

Installation and Maintenance Manual

IM 1233-2

Group: **WSHP**

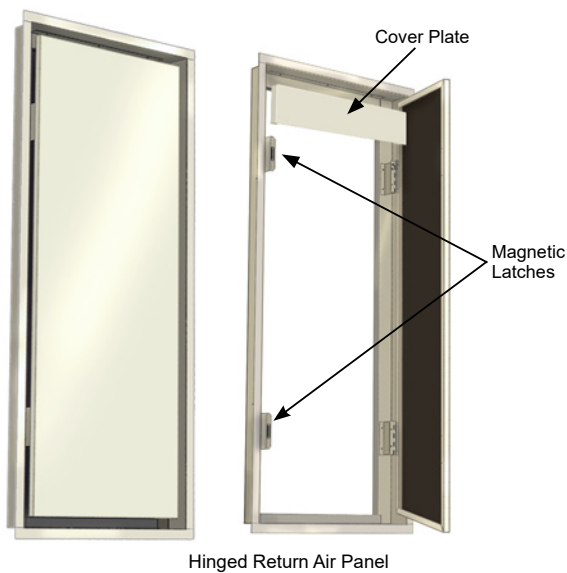
Part Number: **910180751**

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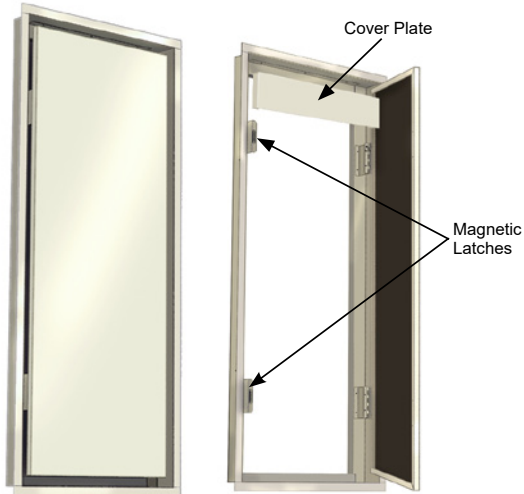
Vertical Stack Water Source Heat Pumps

Hinged Perimeter Return Air Panel Door

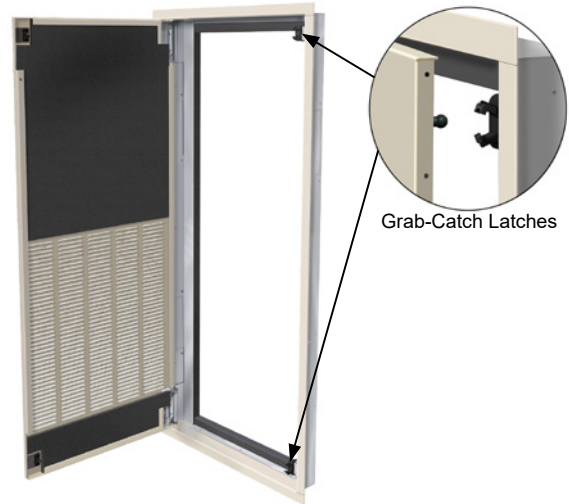
Louvered Return Air Panel Door with Optional Motorized Outdoor Air Damper



