Installation and Maintenance Manual IM 1267-7

Group: Applied Terminal Systems
Part Number: IM1267-7
Date: February 2023

PreciseLine® Air Handler

Sizes 006 through 100



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Introduction

Hazardous Information Messages

⚠ CAUTION

Caution indicates a potentially hazardous situations, which can result in minor injury or equipment damage if not avoided.

⚠ WARNING

Warning indicates a potentially hazardous situations, which can result in property damage, personal injury, or death if not avoided.

⚠ DANGER

Danger indicates a hazardous situation, which will result in death or serious injury if not avoided.

NOTICE

Notice indicates practices not related to physical injury.

Consider Before Operation

⚠ WARNING

Improper installation maintenance can cause equipment damage or personal injury.

Installation and maintenance must be performed by qualified personnel familiar with applicable codes and regulations, and experienced with this type of equipment.

⚠ CAUTION

PreciseLine units are not designed to be weather resistant; DO NOT install outdoors.

⚠ DANGER

Improper ground may result in severe injury or death.

Check grounding nut tightness before connecting power to the external junction box.

Storing the Unit

Store unit on a level surface. If air handling units are to be stored for any period of time, it is important to rotate the motor shaft (quarterly, as a minimum) to prevent permanent distortion of drive components.

Store units indoors in a clean, dry environment on a level surface. Moisture, debris, and minerals can cause permanent damage to the cabinet and components. Do not allow coverings to trap moisture on the galvanized surface.

When in a warehouse (i.e. not in transit), horizontal units Size 006-020 can be stored 3 units high. Vertical units Size 006-020 can be stored 6 units high without an external filter rack, and 5 units high with one. Do not stack units Size 030 and larger.

Smoke Control and Management Systems

⚠ WARNING

Improper smoke or fume air handling can result in severe personal injury or death.

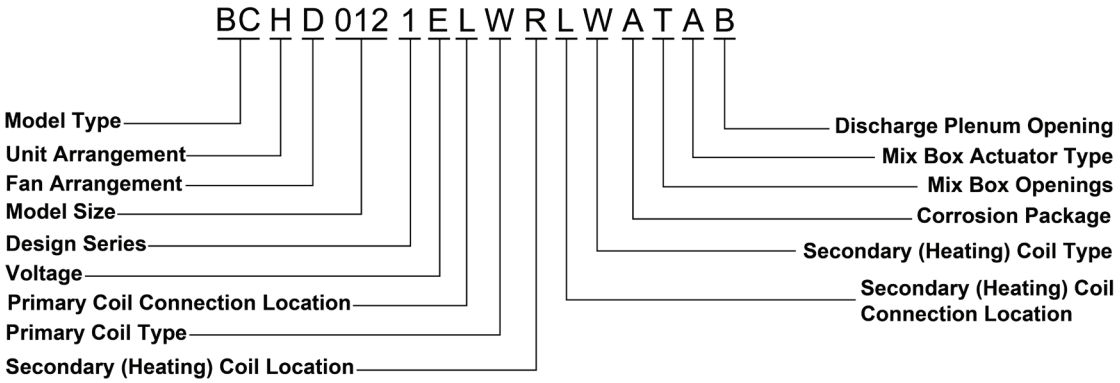
A registered professional engineer must design and approve the air conditioner and air handler application to make sure smoke and fume control meet local fire codes and NFPA requirements for the specific building application. Due to the wide variation in building design and ambient operating conditions into which our products can be applied, we do not represent or warrant that our products will be fit and sufficient for smoke and fume control and management purposes. The owner and building designer must consult a registered professional engineer to satisfy themselves in this regard.

The system design and installation must follow accepted industry practice, such as described in the ASHRAE Handbook, the National Electric Code, and other applicable standards. The installation of this equipment must be in accordance with regulations of authorities having jurisdiction and all applicable codes. It is the responsibility of the installer to determine and follow the applicable codes.

Receiving and Handling

1. Carefully check items against the bills of lading to verify all crates and cartons were received. Carefully inspect all units for damage when received. Report visible and concealed damage immediately to the carrier and a file a claim for damage within 5 days.
2. PreciseLine air handler units are thoroughly inspected before leaving the factory. Install units carefully to prevent damage.
3. All fans are dynamically balanced before leaving the factory. Carefully inspect fans for rough handling that can cause misalignment or a damaged shaft.
4. Horizontal units Size 006-020 may be stacked 3 units high for transit.
5. Vertical units Size 006-020 may be stacked for transit 4 units high without external filter rack and 3 units with external filter rack.
6. Never stack units Sizes 030-100

Nomenclature



Category	Code	Description
Model Type	BC	Daikin Applied Air Handler
Unit Arrangement	H	Horizontal
	V	Vertical
	A	AVD / Compact Vertical (Sizes 006-020)
Fan Arrangement	D	Draw Thru Forward-Curved Fan
	E	Draw Thru Plenum Fan, End Discharge
	U	Draw Thru Plenum Fan, Up Discharge
Model Size	006	Nominal 600 CFM
	008	Nominal 800 CFM
	010	Nominal 1,000 CFM
	012	Nominal 1,200 CFM
	016	Nominal 1,600 CFM
	018	Nominal 1,800 CFM
	020	Nominal 2,000 CFM
	030	Nominal 3,000 CFM
	040	Nominal 4,000 CFM
	050	Nominal 5,000 CFM
	060	Nominal 6,000 CFM
	080	Nominal 8,000 CFM
	100	Nominal 10,000 CFM
Design Series	1	1st Vintage
Voltage	A	115/60/1
	E	208/60/1
	G	460/60/1
	K	230/60/1
	P	277/60/1
	D	208/60/3
	L	230/60/3
	T	460/60/3
	W	575/60/3
Primary Coil Connection Location	L	Left Hand (Air back of the head)
	R	Right Hand (Air back of the head)
	C	Center

Category	Code	Description
Primary Coil Type	W	Water / Glycol
	D	DX / 410A
	V	VRV
Secondary (Heating) Coil Location	P	Preheat
	R	Reheat
	Y	None
Secondary (Heating) Coil Conneciton Location	L	Left Hand (Air back of the head)
	R	Right Hand (Air back of the head)
	Y	None
	C	Center
Secondary (Heating) Coil Type	W	Hot Water / Glycol
	Y	None
	S	Steam
Corrosion Package	A	(Coil Casing) Stainless / (Fin Coating) None / (Drip Pan Corrosion Pkg.) Stainless
	Y	(Coil Casing) Galvanized / (Fin Coating) None / (Drip Pan Corrosion Pkg.) Galvanized
Mix Box Openings	T	Top + Rear
	B	Bottom + Rear
	Y	None
Mix Box Actuator Type	T	ON/OFF
	A	0-10V M
	M	Manual
	Y	None
Discharge Plenum Opening	B	Bottom
	T	Top
	E	End
	Y	None - No Discharge Plenum
	R	Right Hand (Air back of the heat)
	L	Left Hand (Air back of the head)
	F	Field Cut-Out (Has a Plenum)

NOTE: Not all code options shown.

Installation

Optional Mixing Box and Discharge Plenum Removal

All PreciseLine mixing boxes ship attached, and horizontal units ship with pre-attached discharge plenums. However, the discharge plenum and/or mixing box may be removed if necessary to navigate constricted passageways. Detachment of these components requires removal of the screws on the sides, top and bottom of the unit as shown in Figures 1 and 2. If the unit must be turned over or tilted up to access the bottom screws, care must be used to avoid damage.

⚠ CAUTION

Sharp edges can cause personal injury. Avoid contact with them. Use care and wear protective clothing, safety glasses and gloves when handling parts and servicing unit.

NOTICE

It is recommended all bottom screws be removed first. If the unit must be turned over or tilted up to access the bottom screws, care must be used to avoid damage.

Figure 1: Horizontal Size 020 Unit - Disassembling Optional Mixing Box and Discharge Plenum Example

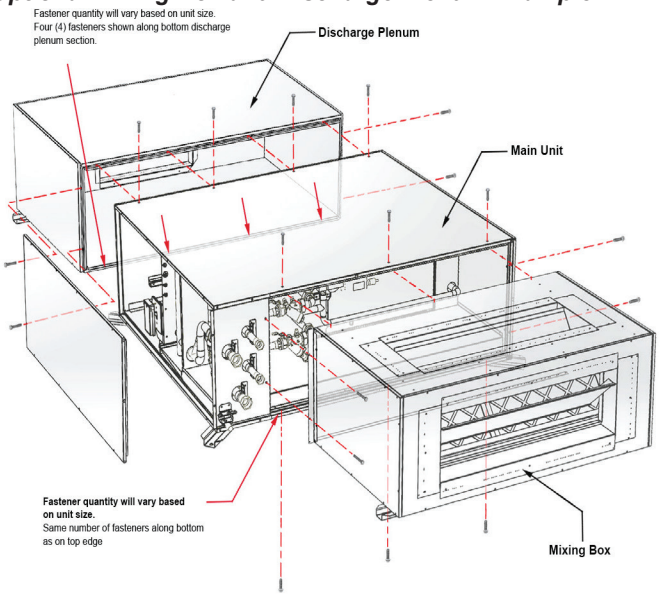


Figure 2: Vertical Size 40 Unit - Disassembling Optional Mixing Box and Discharge Plenum Example

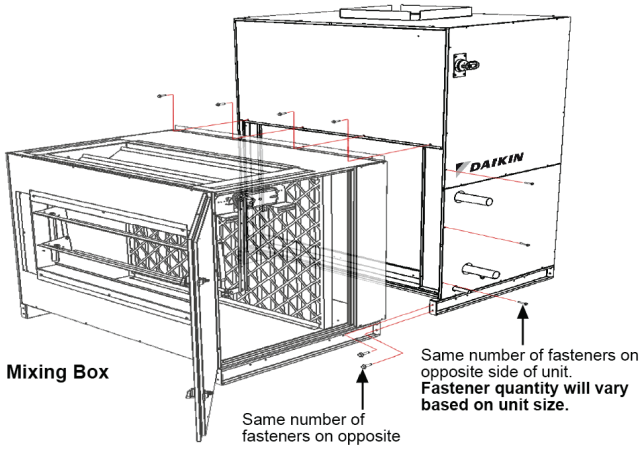


Figure 3: Size 100 Unit - Disassembling Optional Mixing Box

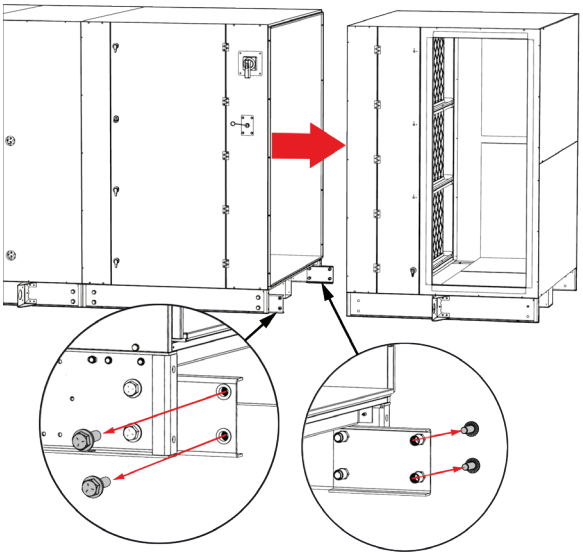
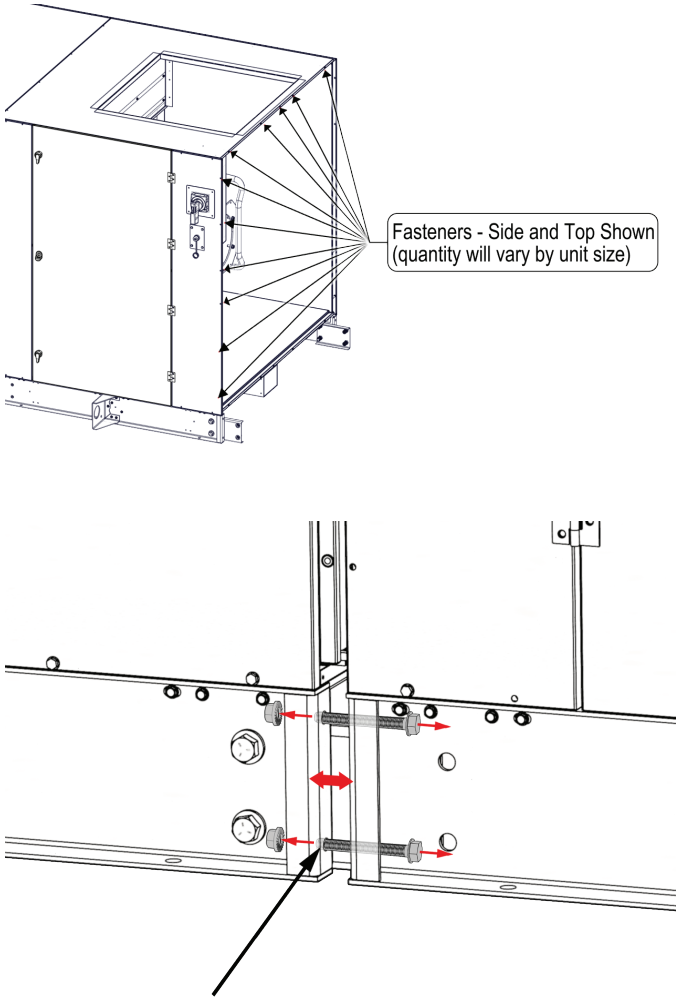


Figure 4: Size 100 Unit - Disassembling Optional Mixing Box



Service Clearances

Leave adequate space around the unit for piping, coils, and drains. Always have access to at least one side of the unit for regular service and maintenance. Refer to images on the following pages for servicing space requirements. Routine maintenance includes filter replacement and drain pan inspection/cleaning. Provide sufficient space on the controls access side of the unit for filter replacement, drain pan cleaning and coil removal, if necessary. For routine maintenance, remove service panels on either side of the unit. See Figure 22 panel removal on page 15. Allow sufficient space for service panel removal and to meet the service clearance requirement of the section it accesses. Service panels are not interchangeable with service panels on the opposite side of the unit. Leave at least 42" of clearance in front of electrical power devices (starters, VFDs, disconnect switches, and combination devices) mounted behind service panels.

Figure 5: Clearance and Access Requirements for Horizontal Units (Sizes 006-050)

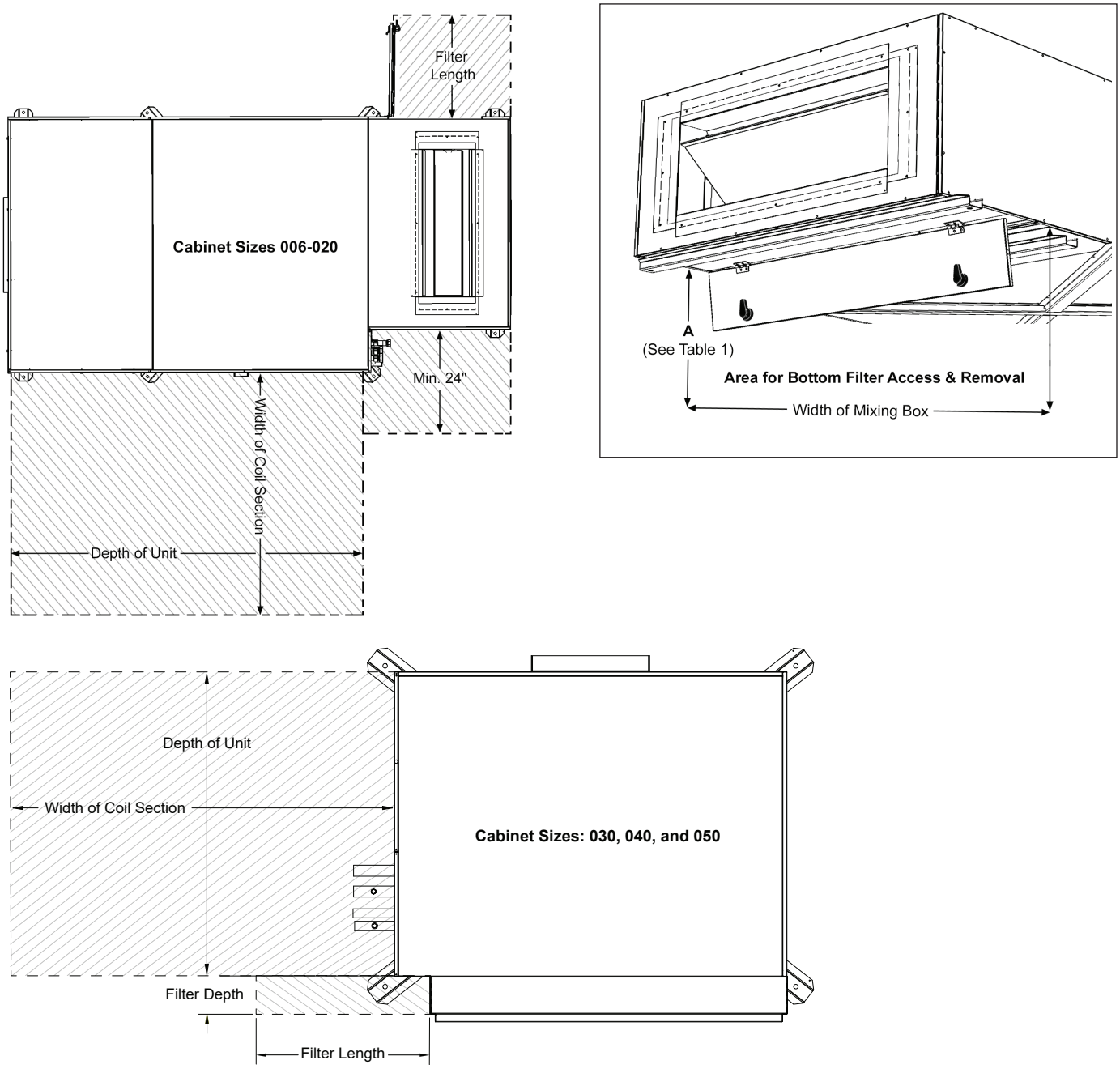
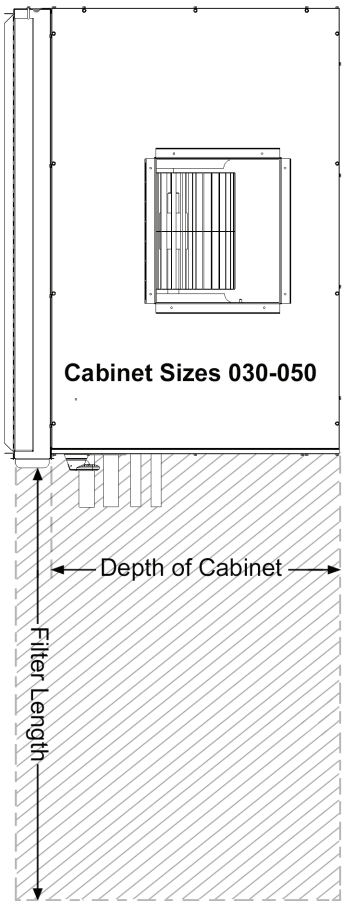


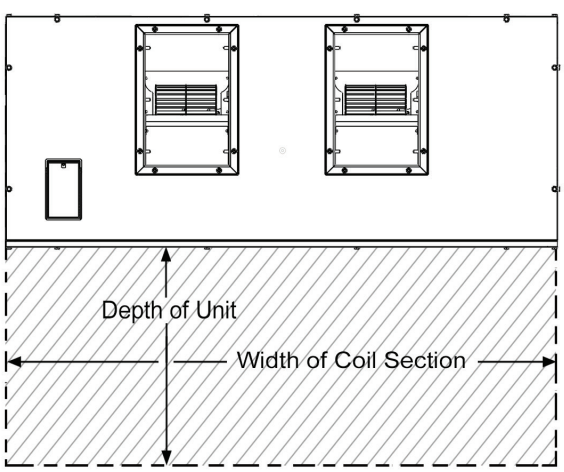
Table 1: Bottom Filter Access Clearance

	006	008	010	012	016	018	020	030	040	050
Cabinet	30L × 15W × 18H	30L × 20W × 18H	30L × 28W × 18H	30L × 28W × 18H	30L × 36.5W × 18H	30L × 45W × 18H	30L × 45W × 18H	33L × 49W × 26H	33L × 54W × 30H	33L × 61W × 32H
A	18.00	18.00	18.00	18.00	18.00	18.00	18.00	24.00	28.00	30.00

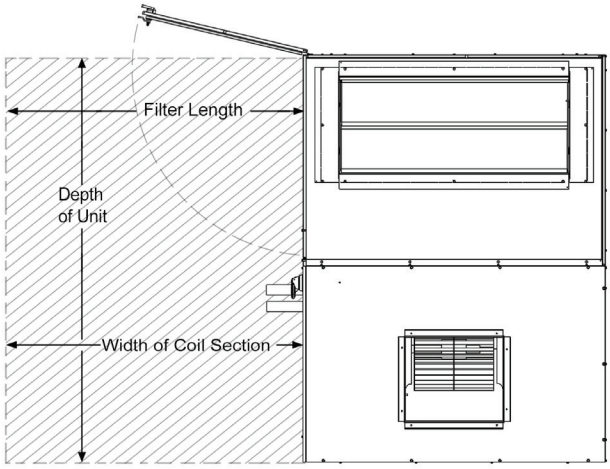
Figure 6: Clearance and Access Requirements for Vertical Units

NOTE: AVD units require field-cut holes on the sides or back, depending on piping orientation. These holes should either be drilled prior to unit installation, or a clearance of 24" should be left on the side requiring field work.





Cabinet Sizes 006-020



Cabinet Sizes 030-050

Figure 7: Clearance for Filter Access from Top - Unit Size 030-050

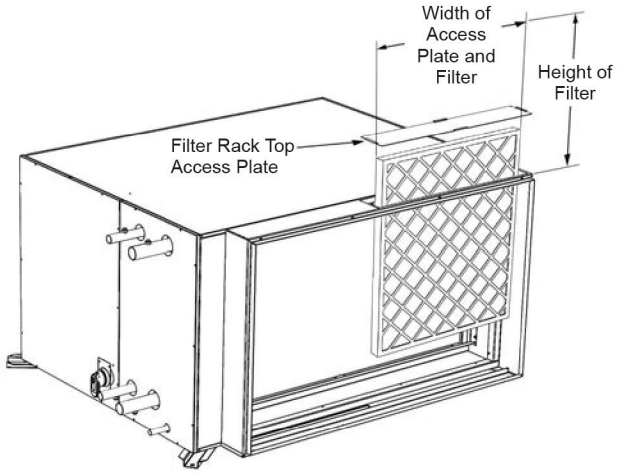
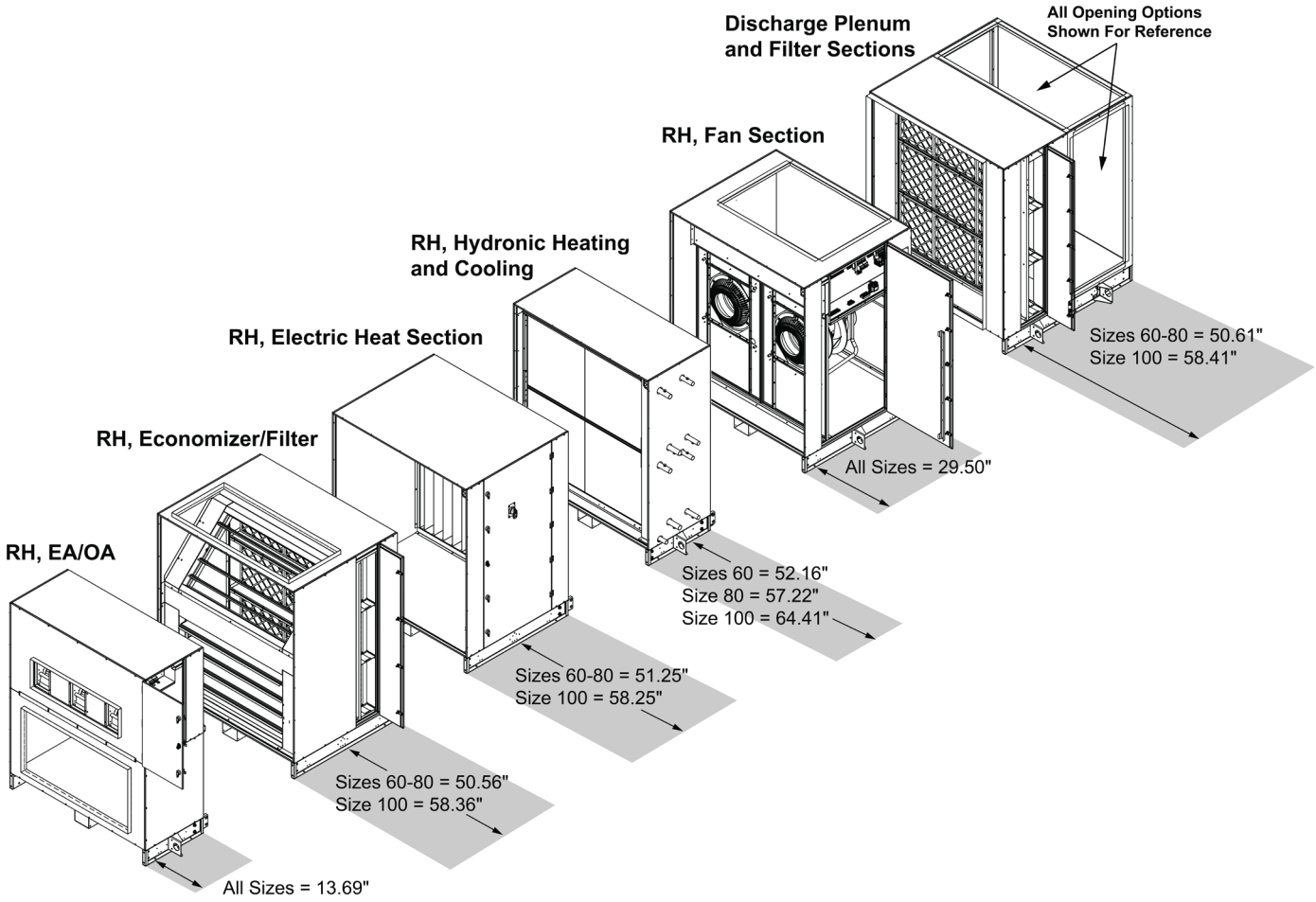


Figure 8: Clearance and Access Requirements for Unit Sizes 060-100



Rigging (Unit Sizes 006-050)

Rig units using straps or a sling with a loop and buckle. Fasten strapping loop around the mounting brackets on the unit main section (Figure 9 & Figure 10). If a field-installed mixing box and/or an optional discharge plenum is attached, adjust to balance the unit properly.

⚠ CAUTION

To avoid damage to the unit cabinet, use spreader bars. Position spreader bars and position protective backing material to keep cables from rubbing the frame, connections, or panels.

Before hoisting into position, test lift for stability and balance. Avoid twisting or uneven lifting of the unit.

Figure 9: Rigged Main Unit - Size 030-050 Shown

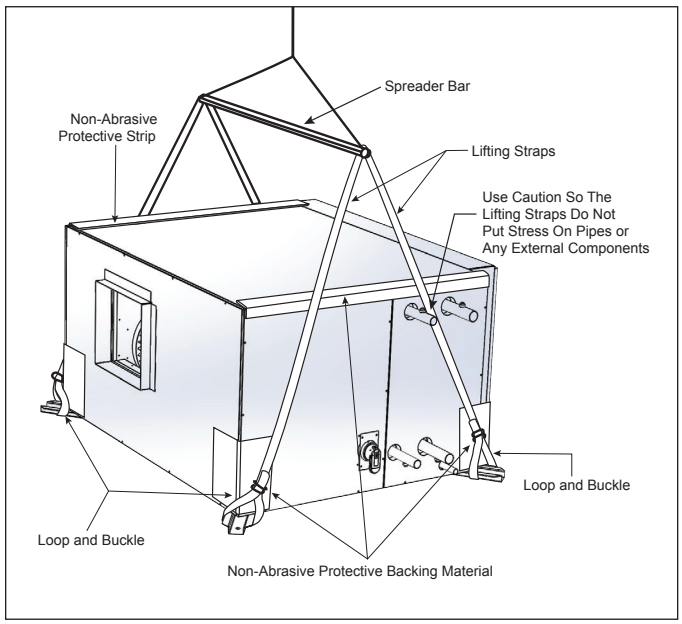
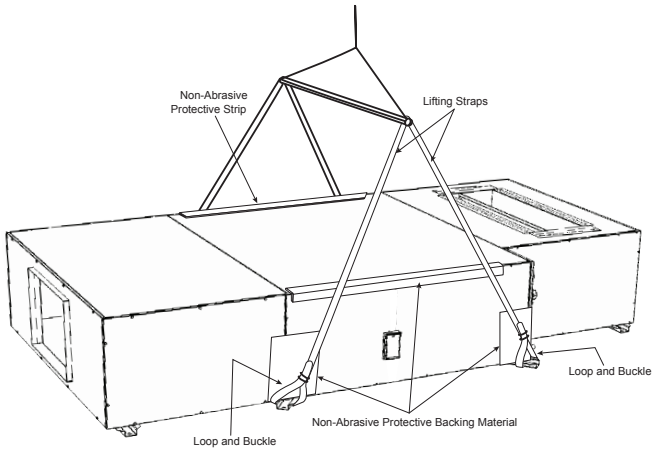


Figure 10: Rigged Main Unit with Optional Mix Box and Discharge Plenum - Size 006-020 Shown



Rigging (Unit Sizes 060-100)

⚠ WARNING

A licensed and/or professional rigger is responsible for developing a safe lift plan to meet local/national/international codes.

⚠ WARNING

Use all lifting points. Improper lifting can cause severe personal injury, death or property damage.

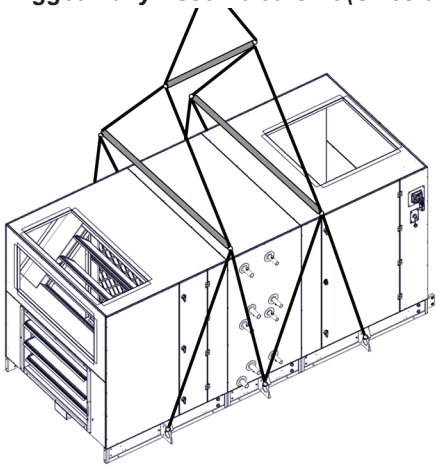
⚠ CAUTION

Lifting points may not be symmetrical to the center of gravity of the unit. Ballast or unequal cable lengths maybe required.

PreciseLine air handlers for sizes 060-100 ship completely assembled. The unit must be rigged as it ships from the factory. Do not assemble sections or modules at the site before rigging, as final assembly should be completed at point of installation. When a unit is provided with a factory-installed base rail, it can be lifted using the 2" diameter lifting holes located in the corners of each shipping section (Figure 11).

To prevent damage to the unit cabinetry, use spreader bars. Position spreader bars to prevent cables from rubbing the frame or panels. Before hoisting into position, test lift for stability and balance. Avoid twisting or uneven lifting of the unit.

Figure 11: Rigged Fully Assembled Unit (Sizes 060-100)



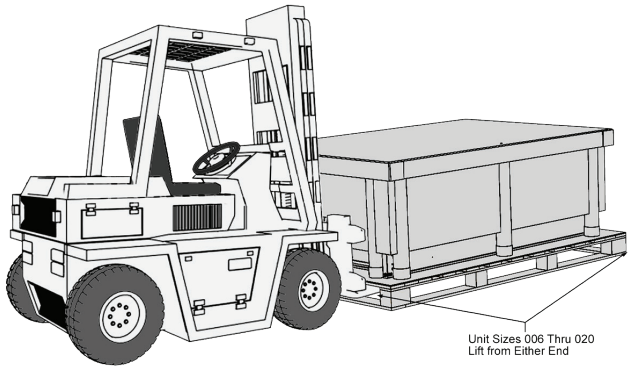
NOTE: Lifting points may not be symmetrical to the unit's center of gravity. Ballast or unequal cable lengths may be required.

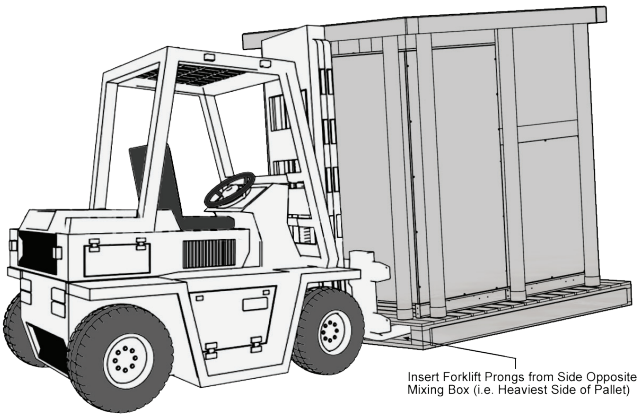
Using a Forklift

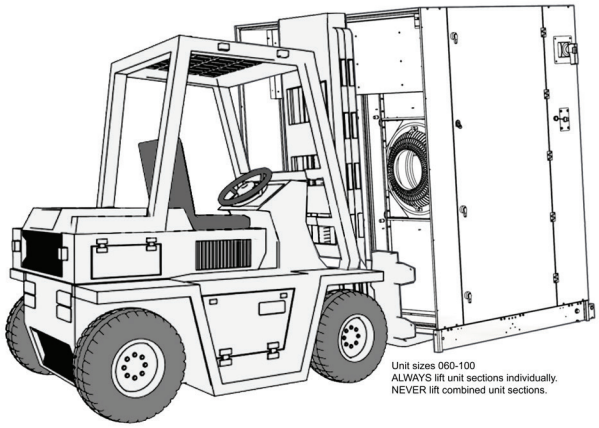
When using a forklift to transport units, make sure that forklift tongs enter from the ends of the pallet, not the sides. In cases where one end is heavier, enter the pallet from the heavier side (e.g. for vertical units with a mixing box, enter from the side opposite the mixing box).

NOTICE

The unit is shipped in a protective plastic coating with cardboard supports. Plastic and cardboard will need to be removed before installation.







Hanging Unit from Ceiling (Horizontal Units)

⚠ WARNING

Do not suspend the unit from the top. The unit top will not support the weight of the unit. Equipment damage and severe personal injury can result.

Before hanging, the unit should be rigged and completely assembled. The PreciseLine air handler main section should be positioned on the pallet to permit access to mounting holes in the structural cross bracing under the unit. The entire unit is then lifted on the pallet (Figure 12) and secured with minimum 1/2" threaded rod, washers and lock nuts through all support bracing. If the pallet is not available, the fully assembled unit may be supported by the main section, while lifting into place (Figure 9 & Figure 10 on page 10). In this case, the main section must be secured with the threaded rod before the mixing box or discharge plenum. Spring isolation is recommended on sizes 030, 040 and 050 as these units do not have any internal vibration isolation. Refer to Figure 15 and Figure 14 on page 13.

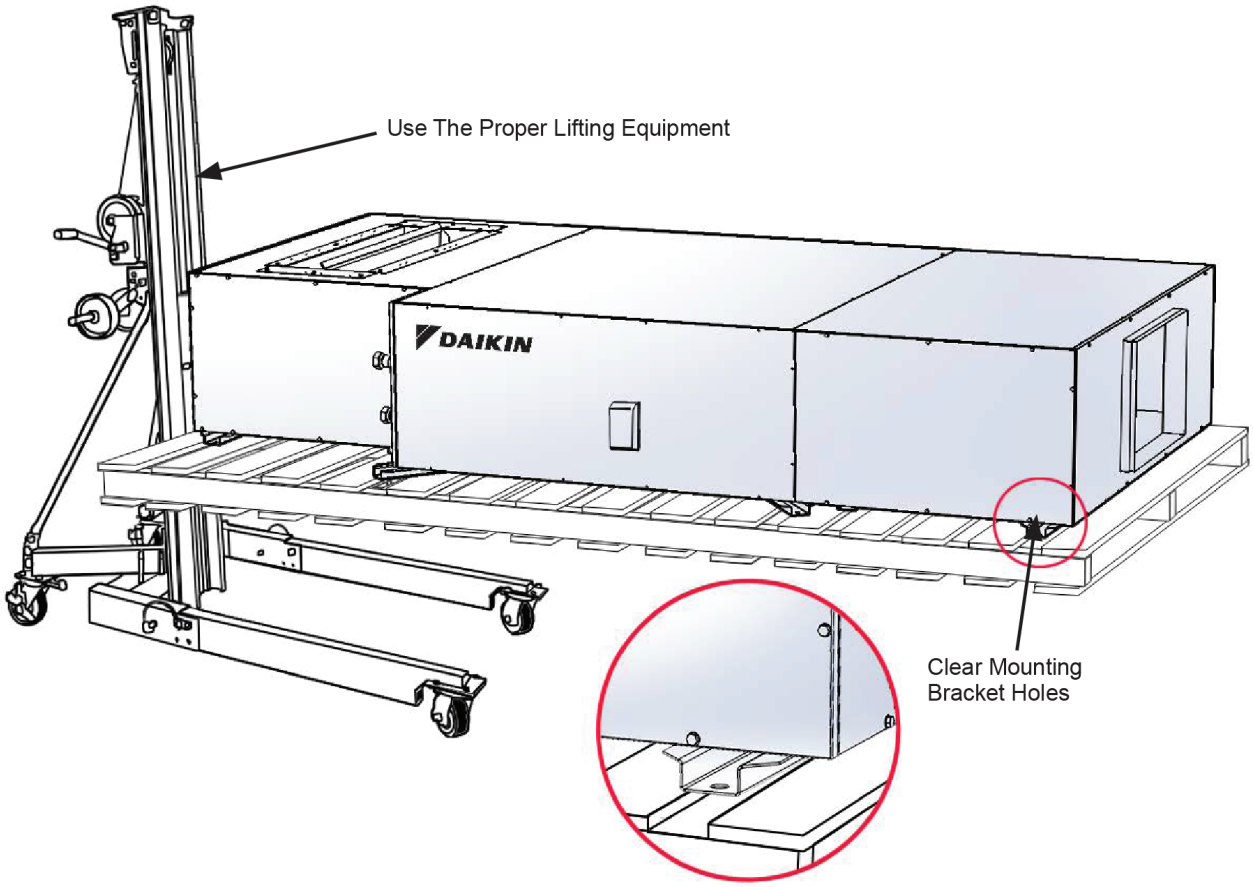
⚠ CAUTION

To avoid damage to the unit cabinet, use spreader bars and non-abrasive protective strips between straps and unit cabinet. to keep straps from rubbing the frame, connections, or panels.

Positioning the Unit

Before hanging, the unit should be rigged and completely assembled. The PreciseLine air handler main section should be positioned on the pallet to permit access to mounting holes in the structural cross bracing under the unit. The entire unit is then lifted on the pallet and secured with minimum 1/2" threaded rod, washers and lock nuts through all support bracing. If the pallet is not available, the fully assembled unit may be supported by the main section, while lifting into place (Figure 9 & Figure 10 on page 10). In this case, the main section must be secured with the threaded rod before the mixing box or discharge plenum. Spring isolation is recommended on sizes 030, 040 and 050 as these units do not have any internal vibration isolation. Refer to Figure 15 and Figure 14 on page 13.

Figure 12: Use The Proper Lifting Equipment



Vibration Isolation (Accessory)

Figure 13: Ceiling Hung with Rubber Isolators - Unit Sizes 006-050 (Sizes 006-020 shown).

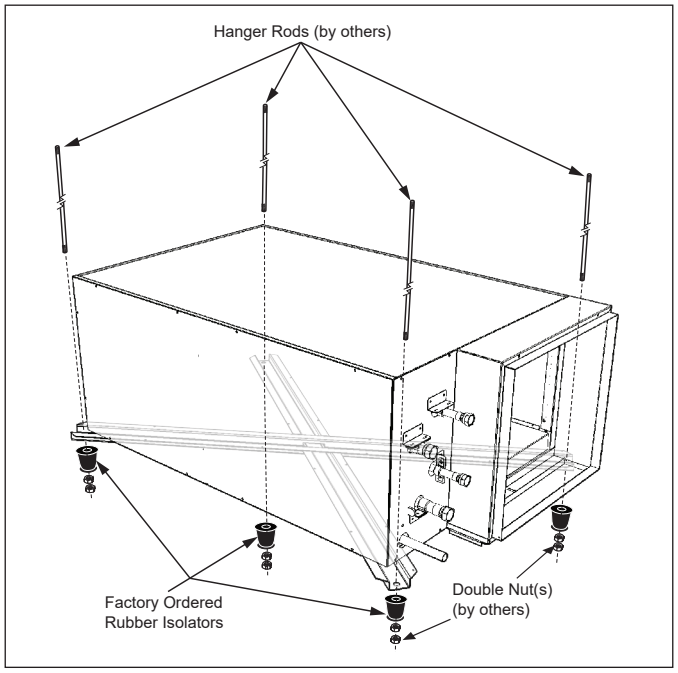
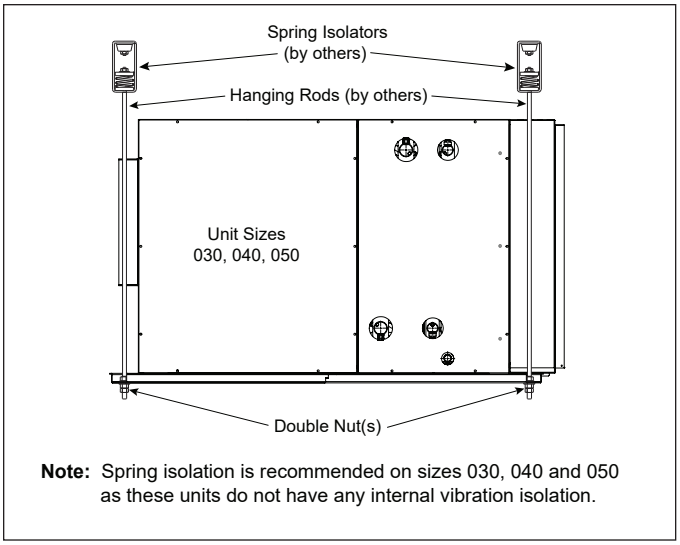


Figure 14: Ceiling Hung Spring Isolation - Unit Sizes 030, 040, 050.



Note: Spring isolation is recommended on sizes 030, 040 and 050 as these units do not have any internal vibration isolation.

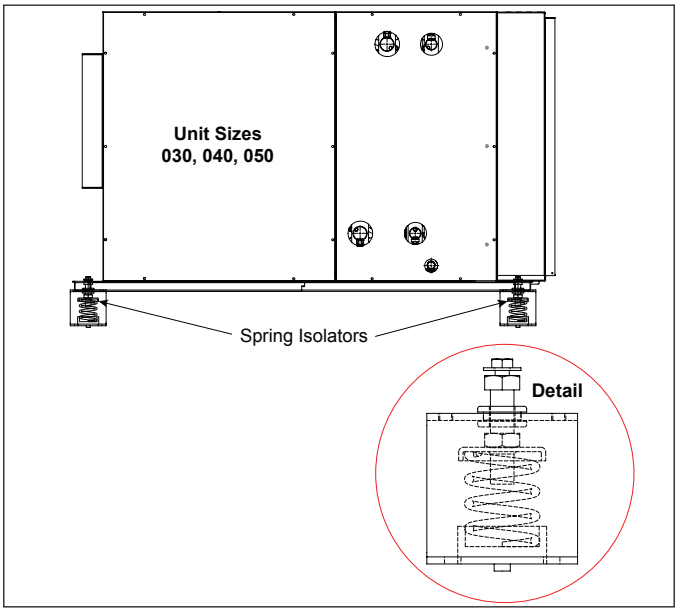
Mounting the Unit on the Floor

Vertical units are all floor-mounted, and horizontal units may be floor-mounted as well.

Spring Mount—Sizes 030, 040, 050

Factory ordered spring isolators are recommended for horizontal units, sizes 030, 040 and 050. The isolators should all be at the same height opening. If adjustments are required, loosen the 5/16" capscrew on top of the isolator and turn the adjusting bolt to lower or raise the unit base. Retighten the capscrew when adjustments are completed. See Figure 15.

Figure 15: Floor Mounted Spring Isolation - Unit Sizes 030, 040, 050.



Unit Leveling

Install the unit on a flat and level surface (or verify that unit is level when hanging from the ceiling). Where the surface irregularities allow the equipment to distort, shim the appropriate base rails to straighten the unit. Distorted units can cause misfit between sections, cabinet leaks, binding of the doors and access panels and prevent proper draining of drain pans.

Vertical Units Size 006-020 and Horizontal Units 060-100 come with leveling legs, which can be adjusted to level the units.

Figure 16: 2-Fan Leveling Legs for Size 020 Units

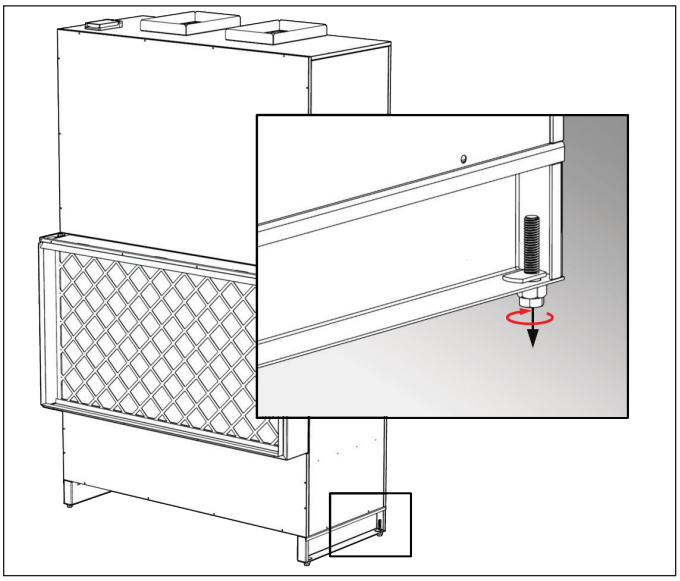
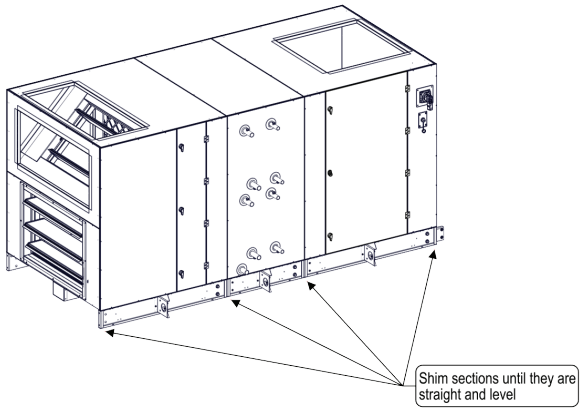


Figure 17: Leveling Unit Sizes 060-100



Mounting holes on the base rails may be used to attach the unit securely to the floor.

Figure 18: Mounting Rail Holes for Size 040 Units

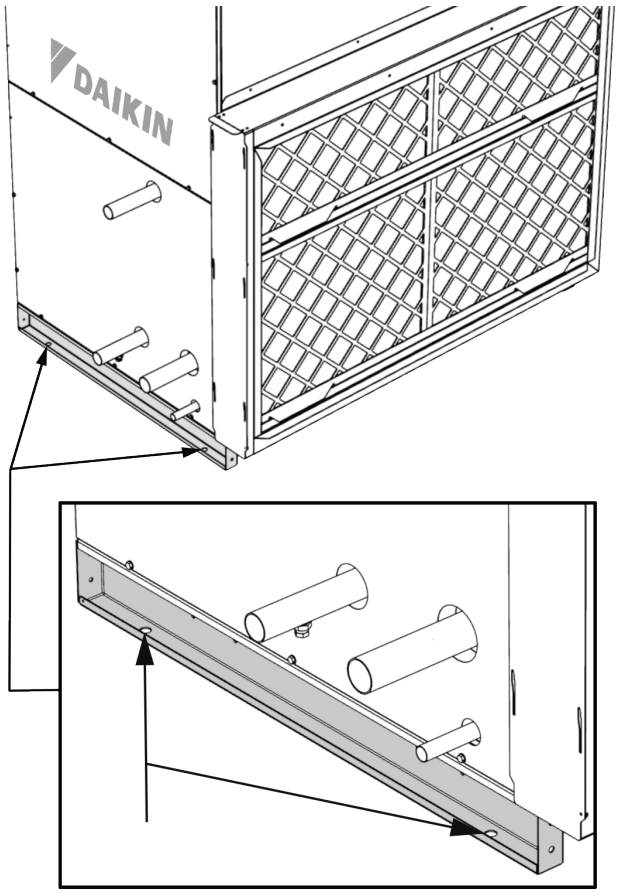
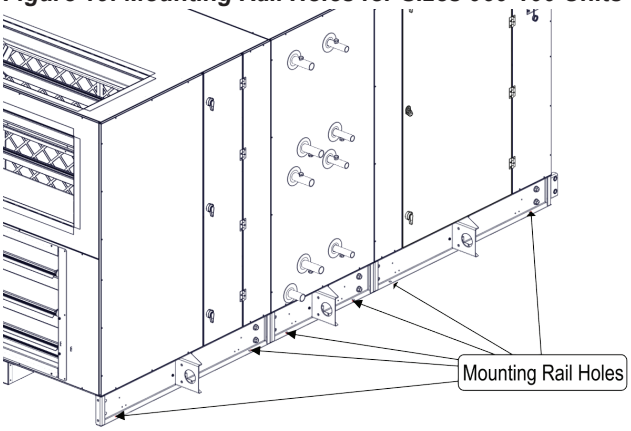


Figure 19: Mounting Rail Holes for Sizes 060-100 Units



Baserail holes for unit sizes 060-100 are 0.5" in diameter.

Table 2: Baserail Hole Widths

Dimension	Sizes 060-080	Size 100
A (width from each baserail hole)	52.75”	59.75”

Figure 20: Baserail Hole Width

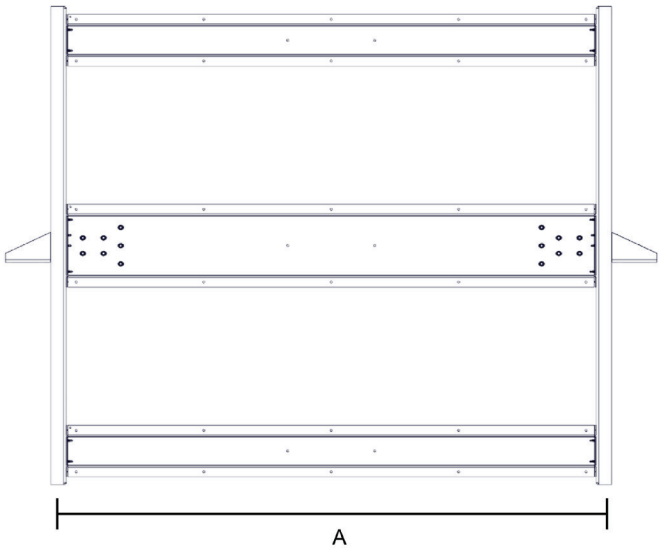
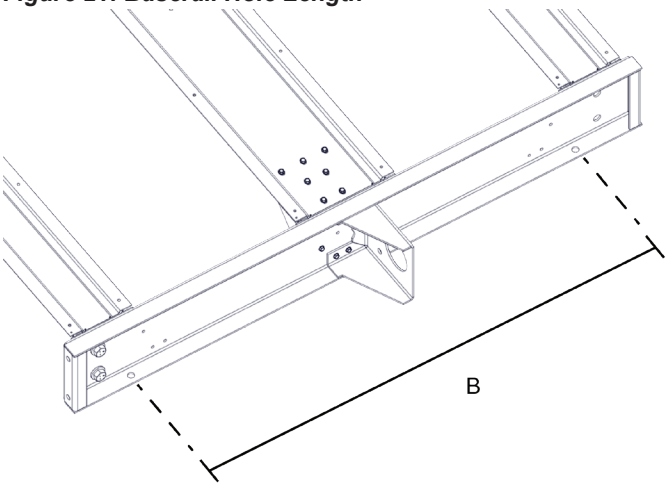


Table 3: Baserail Hole Lengths

Dimension	Baserail Length				
	26"	28"	30"	46"	48"
B (length from each baserail hole)	16"	18"	20"	36"	38"

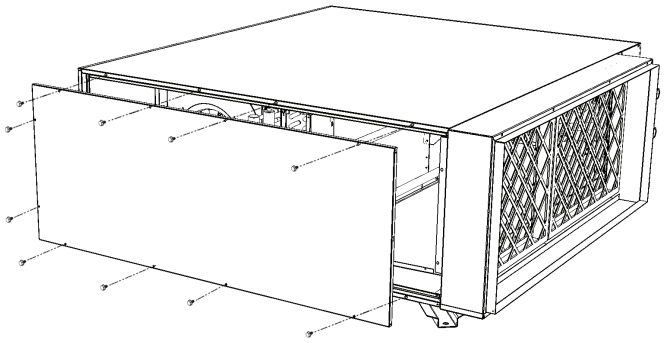
Figure 21: Baserail Hole Length



Panels and Doors

PreciseLine air handlers have hinged access doors or screw-on panels that can be easily removed and handled. To gain access through a side panel, remove the fasteners along the sides of the panel and lift the panel off. Note that the number of fasteners will vary based on unit size.

Figure 22: Panel Removal (Sizes 006-020 Horizontal)



To open the hinged filter access door, rotate the latch handle(s) 1/4 turn as shown in Figure 23.

