proposal Number:
Integral base frame: 2.5in. integral base frame	Sales Office: Columbus OH Main Office	Tags: DOAS-1, DOAS-2, DOAS-3
Paint:		Rigging/Installed Weight: 2925.7 lb / 3013.1 lb

Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

LEGEND DETAIL 1

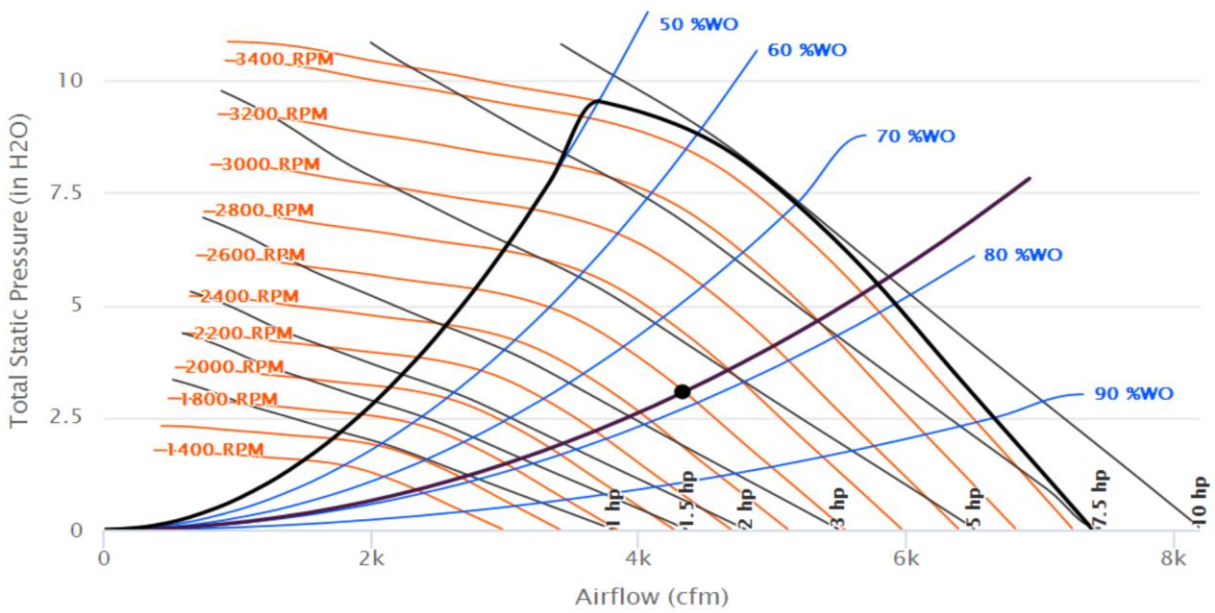
POS#	BUILD GROUP	DESCRIPTION	PT	LABEL	PWR HR—WIRE	SIGNAL HR—WIRE	XFMR	POWER VA
4		Energy Wheel Starter		STR				
5		Low Limit (Leaving)		LLT1				
8		Low Limit Reset Circuit Relay		2K9				

DRAWN BY: SERVICE VANCITY	Morris & Emerson DOAS	Pre—Purchase
DATE 2/14/2022	CSIA—SCHEMATIC UNIT SIZE: 8 UNIT TAG:	
SOFTWARE VERSION 1.4.0		
DRAWING VERSION		

Fan Curve - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Fan Details

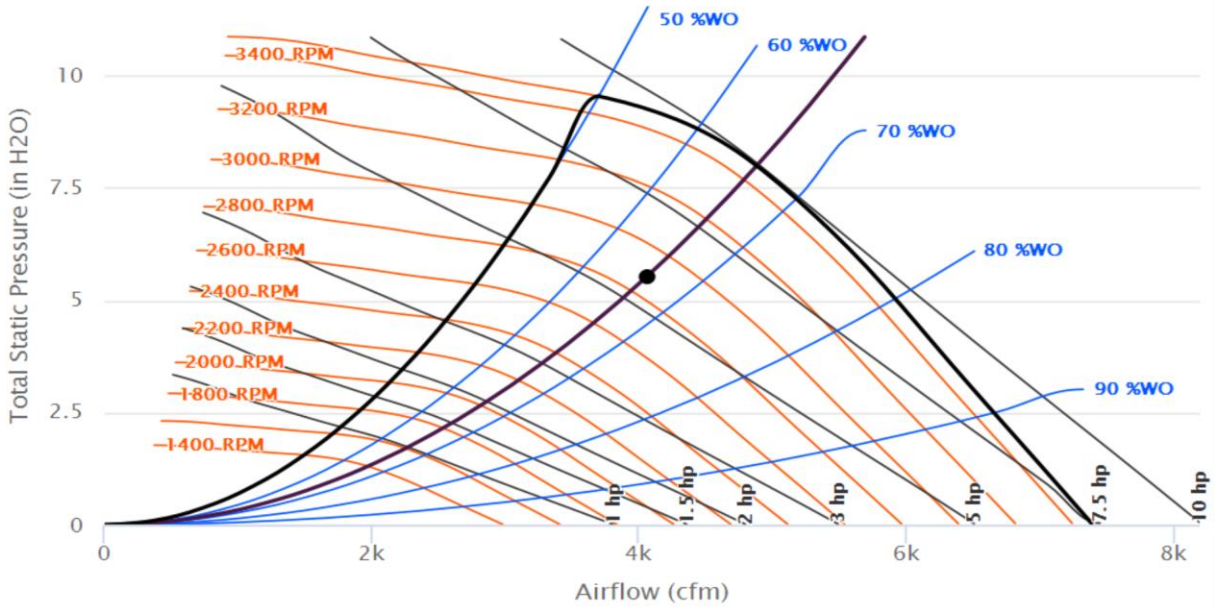
Unit Size	16TF	**Operating Brake Power**	4.007 hp
Motor Frequency	88.00 Hz	**Altitude**	0.00 ft
Operating Airflow	4,323 cfm	**Design Temp.**	70.00 F
Operating Static Pressure	3.053 in H2O	**Efficiency**	51.94 %
Operating RPM	2,591 rpm		