Hinged Perimeter Return Air Panel Door



Louvered Return Air Panel Door



Dimensions

Figure 1: Hinged perimeter return air panel door

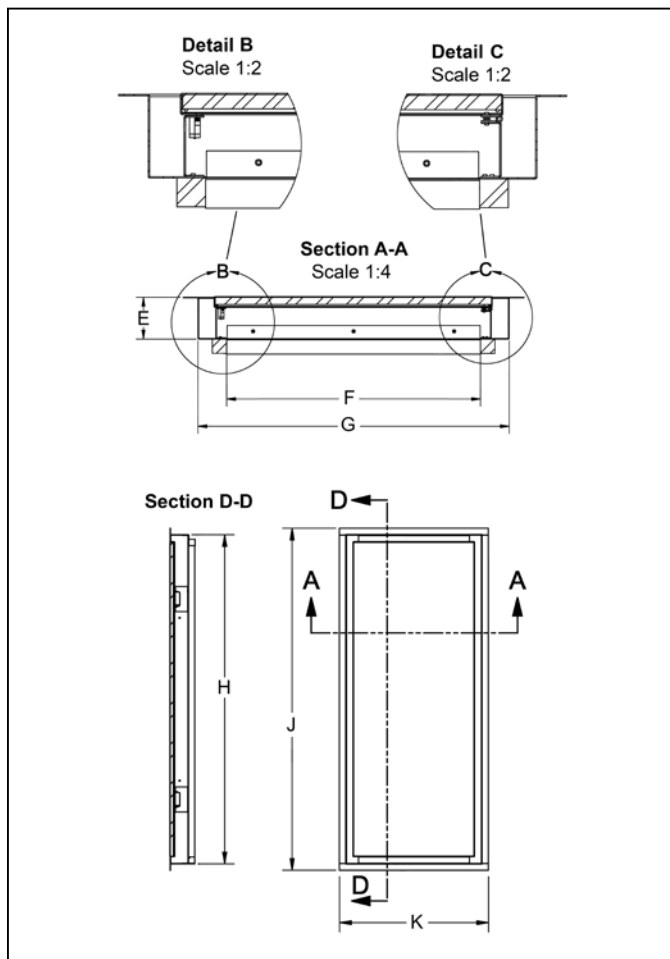
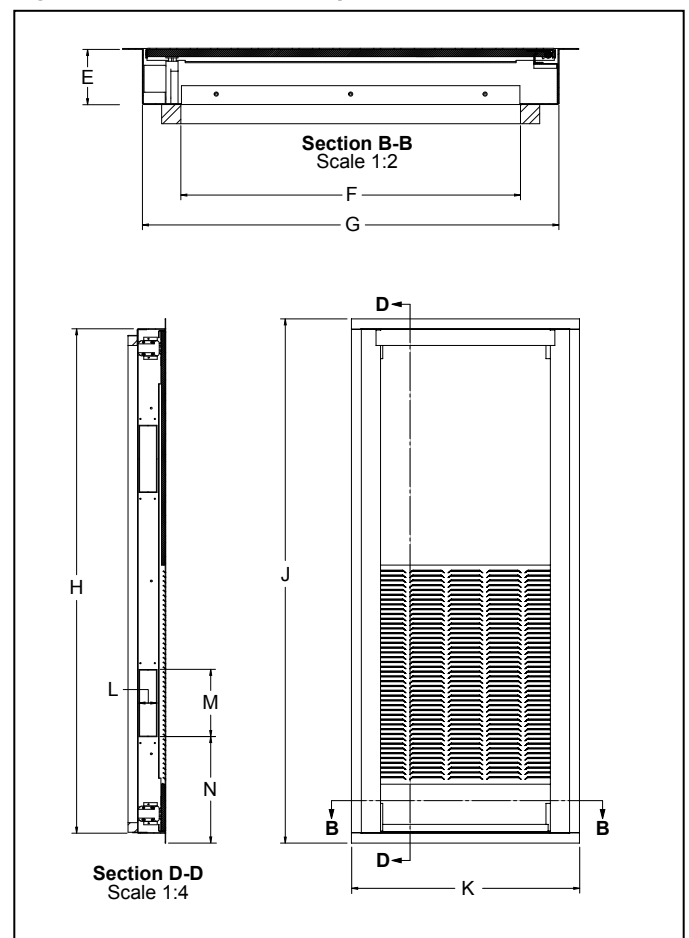


Figure 2: Louvered return air panel door



Unit Size	E	F	G	H	J	K	Outdoor Air Opening		
							L	M	N
009-018	2.92	17.69	21.69	52.53	54.60	23.75	1.88	7.00	11.08
021-036		23.69	27.69			29.75			

Framing Locations and Dimensions

Location of framing around unit is critical for proper fit-up and will help reduce sound levels due to the transfer of vibration when properly installed.