Figure 23: Mixing Box Filter Access Door (Sizes 006-020 and Sizes 030-050 Horizontal)

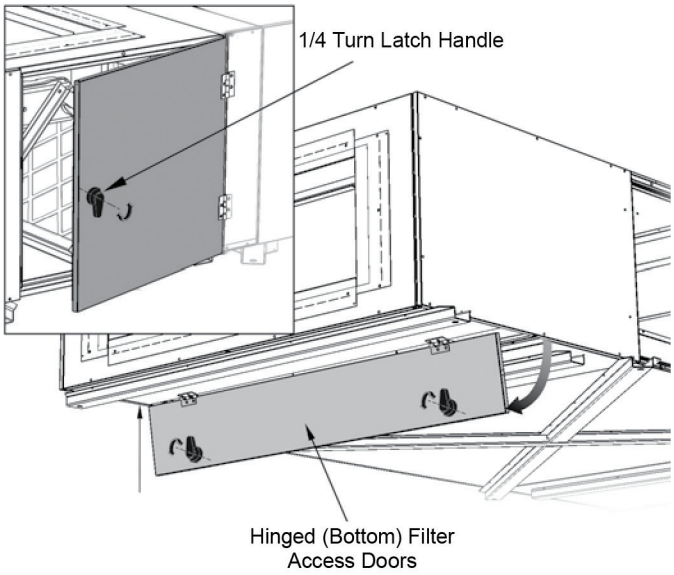


Figure 24: Door Access Types (Sizes 060-100)

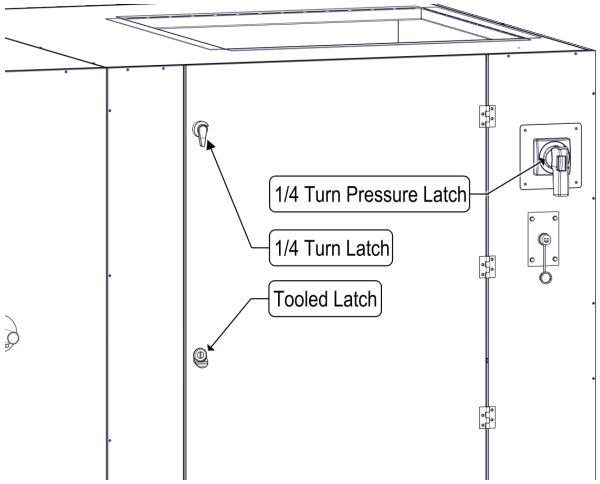


Figure 25: Side Filter Access (Sizes 030-050 Horizontal)

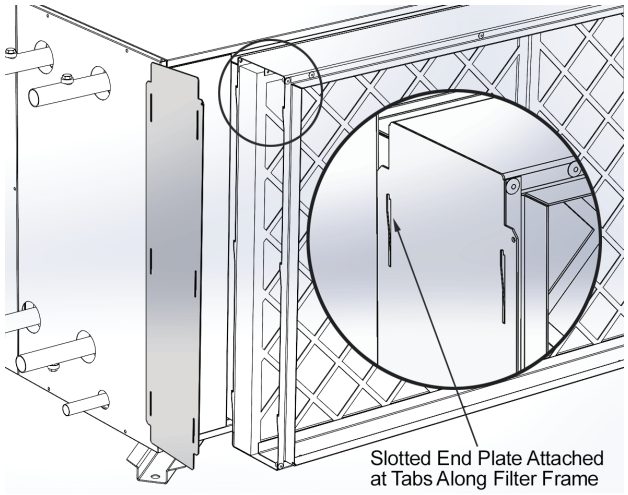


Figure 26: Top Filter Access (Sizes 030-050 Horizontal)

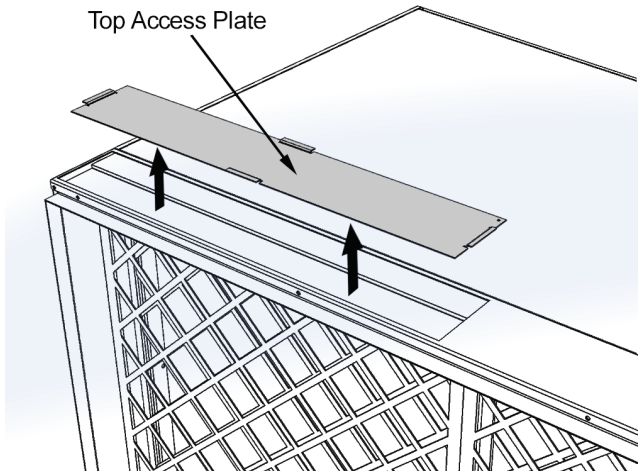


Figure 27: Bottom Filter Access (Sizes 030-050 Horizontal)

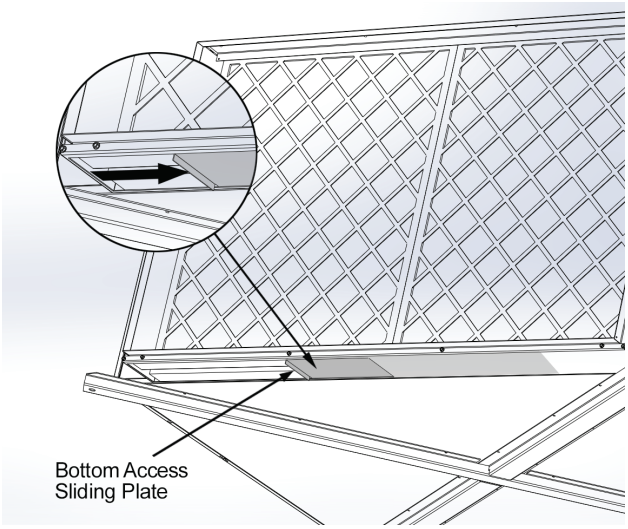


Figure 28: Mixing Box Filter Access Door (Sizes 030-050 Vertical)

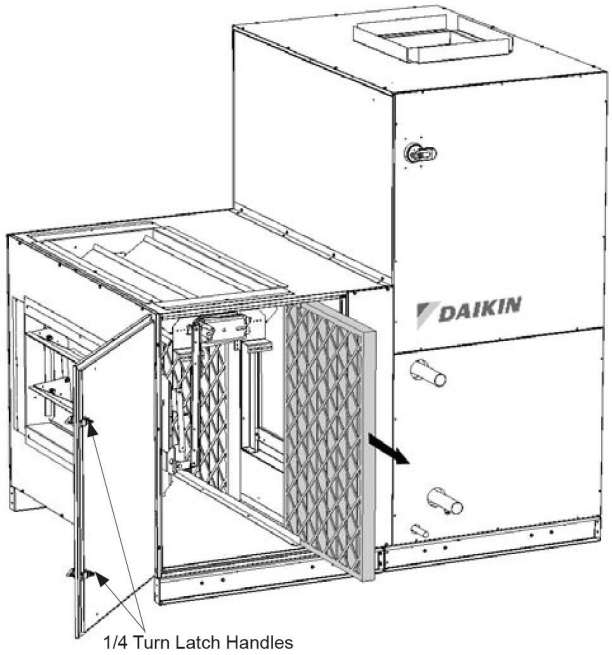


Figure 29: Accessing Internal Filter (Sizes 006-020 Vertical)

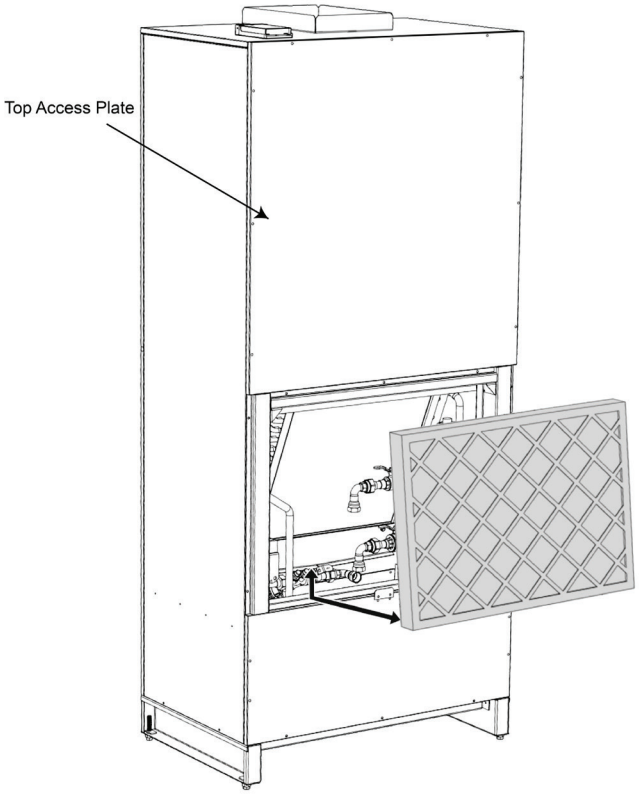


Figure 30: Filter Side Access (Sizes 030-050 Vertical)

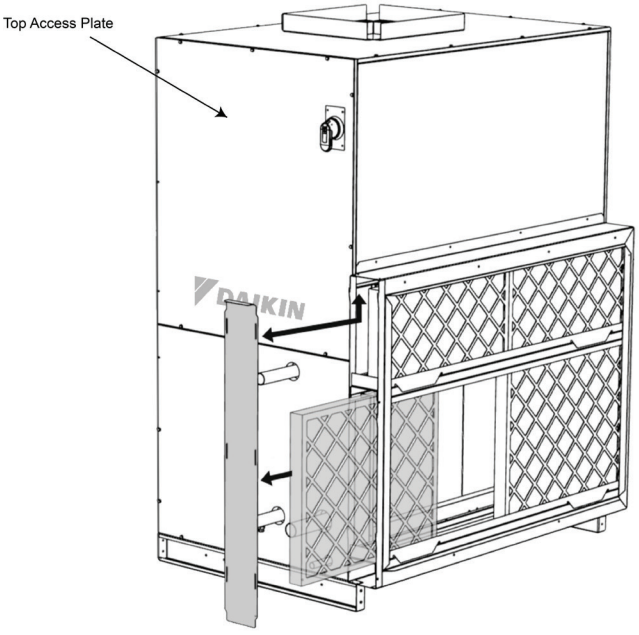
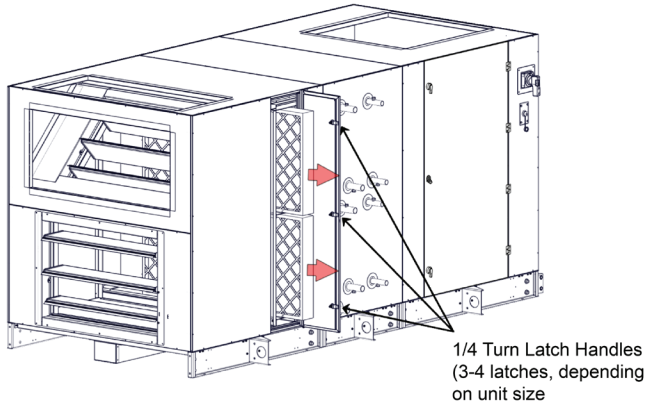


Figure 31: 2-Fan Fillter Top Removal (Sizes 006-020 Vertical)



Figure 32: Filter Side Access (Sizes 060-100)



Piping and Coils

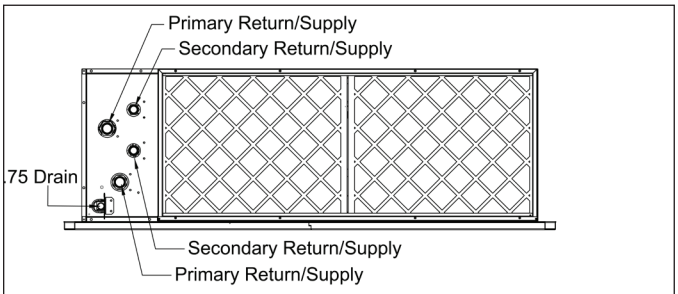
Follow applicable piping design, sizing, and installation information presented in ASHRAE Handbooks in the design and installation of piping. Observe all local codes and industry standards. Do not apply undue stress at the connection to the coil headers. Support pipe work independently of the coils.

Horizontal Hydronic Cooling/Heating Coil Connections

Hydronic coil guidelines are listed below.

1. Horizontal units have hydronic coil stubs extend through the panel of the cabinet as a default, with field connections made outside the cabinet. Stub locations are the same for preheat and reheat coils. All stubs are labeled on the panel.
2. Supply and return connections are copper FPT on unit sizes 006 through 020 and copper sweat on sizes 030 through 100. See Horizontal Hydronic Coil Size and Connection Type on page 67.
3. When making threaded connections, do not apply undue stress to the stub. Use a backup wrench to avoid damaging the braze joint between the stub and the valve package or coil. When making sweat connections the cabinet and valves must be protected from heat damage. Use wet cloths or a heat shield to prevent heat from soldering from burning the paint and insulation around the stub.
4. Entering air below 40°F is not recommended. Extended periods of temperatures below freezing can cause some components to function improperly.
5. If fresh air and return air are to be heated by a hot water coil, take care in the design of the system to provide thorough mixing before air enters the coil.

Figure 33: Horizontal Coil Connections, Unit Sizes 006 Thru 020



Note:
Left hand unit shown, right hand unit connections same as left but opposite.

Horizontal Hydronic Coils with No Valve Package

Hydronic coil guidelines for units selected with the "No Valve Package - Threaded Connections" option are listed below. Refer to Table 5 on page 19 for connection size and type.

1. The supply and return coil stubs terminate inside the cabinet over the drip pan so all field connections are made inside the cabinet. All stubs are factory labeled.
2. Internal hydronic coil connections are M-SWT.
3. Piping penetration holes must be field drilled and must be completely within the drill area on one of the factory designated panels. (See Figure 34 below and Figure 35 on page 19) The diameter of the hole should be no more than 1/2" larger than the pipe and gap around the pipe should be sealed after installation.
4. When making the sweat connection the cabinet, coil and drain pan must be protected from heat damage. Use wet cloths or a heat shield to prevent the heat from soldering from burning the paint and insulation around the stub.

Figure 34: Size 006 - 020 Hydronic Coil Drill Area - Front

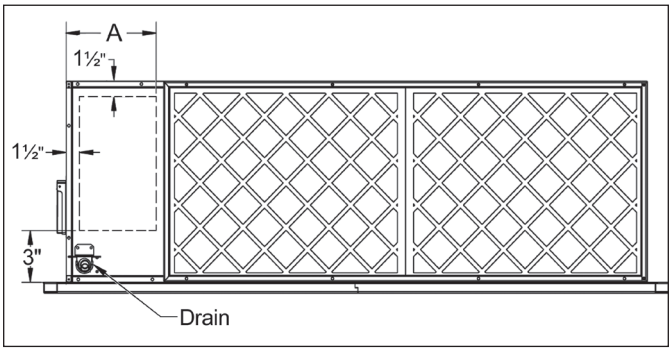


Table 4: Size 006-020 Hydronic Coil Drill Area Dimensions

Unit Size	006	008	010	012	016	018	020
A	7.13	7.80	7.62		7.53		

Figure 35: Size 006 - 020 Hydronic Coil Drill Areas – Top and Right Side

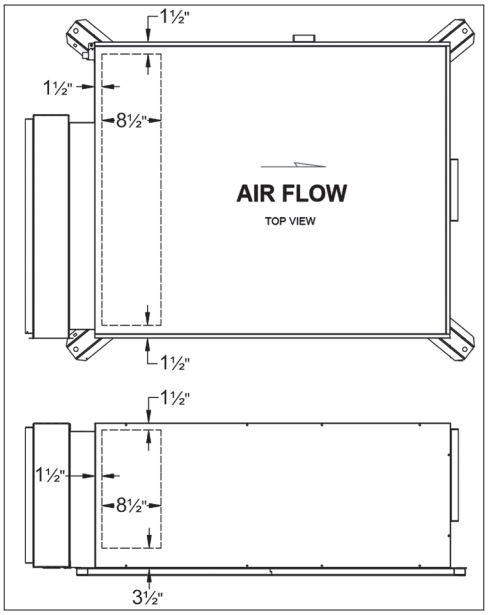


Figure 36: Field Pipe Connections, Unit Sizes 030, 040, 050

NOTE: Preheat coil option shown in figure below.

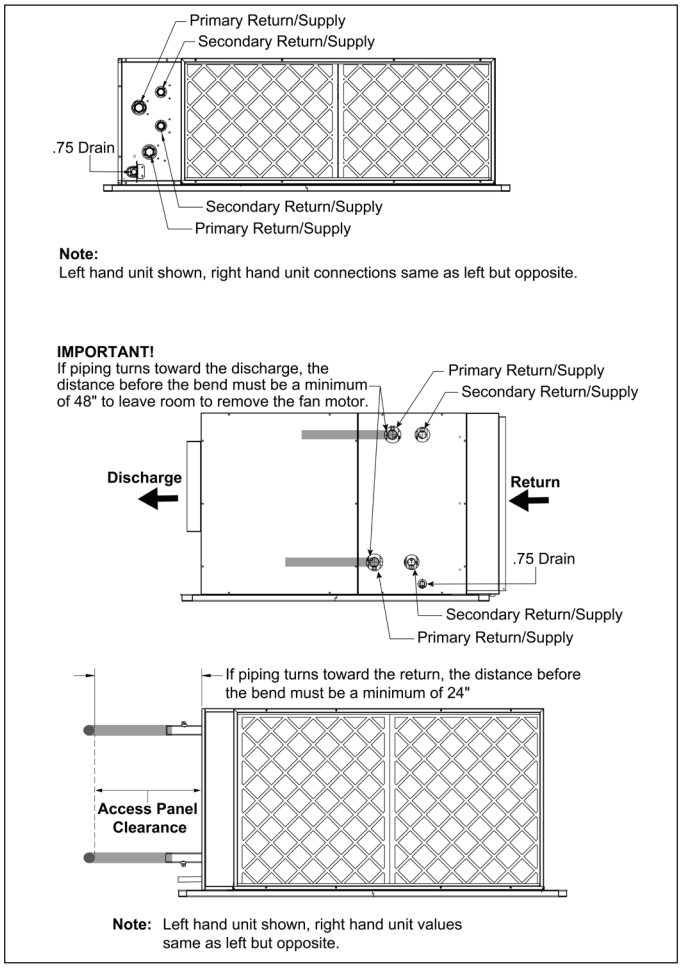


Figure 37: AVD Hydronic Coils

All AVD Units (vertical units Size 06-20) have coil connections located in the unit. The connections are FPT as default, and M-SWT if selected. There are pilot holes on both sides and the back of the unit. Piping penetration holes must be field drilled in the location of the pilot holes. The diameter of the hole should be no more than 1/2" larger than the pipe, and the gap around the pipe should be sealed after installation.

Figure 38: AVD-020 Field-Cut Hole Locations

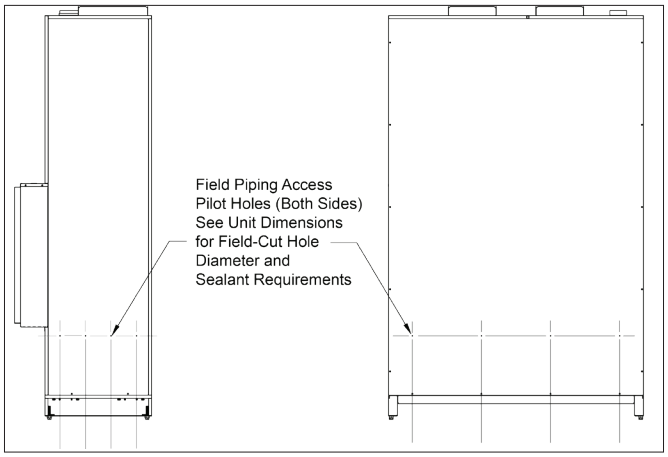
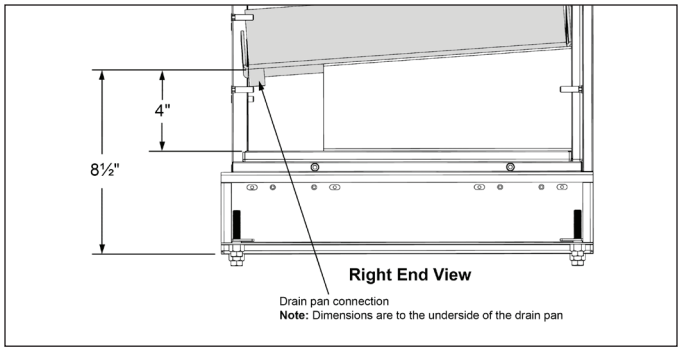


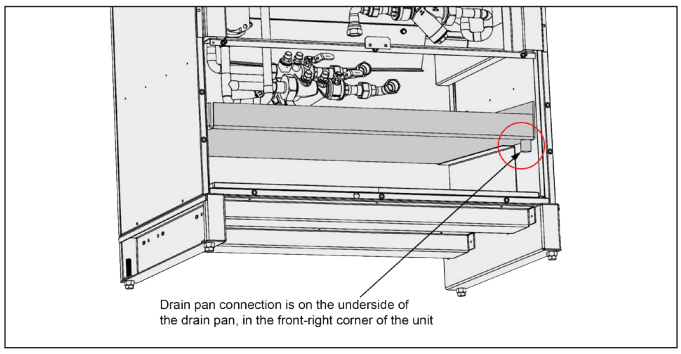
Table 5: Hydronic Coil Connection Size and Type with No Piping Option

Unit Size	6	8	10	12	16	18	20
Connection Type	M-SWT (OD)						
2-Row Cooling	0.625	0.625	0.625	0.625	0.875	0.875	0.875
4-Row Cooling	0.625	0.625	0.875	0.875	0.875	1.125	1.125
6-Row Cooling	0.625	0.875	0.875	0.875	1.125	1.125	1.125
8-Row Cooling	—	—	—	—	—	—	—
1-Row Heating	0.625	0.625	0.625	0.625	0.625	0.625	0.625
2-Row Heating	0.625	0.625	0.625	0.625	0.875	0.875	0.875

Drain Pan Piping

The drain pan requires a field-drilled hole made on the sides or back, in-between the drain pan and bottom panel of the unit. The drain pan connection is in the front-right corner, and must be piped to the field-drilled hole. A P-trap is not included, and must be added in the field. The drain pan is fully removable, both for cleaning and for ease of installation.





Direct Expansion (DX) Coils

Direct expansion coil connection guidelines are listed below.

1. On unit sizes 006 - 020 the coil distributor and suction connections are inside the cabinet on the right-hand side of the unit (air hitting back-of-head). On unit sizes 30 - 100 the distributor connection is inside the cabinet and the suction line connection is outside the cabinet.
2. For connections inside the cabinet, piping penetration holes must be field drilled and must be completely within the drill area on the factory designated panel. The diameter of the hole should be no more than 1/2" larger than the pipe and gap around the pipe should be sealed after installation.
3. The liquid line penetration should be made after the thermal expansion valve has been installed such that the hole aligns with the elbow off the bottom of the valve. The thermal expansion valve should be located directly below the distributor and connected to it with a short (2" maximum) section of straight pipe.
3. The thermostat expansion valve must be an external equalizer tube type. The equalization tube must be connected to suction header for proper function. (See page 72)
4. Use care when piping up the system, making sure all joints are tight and all lines are dry and free of foreign material. For typical refrigerant piping, see the condensing unit product manual.

Figure 39: DX Interlaced Coil, Unit Sizes 030, 040, 050

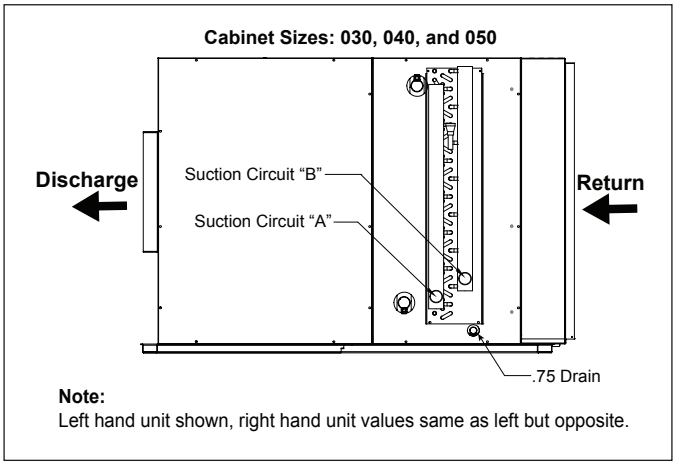


Figure 40: Horizontal Units Sizes 006 - 020 DX Coil Drill Area

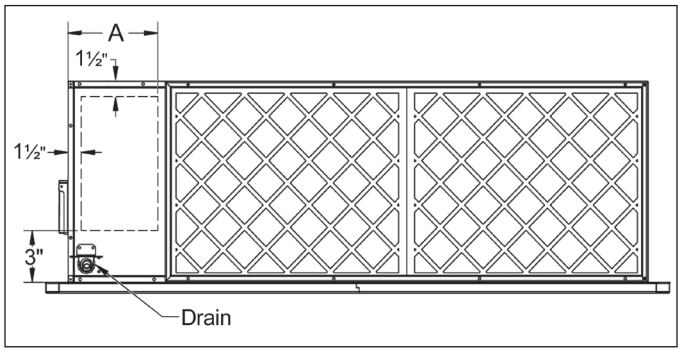


Table 6: Horizontal Units Sizes 006-020 DX Coil Drill Area Dimensions

Unit Size	006	008	010	012	016	018	020
A	7.13	7.80	7.62		7.53		

Figure 41: Horizontal Units Sizes 006 - 020 DX Coil with Reheat or Preheat Drill Area

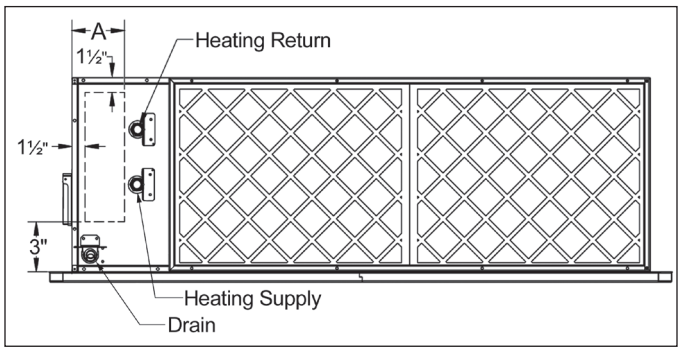


Table 7: Horizontal Units Sizes 006-020 DX Coil with Reheat or Preheat Drill Area Dimensions

Unit Size	006	008	010	012	016	018	020
A	4.38	5.05	4.87		4.78		

Figure 42: Horizontal Units Size 030 - 050 – DX Only and DX with Preheat Drill Area

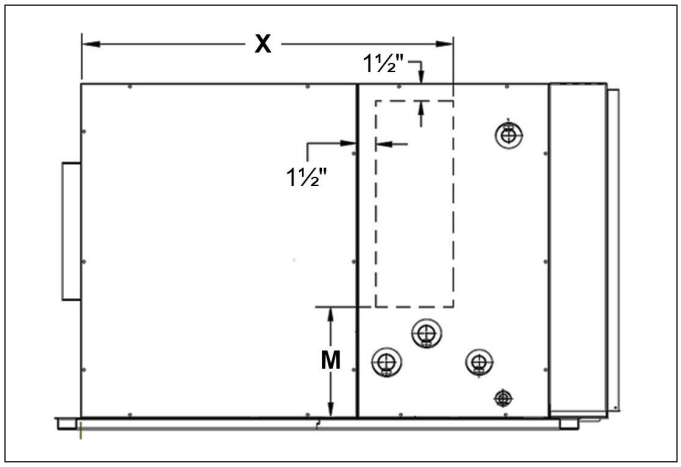


Figure 43: Sizes 030 - 050 Drill Area – DX with Reheat

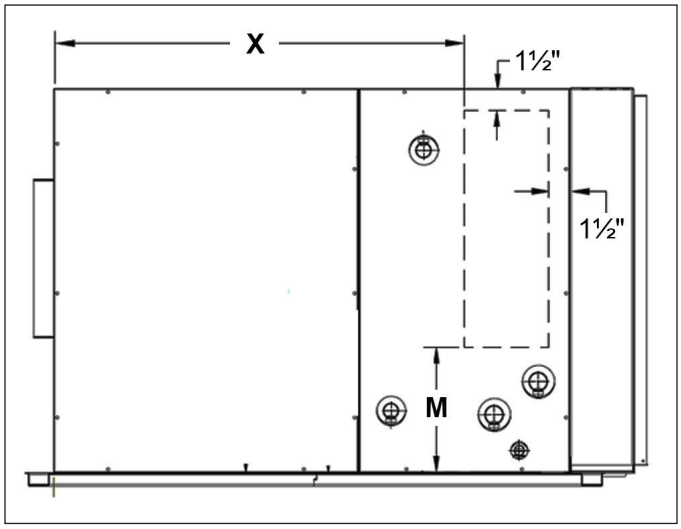
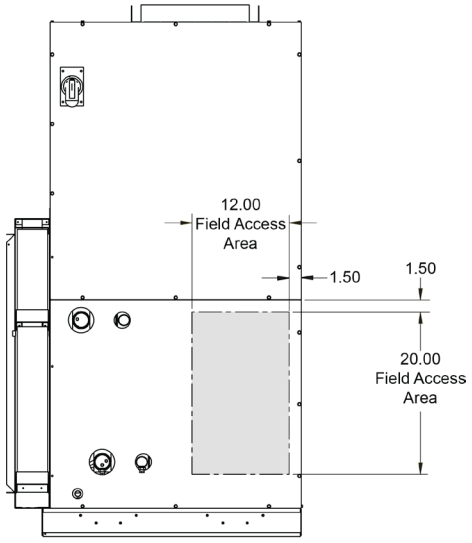


Figure 44: Vertical Units Sizes 030-050 DX Coil Drill Area



Right Side View

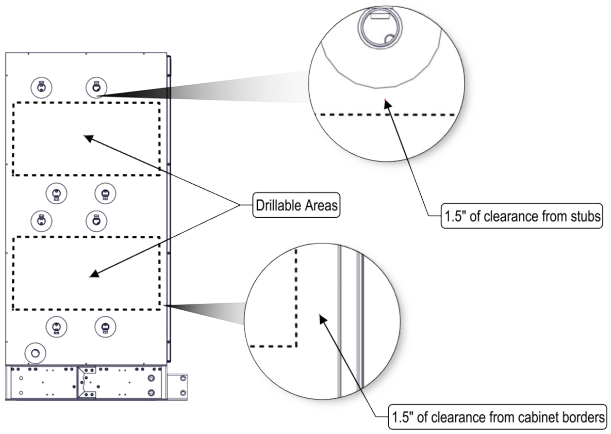
Table 8: Horizontal Drill Area Locations – DX Only and DX with Preheat

Single Circuit DX Primary Only		
Unit Size	**X**	**M**
30	29.18	6.35
40	32.18	6.35
50	32.18	6.35
Interlaced DX Primary Only		
30	29.18	11.35
40	32.18	11.35
50	32.18	9.35
Single Circuit DX Primary with 1 Row Hydronic Preheat		
30	29.18	6.62
40	32.18	7.62
50	32.18	6.62
Interlaced DX Primary with 1 Row Hydronic Preheat		
30	29.18	7.35
40	32.18	7.62
50	32.18	7.35
Single Circuit DX Primary with 2 Row Hydronic Preheat		
Unit Size	**X**	**M**
30	29.18	6.65
40	32.18	6.62
50	32.18	6.62
Interlaced DX Primary with 2 Row Hydronic Preheat		
30	29.18	7.35
40	32.18	7.35
50	**32.18**	**7.35**

Table 9: Horizontal Drill Area Locations – DX with Reheat

Single Circuit DX Primary with 1 Row Hydronic Reheat		
Unit Size	**X**	**M**
30	27.13	6.61
40	30.14	7.65
50	30.14	6.62
Interlaced DX Primary with 1 Row Hydronic Reheat		
30	27.13	7.35
40	30.14	7.62
50	30.14	7.35
Single Circuit DX Primary with 2 Row Hydronic Reheat		
30	27.13	6.62
40	30.14	6.62
50	30.14	6.62
Interlaced DX Primary with 2 Row Hydronic Reheat		
30	27.13	7.35
40	30.14	7.35
50	30.14	7.35

Horizontal Units Size 060 - 100 Drill Area - DX Coil Drill Area



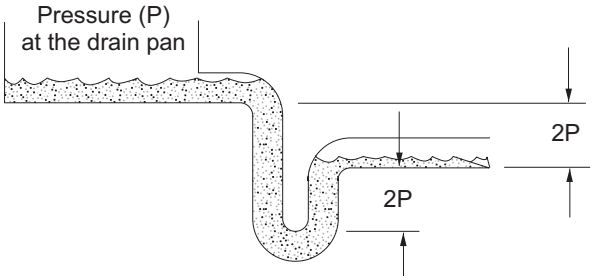
Condensate Overflow Switch

The optional condensate overflow switch must be field wired to a controller and should be field tested to verify proper operation. To test, fill drain pan with water to within 1/4" of top of pan and verify that the normally closed switch opens. If a normally closed overflow switch is required for the control sequence, the action of the factory installed switch can be reversed in the field. To reverse the action, remove the float retainer from the bottom of the guide pin, turn the float upside down and replace the retainer. Test the modified switch as described above to verify the switch closes when water rises to within 1/4" of the top of the pan.

Condensate Drain Pan Traps

The condensate drain stub for sizes 006-050 is 0.75 OD. The condensate drain stub for sizes 060-100 is 0.138 OD. Drain lines and traps should run full size from the drain pan stub. Drain pans should have traps to allow condensate from coils to drain freely. The trap depth and distance between the trap outlet and the drain pan outlet should be twice the static pressure in the drain pan section under normal operation for the trap to remain sealed. Refer to Figure 45.

Figure 45: Allow Adequate Distance Between Trap Outlet and Drain Outlet



Factory Installed Valve Package

The optional factory installed deluxe valve package includes a temperature control valve, a ball shut off valve with supply strainer, P/T port and clean out, and an automatic flow control valve with ball shut off and P/T ports. The temperature control valve is the Belimo B series characterized flow ball valve with SS ball and stem and is selectable as 2-way or 3-way. The valve flow coefficient and connection ports are appropriately sized for the selected flow rate. The control actuator can be configured for spring return on-off normally closed to the coil, spring return on-off normally open to the coil or non-spring return 0-10VDC modulating control. The strainer and ball shut off valve assembly is the Nexus UltraY and the automatic flow control valve and shut off assembly is the Nexus UltraMatic model UM. The piping schematics are shown in Figure 48 and Figure 49. The control valve wiring diagrams are shown in Figure 53 and Figure 54 and valve package component part numbers are listed in Table 11 on page 25 through Table 13.

On vertical units Size 06 and 08, the control valve is a Belimo Zonetight. These valves can be selected as either 2-way or 3-way, N.O. or N.C, and have a manually adjustable Cv ranging from 0.5 to 5.9. These valves are located on the supply side, adjacent to the coil, in contrast with other configurations being located on the return side.

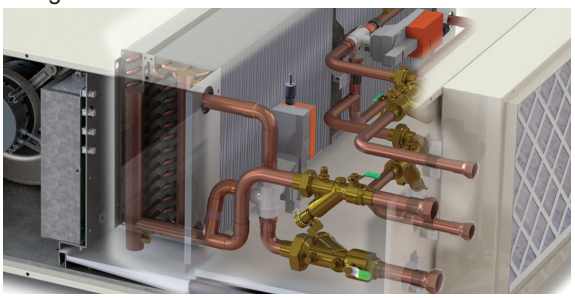


Figure 46: Basic 2-Way Valve Package

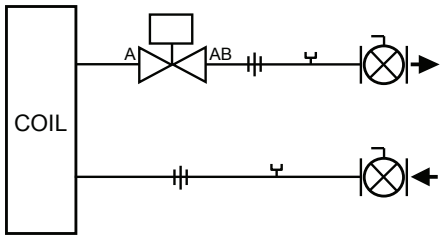


Figure 47: Basic 3-Way Valve Package

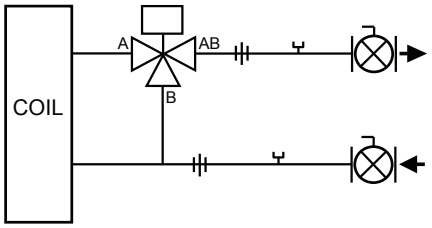


Figure 48: Deluxe 2-Way Valve Package (Auto CS)

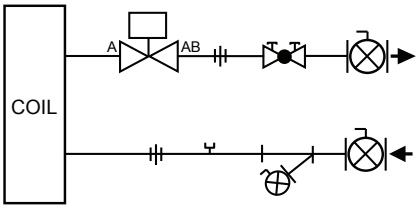


Figure 49: Deluxe 3-Way Valve Package (Auto CS)

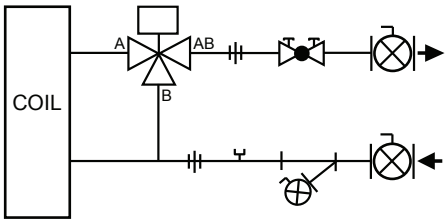


Figure 50: Deluxe 2-Way Valve Package (Manual CS)

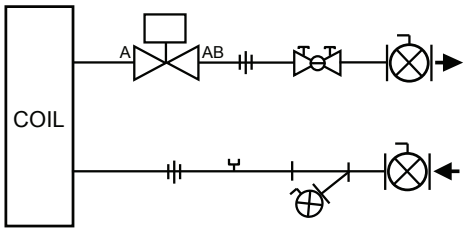


Figure 51: Deluxe 3-Way Valve Package (Manual CS)

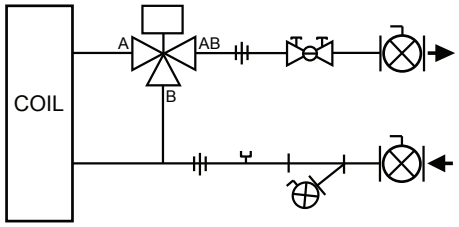


Figure 52: Components Key for Schematics

	**Manual Shutoff Ball Valve with Memory Stop:** Used on return line for limiting water flow.
	**2-Way, ON/OFF Valve:** Turn ON or OFF water flow to the coil in response to 24V or line voltage signal
	**3-Way, ON/OFF Valve:** Bypass water flow away from coil in response to 24V or line voltage signal. Includes fixed orifice for balancing.
	**PT Port:** For connecting a pressure or temperature gauge.
	**Y-Strainer:** Removable screen filters out small particles from supply line during normal system operation.
	**Auto Circuit Setter:** Pressure-compensated, automatic flow control.
	**Manual Circuit Setter:** Pressure-compensated, manual flow control.
	**Union:** For easy removal of piping from coil.

NOTE: Daikin Applied 3-way valves are equipped with a fixed balance orifice in the bypass line, eliminating the need for a separate balancing valve

Figure 53: ON/OFF Control Valve Wiring (Table 11 below)

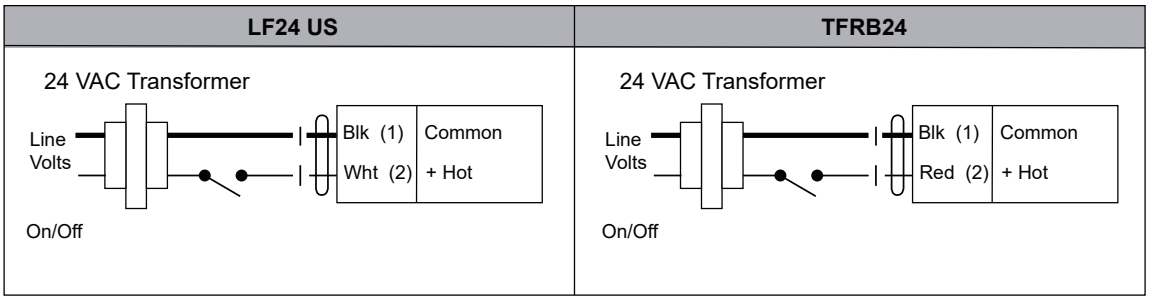
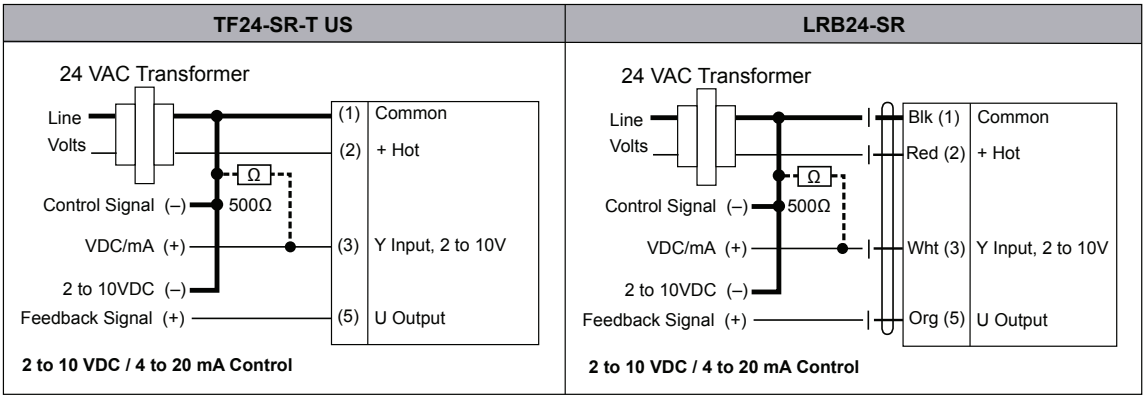


Figure 54: Modulating Control Valve Wiring (Table 12 on page 26)



Control Valve Parts Lists

Table 11: ON/OFF Control Valve Part List

Daikin P/N	Valve Type	Size	Cv	Control Type	Control Voltage	Spring Return	Normal State	Vendor PN (Belimo)
263940312	2 Way	0.5 FPT	1.9	On/Off	24V	Yes	Normally Closed	B211B+TFRB24 DKN
263940304	2 Way	0.5 FPT	1.9	On/Off	24V	Yes	Normally open	B211B+TFRB24 DKN
263940313	2 Way	0.5 FPT	16	On/Off	24V	Yes	Normally Closed	B216B+TFRB24 DKN
263940305	2 Way	0.5 FPT	16	On/Off	24V	Yes	Normally open	B216B+TFRB24 DKN
263940314	2 Way	0.75 FPT	24	On/Off	24V	Yes	Normally Closed	B221B+LF24 DKN
263940306	2 Way	0.75 FPT	24	On/Off	24V	Yes	Normally open	B221B+LF24 DKN
263940315	2 Way	1.0 FPT	30	On/Off	24V	Yes	Normally Closed	B225+LF24 DKN
263940307	2 Way	1.0 FPT	30	On/Off	24V	Yes	Normally open	B225+LF24 DKN
263940308	3 Way	0.5 FPT	1.9	On/Off	24V	Yes	Normally Closed	B311B+TFRB24 DKN
263940300	3 Way	0.5 FPT	1.9	On/Off	24V	Yes	Normally open	B311B+TFRB24 DKN
263940309	3 Way	0.5 FPT	16	On/Off	24V	Yes	Normally Closed	B316B+TFRB24 DKN
263940301	3 Way	0.5 FPT	16	On/Off	24V	Yes	Normally open	B316B+TFRB24 DKN
263940310	3 Way	0.75 FPT	24	On/Off	24V	Yes	Normally Closed	B321B+LF24 DKN
263940302	3 Way	0.75 FPT	24	On/Off	24V	Yes	Normally open	B321B+LF24 DKN
263940311	3 Way	1.0 FPT	30	On/Off	24V	Yes	Normally Closed	B325+LF24 DKN
263940303	3 Way	1.0 FPT	30	On/Off	24V	Yes	Normally open	B325+LF24 DKN
910264701	2-Way	0.5 F-SWT	5.9	On/Off	24VAC	Yes	Normally Open	Z2050QS-J+CQKB24-LL DKN
910282475	2-Way	0.5 F-SWT	5.9	On/Off	24VAC	Yes	Normally Closed	Z2050QS-J+CQKB24-RR DKN
910282487	3-Way	0.5 F-SWT	2.7	On/Off	24VAC	Yes	Normally Open	Z3050QS-H+CQKB24-LL DKN
910259925	3-Way	0.5 F-SWT	2.7	On/Off	24VAC	Yes	Normally Closed	Z3050QS-H+CQKB24-RR DKN

Table 12: Modulating Control Valve Part List

Daikin P/N	Valve Type	Size	Cv	Control Type	Control Voltage	Spring Return	Normal State	Vendor PN (Belimo)
263940901	2 Way	0.50 FPT	0.3	Modulating	0-10VDC	No	N/A	B207B+TR24-SR DKN
263940902	2 Way	0.50 FPT	0.46	Modulating	0-10VDC	No	N/A	B208B+TR24-SR DKN
263940903	2 Way	0.50 FPT	0.8	Modulating	0-10VDC	No	N/A	B209B+TR24-SR DKN
263940904	2 Way	0.50 FPT	1.2	Modulating	0-10VDC	No	N/A	B210B+TR24-SR DKN
263940905	2 Way	0.50 FPT	1.9	Modulating	0-10VDC	No	N/A	B211B+TR24-SR DKN
263940906	2 Way	0.50 FPT	3	Modulating	0-10VDC	No	N/A	B212B+TR24-SR DKN
263940907	2 Way	0.50 FPT	4.7	Modulating	0-10VDC	No	N/A	B213B+TR24-SR DKN
263940908	2 Way	0.50 FPT	10	Modulating	0-10VDC	No	N/A	B215B+TR24-SR DKN
263940909	2 Way	0.50 FPT	16	Modulating	0-10VDC	No	N/A	B216B+TR24-SR DKN
263941001	2 Way	0.75 FPT	4.7	Modulating	0-10VDC	No	N/A	B217B+TR24-SR DKN
263941002	2 Way	0.75 FPT	7.4	Modulating	0-10VDC	No	N/A	B218B+TR24-SR DKN
263941003	2 Way	0.75 FPT	14	Modulating	0-10VDC	No	N/A	B220B+TR24-SR DKN
263941101	2 Way	0.75 FPT	24	Modulating	0-10VDC	No	N/A	B221+LRB24-SR DKN
263941201	2 Way	1.00 FPT	7.4	Modulating	0-10VDC	No	N/A	B222+LRB24-SR DKN
263941202	2 Way	1.00 FPT	10	Modulating	0-10VDC	No	N/A	B223+LRB24-SR DKN
263941203	2 Way	1.00 FPT	30	Modulating	0-10VDC	No	N/A	B225+LRB24-SR DKN
263940501	3 Way	0.50 FPT	0.3	Modulating	0-10VDC	No	N/A	B307B+TR24-SR DKN
263940502	3 Way	0.50 FPT	0.46	Modulating	0-10VDC	No	N/A	B308B+TR24-SR DKN
263940503	3 Way	0.50 FPT	0.8	Modulating	0-10VDC	No	N/A	B309B+TR24-SR DKN
263940504	3 Way	0.50 FPT	1.2	Modulating	0-10VDC	No	N/A	B310B+TR24-SR DKN
263940505	3 Way	0.50 FPT	1.9	Modulating	0-10VDC	No	N/A	B311B+TR24-SR DKN
263940506	3 Way	0.50 FPT	3	Modulating	0-10VDC	No	N/A	B312B+TR24-SR DKN
263940507	3 Way	0.50 FPT	4.7	Modulating	0-10VDC	No	N/A	B313B+TR24-SR DKN
263940508	3 Way	0.50 FPT	10	Modulating	0-10VDC	No	N/A	B315B+TR24-SR DKN
263940509	3 Way	0.50 FPT	16	Modulating	0-10VDC	No	N/A	B316B+TR24-SR DKN
263940601	3 Way	0.75 FPT	4.7	Modulating	0-10VDC	No	N/A	B317B+TR24-SR DKN
263940602	3 Way	0.75 FPT	7.4	Modulating	0-10VDC	No	N/A	B318B+TR24-SR DKN
263940701	3 Way	0.75 FPT	14	Modulating	0-10VDC	No	N/A	B320B+LRB24-SR DKN
263940702	3 Way	0.75 FPT	24	Modulating	0-10VDC	No	N/A	B321B+LRB24-SR DKN
263940801	3 Way	1.00 FPT	7.4	Modulating	0-10VDC	No	N/A	B322+LRB24-SR DKN
263940802	3 Way	1.00 FPT	10	Modulating	0-10VDC	No	N/A	B323+LRB24-SR DKN
263940803	3 Way	1.00 FPT	30	Modulating	0-10VDC	No	N/A	B325+LRB24-SR DKN
910282477	2-Way	0.50 FPT	5.9	Modulating	0-10VDC	No	N/A	Z2050QS-J+CQB24-SR-R DKN

Table 13: Autoflow Valve Part List

GPM	0.5"	0.75"	1.0"
0.50	263578301	263578401	–
0.75	263578302	263578402	–
1.00	263578303	263578403	–
1.50	263578304	263578404	–
2.00	263578305	263578405	–
2.50	263578306	263578406	–
3.00	263578307	263578407	–
3.50	263578308	263578408	–
4.00	263578309	263578409	–
4.50	263578310	263578410	–
5.00	263578311	263578411	–
5.50	263578312	263578412	–
6.00	263578313	263578413	–
7.00	263578314	263578414	263578501
GPM	0.5"	0.75"	1.0"
8.00	263578315	263578415	263578502
9.00	263578316	263578416	263578503
10.00	–	–	263578504
10.50	263578317	263578417	–
11.00	263578318	263578418	–
12.00	263578319	263578419	–
15.00	–	–	263578505
18.00	–	–	263578506
20.00	–	–	263578507
25.00	–	–	263578508
30.00	–	–	263578509

Table 14: Strainer Part List

CV	0.5"	0.75"	1.0"
5.5	263940136	–	–
9.0	–	263940135	263940137

Table 15: Manual Circuit Setter Part List

Valve Size	Daikin PN	Vendor PN
1/2	263922380	MB-050-S-050S-V-L
3/4	263922370	MB-075-S-075S-V-L
1	263922360	MB-100-S-100S-V-L

Table 16: Isolation Ball Valve Part List

Valve Size	Daikin PN	Vendor PN
1/2	910244107	DA-NXP-050-S-050S-P
3/4	910244097	DA-NXP-075-S-075S-P-L
1	910244108	DA-NXP-100-S-100S-P-L

Manual Circuit Setter Flow Charts

Figure 55: Manual Circuit Setter Flow Chart – 1/2" Valves

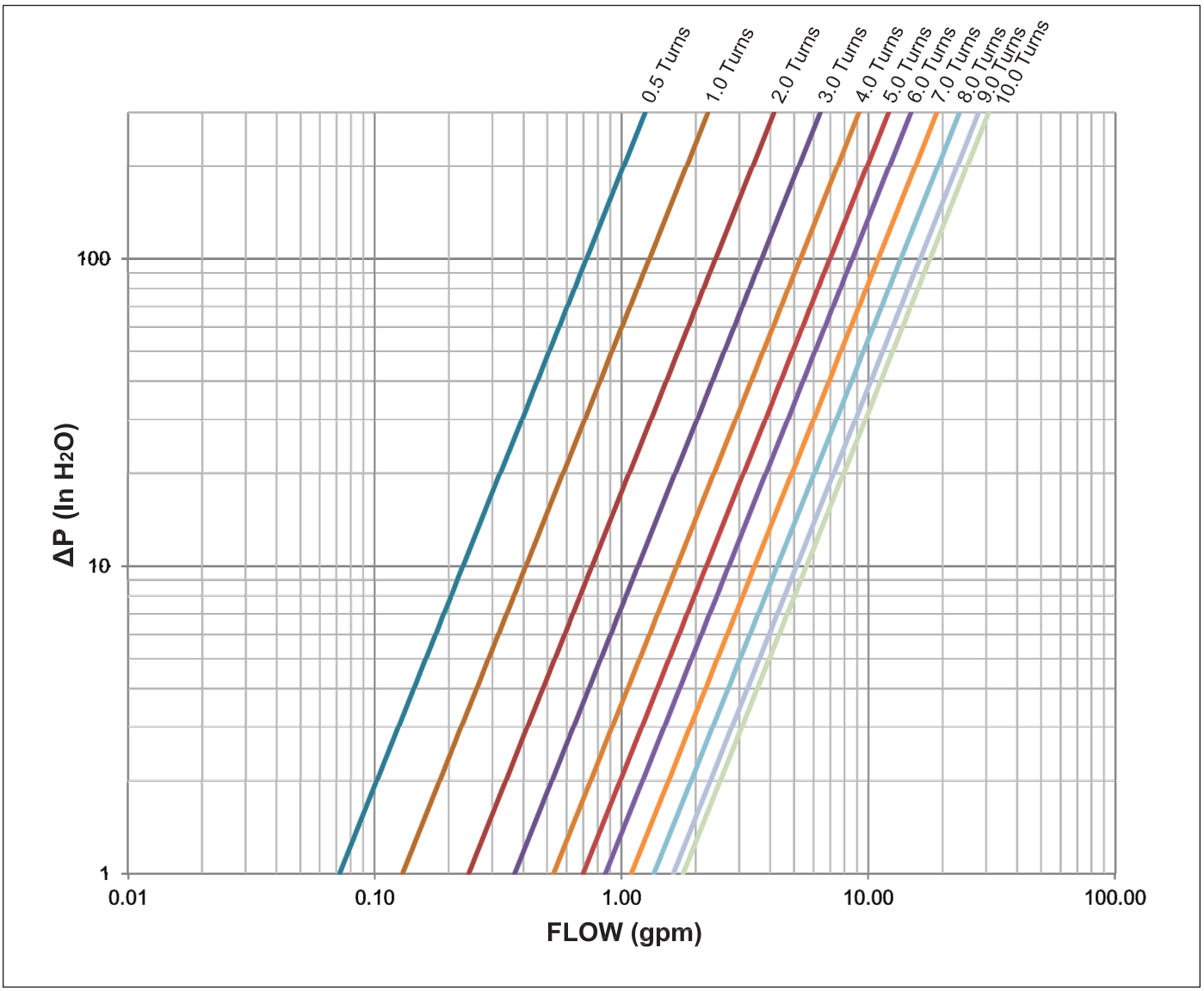
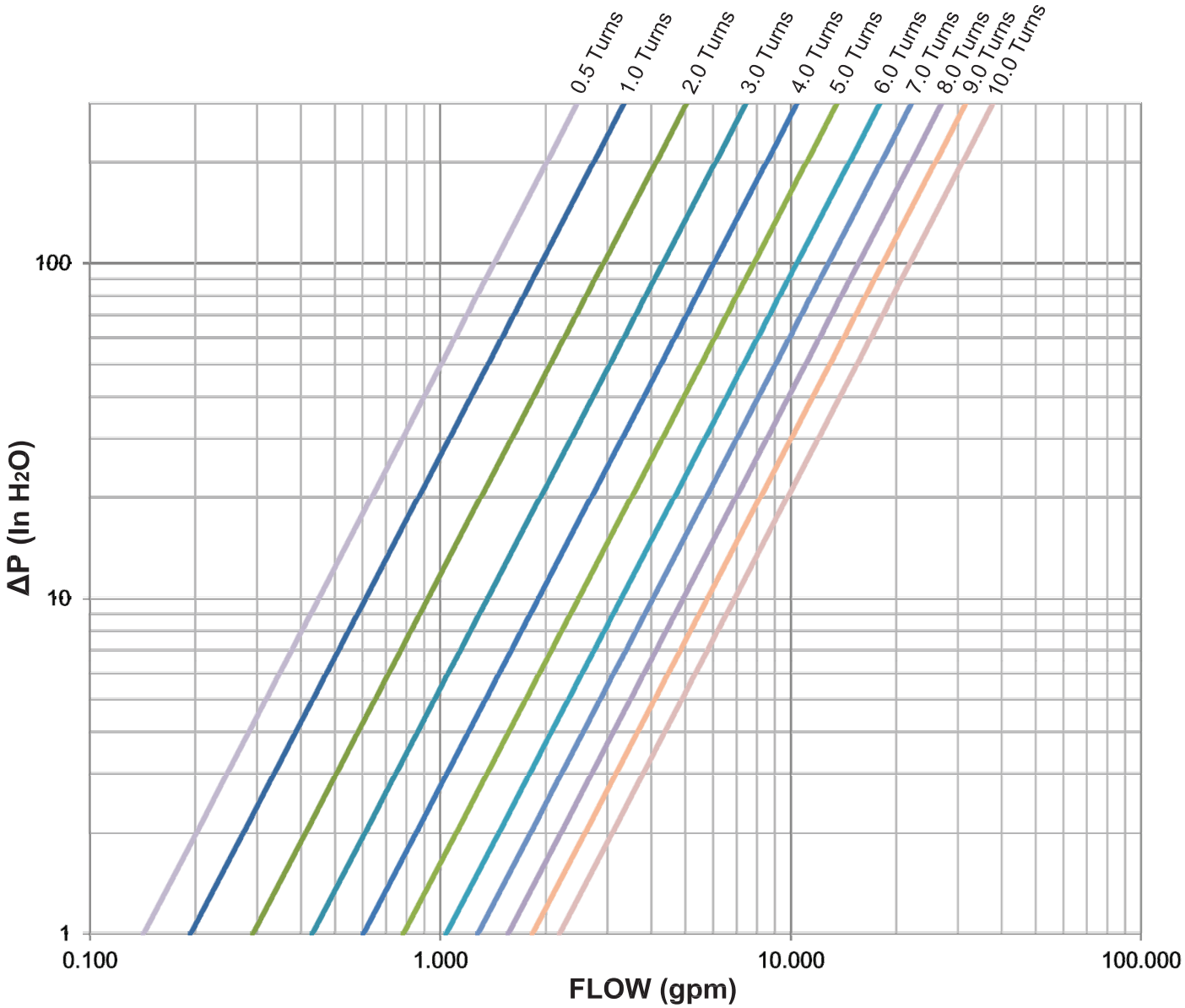


Figure 56: Manual Circuit Setter Flow Chart – 3/4" and 1" Valves



Electric Heat

The factory installed electric heat section (if equipped) consists of an open coil heater rack mounted to the unit's primary coil in the preheat position for horizontal units or reheat postion for vertical units. Electric heat is designed to operate only when the supply fan is running, heating the air as it passes through the heating elements. The electric heat section consists of the mounting rack, electric elements, contactor, optional SCR module and the manual and automatic reset thermal limits. Electric heat comes pre-wired to the main control box for a single point (or 2-point on sizes 060-100) power connection to the unit.

The temperature of the air leaving the unit (LAT) which is dependent on the entering air temperature (EAT), electric heat capacity (kW), and the air volume (CFM), must not exceed 125°F. The minimum allowable air volume for various combinations of EAT and kW are provided beginning on Table 17 on page 31 or may be calculated using the equation below.

LAT = (kW × 3145.622 ÷ CFM) + EAT

Electric Heat Safety

Overcurrent Protection

Optional factory provided over current protection is available on all units with a maximum operating current less than or equal to 48 amps. This protection is provided with fuses located on the unit main power circuit. Units with a maximum operating current greater than 48 amps will come with factory installed fusing on the electric heat circuit.

Thermal (Over Temperature) Protection

All units with electric heat are provided with at least two thermal protection devices. The primary thermal protection device is an automatic limit switch. The switch will reset itself when the temperature drops below a certain level. The secondary thermal protection device is a manual reset thermal cutout. This switch opens at a certain level but must be reset manually after the over temperature issue has been resolved. Units provided with the SCR type electric heat control have an additional automatic thermal protection built into the SCR controller.