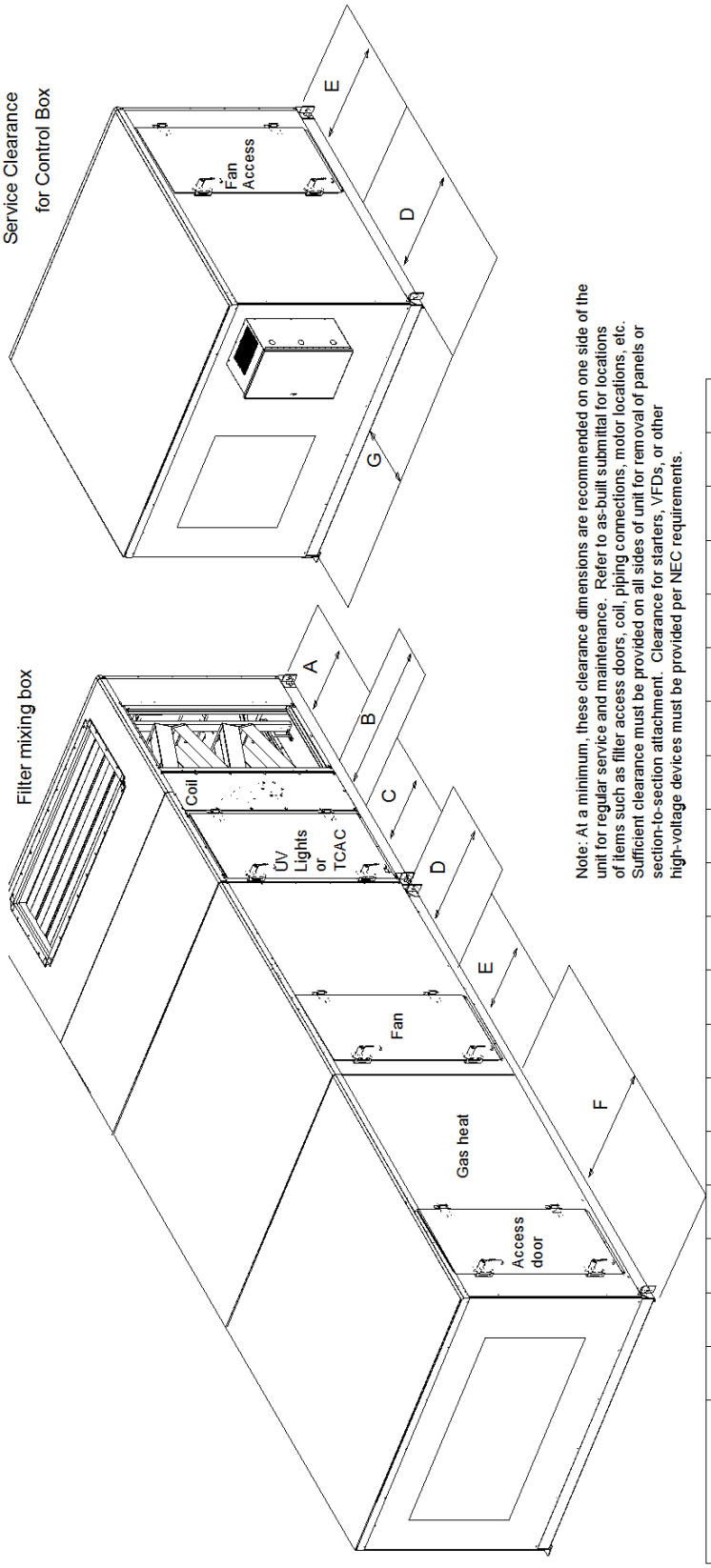
Fan Curve - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Fan Details

Unit Size	16TF	**Operating Brake Power**	5.745 hp
Motor Frequency	98.00 Hz	**Altitude**	0.00 ft
Operating Airflow	4,061 cfm	**Design Temp.**	70.00 F
Operating Static Pressure	5.538 in H2O	**Efficiency**	61.72 %
Operating RPM	2,886 rpm		



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides of unit for removal of panels or section-to-section attachment. Clearance for starters, VFDs, or other high-voltage devices must be provided per NEC requirements.

Component	3	4	6	8	10	12	14	17	21	25	30	35	40	50	57	66	80	100	120
A (filter)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
B (coil, humidifier)	48	59	59	66	77	82	87	87	95	95	109	115	128	141	141	156	156	170	197
B (staggered coil)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	67	76	80	88	96	96	105	105	113	129
C (UV Lights)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
C (TCAC)	43	59	59	63	75	81	83	83	58	58	83	75	83	83	83	83	83	75	83
D (External Starter, VFD, LV box or Overload box)	61	61	61	61	61	61	61	61	64	64	64	64	64	64	64	64	64	64	64
D (Internal Starter or VFD)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
E (fan)	48	48	48	48	51	54	58	61	60	66	66	66	70	77	77	93	93	101	101
F (Gas Heat Ext Vestible)	N/A	N/A	89	90	108	100	100	105	115	115	118	136	140	156	156	170	179	180	N/A
F (Gas Heat Int Vestible)	N/A	N/A	56	63	74	79	84	84	92	92	106	112	125	138	138	153	153	167	194

Component	All Sizes
G (Side mount LV box)	36
G (Front mount LV box)	13

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Base Detail

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Low Limit Switch

SPECIFICATIONS:

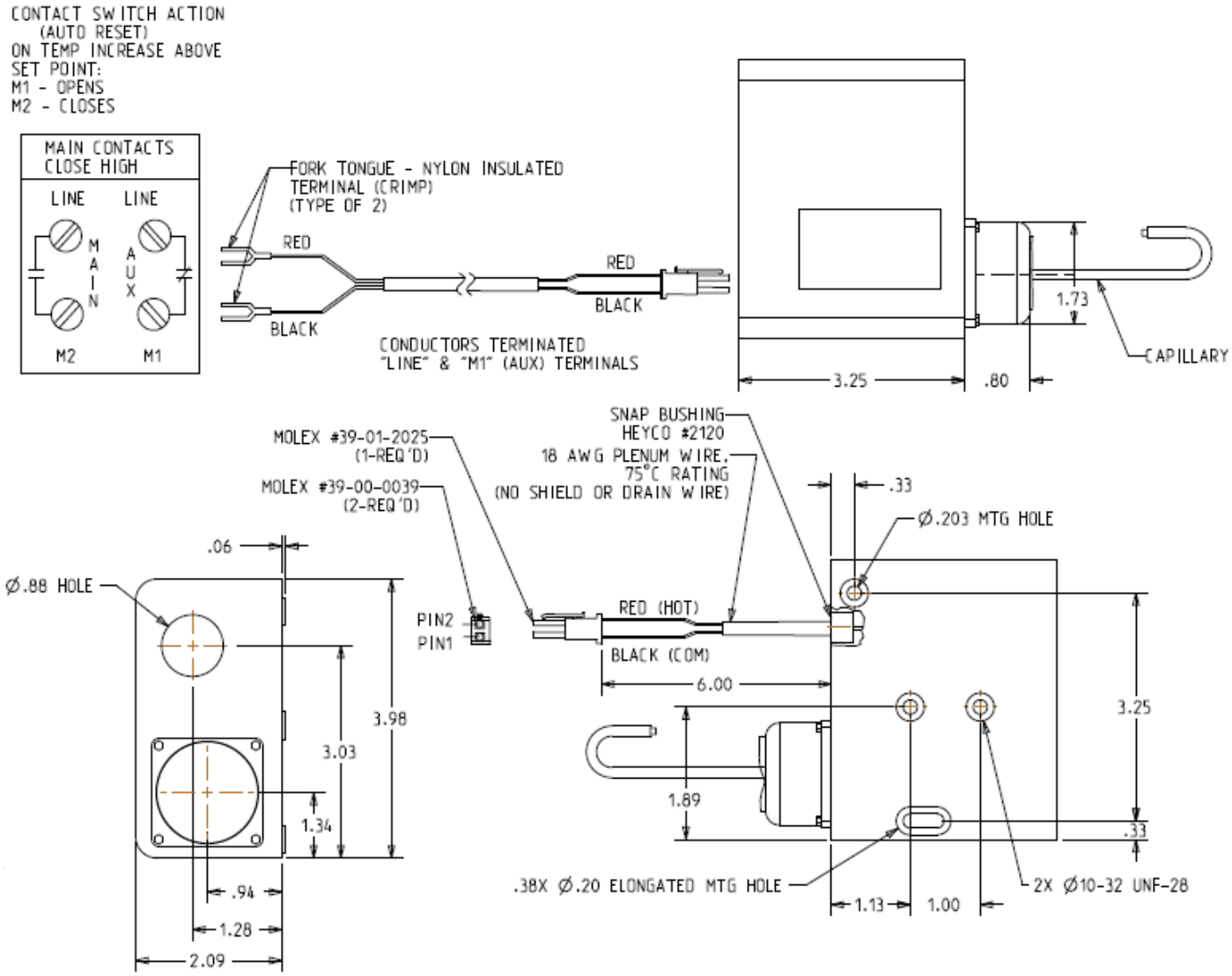
CONTACT ACTION: DPST, AUTO RESET

ELECTRICAL:

4-WIRE, 2-CIRCUIT (SEE NOTE)								
POLE NUMBER	LINE-M2 (MAIN)				LINE-M1 (AUXILIARY)			
MOTOR RATING	120V	208V	240V	277V	120V	208V	240V	277V
AC FULL LOAD AMP	16.0	9.2	8.0	--	6.0	3.3	3.0	--
AC LOCKED ROTOR AMP	96.0	55.2	48.0	--	36.0	19.8	18.0	--
AC NON-INDUCTIVE AMP	16.0	9.2	8.0	7.2	6.0	6.0	6.0	6.0
PILOT DUTY-BOTH POLES	125VA, 120 TO 600 VAC 57.5VA, 120 TO 300 VDC							

CAPILLARY: Ø.187 (STYLE 9)
MATERIAL: COLD ROLLED STEEL
FINISH: GRAY BAKED ENAMEL
MOUNTING: COME WITH MOUNTING BRACKET

NOTE: THESE ELECTRICAL CHARACTERISTICS ONLY APPLY WHEN THE WIRE ASSEMBLY IS REMOVED. THE SWITCH IS LIMITED TO 100VA @ 30VAC WITH THE WIRE ASSEMBLY ATTACHED.



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Thermal Sensor

Resistance Temperature Characteristics			
Temperature	Resistance		Temp Coeff
	Min.	Max.	
-40°C	320.9K	369.0K	-6.61 % / °C
-25°C	125.6K	142.3K	-6.04% / °C
0°C	31.17K	34.6K	-5.16 % / °C
25°C	9.56K	10.44K	-4.40 % / °C
65°C	2.012K	2.158K	-3.5 % / °C

Specifications:
Probe to be permanently identified with the Trane part number, vendor part number and date code or lot code.