Figure 3: Framing locations and dimensions

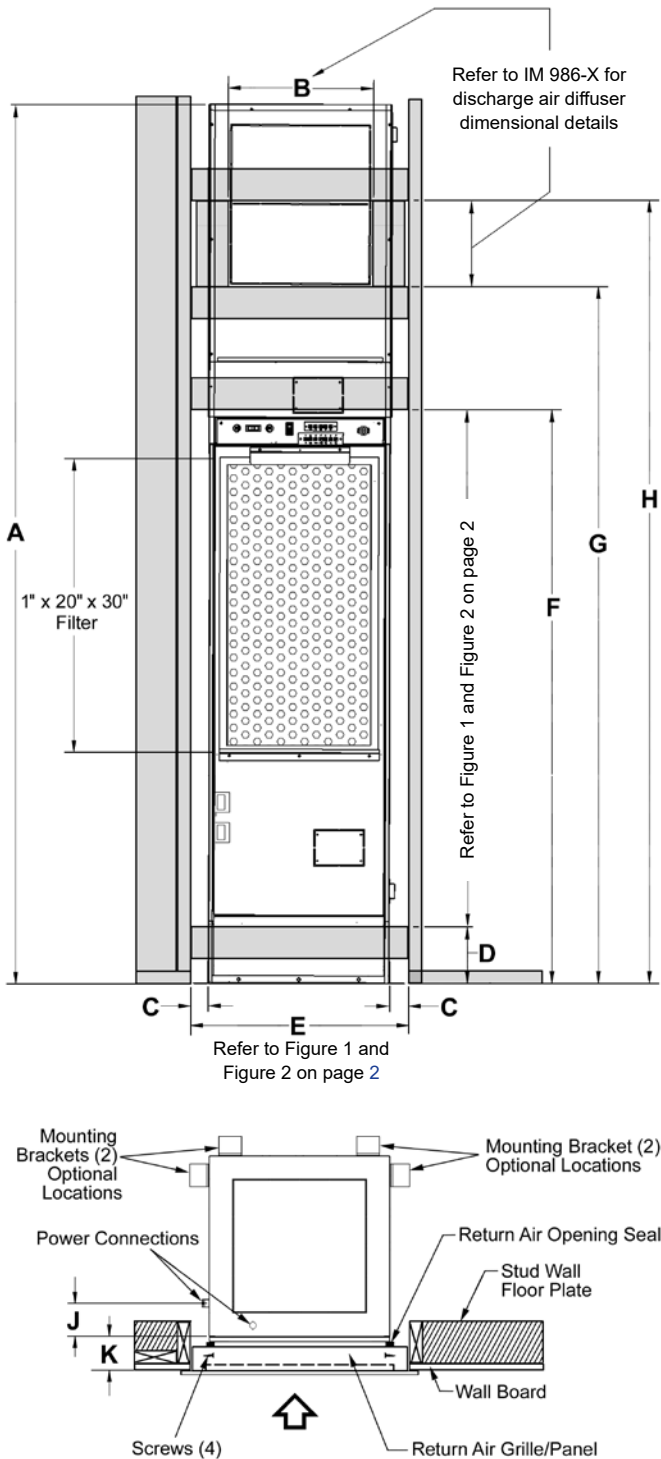


Table 1: Letter dimensions for Figure 3 (18" x 18" unit)

Dimension	Framing Locations			
	18" x 18" Unit (Sizes 009-012)			
	Unit Height "A"			
	80"	88"	92"	96"
B	14"			
C	2.07"			
D ¹	6"			
E ²	22.25"			
F ¹	58.75"			
G ^{1,3}	61"	69"	73"	77"
H ^{1,3}	79"	87"	91"	95"
J	3.125"			
K ⁴	3.125" Min./Max.			

Table 2: Letter dimensions for Figure 3 (18" x 20" unit)

Dimension	Framing Locations			
	18" x 20" Unit (Sizes 015-018)			
	Unit Height "A"			
	80"	88"	92"	96"
B	14"			
C	2.07"			
D ¹	6"			
E ²	22.25"			
F ¹	58.75"			
G ^{1,3}	61"	69"	73"	77"
H ^{1,3}	79"	87"	91"	95"
J	3.125"			
K ⁴	3.125" Min./Max.			

Table 3: Letter dimensions for Figure 3 (24" x 24" unit)

Dimension	Framing Locations			
	24" x 24" Unit (Sizes 021-036)			
	Unit Height "A"			
	80"	88"	92"	96"
B	18"			
C	2.125"			
D ¹	6"			
E ²	28.25"			
F ¹	59.5"			
G ^{1,3}	63"	71"	75"	79"
H ^{1,3}	79"	87"	91"	95"
J	4.54"			
K ⁴	3.125" Min./Max.			

¹ Dimension includes approximately 1/4" for vibration isolation pad

² Dimension "E" \pm 0.125"

³ Dimension "G" and "H" will vary based on cabinet height selected and choice of upper or lower discharge knockout.