Minimum Allowable Air Volume For Units With Electric Heat

Table 17: Horizontal Minimum Allowable Air Volume With Electric Heat (unit sizes 006-020)

kW	Unit Size						
	006	008	010	012	016	018	020
	Air Volume - CFM						
0.41	300	400	600	600	800	1000	1000
0.5	300	400	600	600	800	1000	1000
0.82	300	400	600	600	800	1000	1000
1	300	400	600	600	800	1000	1000
1.64	300	400	600	600	800	1000	1000
2	300	400	600	600	800	1000	1000
2.45	300	400	600	600	800	1000	1000
3	300	400	600	600	800	1000	1000
3.27	300	400	600	600	800	1000	1000
4	300	400	600	600	800	1000	1000
4.09	300	400	600	600	800	1000	1000
4.91	300	400	600	600	800	1000	1000
5	300	400	600	600	800	1000	1000
6	-	400	600	600	800	1000	1000
6.54	-	400	600	600	800	1000	1000
7.36	-	425	600	600	800	1000	1000
8	-	460	600	600	800	1000	1000
8.18	-	470	600	600	800	1000	1000
9	-	515	600	600	800	1000	1000
9.81	-	570	600	600	800	1000	1000
10	-	575	600	600	800	1000	1000
10.6	-	-	-	-	800	1000	1000
11	-	-	-	-	800	1000	1000
11.3	-	-	-	-	800	1000	1000
12	-	-	-	-	800	1000	1000
13	-	-	-	-	800	1000	1000

Table 18: Horizontal Minimum Allowable Air Volume With Electric Heat (unit sizes 030-100)

kW	Forward-Curved Fan Units			Plenum Fan Units					
	030	040	050	030	040	050	060	080	100
	Air Volume - CFM			Air Volume - CFM					
7.36	1500	2000	2500	1800	2400	3000	-	-	-
9	1500	2000	2500	1800	2400	3000	-	-	-
15	1500	2000	2500	1800	2400	3000	-	-	-
17	-	-	-	-	-	-	3600	-	-
18	1500	2000	2500	1800	2400	3000	-	-	-
19	-	-	-	-	-	-	3600	-	-
20	-	-	-	-	-	-	3600	-	-
21	1500	2000	2500	1800	2400	3000	-	-	-
24	1500	2000	2500	1800	2400	3000	-	-	-
25	-	-	-	-	-	-	-	4800	-
28.9	-	-	-	-	-	-	-	4800	6000
30	-	2000	2500	-	2400	3000			
32	-	-	-	-	-	-	-	4800	6000
34.4	-	-	-	-	-	-	3600	-	-
36	-	2060	2500	-	2400	3000	-	-	-
38	-	-	-	-	-	-	3600	-	-
39	-	2250	2500	-	2400	3000	-	-	-
40	-	-	-	-	-	-	3600	-	-
43.4	-	-	-	-	-	-	-	4800	6000
48	-	-	-	-	-	-	-	4800	6000
50	-	-	-	-	-	-	-	4800	-
57	-	-	-	-	-	-	3600	4800	6000
60	-	-	-	-	-	-	3600	-	-
63	-	-	-	-	-	-	3603	4800	6000
65	-	-	-	-	-	-	-	4800	6000
75	-	-	-	-	-	-	4290	4800	-
95	-	-	-	-	-	-	5433	6000	6000
105	-	-	-	-	-	-	-	6005	-
133	-	-	-	-	-	-	-	-	7607

NOTE: Limits are based on greater value of either:
1. 250 FPM face velocity across the electric heating coil
2. Entering Air of 70°F and a maximum of 125°F LAT

Table 19: Vertical Minimum Allowable Air Volume With Electric Heat

kW	Unit Size				
	006	008	012	016	020
	Air Volume - CFM				
0.82	300	-	-	-	-
1	300	400	-	-	-
1.64	-	400	600	-	-
2	300	400	600	800	1000
2.45	300	-	-	-	-
3	300	-	-	-	-
3.27	-	400	600	800	1000
4	300	400	600	800	1000
4.8	-	400	600	-	-
4.91	300	-	-	-	-
6	345	-	-	-	-
6.54	-	400	600	800	1000
8	-	460	600	800	1000
8.18	-	470	600	800	1000
9.6	-	550	600	800	1000
10	-	575	600	800	1000
12	-	-	-	800	1000
19.2	-	-	-	-	1100

kW	Forward-Curved Fan Units			Plenum Fan Units		
	030	040	050	030	040	050
	Air Volume - CFM			Air Volume - CFM		
6.8	1500	2000	2500	1800	2400	3000
9	1500	2000	2500	1800	2400	3000
11.3	1500	2000	2500	1800	2400	3000
13.5	1500	2000	2500	1800	2400	3000
15	1500	2000	2500	1800	2400	3000
18	1500	2000	2500	1800	2400	3000
21	1500	2000	2500	1800	2400	3000
24	1500	2000	2500	1800	2400	3000
39	2235	2235	2500	1800	2400	3000

NOTE: Limits are based on greater value of either:
1. 250 FPM face velocity across the electric heating coil
2. Entering Air of 70°F and a maximum of 125°F LAT

Table 20: Horizontal Electric Heat kW Options by Unit Size

Unit Size	Voltage	Horizontal kW												
006	120/60/1	0.5	1.0	2.0	3.0	4.0	-	-	-	-	-	-	-	-
	208/60/1	0.4	0.8	1.6	2.5	3.3	4.1	4.9	-	-	-	-	-	-
	230/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	-	-	-	-	-	-
	277/60/1	-	1.0	2.0	3.0	4.0	5.0	6.0	-	-	-	-	-	-
	460/60/1	-	1.0	-	3.0	-	-	6.0	-	-	-	-	-	-
008	120/60/1	0.5	1.0	2.0	3.0	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	0.4	0.8	1.6	2.5	3.3	4.1	4.9	6.5	8.2	-	-	-	-
	230/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0		10.0	-	-	-
	277/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	-	10.0	-	-	-
	460/60/1	-	-	2.0	-	4.0	5.0	-	8.0	-	10.0	-	-	-
010	120/60/1	0.5	1.0	2.0	3.0	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	0.4	0.8	1.6	2.5	3.3	4.1	4.9	6.5	8.2	-	-	-	-
	230/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	-	10.0	-	-	-
	277/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	-	10.0	-	-	-
	460/60/1	-	-	2.0	-	4.0	5.0	-	8.0	-	10.0	-	-	-
012	120/60/1	0.5	1.0	2.0	3.0	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	0.4	0.8	1.6	2.5	3.3	4.1	4.9	6.5	8.2	-	-	-	-
	230/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	-	10.0	-	-	-
	277/60/1	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	-	10.0	-	-	-
	460/60/1	-	-	2.0	-	4.0	5.0	-	8.0	-	10.0	-	-	-
016	120/60/1	-	1.0	2.0	-	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	-	0.8	1.6	-	3.3	-	4.9	6.5	8.2	-	-	-	-
	230/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	-	-	-
	277/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	-	12.0	13.0
	460/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	16.0	20.0
018	120/60/1	-	1.0	2.0	-	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	-	0.8	1.6	-	3.3	-	4.9	6.5	8.2	9.0	-	-	-
	230/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	11.0	-	-
	277/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	-	12.0	13.0
	460/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	17.0	20.0
020	120/60/1	-	1.0	2.0	-	4.0	5.0	-	-	-	-	-	-	-
	208/60/1	-	0.8	1.6	-	3.3	-	4.9	6.5	8.2	9.0	-	-	-
	230/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	11.0	-	-
	277/60/1	-	1.0	2.0	-	4.0	-	6.0	8.0	-	10.0	-	12.0	13.0
	460/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	-	20.0
030	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	18.0	21.0	24.0	-	-	-	-	-	-	-	-
	575/60/3	9.0	15.0	18.0	21.0	24.0	-	-	-	-	-	-	-	-
040	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	18.0	21.0	24.0	30.0	36.0	39.0	-	-	-	-	-
	575/60/3	9.0	15.0	18.0	21.0	24.0	30.0	36.0	39.0	-	-	-	-	-
050	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	18.0	21.0	24.0	30.0	36.0	39.0	-	-	-	-	-
	575/60/3	9.0	15.0	18.0	21.0	24.0	30.0	36.0	39.0	-	-	-	-	-
060	208/60/3	17.2	-	-	-	34.4	-	-	57	-	-	-	-	-
	240/60/3	19	-	-	-	38	-	-	63	-	-	-	-	-
	460/60/3	-	20	-	-	-	40	-	63	-	75	-	-	-
	575/60/3	-	20	-	-	-	40	-	63	-	75	-	-	-
080	208/60/3	-	-	-	28.9	-	-	43.4	57	-	-	-	-	-
	240/60/3	-	-	-	32	-	-	48	63	-	-	-	-	-
	460/60/3	-	-	25	-	-	-	50	-	-	75	-	105	-
	575/60/3	-	-	25	-	-	-	50	-	-	-	95	105	-
100	208/60/3	-	-	-	28.9	-	-	43.4	57	-	-	-	-	-
	240/60/3	-	-	-	32	-	-	48	63	-	-	-	-	-
	460/60/3	-	-	-	32	-	-	-	-	65	-	95	-	133
	575/60/3	-	-	-	32	-	-	-	-	65	-	95	-	133

Table 21: Vertical Electric Heat kW Options by Unit Size

Unit Size	Voltage	Vertical kW												
006	120/60/1	-	1	2	-	4	-	-	-	-	-	-	-	-
	208/60/1	-	0.8	-	2.5	3.3	-	4.9	-	-	-	-	-	-
	230/60/1	-	1.0	-	3.0	4.0	-	6.0	-	-	-	-	-	-
	277/60/1	-	1.0	-	3.0	4.0	-	6.0	-	-	-	-	-	-
	460/60/1	-	1.0	-	3.0	-	-	6.0	-	-	-	-	-	-
008	120/60/1	-	1.0	2.0	-	4.0	-	-	-	-	-	-	-	-
	208/60/1	-	-	1.6	-	3.3	-	-	6.5	8.2	-	-	-	-
	230/60/1	-	-	2.0	-	4.0	-	-	8.0	-	10.0	-	-	-
	277/60/1	-	-	2.0	-	4.0	-	-	8.0	-	10.0	-	-	-
	460/60/1	-	-	2.0	-	4.0	5.0	-	8.0	-	10.0	-	-	-
012	120/60/1	-	-	2.0	-	4.0	-	-	-	-	-	-	-	-
	208/60/1	-	-	1.6	-	3.3	-	-	6.5	8.2	-	-	-	-
	230/60/1	-	-	2.0	-	4.0	-	-	8.0	-	10.0	-	-	-
	277/60/1	-	-	2.0	-	4.0	-	-	8.0	-	10.0	-	-	-
	460/60/1	-	-	2.0	-	4.0	5.0	-	8.0	-	10.0	-	-	-
016	120/60/1	-	-	2.0	-	4.0	-	-	-	-	-	-	-	-
	208/60/1	-	-	-	-	3.3	-	-	6.5	8.2	-	-	-	-
	230/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	-	-	-
	277/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	-	-
	460/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	-	-
020	120/60/1	-	-	2.0	-	4.0	-	-	-	-	-	-	-	-
	208/60/1	-	-	-	-	3.3	-	-	6.5	8.2		-	-	-
	230/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	-	-	-
	277/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	-	-
	460/60/1	-	-	-	-	4.0	-	-	8.0	-	10.0	12.0	-	20.0
030	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	-	21.0	24.0	-	-	-	-	-	-	-	-
	575/60/3	9.0	15.0	-	21.0	24.0	-	-	-	-	-	-	-	-
040	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	-	21.0	24.0	-	-	39.0	-	-	-	-	-
	575/60/3	9.0	15.0	-	21.0	24.0	-	-	39.0	-	-	-	-	-
050	208/60/3	6.8	11.3	13.5	-	-	-	-	-	-	-	-	-	-
	240/60/3	9.0	15.0	18.0	-	-	-	-	-	-	-	-	-	-
	460/60/3	9.0	15.0	-	21.0	24.0	-	-	39.0	-	-	-	-	-
	575/60/3	9.0	15.0	18.0	21.0	24.0	-	-	39.0	-	-	-	-	-

Table 22: Horizontal Unit - Heater Amps

Horizontal Heater Amps											
kW	**120V / 1Ø**	**230V / 1Ø**	**277V / 1Ø**	**460V / 1Ø**	**kW**	**240V / 3Ø**	**460V / 3Ø**	**575V / 3Ø**	**kW**	**208V/1Ø†**	**208V/3Ø†**
0.5	4.17	2.17	1.81	-	**0.5**	1.20	0.63	0.50	**0.41**	1.97	-
1	8.33	4.35	3.61	2.17	**1**	2.41	1.26	1.00	**0.82**	3.94	-
2	16.67	8.70	7.22	4.35	**2**	4.81	2.51	2.01	**1.64**	7.88	-
3	25.00	13.04	10.83	6.52	**3**	7.22	3.77	3.01	**2.45**	11.78	-
4	33.33	17.39	14.44	8.70	**4**	9.62	5.02	4.02	**3.27**	15.72	-
5	41.67	21.74	18.05	10.87	**5**	12.03	6.28	5.02	**4.09**	19.66	-
6	-	26.09	21.66	13.04	**6**	14.43	7.53	6.02	**4.91**	23.61	-
8	-	34.78	28.88	17.39	**8**	19.25	10.04	8.03	**6.54**	31.44	-
10	-	43.48	-	21.74	**9**	21.65	11.30	9.04	**6.80**	-	35.38
11	-	47.83	39.71	-	**10**	24.06	12.55	10.04	**8.18**	39.33	-
12	-	-	43.32	26.09	**11**	26.46	13.81	11.04	**9.00**	43.27	-
13	-	-	46.93	-	**12**	28.87	15.06	12.05	**9.81**	47.16	-
18	-	-	-	39.13	**13**	31.27	16.32	13.05	**10.63**	51.11	-
21	-	-	-	45.65	**15**	36.08	18.83	15.06	**11.30**	-	54.33
					18	43.30	22.59	18.07	**13.50**	-	64.90
					19	45.70	-	-	**17.2**	-	47.70
					20	-	24.10	19.20	**28.9**	-	80.30
					21	-	26.36	21.09	**34.4**	-	95.40
					24	-	30.12	24.10	**43.4**	-	120.50
					25	-	30.10	-	**57**	-	158.10
					30	-	37.65	30.12			
					36	-	45.18	36.15			
					39	-	48.95	39.16			
					40	-	48.1	38.5			
					48	115.5	-	-			
					50	-	60.1	-			
					60	-	72.2	57.7			
					63	151.6	-	-			
					65	-	-	62.5			
					75	-	90.2	72.2			
					95	-		91.4			
					105	-	126.3	1.1			
					133	-	160	128			

NOTE: † Indicates that 208V single and three phase applications make use of a de-rated 230/240V heater.

Table 23: Vertical Unit - Heater Amps

Vertical Heater Amps											
kW	**115V / 1Ø**	**230V / 1Ø**	**277V / 1Ø**	**480V / 1Ø**	**kW**	**240V / 3Ø**	**480V / 3Ø**	**600V / 3Ø**	**kW**	**208V / 1Ø†**	**208V / 3Ø†**
1	8.7	4.3	3.6	2.1	**9**	21.7	10.8	8.7	**0.82**	3.9	-
2	17.4	8.7	7.2	4.2	**15**	36.1	18.0	14.4	**1.64**	7.9	-
3	-	13.0	10.8	6.3	**18**	43.3	-	-	**2.45**	11.8	-
4	34.8	17.4	14.4	8.3	**21**	-	25.3	20.2	**3.27**	15.7	-
5	-	-	-	10.87	**24**	-	28.9	23.1	**4.09**	19.7	-
6	-	26.1	21.7	12.5	**39**	-	46.9	37.5	**4.91**	23.6	-
8	-	34.8	28.9	16.7					**6.54**	31.5	-
10	-	43.5	36.1	20.83					**6.80**	-	18.8
12	-	-	43.3	25.0					**8.18**	39.3	-
19.2	-	-	-	40.0					**11.3**	-	31.3
									13.5	-	37.5

Field Power Wiring

⚠ DANGER

Improper ground may result in severe injury or death.

Check grounding nut tightness before connecting power to the external junction box.

⚠ DANGER

Hazardous voltage. Can cause severe injury or death. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

Wiring must comply with all applicable codes and ordinances. The warranty is voided if wiring is not in accordance with these specifications. An open fuse or starter indicates a short, ground, or overload. Before replacing a fuse or resetting a starter, identify the trouble and correct.

According to the National Electrical Code, a disconnecting means shall be located within sight of and readily accessible from the air conditioning equipment. Power leads must be over-current protected at the point of distribution. The maximum allowable overcurrent protection (MROPD) appears on the unit nameplate.

Supply Power Wiring

1. Allowable voltage tolerances:
   a. 60 Hertz
      – Nameplate 208V: Min. 187V, Max. 229V
      – Nameplate 230V: Min. 207V, Max. 253V
      – Nameplate 460V: Min. 414V, Max. 506V
      – Nameplate 575V: Min. 518V, Max. 633V
2. Minimum Circuit Ampacity (MCA) Calculation is based on the following formulas:

   Sizes 006-050:
   Unit MCA = 1.25 (heater FLA + motor loads)

   Sizes 060-100*:
   Unit MCA = 1.25 (motor loads + transformer load)

   *Electric heat equipped units have dual-source power and MCA/MROPD is calculated separately.
   Electric Heat Section MCA = 1.25 x heater FLA
3. MROPD is calculated per UL 1995 methodology.
4. Size wires in accordance with Table 310-16 or 310-19 of the National Electrical Code.
5. Wires should be sized for a maximum of 3% voltage drop.

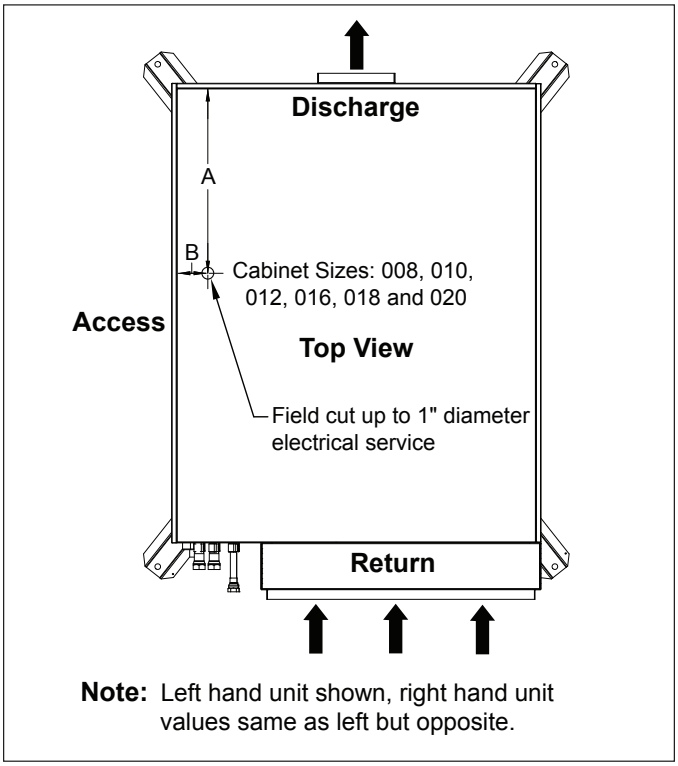
Electrical Installation

1. Electrical service to the fan must correspond to the rated voltage on the motor nameplate and be in conformance with the National Electric Code and local restrictions.
2. The unit metal frame must be connected to the building electrical ground and all wiring must be in conformance with the national electric code and local restrictions.

NOTE: All field wiring penetrations, for both power and controls wiring, must only be made at the factory designated locations on the top, side, or bottom panels. These locations are identified on the panels with a 3/16" pilot hole, and are shown in the following drawings.

3. To make a field wiring connection, use a hole saw to penetrate the double wall panel at the designated locations and install up to a 1" electrical conduit bulkhead connector as shown below. Route the power wires through the conduit connector to the disconnect box and the wire to the control box inside the cabinet.
4. All units are provided with a safety disconnect switch. Unit sizes 006 – 020 are available as single phase only and are provided with a two pole switch. Three phase units, sizes 030 – 050, are provided with a three pole switch.
5. Optional factory provided over current protection is available on all units with a maximum operating current less than or equal to 48 amps. This protection is provided with fuses located on the unit main power circuit. Units with a maximum operating current greater than 48 amps are provided with factory installed fusing on the electric heat circuit only.
6. All field provided controllers must be powered by the unit transformer.
7. All grounds, both AC and DC, are to be consolidated at the unit.
8. A DC common input is not included on the unit. Accordingly, the AC ground and DC ground are the same. Any field provided controller must be compatible with this.

Figure 57: Horizontal Cabinet Sizes 008-020 Field Cut Electrical Service Entry Pilot Hole Location



Note: Left hand unit shown, right hand unit values same as left but opposite.

Table 24: Figure 57 Letter Dimensions

Unit Sizes	Left-Hand		Right-Hand	
	A	B	A	B
008, 010, 012, 016, 018, 020	17.51	1.92	17.51	1.92

Figure 58: Horizontal Cabinet Sizes 030-050 Field Cut Electrical Service Entry Pilot Hole Location

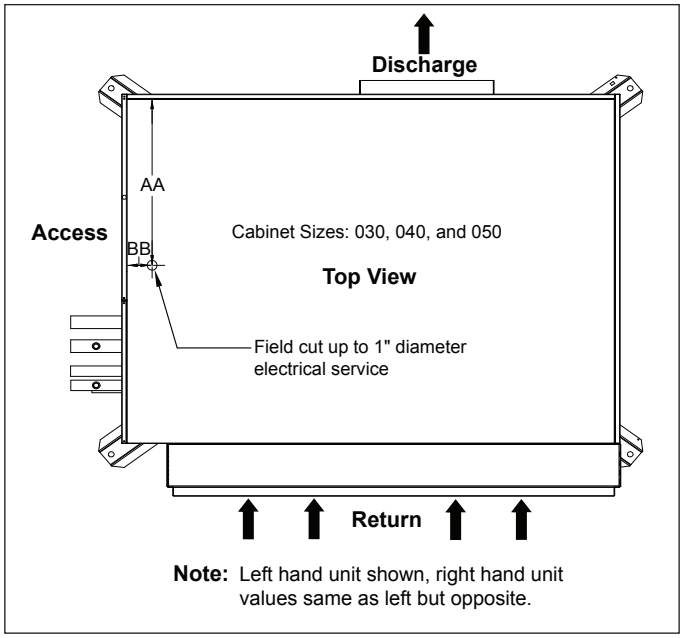
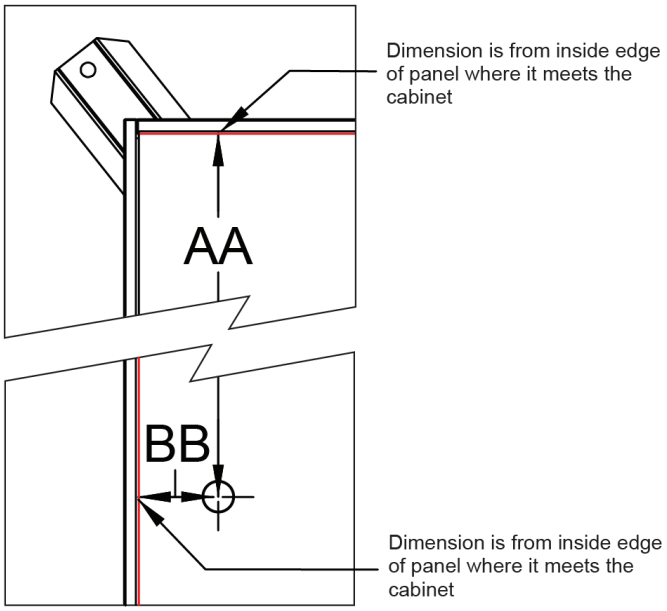


Figure 59: Figure 58 Letter Dimensions



Unit Sizes	Top or Bottom Entry	Left-Hand		Right-Hand	
		AA	BB	AA	BB
030	Top	18.97	2	19	2
	Bottom	18.74	3.45	18.35	3.45
040	Top	21.74	2.31	21.73	1.93
	Bottom	21.03	3.44	21.02	3.44
050	Top	21.46	1.93	21.65	2.63
	Bottom	20.95	3.62	20.95	3.62

Figure 60: Vertical Cabinet Sizes 006-020 Field Cut Electrical Service Entry Pilot Hole Location

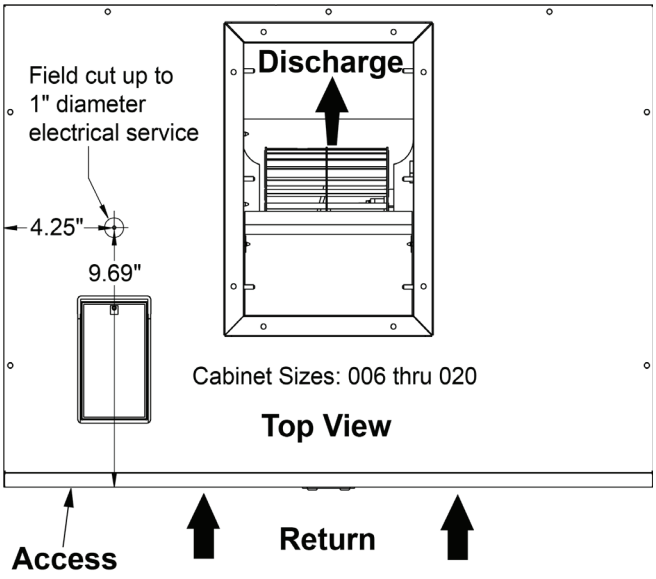


Figure 61: Vertical Cabinet Sizes 030-050 Field Cut Electrical Service Entry Pilot Hole Location

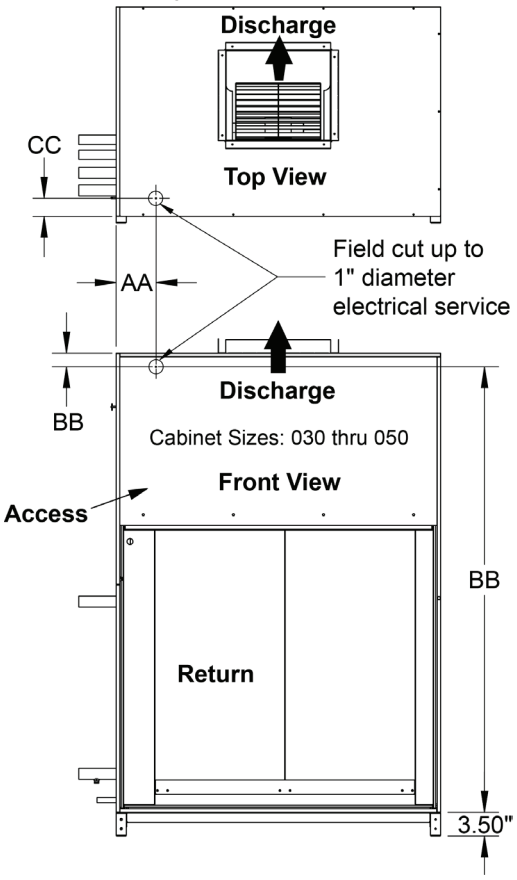


Figure 62: Horizontal Cabinet Sizes 060 - 100 Field Cut Electrical Service Entry Pilot Hole Location (Fan Section)

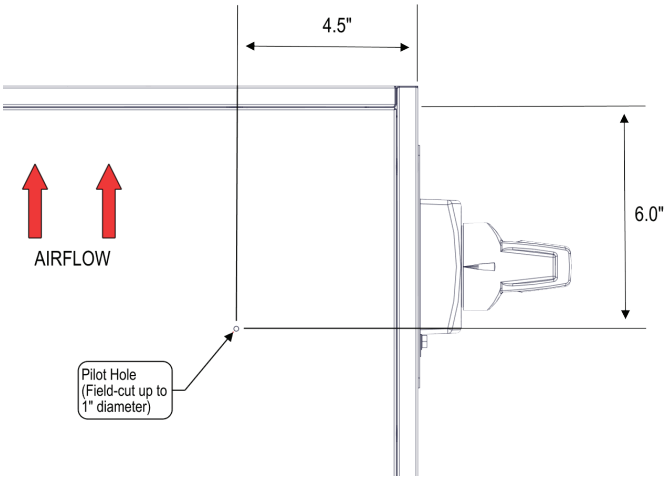
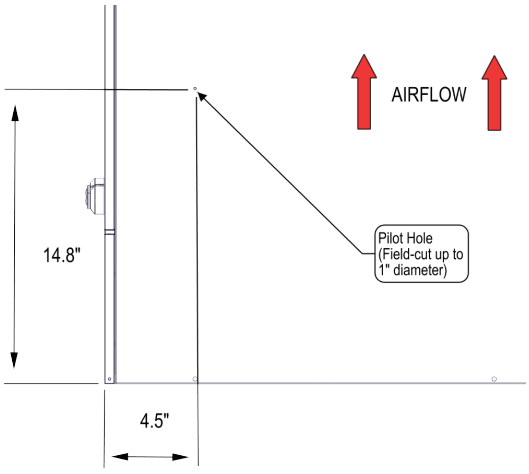


Figure 63: Horizontal Cabinet Sizes 060 - 100 Field Cut Electrical Service Entry Pilot Hole Location (Electric Heat Section)



Electric Heat Control

1. Electric heat control can be factory configured for either on-off or analog control.
2. On-off control requires a 24VAC signal applied to terminal EH 24+ to cycle the electric heat elements.
3. Analog control uses an SCR control module to power the electric elements and requires a 0-10VDC signal applied to terminal EH 0-10V, to modulate heat output.

Valve Control

1 Valve control can be factory configured for either on-off or analog control.
2. On-off control requires a 24VAC signal applied to terminal VLV1 24+ or VLV2 24+ to control the valve.
3. Analog control requires a 0-10VDC signal, applied to terminal VLV1 0-10V or VLV2 0-10V to modulate the valve.

Motor Controls

1. Unit sizes 006 – 020 ship with an EC motor factory configured for either three speed or analog control.
2. The three speed control option provides three separate field adjustable motor speeds that can be activated by applying a 24VAC signal to the appropriate terminal. This allows fan control with a conventional three position fan switch or fan coil style thermostat. The speed terminals in the unit, CALL 1, CALL 2, and CALL 3 correspond to the low, medium and high speed terminals on the switch. Speed adjustment is made at the EVO board by turning the dial adjacent to the speed terminal to change the motor's RPM for that speed.
3. The analog speed control option requires a 0-10VDC signal applied to terminal FAN 0-10V on terminal block TB4 to control motor RPM. 0.0VDC turns the fan off. 1.0VDC is the threshold for turning on the fan and induces the minimum motor RPM. 10.0VDC runs the motor at maximum RPM.

NOTE: Design may call for lower than a 10VDC max signal.

4. Unit sizes 030 – 050 are provided with a factory installed VFD programmed for analog motor speed control. A 0-10VDC signal applied to terminal FAN 0-10V on terminal block TB4 allows motor RPM to be adjusted. VFD settings are programmed at the factory, with motor information inputted.

Damper Control

1. Damper control can be factory configured for either on-off or analog control.
2. On-off control requires a 24VAC signal applied to terminal ACT 24+ to cycle the damper.
3. Analog control requires a 0-10VDC signal applied to terminal ACT 0-10V to modulate the damper.

Figure 64: Terminal Block Layout (Sizes 006-050)

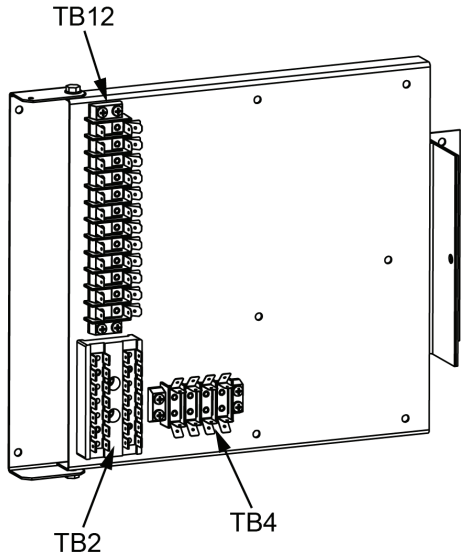
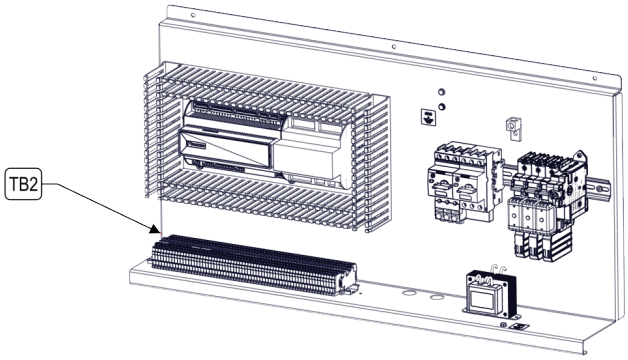


Figure 65: Terminal Block Layout (Sizes 060-100)



Field Control Wiring

⚠ DANGER

LOCKOUT/TAGOUT all power sources prior to wiring or servicing the unit. Electrical shock hazard that may cause severe injury or death. Connect only low voltage NEC Class II circuits to terminal blocks TB2, TB4, and TB12. Reinstall and secure all protective front panels when the wiring installation is complete.

PreciseLine units are available with several control schemes which may require low voltage field wiring. Use the Unit Specific Electrical Schematics to determine which control connections will be required for installation. Check unit specific electrical documentation in the door of the control panel. Table 25 shows the possible field connections that can be made.

Table 25: Potential Field Connections and Locations (Sizes 006-050)

	Label	Description	Signal
TB12	T1	Freezestat	24VAC Contact Closure
	T2	Condensate Overflow	Discrete Contact Closure
	T3	Space Humidity Sensor	0-10 VDC Input
	T4	Compressor 2	24VAC Output
	T5	Discharge Air Temperature	Thermistor Input
	T6	Airflow Switch	24VAC Contact Closure
	T7	Entering Water Temp / Leaving Coil Temp	Thermistor Input
	T8	Duct Static Pressure	0-10 VDC Input
	T9	Duct Static Pressure Power	24 VDC Supply
	T10	Emergency Stop	Discrete Contact Closure
	T11	Remote Space Sensor (CE-)	Remote Space Sensor Communications (CE-)
	T12	Remote Space Sensor (CE+)	Remote Space Sensor Communications (CE+)
TB4	T1	Supply Fan Signal	0-10 VDC Output
	T2	Compressor 1 or Valve 1	24VAC Output / 0-10 VDC Output
	T3	Electric Heat or Valve 2	24VAC Output / 0-10 VDC Output
	T4	Outside Air Damper	0-10 VDC Output
TB2	24+	Supply Voltage	24VAC Output Supply
	Common	Supply Voltage Common	Ground

Table 26: Potential Field Connections and Locations (Sizes 060-100)

	Label	Description	Signal
TB2	24+	Supply Voltage	24VAC Output Supply
	N24	Supply Voltage Common	Ground
	236	Sensor Common	Sensor Common
	+24V	Sensor Power MCB	24VDC Supply MCB
	+24V-A	Sensor Power EXP-A	24VDC Supply EXP-A
	202	Condensate Overflow Switch	Discrete Contact Closure
	208	Outdoor Air Humidity	0-10VDC Input
	208E	Space Humidity Sensor	0-10VDC Input
	208G	Return Air Humidity Sensor	0-10VDC Input
	213	Space CO2	0-10VDC Input
	220	Freeze Stat	24VAC Contact Closure
	222	SCR Electric Heat/Electric Heat Stage 1	0-10VDC Output/24VAC Output
	222C	Chilled Water Valve Output	24VAC Output
	223	Electric Heat Stage 2	24VAC Output
	224	Electric Heat Stage 3	24VAC Output
	225	Electric Heat Stage 4	24VAC Output
	228C	Hot Water Valve Output	24VAC Output
	232A	Dirty Filter Switch	Discrete Contact Closure
	247	Leving Coil Temp	Thermistor Input
	249	Compressor 1/Vlv1 On Off	24VAC Output
	251	Compressor 2	24VAC Output
	254	Compressor 3	24VAC Output
	256	Compressor 4	24VAC Output
	267	Supply Fan Signal	0-10VDC Output
	275	Exhaust Fan Signal	0-10VDC Output
	277	Outdoor Air Damper	0-10VDC Output
	281	Discharge Air Temp	Thermistor Input
	282	Return Air Temp	Thermistor Input
	297	Outdoor Air Temp	Thermistor Input
	299	Emergency Stop	Discrete Contact Closure
	2120	Air Flow Switch	24VAC Contact Closure
	2124	Duct Static Pressure	0-10VDC Input
	2130	Damper End Switch	Discrete Contact Closure
	2133	Return Air Damper	0-10VDC Output
	2140	VAV Box Output	24VAC Output
	2150	Modulating Chilled Water Valve	0-10VDC Output

PreciseLine units operate with 115V and 24V control circuit power. All field control wiring connections are made at the class II terminal blocks TB2, TB4, and TB12 which is located in the Low Voltage Control Panel, shown in Figure 64 and Figure 65.

NOTE: The installation of all field wiring, must comply with all applicable local codes and ordinances. The warranty may be limited or certain aspects excluded if the field wiring is not in accordance with these standards.

If a single conduit containing 24V and 115V wiring is run above the roofline between units, consider the 24V wiring within as an NEC Class I wiring system.

Emergency Stop

The terminals TB12-T10 & TB2-Ground on sizes 006-050 and TB2-299 & TB2-236 on sizes 060-100 can be used for any field supplied component that requires a unit emergency stop. When these terminals are used, the factory installed jumper must be removed.

Accessories and Sensors

Integrated Thermostat

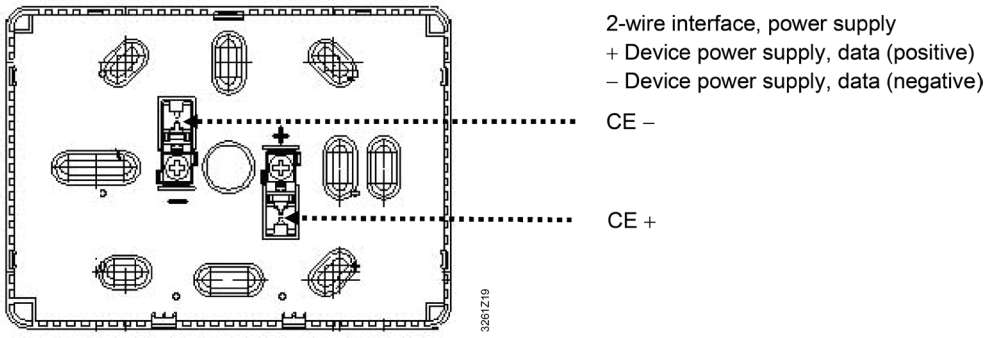


Mounting considerations:

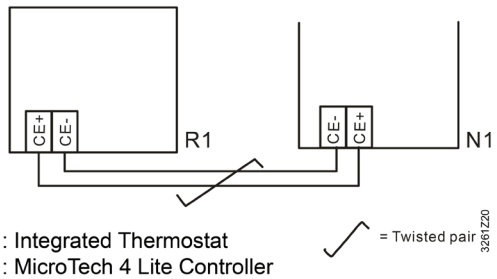
- The device is suitable for semi-flush mounting with a recessed conduit box.
- The unit should not be mounted in recesses, shelving, behind curtains or doors or above or near direct heat sources.
- Avoid direct sun and draught.
- The conduit must be sealed on the device side, as currents of air in the conduit can affect the sensor reading.
- Local installation regulations must be observed.

Use a flathead screwdriver to gently pry the front covering to access the terminals shown in Figure 67.

Figure 66: Integrated Thermostat Terminal Layout

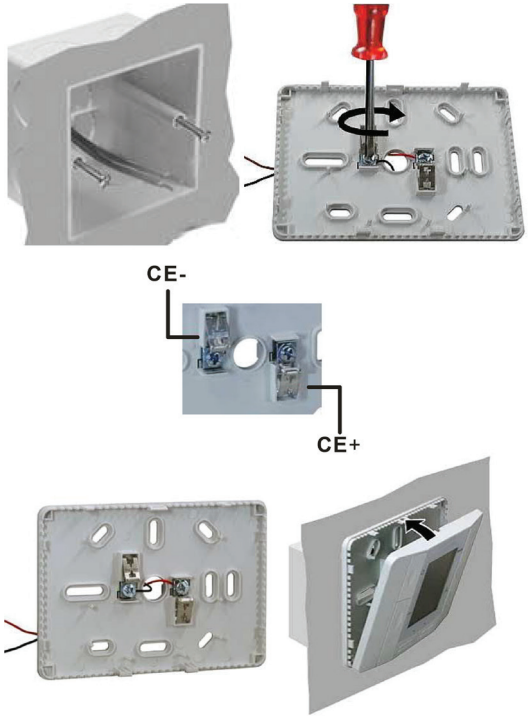


Wiring diagram The example below shows the room unit connected to Microtech 4 Lite controller.



R1: Integrated Thermostat
N1: MicroTech 4 Lite Controller

Figure 67: Thermostat Installation



Economizer Space Humidity Sensor

NOTICE

Do not use sensors in areas with possible acid fumes or chemical vapors that can corrode sensor metal parts or with volatatile or explosive gases.

The sensor(s) can be mounted to the inner wall of the duct or space as illustrated in Figure 68.

Figure 68: Economizer Space Humidity Sensor Installation

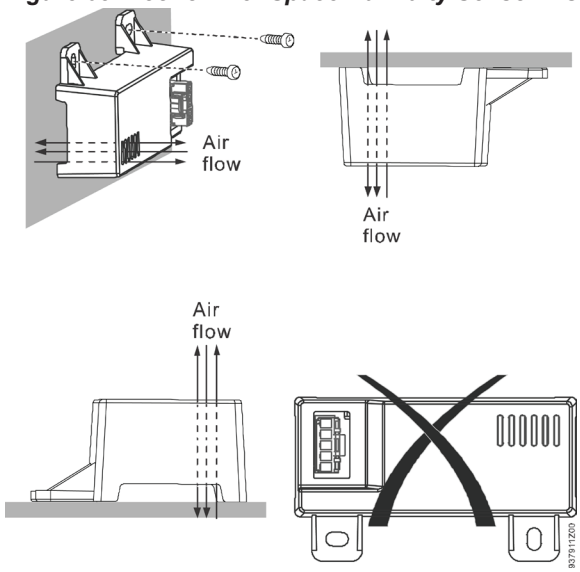
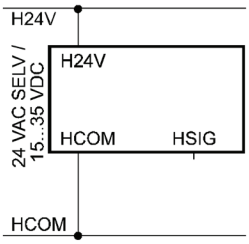


Figure 69: Economizer Space Humidity Sensor Terminal Layout

H24V	Operating voltage 24 VAC (-25 %…+30 %) or 15…35 VDC
HSIG	Relative humidity signal output 0...10 VDC



Connect the wires to the sensor as follows.

- ► H23V - 24VDC Supply
- ► HCOM - Sensor Common / Ground
- ► HSIG - Space Humidty Sensor

Duct Static Pressure Sensor



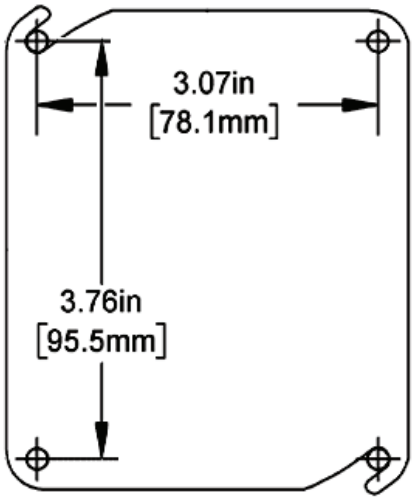
Additional Required Parts:

- (4) #10 x ¾" self-tapping sheet metal screws
- ¼" tubing (1/8" to 3/16" I.D.)
- Duct pressure tap
- Minimum 3-conductor shielded 22AWG wire

Installation

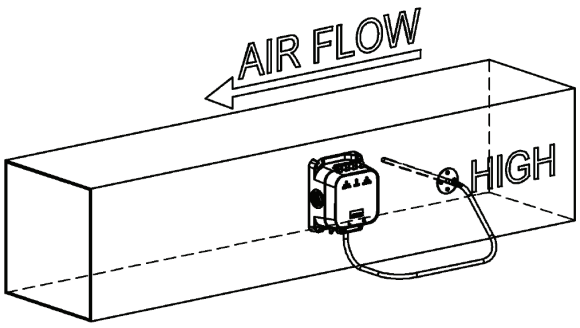
- All wiring must comply with the National Electric Code (NEC) and local codes. Do NOT run any of this device's wiring in the same conduit as other AC power wiring. Tests show that fluctuating and inaccurate signal levels are possible when AC power wiring is present in the same conduit as the signal lines. If you are experiencing any of these difficulties, please contact your Daikin Applied representative.

Figure 70: Drill Holes Mounting Locations



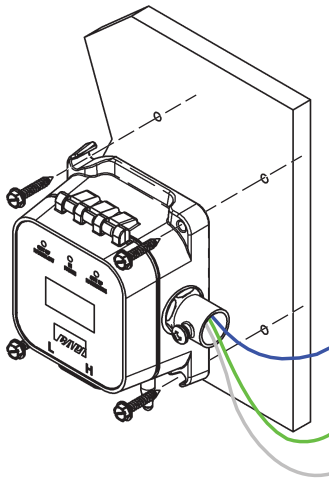
- Use the sensor as a template to locate and mark the mounting holes.
- Locate the field provided duct pressure tap near the end of a long duct to ensure that all terminal box take-offs along the run have adequate static pressure. The tap should be in a non-turbulent flow area of the duct. Keep it several duct diameters away from take-off points, bends, neckdowns, attenuators, vanes, or other irregularities that may create turbulent air flow.

Figure 71: Sensor Location In Supply Duct



- Mount sensor on the supply duct near the location selected for the duct pressure. See Figure 71.

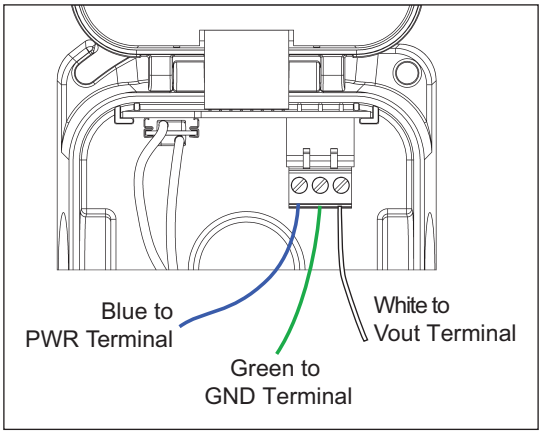
Figure 72: Secure Sensor with Provided Screws



Connect the wires to the sensor as follows: See Figure 73.

- ► White to Vout - DSP Input
- ► Green to GND - Sensor Common/Ground
- ► Blue to PWR - 24VDC Supply

Figure 73: Connect Wires to Sensor Terminals



- Run 3-conductor wire from the sensor location to the unit. Daikin Applied recommends using shielded 22AWG for all connections. Larger gauge wire may be required for runs of greater than 250'.
- Connect the field provided tube between the tap and the high pressure (H) port on the sensor.
- The sensor has internal setting options. For proper operation the setting must be as follows: Also refer to Figure 74.

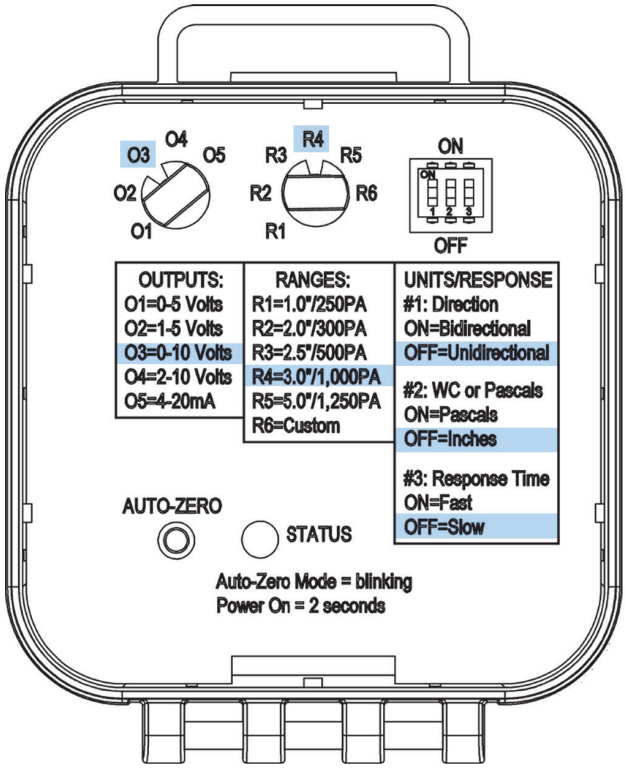
- ► OUTPUTS = 0-10 Volts
- ► RANGES = 3.0"/1,000PA
- ► UNITS/RESPONSE

  #1: Direction = OFF = Unidirectional

  #2: WC or Pascales = OFF=Inches

  #3: Response Time = OFF=Slow

Figure 74: Sensor Operation Settings



Space CO2 Sensor

Installation

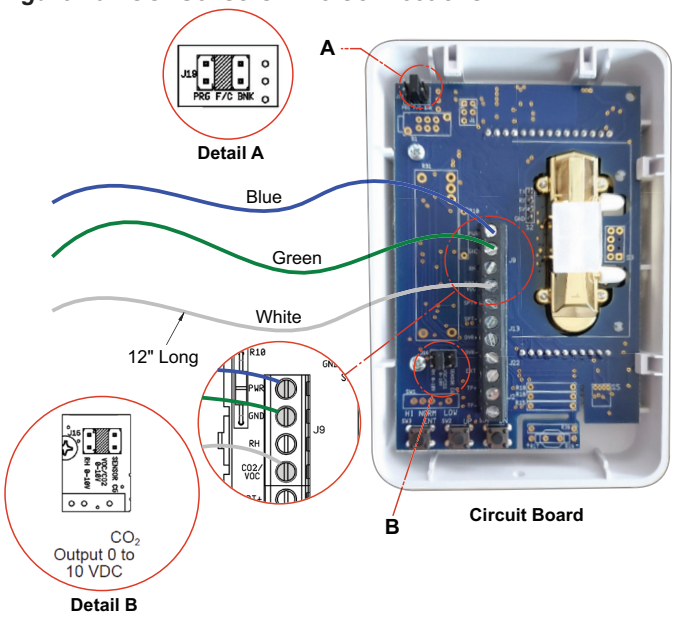
- All wiring must comply with the National Electric Code (NEC) and local codes. Do NOT run any of this device's wiring in the same conduit as other AC power wiring. Tests show that fluctuating and inaccurate signal levels are possible when AC power wiring is present in the same conduit as the signal lines. If you are experiencing any of these difficulties, please contact your Daikin Applied representative.
- Mount sensor in desired location. The location should be selected to provide a typical representation of the space CO2 level. Do no place near heat generating equipment, operable windows, supply/return duct terminals or other features that could affect sensor measurement.
- Run (2) minimum 2- conductor wires from the sensor location to the unit. Daikin Applied recommends using shielded 22AWG for all connections and a separate twisted pair for the power wire connections. The shield should be earth grounded only at the power source. Larger gauge wire may be required for runs greater than 250'.

⚠ CAUTION

The AC power wiring at terminals [PWR] & [GND] should be run in a separate twisted shielded pair to avoid fluctuating and inaccurate signal levels induced into the other sensor signal wires. This sensor AC power can be run in the same conduit with the sensor signal wire as long as it's run in twisted, shielded pair and terminated properly.

- Connect the wires to the sensor as follows:
  - ► Blue to PWR - 24VAC Supply
  - ► Green to GND - Ground
  - ► White to CO_2/VOC - Space CO_2 Input

Figure 75: CO_2 Sensors Wire Connections

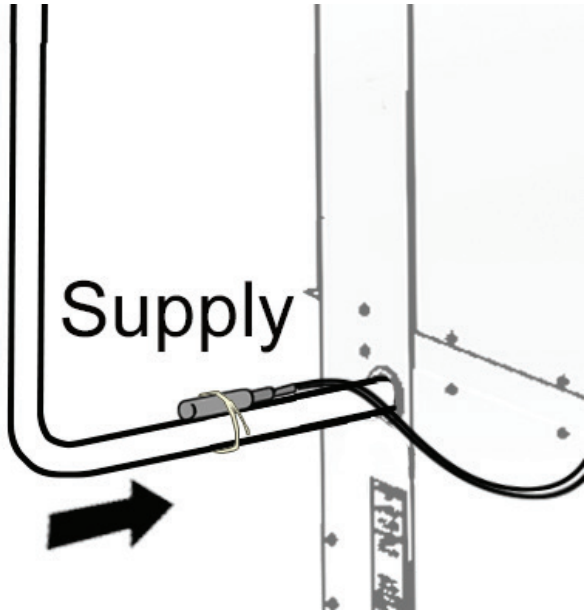


Entering/Leaving Water and Space Temperature Sensor

Mount sensor on water piping as shown in Figure 76 using the zip ties. Wrap the sensor and pipe with the insulation.

Ideally the sensor should be located on the water supply line in an area where there is continuous water flow. This sensor must be attached correctly on 2-Pipe chilled water/hot water changeover units for proper unit operation.

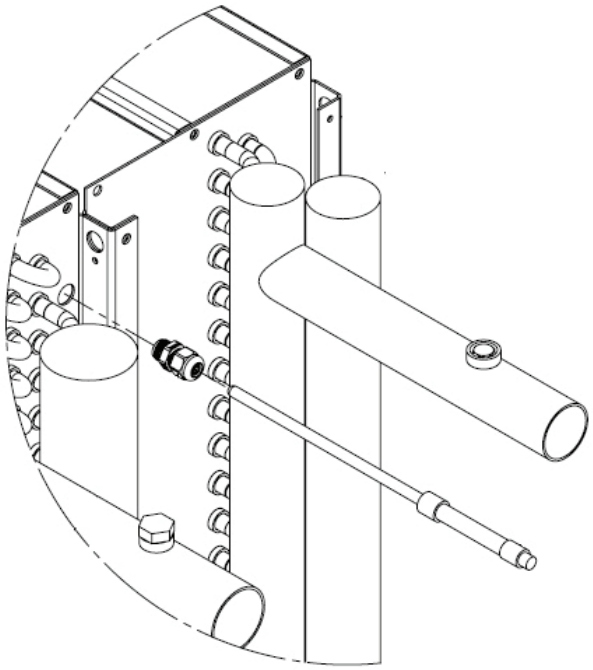
Figure 76: Sensor Mounting Location



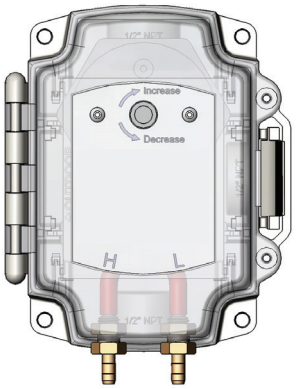
Leaving Coil Temperature Sensor

This sensor needs to be installed downstream of the cooling coil but upstream of the heating coil on units with dehumidification that have either modulating cooling valves or 2/4 compressor stages. A 1/2" hole needs to be field drilled in the endplate to install the included plug for mounting the sensor.

Figure 77: Leaving Coil Temperature Sensor Install



Air Flow Switch



Installation

- Two field provided duct pressure taps will be required to install this sensor. Locate one tap in the ductwork upstream of the fan and the second downstream of the fan.
- Mount sensor on the entering are duct near the location selected for the duct pressure. See Figure 79.
- Connect the field provided tube between the down stream port and the high pressure (H) port on the sensor, and between the up stream tap to the low pressure (L) port on the sensor.
- Run the wires from the sensor location to the unit.
- Connect the first wire from the Normally Open terminal on the sensor to TB4-T6. Connect the second wire from the Common terminal on the sensor to TB4-Common.

Figure 78: Mounting Holes Locations

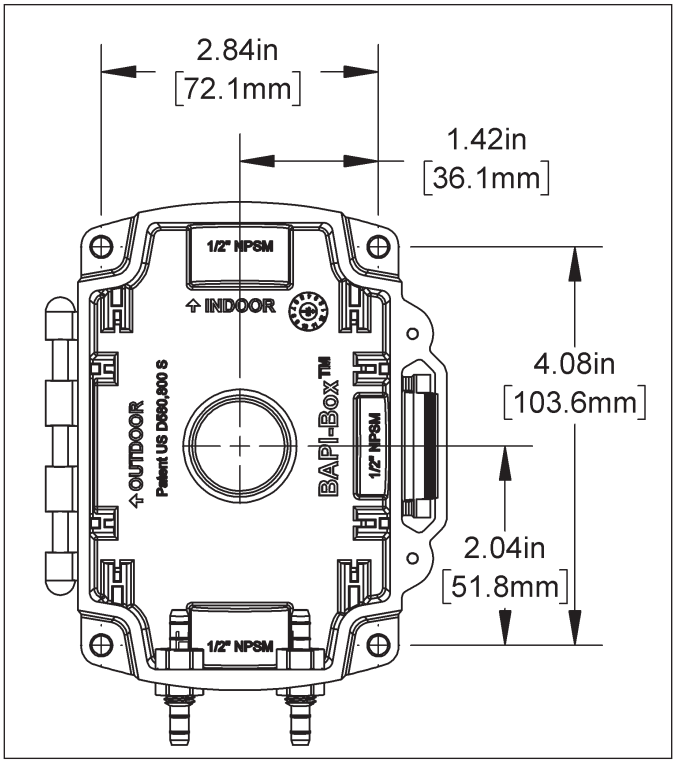


Figure 79: Air Flow Switch and Sensing Probe Locations

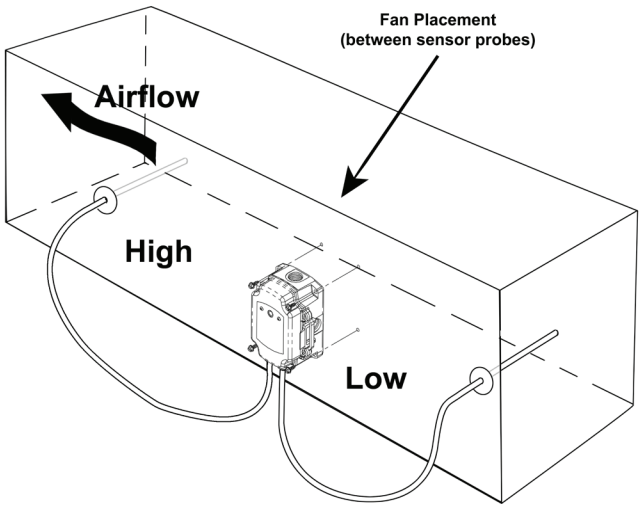
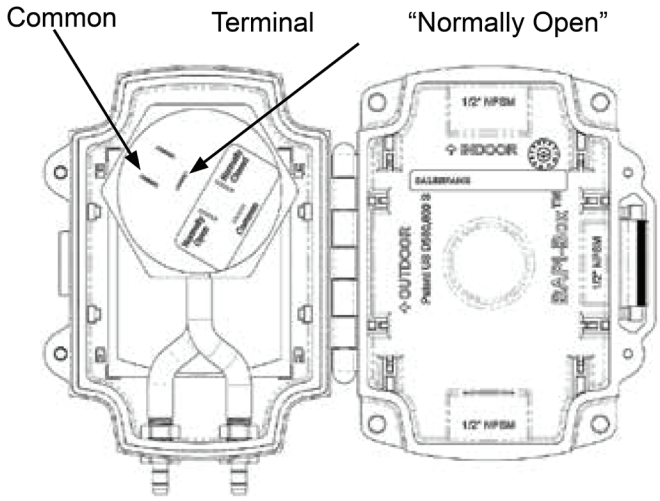


Figure 80: Sensor Terminals



Duct Pressure Taps

Units that the fan will control to a duct static pressure require a reading, which requires that pressure taps be field installed and plumbed back to the pressure sensors in the unit. When required, these sensors will be field installed.

Carefully locate and install the field provided pressure tap. Improperly locating or installing the tap may cause unsatisfactory operation of the building VAV system. Consider the following pressure tap location and installation recommendations. The installation must comply with all applicable local code requirements.

1. Install a tee fitting with a leak-tight removable cap in each tube near the sensor fitting. This facilitates connecting a manometer or pressure gauge if testing is required.
2. Differentiate between the duct pressure (HI) and reference pressure (LO) taps by using different color tubing or by tagging the tubes. Daikin Applied recommends 3/16" I.D. plastic tubing.
3. Locate the duct pressure (HI) tap near the end of a long duct to ensure that all terminal box take-offs along the run have adequate static pressure.
4. Locate the duct pressure tap in a non-turbulent flow area of the duct. Keep it several duct diameters away from take-off points, bends, neckdowns, attenuators, vanes, or other irregularities that may create turbulent air flow.
5. Use a static pressure tip or the bare end of the plastic tubing for the duct tap. (If the duct is lined inside, use a static pressure tip device.)
6. Install the pressure tap so that it senses only static pressure (not velocity pressure). If a bare tube end is used, it must be smooth, square (not cut at an angle) and perpendicular to the airstream.
7. Locate the reference pressure (LO) tap somewhere near the duct pressure tap within the building.
8. If the reference pressure tap is not connected to the sensor, unsatisfactory operation will result.

Discharge Air Temperature Sensor

The discharge air temperature sensor should be installed in the supply air duct, downstream of the PreciseLine unit. Locate the sensor at a location that approximates the average duct temperature. To avoid the affects of radiation, the sensor should not be in direct line of sight with the electric heat elements. Generally, locate the sensor 5-10' from the unit discharge and after one duct turn to allow for air mixing. Do not install downstream of VAV boxes or other dampers.

1. Drill a 3/8" diameter hole in the duct, insert the temperature probe and secure plate to duct using 2-#8 screws.
2. Be sure to apply gasket or sealant to back of mounting plate prior to screwing the plate to the duct to create an air tight seal.

Figure 81: Temperature Sensor Installation

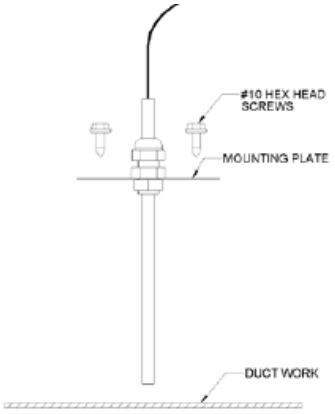
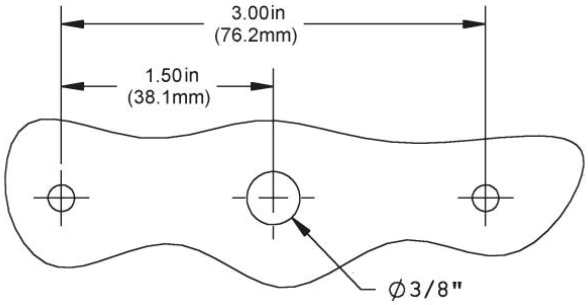


Figure 82: Temperature Sensor Mounting Measurements



MicroTech® 4 Lite Portable Interface

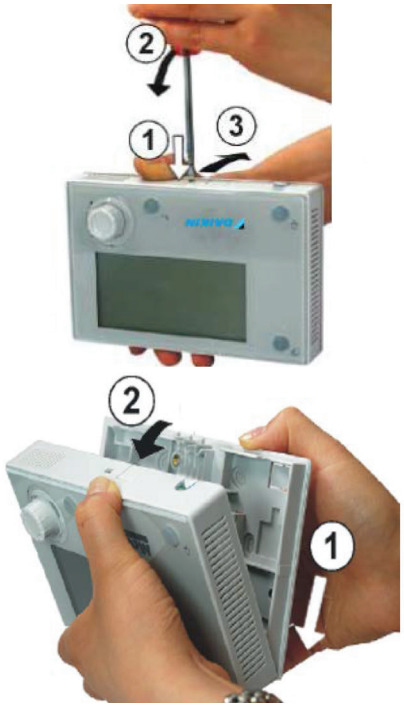
⚠ WARNING

Electric shock hazard. Can cause death, personal injury, or equipment damage.