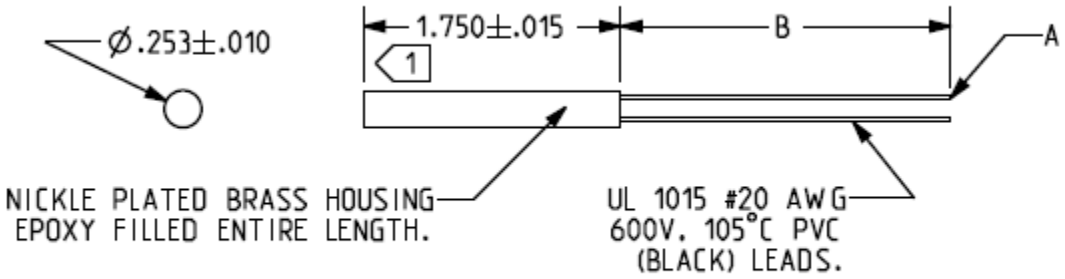
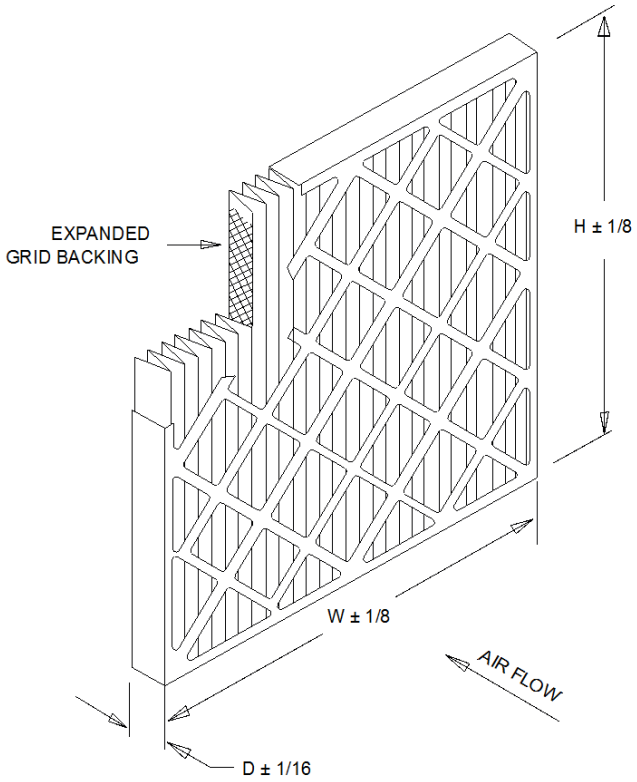


FIGURE 1

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

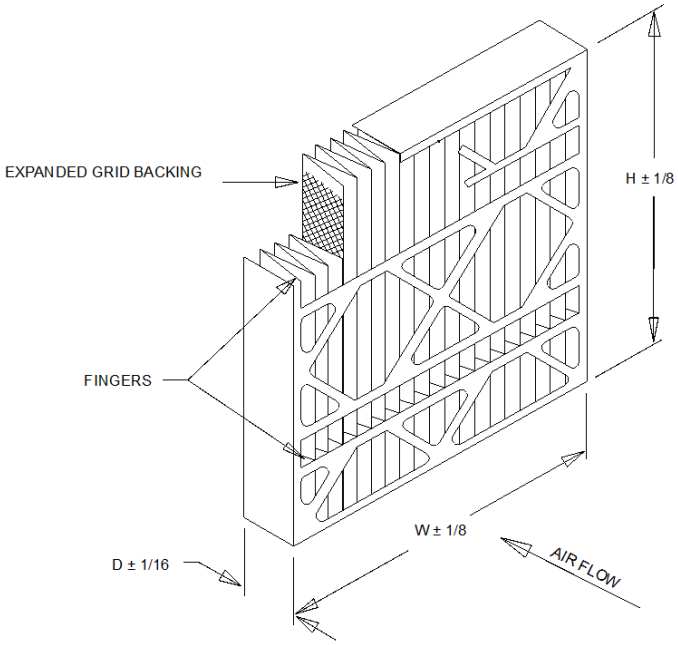


STANDARD CONSTRUCTION
1. 100 % Synthetic White Un-Dyed Media
2. 10.0 Pleats Per Foot
3. Expanded Metal Pleat Supports
4. Moisture Resistant Beverage Board Frame
5. Double Wall Frame

NOTES
1. MERV 8-A Per ASHRAE 52.2-2007 Appendix J.
2. Final Resistance: 1/0" W.G.
3. Rated Velocity: 500 FPM
4. Class 2 Filter Per U.L. Standard 900
5. Maximum Operating Temperature: 225 DEG. F

MODEL NUMBER	NOMINAL SIZE IN. W X H X D	ACTUAL SIZE IN. W X H X D	RATED AIR FLOW CFM	INITIAL RESISTANCE IN. W.G.	MEDIA AREA SQ. FT.
MX40-STD2-217	10 X 20 X 2	9-1/2 X 19-1/2 X 1-3/4	700	0.29	4.7
MX40-STD2-220	12 X 20 X 2	11-1/2 X 19-1/2 X 1-3/4	840	0.29	5.5
MX40-STD2-210	12 X 24 X 2	11-3/8 X 23-3/8 X 1-3/4	1000	0.29	6.2
MX40-STD2-239	14 X 20 X 2	13-1/2 X 19-1/2 X 1-3/4	980	0.29	5.7
MX40-2TD2-241	14 X 25 X 2	13-1/2 X 24-1/2 X 1-3/4	1220	0.29	7.1
MX40-STD2-245	15 X 20 X 2	14-1/2 X 19-1/2 X 1-3/4	1050	0.29	6.2
MX40-STD2-201	16 X 20 X 2	15-1/2 X 19-1/2 X 1-3/4	1120	0.29	6.7
MX40-STD2-216	16 X 24 X 2	15-3/8 X 23-3/8 X 1-3/4	1340	0.29	8.0
MX40-STD2-202	16 X 24 X 2	15-1/2 X 24-1/2 X 1-3/4	1400	0.29	8.0
MX40-STD2-280	15 X 20 X 2	17-1/2 X 19-1/2 X 1-3/4	1250	0.29	7.8
MX40-STD2-212	18 X 24 X 2	17-3/8 X 23-3/8 X 1-3/4	1500	0.29	9.3
MX40-STD2-285	18 X 25 X 2	17-1/2 X 24-1/2 X 1-3/4	1570	0.29	9.7
MX40-STD2-203	20 X 20 X 2	19-1/2 X 19-1/2 X 1-3/4	1400	0.29	8.3
MX40-STD2-211	20 X 24 X 2	19-3/8 X 23-3/8 X 1-3/4	1670	0.29	9.9
MX40-STD2-204	20 X 25 X 2	19-1/2 X 24-1/2 X 1-3/4	1750	0.29	10.3
MX40-STD2-205	24 X 24 X 2	23-3/8 X 23-3/8 X 1-3/4	2000	0.29	11.7
MX40-STD2-225	25 X 25 X 2	24-1/2 X 24-1/2 X 1-3/4	2170	0.29	13.6