⁴ Dimension "K" is critical, and that it be no more or no less than 3.125" from the finished wall surface to the front of the unit when using the hinged return air panel or louvered return air panel.

Installing The Return Air Panel Door

1. Install the return air panel door assembly (Figure 4). Center, level and plumb the frame inside the framed opening. Push the assembly into the opening until the gaskets compress against the cabinet, and the frame face is tight to the finished wall.

Notes: 1. Shims (field-supplied) should be used to make up the space between the studs and the panel frame at the locations of the fasteners on the panel frame (4). Adhere them to the panel frame to keep them in place (Figure 4).

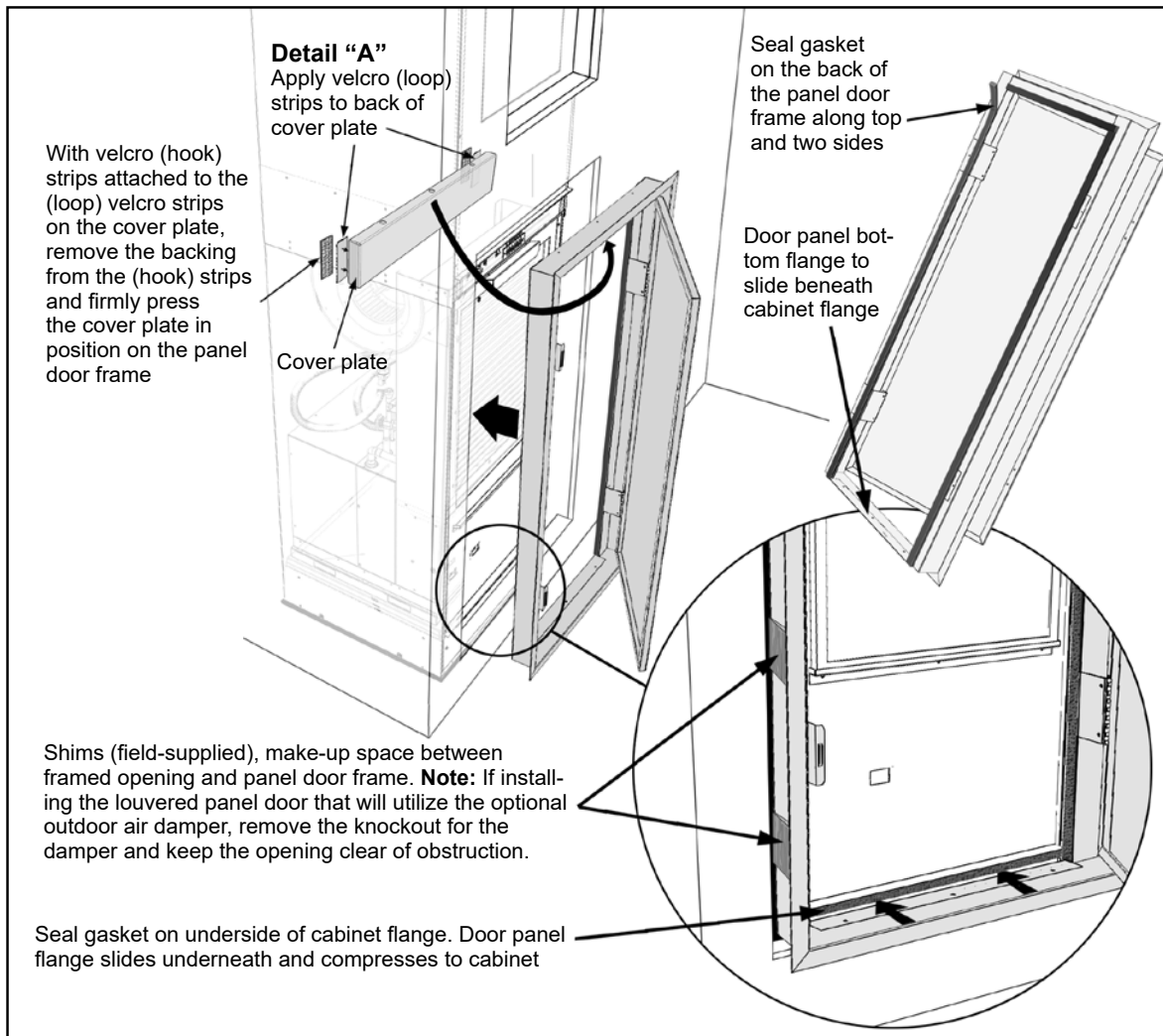
2. Be sure the bottom flange of the door frame slides beneath the cabinet flange, as shown in Figure 4. This seal must compress between the bottom panel flange and the bottom cabinet flange when the installation of the panel door frame is complete.