This equipment must be properly grounded. Connections and service to the MicroTech 4 Lite unit controller must be performed only by personnel knowledgeable in the operation of the equipment being controlled.

1. Remove plastic cover (Figure 83).
2. Mount the portable interface. The portable interface can be either panel mounted or wall mounted.

Figure 83: Removing the Cover



Direct Connection

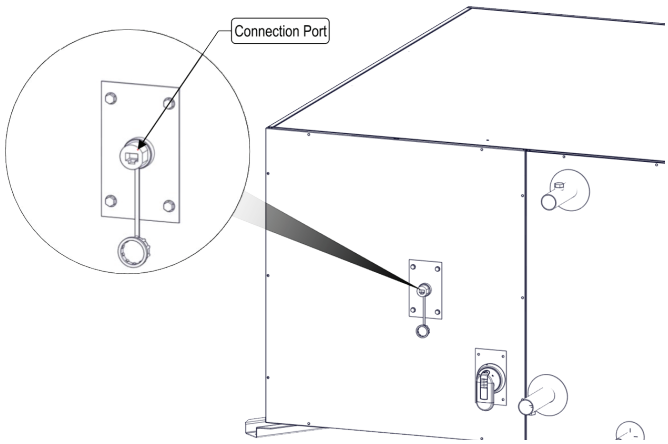
The portable interface can be wired directly to a single MicroTech 4 Lite unit controller over a standard RJ45 (Ethernet) connection.

1. Locate the external RJ45 plug shown in Figure 84
2. Follow Figure 84 for connection details. Note the distance limitations provided.
3. Cycle power to the unit(s) once the wiring of the portable interface is complete.

Interface Details for RJ45 Connector:

- Bus connection - RJ45 Interface
- Max length of shielded cable: 164 ft (50 m)
- Max length of unshielded cable: 9.8 ft (3 m)
- Cable type: standard Ethernet cable

Figure 84: Connection Port (Size 030 Shown)



Using the Portable Interface

Hardware Features

The portable interface keypad/display consists of an 8-line by 30 character display, a “push and roll” navigation wheel, and three buttons: Alarm, Home (Menu), and Back (Figure 85).

- Turn the navigation wheel clockwise (right) or counterclockwise (left) to navigate between lines on a screen and also to increase and decrease changeable values when editing. Press down on the wheel to use it as an Enter button.
- Press the Back button to display the previous page.
- Press the Home button to return to the main screen from the current page.
- Press the Alarm button to view the Alarm Lists menu.

Keypad/Display Features

The first line on each page includes the page title and the line number to which the cursor is currently “pointing.” The line numbers are X/Y to indicate line number X of a total of Y lines for that page. The left most position of the title line includes an “up” arrow to indicate there are pages “above” the currently displayed items, a “down” arrow to indicate there are pages “below” the currently displayed items or an “up/down” arrow to indicate there are pages “above and below” the currently displayed page. Each line on a page can contain status-only information or include changeable data fields. When a line contains status-only information and the cursor is on that line, all but the value field of that line is highlighted meaning the text is white with a black box around it. When the line contains a changeable value and the cursor is at that line, the entire line is highlighted.

Each line on a page may also be defined as a “jump” line, meaning pushing the navigation wheel will cause a “jump” to a new page. An arrow is displayed to the far right of the line to indicate it is a “jump” line and the entire line is highlighted when the cursor is on that line.

NOTE: Only menus and items that are applicable to the specific unit configuration are displayed.

Figure 85: Portable Interface Main Features

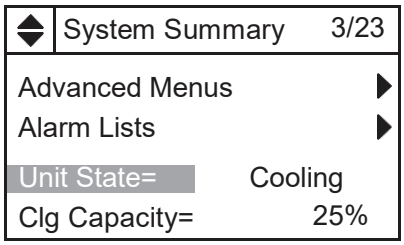


Keypad/Display Functions

The keypad/display Information is organized into five main menus or menus groups; Alarm Lists Menu, System Summary Menu, Standard Menus, Extended Menus and Advance Menus.

NOTE: Only menus and items that are applicable to the specific unit configuration are displayed.

Figure 86: Keypad Controls



The Alarm Lists Menu includes active alarm and alarm log information. The System Summary Menu includes status information indicating the current operating condition of the unit. Standard Menus include basic menus and items required to setup the unit for general operation. These include such things as control mode, occupancy mode and heating and cooling setpoints. Extended Menus include more advanced items for “tuning” unit operation such as PI loop parameters and time delays. Advanced Menus include the most advanced items such as “unit configuration” parameters and service related parameters. These generally do not need changing or accessing unless there is a fundamental change to or a problem with the unit operation.

Passwords

When the keypad/display is first accessed, the Home Key is pressed, the Back Key is pressed multiple times, or if the keypad/display has been idle for the Password Timeout timer (default 10 minutes), the display will show a “main” page where the user can enter a password or continue without entering a password.

Various menu functions are accessible or inaccessible, depending on the access level of the user, and the password they enter, if any. There are four access levels, including no password, Level 2, Level 4, and Level 6, with Level 2 having the highest level of access. Without entering a password, the user has access only to basic status menu items. Entering the Level 6 password (5321) allows access to the Alarm Lists Menu, Quick Menu, and the View Status Unit Menus group. Entering the Level 4 password (2526) allows similar access as Level 6 with the addition of the Commission Unit Menu, Manual Control, and Service Menu groups. Entering the Level 2 password (6363) allows similar access as Level 4 with the addition of the Unit Configuration Menu. To access the advanced menu, you need to enter a level 2 password and set the enable advanced menu flag to Yes in the service menu.

Continuing without entering one of these three levels allows access only to the Alarm Lists Menu and the System Summary Menu.

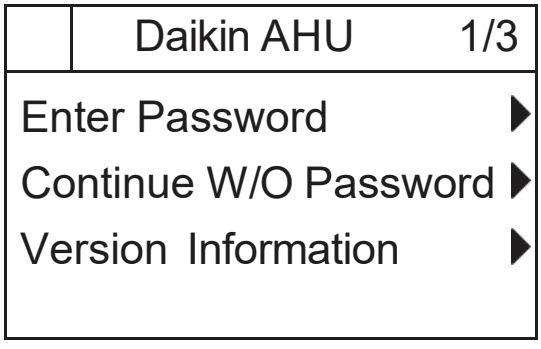
NOTE: Alarms can be acknowledged without entering a password.

The password field initially has a value **** where each * represents an adjustable field. These values can be changed by entering the Edit Mode.

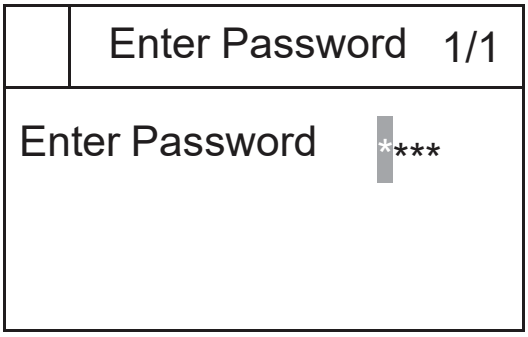
Entering an invalid password has the same effect as continuing without entering a password.

Once a valid password has been entered, the controller allows further changes and access without requiring the user to enter a password until either the password timer expires or a different password is entered. The default value for this password timer is 10 minutes. It is changeable from 3 to 30 minutes via the Timer Settings menu in the Extended Menus.

Figure 87: Password Main Page



Password Entry Page



Navigation Mode

In the Navigation Mode, when a line on a page contains no editable fields all but the value field of that line is highlighted meaning the text is white with a black box around it. When the line contains an editable value field the entire line is inverted when the cursor is pointing to that line.

When the navigation wheel is turned clockwise, the cursor moves to the next line (down) on the page. When the wheel is turned counter-clockwise the cursor moves to the previous line (up) on the page. The faster the wheel is turned the faster the cursor moves.

When the Back Button is pressed the display reverts back to the previously displayed page. If the Back button is repeatedly pressed the display continues to revert one page back along the current navigation path until the “main menu” is reached.

When the Menu (Home) Button is pressed the display reverts to the “main page.”

When the Alarm Button is depressed, the Alarm Lists menu is displayed.

Edit Mode

The Editing Mode is entered by pressing the navigation wheel while the cursor is pointing to a line containing an editable field. Once in the edit mode pressing the wheel again causes the editable field to be highlighted. Turning the wheel clockwise while the editable field is highlighted causes the value to be increased. Turning the wheel counter-clockwise while the editable field is highlighted causes the value to be decreased.

The faster the wheel is turned the faster the value is increased or decreased. Pressing the wheel again cause the new value to be saved and the keypad/display to leave the edit mode and return to the navigation mode.

MicroTech 4 Lite Unit Operation

Preparing Unit for Operation

Power-up

There is a 115 VAC control circuit transformer and several 24VAC circuit transformers within the unit to control the various loads and sensors within the unit. See as-built schematics that are sent with the unit to familiarize yourself with the various features and control circuits.

NOTE: Unit ships with factory installed jumpers in the emergency stop circuit between terminals TB12-T10 and TB2-Ground on size 006-050 and TB2-299 and TB2-236 on sizes 060-100.

Fan Only

The unit enters the Fan Only operating state after the power up and anytime there is no requirement for heating, cooling, or dehumidification. Once entering the Fan Only state of operation the unit will then, based on sensor inputs transition into any of the remaining states of operation - heating, cooling, economizer, econo-cooling, or dehumidification.

Fan Operation

Within 30 seconds (default configurable) on units configured for an airflow status switch, the controller expects to get feedback from the switch that the fans are operating properly. If MCB-the controller does receive that feedback, the controller assumes the fans did not start. It then shuts down the unit and generates an alarm. Units configured for DPS control, the supply fan(s) is modulated to maintain the duct static pressure setpoint.

Two-Positions Damper Operation

On units equipped with a two-position outdoor air damper, the outdoor air damper will be commanded open any time the fan is running in the occupied state.

Economizer Operation

If the unit is equipped with a 0-100% modulating economizer and the conditions are suitable for free cooling, the unit attempts to satisfy the cooling load by using the outdoor air economizer before using mechanical cooling.

The transition to economizer operation will occur if all the following are true:

- The control temperature rises above the occupied cooling setpoint by more than half the occupied cooling deadband
- The economizer operation is not disabled

Compressor Operation

Single Compressor

In this configuration a single output is used for compressor control. When mechanical cooling is required, it will be energized. When mechanical cooling is no longer required, it will be de-energized.

Two Compressors

When cooling is required, the Compressor 1 output will be energized. When mechanical cooling is no longer required, it will be de-energized. If Compressor Stages is 2, the compressor 2 output will be energized when the control temperature reaches the active cooling setpoint plus the compressor cooling differential. If the Compressor 2 output is energized and the control temperature falls below the active cooling setpoint + Compressor Cooling Differential – Unoccupied Off Differential, then Compressor 2 output will de-energize.

Four Compressors

When Compressor Stages is 4, the controller will use a PI control to stage the 4 compressor stages.

If the Supply Fan Control is ‘Constant Speed’, the PI loop will stage to control to space temperature. If the Supply Fan Control is ‘Duct Static Pressure’ or ‘Single Zone VAV’, the PI loop will stage to control discharge air temperature to the Cooling Discharge Air Temperature Setpoint.

The compressor outputs Compressor 1, Compressor 2, Compressor 3, and Compressor 4 each represent 25% of the heating capacity.

- When cooling output is >0%, Compressor 1 will be energized and it will be de-energized when the cooling output is 0%.
- When cooling output is >25% Compressor 2 will be energized and it will be de-energized when the cooling output is 20%.
- When cooling output is >50% Compressor 3 will be energized and it will be de-energized when the cooling output is 45%.
- When cooling output is >75% Compressor 4 will be energized and it will be de-energized when the cooling output is 70%.

Compressor Staging

For all compressor configurations, when mechanical cooling is no longer required, all outputs will be de-energized subject to minimum on times. Additionally, when a stage of cooling is de-energized, the interstage timer will start and the next stage of cooling will not be initiated or deactivated until the interstage timer expires.

Minimum Compressor On/Off Time

When a compressor is turned off, it must remain off for the duration of the Compressor Minimum Off Time. When a compressor is turned on, it must remain on for the duration of the Compressor Minimum On Time. After initial power up of the controller, clearing of a fault, or transition from unoccupied, all compressors must remain off for the duration of the Compressor Minimum Off Time plus a randomly (at each power up) generated value of up to 60 additional seconds. This prevents multiple units from turning on their compressors at the same time when power is applied. If Compressor Minimum On Time or Compressor Minimum Off Time is '0' then that functionality is disabled.

Lead Compressor Selection

If Lead Compressor Configuration is Run Hours, when a compressor is needed to satisfy the cooling requirement, the controller will turn on the compressor with the lowest total runtime. If Lead Compressor Configuration is Compressor 1, when a compressor is needed to satisfy the cooling requirement, the controller will turn on the compressors in numerical order. Compressors will be turned off in the reverse order that they were turned on.

VAV Box Signal/Fan Operation Signal

Digital Output #6 (MCB-T4-DO6) will be energized any time the fan is running.

Dehumidification Operation

In dehumidification mode, mechanical cooling is used to cool air low enough to lower the moisture content of the air and then reheat it to comfort conditions. Dehumidification is only available on units with a reheat coil that are equipped with space humidity, discharge air temperature, and (when necessary) leaving coil temperature sensors.

Passive Dehumidification

Passive dehumidification can be field-enabled on constant air volume units with space humidity sensors, but without reheat coils. Passive dehumidification can be used to reduce the supply fan speed when the unit is cooling and the space humidity is above the dehumidification setpoint.

Dehumidification Initiation

An analog sensor is mounted in the space to sense Relative Humidity. Active dehumidification is disabled when the unit is in the cooling or heating state. Passive dehumidification is only available when the unit is in the cooling state. When dehumidification is enabled, operation is initiated when Humidity Control is set to either Relative Humidity or Dew Point and that value rises above the appropriate setpoint by more than half its deadband.

Dehumidification Termination

Dehumidification is terminated if the selected variable, Relative Humidity or Dew Point, drops below the appropriate humidity setpoint by more than half its dead band plus the appropriate differential. Dehumidification is also terminated if cooling is disabled for any reason or the unit enters either the Heating or Cooling state.

Chilled/Hot/Changeover Water Valve Operation

Two-Position On/Off Valves

Appropriate valve will be open when cooling or heating is required and closed when it is not.

Modulating Valves

When cooling or heating is required, valves will modulate open or closed to meet demand. For Single Zone VAV and DSP fan control, the valve will modulate to maintain a discharge air temperature. For constant speed fan control, the valve will modulate to maintain a control temperature (space, return, or an average of the two).

Valve Action

Valve control is factory configured to be direct or reverse acting based on how they were ordered. If necessary, this can be configured in the field using the controller's operation manual.

Entering Water Temperature Sampling

Units with a changeover chilled/hot water valve come with an entering water temperature sensor (field installed for certain applications) required to ensure that the water temperature is adequate for the appropriate mode of operation. On a call for heating or cooling, the valve will be opened to a minimum position and the water temperature monitored. If the temperature is deemed to be adequate within 2 minutes, normal operation will occur. If the temperature is deemed to be inadequate, the mode of operation (heating/cooling) will be locked out for 2 hours.

Electric Heat Operation

Single Stage Electric Heat

Electric heat will be enabled when heating is required and off when it is not.

4 Stage/SCR Electric Heat

When heating is required, the heating output will stage/modulate on/off to meet demand. For Single Zone VAV and DSP fan control, the electric heat output will modulate to maintain a discharge air temperature. For Constant Speed fan control, the electric heat output will modulate to maintain a control temperature (space, return, or an average of the two).

Servicing High Voltage Control Panel Components

⚠ DANGER

LOCKOUT/TAGOUT all power sources prior to servicing the unit. Hazardous voltage may cause serious injury, death, and property damage. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

Disconnect all electric power to the unit when servicing control panel components. Unless power is disconnected to the unit, the components remain energized. Always inspect units for multiple disconnects to ensure all power is removed from the control panel and its components before servicing.

Before Start-up

1. Verify that the unit is completely and properly installed with ductwork connected.
2. Verify that all construction debris is removed, and that the filters are clean.
3. Verify that all electrical work is complete and properly terminated.
4. Verify that all electrical connections in the unit control panel and compressor terminal box are tight, and that the proper voltage is connected.
5. Verify all nameplate electrical data is compatible with the power supply.
6. Verify the phase voltage imbalance is no greater than +/- 3%.
7. Manually rotate all fans and verify that they rotate freely.
8. Verify all fasteners on the fan assemblies are still tight.
9. Verify that the evaporator condensate drain trap is installed and that the drain pan is level.
10. If unit is curb mounted, verify that the curb is properly flashed to prevent water leakage.
11. Before attempting to operate the unit, review the control layout description to become familiar with the control locations.
12. Review the equipment and service literature, the sequences of operation, and the wiring diagrams to become familiar with the functions and purposes of the controls and devices.
13. Determine which optional controls are included with the unit.

Initial Manual Mode Start-Up

Initial Start-up should be performed in manual control mode before proceeding to the cooling/heating start up.

Power Up

1. Close the unit disconnect switch. Power should now be supplied to the control panel, and the LEDs on MCB1 should follow the normal startup sequence.

Supply Fan Start-up

1. Verify all duct and unit mounted isolation dampers are open.
2. Place the unit in the Off Mode in order to initiate the Manual Control Mode through the keypad menu. **Main Menu\Manual Control\Ctrl Mode = Off**
3. Place the unit into Manual Control Mode through the keypad menu **Main Menu\Manual Control\Manual Ctrl = Enabled**
4. Activate the fan through the keypad menu **Main Menu\ Manual Control\SAF Cap Cmd = 40%**
    a. Check Fan rotation for proper rotational direction
4. Speed the fan up through the keypad menu **Main Menu\ Manual Control\SAF Cap Cmd = 100%**
    a. Check the manual motor protectors or that the circuit breakers have not tripped.
    b. Check the phase monitor.

OA Damper Start-up

1. Open the outdoor air damper through the keypad menu: **Main Menu\Manual Control\OA Damper Pos=30%.**
    a. Verify that the OA damper position moved and the Return air damper (if present) also moved.
    b. Leave OA damper Open for next step

Exhaust Fan Start-up

1. Verify all duct and unit mounted isolation dampers are open.
2. Activate the fan through the keypad menu **Main Menu\ Manual Control\Exh Fan Cmd = 40%**
    a. Check fan rotation for proper rotational direction
3. Speed the fan up through the keypad menu **Main Menu\ Manual Control\Exh Fan Cap Cmd = 100%**
    a. Check the manual motor protectors or that the circuit breakers have not tripped.
    b. Check the phase monitor.

Leaving Manual Control when complete through the keypad menu: **Main Menu\Manual Control\Manual Ctrl = Normal**

Cooling/Heating Start up

NOTICE

Operational Override using the Manual Ctrl Type commands should only be used by trained service technicians as several timing functions are reduced to speed system check out. The Manual Ctrl Type commands should only be used for a short period of time for testing of the unit's operation by a trained service technician. The Manual Ctrl Type should be returned to Normal to allow for normal unit operation. If Manual Ctrl Type is left as something other than Normal after system check out, the unit may be damaged. If no modifications have been made to the controller for 30 minutes, the Manual Ctrl Type will revert to Normal When in Operational Override, the modified time values listed in Table 27 will be used

Table 27: Operational Override Time Values

Control Parameter	Modified Time
Duct Static Pressure Control Delay	5 Seconds
Compressor Minimum On Time	6 Seconds
Compressor Minimum Off Time	6 Seconds
Condensate Overflow Alarm Delay	2 Seconds
Cooling Interstage Time	6 Seconds
Heating Interstage Time	6 Seconds

Economizer/OA Damper and Cooling Start-up

1. Verify all duct and unit mounted isolation dampers are open.
2. Place the unit in the Off mode in order to initiate the Manual Control Mode through the keypad menu: **Main Menu\Manual Control\Ctrl Mode = Off**
3. Place the unit into Override Cooling Mode through the keypad menu: **Main Menu\Manual Control\Manual Ctrl Type = Cooling**
    a. The fan will activate
    b. If present, the economizer/OA damper will open
    c. If present, the chilled water valves will open
    d. If present all compressor outputs will stage on

Alternativly, individual outputs can be commanded to on using the Output Override functionality. See MicroTech 4 Lite Operations Manual for more information.

Heating Startup

1. Verify all duct and unit mounted isolation dampers are open.
2. Place the unit in the Off mode in order to initiate the Manual Control Mode through the keypad menu: **Main Menu\Manual Control\Ctrl Mode = Off**
3. Place the unit into Override Cooling Mode through the keypad menu: **Main Menu\Manual Control\Manual Ctrl Type = Heating**
    a. The fan will activate
    b. If present, the hot water valves will open
    c. If present electric heat outputs will stage on

Alternativly individual outputs can be commanded on using the Output Override functionality. See the MicroTech 4 Lite Operations Manual for more information.

Setup for Normal Operation

When all start-up procedures are completed, set the controls and program the MicroTech 4 Lite controller for normal operation. Use the following list as a guide; some items may not apply to your unit.

1. Set the heating and cooling parameters as required for normal unit operation.
    a. **Main Menu\Commission Unit\Unit Set-Up\Ctrl Temp Scr = Space, Return, Average** based on application needs.
    b. **Main Menu\Commission Unit\Cooling Set-Up\Occ Clg Spt** & **DAT Clg Spt**.
    c. **Main Menu\Commissioning Unit\Heating Set-Up\Occ Htg Spt** & **DAT Htg Spt.**
2. Set the low ambient compressor lockout setpoint as required in menu, **Main Menu\Commission Unit\Cooling Set-up\Clg Lo Oat Lk =**. Do not set it below 50°F (10°C) unless the unit is equipped for low ambient operation.
3. Set the compressor lead/lag function as desired using keypad menu **Main Menu\Advanced Menus\Cooling Set-up\Lead Compressor**
4. Set the duct static pressure control parameters as required in keypad menu **Main Menu\Quick Menu\ SAF DSP Spt =___ in.** based on application and unit configuration.
5. Set the EF Control Parameters based on the application
    a. If EF Control = Tracking, then set the fan tracking parameters as required in keypad menu. **Main Menu\ Commission Unit\EF Set-up\Min EF Cap, Max EF Cap**
    b. If **Main Menu\ Commission Unit\EF Set-up\EF Ctrl = Constant**, Set the constant exhaust fan speed as required in keypad menu location **Main Menu\ Advanced Menus\EF Set-Up\EF Const Speed Setpt= %** based application and unit configuration.
8. Set the Outside air damper and economizer control parameters as required in keypad menu **Main Menu\ Commission Unit\Econo Set-Up**
    a. Set the OAD Min and OAD Max positions
    b. Set the OAD Out Scaling based on application and unit configuration
    c. Set the Econo Strategy based on application and unit configuration
    d. Set the Econo OAT Setpt, Temp Diff Setpt, Out Enth Setpt, or Enth Diff Setpt based on application and unit configuration
    e. If the unit is performance DCV (Demand Control Ventilation), go to: **Main Menu\Commission Unit\ C02 Set-Up**. set the Min OA CO2 Spt = lower

threshold of CO2 allowed and Max OA CO2 Spt = upper threshold of CO2 allowed.

9. Set the control timers as required in keypad menu **Main Menu\Commission Unit\Timer Settings.**
    a. Set the date and time in keypad menu **Set-up\ Service\Time\Date\.**
    b. Set the operating schedule as required using keypad menus. **Main Menu\ViewStatus\Date\ Time and Date\Time\Schedules.**

NOTE: When used with a Building Automation System, these settings may need to be kept at the default of no schedule.

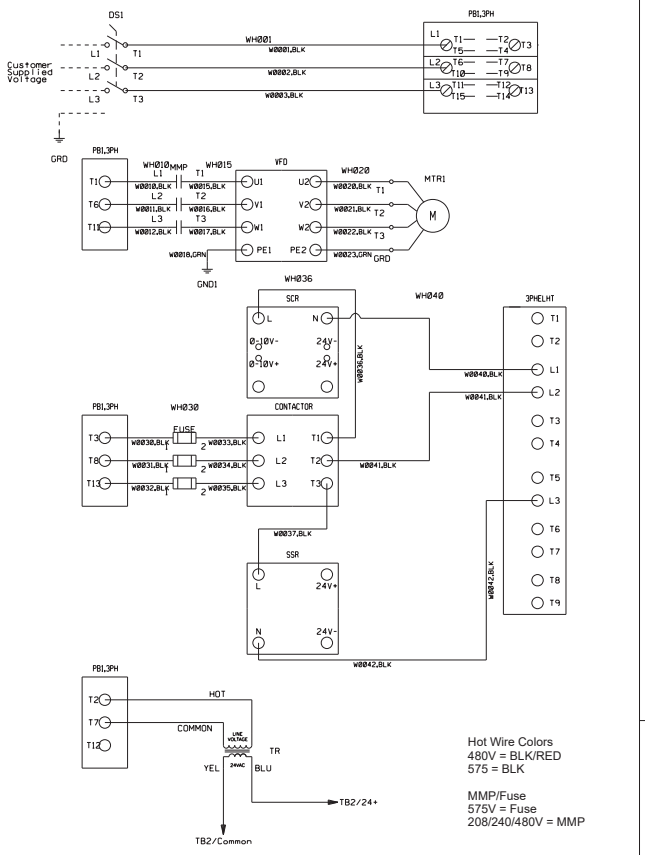
Maintaining Control Parameter Records

Daikin Applied recommends that the MicroTech 4 Lite controller's setpoints and parameters be recorded and saved for future reference. If the Microprocessor Control Board requires replacement, this record facilitates entering the unit's proper data.

Example Wiring Diagrams

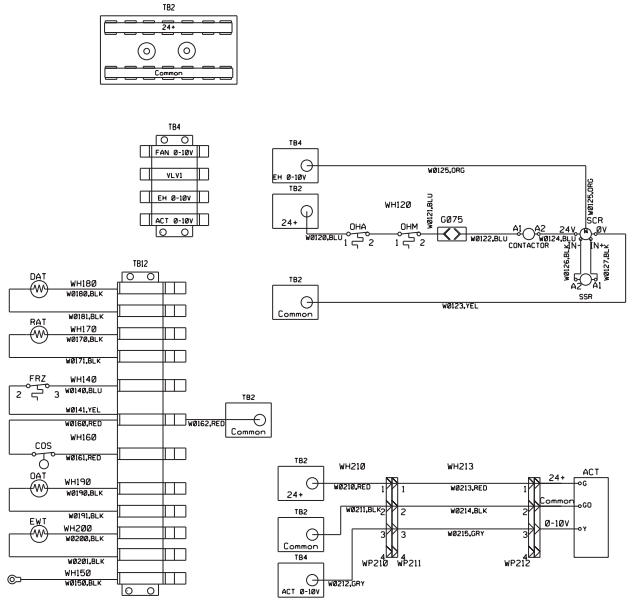
NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit.

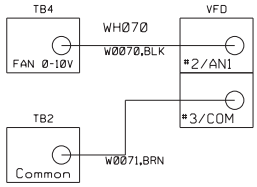
3 Phase Power, SCR Electric Heat, No Valve, Modulating Damper, VFD Fan



Hot Wire Colors
480V = BLK/RED
575 = BLK

MMP/Fuse
575V = Fuse
208/240/480V = MMP



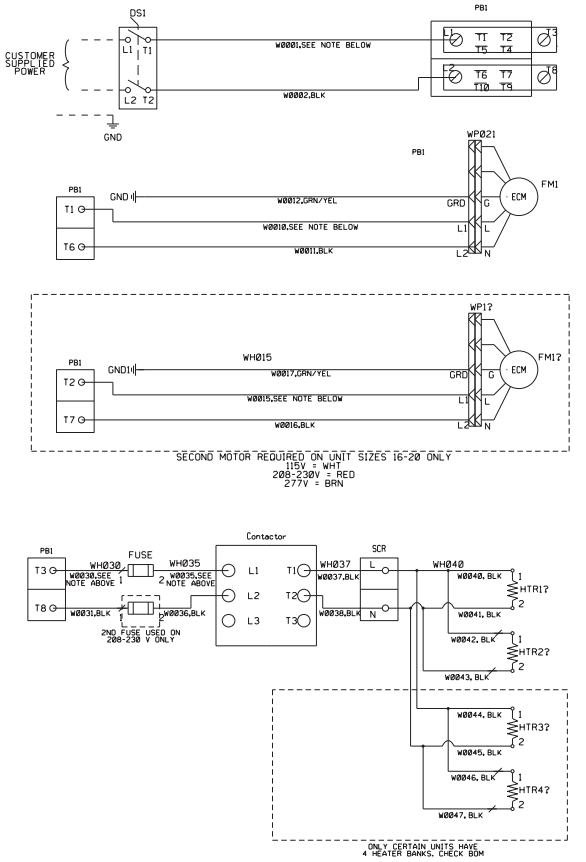


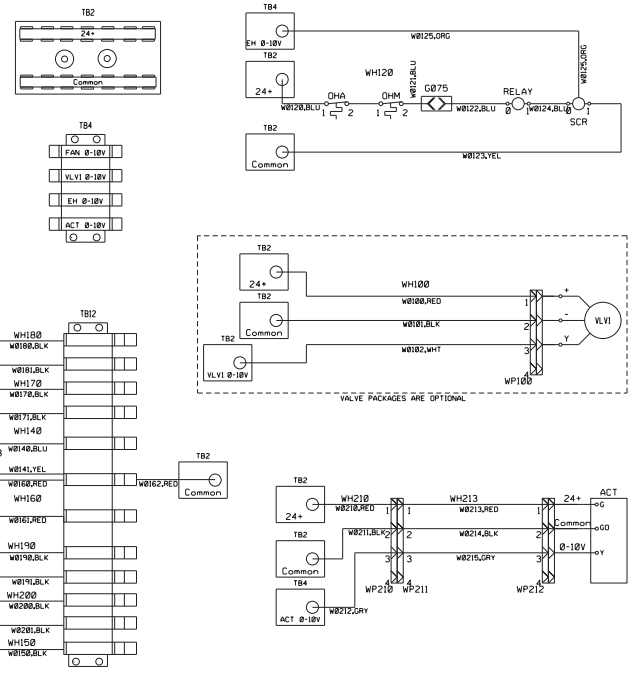
Legend: (Devices may or may not be on unit)

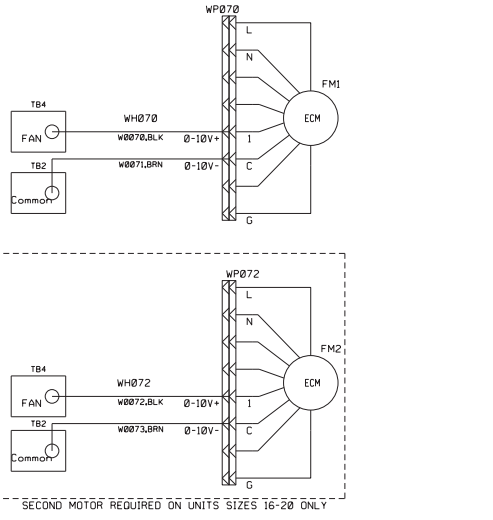
ACT	Mixing Box Damper Actuator	PB1	Main Power Distribution Block
COS	Condensate Overflow Switch/Sensor	PB2	Electric Heat Power Distribution Block
DAT	Discharge Air Temperature Sensor	PB3	24VAC Power Distribution Block
DS	Disconnect Switch	TB4	EC Motor Control Terminal Block
EB	MicroTech III I/O Expansion Board	TB5	Intermediate Electric Heat Terminal Block
EWT	Entering Water Temperature	TB6	No Controls Terminal Block
FM1-2	Fan Motor	RAT	Return Air Temperature Sensor
FRZ	Freeze Alarm Switch	R1-2	Electric Heater Power Relay
FSW	Fan 3-Speed Switch	R3	Electric Heater Control Relay
G075	Quick Connect Splice	TS1-2	Thermal Switch (Intermediate Electric Heat)
HTR1-4	Electric Heater Elements	TS3	Thermal Switch (Automatic Change Over)
LVB	Low Voltage Control Board	TR	Control Transformer
MIII	MicroTech III Control Board	VSV1-2	Coil Valve Actuator (Primary or Secondary)
NCB	Network Communication Board	Wxxx	Wire
OAT	Outside Air Temperature Sensor	WHxxx	Wire Harness
OHA	Automatic High Temp Cutout Switch	WPxxx	Wire Plug
OHM	Manual High Temp Cutout Switch	WNxxx	Wire Nut

NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit.

1 Phase Power, SCR Electric Heat, Modulating Valve, Modulating Damper, Modulating Fan

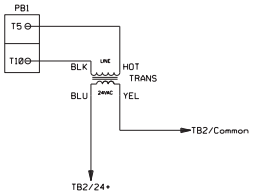






Legend: (Devices may or may not be on unit)

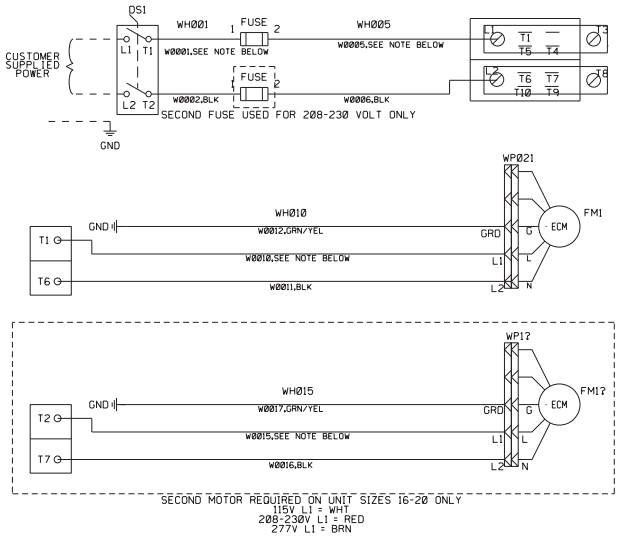
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VSV1-2	Coil Valve Actuator (Primary or Secondary)
Wxxx	Wire
WHxxx	Wire Harness
WPxxx	Wire Plug
WNxxx	Wire Nut

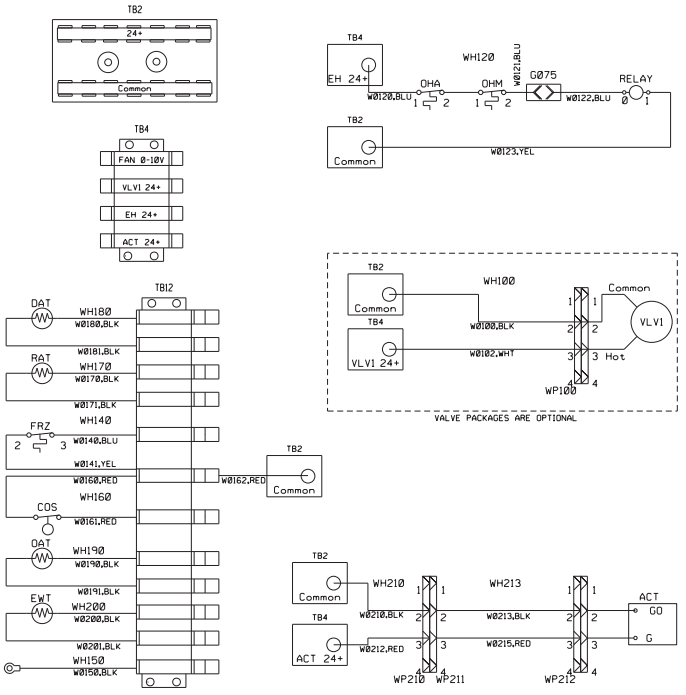


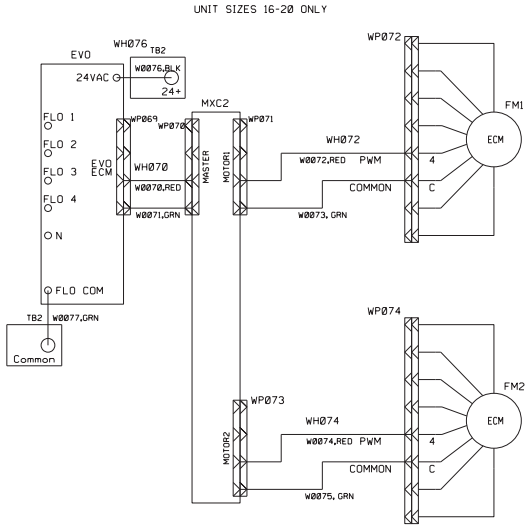
Hot Wire Colors
115 = WHT
208 = RED
240 = ORG
277 = BRN

NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit.

1 Phase Power, On-Off Electric Heat, On-Off Valve, On-Off Damper, 3-Speed Fan







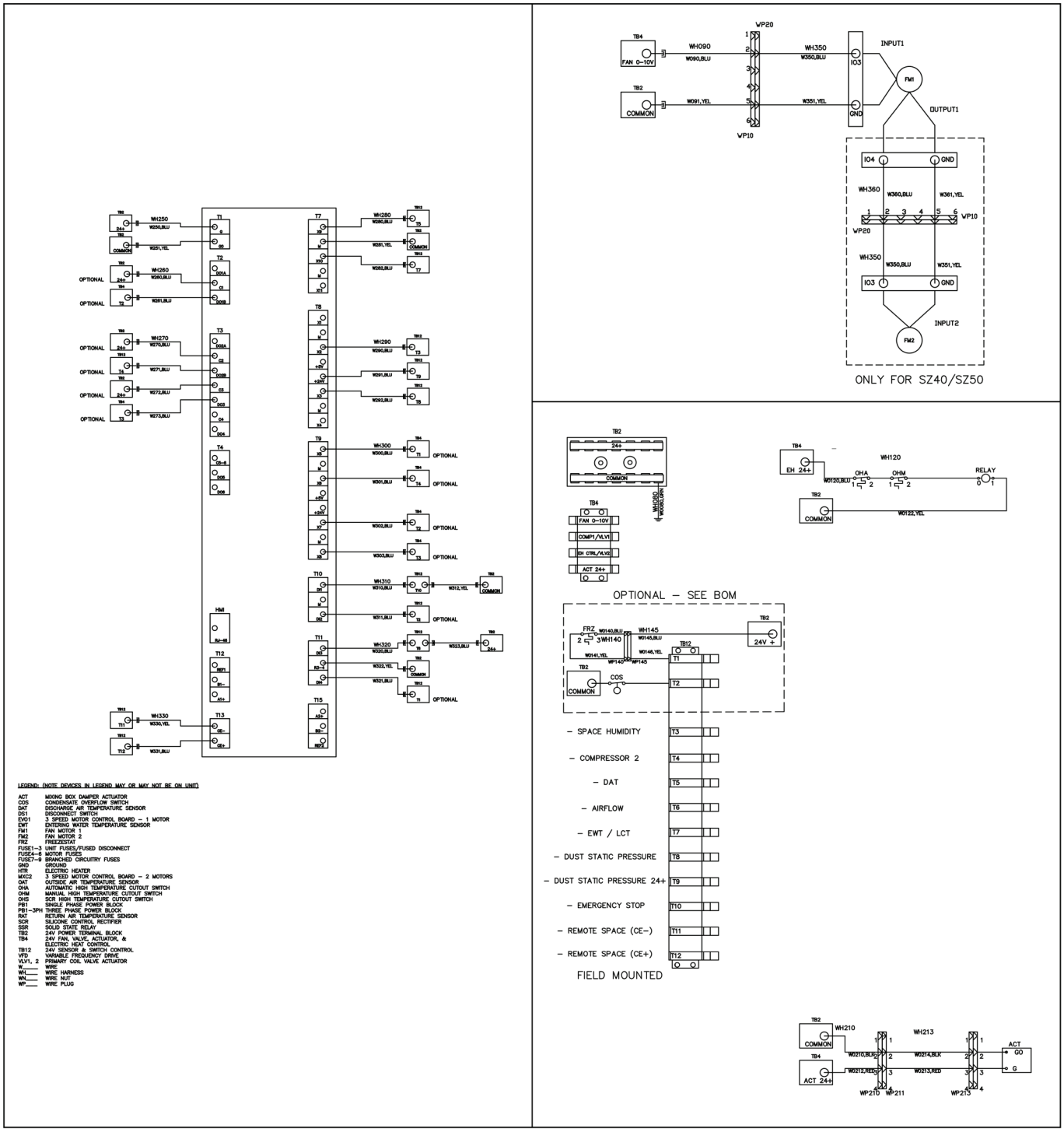
Hot Wire Colors
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240 = ORG
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Legend: (Devices may or may not be on unit)

ACT	Mixing Box Damper Actuator	PB1	Main Power Distribution Block
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DAT	Discharge Air Temperature Sensor	PB3	24VAC Power Distribution Block
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OHA	Automatic High Temp Cutout Switch	WPxxx	Wire Plug
OHM	Manual High Temp Cutout Switch	WNxxx	Wire Nut

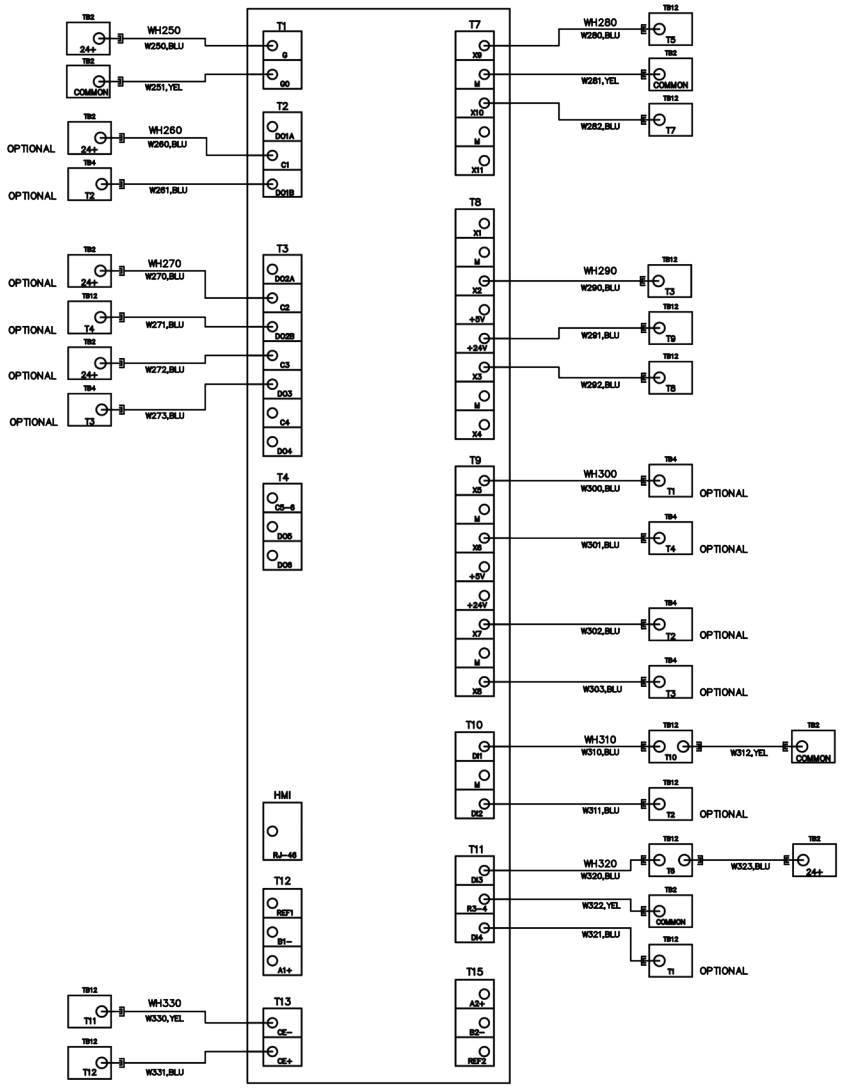
NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit

3-Phase Power, Welded Aluminum Airfoil Plenum Fan, On-Off Electric Heat, On/Off Damper, Fused



NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit

MicroTech 4 Lite Controller for Sizes 006-050

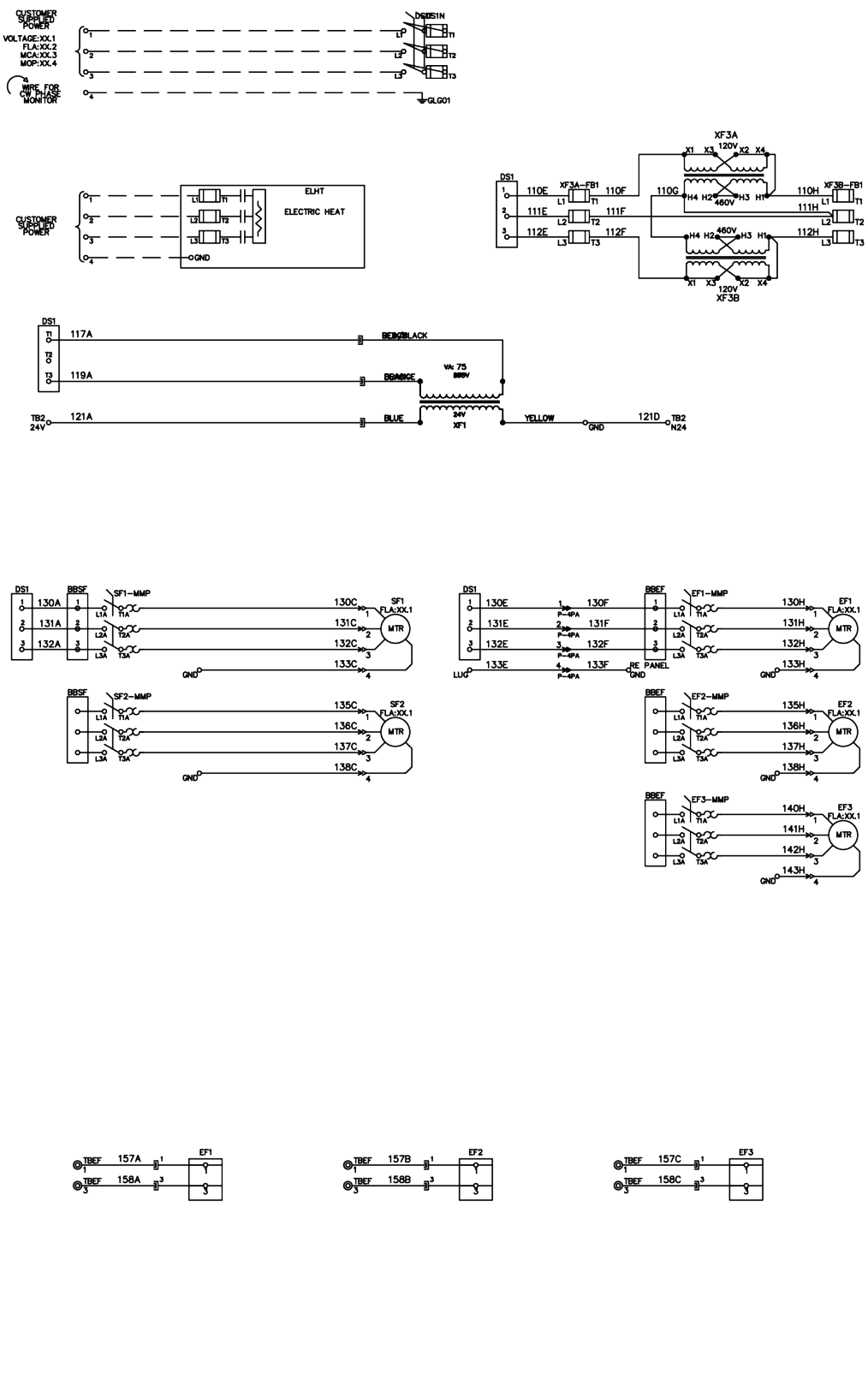


LEGEND: (NOTE DEVICES IN LEGEND MAY OR MAY NOT BE ON UNIT)

ACT	MIXING BOX DAMPER ACTUATOR
COS	CONDENSATE OVERFLOW SWITCH
DAT	DISCHARGE AIR TEMPERATURE SENSOR
DS1	DISCONNECT SWITCH
EVO1	3 SPEED MOTOR CONTROL BOARD – 1 MOTOR
EWT	ENTERING WATER TEMPERATURE SENSOR
FM1	FAN MOTOR 1
FM2	FAN MOTOR 2
FRZ	FREEZESTAT
FUSE1–3	UNIT FUSES/FUSED DISCONNECT
FUSE4–6	MOTOR FUSES
FUSE7–9	BRANCHED CIRCUITRY FUSES
GND	GROUND
HTR	ELECTRIC HEATER
MXC2	3 SPEED MOTOR CONTROL BOARD – 2 MOTORS
OAT	OUTSIDE AIR TEMPERATURE SENSOR
OHA	AUTOMATIC HIGH TEMPERATURE CUTOUT SWITCH
OHM	MANUAL HIGH TEMPERATURE CUTOUT SWITCH
OHS	SCR HIGH TEMPERATURE CUTOUT SWITCH
PB1	SINGLE PHASE POWER BLOCK
PB1–3PH	THREE PHASE POWER BLOCK
RAT	RETURN AIR TEMPERATURE SENSOR
SCR	SILICONE CONTROL RECTIFIER
SSR	SOLID STATE RELAY
TB2	24V POWER TERMINAL BLOCK
TB4	24V FAN, VALVE, ACTUATOR, & ELECTRIC HEAT CONTROL
TB12	24V SENSOR & SWITCH CONTROL
VFD	VARIABLE FREQUENCY DRIVE
VLV1, 2	PRIMARY COIL VALVE ACTUATOR
W____	WIRE
WH____	WIRE HARNESS
WN____	WIRE NUT
WP____	WIRE PLUG

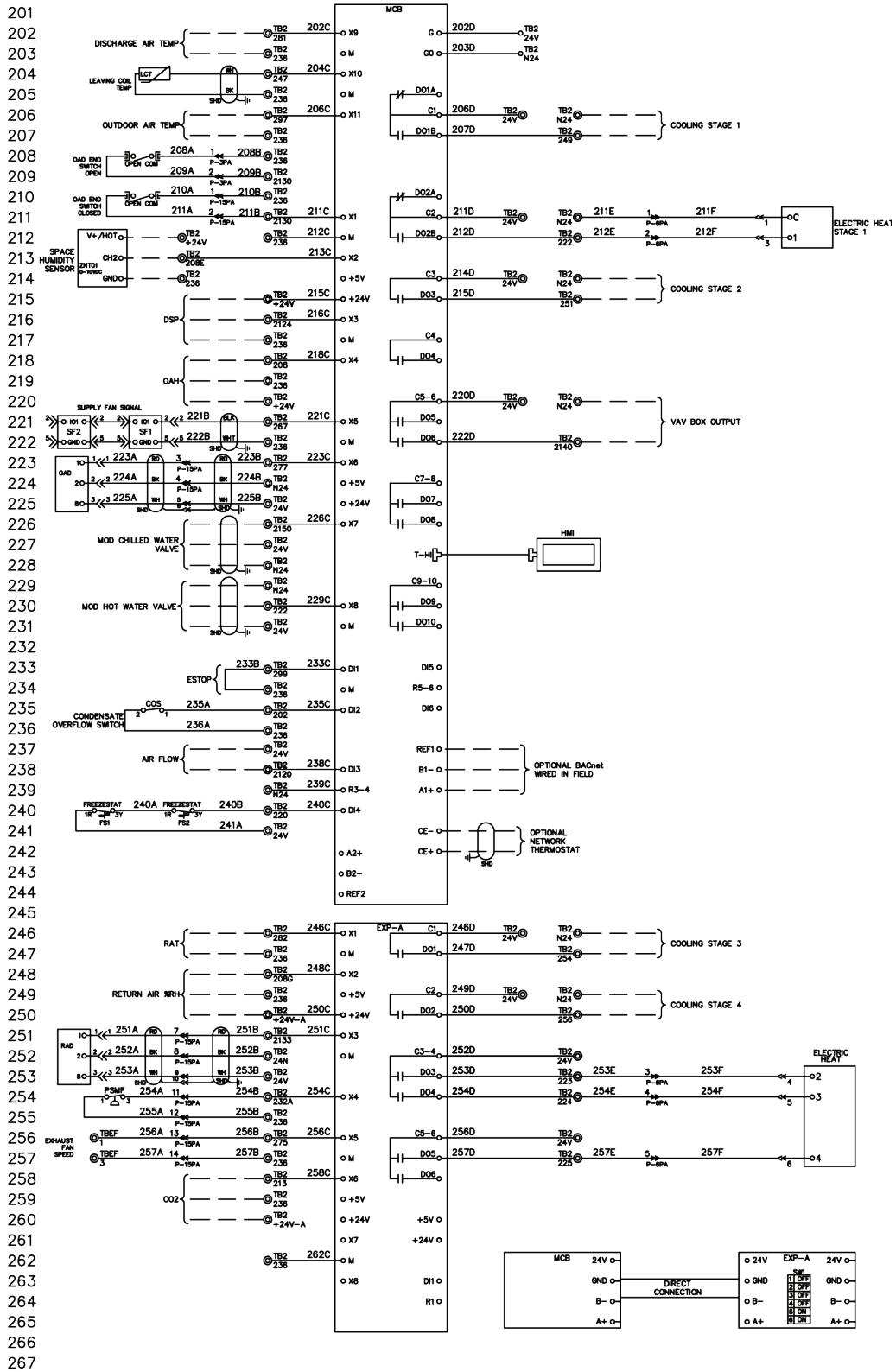
NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit

MicroTech 4 Lite Controller for Sizes 060-100



NOTE: Wiring diagrams are typical, always defer to the wiring diagram provided with the unit

MicroTech 4 Lite Controller for Sizes 060-100



Physical Data

Component Weights

Table 28: Horizontal Component Weights (sizes 006-050)

Component	Rows	FPI	Weight — lbs (kg)									
			006	008	010	012	016	018	020	030	040	050
Coil (Wet)	1	12	6 (3)	7 (4)	9 (5)	9 (5)	10 (5)	11 (5)	11 (5)	20 (10)	26 (12)	33 (15)
Coil (Wet)	1	16	7 (4)	7 (4)	9 (5)	9 (5)	11 (5)	12 (6)	12 (6)	21 (10)	28 (13)	35 (16)
Coil (Wet)	2	12	9 (5)	10 (5)	13 (6)	13 (6)	17 (8)	19 (9)	19 (9)	33 (15)	43 (20)	53 (25)
Coil (Wet)	2	16	9 (5)	11 (5)	14 (7)	14 (7)	18 (9)	21 (10)	21 (10)	36 (17)	46 (21)	57 (26)
Coil (Wet)	4	12	13 (6)	16 (8)	23 (11)	23 (11)	28(13)	35 (16)	35 (16)	57 (26)	77 (35)	93 (43)
Coil (Wet)	4	16	14 (7)	17 (8)	24 (11)	24 (11)	30 (14)	38 (18)	38 (18)	61 (28)	84 (39)	101 (46)
Coil (Wet)	6	12	18 (9)	23 (11)	31 (15)	31 (15)	41 (19)	49 (23)	49 (23)	78 (36)	106 (49)	128 (59)
Coil (Wet)	6	16	19 (9)	25 (12)	34 (16)	34 (16)	44 (20)	54 (25)	54 (25)	85 (39)	115 (53)	140 (64)
Coil (Wet)	8	12	-	-	-	-	-	-	-	100 (46)	134 (61)	164 (75)
Coil (Wet)	8	16	-	-	-	-	-	-	-	109 (50)	147 (67)	179 (82)
Coil (Dry)	1	12	5 (3)	6 (3)	7 (4)	7 (4)	8 (4)	9(5)	9(5)	16 (8)	20 (10)	25 (12)
Coil (Dry)	1	16	5 (3)	6 (3)	7 (4)	7 (4)	8 (4)	10 (5)	10 (5)	17 (8)	22 (10)	27 (13)
Coil (Dry)	2	12	7 (4)	8 (4)	10 (5)	10 (5)	12 (6)	14 (7)	14 (7)	24 (11)	32 (15)	39 (18)
Coil (Dry)	2	16	7 (4)	8 (4)	11 (5)	11 (5)	14 (7)	16 (8)	16 (8)	27 (13)	35 (16)	43 (20)
Coil (Dry)	4	12	10 (5)	12 (6)	16 (8)	16 (8)	20 (10)	25 (12)	25 (12)	41 (19)	55 (25)	65 (30)
Coil (Dry)	4	16	11 (5)	13 (6)	18 (9)	18 (9)	23 (11)	28 (13)	28 (13)	46 (21)	61 (28)	73 (34)
Coil (Dry)	6	12	13 (6)	16 (8)	23 (11)	23 (11)	29 (14)	35 (16)	35 (16)	56 (26)	75 (35)	91 (42)
Coil (Dry)	6	16	14 (7)	18 (9)	25 (12)	25 (12)	33 (15)	40 (19)	40 (19)	63 (29)	84 (39)	102 (47)
Coil (Dry)	8	12	-	-	-	-	-	-	-	72 (33)	95 (44)	116 (53)
Coil (Dry)	8	16	-	-	-	-	-	-	-	81 (37)	107 (49)	131 (60)
DX Normal	3	12	9(5)	11 (5)	15 (7)	15 (7)	19 (9)	23 (11)	23 (11)	38 (18)	49 (23)	60 (28)
DX Interlaced	3	12	-	-	-	-	-	-	-	36 (17)	47 (22)	58 (27)
DX Normal	3	16	10 (5)	12 (6)	17 (8)	17 (8)	21 (10)	25 (12)	25 (12)	42 (20)	54 (25)	66 (30)
DX Interlaced	3	16	-	-	-	-	-	-	-	40 (19)	52 (24)	64 (30)
Standard Cabinet (FC Fans)	-	-	180 (82)	260 (118)	324 (147)	324 (147)	440 (200)	530 (241)	530 (241)	490 (223)	585 (266)	730 (332)
Standard Cabinet (Plenum Fans)	-	-	-	-	-	-	-	-	-	457 (208)	618 (281)	743 (338)
Mixing Box	-	-	22 (10)	32 (15)	40 (18)	40 (18)	54 (25)	54 (25)	65 (30)	68 (31)	72 (33)	90 (41)
Discharge Plenum	-	-	20 (9)	29 (13)	36 (16)	36 (16)	49 (22)	49 (22)	59 (27)	63 (29)	67 (30)	81 (37)
Primary Valve Package	-	-	6 (3)	6 (3)	9 (4)	9 (4)	10 (5)	12 (5)	12 (5)	-	-	-
Heating Valve Package	-	-	4 (2)	4 (2)	6 (3)	6 (3)	6 (3)	8 (4)	8 (4)	-	-	-
VRV	3	12	9 (5)	11 (5)	15 (7)	15 (7)	18 (9)	22(10)	22 (10)	-	47 (22)	58 (27)
VRV	3	10	-	-	-	-			-	36 (16)	-	-