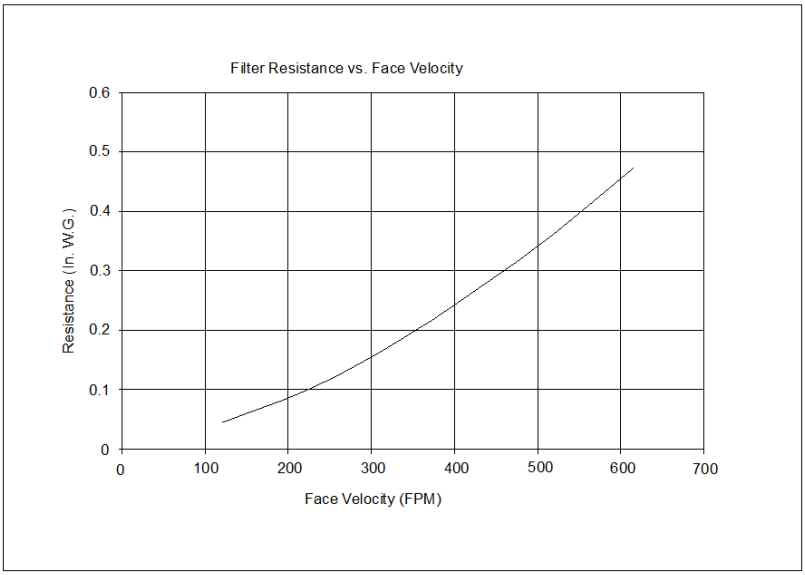
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



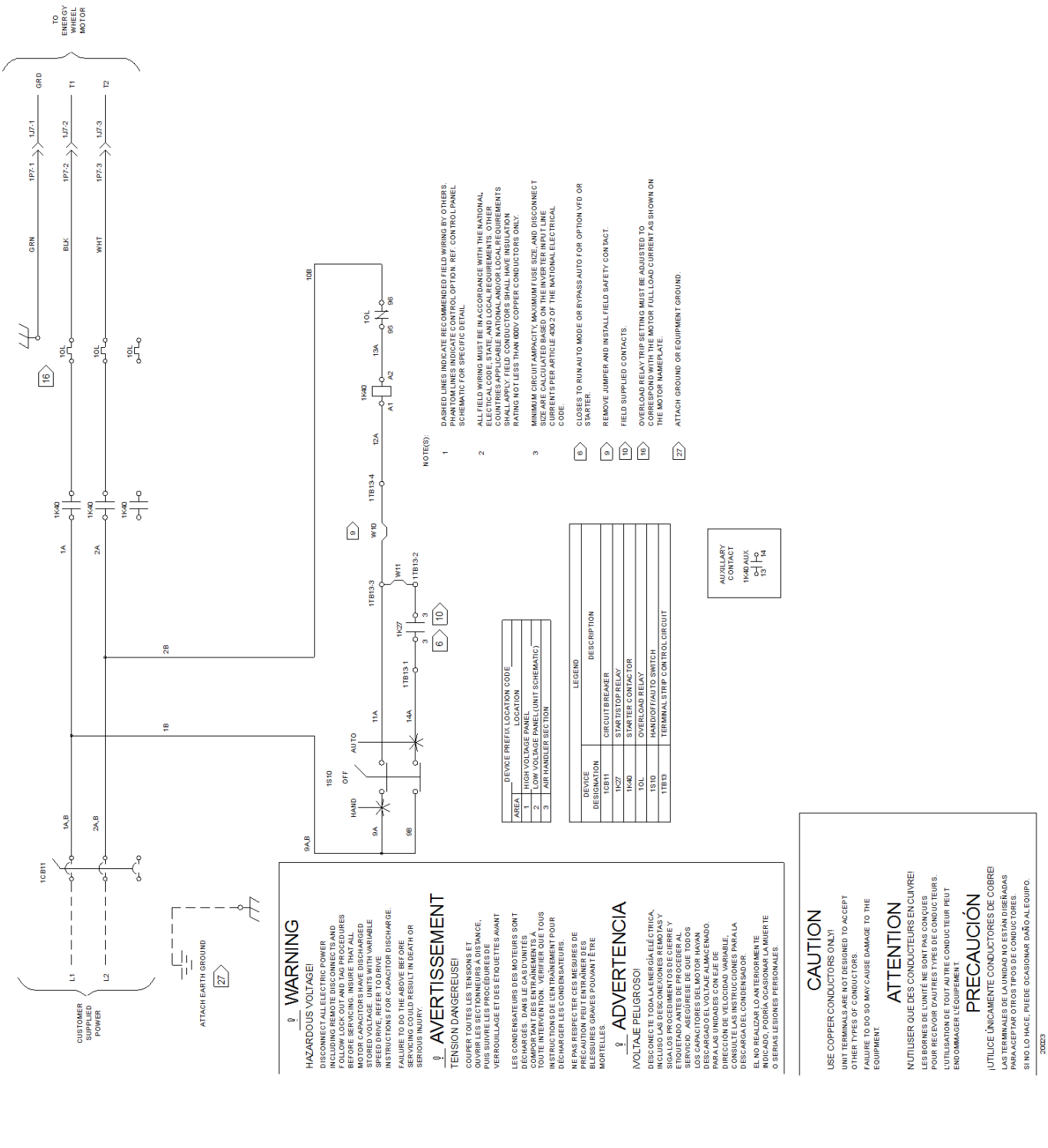
STANDARD CONSTRUCTION
1. 100 % Synthetic Un-Dyed Media
2. 11 Pleats Per Foot
3. Expanded Metal Pleat Supports
4. Moisture Resistant Beverage Board Frame
5. Double Wall Frame
6. (2) Rows of Fingers on Air Entering Side