2. Check that the panel door frame is centered within the opening and seals completely to the cabinet return air opening. Also confirm that the room side flange of the frame is level, plumb and firmly against the drywall. Secure the hinged panel door frame with the appropriate fasteners/ screws (field provided).

3. Remove the backing from the provided (loop) velcro strips and apply them to the (left and right sides) on the back of the cover plate (Figure 4, detail "A"). Attach the (hook) velcro strips to the (loop) strips. Remove the backing on the (hook) velcro strips and firmly press the cover plate to the panel door frame in the location shown in Figure 4.

Note: The clearance holes along the top edge of the cover plate should fit around the screws on the underside of the top door frame.

Figure 4: Installing the return air panel door (hinged perimeter panel door shown)



Installing The Optional Motorized Outdoor Air Damper with Louver Panel Doors Only

1. Install the return air grille/panel assembly as described in "Installing The Return Air Panel Door" on page 4.
3. Fasten the damper assembly to the door frame with the provided screws. On left hand hinged doors the damper assembly will mount on the hinge side with the motor located at the bottom, and with right hand hinged doors the damper assembly will mount on the right side with the motor in the top position.
4. Wire the damper assembly motor using the correct schematic based on the unit motor type and voltage, (See Figure 7 through Figure 10 on page 7).

Note: It is the responsibility of the installing contractor to install the ductwork that connects the outdoor air opening in the panel door frame to the source of the outdoor intake opening in the building. All ductwork should conform to industry standards of good practice as described in the ASHRAE Systems Guide. Also refer to good installation practices as outlined in ED 18529.

Figure 5: Fasten the outside air damper assembly to the louver panel door frame

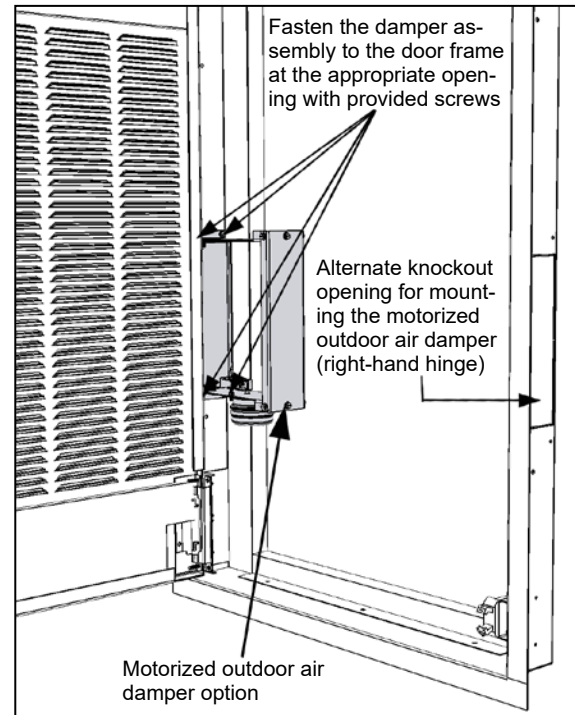
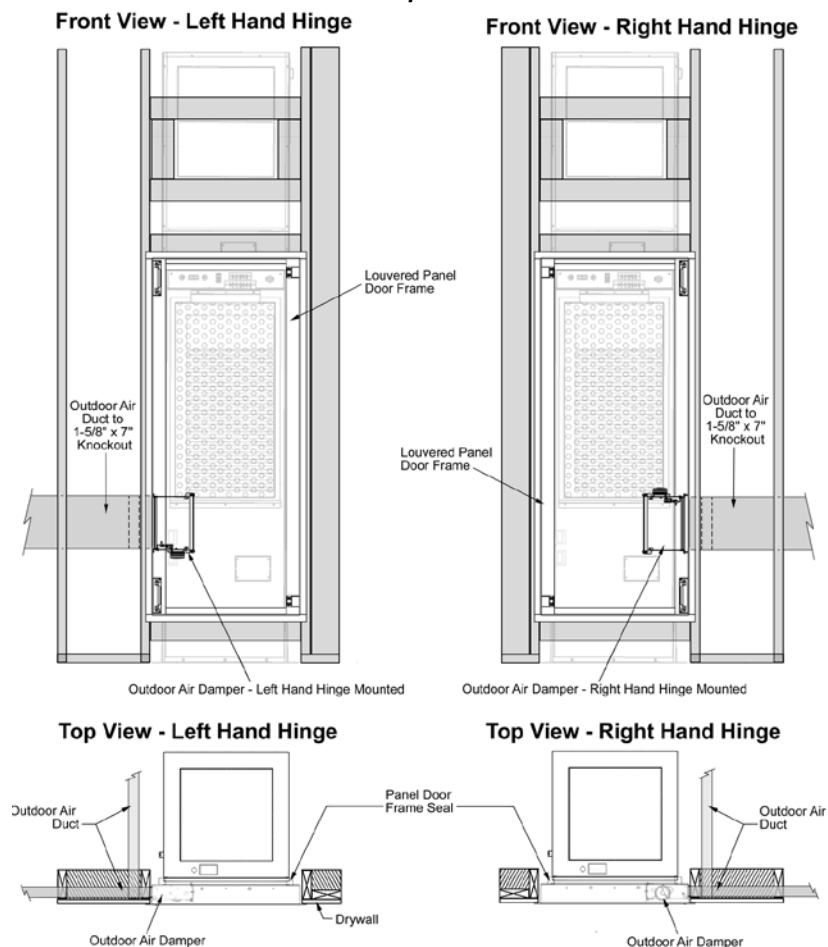