Table 29: Horizontal Component Weights (Sizes 060-100)

Component	Rows	FPI	Weight — lbs (kg)		
			060	080	100
Coil (Wet)	1	12	40 (18)	52 (24)	66 (30)
Coil (Wet)	1	16	42 (19)	56 (25)	70 (32)
Coil (Wet)	2	12	66 (30)	86 (39)	106 (48)
Coil (Wet)	2	16	72 (33)	92 (42)	114 (52)
Coil (Wet)	4	12	114 (52)	154 (70)	186 (84)
Coil (Wet)	4	16	122 (55)	168 (76)	20 (9)
Coil (Wet)	6	12	156 (71)	20 (9)	24 (11)
Coil (Wet)	6	16	170 (77)	22 (10)	28 (13)
Coil (Wet)	8	12	20 (9)	26 (12)	32 (15)
Coil (Wet)	8	16	20 (9)	28 (13)	34 (15)
Coil (Dry)	1	12	32 (15)	40 (18)	50 (23)
Coil (Dry)	1	16	34 (15)	44 (20)	54 (24)
Coil (Dry)	2	12	48 (22)	64 (29)	78 (35)
Coil (Dry)	2	16	54 (24)	70 (32)	86 (39)
Coil (Dry)	4	12	82 (37)	110 (50)	130 (59)
Coil (Dry)	4	16	92 (42)	122 (55)	146 (66)
Coil (Dry)	6	12	112 (51)	150 (68)	182 (83)
Coil (Dry)	6	16	126 (57)	168 (76)	20 (9)
Coil (Dry)	8	12	144 (65)	190 (86)	22 (10)
Coil (Dry)	8	16	162 (73)	20 (9)	26 (12)
DX Normal	3	12	76 (34)	98 (44)	120 (54)
DX Interlaced	3	12	72 (33)	94 (43)	116 (53)
DX Normal	3	16	84 (38)	108 (49)	132 (60)
DX Interlaced	3	16	80 (36)	104 (47)	128 (58)
VRV	3	12	-	94 (43)	116 (53)
VRV	3	10	72 (33)	-	-
Discharge Plenum	-	-	239 (108)	250 (113)	270 (122)
Discharge Plenum W/ Post Filter	-	-	307 (139)	352 (160)	378 (171)
Fan Section	-	-	422 (191)	415 (188)	457 (207)
Single Supply Fan Weight	-	-	110 (50)	110 (50)	110 (50)
Dual Supply Fan Weight	-	-	220 (100)	220 (100)	220 (100)
Coil Section	-	-	130 (59)	140 (64)	166 (75)
Prefilter	-	-	234 (106)	263 (119)	267 (121)
Mixbox	-	-	380 (172)	439 (199)	460 (209)
Economizer	-	-	406 (184)	454 (206)	479 (217)
Electric Heat	-	-	329 (149)	332 (151)	362 (164)
Exhaust Air/Outdoor Air	-	-	333 (151)	377 (171)	422 (191)

Table 30: Vertical Component Weights

Component	Rows	FPI	Weight—lbs (kg)							
			006	008	012	016	020	030	040	050
Coil (Wet)	1	12	6 (3)	8 (4)	9 (5)	12 (6)	13 (6)	22 (10)	28 (13)	38 (18)
Coil (Wet)	1	14	7 (4)	8 (4)	10 (5)	12 (6)	13 (6)	22 (10)	29 (14)	39 (18)
Coil (Wet)	1	16	7 (4)	8 (4)	10 (5)	12 (6)	14 (7)	23 (11)	30 (14)	40 (19)
Coil (Wet)	2	12	10 (5)	11 (5)	14 (7)	19 (9)	21 (10)	36 (17)	47 (22)	59 (27)
Coil (Wet)	2	14	10 (5)	11 (5)	14 (7)	19 (9)	22 (10)	37 (17)	48 (22)	61 (28)
Coil (Wet)	2	16	10 (5)	11 (5)	15 (7)	20 (10)	23 (11)	39 (18)	50 (23)	63 (29)
Coil (Wet)	4	12	13 (6)	17 (8)	23 (11)	30 (14)	37 (17)	61 (28)	80 (37)	101 (46)
Coil (Wet)	4	14	14 (7)	17 (8)	24 (11)	32 (15)	39 (18)	63 (29)	83 (38)	105 (48)
Coil (Wet)	4	16	14 (7)	18 (9)	25 (12)	33 (15)	40 (19)	65 (30)	86 (40)	109 (50)
Coil (Wet)	6	12	18 (9)	23 (11)	32 (15)	44 (20)	52 (24)	87 (40)	109 (50)	138 (63)
Coil (Wet)	6	14	18 (9)	24 (11)	33 (15)	45 (21)	54 (25)	90 (41)	113 (52)	143 (65)
Coil (Wet)	6	16	19 (9)	25 (12)	34 (16)	47 (22)	56 (26)	94 (43)	118 (54)	149 (68)
Coil (Wet)	8	12	-	-	-	-	-	109 (50)	137 (63)	174 (79)
Coil (Wet)	8	14	-	-	-	-	-	114 (52)	143 (65)	181 (83)
Coil (Wet)	8	16	-	-	-	-	-	119 (54)	150 (69)	189 (86)

Component	Rows	FPI	Weight—lbs (kg)							
			006	008	012	016	020	030	040	050
Coil (Dry)	1	12	5 (3)	6 (3)	7 (4)	9 (5)	10 (5)	17 (8)	22 (10)	29 (14)
Coil (Dry)	1	14	5 (3)	6 (3)	8 (4)	9 (5)	10 (5)	18 (9)	23 (11)	30 (14)
Coil (Dry)	1	16	5 (3)	6 (3)	8 (4)	10 (5)	11 (5)	19 (9)	24 (11)	31 (15)
Coil (Dry)	2	12	7 (4)	8 (4)	10 (5)	14 (7)	16 (8)	27 (13)	35 (16)	44 (20)
Coil (Dry)	2	14	8 (4)	9 (5)	11 (5)	15 (7)	17 (8)	28 (13)	36 (17)	46 (21)
Coil (Dry)	2	16	8 (4)	9 (5)	11 (5)	15 (7)	17 (8)	30 (14)	38 (18)	48 (22)
Coil (Dry)	4	12	10 (5)	12 (6)	17 (8)	22 (10)	27 (13)	44 (20)	56 (26)	71 (33)
Coil (Dry)	4	14	10 (5)	13 (6)	18 (9)	23 (11)	28 (13)	46 (21)	59 (27)	75 (35)
Coil (Dry)	4	16	11 (5)	14 (7)	19 (9)	25 (12)	30 (14)	49 (23)	63 (29)	79 (36)
Coil (Dry)	6	12	13 (6)	17 (8)	23 (11)	31 (15)	37 (17)	61 (28)	77 (35)	97 (44)
Coil (Dry)	6	14	14 (7)	18 (9)	24 (11)	33 (15)	39 (18)	65 (30)	81 (37)	103 (47)
Coil (Dry)	6	16	14 (7)	19 (9)	25 (12)	35 (16)	42 (20)	68 (31)	86 (40)	109 (50)
Coil (Dry)	8	12	-	-	-	-	-	77 (35)	97 (44)	122 (56)
Coil (Dry)	8	14	-	-	-	-	-	82 (38)	103 (47)	130 (59)
Coil (Dry)	8	16	-	-	-	-	-	86 (40)	109 (50)	138 (63)
DX Normal	3	12	9 (5)	11 (5)	15 (7)	20 (10)	24 (11)	-	-	-
DX Interlaced	3	12	-	-	-	-	-	36 (17)	48 (22)	60 (28)
DX Normal	3	14	9 (5)	12 (6)	16 (8)	21 (10)	25 (12)	-	-	-
DX Interlaced	3	14	-	-	-	-	-	38 (18)	50 (23)	63 (29)
DX Normal	3	16	9 (5)	12 (6)	17 (8)	22 (10	26 (12)	-	-	-
DX Interlaced	3	16	-	-	-	-	-	40 (19)	52 (24)	66 (30)
DX Normal	6	12	14 (7)	19 (9)	26 (12)	35 (16)	42 (20)	67 (31)	85 (39)	107 (49)
DX Interlaced	6	12	-	-	-	-	-	64 (30)	84 (39)	107 (49)
DX Normal	6	14	15 (7)	20 (10)	27 (13)	37 (17)	44 (20)	71 (33)	90 (41)	113 (52)
DX Interlaced	6	14	-	-	-	-	-	68 (31)	89 (41)	113 (52)
DX Normal	6	16	16 (8)	21 (10)	28 (13)	39 (18)	47 (22)	74 (34)	94 (43)	119 (54)
DX Interlaced	6	16	-	-	-	-	-	71 (33)	93 (43)	119 (54)
Standard Cabinet (FC Fans)	-	-	119 (54)	119 (54)	119 (54)	170 (78)	170 (78)	315 (143)	336 (153)	373 (170)
Standard Cabinet (Plenum Fans)	-	-	-	-	-	-	-	272 (124)	332 (151)	340 (155)
Mixing Box	-	-	-	-	-	-	-	88 (40)	97 (44)	105 (48)
Discharge Plenum	-	-	20 (10)	23 (11)	25 (12)	33 (15)	35 (16)	48 (22)	52 (24)	56 (26)
Primary Valve Package	-	-	6 (3)	6 (3)	9 (4)	10 (5)	12 (5)	-	-	-
Heating Valve Package	-	-	4 (2)	4 (2)	6 (3)	6 (3)	8 (4)	-	-	-

Fan and Motor Data

Table 31: Horizontal Fan and Motor Data (Forward-Curved Fans)

Forward-Curved Fan Data										
Unit Size	006	008	010	012	016	018	020	030	040	050
Fan Quantity	1	1	1	1	2	2	2	1	1	1
Fan Type	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI	FC, DWDI
Fan Size	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"	10" X 10"	12" X 12"	12" X 12"
Maximum RPM	2065	2065	2065	2065	2065	2065	2065	2100	1800	1800
Class	1	1	1	1	1	1	1	2	2	2
EC Motors	1	1	1	1	2*	2*	2*	–	–	–
Poly Phase Motors	–	–	–	–	–	–	–	1	1	1
1/3 HP	X	X			X					
1/2 HP	X	X	X	X	X	X	X			
3/4 HP	X	X	X	X	X	X	X			
1 HP			X	X		X	X			
1½ HP								X		
2 HP								X	X	
3 HP								X**	X	
5 HP									X**	X
7½ HP										X**

* Motors are the same HP
** HP is limited by VFD size

Table 32: Horizontal Fan and Motor Data (Plenum Supply Fans)

Plenum Fan Data			
Unit Size	**30**	**40**	**50**
Fan Quantity	1	2	2
Fan Type	Plenum Fan	Plenum Fan	Plenum Fan
Fan Size	355 mm	355 mm	355 mm
Maximum RPM	3300	3300	3300
EC Motors	1	2	2
Poly Phase EC Motors	1	2	2
Motor 4.42 HP	X	X	X

Table 33: Sizes 060-100 Fan and Motor Data (Forward-Curved Exhaust Fans)

Forward-Curved Fan Data			
Unit Size	**060**	**080**	**100**
Fan Quantity	1 or 2	2 or 3	2 or 3
Fan Type	FC, DWDI	FC, DWDI	FC, DWDI
Fan Size	9.5" X 4.5"	9.5" X 4.5"	9.5" X 4.5"
Maximum RPM	2065	2065	2065
Class	1	1	1
EC Motors	1 or 2	2 or 3	2 or 3
Poly Phase EC Motors	1 or 2	2 or 3	2 or 3
Motor 1/2 HP	x	x	x
Motor 1 HP	x	x	x

Table 34: Sizes 060-100 Fan and Motor Data (Plenum Supply Fans)

Plenum Fan Data			
Unit Size	**060**	**080**	**100**
Fan Quantity	1 or 2	1 or 2	1 or 2
Fan Type	Plenum Fan	Plenum Fan	Plenum Fan
Fan Size	450 mm	450 mm	450 mm
Maximum RPM	2600	2600	2600
EC Motors	1 or 2	1 or 2	1 or 2
Poly Phase EC Motors	1 or 2	1 or 2	1 or 2
Motor 3.7 HP	x	x	x
Motor 6.63 HP	x	x	x

Horizontal Filter Data

Table 35: Filter Data for Main Unit and Optional Mixing Box

Main Unit Filters														
Unit Size	**006**	**008**	**010**	**012**	**016**	**018**	**020**	**030**	**040**	**050**	**060**	**080**	**100**	
Quantity	1	1	2	2	2	2	2	2	2	2	4	6	3	6
Height (inches)	17.69							25.38	29.75	28.00	24.00	18.00	20.00	20.00
Width (inches)	12.13	17.13	13.75		17.94	22.25		21.88	24.50	27.81	24.00	24.00	16.00	20.00
Nom. Face Velocity (FPM)	421	393	296	355	363	329	366	389	395	408	375	444	429	
(Optional) Mixing Box Filters														
Quantity	1	1	2	2	2	2	2	2	2	2	4	6	3	
Height (inches)	18.50							23.50	27.50	29.50	24.00	24.00	16.00	
Width (inches)	12.50	17.50	12.75		17.00	21.25		23.25	25.75	29.25	24.00	18.00	20.00	

Vertical Filter Data

Table 36: Filter Data for Main Unit and Optional Mixing Box

Main Unit Filters									
External									
Unit Size	006	008	012	016	020	030	040		050
Quantity	1	1	1	2	2	2	2	2	4
Height	12	12	18	16	16	25	12	20	20
Width	24	24	24	20	20	20	24	24	24
Nom. Face Velocity (FPM)	300	400	300	360	450	432	375		375
Internal Filter Rack									
Quantity	1	1	1	2	2	-	-		-
Height	12	18	20	16	16	-	-		-
Width	20	24	24	20	20	-	-		-
(Optional) Mixing Box Filters									
Quantity	-	-	-	-	-	2	4		4
Height	-	-	-	-	-	24	16		20
Width	-	-	-	-	-	20	20		20

Table 37: Filter Pressure Drop

Clean Pressure Drop	Face Velocity (Feet per minute)				
	100	200	300	400	500
2" Filter					
Merv 4	0.02	0.04	0.08	0.11	0.16
Merv 8	0.02	0.07	0.12	0.19	0.27
Merv 13	0.08	0.17	0.27	0.37	0.48
4" Filter					
Merv 8	0.01	0.03	0.06	0.1	0.14
Merv 13	0.02	0.07	0.12	0.19	0.27

Table 38: Horizontal Hydronic Coil Size and Connection Type

Unit Size	006	008	010	012	016	018	020	030	040	050	060	080	100
Connection Type	FPT (Nominal)					F-SWT (OD)							
2-Row Cooling	0.500	0.500	0.500	0.500	0.750	0.750	0.750	1.125	1.125	1.375	1.125	1.125	1.375
4-Row Cooling	0.500	0.500	0.750	0.750	0.750	1.000	1.000	1.375	1.625	1.625	1.375	1.625	1.625
6-Row Cooling	0.500	0.500	0.750	0.750	1.000	1.000	1.000	1.375	1.625	1.625	1.375	1.625	1.625
8-Row Cooling	—	—	—	—	—	—	—	1.375	1.625	1.625	1.375	1.625	1.625
1-Row Heating	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.625	0.875	1.125	0.625	0.875	1.125
2-Row Heating	0.500	0.500	0.500	0.500	0.750	0.750	0.750	1.125	1.125	1.375	1.125	1.125	1.375

NOTE: Number of connections in unit sizes 060-100 are doubled (stacked)

Table 39: Vertical Hydronic Coil Size and Connection Type

Unit Size	006	008	012	016	020	030	040	050
Connection Type	FPT (Nominal)					F-SWT (OD)		
2-Row Cooling	0.500	0.500	0.500	0.750	0.750	1.125	1.375	1.375
4-Row Cooling	0.500	0.500	0.750	0.750	1.000	1.375	1.625	1.625
6-Row Cooling	0.500	0.500	0.750	1.000	1.000	1.625	1.625	2.125
8-Row Cooling	—	—	—	—	—	1.625	2.125	2.125
1-Row Heating	0.500	0.500	0.500	0.500	0.500	0.625	0.875	1.125
2-Row Heating	0.500	0.500	0.500	0.750	0.750	1.125	1.375	1.375

Table 40: Hydronic Coil Size and Type with No Piping Option

Unit Size	006	008	012	016	020
Connection Type	M-SWT (OD)				
2-Row Cooling	0.625	0.625	0.625	0.875	0.875
4-Row Cooling	0.625	0.625	0.875	0.875	1.125
6-Row Cooling	0.625	0.875	0.875	1.125	1.125
8-Row Cooling	—	—	—	—	—
1-Row Heating	0.625	0.625	0.625	0.625	0.625
2-Row Heating	0.625	0.625	0.625	0.875	0.875

Table 41: Vertical Steam Coil Size and Type

Unit Size	006	008	012	016	020	030	040	050
Connection Type	M-SWT (OD)							
Supply	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.375
Return	0.875	0.875	0.875	0.875	0.875	1.125	1.125	1.375

Table 42: Horizontal Steam Coil Size and Type with Piping

Unit Size	006	008	010	012	016	018	020	030	040	050	060	080	100
Connection Type	FPT (Nominal)							M-SWT (OD)					
Supply	0.750	0.750	0.750	0.750	0.750	0.750	0.750	1.125	1.125	1.375	1.125	1.125	1.375
Return	0.500	0.500	0.500	0.500	0.500	0.500	0.500	1.125	1.125	1.375	1.125	1.125	1.375

NOTE: Number of connections in unit sizes 060-100 are doubled (stacked)

Table 43: Horizontal Steam Coil Size and Type with No Piping

Unit Size	006	008	010	012	016	018	020
Connection Type	FPT (Nominal)						
Supply	0.750	0.750	0.750	0.750	0.750	0.750	0.750
Return	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Coil Size							
Finned Height	12	12	12	12	12	12	12
Finned Length	6.5	10.5	19	19	27	35.5	35.5

NOTE: FPI of 10 may be selected.

Table 44: VRV Coil Size and Type (Horizontal)

Unit Size	Rows	Fin Height	Fin Length	FPI	Connection Size (M-SWT (OD))	
					Distributor	Suction
006	3	14	12.5	12	0.375	0.750
008	3	14	16.5	12	0.375	0.750
010	3	14	25	12	0.375	0.875
012	3	14	25	12	0.375	0.875
016	3	14	33	12	0.375	1.125
018	3	14	41.5	12	0.375	1.125
020	3	14	41.5	12	0.375	1.125
030	3	22	39.5	10	0.500	1.375
040	3	26	44.5	12	0.625	1.375
050	3	28	51.5	12	0.625	1.625
060	3	44*	39.5	10	0.5	1.375
080	3	52*	44.5	12	0.625	1.375
100	3	56*	51.5	12	0.625	1.625

NOTE: Number of connections in unit sizes 060-100 are doubled (stacked)

*Combined height of two vertically stacked coils

Table 45: DX Coil Size and Type (Horizontal and Vertical)

Unit Size	Rows	Circuits		Connection Size (M-SWT (OD))	
		Number	Type	Distributor	Suction
006	3	1	Normal	0.500	0.750
006	6	1	Normal	0.500	0.750
008	3	1	Normal	0.500	0.875
008	6	1	Normal	0.500	0.875
012	3	1	Normal	0.500	1.125
012	6	1	Normal	0.625	1.125
016	3	1	Normal	0.625	1.125
016	6	1	Normal	0.875	1.125
020	3	1	Normal	0.875	1.375
020	6	1	Normal	0.875	1.375
030	3	1	Normal	0.875	1.625
030	3	2	Interlaced	0.625	0.875
030	6	1	Normal	—	—
030	6	2	Interlaced	0.875	0.875
040	3	1	Normal	0.875	1.625
040	3	2	Interlaced	0.875	1.125
040	6	1	Normal	—	—
040	6	2	Interlaced	0.875	1.375
050	3	1	Normal	0.875	1.625
050	3	2	Interlaced	0.875	1.375
050	6	1	Normal	—	—
050	6	2	Interlaced	0.875	1.625
060	3	2	Normal	0.875	1.625
060	3	4	Interlaced	0.625	0.875
080	3	2	Normal	0.875	1.625
080	3	4	Interlaced	0.875	1.125
100	3	2	Normal	0.875	1.625
100	3	4	Interlaced	0.875	1.375

NOTE: FPI of 12, 14, or 16 may be selected. Number of connections in unit sizes 060-100 are doubled (stacked).

Thermal Expansion Valve Kits

Table 46: Thermal Expansion Valve Kits (Horizontal)

	Size	FPI	Circuit	Connections		TEV Option 11		TEV Option 22	
				Inlet3	Outlet	Vendor PN	Daikin PN	Vendor PN	Daikin PN
Single Circuit	6	12		0.375	0.500	BBIZE-1 - 1/2	263922461	BBIZE-2	263922463
		16		0.375	0.500	BBIZE-1 - 1/2	263922461	BBIZE-2	263922463
	8	12		0.500	0.500	BBIZE-1 - 1/2	263922462	BBIZE-2	263922464
		16		0.500	0.500	BBIZE-2	263922464	BBIZE-3	263922465
	10	12		0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		16		0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
	12	12		0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		16		0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
	16	12		0.500	0.500	BBIZE-4	263922466	BBIZE-5	263922467
		16		0.500	0.500	BBIZE-4	263922466	BBIZE-5	263922467
	18	12		0.625	0.500	BBIZE-5	263922466	BBIZE-6	263922467
		16		0.625	0.500	BBIZE-5	263922466	BBIZE-6	263922467
	20	12		0.625	0.500	BBIZE-5	263922468	BBIZE-6	263922469
		16		0.625	0.500	BBIZE-5	263922468	BBIZE-6	263922469
	30	12		0.625	0.875	BBIZE-6	263922482	BBIZE-8	263922484
		16		0.625	0.875	BBIZE-8	263922484	BBIZE-12	263922486
	40	12		0.625	0.875	BBIZE-8	263922484	BBIZE-12	263922486
		16		0.625	0.875	BBIZE-12	263922486	BBIZE-15	263922488
	50	12		0.875	0.875	BBIZE-12	263922487	BBIZE-15	263922489
		16		0.875	0.875	BBIZE-15	263922489	N/A	N/A
	60*	12		0.625	0.875	BBIZE-6	263922482	BBIZE-8	263922484
		16		0.625	0.875	BBIZE-8	263922484	BBIZE-12	263922486
	80*	12		0.625	0.875	BBIZE-8	263922484	BBIZE-12	263922486
		16		0.625	0.875	BBIZE-12	263922486	BBIZE-15	263922488
	100*	12		0.875	0.875	BBIZE-12	263922487	BBIZE-15	263922489
		16		0.875	0.875	BBIZE-15	263922489	N/A	N/A

	Size	FPI	Circuit	Connections		TEV Option 11		TEV Option 22	
				Inlet3	Outlet	Vendor PN	Daikin PN	Vendor PN	Daikin PN
Interlaced Circuit	30	12	A	0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		12	B	0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		16	A	0.500	0.500	BBIZE-4	263922466	N/A	N/A
		16	B	0.500	0.500	BBIZE-3	263922465	N/A	N/A
	40	12	A	0.500	0.625	BBIZE-5	263922499	BBIZE-6	263922483
		12	B	0.500	0.625	BBIZE-4	263922470	BBIZE-5	263922499
		16	A	0.500	0.625	BBIZE-5	263922499	BBIZE-6	263922483
		16	B	0.500	0.625	BBIZE-4	263922470	BBIZE-5	263922499
	50	12	A	0.625	0.625	BBIZE-5	263922500	BBIZE-6	263922471
		12	B	0.625	0.625	BBIZE-5	263922500	BBIZE-6	263922471
		16	A	0.625	0.625	BBIZE-6	263922471	BBIZE-8	263922485
		16	B	0.625	0.625	BBIZE-6	263922471	BBIZE-8	263922485
	60*	12	A / C	0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		12	B / D	0.500	0.500	BBIZE-3	263922465	BBIZE-4	263922466
		16	A / C	0.500	0.500	BBIZE-4	263922466	N/A	N/A
		16	B / D	0.500	0.500	BBIZE-3	263922465	N/A	N/A
	80*	12	A / C	0.500	0.625	BBIZE-5	263922499	BBIZE-6	263922483
		12	B / D	0.500	0.625	BBIZE-4	263922470	BBIZE-5	263922499
		16	A / C	0.500	0.625	BBIZE-5	263922499	BBIZE-6	263922483
		16	B / D	0.500	0.625	BBIZE-4	263922470	BBIZE-5	263922499
	100*	12	A / C	0.625	0.625	BBIZE-5	263922500	BBIZE-6	263922471
		12	B / D	0.625	0.625	BBIZE-5	263922500	BBIZE-6	263922471
		16	A / C	0.625	0.625	BBIZE-6	263922471	BBIZE-8	263922485
		16	B / D	0.625	0.625	BBIZE-6	263922471	BBIZE-8	263922485

*Sizes 060-100 have stacked coils

1 Use Option 1 for standard entering air and suction temperatures.
2 Use TEV Option 2 with higher entering air temperatures and lower suction temperatures.
3 TEV inlet size is the recommended liquid line size when using factory provided TEV

Table 47: Thermal Expansion Valve Kits (Vertical)

	Unit Size	Rows	FPI	Circuits	Connections		TEV Option 1	
					Inlet	Outlet	Vendor PN	Daikin PN
Single Circuit	006	3	12	—	0.500	0.500	BBIZE-1.5	263922462
			14	—	0.500	0.500	BBIZE-1.5	263922462
			16	—	0.500	0.500	BBIZE-1.5	263922462
	006	6	12	—	0.500	0.500	BBIZE-2	263922464
			14	—	0.500	0.500	BBIZE-2	263922464
			16	—	0.500	0.500	BBIZE-2	263922464
	008	3	12	—	0.500	0.500	BBIZE-2	263922464
			14	—	0.500	0.500	BBIZE-2	263922464
			16	—	0.500	0.500	BBIZE-2	263922464
	008	6	12	—	0.500	0.500	BBIZE-3	263922465
			14	—	0.500	0.500	BBIZE-3	263922465
			16	—	0.500	0.500	BBIZE-3	263922465
	012	3	12	—	0.500	0.500	BBIZE-3	263922465
			14	—	0.500	0.500	BBIZE-3	263922465
			16	—	0.500	0.500	BBIZE-3	263922465
	012	6	12	—	0.625	0.625	BBIZE-4	910279782
			14	—	0.625	0.625	BBIZE-4	910279782
			16	—	0.625	0.625	BBIZE-4	910279782
	016	3	12	—	0.625	0.625	BBIZE-4	910279782
			14	—	0.625	0.625	BBIZE-4	910279782
			16	—	0.625	0.625	BBIZE-4	910279782
	016	6	12	—	0.625	0.875	BBIZE-6	263922482
			14	—	0.625	0.875	BBIZE-6	263922482
			16	—	0.625	0.875	BBIZE-6	263922482
	020	3	12	—	0.625	0.875	BBIZE-5	910279777
			14	—	0.625	0.875	BBIZE-5	910279777
			16	—	0.625	0.875	BBIZE-5	910279777
	020	6	12	—	0.625	0.875	BBIZE-8	263922484
			14	—	0.625	0.875	BBIZE-8	263922484
			16	—	0.625	0.875	BBIZE-8	263922484
	030	6	12	—	0.875	0.875	BBIZE-8	910279795
			14	—	0.875	0.875	BBIZE-8	910279795
			16	—	0.875	0.875	BBIZE-8	910279795
	040	6	12	—	0.875	0.875	BBIZE-12.5	263922487
			14	—	0.875	0.875	BBIZE-12.5	263922487
			16	—	0.875	0.875	BBIZE-12.5	263922487
	050	6	12	—	0.875	0.875	BBIZE-15	263922489
			14	—	0.875	0.875	BBIZE-15	263922489
				—	0.875	0.875	BBIZE-15	263922489

	Unit Size	Rows	FPI	Circuits	Connections		TEV Option 1	
					Inlet	Outlet	Vendor PN	Daikin PN
Interlaced Circuit	030	3	12	A	0.625	0.625	BBIZE-4	910279782
			12	B	0.625	0.625	BBIZE-4	910279782
			14	A	0.625	0.625	BBIZE-4	910279782
			14	B	0.625	0.625	BBIZE-4	910279782
			16	A	0.625	0.625	BBIZE-4	910279782
			16	B	0.625	0.625	BBIZE-4	910279782
	030	6	12	A	0.625	0.875	BBIZE-6	263922482
			12	B	0.625	0.875	BBIZE-5	910279777
			14	A	0.625	0.875	BBIZE-6	263922482
			14	B	0.625	0.875	BBIZE-5	910279777
			16	A	0.625	0.875	BBIZE-6	263922482
			16	B	0.625	0.875	BBIZE-5	910279777
	040	3	12	A	0.625	0.875	BBIZE-6	263922482
			12	B	0.625	0.875	BBIZE-5	910279777
			14	A	0.625	0.875	BBIZE-6	263922482
			14	B	0.625	0.875	BBIZE-5	910279777
			16	A	0.625	0.875	BBIZE-6	263922482
			16	B	0.625	0.875	BBIZE-5	910279777
	040	6	12	A	0.875	0.875	BBIZE-8	910279795
			12	B	0.875	0.875	BBIZE-8	910279795
			14	A	0.875	0.875	BBIZE-8	910279795
			14	B	0.875	0.875	BBIZE-8	910279795
			16	A	0.875	0.875	BBIZE-8	910279795
			16	B	0.875	0.875	BBIZE-8	910279795
	050	3	12	A	0.625	0.875	BBIZE-8	263922484
			12	B	0.625	0.875	BBIZE-6	263922482
			14	A	0.625	0.875	BBIZE-8	263922484
			14	B	0.625	0.875	BBIZE-6	263922482
			16	A	0.625	0.875	BBIZE-8	263922484
			16	B	0.625	0.875	BBIZE-6	263922482
	050	6	12	A	0.875	0.875	BBIZE-12.5	263922487
			12	B	0.875	0.875	BBIZE-12.5	263922487
			14	A	0.875	0.875	BBIZE-12.5	263922487
			14	B	0.875	0.875	BBIZE-12.5	263922487
			16	A	0.875	0.875	BBIZE-12.5	263922487
				B	0.875	0.875	BBIZE-12.5	263922487

Use Option 1 for standard entering air and suction temperatures.
TEV inlet sizes is the recommended liquid line size when using factory-provided TEV

Thermal Expansion Valve (TEV)

For each unit size there are two TEV options available (Table 46). TEV Option 1 is optimized for the standard entering air and suction temperatures while option 2 is intended for applications with higher entering air temperatures and lower suction temperatures.

Thermal Expansion Valve Installation

The TEV should be located directly below and as close to the distributor as possible. The distance between them should not exceed 18" and should minimize the use of any bends or elbows between. The sensing bulb from the TEV should be attached to a horizontal section of the suction line within 12" of the coil header using the proper mounting straps to ensure good thermal contact. On suction lines 7/8" OD and larger, the bulb should be installed in the 4 or 8 o'clock position. For smaller lines, the bulb may be attached anywhere but the bottom. For optimal performance, a TEV with an external equalization tube is recommended. The equalization tube must be soldered to the suction header by drilling a hole in the header, inserting the tube and securing in place with solder. Care must be taken to ensure that the equalization tube is inserted to the proper depth and is free of crimps, solder, debris, etc.

Mixing Box (Optional)

The optional mixing box includes a fresh air and return air damper that are linked together and driven from the same actuator. It may be ordered with or without the factory mounted damper actuator. Those with the factory mounted actuator ship pre wired to the main unit control box and do not require field adjustment of the hardware or linkage.

For the mixing box ordered without the factory mounted damper actuator one must be provided in the field that meets the following criteria.

- Maximum range of rotation = 95°
- Maximum torque = 62 in/lbs
- On-off control = spring return
- Modulating control = 0-10VDC fail in place
- Damper shaft size = 0.5" diameter

A mounting plate is provided on the shaft side of the damper frame to accommodate a variety of actuators. However, due to the number of options, size variations, and arrangements available, some actuators may require alternate field provided mounting hardware. Proper support for the actuator is important to avoid putting excess stress in the cabinet, linkage, or damper

shafts. The installing contractor is responsible for mounting, and wiring of the actuator and adjustment of the damper linkage.

Optional Mixing Box Damper or Discharge Plenum Loss

For reference, losses are similar to those used in custom openings, however, their coefficients are multipliers of velocity pressure based on opening size. These are multipliers of coil velocity pressure. The intake loss assumes a fully open damper in line with the unit, based on the sudden expansion into the unit of 2x the face area and 20% drag from the blade. The discharge loss assumes the sudden expansion off the fan of 10X then a sudden contraction at the discharge of 3x the face area. Losses from a grille are not taken into account.

Intake, intake with damper or discharge plenum loss

$= ((\ V*C\ ) / 4005)^2$

V = velocity through the opening

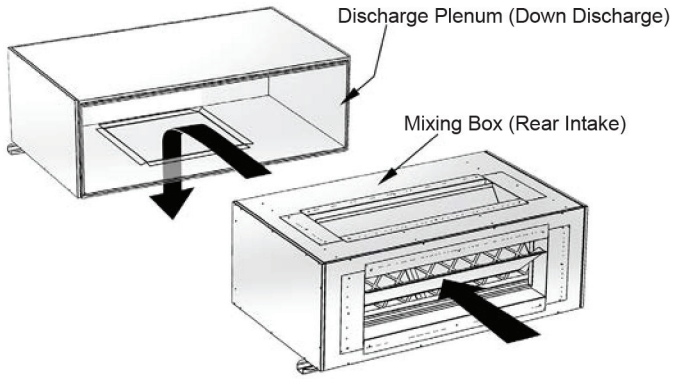
C: Straight intake without damper = 0.75
Turned intake without damper = 1.0
Straight intake with damper = 1.0
Turned intake with damper = 1.33
Straight discharge = 1.5
Turned discharge = 2

Example:

For a selection at 1000 ft/min, mix box with rear intake and discharge plenum down discharge:

Intake loss is (1000*1/4005)^2 = 0.062"
Discharge loss is (1000*1.5/4005)^2 = 0.140"

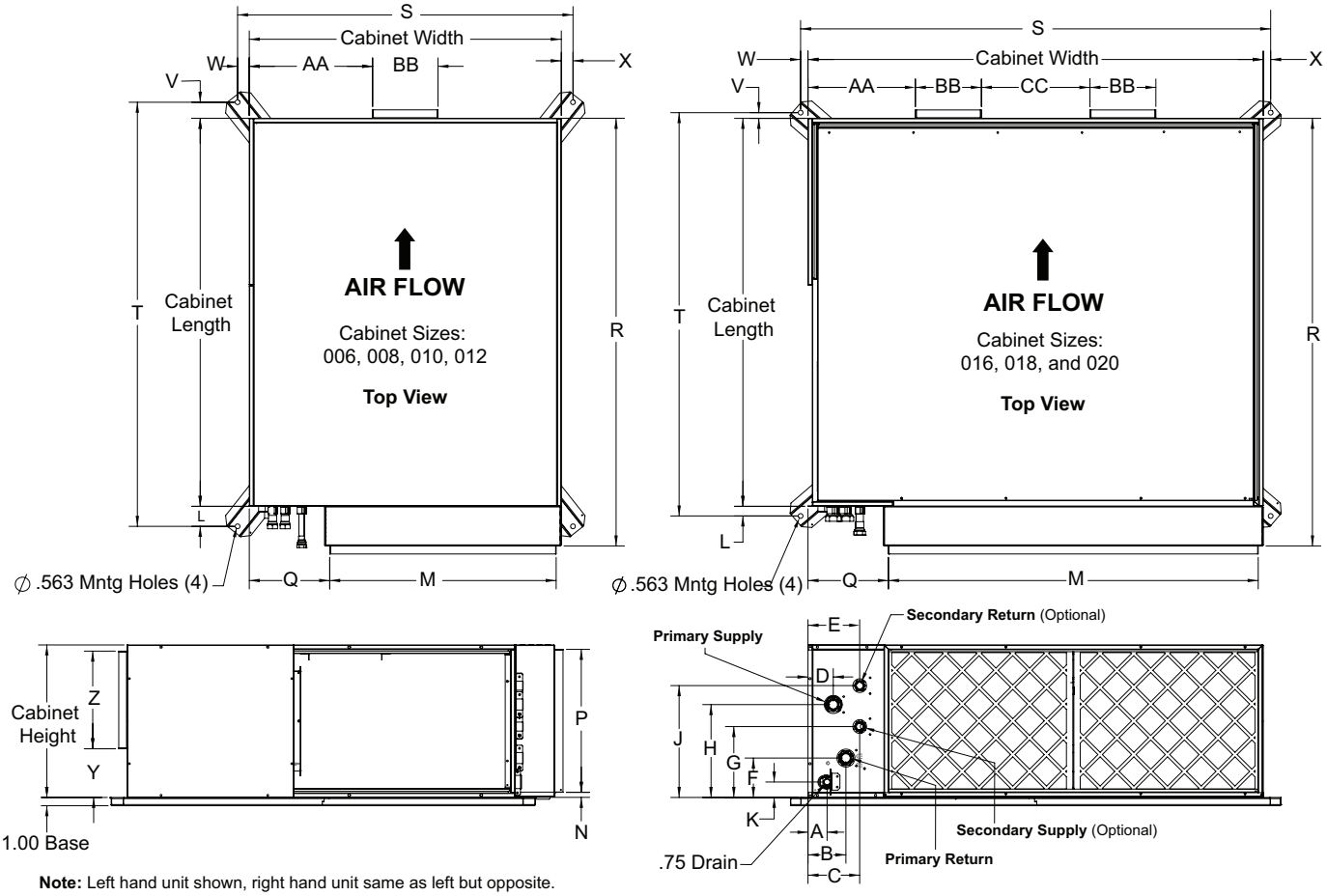
Figure 88: Discharge and Mixing Box Examples



Dimensional Data

Size 006-050 Horizontal Unit Dimensions

Figure 89: Left-Hand, Single and Dual Fan (Sizes 006-020))



Note: Left hand unit shown, right hand unit same as left but opposite.

Overall Cabinet Dimensions
006 = 43L × 24W × 18H
008 = 43L × 29W × 18H
010 & 012 = 46L × 37W × 18H
016 = 46L × 45.5W × 18H
018 & 020 = 46L × 54W × 18H

Table 48: Dimension Letter Reference for Figure 89 on page 75

Dimension	006	008	010	012	016	018	020
A	2.26	2.28	2.18	2.18	2.60	2.25	2.25
B	4.01	4.51	4.26	4.26	4.52	4.50	4.50
C	5.75	6.45	6.24	6.24	6.15	6.19	6.19
D	2.51	3.00	2.76	2.76	3.02	3.00	3.00
E	5.75	6.42	6.24	6.24	6.15	6.15	6.15
F	5.45	5.42	4.67	4.67	4.67	4.67	4.67
G	7.42	7.40	8.13	8.13	8.38	8.38	8.38
H	11.03	10.77	11.15	11.15	11.03	11.03	11.03
J	13.85	13.32	13.26	13.26	13.27	13.27	13.27
K	1.83	1.80	1.83	1.83	1.83	1.83	1.83
L	1.70	1.38	2.42	2.42	1.79	1.18	1.18
M	11.61	16.61	26.87	26.87	35.27	43.87	43.87
N	0.67	0.59	0.60	0.60	0.60	0.60	0.60
P	16.97	16.97	16.97	16.97	16.97	16.97	16.97
Q	9.56	9.53	9.53	9.53	9.63	10.67	10.67
R Bottom Access	47.70	47.70	50.70	50.70	50.70	50.70	50.70
R Side Access	49.50	49.50	53.90	53.90	52.50	52.50	52.50
S	24.79	29.77	39.80	39.80	47.89	55.80	55.80
T	45.90	45.25	50.34	50.34	48.97	47.87	47.87
V	1.19	0.87	1.90	1.90	1.23	0.67	0.67
W	0.38	0.38	1.39	1.39	1.19	0.87	0.87
X	0.38	0.38	1.39	1.39	1.19	0.87	0.87
Y	5.77	5.77	5.77	5.77	5.77	5.77	5.77
Z	11.59	11.59	11.59	11.59	11.59	11.59	11.59
AA	8.13	10.63	14.63	14.63	9.24	12.74	12.74
BB	7.73	7.75	7.75	7.75	7.75	7.82	7.82
CC	0.00	0.00	0.00	0.00	11.53	12.88	12.88

Figure 90: Left-Hand, Single Fan (Sizes 030-050)

Notes:
1. Refer to submittal drawings in Daikin Applied SelectTools for piping connection dimensions.
2. Left hand unit shown, right hand unit values same as left but opposite.
3. Preheat option shown, reheat option viable.

Overall Cabinet Dimensions
030 = 38L × 49W × 26H (forward-curved fan units)
030 = 39.5L × 49W × 26H (plenum fan units)
040 = 41L × 54W × 30H
050 = 41L × 61W × 32H

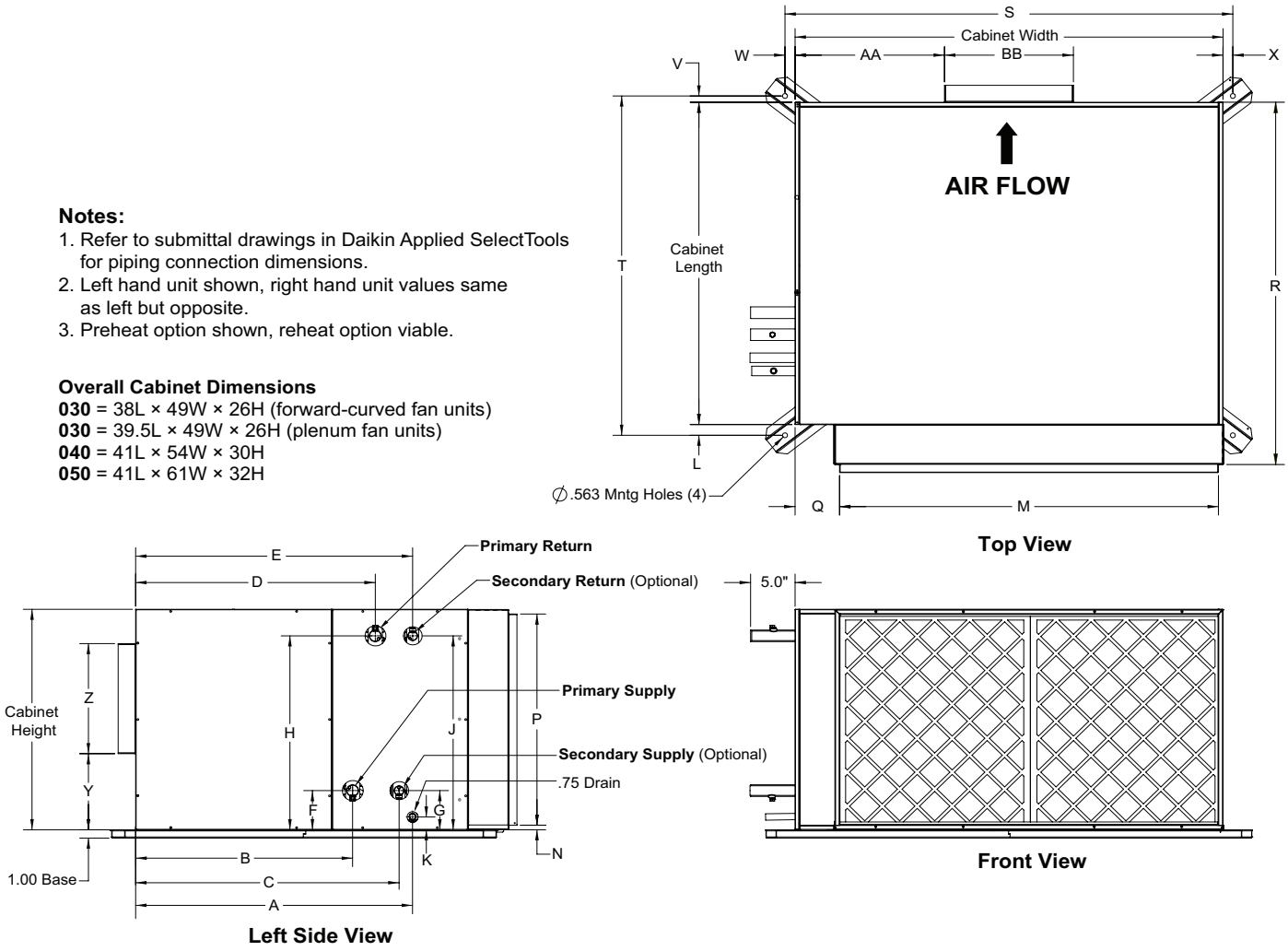


Table 49: Dimension Letter Reference for Hanger Brackets

Dimension	030	040	050
R Bottom Access	42.65	45.72	45.66
R Side Access	44.40	47.40	47.40
L	1.26	1.16	0.87
S	51.23	56.02	62.59
T	40.01	42.80	42.22
V	0.74	0.63	0.35
W	1.15	1.01	0.80
X	1.12	1.01	0.80

Table 50: Hydronic Unit Dimensions - Dimension Letter Reference for Figure 90 on page 77

		2-Row Cooling / Primary					4-Row Cooling / Primary					6-Row Cooling / Primary					8-Row Cooling / Primary
			Preheat		Reheat			Preheat		Reheat			Preheat		Reheat		
Unit Size	Dimension		1-Row	2-Row	1-Row	2-Row		1-Row	2-Row	1-Row	2-Row		1-Row	2-Row	1-Row	2-Row	
030	A	32.12	32	32	32	32	32.12	32	32	32	32	32.12	32	32	32	32	32.12
	B	24	24	24	24	24	24	24	24	24	24	24.81	24.81	24.81	24	24	24.81
	C	-	30.13	30.13	28.12	28.12	-	30.13	30.13	28.12	28.12	30.13	30.13	30.13	29	29	-
	D	25.5	25.5	26.56	25.12	25.12	26.5	26.56	26.56	25.12	25.12	27.43	27.41	27.41	25.12	25.12	29.16
	E	-	31.5	31.5	29.62	29.62	-	31.5	31.5	30.69	30.69	-	31.5	31.5	31.5	31.5	-
	G	-	4.62	4.62	4.62	4.62	-	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	-
	J	-	22.86	22.86	22.86	22.86	-	22.86	22.86	22.86	22.86	-	22.86	22.86	22.86	22.86	-
040	A	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12
	B	27	27	27	27	27	27.87	27.87	27.87	27	27	27.83	27.87	37.87	27	27	27.83
	C	-	33.12	33.12	31.12	33.12	-	33.12	33.12	32	31.12	33.15	33.12	33.12	32	32	-
	D	28.5	28.5	28.5	28.5	28.5	30.43	30.5	30.5	28.5	28.5	30.43	30.5	30.5	28.25	28.25	32.16
	E	-	34.5	34.5	32.67	34.5	-	34.5	34.5	34.62	32.62	-	34.5	34.5	34.62	34.62	-
	G	-	4.62	4.62	4.62	4.62	-	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	-
	J	-	26.87	26.87	26.87	26.87	-	26.87	26.87	26.87	26.87	-	26.87	26.87	26.87	26.87	-
050	A	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12	35.12
	B	27	27	27	27.68	27.68	27.12	27	27	27.68	27.68	27.81	27.87	27.87	27.75	27.75	27.79
	C	-	33.87	33.87	31.12	31.12	-	33.87	33.87	31.25	31.25	33.1	33.82	33.82	33.87	33.87	-
	D	28.86	29	29	29.12	29.12	29.68	29.68	29.68	29.12	29.12	30.41	30.37	30.37	30.43	30.43	32.12
	E	-	35.44	35.44	33	33	-	35.31	35.31	33.82	33.82	-	35.25	35.25	35.31	35.31	-
	G	-	4.62	4.62	4.62	4.62	-	4.62	4.62	4.62	4.62	4.74	4.62	4.62	4.62	4.62	-
	J	-	28.87	28.87	28.87	28.87	-	28.87	28.87	28.87	28.87	-	28.87	28.87	28.87	28.87	-

Table 51: Hydronic Unit Dimensions - Dimension Letter Reference for Figure 90 on page 77

	Unit Size		
Dimension	030	040	050
F	4.62	4.62	4.62
H	22.86	26.87	28.87
K	1.61	1.61	1.61
M	43.34	48.45	54.96
N	0.57	0.55	0.55
P	24.9	28.92	30.94
Q	5.08	5.01	5.5
Y (FC Fans)	9.73	9.51	10.25
Y (Plenum Fans)	4.94	7.97	6.95
Z (FC Fans)	11.47	13.53	13.53
Z (Plenum Fans)	27.13	14.06	18.13
AA (FC Fans)	23.35	22.64	22.64
AA (Plenum Fans)	10.93	6.47	10.43
BB (FC Fans)	13.21	15.62	15.62
BB (Plenum Fans)	16.13	41.06	40.13

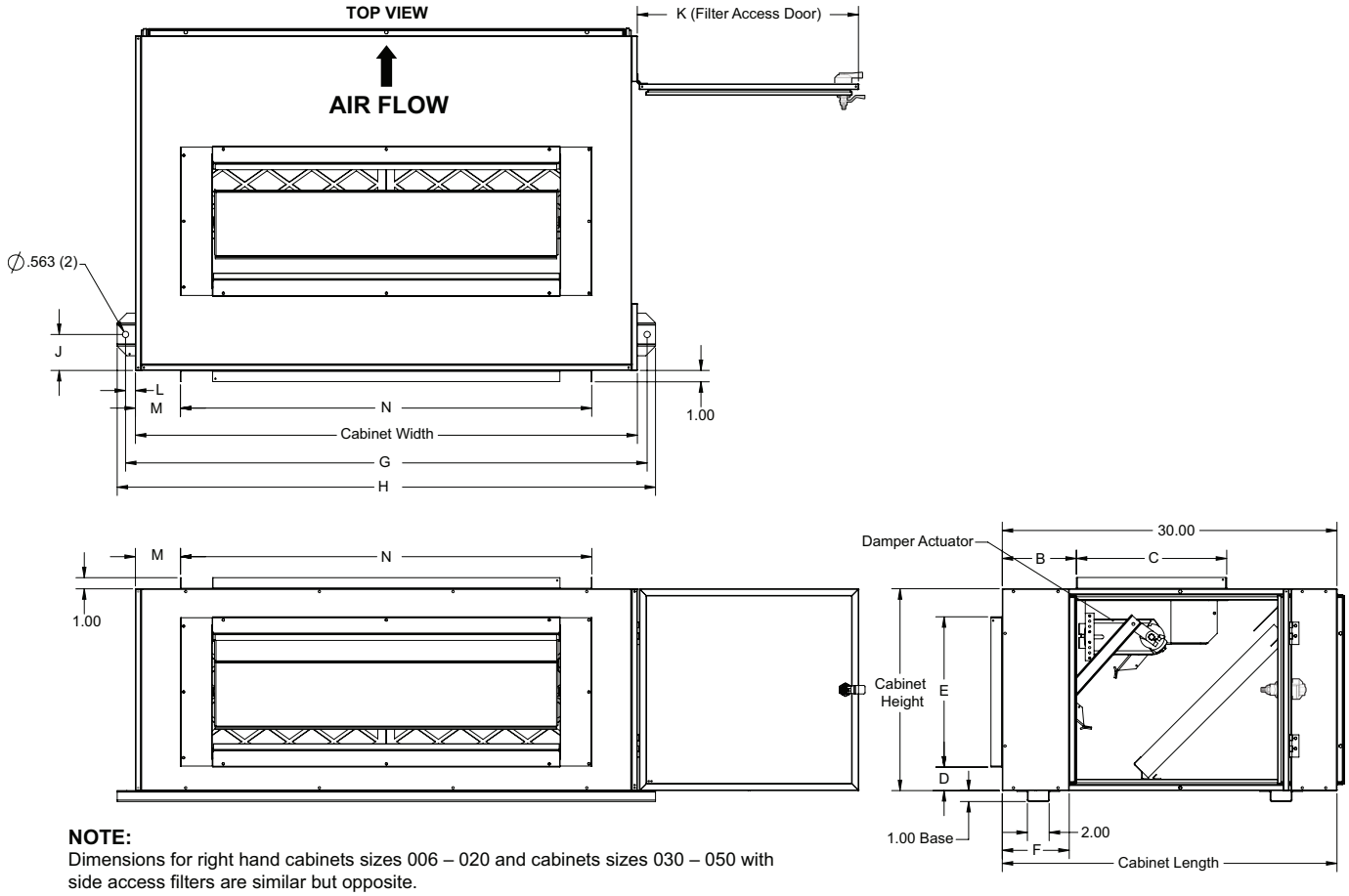
Table 52: DX Unit Dimensions - Dimension Letter Reference for Figure 90 on page 77

		Single Circuit DX					Interlaced DX				
			Preheat		Reheat			Preheat		Reheat	
Unit Size	Dimension		1-Row	2-Row	1-Row	2-Row		1-Row	2-Row	1-Row	2-Row
030	B	25.69	25.69	25.61	23.95	23.88	24.38	24.3	24.3	23.88	23.88
	C	-	30.16	30.07	29.83	29.76	25.7	30.07	30.07	28.45	28.45
	D	-	-	-	25.04	25.42	-	25.62	25.61	25.09	25.43
	E	-	31.24	31.61	-	-	-	31.28	31.61	29.76	29.76
	F	4.35	4.35	4.35	4.61	4.62	5.35	5.35	5.35	4.61	4.62
	G	-	4.62	4.65	4.35	4.35	9.35	4.62	4.62	5.35	5.35
	H	-	-	-	22.86	22.87	-	9.35	9.35	22.86	22.87
	J	-	22.87	22.87	-	-	-	22.87	22.87	9.35	9.35
040	B	28.71	28.69	28.7	26.97	26.97	27.27	27.26	27.26	26.97	26.97
	C	-	33.16	33.16	32.85	32.85	28.7	33.16	33.16	31.41	31.41
	D	-	-	-	28.29	28.52	-	28.7	28.7	28.29	28.52
	E	-	34.48	34.7	-	-	-	34.48	34.7	32.85	32.85
	F	4.35	4.35	4.35	5.65	4.62	5.35	5.35	5.35	5.62	4.62
	G	-	5.62	4.62	4.39	4.35	9.35	5.62	4.62	5.35	5.35
	H	-	-	-	25.38	26.87	-	9.35	9.35	25.37	26.87
	J	-	25.37	26.87	-	-	-	25.37	26.87	9.35	9.35
050	B	28.69	28.69	28.68	27.68	26.9	27.13	27.13	27.12	27.68	26.9
	C	-	33.87	33.09	32.84	32.83	30.25	33.87	33.09	31.27	31.26
	D	-	-	-	29.13	29.24	-	30.25	30.24	29.13	29.24
	E	-	35.32	35.43	-	-	-	35.32	35.43	34.4	34.39
	F	4.35	4.35	4.35	4.62	4.62	5.35	5.35	5.35	4.62	4.62
	G	-	4.62	4.62	4.35	4.35	7.35	4.62	4.62	5.35	5.35
	H	-	-	-	28.87	28.87	-	7.35	7.35	28.87	28.87
	J	-	28.87	28.87	-	-	-	28.87	28.87	7.35	7.35

Table 53: DX Unit Dimensions - Dimension Letter Reference for Figure 90 on page 77

	Unit Size		
Dimension	030	040	050
A	32.1	35.1	35.1
K	1.61	1.61	1.61
M	43.34	48.45	54.96
N	0.57	0.55	0.55
P	24.9	28.92	30.94
Q	5.08	5.01	5.50
Y (FC Fans)	9.73	9.51	10.25
Y (Plenum Fans)	4.94	7.97	6.95
Z (FC Fans)	11.47	13.53	13.53
Z (Plenum Fans)	27.13	14.06	18.13
AA (FC Fans)	23.35	22.64	22.64
AA (Plenum Fans)	10.93	6.47	10.43
BB (FC Fans)	13.21	15.62	15.62
BB (Plenum Fans)	16.13	41.06	40.13

Figure 91: Horizontal Mixing Box – Top and End Damper, Left Hand Sizes 006–020 and Right Hand Sizes 030–050 – Side Filter Access

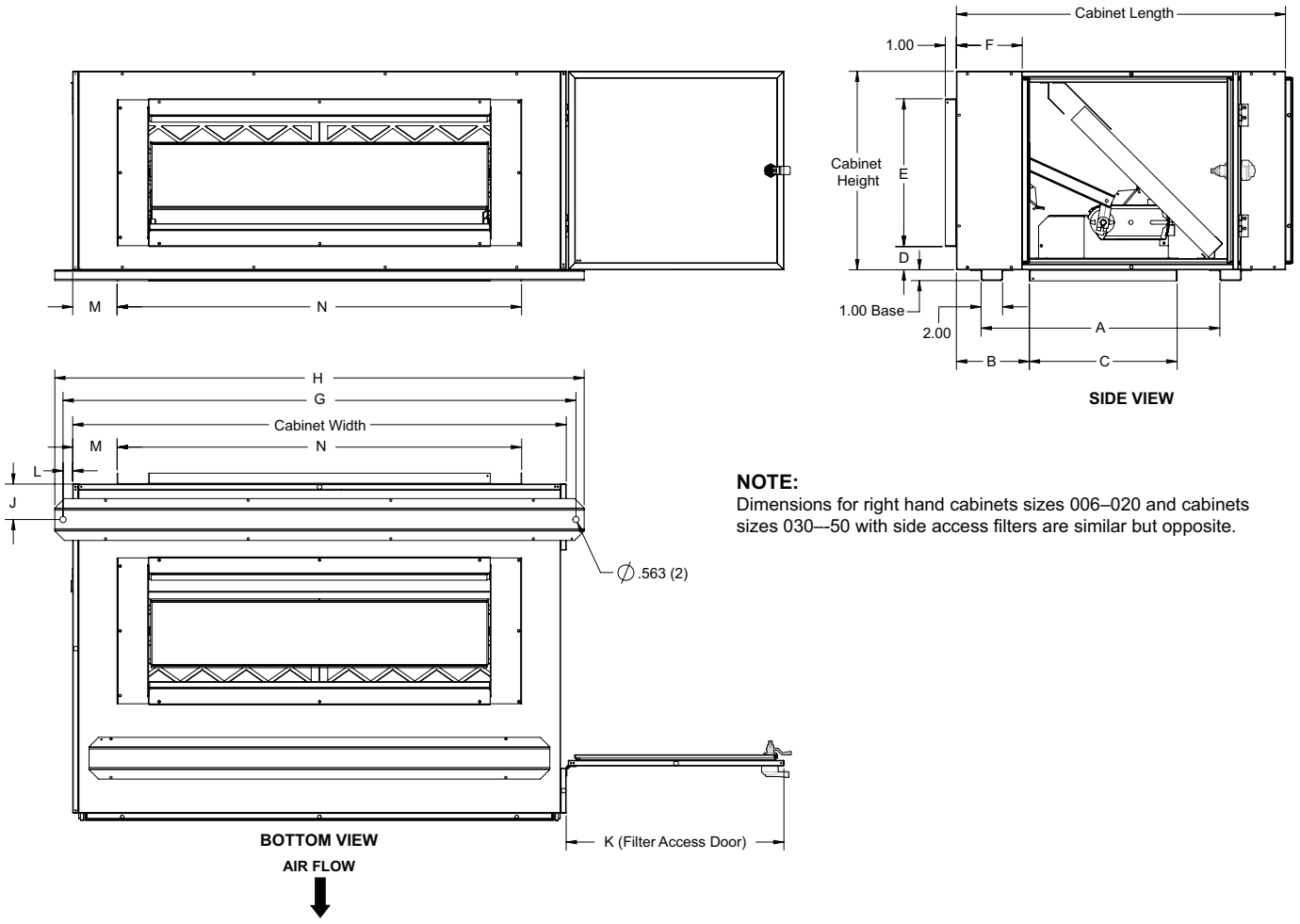


NOTE:
Dimensions for right hand cabinets sizes 006 – 020 and cabinets sizes 030 – 050 with side access filters are similar but opposite.