NOTES
1. MERV 13 per ASHRAE 52.2-2012
   Tested at 492 FPM on 24x24x4 Nominal Size
2. Final Resistance: 1.0" W.G,
3. Rated Velocity: 500 FPM
4. Classified Per U.L. Standard 900 for Flammability
5. Maximum Operating Temperature: 200 deg. F

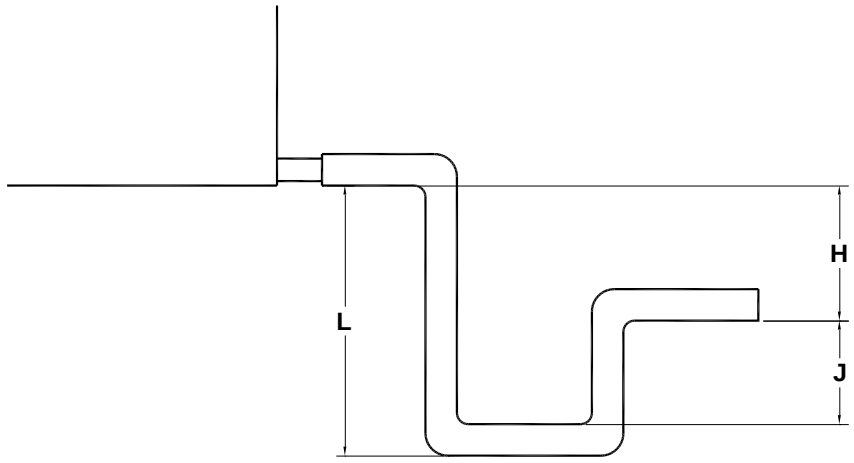
NOMINAL SIZE (WxHxD)	ACTUAL SIZE (WxHxD)	RATED AIR FLOW (IN. W.G.)	INITIAL RESISTANCE (IN. W.G.)	MEDIA AREA (SQUARE FEET)	FILTER UNIT WEIGHT (LBS)
12x24x4	11-3/8 x 23-3/8 x 3-3/4	1000	0.34	12.4	1.7
16x20x4	15-1/2 x 19-1/2 x 3-3/4	1120	0.34	14.6	1.7
16x25x4	15-1/2 x 24-1/2 x 3-3/4	1400	0.34	18.3	2.1
20x20x4	19-1/2 x 19-1/2 x 3-3/4	1400	0.34	18.8	2.1
20x24x4	19-3/8 x 23-3/8 x 3-3/4	1670	0.34	22.4	2.5
20x25x4	19-1/2 x 24-1/2 x 3-3/4	1750	0.34	23.5	2.6
24x24x4	23-3/8 x 23-3/8 x 3-3/4	2000	0.34	27.4	3.0



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Accessory - Performance Climate Changer (CSAA)
Trap Schedule
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3



Drain pan trapping for section under negative pressure

L = H + **J** + pipe diameter where:
H = 1 inch for each inch of negative pressure (loaded filters) plus 1 inch
J = ½ **H**

Drain pan trapping for section under positive pressure

L = H + **J** + pipe diameter where:
H = 1/2 inch (minimum)
J = ½ inch plus the unit positive static pressure at coil discharge (loaded filters)

Unit Tag(s)	Unit Size	Entering Ext. Static Pressure (in H2O)	Discharge Ext. Static Pressure (in H2O)	Drain pan Section Location	Recommended Trap Dimensions[1]			Selected Baserail Height (in)[1]
					H (in)	J (in)	L (in)	
DOAS-1[2], DOAS-2[2], DOAS-2[2], DOAS-3[2]	Unit size 8	0.500	0.500	Coil section [6]	6.194	3.097	10.291	2.500

[1] To ensure proper condensate trapping the field installed housekeeping pad height is the responsibility of the contractor.
[2] The external static pressure used for fan selection was assumed to be divided 50% to entering duct external static pressure and 50% discharge external static pressure.

Accessory - Performance Climate Changer (CSAA)
Filter Schedule
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Unit Tag(s)	Filter Location	Filter Arrangement	Filter Depth	Filter Type	MERV Rating	Filter Quantity	Filter Size
DOAS-1	Air mixing section [2]	Flat	2in./4in. combo w/ space for dual sensor	4in. cartridge - standard	MERV 13	1 1	20 x 24 24 x 24
	Wheel [4]	Flat	2" (51 mm) filter frame	Pleated media	MERV 8	1 1	20 x 24 24 x 24
DOAS-2	Air mixing section [2]	Flat	2in./4in. combo w/ space for dual sensor	4in. cartridge - standard	MERV 13	1 1	20 x 24 24 x 24
	Wheel [4]	Flat	2" (51 mm) filter frame	Pleated media	MERV 8	1 1	20 x 24 24 x 24
DOAS-2	Air mixing section [2]	Flat	2in./4in. combo w/ space for dual sensor	4in. cartridge - standard	MERV 13	1 1	20 x 24 24 x 24
	Wheel [4]	Flat	2" (51 mm) filter frame	Pleated media	MERV 8	1 1	20 x 24 24 x 24
DOAS-3	Air mixing section [2]	Flat	2in./4in. combo w/ space for dual sensor	4in. cartridge - standard	MERV 13	1 1	20 x 24 24 x 24
	Wheel [4]	Flat	2" (51 mm) filter frame	Pleated media	MERV 8	1 1	20 x 24 24 x 24