Figure 6: Mounting locations for Motorized Outdoor Air Damper



Note: The outdoor air duct can be located on either side of the cabinet and routed around the side- to the back of the cabinet, or run straight- parallel to the front of the cabinet.

Figure 7: Damper control wiring, sizes 009-012 with 208/230V and 277V fan motor control

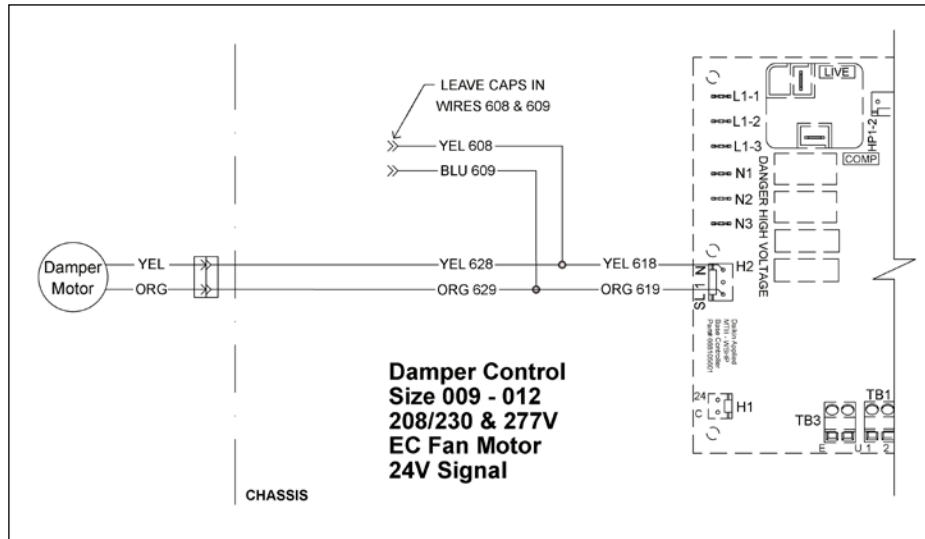


Figure 8: Damper control wiring, sizes 015-036 with EC motor