Table 54: Mixing Box Dimension Letter Reference

Cabinet	006	008	010	012	016	018	020	030	040	050
B	6.64	6.64	6.64	6.64	6.64	6.64	6.64	5.54	5.54	5.54
C	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
D	2.11	2.11	2.11	2.11	2.11	2.11	2.11	3.80	5.80	6.80
E	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
F	6.12	6.12	6.12	6.12	6.12	6.12	6.12	14.06	14.06	14.06
G	16.75	21.75	29.75	29.75	38.25	46.75	46.75	51.00	56.00	63.00
H	18.25	23.25	31.25	31.25	39.75	48.25	48.25	52.50	57.50	64.50
J	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22
K	19.75	19.75	19.75	19.75	19.75	19.75	19.75	14.75	14.75	14.75
L	0.87	0.87	0.87	0.87	0.87	0.87	0.87	1.00	1.00	1.00
M	0.98	2.66	2.29	2.29	2.80	4.04	4.04	6.32	3.82	2.82
N	10.18	14.66	23.41	30.90	30.90	36.87	36.87	36.34	46.34	55.34

Figure 92: Horizontal Mixing Box – Bottom and End Damper, Left Hand Sizes 006–020 and Right Hand Sizes 030–050 – Side Filter Access



NOTE:
Dimensions for right hand cabinets sizes 006–020 and cabinets sizes 030–-50 with side access filters are similar but opposite.

Table 55: Mixing Box Dimension Letter Reference

Cabinet	006	008	010	012	016	018	020	030	040	050
A	20.51	20.51	20.51	20.51	20.51	20.51	20.51	27.27	27.27	27.27
B	6.64	6.64	6.64	6.64	6.64	6.64	6.64	5.54	5.54	5.54
C	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
D	2.11	2.11	2.11	2.11	2.11	2.11	2.11	3.80	5.80	6.80
E	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
F	6.12	6.12	6.12	6.12	6.12	6.12	6.12	14.06	14.06	14.06
G	16.75	21.75	29.75	29.75	38.25	46.75	46.75	51.00	56.00	63.00
H	18.25	23.25	31.25	31.25	39.75	48.25	48.25	52.50	57.50	64.50
J	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22
K	19.75	19.75	19.75	19.75	19.75	19.75	19.75	14.75	14.75	14.75
L	0.87	0.87	0.87	0.87	0.87	0.87	0.87	1.00	1.00	1.00
M	0.98	2.66	2.29	2.29	2.80	4.04	4.04	6.32	3.82	2.82
N	10.18	14.66	23.41	30.90	30.90	36.87	36.87	36.34	46.34	55.34

Figure 93: Horizontal Mixing Box Dimensions – Left Hand Sizes 006–020 and Right Hand Sizes 030–050 – Bottom Filter Access

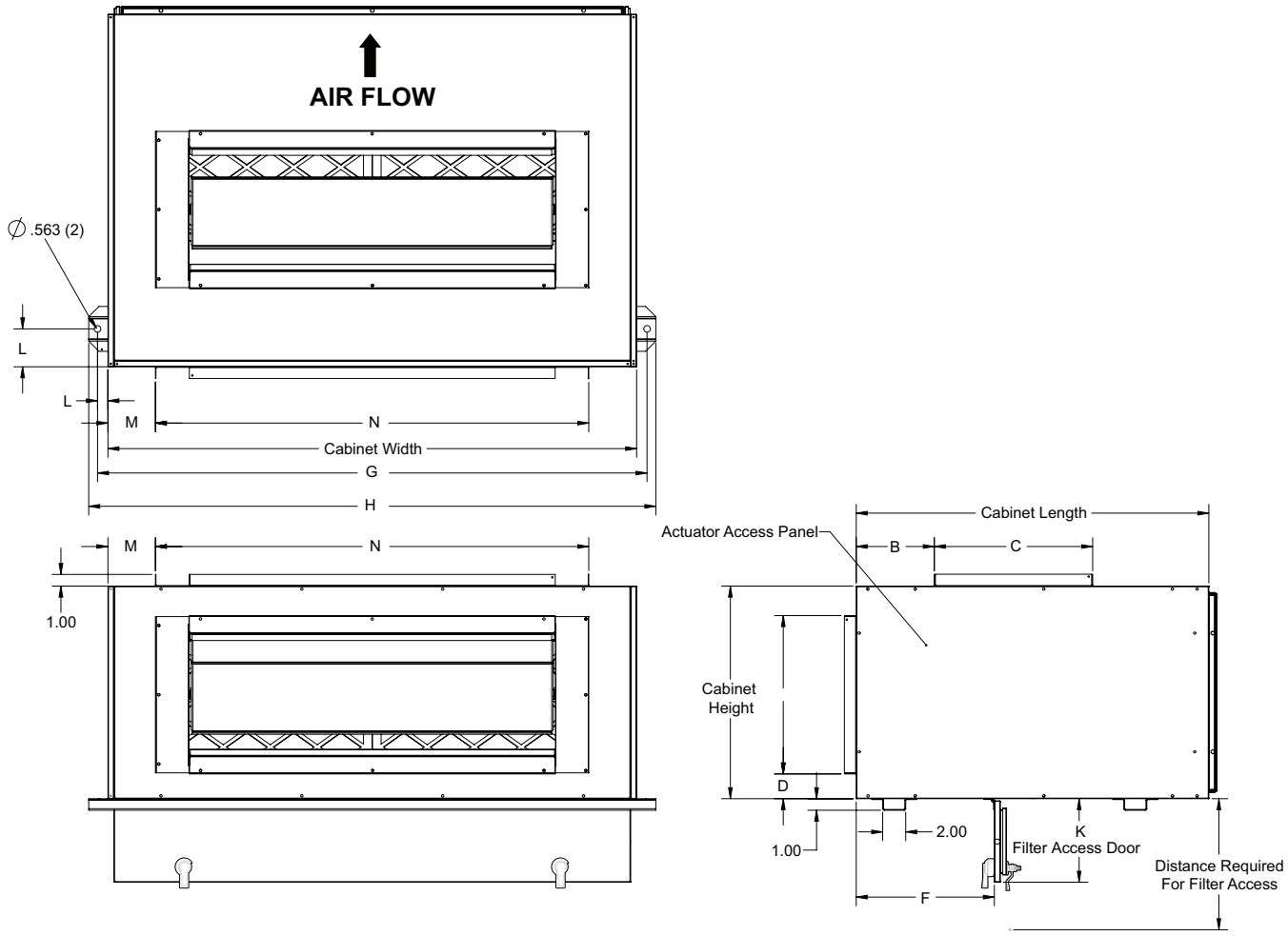


Table 56: Mixing Box Dimension Letter Reference

Cabinet	006	008	010	012	016	018	020	030	040	050
B	6.64	6.64	6.64	6.64	6.64	6.64	6.64	5.54	5.54	5.54
C	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
D	2.11	2.11	2.11	2.11	2.11	2.11	2.11	3.80	5.80	6.80
E	13.47	13.47	13.47	13.47	13.47	13.47	13.47	18.39	18.39	18.39
F	11.62	11.62	11.62	11.62	11.62	11.62	11.62	19.56	17.86	17.36
G	16.75	21.75	29.75	29.75	38.25	46.75	46.75	51.00	56.00	63.00
H	18.25	23.25	31.25	31.25	39.75	48.25	48.25	52.50	57.50	64.50
J	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22
K	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
L	0.87	0.87	0.87	0.87	0.87	0.87	0.87	1.00	1.00	1.00
M	0.98	2.66	2.29	2.29	2.80	4.04	4.04	6.32	3.82	2.82
N	10.18	14.66	23.41	30.90	30.90	36.87	36.87	36.34	46.34	55.34

Figure 94: Horizontal Discharge Plenum (Sizes 006-050)

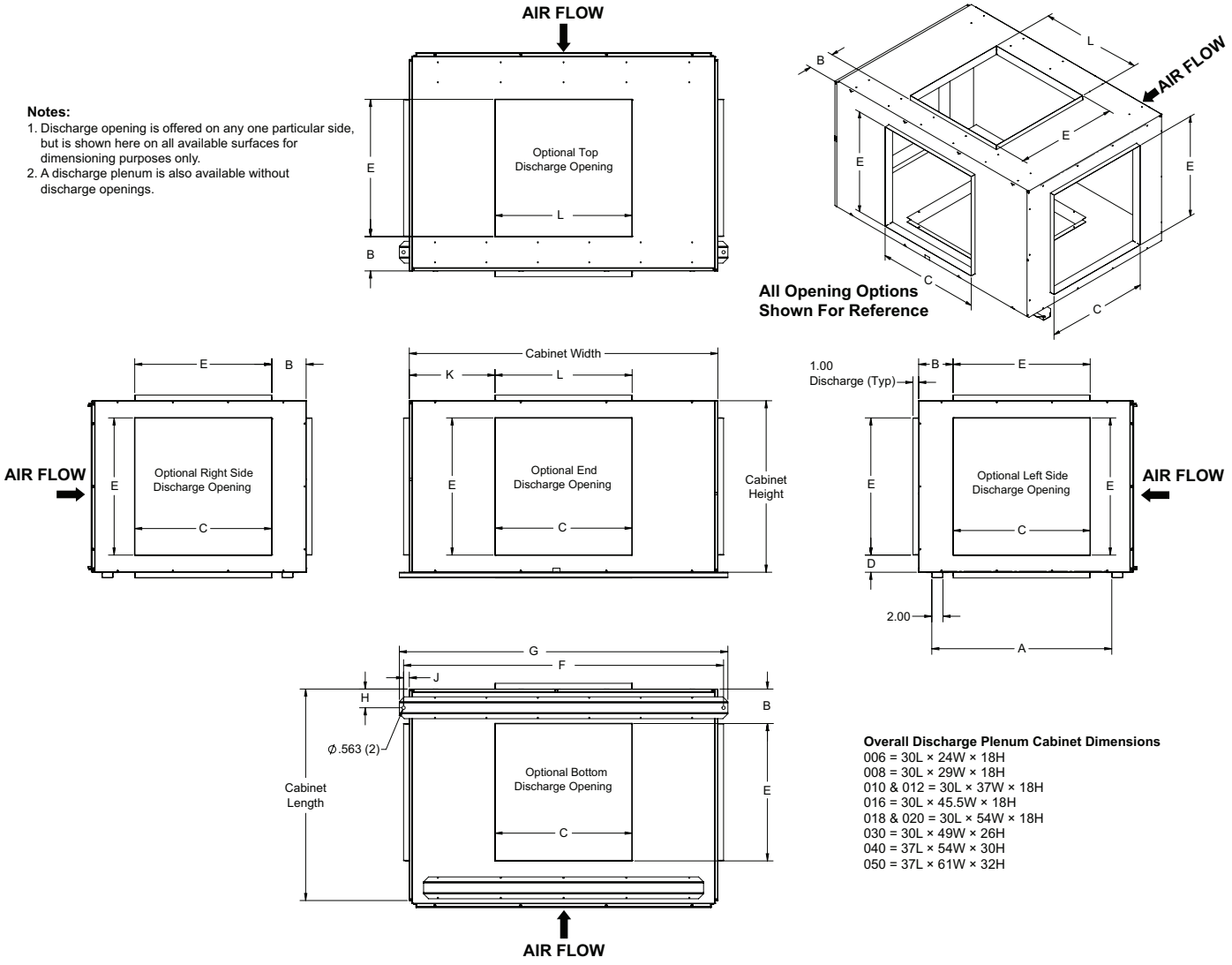


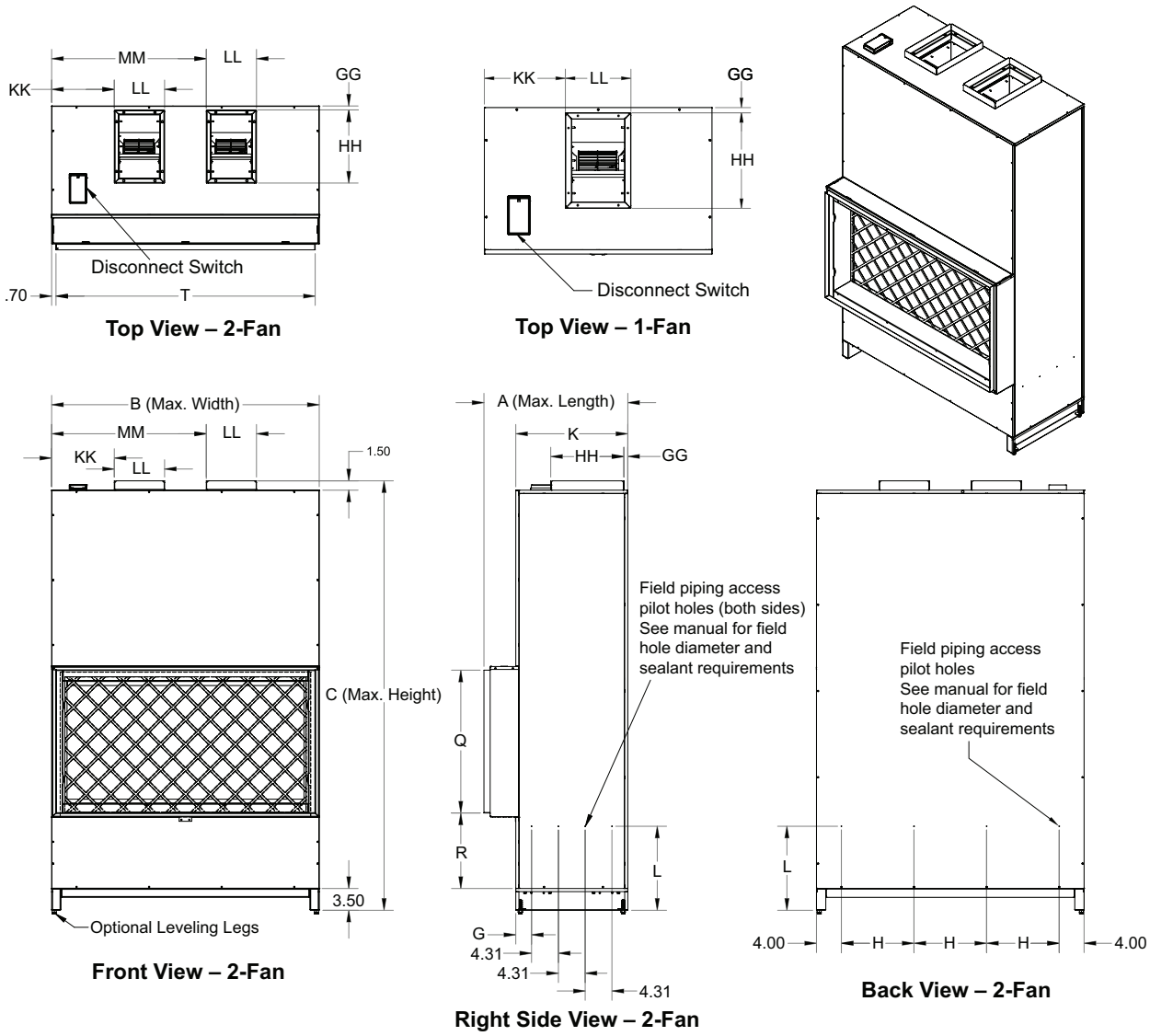
Table 57: Discharge Plenum Dimension Letter Reference

Cabinet	006	008	010	012	016	018	020	030	040	050
A	22.00	22.00	22.00	22.00	22.00	22.00	22.00	24.50	31.50	32.88
B	6.56	6.10	6.56	6.56	6.56	6.56	6.56	5.53	6.02	5.06
C	12.00	12.00	14.00	14.00	16.00	20.00	20.00	24.00	24.00	28.00
D	5.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00
E	8.00	12.00	14.00	14.00	14.00	14.00	14.00	20.00	24.00	28.00
F	26.00	30.00	39.00	39.00	48.00	56.00	56.00	50.50	56.00	62.50
G	27.50	31.50	40.50	40.50	49.50	57.50	57.50	52.00	57.50	64.00
H	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	2.63
J	1.00	0.50	1.00	1.00	1.25	1.00	1.00	0.75	1.00	0.75
K	6.00	8.50	11.50	11.50	14.75	17.00	17.00	12.50	15.00	16.50
L	12.00	12.00	14.00	14.00	16.00	20.00	20.00	24.00	24.00	28.00

NOTE: Discharge opening is offered on any one particular side, but is shown here on all availabe surfaces for dimensioning purposes only. A discharge plenum is also available without discharge openings.

Size 006-050 Vertical Unit Dimensions

Figure 95: Left-Hand, Single and Dual Fan (Sizes 006-020)

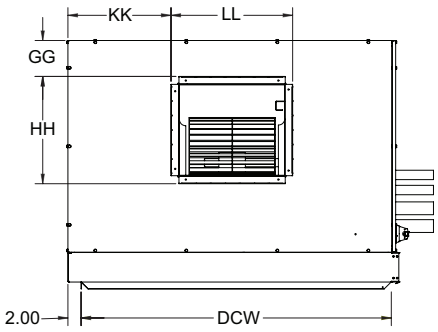


NOTE: Sizes 006 - 012 have 1 outlet while sizes 016-020 have 2

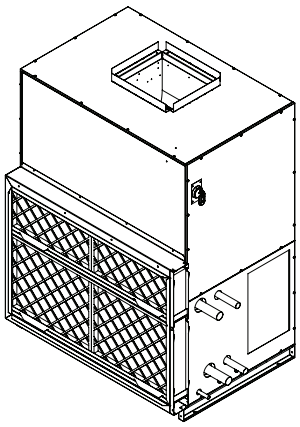
Table 58: Dimension Letter Reference

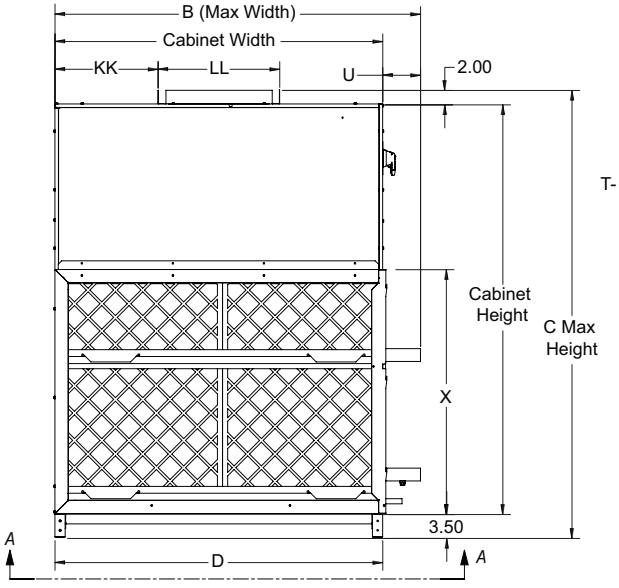
	Internal Filter																			
Size	**A**	**B**	**C**	**G**	**H**	**K**	**L**	**Q**	**R**	**S**	**U**	**V**	**W**	**X**	**MM**	**KK**	**LL**	**GG**	**HH**	
006	18.00	25.00	60.00	2.54	5.65	N/A	13.50	15.88	11.50	3.50	10.86	4.76	2.81	2.85	N/A	8.47	8.06	0.63	11.75	
008	18.00	28.00	65.00	2.54	6.65	N/A	13.50	19.04	11.50	3.50	10.86	4.76	2.81	2.85	N/A	9.97	8.06	0.63	11.75	
012	18.00	31.50	67.00	2.54	7.83	N/A	13.50	21.75	11.50	3.50	10.86	4.76	2.81	2.85	N/A	11.72	8.06	0.63	11.75	
016	18.00	38.00	68.5	2.54	10.00	N/A	13.50	24.19	11.50	3.50	10.86	4.76	2.81	2.85	24.86	9.45	8.06	0.63	11.75	
020	18.00	43.00	69.00	2.54	11.65	N/A	13.50	24.19	11.50	3.50	10.86	4.76	2.81	2.85	24.86	10.08	8.06	0.63	11.75	
	External Filter																			
Size	**A**	**B**	**C**	**G**	**H**	**K**	**L**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**MM**	**KK**	**LL**	**GG**	**HH**
006	23.07	25.00	60.00	2.54	5.65	18.00	13.50	14.78	12.09	3.50	23.63	10.86	4.76	2.81	2.85	N/A	8.47	8.06	0.63	11.75
008	23.07	28.00	65.00	2.54	6.65	18.00	13.50	17.85	12.09	3.50	26.63	10.86	4.76	2.81	2.85	N/A	9.97	8.06	0.63	11.75
012	23.07	31.50	67.00	2.54	7.83	18.00	13.50	20.63	12.09	3.50	30.18	10.86	4.76	2.81	2.85	N/A	11.72	8.06	0.63	11.75
016	23.07	38.00	68.5	2.54	10.00	18.00	13.50	23.00	12.09	3.50	36.63	10.86	4.76	2.81	2.85	24.86	9.45	8.06	0.63	11.75
020	23.07	43.00	69.00	2.54	11.65	18.00	13.50	23.00	12.09	3.50	41.63	10.86	4.76	2.81	2.85	24.86	10.08	8.06	0.63	11.75

Figure 96: Vertical Unit Dimensions (Sizes 030-050)

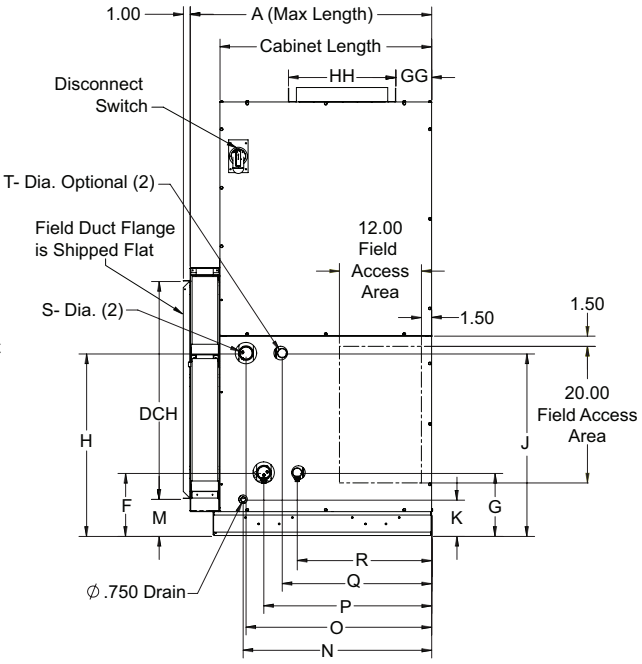


Top View

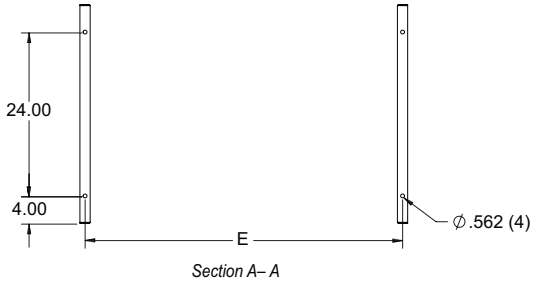




Front View



Right Side View



Section A– A

Cabinet Mounting Hole Locations

Note:
Right Hand Cabinet Shown, Left Hand Similar But Opposite

Table 59: General Vertical Unit Dimensions for Figure 96 on page 85

Units with Forward-Curved Fans													
	A	B	C	D	E	U	X	KK	LL	GG	HH	DCH	DCold Water
SIZE 30	35.36	49.5	61.5	44	42.5	5.54	30.49	12.3	15.32	5.29	13.66	24.5	38
SIZE 40	35.36	53.5	65.5	48	46.5	6	34.49	15.09	17.82	5.25	15.72	31.88	45.44
SIZE 50	35.36	53.5	73.5	48	46.5	6	42.49	15.09	17.82	5.25	15.72	39.88	45.44
Units with Plenum Fans													
	A	B	C	D	E	U	X	KK	LL	GG	HH	DCH	DCold Water
SIZE 30	35.36	49.5	61.5	44	42.5	5.54	30.49	8.67	27.20	3.96	16.20	24.5	38
SIZE 40	35.36	53.5	65.5	48	46.5	6	34.49	3.67	41.20	3.96	14.20	31.88	45.44
SIZE 50	35.36	53.5	73.5	48	46.5	6	42.49	4.17	40.20	3.96	18.20	39.88	45.44

Table 60: Vertical Coil Dimensions for Figure 96 on page 85

8 Row Coil RH (Cooling)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	-	7.74	27.6	25.99	21.65	-	-	1.625	-
SIZE 40	5.3	9.22	26.72	-	-	5.42	27.59	25.98	21.65	-	-	1.875	-
SIZE 50	5.31	9.22	34.72	-	-	5.42	27.59	25.98	21.65	-	-	2.125	-
6 Row Coil RH (Cooling)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	-	7.74	27.6	27.12	24.57	-	-	1.625	-
SIZE 40	5.3	9.22	26.72	-	-	5.42	27.59	27.17	24.57	-	-	1.625	-
SIZE 50	5.31	9.22	34.72	-	-	5.42	27.59	27.17	24.57	-	-	2.125	-
4 Row Coil RH (Cooling)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	-	7.74	27.6	27.12	24.57	-	-	1.375	-
SIZE 40	5.3	9.22	26.72	-	-	5.42	27.59	27.17	24.57	-	-	1.625	-
SIZE 50	5.31	9.22	34.72	-	-	5.42	27.59	27.17	24.57	-	-	2.125	-
2 Row Coil RH (Cooling)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	-	7.74	27.59	27.12	24.63	-	-	1.125	-
SIZE 40	5.3	9.22	26.72	-	-	5.42	27.59	27.17	24.57	-	-	1.375	-
SIZE 50	5.3	9.22	34.72	-	-	5.42	27.59	27.17	24.57	-	-	2.125	-
6 + 1 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.12	24.57	21.89	19.68	1.625	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	21.89	19.68	1.625	0.875
SIZE 50	5.31	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	21.89	19.69	2.125	1.375
4 + 1 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.12	24.57	21.89	19.68	1.375	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	21.89	19.68	1.625	0.875
SIZE 50	5.31	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	21.89	19.69	2.125	1.375
2 + 1 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.1	24.63	21.89	19.68	1.125	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	21.89	19.68	1.375	0.875
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	21.89	19.69	2.125	1.375
6 + 2 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.12	24.57	22.02	19.55	1.625	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	22.09	19.49	1.625	1.375
SIZE 50	5.31	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	22.09	19.5	2.125	1.375
4 + 2 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.12	24.57	22.02	19.55	1.375	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	22.09	19.49	1.625	1.375
SIZE 50	5.31	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	22.09	19.5	2.125	1.375

Table 61: Vertical Coil Dimensions for Figure 96 on page 85 (continued)

2 + 2 Rows Coil RH (Re-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.1	24.63	22.02	19.55	1.125	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.17	24.57	22.09	19.49	1.375	1.375
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	27.59	27.17	24.57	22.09	19.5	2.125	1.125
1 + 6 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.95	25.75	23.07	20.47	1.625	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.95	25.75	23.07	20.47	1.625	0.875
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	27.95	27.59	25.75	23.07	20.47	2.125	1.375
1 + 4 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.95	25.75	23.07	20.47	1.375	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.95	25.75	23.07	20.47	1.625	0.875
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	28.15	27.59	25.56	23.07	20.47	2.125	1.375
1 + 2 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	27.95	25.75	23	20.53	1.125	0.625
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	27.95	25.75	23.07	20.47	1.375	0.875
SIZE 50		9.22	34.72	9.22	34.72	5.42	28.15	27.59	25.56	23.07	20.47	2.125	1.375
2 + 6 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	28.09	25.61	23.07	20.47	1.625	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	28.15	25.55	23.07	20.47	1.625	1.375
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	28.15	27.59	25.56	23.07	20.47	2.125	1.375
2 + 4 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	28.09	25.61	23.07	20.47	1.375	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	28.15	25.55	23.07	20.47	1.625	1.375
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	28.15	27.59	25.56	23.07	20.47	2.125	1.375
2 + 2 Rows Coil RH (Pre-heat)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	9.22	22.72	7.74	27.6	28.09	25.61	23	20.53	1.125	1.125
SIZE 40	5.3	9.22	26.72	9.22	26.72	5.42	27.59	28.15	25.55	23.07	20.47	1.375	1.375
SIZE 50	5.3	9.22	34.72	9.22	34.72	5.42	28.15	27.59	25.56	23.07	20.47	2.125	1.375
1 + DX SINGLE 3 ROWS COIL RH (RE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.84	-	9.22	22.72	7.74	27.59	-	26.73	21.89	19.68	1.625	-
SIZE 40	5.3	9.84	-	9.22	26.72	5.42	27.59	-	26.73	21.89	19.68	1.625	-
SIZE 50	5.3	9.84	-	9.22	34.72	5.42	27.59	-	26.73	21.89	19.69	1.625	-
2 + DX SINGLE 3 ROWS COIL RH (RE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.84	-	9.22	22.72	7.74	27.59	-	26.73	22.02	19.55	1.625	-
SIZE 40	5.3	9.84	-	9.22	26.72	5.42	27.59	-	26.73	22.09	19.49	1.625	-
SIZE 50	5.3	9.84	-	9.22	34.72	5.42	27.59	-	26.73	22.09	19.5	1.625	-
1 + DX INTERLACE 3 ROWS COIL RH (RE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.84	14.47	9.22	22.72	7.74	27.59	27.56	25.42	21.89	19.68	0.875	-
SIZE 40	5.3	10.47	11.84	9.22	26.72	5.42	27.59	27.69	25.14	21.89	19.68	1.375	-
SIZE 50	5.3	10.47	11.84	9.22	34.72	5.42	27.59	27.72	25.17	21.89	19.69	1.375	-

Table 62: Vertical Coil Dimensions for Figure 96 on page 85 (continued)

2 + DX INTERLACE 3 ROWS COIL RH (RE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.84	14.47	9.22	22.72	7.74	27.59	27.56	25.42	22.02	19.55	0.875	-
SIZE 40	5.3	10.47	11.84	9.22	26.72	5.42	27.59	27.69	25.14	22.09	19.49	1.375	-
SIZE 50	5.3	10.47	11.84	9.22	34.72	5.42	27.59	27.72	25.17	22.09	19.5	1.375	-
1 + DX INTERLACE 6 ROWS COIL RH (RE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	10.47	14.22	9.22	22.72	7.74	27.59	27.12	24.97	21.89	19.68	1.125	-
SIZE 40	5.3	8.84	10.47	9.22	26.72	5.42	27.59	27.03	24.85	21.89	19.68	1.325	-
SIZE 50	5.3	10.47	10.47	9.22	34.72	5.42	27.59	26.73	24.61	21.89	19.69	1.625	-
2 + DX INTERLACE 6 ROWS COIL RH (RE-HEAT))													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	10.47	14.22	9.22	22.72	7.74	27.59	27.12	24.97	22.02	19.55	1.125	-
SIZE 40	5.3	8.84	10.47	9.22	26.72	5.42	27.59	27.03	24.85	22.09	19.49	1.325	-
SIZE 50	5.3	10.47	10.47	9.22	34.72	5.42	27.59	26.73	24.61	22.09	19.5	1.625	-
1 + DX SINGLE 3 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	9.84	7.74	27.59	27.95	25.75	22.64	-	1.125	-
SIZE 40	5.3	9.22	26.72	-	9.84	5.42	27.59	27.95	25.75	22.64	-	0.875	-
SIZE 50	5.3	9.22	34.72	-	9.84	5.42	27.59	27.59	25.75	22.64	-	1.375	-
2 + DX SINGLE 3 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.3	9.22	22.72	-	9.84	7.74	27.59	28.09	25.61	22.64	-	1.125	-
SIZE 40	5.3	9.22	26.72	-	9.84	5.42	27.59	28.15	25.55	22.64	-	0.875	-
SIZE 50	5.3	9.22	34.72	-	9.84	5.42	27.59	27.59	25.56	22.64	-	1.375	-
1 + DX INTERLACE 3 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.31	9.22	22.72	9.84	14.47	7.74	27.59	27.95	25.75	23.46	21.32	0.625	0.875
SIZE 40	5.31	9.22	26.72	11.84	10.47	5.42	27.59	27.95	25.75	23.62	21.07	0.875	1.375
SIZE 50	5.31	9.22	34.72	11.84	10.47	5.42	27.59	27.59	25.75	23.62	21.07	1.375	1.375
2 + DX INTERLACE 3 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.31	9.22	22.72	9.84	14.47	7.74	27.59	28.09	25.61	23.46	21.32	0.625	0.875
SIZE 40	5.31	9.22	26.72	11.84	10.47	5.42	27.59	28.15	25.55	23.62	21.07	0.875	1.375
SIZE 50	5.31	9.22	34.72	11.84	10.47	5.42	27.59	27.59	25.56	23.62	21.07	1.375	1.375
1 + DX INTERLACE 6 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.31	9.22	22.72	9.84	14.47	7.74	27.59	27.95	25.75	23.46	21.32	0.625	0.875
SIZE 40	5.31	9.22	26.72	11.84	10.47	5.42	27.59	27.95	25.75	23.62	21.07	0.875	1.375
SIZE 50	5.31	9.22	34.72	11.84	10.47	5.42	27.59	27.59	25.75	23.62	21.07	1.375	1.375
2 + DX INTERLACE 6 ROWS COIL RH (PRE-HEAT)													
	K	F	H	G	J	M	N	O	P	Q	R	S	T
SIZE 30	5.31	9.22	22.72	9.84	14.47	7.74	27.59	28.09	25.61	23.46	21.32	0.625	0.875
SIZE 40	5.31	9.22	26.72	11.84	10.47	5.42	27.59	28.15	25.55	23.62	21.07	0.875	1.375
SIZE 50	5.31	9.22	34.72	11.84	10.47	5.42	27.59	27.59	25.56	23.62	21.07	1.375	1.375
Steam Coils													
	K	F	H	G	J	M	N	O	P	Q	R		T
SIZE 30	5.31	-	-	9.67	21.71	-	-	-	-	25.72	28.03		1.125
SIZE 40	5.31	-	-	9.58	23.71	-	-	-	-	25.72	28.03		1.125
SIZE 50	5.31	-	-	9.84	27.71	-	-	-	-	25.82	27.97		1.375

Figure 97: Vertical Mixing Box - Top and End Damper. Sizes 030-050 - Side Filter Access.

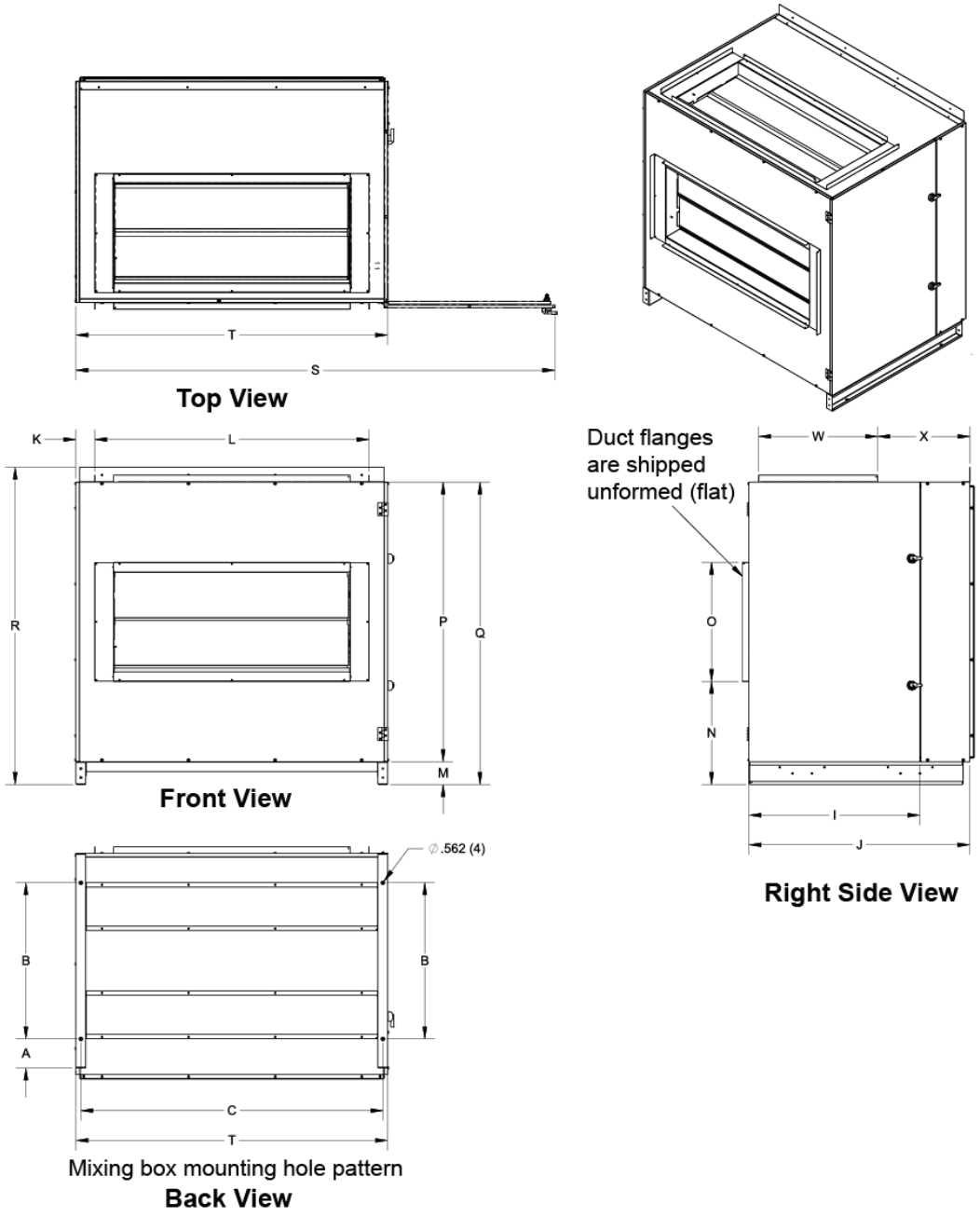


Table 63: Mixing Box Dimension Letter Reference

	Vertical Mixing Box																	
	A	B	C	D	I	J	K	L	M	N	O	P	Q	R	S	T	W	X
SIZE 30	5.5	24	42.5	44	26.31	33	2.87	38.27	3.5	9.82	18.37	31	34.5	36.76	70.12	34	18.37	14.19
SIZE 40	5.5	24	46.5	48	26.31	33	2.87	42.31	3.5	11.82	18.37	35	38.5	40.76	74.12	34	18.37	14.19
SIZE 50	5.5	24	46.5	48	26.31	33	2.87	42.31	3.5	15.82	18.37	43	46.5	48.76	74.12	34	18.37	14.19

Figure 98: Vertical Discharge Plenum (Sizes 030-050)

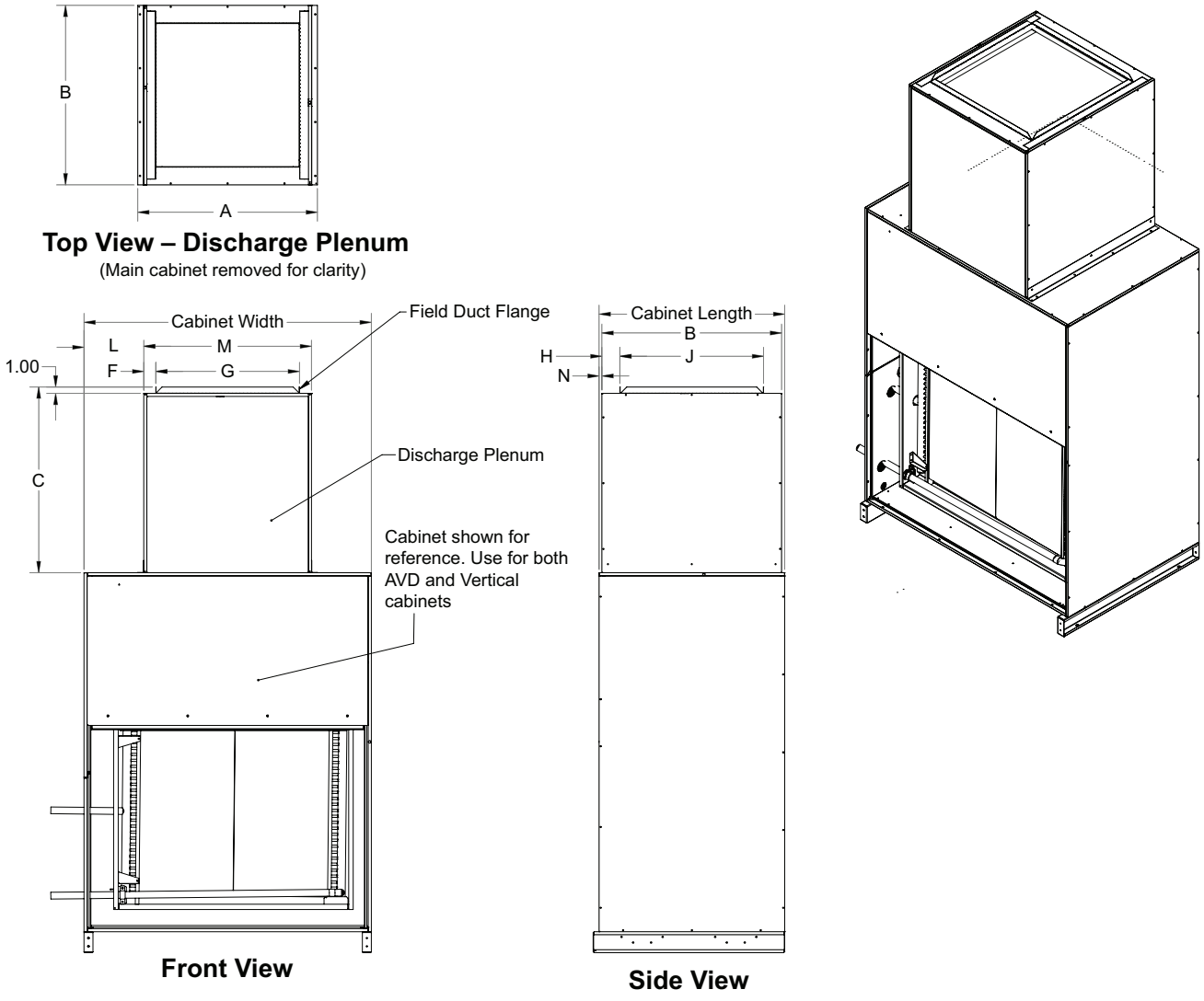


Table 64: Discharge Plenum Dimension Letter Reference

AVD												
A	B	C	F	G	H	J	L	M	N	Cabinet Length	Cabinet Width	Cabinet Height
14.00	17.50	25.00	2.00	8.06	2.75	12.00	6.50	12.00	0.25	18.00	25.00	58.00
18.00	17.50	25.00	2.00	12.00	2.75	12.00	6.00	16.00	0.25	18.00	28.00	60.00
20.00	17.50	25.00	2.00	14.00	2.75	12.00	6.75	18.00	0.25	18.00	31.50	62.00
31.00	17.50	25.00	5.47	20.00	1.75	14.00	6.75	29.00	0.25	18.00	38.00	63.50
33.00	17.50	25.00	2.47	20.00	1.75	14.00	6.00	31.00	0.25	18.00	43.00	64.00
Vertical												
A	B	C	F	G	H	J	L	M	N	Cabinet Length	Cabinet Width	Cabinet Height
26.00	30.00	31.00	2.00	20.00	5.00	20.00	10.00	24.00	0.50	31.00	44.00	56.00
30.00	30.00	31.00	2.00	24.00	3.00	24.00	10.00	28.00	0.50	31.00	48.00	60.00
30.00	30.00	31.00	2.00	24.00	3.00	24.00	10.00	28.00	0.50	31.00	48.00	68.00

Size 060-100 Unit Dimensions

Figure 99: Coil Section Dimensions (Sizes 060-100)

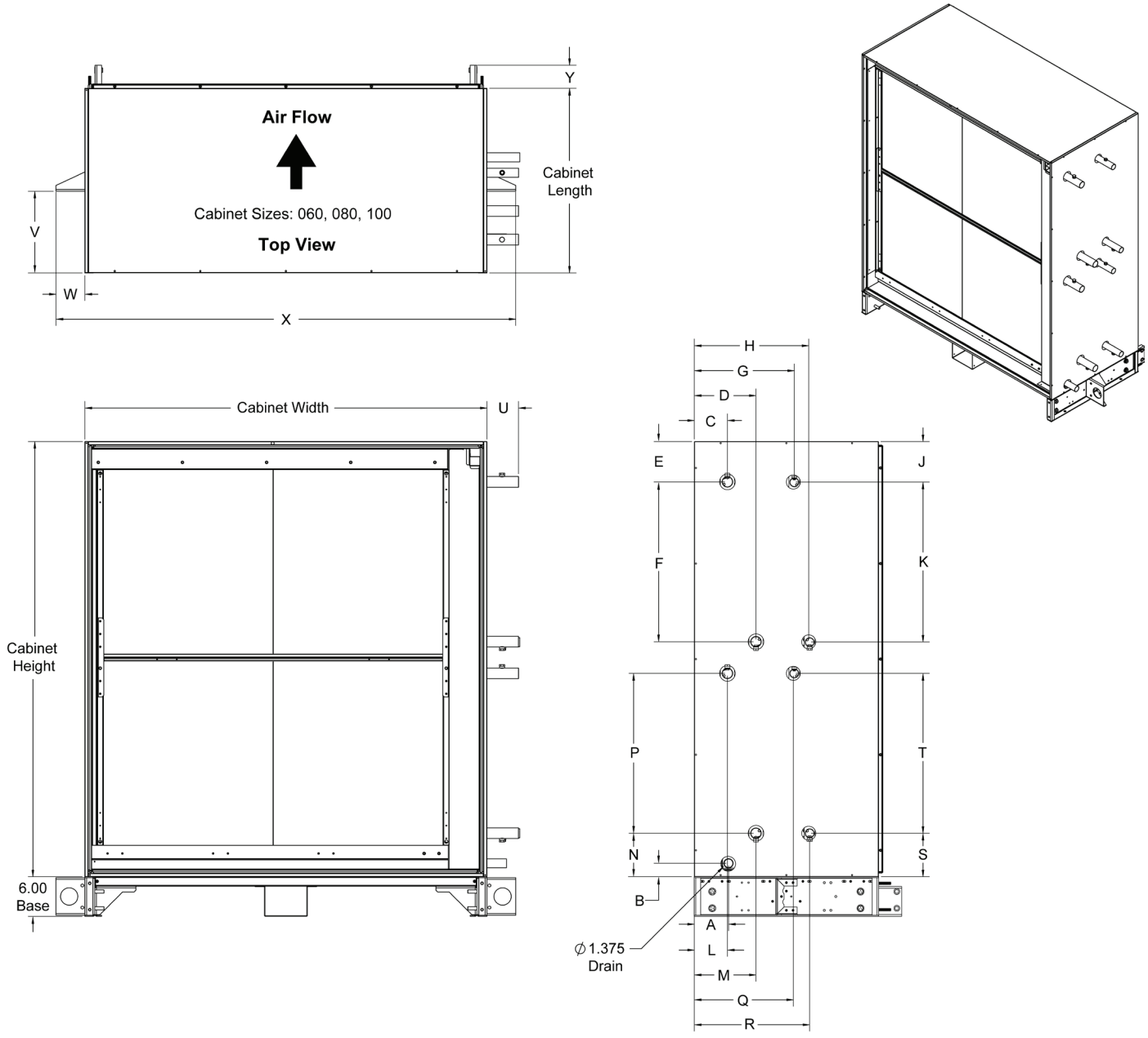


Table 65: General Unit Dimensions (Sizes 060-100)

	Length	Width	Height	U	V	W	X	Y
SIZE 60	28.00	54.00	54.00	4.19	12.39	4.38	62.75	3.50
SIZE 80	28.00	54.00	62.00	5.45	12.39	4.38	62.75	3.50
SIZE 100	28.00	61.00	66.00	4.79	12.39	4.38	69.75	3.50

Table 66: Hydronic Coil Unit Dimensions (Sizes 060-100) for Figure 99 on page 91

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
8-Row Cold Water + 2-Row Hot Water																		
SIZE 60	-	-	5.01	9.37	6.11	18.25	15.75	17.29	6.11	18.25	5.01	9.37	6.59	18.25	15.75	17.29	6.59	18.25
SIZE 80	-	-	5.03	9.36	6.11	22.25	15.75	17.29	6.11	22.25	5.03	9.36	6.59	22.25	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	5.03	9.36	6.11	24.25	15.17	17.50	6.11	24.25	5.03	9.36	6.59	24.25	15.17	17.50	6.59	24.25
6-Row Cold Water + 2-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.84	6.11	18.25	15.75	17.29	6.11	18.25	6.24	8.84	6.59	18.25	15.75	17.29	6.59	18.25
SIZE 80	-	-	6.24	8.83	6.11	22.25	15.75	17.29	6.11	22.25	6.24	8.83	6.59	22.25	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	6.23	8.84	6.11	24.25	15.17	17.50	6.11	24.25	6.23	8.84	6.59	24.25	15.17	17.50	6.59	24.25
4-Row Cold Water + 2-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.83	6.11	18.25	15.75	17.29	6.11	18.25	6.24	8.83	6.59	18.25	15.75	17.29	6.59	18.25
SIZE 80	-	-	5.36	7.96	6.11	22.25	15.75	17.29	6.11	22.25	5.36	7.96	6.59	22.25	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	6.24	8.83	6.11	24.25	15.17	17.50	6.11	24.25	6.24	8.83	6.59	24.25	15.17	17.50	6.59	24.25
2-Row Cold Water + 2-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.42	7.97	6.11	18.25	15.75	17.29	6.11	18.25	6.42	7.97	6.59	18.25	15.75	17.29	6.59	18.25
SIZE 80	-	-	6.42	7.97	6.11	22.25	15.75	17.29	6.11	22.25	6.42	7.97	6.59	22.25	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	5.96	7.97	6.11	24.25	15.17	17.50	6.11	24.25	5.96	7.97	6.59	24.25	15.17	17.50	6.59	24.25
8-Row Cold Water + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	5.01	9.37	6.11	18.25	15.63	16.84	6.11	18.39	5.01	9.37	6.59	18.25	15.63	16.84	6.45	18.39
SIZE 80	-	-	5.03	9.36	6.11	22.25	15.49	16.84	7.61	19.75	5.03	9.36	6.59	22.25	15.49	16.84	7.59	19.75
SIZE 100	5.20	2.03	5.03	9.36	6.11	24.25	15.39	16.84	6.11	24.25	5.03	9.36	6.59	24.25	15.39	16.84	6.59	24.25
6-Row Cold Water + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.84	6.11	18.25	15.63	16.84	6.11	18.39	6.24	8.84	6.59	18.25	15.63	16.84	6.45	18.39
SIZE 80	-	-	6.24	8.83	6.11	22.25	15.48	16.83	7.61	19.75	6.24	8.83	6.59	22.25	15.48	16.83	7.59	19.75
SIZE 100	5.20	2.03	6.23	8.84	6.11	24.25	15.39	16.84	6.11	24.25	6.23	8.84	6.59	24.25	15.39	16.84	6.59	24.25
4-Row Cold Water + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.83	6.11	18.25	15.63	16.84	6.11	18.39	6.24	8.83	6.59	18.25	15.63	16.84	6.45	18.39
SIZE 80	-	-	5.36	7.96	6.11	22.25	15.48	16.83	7.61	19.75	5.36	7.96	6.59	22.25	15.48	16.83	7.59	19.75
SIZE 100	5.20	2.03	6.24	8.83	6.11	24.25	15.39	16.84	6.11	24.25	6.24	8.83	6.59	24.25	15.39	16.84	6.59	24.25
2-Row Cold Water + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.42	7.97	6.11	18.25	15.63	16.84	6.11	18.39	6.42	7.97	6.59	18.25	15.63	16.84	6.45	18.39
SIZE 80	-	-	6.42	7.97	6.11	22.25	15.48	16.83	7.61	19.75	6.42	7.97	6.59	22.25	15.48	16.83	7.59	19.75
SIZE 100	5.20	2.03	5.96	7.97	6.11	24.25	15.39	16.84	6.11	24.25	5.96	7.97	6.59	24.25	15.39	16.84	6.59	24.25
2-Row Hot Water + 8-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	12.22	16.58	6.11	18.25	7.45	9.00	6.59	18.25	12.22	16.58	6.59	18.25
SIZE 80	-	-	7.50	9.04	6.11	22.25	12.28	16.61	6.11	22.25	7.50	9.04	6.59	22.25	12.28	16.61	6.59	22.25
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	12.28	16.61	6.11	24.25	6.92	9.25	6.59	24.25	12.28	16.61	6.59	24.25
2-Row Hot Water + 6-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	13.45	16.05	6.11	18.25	7.45	9.00	6.59	18.25	13.45	16.05	6.59	18.25
SIZE 80	-	-	7.50	9.04	6.11	22.25	13.49	16.08	6.11	22.25	7.50	9.04	6.59	22.25	13.49	16.08	6.59	22.25
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	13.48	16.09	6.11	24.25	6.92	9.25	6.59	24.25	13.48	16.09	6.59	24.25
2-Row Hot Water + 4-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	13.45	16.04	6.11	18.25	7.45	9.00	6.59	18.25	13.45	16.04	6.59	18.25
SIZE 80	-	-	7.50	9.04	6.11	22.25	12.61	15.21	6.11	22.25	7.50	9.04	6.59	22.25	12.61	15.21	6.59	22.25
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	13.49	16.08	6.11	24.25	6.92	9.25	6.59	24.25	13.49	16.08	6.59	24.25
2-Row Hot Water + 2-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	13.63	15.18	6.11	18.25	7.45	9.00	6.59	18.25	13.63	15.18	6.59	18.25
SIZE 80	-	-	7.50	9.04	6.11	22.25	13.67	15.22	6.11	22.25	7.50	9.04	6.59	22.25	13.67	15.22	6.59	22.25
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	13.21	15.22	6.11	24.25	6.92	9.25	6.59	24.25	13.21	15.22	6.59	24.25

1-Row Hot Water + 8-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	12.22	16.58	6.11	18.25	7.34	8.55	6.45	18.39	12.22	16.58	6.59	18.25
SIZE 80	-	-	7.23	8.58	7.61	19.75	12.28	16.61	6.11	22.25	7.23	8.58	7.59	19.75	12.28	16.61	6.59	22.25
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	12.28	16.61	6.11	24.25	7.14	8.59	6.59	24.25	12.28	16.61	6.59	24.25
1-Row Hot Water + 6-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	13.45	16.05	6.11	18.25	7.34	8.55	6.45	18.39	13.45	16.05	6.59	18.25
SIZE 80	-	-	7.23	8.58	7.61	19.75	13.49	16.08	6.11	22.25	7.23	8.58	7.59	19.75	13.49	16.08	6.59	22.25
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	13.48	16.09	6.11	24.25	7.14	8.59	6.59	24.25	13.48	16.09	6.59	24.25
1-Row Hot Water + 4-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	13.45	16.04	6.11	18.25	7.34	8.55	6.45	18.39	13.45	16.04	6.59	18.25
SIZE 80	-	-	7.23	8.58	7.61	19.75	12.61	15.21	6.11	22.25	7.23	8.58	7.59	19.75	12.61	15.21	6.59	22.25
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	13.49	16.08	6.11	24.25	7.14	8.59	6.59	24.25	13.49	16.08	6.59	24.25
1-Row Hot Water + 2-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	13.63	15.18	6.11	18.25	7.34	8.55	6.45	18.39	13.63	15.18	6.59	18.25
SIZE 80	-	-	7.23	8.58	7.61	19.75	13.67	15.22	6.11	22.25	7.23	8.58	7.61	19.75	13.67	15.22	6.59	22.25
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	13.21	15.22	6.11	24.25	7.14	8.59	6.59	24.25	13.21	15.22	6.59	24.25
8-Row																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	5.01	9.37	6.11	18.25	-	-	-	-	5.01	9.37	6.59	18.25	-	-	-	-
SIZE 80	-	-	5.03	9.36	6.11	22.25	-	-	-	-	5.03	9.36	6.59	22.25	-	-	-	-
SIZE 100	5.20	2.03	5.03	9.36	6.11	24.25	-	-	-	-	5.03	9.36	6.59	24.25	-	-	-	-
6-Row																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.84	6.11	18.25	-	-	-	-	6.24	8.84	6.59	18.25	-	-	-	-
SIZE 80	-	-	6.24	8.83	6.11	22.25	-	-	-	-	6.24	8.83	6.59	22.25	-	-	-	-
SIZE 100	5.20	2.03	6.23	8.84	6.11	24.25	-	-	-	-	6.23	8.84	6.59	24.25	-	-	-	-
4-Row																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.24	8.83	6.11	18.25	-	-	-	-	6.24	8.83	6.59	18.25	-	-	-	-
SIZE 80	-	-	5.36	7.96	6.11	22.25	-	-	-	-	5.36	7.96	6.59	22.25	-	-	-	-
SIZE 100	5.20	2.03	6.24	8.83	6.11	24.25	-	-	-	-	6.24	8.83	6.59	24.25	-	-	-	-
2-Row																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.42	7.97	6.11	18.25	-	-	-	-	6.42	7.97	6.59	18.25	-	-	-	-
SIZE 80	-	-	6.42	7.97	6.11	22.25	-	-	-	-	6.42	7.97	6.59	22.25	-	-	-	-
SIZE 100	5.20	2.03	5.96	7.97	6.11	24.25	-	-	-	-	5.96	7.97	6.59	24.25	-	-	-	-