Field Wiring - Performance Climate Changer (CSAA)
MCA MOP Schedule
Item: A1 Qty: 4 Tag(s): DOAS-1, DOAS-2, DOAS-3

Unit Tag(s)	Circuit	Circuit Description	Voltage/Phase/Hz	MCA (A)	MOP (A)
DOAS-1, DOAS-2, DOAS-3	1	Supply fan motor(s)	200-208/3/60	29.13	50.00
	2	Exhaust fan motor(s)	200-208/3/60	19.13	30.00
	3	Energy wheel	115/1/60	2.38	15.00

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 - Performance Climate Changer (CSAA)

Item	Tag(s)	Qty	Description	Model Number
A1	DOAS-1, DOAS-2, DOAS-3	4	Performance Climate Changer (CSAA)	CSAA008UA

Field Installed Option Description	Part/Ordering Number
4in. cartridge - standard	
2" Pleated media	
Pleated media	

TRANE

White Paper

Disassembling an Air Handler Effectively

Executive Summary

At some jobsites, circumstances dictate that an air handler will need to be disassembled to allow entry access to a space-restricted entrance or installation area. It's critical to follow the manufacturer's guidelines to minimize risk of incorrect assembly and reduce the amount of labor involved.

Problem

There are often instances that will require the equipment to fit through tight spaces in the building before it gets to the intended installation location. This becomes a great challenge as the amount of retrofit activity grows.

Solutions

There are two potential solutions to this problem.

1. Work with the manufacturer to determine where shipping splits are located and if they will allow entry into the location. If additional splits are needed, or if the split locations need to be changed, the manufacturer can determine what options are available.

   Note: Additional splits may increase the price of the unit.

2. If the air handler has been built and shipped before it is known that there is an issue fitting into the space, the air handler will have to be broken down to some extent to accommodate the space requirements.

Solution Details

With Performance Climate Changer™ air handlers, the roof, walls and internal components of the unit can be disassembled to accommodate tight space requirements.

There are some key points to remember before attempting to disassemble a Performance air handler:

- Plan your work prior to disassembling.
- Mark the panels before disassembly begins. A sticker could be applied and a unique number written.
- Make a quick sketch of the layout of the unit with the numbers of the panels listed in relation to airflow.
- Be careful not to strip the sheet metal on the panels when removing and attaching the screws. In the event the metal strips out, change affected fastener to a larger screw.
  - Standard panel screw 10-16 x 0.75 self driller (5/16-inch hex head)
  - Standard base screw 0.25-14 x 0.75 self driller (3/8-inch hex head)

By following these steps prior to breaking down the unit, you will minimize the man hours it will take plus eliminate confusion when reassembling unit.

Note: The base of each sectional build group cannot be disassembled. The baserail is attached to the unit's bottom panel by an adhesive that prohibits it from being taken apart. This means floor panels, drain pans and the baserail itself cannot be broken down smaller than each shipping split. If this will be an issue, it is critical to work with the factory to modify or add splits as required.

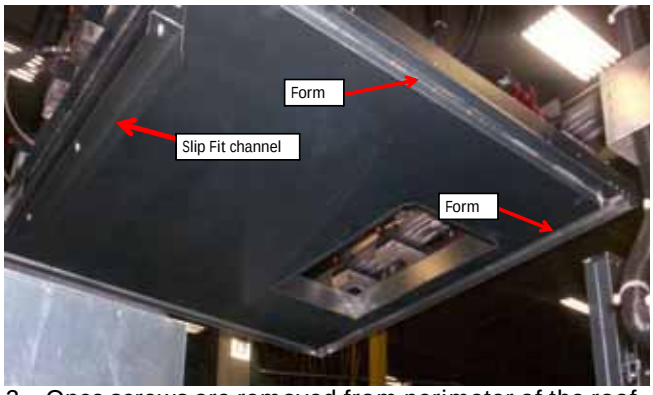
Reduce time, labor and cost by planning ahead.

Instructions for Disassembly

Figure 1. Roof panel

1. Remove 5/15-inch hex head screws that are used to attach the roof panel to the side walls along the perimeter of the panel.

Figure 2. Roof panel lifted from the wall



2. Once screws are removed from perimeter of the roof, the panels can be lifted off. Note that the roof panel has a form to allow the panel to slide over the top edge of the side panel.

Figure 3. Gasket

Figure 3. Gasket

3. There is a gasket along all sides of the unit at the center of unit (COU) panel and wall panels. The gasket should be in good condition in order to be reused, but if not, the gasket will need to be replaced.

Figure 4. Removal of doors

4. Remove the doors from the unit. Each hinge has a pin that can be removed that will allow the door to break free. Removing the door in this manner will lesson the chance of stripping the screw hole. Place the pin back in the hinge so it is not lost during transport.

Figure 5. Door header and jambs

5. The door header connects the door jambs on either side. They are connected during construction with pop rivets. These pop rivets must be drilled out before removal of wall panels. Pop rivets must be installed during panel replacement. Rivet = 0.125-inch diameter (mounting hole 0.136 inch).

Figure 6. Wall panel

6. Remove screws from the wall panels along the perimeter of the panel. There are 5/16-inch hex head screws along the top and sides of panel; 3/8-inch hex head screws along the base side of the panel.