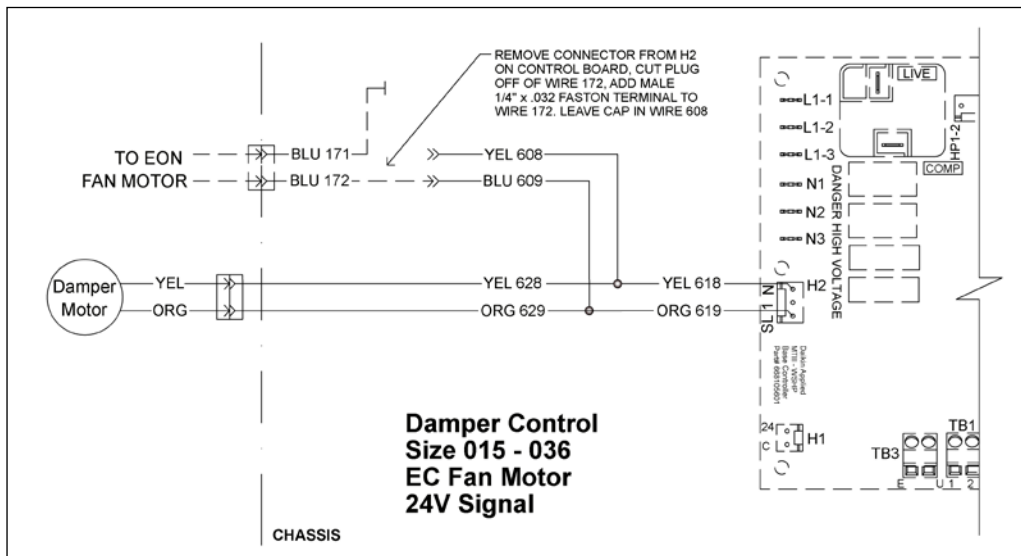


Figure 9: Damper control wiring, sizes 009-012 with 115V PSC fan motor, line voltage control

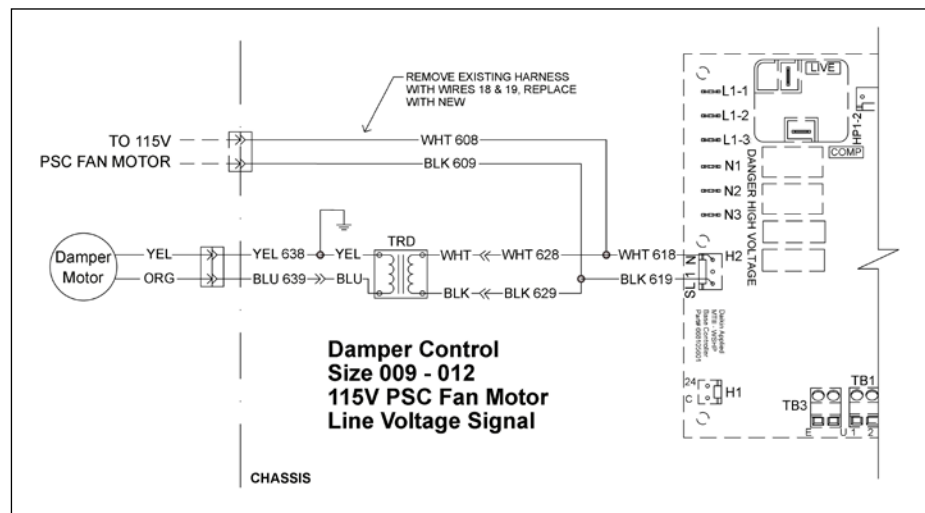


Figure 10: Damper control wiring, sizes 009-036 with 277V PSC fan motor, 24V control

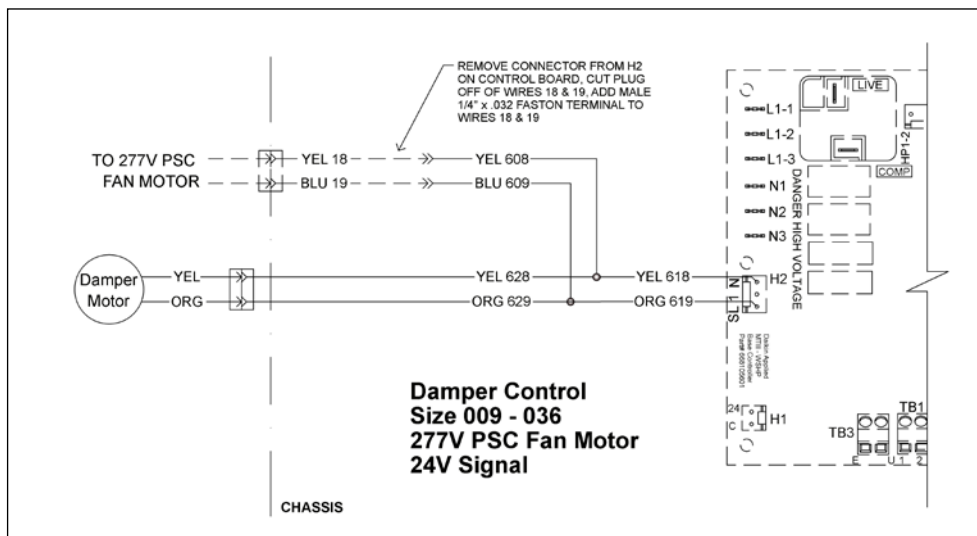


Figure 11: Damper control wiring, sizes 009-036 with 208/230V PSC fan motor, 24V control