Table 67: DX Unit Dimensions (Sizes 060-100) for Figure 99 on page 91

DX SINGLE + 2-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.67	-	24.63	-	15.75	17.29	6.11	18.25	6.67	-	6.33	-	15.75	17.29	6.59	18.25
SIZE 80	-	-	6.67	-	28.63	-	15.75	17.29	6.11	22.25	6.67	-	6.33	-	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	6.67	-	30.61	-	15.17	17.50	6.11	24.25	6.67	-	6.33	-	15.17	17.50	6.59	24.25
DX SINGLE + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.67	-	24.63	-	15.63	16.84	6.11	18.39	6.67	-	6.33	-	15.63	16.84	6.45	18.39
SIZE 80	-	-	6.67	-	28.63	-	15.48	16.83	7.61	19.75	6.67	-	6.33	-	15.48	16.83	7.59	19.75
SIZE 100	5.20	2.03	6.67	-	30.61	-	15.39	16.84	6.11	24.25	6.67	-	6.33	-	15.39	16.84	6.59	24.25
DX INTERLACED + 2-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	**-**	**-**	**6.67**	**7.98**	**19.63**	**4.00**	**15.75**	**17.29**	**6.11**	**18.25**	**6.67**	**7.98**	**7.33**	**4.00**	**15.75**	**17.29**	**6.59**	**18.25**
SIZE 80	-	-	6.66	8.10	23.63	4.00	15.75	17.29	6.11	22.25	6.66	8.10	7.33	4.00	15.75	17.29	6.59	22.25
SIZE 100	5.20	2.03	5.11	8.23	27.61	2.00	15.17	17.50	6.11	24.25	5.11	8.23	9.33	2.00	15.17	17.50	7.33	24.25
DX INTERLACED + 1-Row Hot Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.67	7.98	19.63	4.00	15.63	16.84	6.11	18.39	6.67	7.98	7.33	4.00	15.63	16.84	6.45	18.39
SIZE 80	-	-	6.66	8.10	23.63	4.00	15.48	16.83	7.61	19.75	6.66	8.10	7.33	4.00	15.48	16.83	7.59	19.75
SIZE 100	5.20	2.03	5.11	8.23	27.61	2.00	15.39	16.84	6.11	24.25	5.11	8.23	9.33	2.00	15.39	16.84	7.33	24.25
2-Row Hot Water + DX SINGLE																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	-	13.88	-	24.63	7.45	9.00	6.59	18.25	-	13.88	6.33	-
SIZE 80	-	-	7.50	9.04	6.11	22.25	13.92	-	28.63	-	7.50	9.04	6.59	22.25	13.92	-	6.33	-
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	13.92	-	30.63	-	6.92	9.25	6.59	24.25	13.92	-	6.33	-
1-Row Hot Water + DX SINGLE																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	-	13.88	-	24.63	7.34	8.55	6.45	18.39	-	13.88	6.33	-
SIZE 80	-	-	7.23	8.58	7.61	19.75	13.92	-	28.63	-	7.23	8.58	7.59	19.75	13.92	-	6.33	-
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	13.92	-	30.63	-	7.14	8.59	6.59	24.25	13.92	-	6.33	-
2-Row Hot Water + DX INTERLACED																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.45	9.00	6.11	18.25	13.88	15.19	19.63	4.00	7.45	9.00	6.59	18.25	13.88	15.19	7.33	4.00
SIZE 80	-	-	7.50	9.04	6.11	22.25	13.91	15.35	23.63	4.00	7.50	9.04	6.59	22.25	13.91	15.35	7.33	4.00
SIZE 100	5.20	2.03	6.92	9.25	6.11	24.25	12.35	15.48	27.61	2.00	6.92	9.25	9.33	24.25	12.35	15.48	7.33	2.00
1-Row Hot Water + DX INTERLACED																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.34	8.55	6.11	18.39	13.88	15.19	19.63	4.00	7.34	8.55	6.45	18.39	13.88	15.19	7.33	4.00
SIZE 80	-	-	7.23	8.58	7.61	19.75	13.91	15.35	23.63	4.00	7.23	8.58	7.59	19.75	13.91	15.35	7.33	4.00
SIZE 100	5.20	2.03	7.14	8.59	6.11	24.25	12.35	15.48	27.61	2.00	7.14	8.59	9.33	24.25	12.35	15.48	7.33	2.00
DX SINGLE																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.67	-	24.63	-	-	-	-	-	6.67	-	6.33	-	-	-	-	-
SIZE 80	-	-	6.67	-	28.63	-	-	-	-	-	6.69	-	6.33	-	-	-	-	-
SIZE 100	5.20	2.03	6.67	-	30.61	-	-	-	-	-	6.67	-	6.33	-	-	-	-	-
DX INTERLACED																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	6.67	7.98	19.63	4.00	-	-	-	-	6.67	7.98	7.33	4.00	-	-	-	-
SIZE 80	-	-	6.66	8.10	23.63	4.00	-	-	-	-	6.66	8.10	7.33	4.00	-	-	-	-
SIZE 100	5.20	2.03	5.11	8.23	27.61	2.00	-	-	-	-	5.11	8.23	9.33	2.00	-	-	-	-

Table 68: Steam Unit Dimensions (Sizes 060-100) for Figure 99 on page 91

Steam + 8-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	12.22	16.58	6.11	18.25	7.68	5.35	5.44	11.24	12.22	16.58	6.59	18.25
SIZE 80	-	-	7.80	5.49	16.07	13.38	12.28	16.61	6.11	22.25	7.80	5.49	5.50	13.38	12.28	16.61	6.59	22.25
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	12.28	16.61	6.11	24.25	7.80	5.48	5.25	14.65	12.28	16.61	6.59	24.25
Steam + 6-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	13.45	16.05	6.11	18.25	7.68	5.35	5.44	11.24	13.45	16.05	6.59	18.25
SIZE 80	-	-	7.80	5.49	16.07	13.38	13.49	16.08	6.11	22.25	7.80	5.49	5.50	13.38	13.49	16.08	6.59	22.25
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	13.48	16.09	6.11	24.25	7.80	5.48	5.25	14.65	13.48	16.09	6.59	24.25
Steam + 4-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	13.45	16.04	6.11	18.25	7.68	5.35	5.44	11.24	13.45	16.04	6.59	18.25
SIZE 80	-	-	7.80	5.49	16.07	13.38	12.61	15.21	6.11	22.25	7.80	5.49	5.50	13.38	12.61	15.21	6.59	22.25
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	13.49	16.08	6.11	24.25	7.80	5.48	5.25	14.65	13.49	16.08	6.59	24.25
Steam + 2-Row Cold Water																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	13.63	15.18	6.11	18.25	7.68	5.35	5.44	11.24	13.63	15.18	6.59	18.25
SIZE 80	-	-	7.80	5.49	16.07	13.38	13.67	15.22	6.11	22.25	7.80	5.49	5.50	13.38	13.67	15.22	6.59	22.25
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	13.21	15.22	6.11	24.25	7.80	5.48	5.25	14.65	13.21	15.22	6.59	24.25
Steam + DX Single																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	13.92	-	24.63	-	7.68	5.35	5.44	11.24	13.92	-	6.33	-
SIZE 80	-	-	7.80	5.49	16.07	13.38	13.92	-	28.63	-	7.80	5.49	5.50	13.38	13.92	-	6.33	-
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	13.92	-	30.63	-	7.80	5.48	5.25	14.65	13.92	-	6.33	-
Steam + DX Interlaced																		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
SIZE 60	-	-	7.68	5.35	14.27	11.24	13.92	15.23	19.63	4.00	7.68	5.35	5.44	11.24	13.92	15.23	7.33	4.00
SIZE 80	-	-	7.80	5.49	16.07	13.38	13.91	15.35	23.63	4.00	7.80	5.49	5.50	13.38	13.91	15.35	7.33	4.00
SIZE 100	5.20	2.03	7.80	5.48	17.06	14.65	12.35	15.48	27.61	2.00	7.80	5.48	5.25	14.65	12.35	15.48	7.33	2.00

Figure 100: Mixing Box Dimensions (Sizes 060-100)

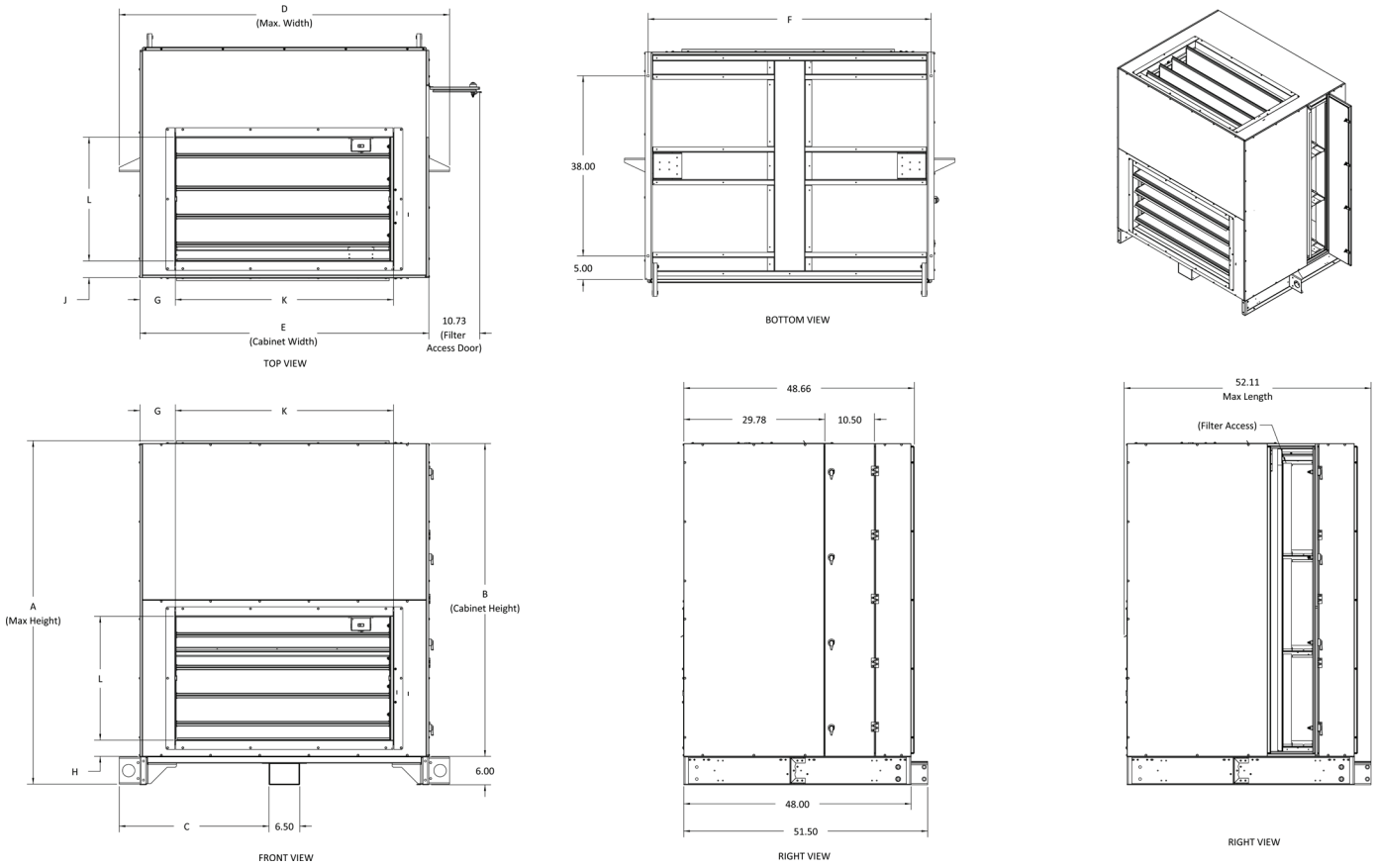


Table 69: Mixing Box Dimension Letter Reference

Dimension	060	080	100
A	60.00	68.00	72.00
B	54.00	62.00	66.00
C	28.13	28.13	31.63
D	62.75	62.75	69.75
E	54.00	54.00	61.00
F	52.76	52.76	59.76
G	10.19	4.94	7.49
H	2.45	2.45	3.43
J	3.16	3.16	3.53
K	33.63	44.13	46.03
L	22.07	22.07	26.11

Figure 101: Discharge Plenum Without Filter (Sizes 060-100)

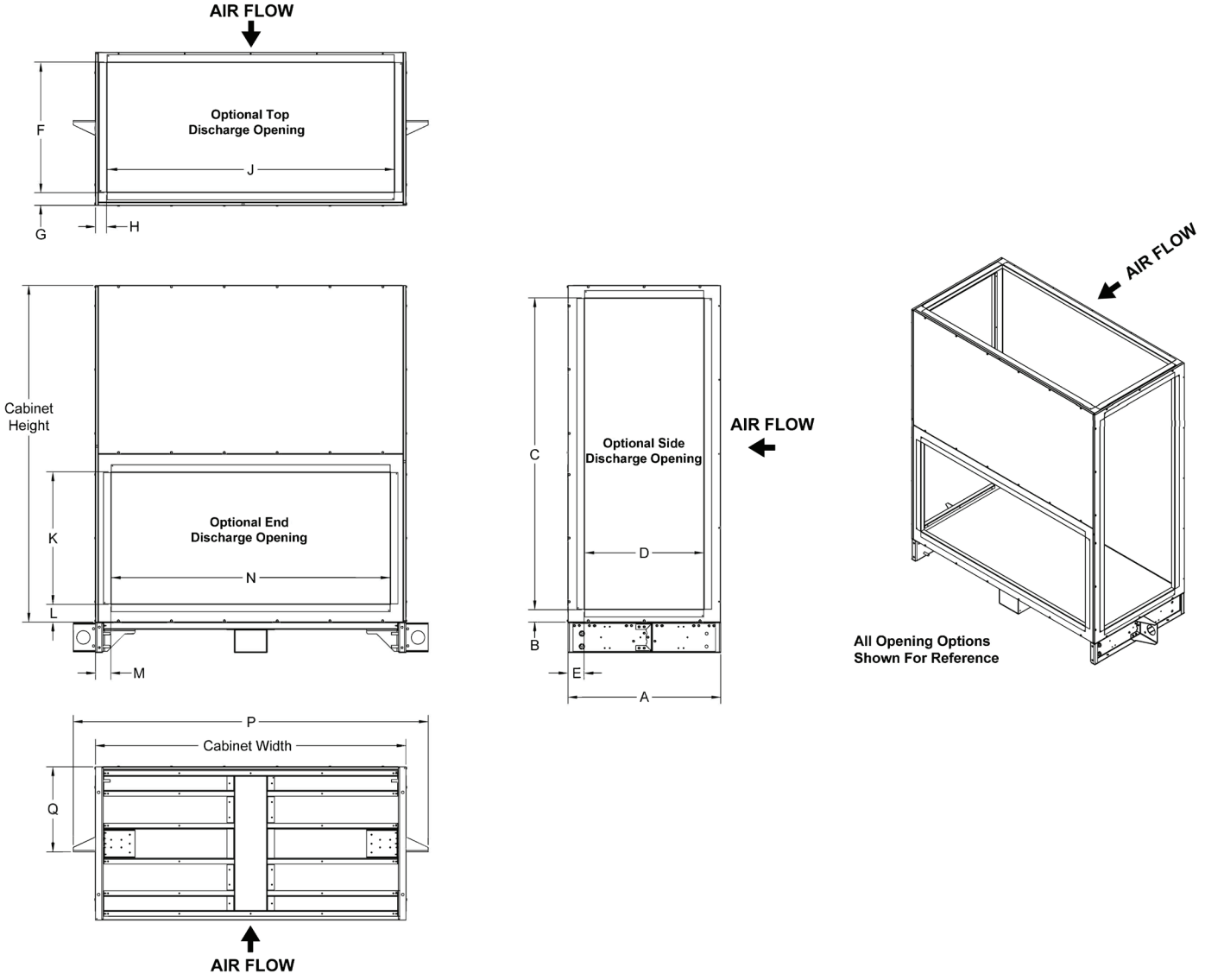


Table 70: Discharge Plenum Without Filter Dimension Letter Reference

Dimension	060	080	100		Dimension	060	080	100
A	30.00	30.00	30.00		K	20.00	24.00	26.00
B	3.00	7.00	2.50		L	3.49	3.49	3.46
C	48.00	48.00	61.00		M	5.50	3.00	3.00
D	18.00	24.00	23.50		N	43.00	48.00	55.00
E	7.16	2.99	3.23		P	62.75	62.75	69.75
F	20.00	24.00	26.00		Q	16.61	16.61	16.61
G	2.60	3.25	2.50		Length	30	30	30
H	7.50	3.00	2.25		Width	54	54	61
J	43.00	48.00	55.00		Height	54	62	66

Figure 102: Discharge Plenum With Filter (Sizes 060-100)

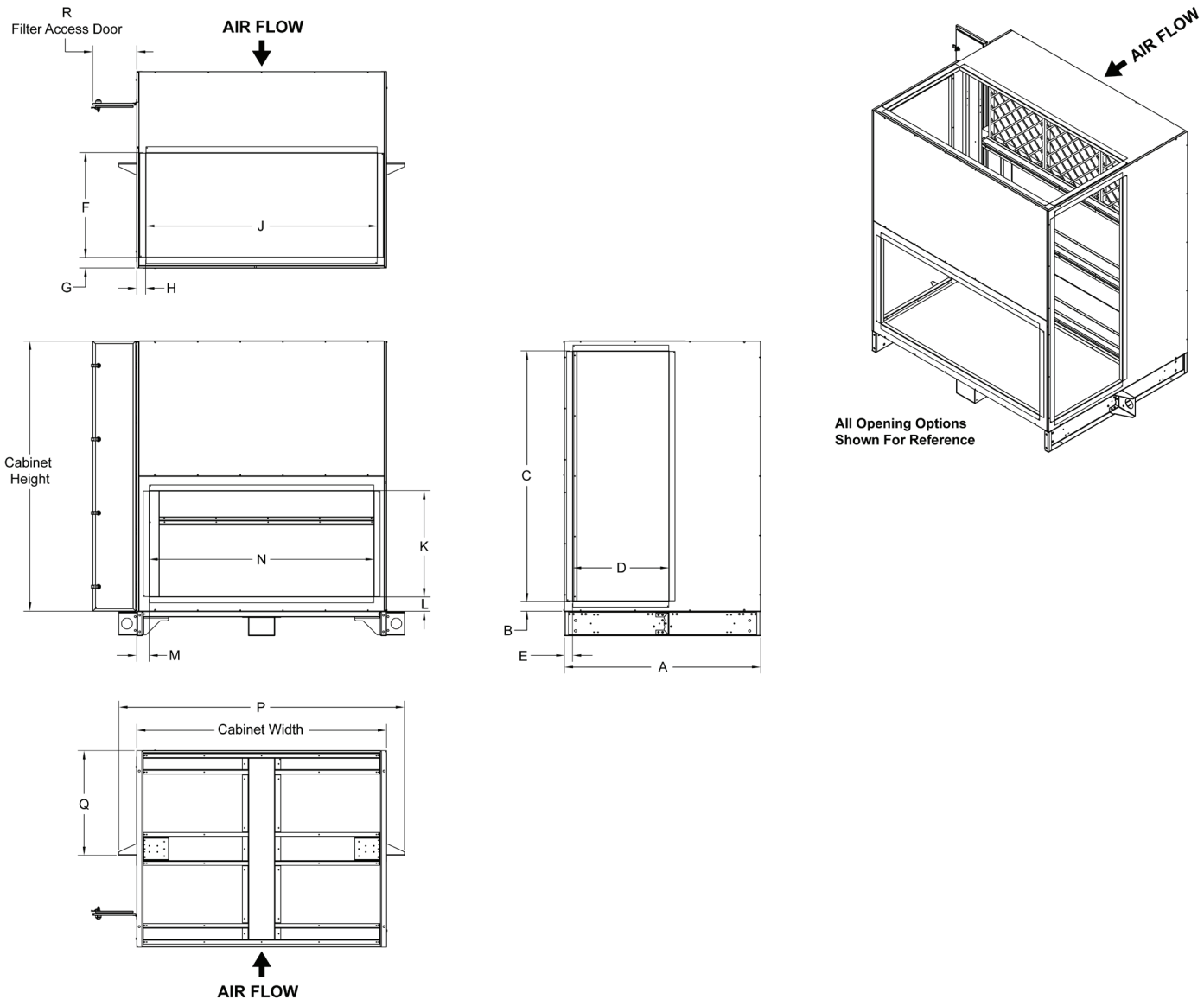


Table 71: Discharge Plenum With Filter Dimension Letter Reference

Dimension	060	080	100		Dimension	060	080	100
A	48.00	48.00	48.00		L	3.49	3.49	3.46
B	3.00	7.00	2.50		M	5.50	3.00	3.00
C	48.00	48.00	61.00		N	43.00	48.00	55.00
D	18.00	24.00	23.50		P	62.75	62.75	69.75
E	4.81	3.06	2.06		Q	25.61	25.61	25.61
F	20.00	24.00	26.00		R	10.73	10.73	10.73
G	2.60	2.60	2.06		Length	48	48	48
H	7.50	3.00	2.25		Width	54	54	61
J	43.00	48.00	55.00		Height	54	62	66
K	20.00	24.00	26.00					

Figure 103: Exhaust Air / Outdoor Air Dimensions (Sizes 060-100)

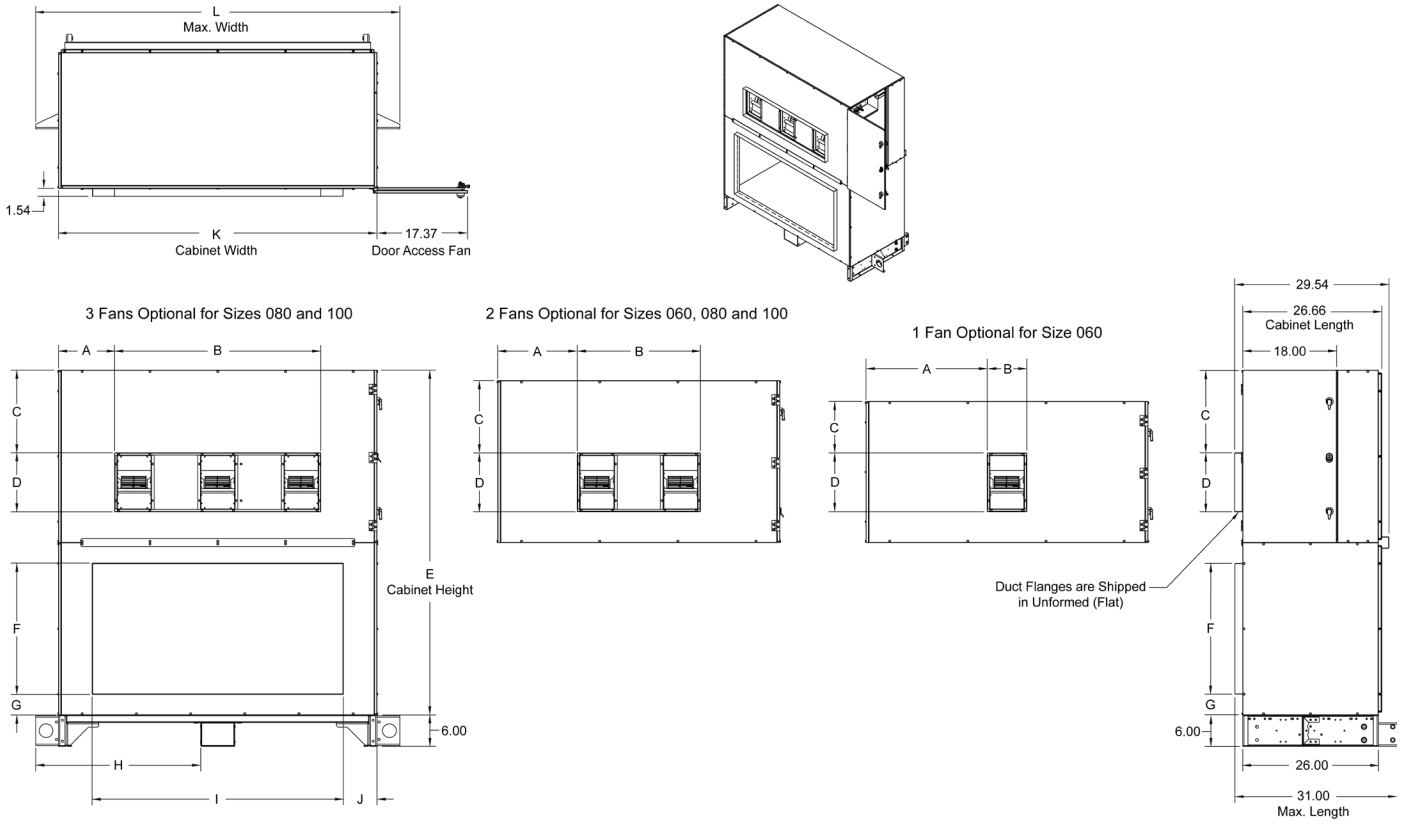


Table 72: Exhaust Air / Outdoor Air Section Dimension Letter Reference

Dimension	060		080		100	
	1 Fan	2 Fans	2 Fans	3 Fans	2 Fans	3 Fans
A	23.20	15.20	15.20	7.20	18.75	10.75
B	7.60	23.60	23.60	39.61	23.50	39.61
C	9.84	9.84	13.84	13.81	15.84	15.81
D	11.26	11.26	11.26	11.26	11.26	11.26
E	54.00		62.00		66.00	
F	20.00		24.00		25.00	
G	3.50		3.50		4.00	
H	23.75		23.75		31.63	
I	36.00		40.00		48.00	
J	9.00		7.00		6.50	
K	54.00		54.00		61.00	
L	62.75		62.75		69.75	

Figure 104: Economizer Dimensions (Sizes 060-100)

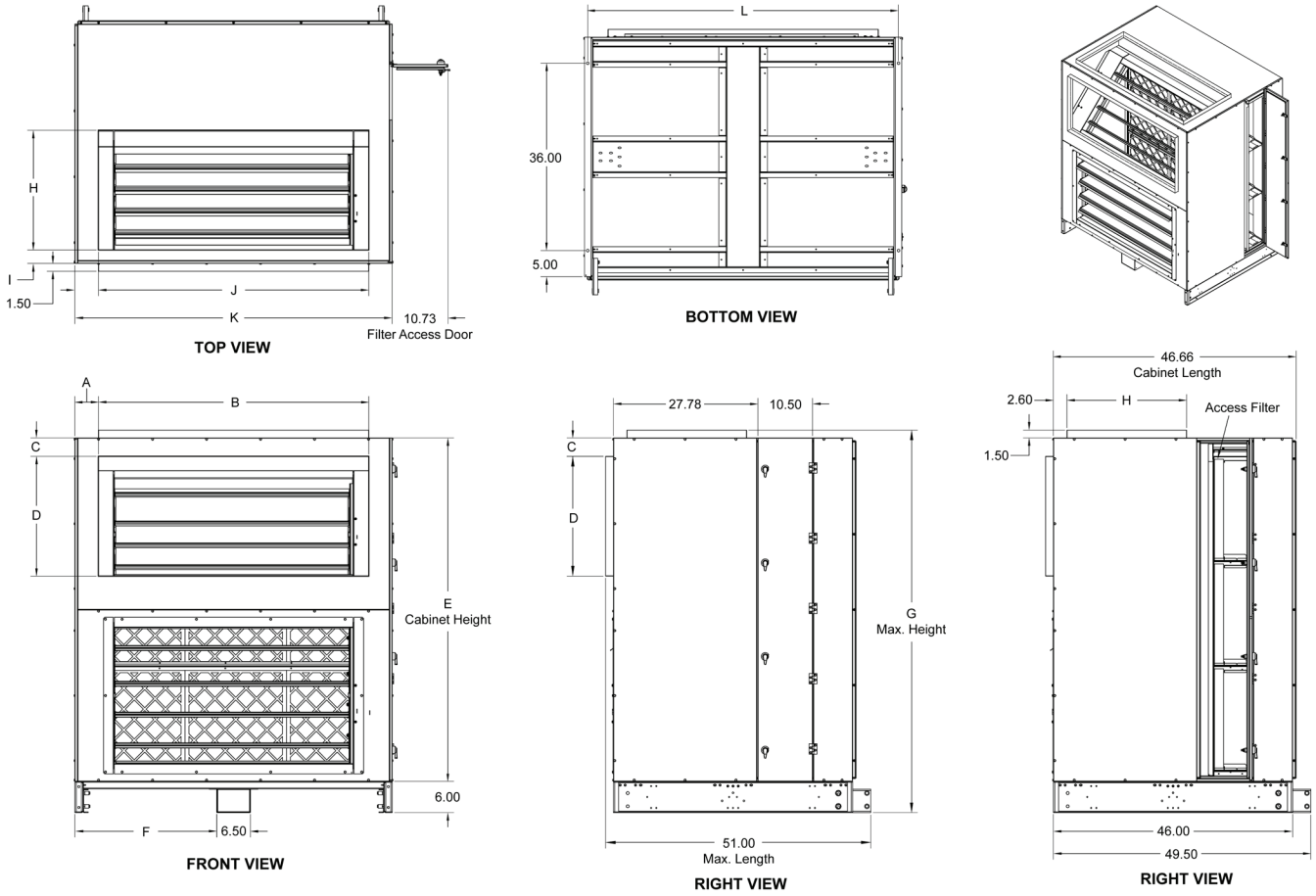


Table 73: Economizer Section Dimension Letter Reference

Dimension	060	080	100
A	7.00	5.00	4.50
B	40.00	44.00	52.00
C	54.00	62.00	66.00
D	23.75	23.75	27.25
E	61.50	69.50	73.50
F	18.00	22.00	23.19
G	54.00	54.00	61.00
H	52.76	52.76	59.76
I	6.50	4.00	4.50
J	40.00	46.00	52.00
K	54.00	54.00	61.00
L	52.76	52.76	59.76

Figure 105: Return Filter Dimensions (Sizes 060-100)

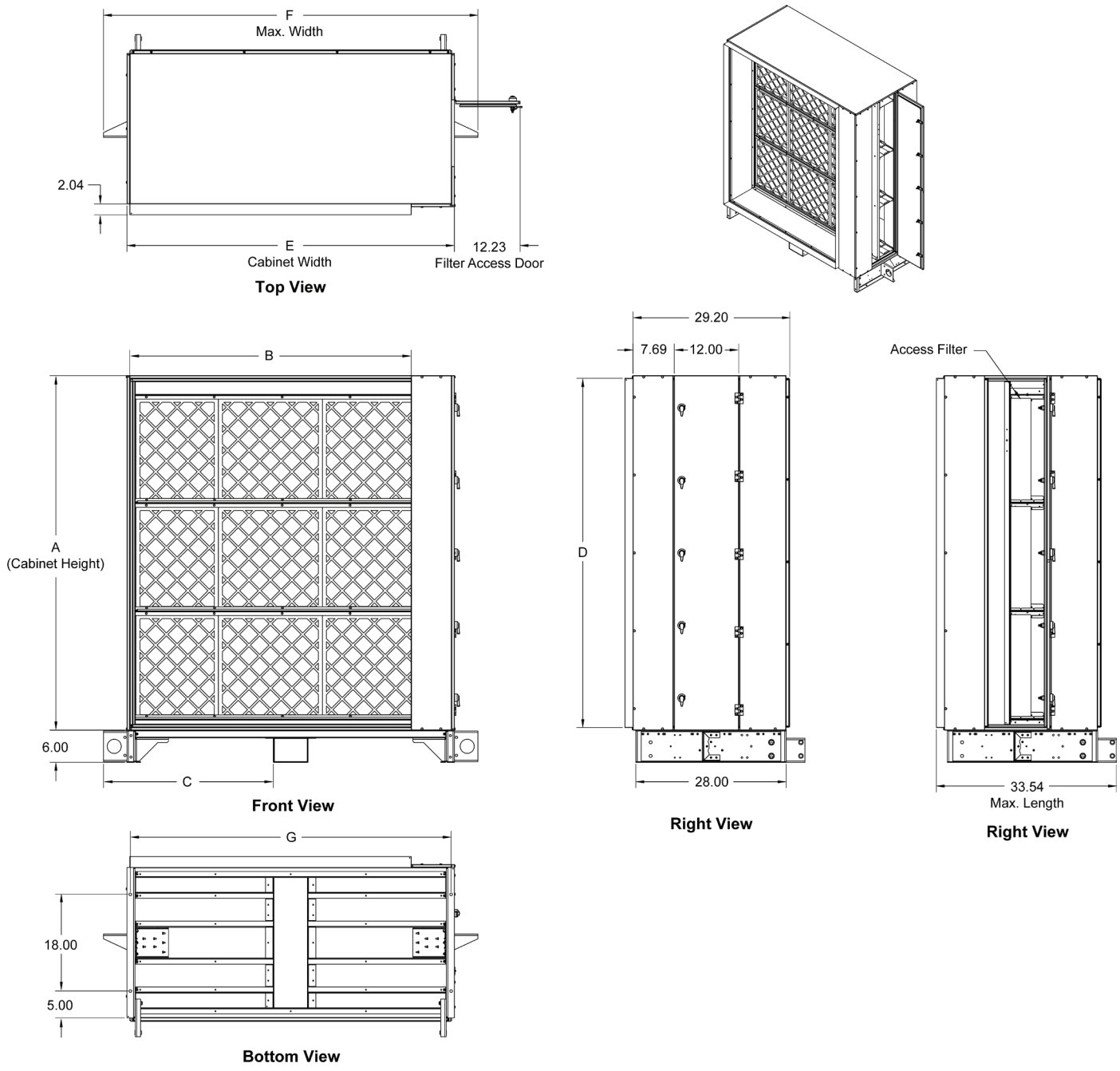


Table 74: Return Filter Section Dimension Letter Reference

Dimension	060	080	100
A	54.00	62.00	66.00
B	45.36	45.36	52.36
C	28.13	28.13	31.63
D	52.88	60.88	64.88
E	54.00	54.00	61.00
F	62.75	62.75	69.75
G	52.76	52.76	59.76

Figure 106: Electric Heat Section Dimensions (Sizes 060-100)

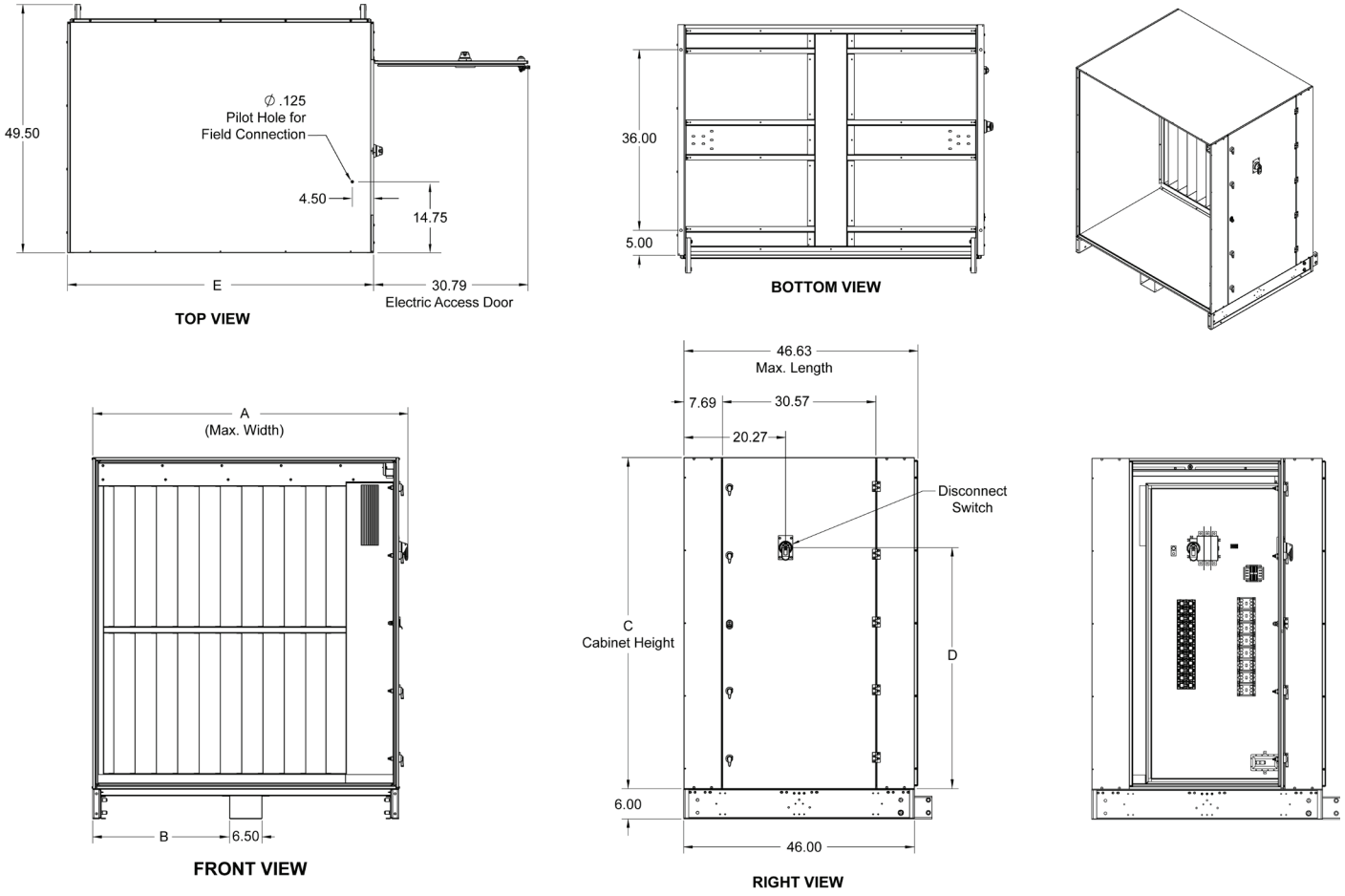


Table 75: Electric Heat Section Dimension Letter Reference

Dimension	060	080	100
A	55.82	55.82	62.82
B	23.75	23.75	27.25
C	54.00	62.00	66.00
D	36.04	44.04	46.73
E	54.00	54.00	61.00

Figure 107: Supply Air Fan Section Dimensions (Sizes 060-100)

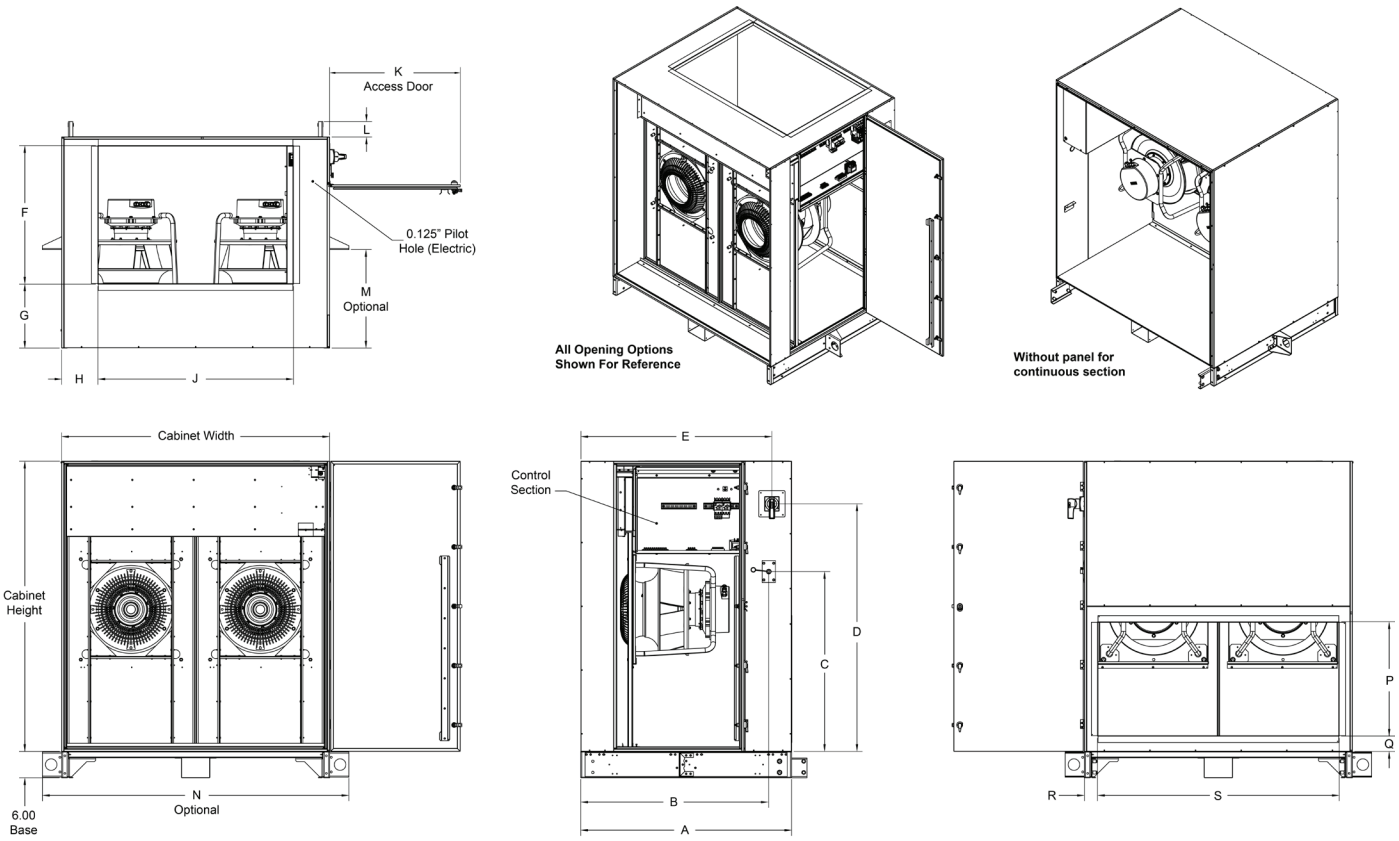


Table 76: Supply Air Fan Section Dimension Letter Reference

Dimension	060	080	100
A	48.00	48.00	48.00
B	43.65	43.65	43.65
C	36.65	44.64	48.64
D	44.08	52.08	56.07
E	43.65	43.65	43.65
F	29.50	31.00	31.38
G	15.87	14.37	14.57
H	12.25	8.50	8.31
J	29.50	37.00	44.38
K	29.73	29.73	29.73
L	3.50	3.50	3.50
M	22.39	22.39	22.39
N	62.75	62.75	69.75
P	20.00	26.00	26.00
Q	3.49	2.49	3.46
R	5.50	5.00	3.00
S	43.00	44.00	55.00

Accessory Dimensions

Figure 108: Integrated Thermostat

All figures in mm

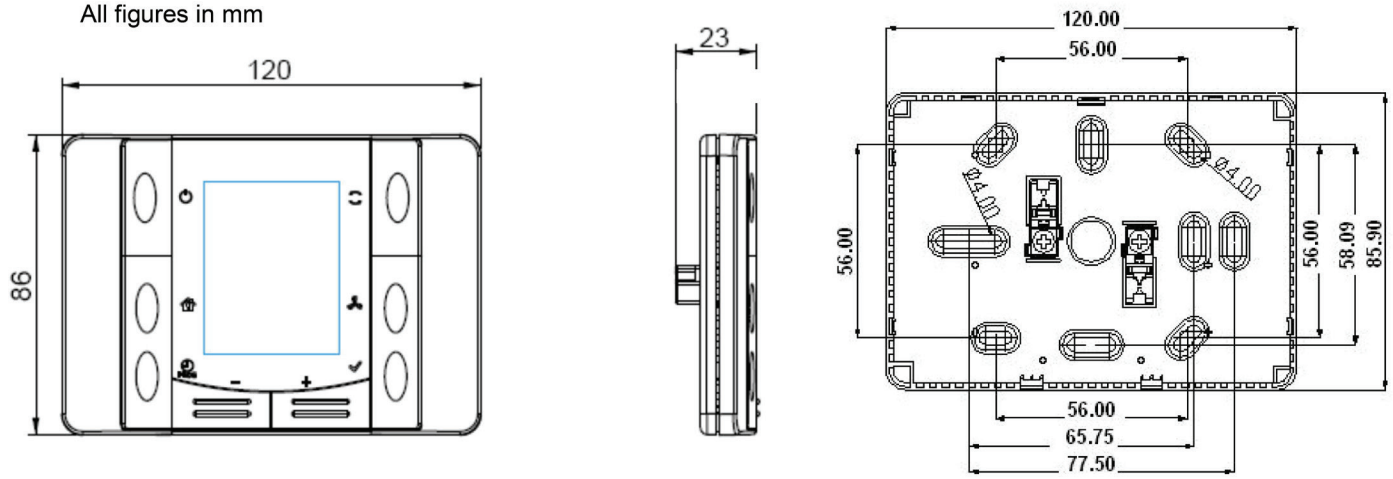
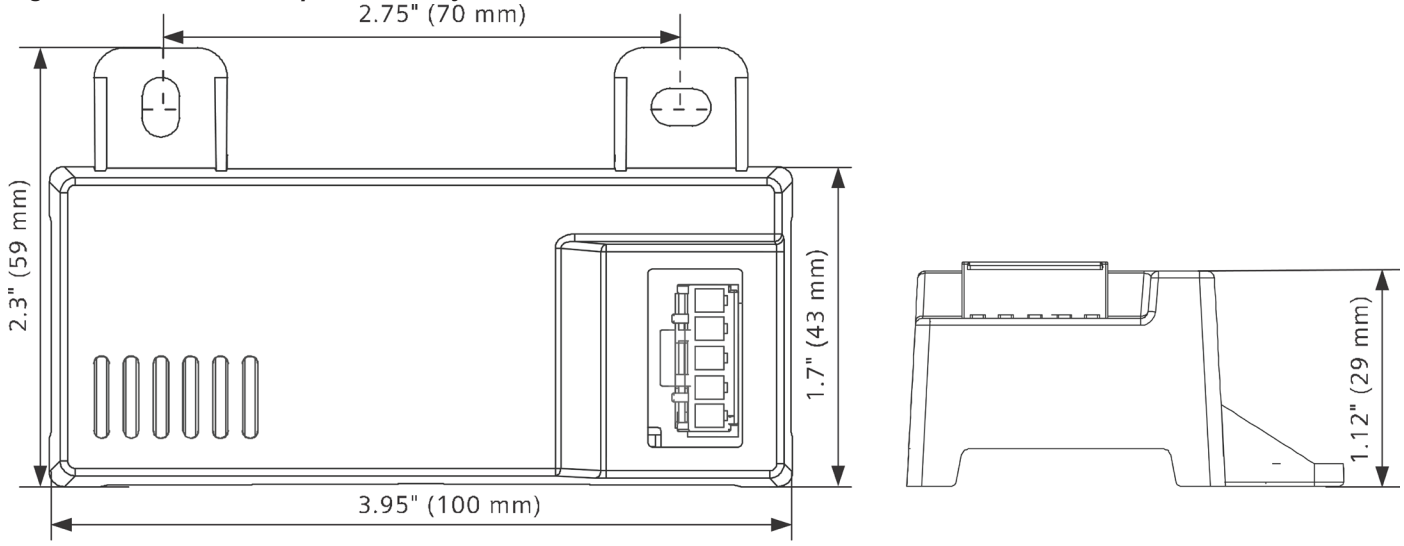


Figure 109: Economizer Space Humidity Sensor



Dimensions in inch (mm)

Startup Checks

When performing startup and service, always take thorough safety precautions. Start-up functions must be performed by trained, experienced personnel.

⚠ DANGER

FAN MOTOR REQUIRES OVERLOAD PROTECTION

Failure to provide motor overload protection can result in fire, property damage, electric shock, personal injury or death. Connect motor to an overload protective device rated in compliance with local electric codes.

⚠ DANGER

FIRE/ELECTRIC SHOCK HAZARD

Can cause property damage, personal injury or death. Wire fan power supply and ground motor frame in accordance with local electric codes.

⚠ WARNING

DO NOT OVERHEAT FAN MOTOR

High air temperatures the fan section can cause the fan motor to burnout. On draw-through air handlers or air handlers with the fan section down the air stream from the heating section, the discharge air temperature of the heating section must not exceed 104°F (40°C).

⚠ WARNING

ROTATING FAN(S)

Can cause severe injury or death. Before servicing fans, lockout and tag out power.

Before Starting the Unit

- □ Make sure that fan electrical power source is disconnected and locked in the OFF position before entering fan section.
- □ With ductwork connected, check the unit for complete and proper installation.
- □ Check that all construction debris is removed and filters are clean.
- □ Check that all electrical work is complete and properly terminated. Check that all electrical connections are tight and that the proper voltage is connected. Phase imbalance must not exceed 2%.
- □ Fan motors are pre-lubricated and do not need grease before startup.
- □ Check that fan wheel(s) turn freely, are aligned properly and do not rub against the fan housing(s), etc.
- □ Leak test the thermal system to verify that connections are tight.
- □ Check that condensate drain is trapped and clear of debris.
- □ Rotate shaft by hand to be sure it is free.
- □ Fan startup: Fan should start and run. Verify fan rotation is correct.

NOTE: 3-phase motor rotation may be reversed by reversing two legs of the three-phase power at the motor.

Coil Maintenance

⚠ WARNING

SHARP EDGES AND COIL SURFACES are a potential injury hazard. Avoid contact with them.

⚠ WARNING

Clean drain pan regularly so mold does not develop or water overflows causing property damage.

Maintenance

1. For maximum performance, the coil must be clean.

   Check once a year under normal operating conditions and brush or vacuum clean if necessary. Use a chemical coil cleaner on multiple row coils. Read and follow the chemical cleaner instructions since some cleaners may contain harsh chemicals. Take care not to damage fins while cleaning.

2. Drain pans in any air conditioning unit may have some moisture, with growth of organisms possible due to airborne spores and bacteria. Clean drain pans periodically to prevent build-up from plugging the drain and causing the drain pan to overflow. Keep drain pans clean to prevent the spread of disease. Cleaning should be performed by qualified personnel.

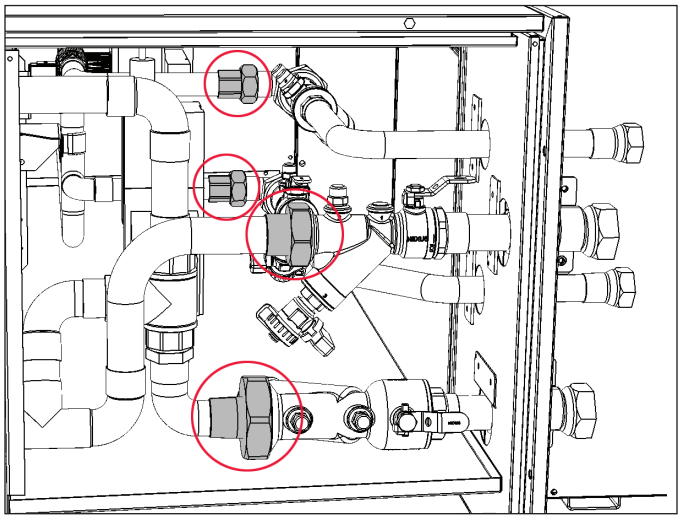
3. Dirt and lint can clog the condensate drain, especially with dirty filters. Inspect twice a year to help avoid overflow.

Component Removal

Hydronic Coil Removal - Horizontal Unit Sizes 006 - 020

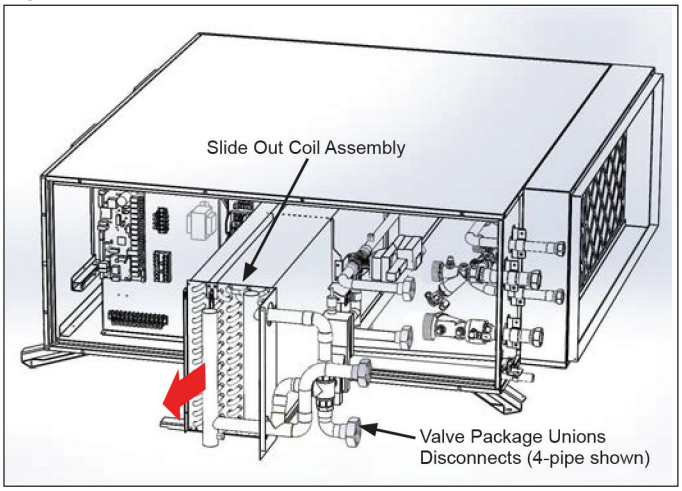
1. Remove coil section access panel.
2. Drain the coils.
3. Disconnect unions on supply and return of heating and cooling coils inside cabinet. Field piping does not need to be disconnected.

Figure 110: Heating and Cooling Coil Unions



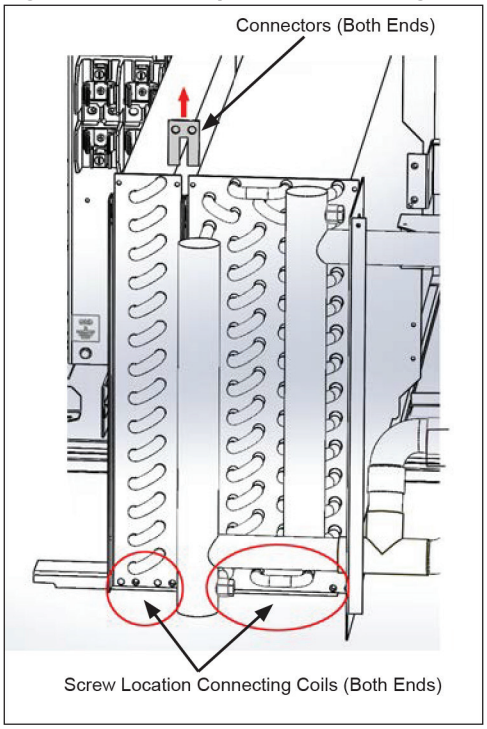
4. Disconnect any valve, damper, or electric heat wires that may interfere with removing the coil.
5. Slide the coil out by pulling on the header tube. The coil is not fastened in cabinet. If unit is equipped with factory installed valve package, part of the valve package will be removed with coil.

Figure 111: Slide Coil Out



6. For four pipe units, the cooling coil is attached to the preheat or reheat coil. To separate the coils remove the screws along the bottom edge of the header end plate, on each end of the coil and the connectors.

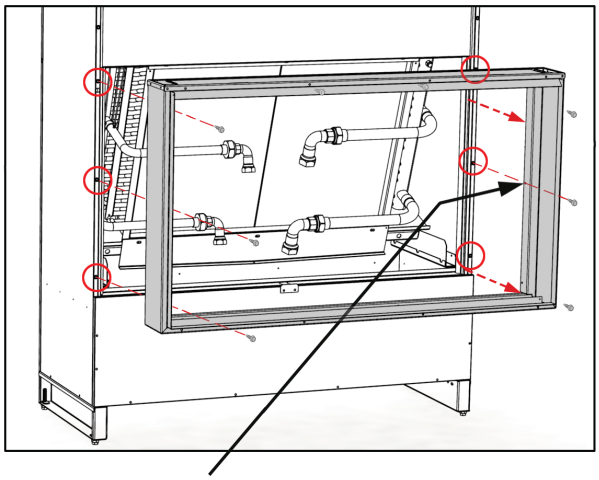
Figure 112: Four Pipe Unit, Detaching Coils



7. For units with the electric heat option, the electric heat rack is attached to the cooling coil in the preheat position. To separate the electric heat rack from the cooling coil remove the screws on each end of the coil, and the connectors.

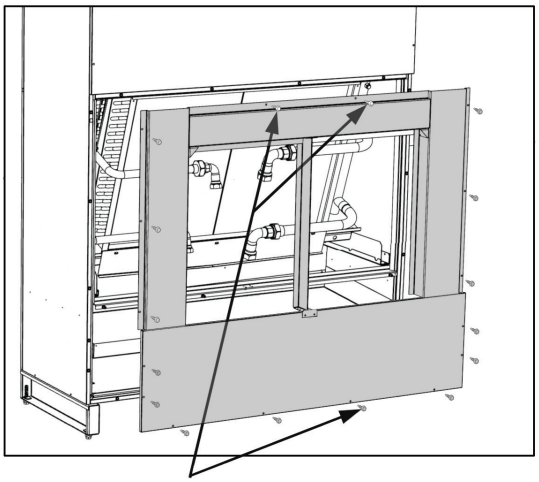
Hydronic Coil Removal - Vertical Unit Sizes 006 - 020

1. Remove screws on the inside right (3) and inside left (3), holding external filter frame.

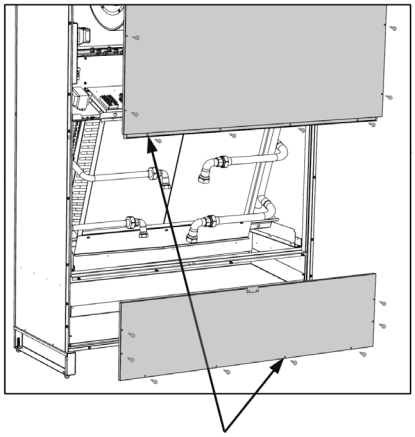


OR

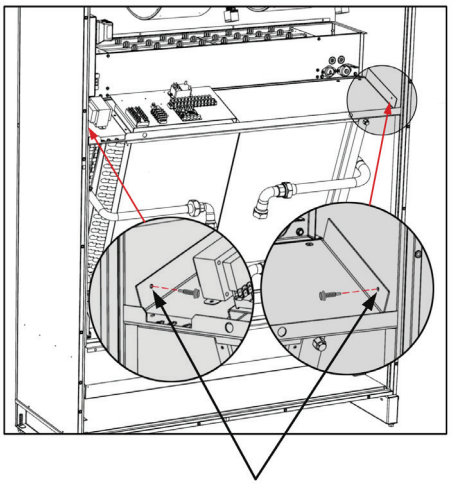
1. Remove screws holding internal filter brackets and bottom panel assembly.