Figure 7. Slip fit channels

7. Wall panels have slip fit channels to support internal components and COU panels as seen in this coil service panel.

Figure 8. Screws internal to the wall

Figure 8. Screws internal to the wall

8. Occasionally there will be screws internal to the wall that are attached on the slip fit. They may be attached to filter frames, coil blockoffs, etc. The wall panel will not break free without first removing this screw. It is not necessary to reinstall this screw during reassembly. This screw is installed during assembly to keep the walls from falling before the roof is installed. It serves no structural function.

Figure 9. Slip fit channels

9. The slip fit channel will fit over the COU panel. This gives the wall and components alignment and added strength/rigidity. At this point, remove the panels and doors from one side of the unit only.

Figure 10. Butyl® tape

10. Along the base panel perimeter on the drain pan, there will be Butyl tape that serves as a water guard against condensation leaks. This must be removed and replaced before panels are reinstalled.

Figure 11. COU panel and filter racks

11. All COU panels or filter racks are screwed to the base panel and caulked down. This can be a challenge to remove from the base panel. Take care not to damage the panel during this process. A lift bar can be used to lightly lift the bottom.

Figure 12. Fan COU panel

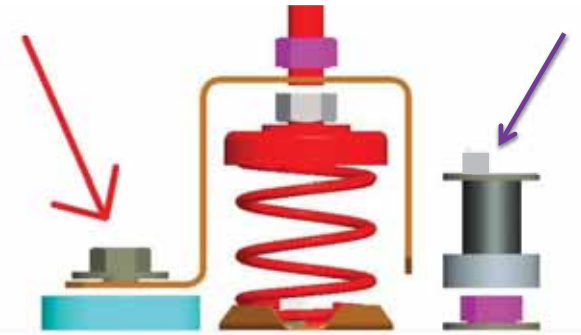
12. Additional steps will need to be taken to remove fan COU panels before the fan can be removed. The COU panels and ductwork is attached to the fan intake or housing.

Figure 13. Duct strip cover

Figure 13. Duct strip cover

13. A U-shaped duct strip cover is held on by a self-drilling screw. Once the screw is removed, the duct strip cover can be removed and the COU panel and fan will be independent of each other. There may be more than one fan attached to a single COU panel so be sure to release all associated ducts prior to fan removal. A good method to keep the duct covers in the same location is to screw them back in place without the duct and take back off to reattach during the reassembly.

Figure 14. Fan isolation



14. Fan isolation snubber nut (purple arrow on right) and tie down bolt (red arrow on left) is shown above. The tie down bolt can be removed. Keep this tie down bolt only if you have a spring isolated unit setup. If not, the tie down bolts can be discarded. The snubber nut can be removed and retained for fan installation after transport. All four corners of the fan isolation base should have this setup or similar for sizes 3-30. Once nut and bolt is removed, the fan is free to be lifted off the base panel assembly.

Figure 15. Coil installation

15. Standard coil installation with slip fit is shown over a coil blockoff. There are three blockoffs - header, opposite header, and top blockoff. All three will have corresponding slip fit channels from the wall and roof panels respectively.

Figure 16. Coil blockoffs

16. Coil blockoff shown in relation to the slip fit channel on the wall panel. This is an opposite header side blockoff. Do not remove blockoffs from the coil during disassembly.

Figure 17. Support bracket

17. You will notice in the photo that a support bracket was added during assembly because the walls are not installed on either side. This is the reason for leaving panels installed on one side of the unit while removing the internal components. Removing both walls could allow a coil to tip and be damaged by the fall.

Figure 18. Removing coils

Figure 18. Removing coils

18. Coils are removable by design and should be lifted out by chains attached directly to the coil frame at each end. Some coils have screws that are added to the air leaving side at the base because there is not enough room to add a support bracket. This screw can be removed to allow the coil to be lifted. Check this first before attempting a coil lift.

Figure 19. Filter frame

19. Standard filter frame with slip fit shown.

Figure 20. Filter frame removal

20. Filter frames are attached to the base panel with the same method as COU panels. They are caulked and screwed down. Use a pry bar to gently help lift the filter rack from the base if it does not release cleanly. Be careful not to damage the panel. It is likely the bottom filter frame will be racked a bit during this process. You can use pliers or a hammer to get this part back in shape. During reinstallation, additional screws can be used to close the gap on any rough spots. Add a bead of caulk during the installation on the bottom of the rack.

Electrical Components

⚠ WARNING

Live Electrical Components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

There are many different electrical components that may have to be removed during disassembly. Electrical components should only be worked on by qualified electrical personnel.

Low voltage harnesses are labeled, but distinguishable markings should be added where multiple harnesses exist using electrical tape. This will eliminate the chance for cross wiring.

Final Steps

21. Remove all the remaining wall panels and door jambs from the baserail.
22. Move all base assemblies for each shipping split into the final destination.
23. Replace bad gasket.
24. The shipping splits can be reassembled in reverse order from the instructions above. Remember to start with panels on one side to use as a guide and structural support for the internal components that are added next.

Part Numbers

- Foam gasketing 0.375-in. T x 0.750-in. W (size 3-30) - GKT04373
- Foam gasketing 1.0-in. T x 1.0-in. W (size 35-120) - GKT04374
- Butyl tape 0.375-in.T x 0.375-in. W (size 3-30) - SEL00827

Fan Removal

There may be times when the fan housing (scroll) needs to be removed in order to fit into the space. See HVAC-Knowledge Center wave49549 for these dimensions. You may contact technical support for further assistance if you need help with fan disassembly.

Action

If space constraints are an issue, it's important to be pro-active early in the ordering process to determine how best to get the air handler to fit into the space.

Determine the size of the space that the air handler will have to fit through in the building, including hallways, elevators, stairs, doorways, etc.

Work with the factory to closely review the submittal to determine whether the shipping groups will fit or not. If the air handler can be modified to add shipping splits before shipping, that will potentially be the preferred approach.

If the unit must be broken down at the job site, it is important to follow the method described in this White Paper to minimize risk and reduce the amount of labor involved.

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