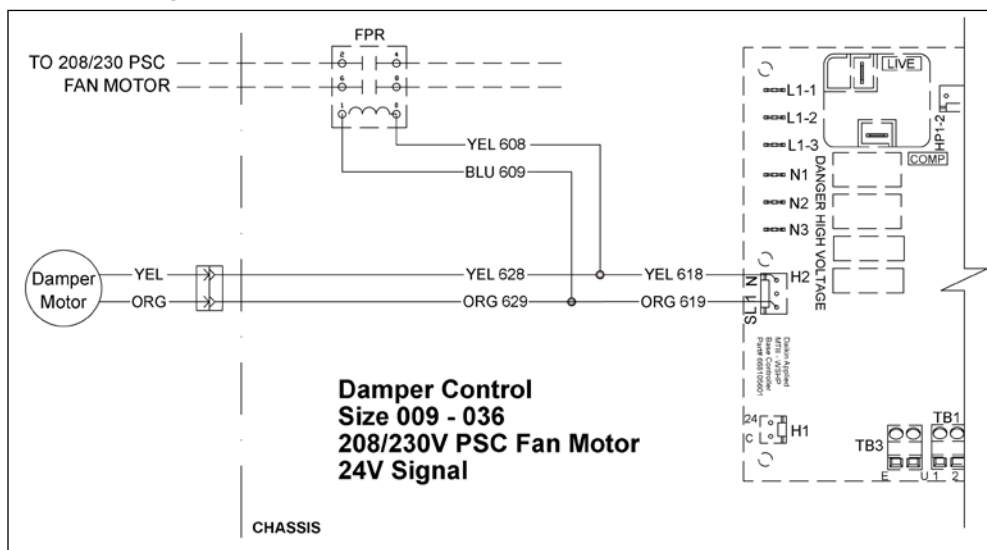
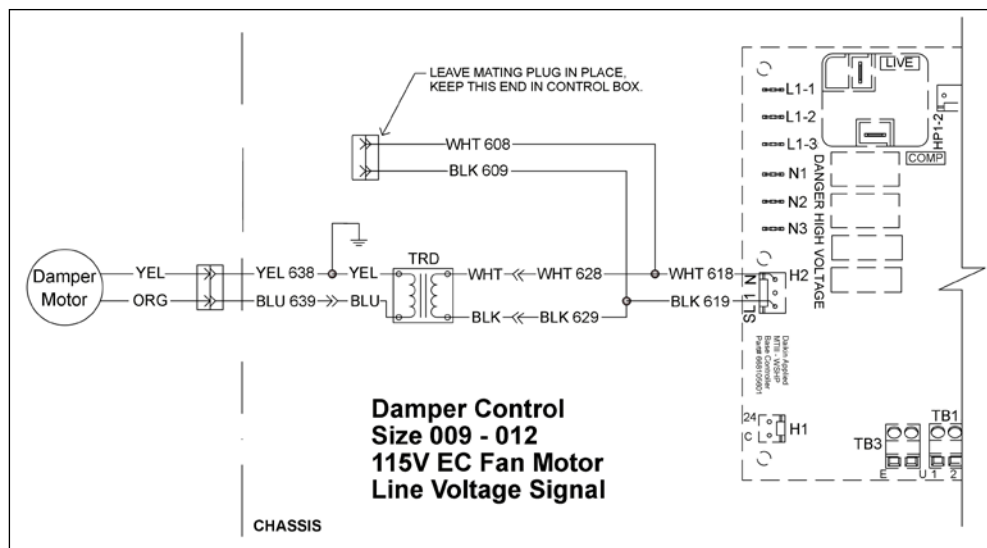


Figure 12: Damper control wiring, sizes 009-012 with 115V EC fan motor, line voltage control





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