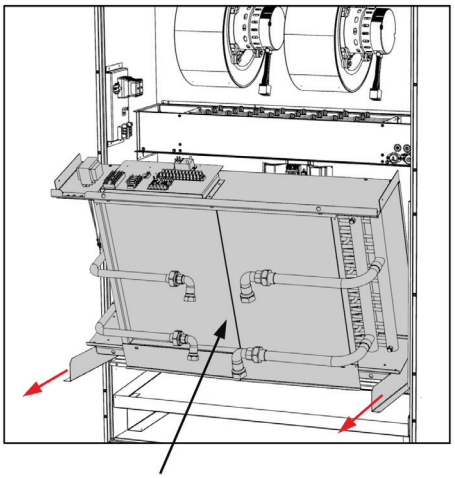
2. Remove screws holding upper and lower front panels (number dependent on unit size).



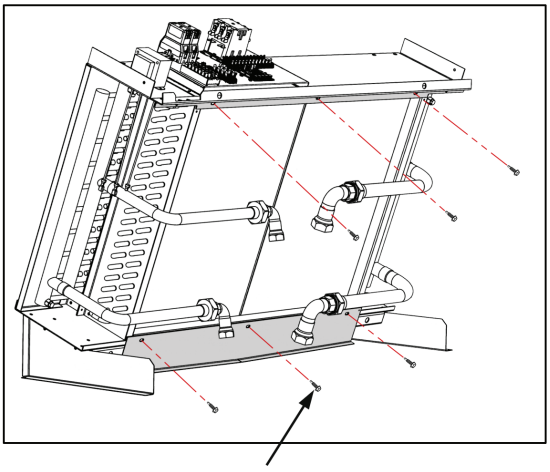
3. Remove 2 screws holding coil.



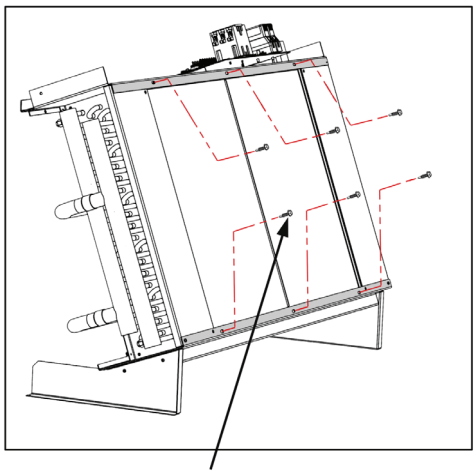
4. Slide out coil assembly.



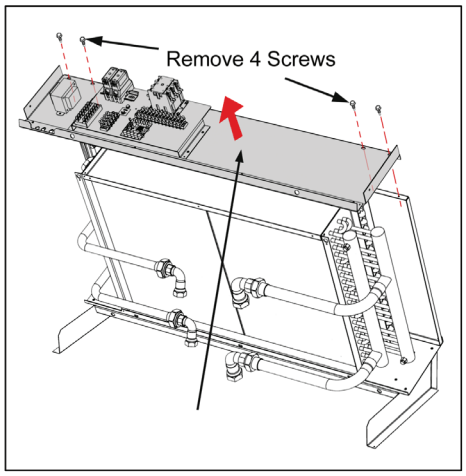
5. Remove screws along front of coil at bottom and top holding coil.



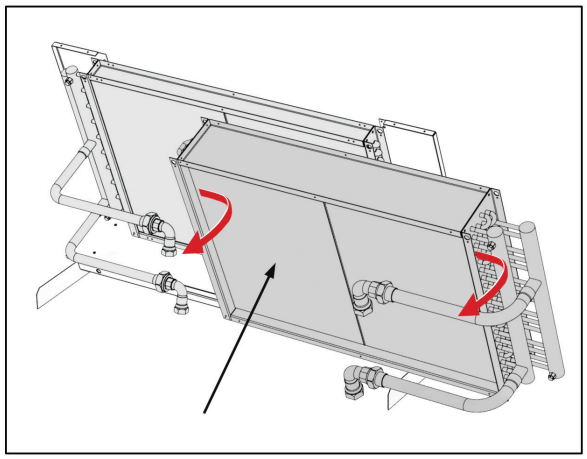
6. Remove screws along back of coil at bottom and top holding coil.



7. Remove coil support top.



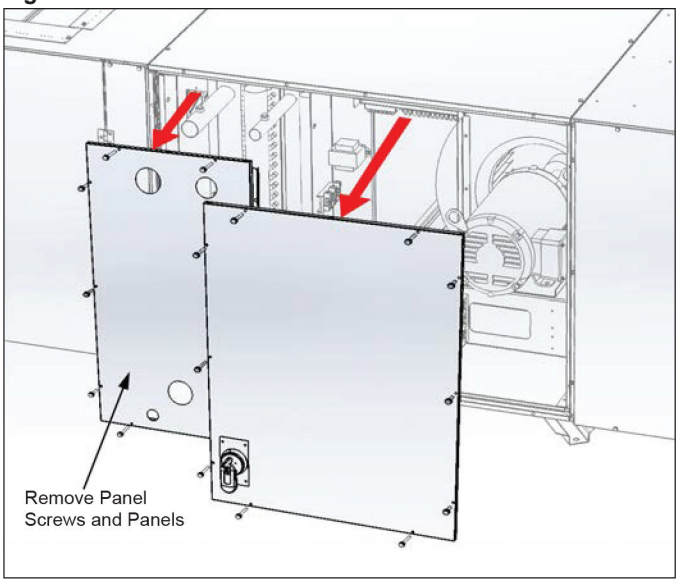
8. Separate and remove coils.



Hydronic Coil Removal - Horizontal Unit Sizes 030 - 050

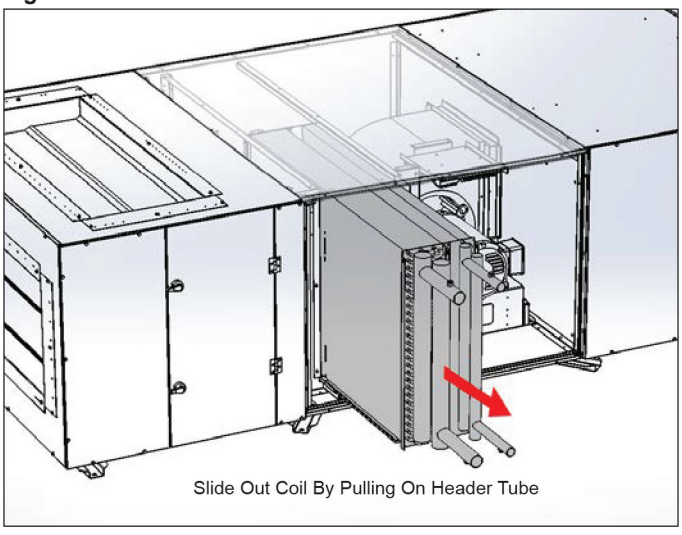
1. Remove coil section panels.

Figure 113: Remove Panel Screws and Panels



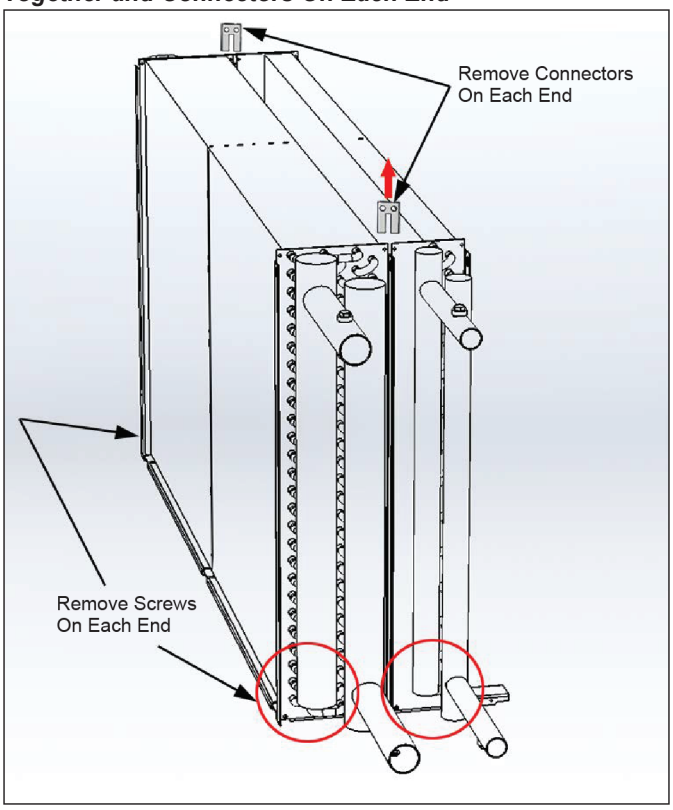
2. Drain coils.
3. Disconnect supply and return on heating and cooling coils from field piping.
4. Remove any field piping that might be interfere with coil removal.
5. Disconnect any damper or electric heat wires that may interfere with coil removal.
6. Slide the coil out by pulling on the header tube.

Figure 114: Slide Coil Out



7. For four pipe units, the cooling coil is attached to the preheat or reheat coil. To separate the coils remove the screws on each end of the coil and the connectors.

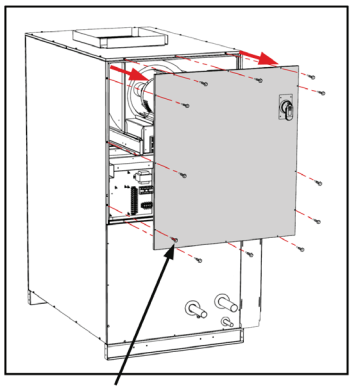
Figure 115: Remove Screws Holding Coil Sections Together and Connectors On Each End



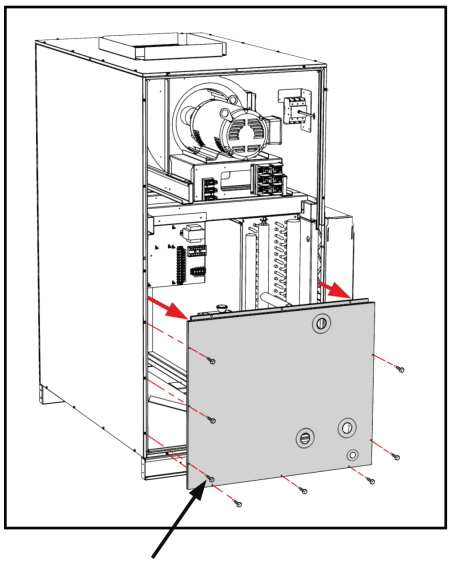
8. For units with the electric heat option, the electric heat rack is attached to the cooling coil in the preheat position. To separate the electric heat rack from the cooling coil remove the screws on each end of the coil, and the connectors.

Hydronic Coil Removal - Vertical Unit Sizes 030 - 050

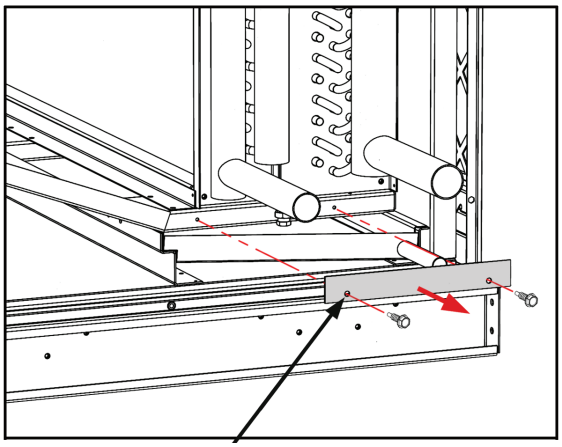
1. Remove screws and remove top access panel with disconnect switch.



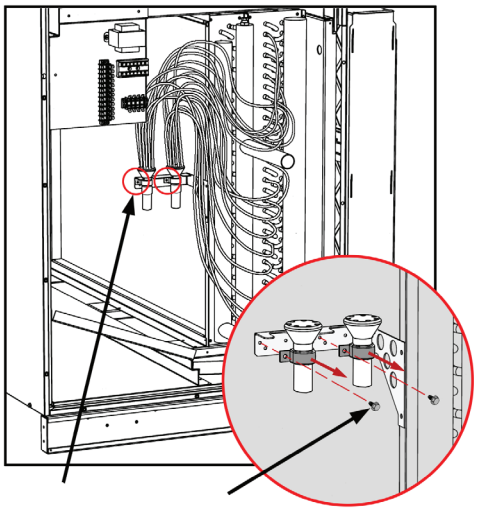
2. Remove screws and remove bottom access panel.



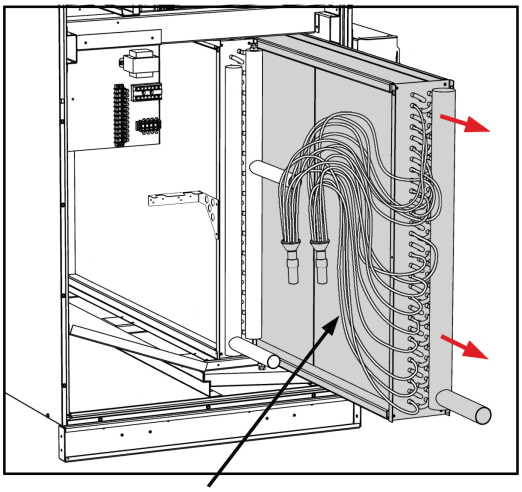
3. Remove screws and remove coils stop plate.



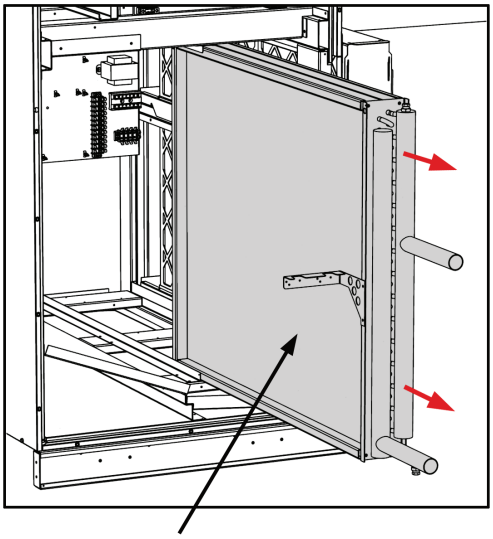
4. Remove screws from clamps holding distributors and cap tubes to bracket.



5. Slowly pull out the 1st position coil assembly using caution to not damage cap tubes.

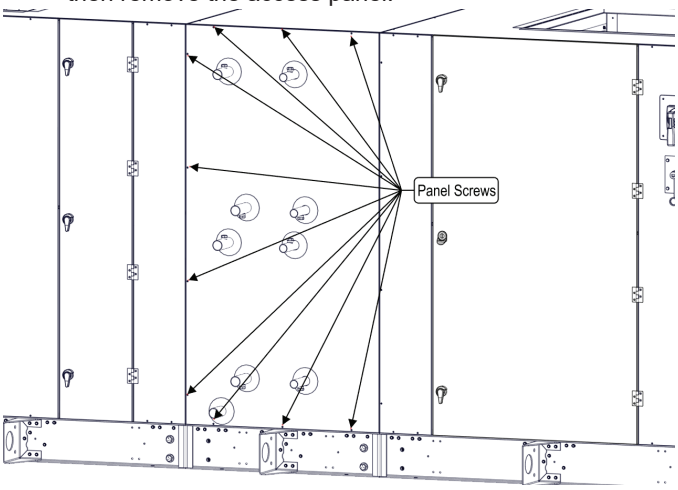


6. Slide out the 2nd position coil.

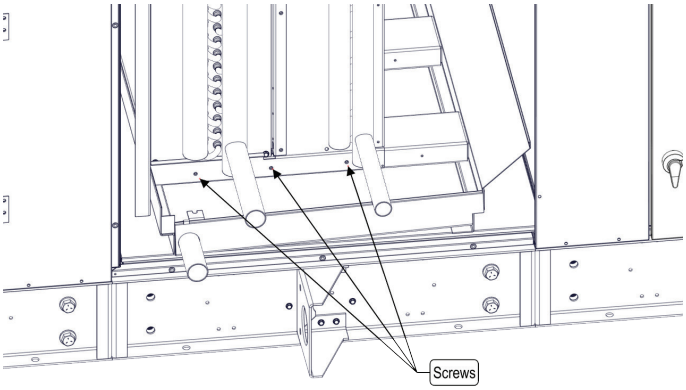


Hydronic Coil Removal: Sizes 060 - 100 (Primary Coil and Optional Secondary Coil Shown)

1. Remove screws securing the access panel to the cabinet, then remove the access panel.



2. Remove screws securing the stopper bracket to the cabinet. Remove the bracket.

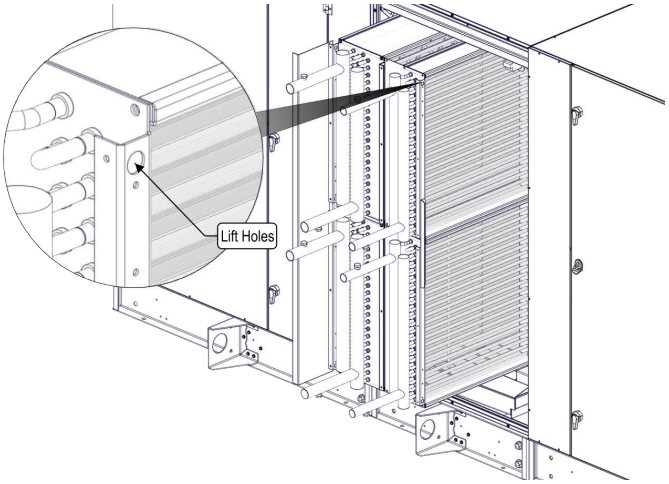


3. Pull to slide the entire coil assembly out of the cabinet. If using support straps/hooks, pull the coil assembly out partially and secure the supports to any of the available lift holes.

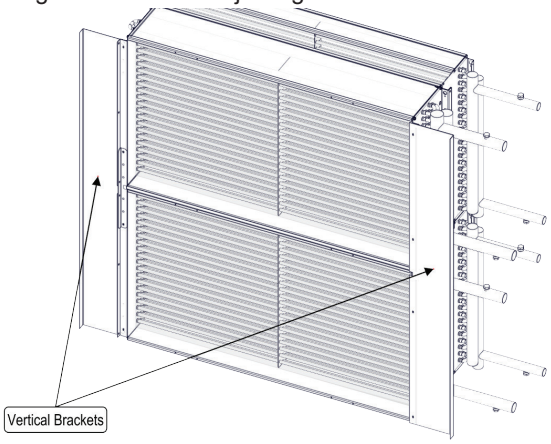
⚠ DANGER

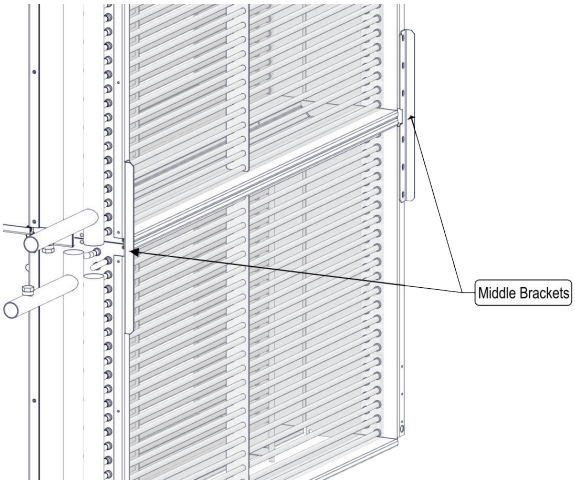
COIL ASSEMBLY IS HEAVY!

Failure to use the proper lifting equipment to support the weight of the assembly can cause property damage, personal injury or death. Supports should be able to lift the weight of the coils as detailed in Table 29 on page 64.

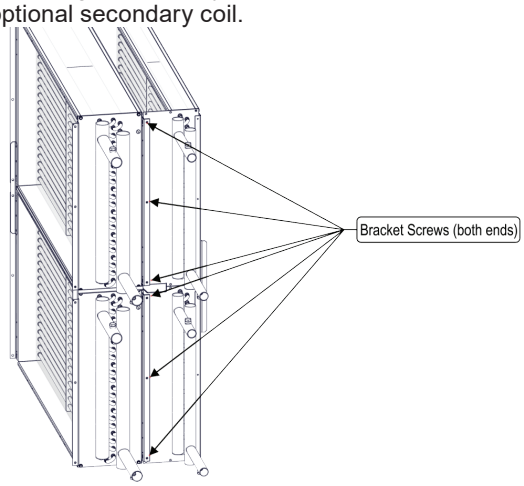


4. Place the coil assembly on a flat surface.
5. To detach the individual coils, remove the screws securing the coils to each joining bracket.





NOTE: The image below only applies to units with the optional secondary coil.



Fan Motor Removal

Horizontal Units Size 006-020

1. Unplug the wires going from the control box to motor.
2. Remove the top and bottom screws on the downstream side of the control box and loosen the top and bottom screws on the upstream side. Swing the control box out to make room for the fan housing to slide out.
3. Remove the set screw on the fan housing rail and slide out the blower assembly.

Figure 116: Remove Set Screw On Fan Housing Rail

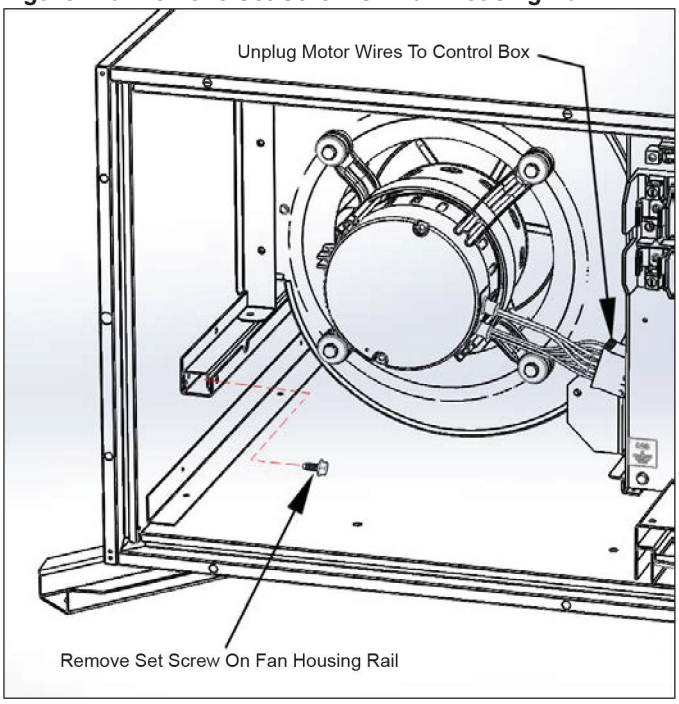
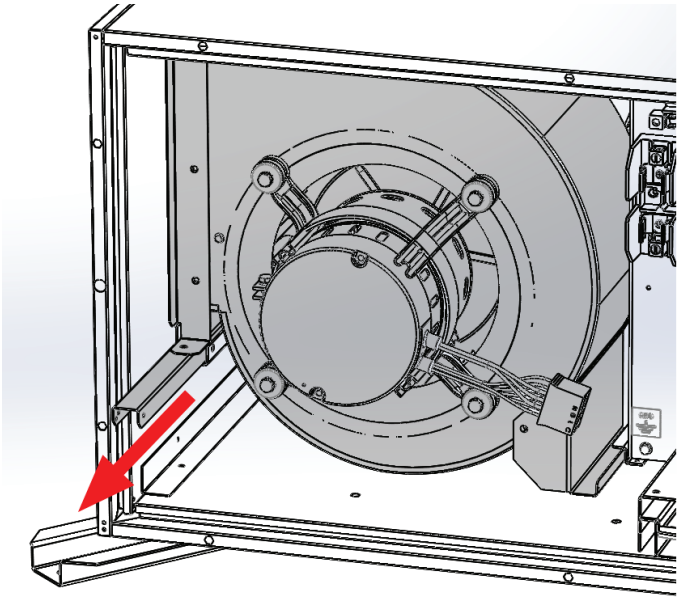
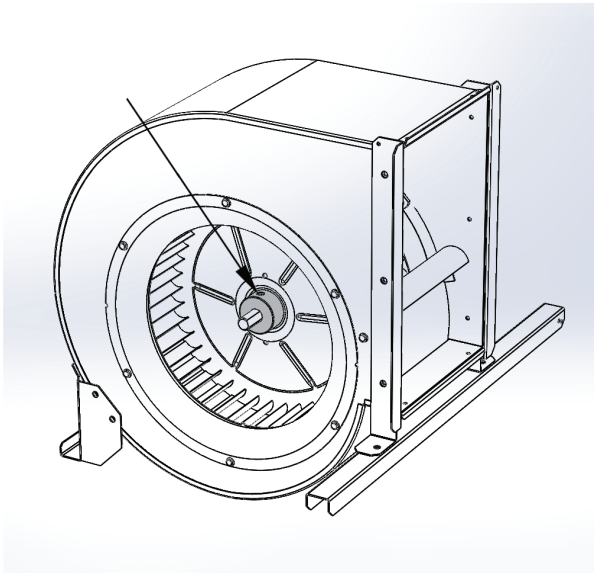


Figure 117: Slide Out The Blower Assembly



4. Loosen the motor shaft set screw on the opposite side of the fan.

Figure 118: Loosen The Motor Shaft Set Screw



5. Remove the four bolts holding the belly band to the fan housing and pull the motor out.

Figure 119: Loosen The Motor Shaft Set Screw

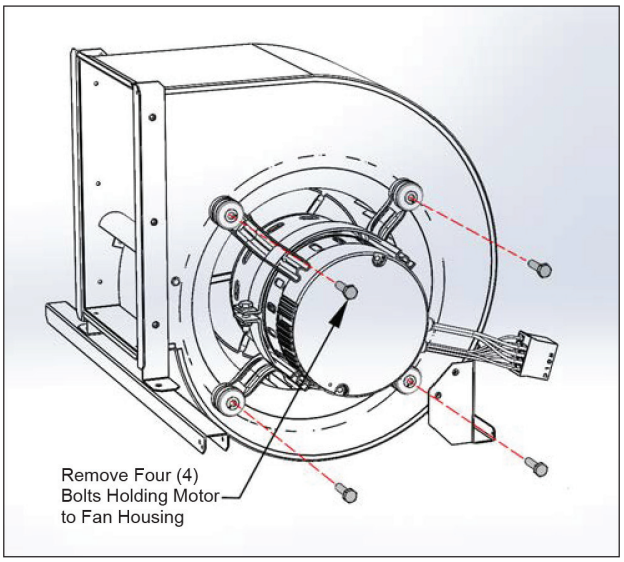
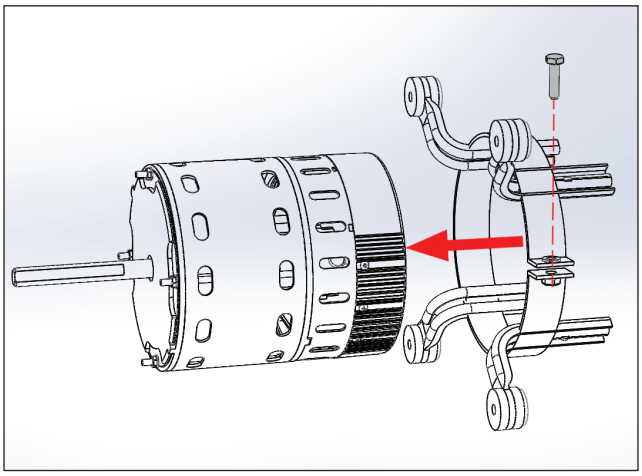


Figure 120: Loosen Belly Band Bolt And Remove From Motor



6. Reverse this process to install the new motor, taking care to center the fan on the shaft before tightening the motor shaft set screw.

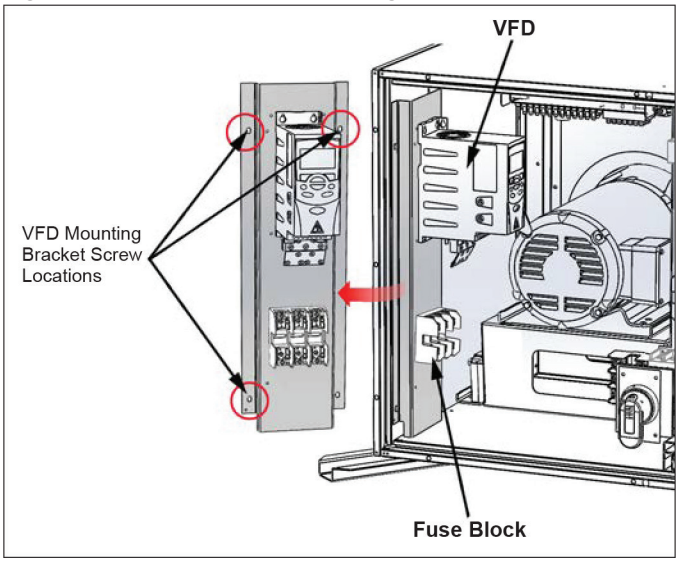
Horizontal Units Size 030-050 (DWDI Forward-Curved Fans)

1. Disconnect the wires from the motor to the VFD at the VFD. The wires between the VFD/Fuse Block and the control box may be left attached.

NOTE: Unit size 030 shown. Views may vary by unit size. For clarity not all wiring and components are shown.

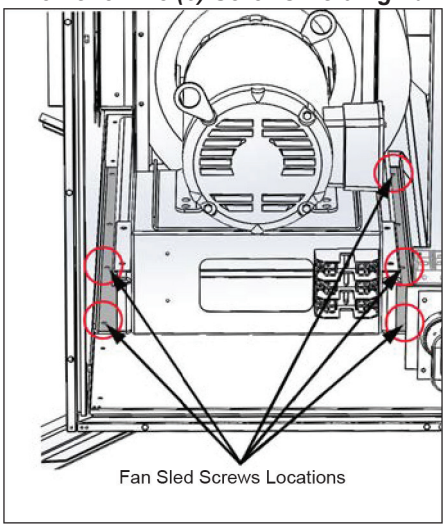
2. Remove the VFD mounting bracket by removing three mounting screws; two on the access panel side of the bracket and one on the upper-back side of the bracket.
3. The VFD mounting bracket with the control box wires still attached should be moved out of the way and supported to avoid straining the wires.

Figure 121: Remove VFD Mounting Bracket



4. Remove the five screws holding the fan sled to the cabinet bottom panel; two screws on the access panel side and three on the upstream side of the sled.

Figure 122: Remove Five (5) Screws Holding Fan Sled



5. Pull the sled assembly out, using caution to support its weight and gain access to the motor shaft set screws shown in Figure 123.

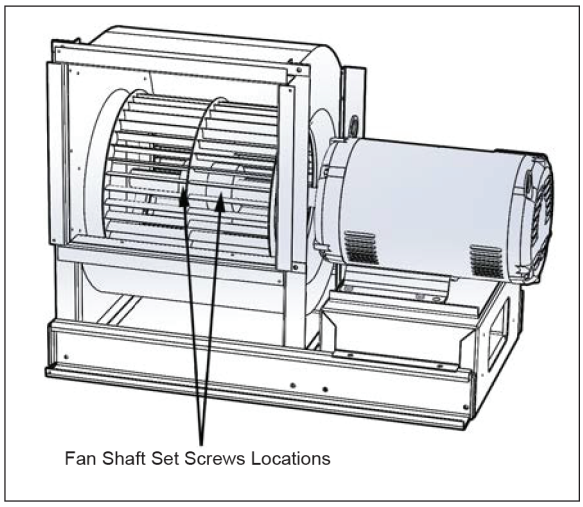
⚠ DANGER

FAN MOTOR SLED ASSEMBLY IS HEAVY!

Failure to use the proper lifting equipment specified to support the weight of the sled assembly can cause property damage, personal injury or death. Supports should be able to withstand at least 200 lbs of weight.

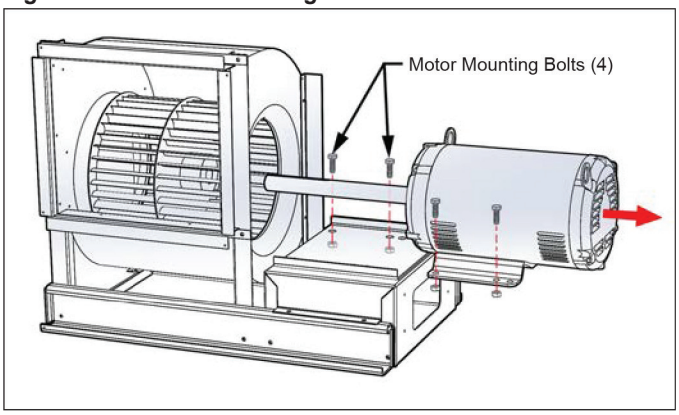
6. Loosen the two motor shaft set screws; one on either side of the fan center partition.

Figure 123: Fan Shaft Set Screw Locations



7. Remove the four motor mounting bolts using a wrench to hold the nut on the underside of the motor base.
8. Slide the motor shaft out of the fan hub while supporting the motor.

Figure 124: Motor Mounting Bolts

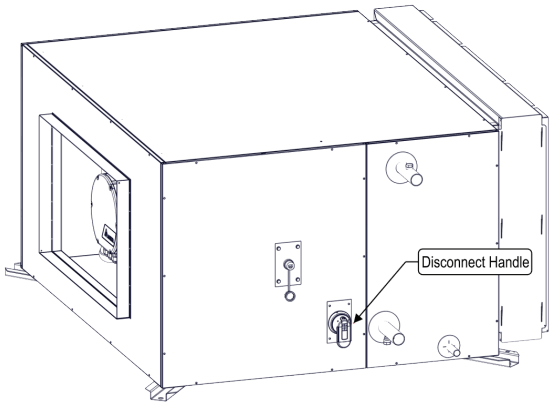


To replace with poly phase motor:

1. Place the new motor on the base and insert the shaft into the fan hub, leaving the set screws loose.
2. Install the motor mounting bolts, washers and nuts leaving the nuts loose.
3. Adjust the motor on the base and the fan on the shaft so that the fan is straight and centered in the housing.
4. Tighten the mounting bolts and shaft set screws.
5. Push the sled into the cabinet until it is against the back stop and the fan housing is tight against the front panel.
6. Reinstall and tighten the five sled screws.
7. Reattach the VFD bracket on the front panel
8. Reconnect the motor wires to the VFD.

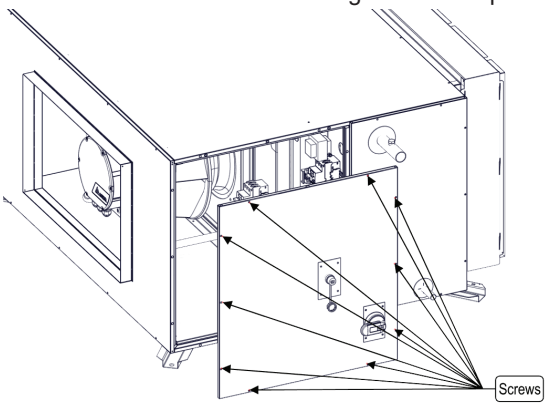
Horizontal Unit Sizes 030 - 050 (Welded Aluminum Airfoil Plenum Fans)

1. Turn the switch disconnect handle to the off position.



NOTE: Single fan model shown.

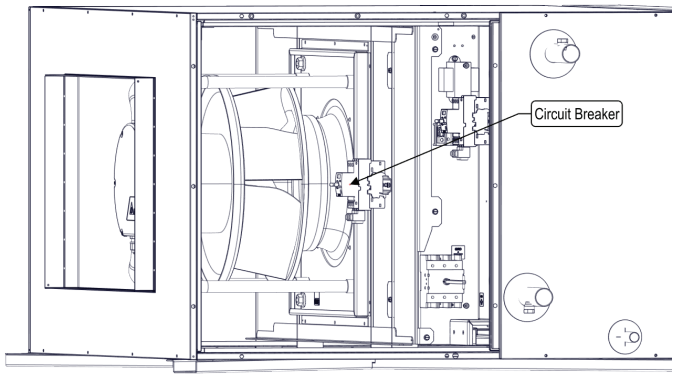
2. Remove the screws holding the access panel in place.



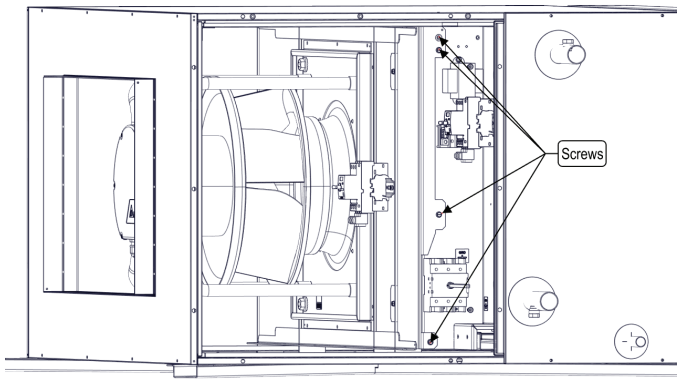
3. Detach the low-voltage and power wires from the fan motor by releasing the plastic connectors.

NOTE: Remember the fan motor orientation when installing a new fan. Matching the motor orientation will ensure wires can reach the connectors of the new motor.

4. SIZE 030 ONLY: detach wires connecting the circuit breaker to the terminal block.



5. Remove the screws holding the fan sled assembly in place (single fan models only).



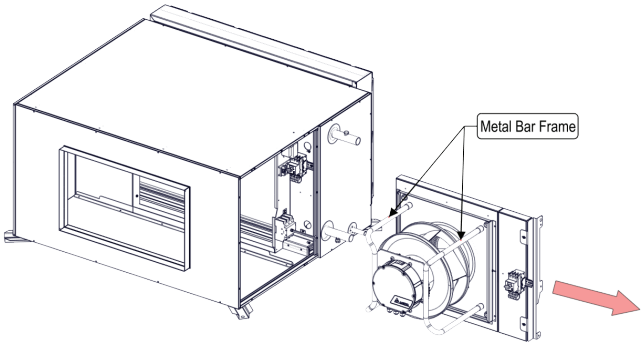
6. Secure supports to the metal bar frame.

⚠ DANGER

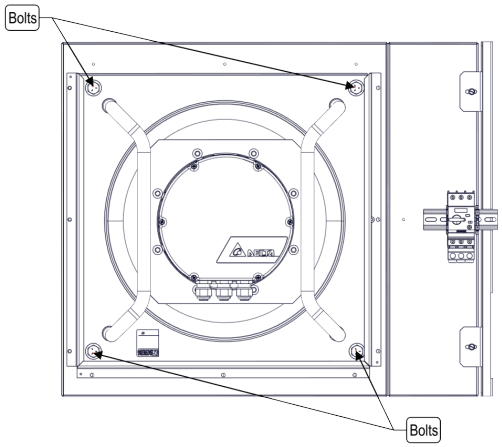
FAN SLED ASSEMBLY IS HEAVY!

Failure to use the proper lifting equipment to support the weight of the sled assembly can cause property damage, personal injury or death. Supports should be able to withstand at least 200 lbs of weight.

7. Remove the fan sled assembly from the cabinet and lower onto a flat surface.



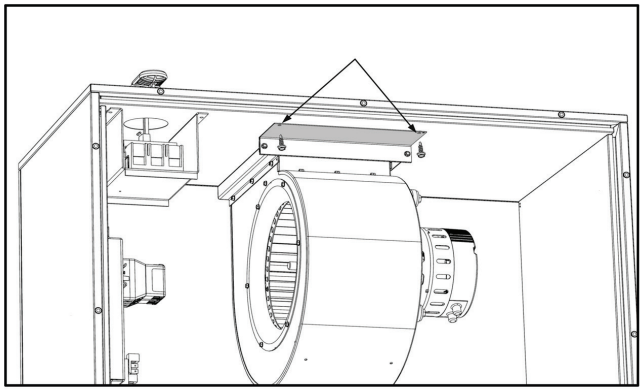
8. Remove the bolts holding the fan(s) to the slide-out sled.



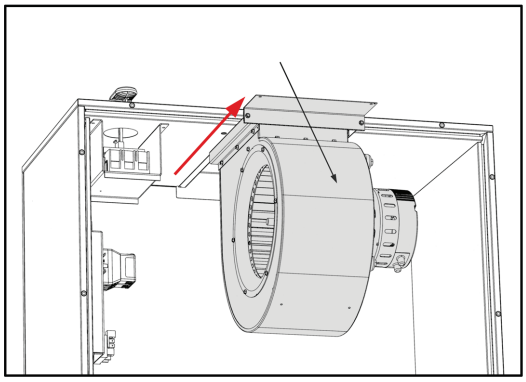
9. Remove fan from the slide-out sled.
10. Repeat steps 3-8 for second fan (if equipped).

Vertical Unit Sizes 006 - 020 (DWDI Forward-Curved Fans)

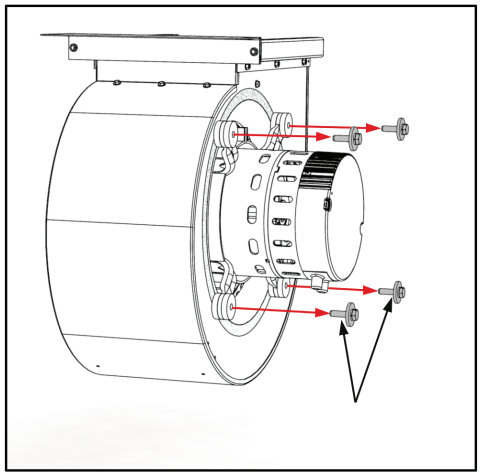
1. Remove 2 screws.



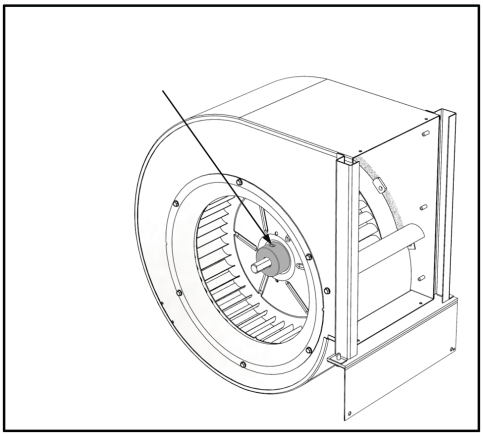
2. Slide out fan and motor assembly.



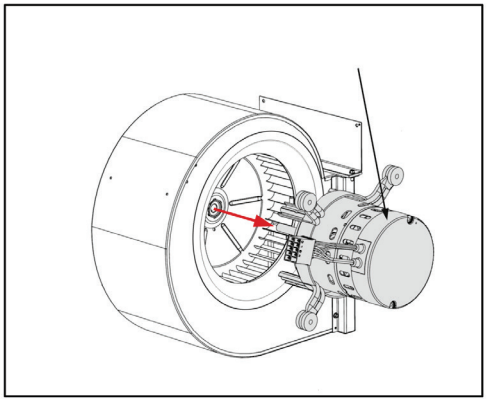
3. Remove motor mount leg bolts.



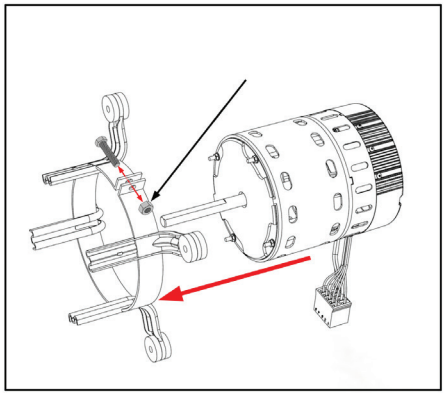
4. Loosen set screw holding fan to fan shaft.



5. Remove motor and mounting assembly.

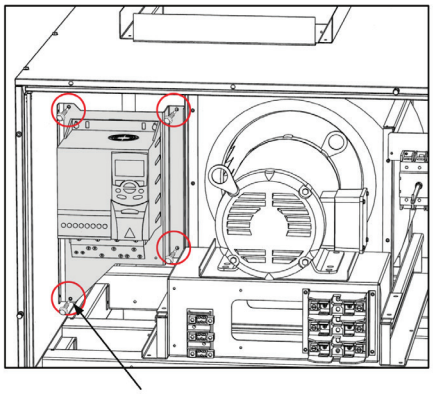


6. Loosen bolt and nut to remove belly band from motor.

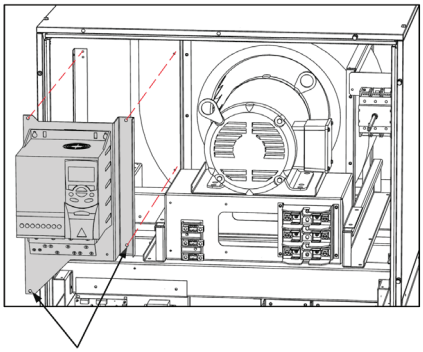


Vertical Unit Sizes 030 - 050 (DWDI Forward-Curved Fans)

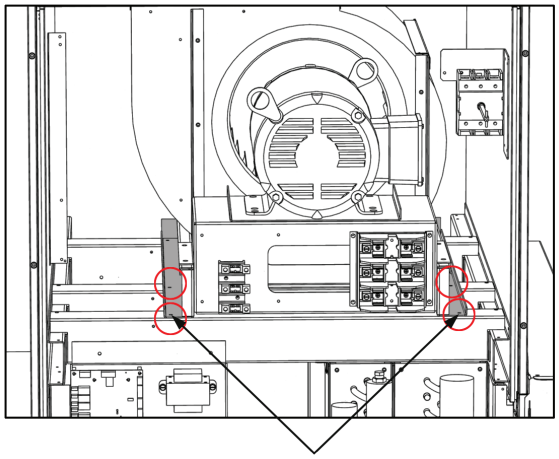
1. Remove 4 screws holding VFD controller.



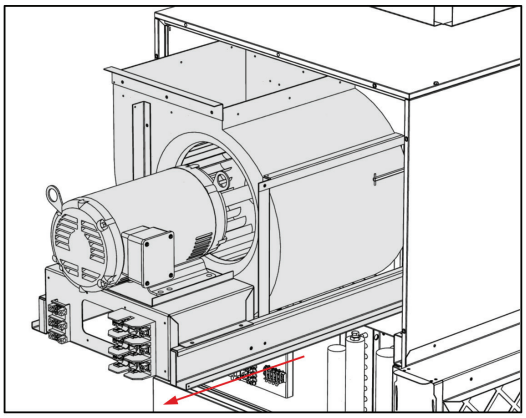
2. Remove VFD controller.



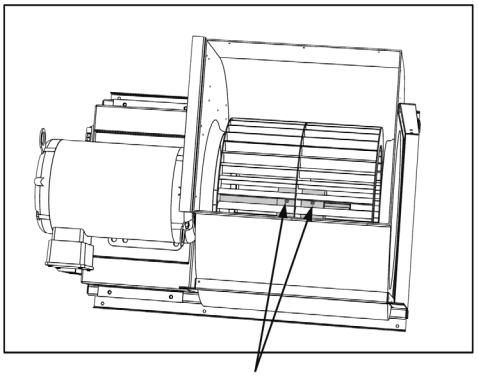
3. Remove 4 screws along motor sled rails.



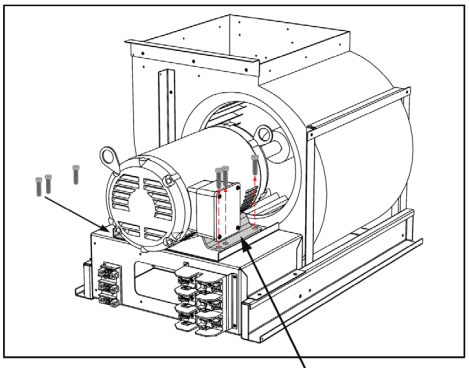
4. Slide out motor and fan assembly sled.



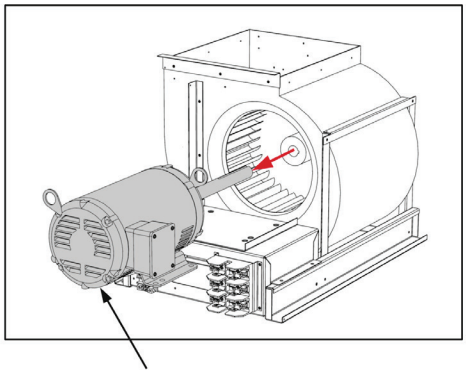
5. Loosen fan wheel set screws (2) on either side of the fan wheel central plate.



6. Remove (6) bolts, 3 on each side holding motor to sled assembly.

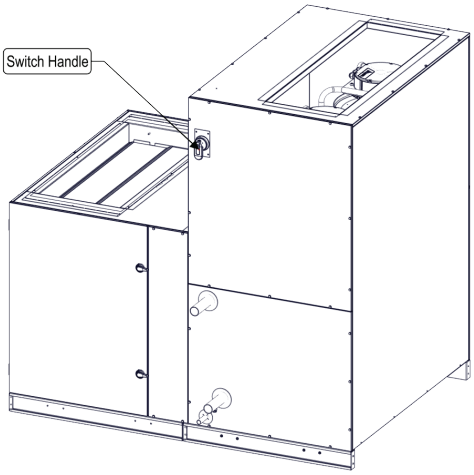


7. Slide out motor from fan housing.



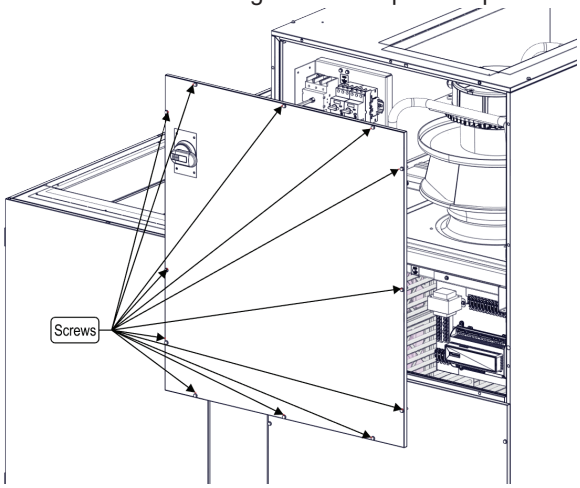
Vertical Unit Sizes 030 - 050 (Welded Aluminum Airfoil Plenum Fans)

1. Turn the switch disconnect handle to the off position.



NOTE: Dual fan assembly shown.

2. Remove the screws holding the access panel in place.



3. Detach the low-voltage and power wires from the motor by releasing the plastic connectors.

NOTE: Remember the motor orientation when installing a new fan. Matching the motor orientation will ensure wires can reach the connectors of the new motor.

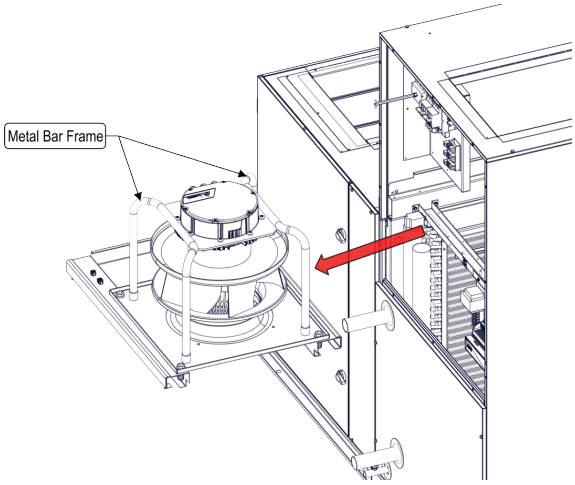
4. Secure supports to the metal bar frame.

⚠ DANGER

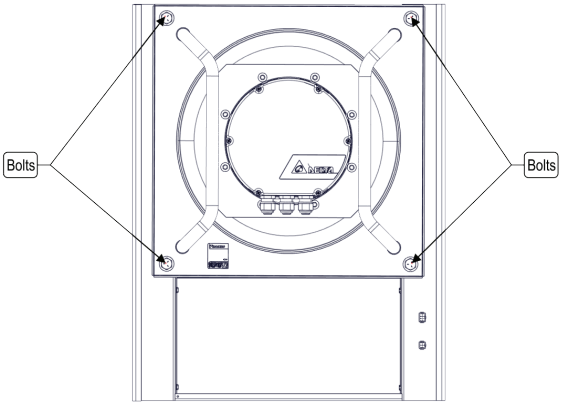
FAN SLED ASSEMBLY IS HEAVY!

Failure to use the proper lifting equipment to support the weight of the sled assembly can cause property damage, personal injury or death. Supports should be able to lift at least 200 lbs.

5. Remove the fan sled assembly from the cabinet and lower onto a flat surface.



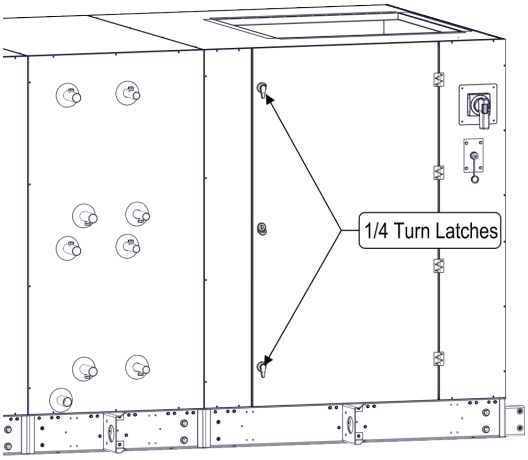
6. Remove the bolts holding the fan to the slide-out sled.



7. Remove fan from the slide-out sled.
8. Repeat steps 2-8 for second fan (if equipped).

Horizontal Unit Sizes 060 - 100 (Welded Aluminum Airfoil Plenum Fans)

1. Open the cabinet access door by turning the quarter-turn latches.



NOTE: Dual fan model shown.

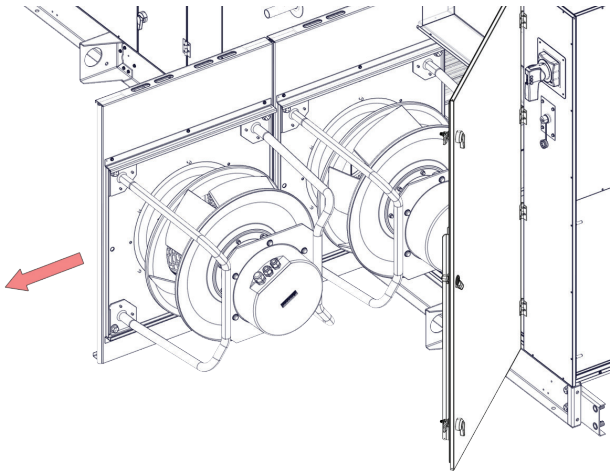
2. Detach the low-voltage and power wires from the fan motor(s) by releasing the plastic connectors.

NOTE: Remember the motor orientation when installing the new fan. Matching the motor orientation will ensure wires can reach the connectors of the new motor.

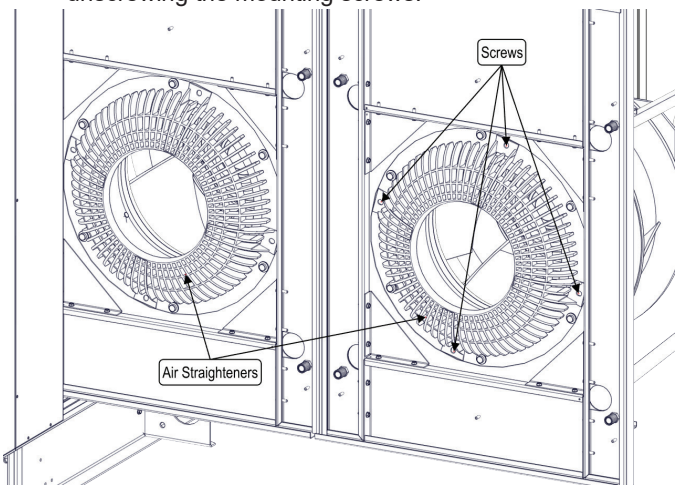
3. Slide the fan(s) out fully from the cabinet along the slide-out rail.

⚠ DANGER

NEVER slide fans out of the cabinet unless the cabinet is securely fastened to a flat surface or to another cabinet section. Failure to do so will create tipping hazard, which can cause property damage, personal injury or death.



4. If equipped, remove the sound baffle from each fan by unscrewing the mounting screws.



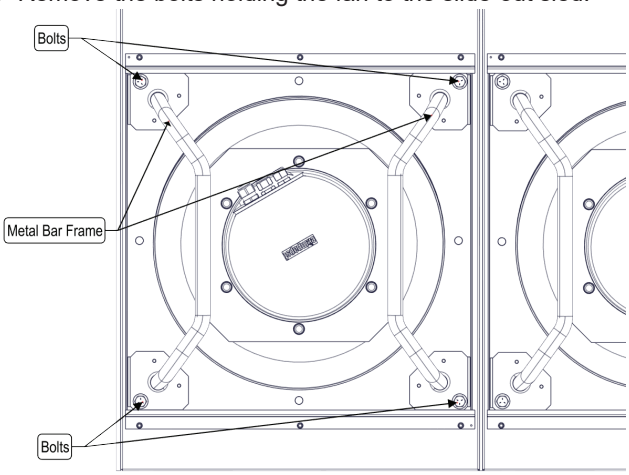
5. Secure supports to the metal bar frame.

⚠ DANGER

FAN SLED ASSEMBLY IS HEAVY!

Failure to use the proper lifting equipment to support the weight of the sled assembly can cause property damage, personal injury or death. Supports should be able to lift at least 150 lbs.

6. Remove the bolts holding the fan to the slide-out sled.



7. Remove fan from the slide-out sled.
8. Repeat steps 5-7 for second fan (if equipped).

Warranty

Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

Warranty Return Material Procedure

Defective material may not be returned without permission of authorized factory service personnel of Daikin Applied in Minneapolis, Minnesota, (763) 553-5330. A “Return Goods” tag must be included with the returned material. Enter the required information to expedite handling and prompt issuance of credits. All parts must be returned to the appropriate Daikin Applied facility, designated on the “Return Goods” tag. Transportation charges must be prepaid.

The return of the part does not constitute an order for replacement. Therefore, a purchase order must be entered through the nearest Daikin Applied representative. The order should include part number, model number, and serial number of the unit involved.

Credit will be issued on customer’s purchase order following an inspection of the return part and upon determination that the failure is due to faulty material or workmanship during the warranty period.

Replacement Parts

When writing to Daikin Applied for service or replacement parts, refer to the model number and serial number of the unit stamped on the serial plate attached to the unit. If replacement parts are required, mention the date of installation of the unit and date of failure, along with an explanation of the malfunctions and a description of the replacement parts required.

Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin branded equipment, its care should be a high priority. For training information on all Daikin branded HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

Warranty

All Daikin branded equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

Aftermarket Services

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

This document contains the most current product information as of this printing. For the most up-to-date product information, please go to www.DaikinApplied.com.

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