



Installation and Maintenance Manual

IM 1223

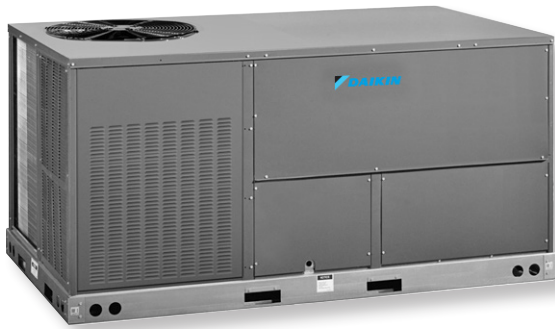
Group: Applied Air Systems

Part Number: IM 1223

Date: November 2014

Light Commercial Packaged Air Conditioners Accessories for Models DC

3 through 20 Tons



3.0 to 6.0 Ton Units



7.5 to 12.5 Ton Units



15 and 20 Ton Units

Accessories Table	3	Diffuser Systems	48
Fresh Air Dampers	4	510 Series Concentric Diffuser Systems	48
25% Fresh Air Damper Manual/Motorized	4	530 Series Concentric Diffuser Systems	51
Economizers	8	Add-On Kits	54
Downflow Jade Economizer	8	Low Ambient Kits	54
Horizontal Jade Economizer	18	HAKT-36300 High Static Kit	62
Power Exhausts	22	Factory-Installed Electrical Disconnect Kit	69
Downflow Power Exhausts	22	GFCI Outlet Powered and Non-Powered Kit	72
Downflow Power Exhausts	28	Smoke Detector Kits	75
Downflow Power Exhausts	34	Natural Gas to Liquid Propane Conversion Kits . . .	82
Relief Dampers	40	LPT-00A and LPT-01A Conversion Kit	82
Horizontal Barometric Relief Damper	40	LPM-06 2-Stage Furnace Conversion Kit	86
Roof Curbs	41	LPKT-36150 Conversion Kit	92
14" Knocked Down Roof Curbs	41	LPKT180300 Conversion Kit	97
Horizontal Discharge Roof Curbs	44	HAKT-36300 High Altitude Conversion Kit	102
Duct Adapters	47	Electric Heat Kits	107
Downflow Square-to-Round Adapter	47	EHK Electric Heat Kit	107

Table 1: Field Accessories—Models DCC, DCG and DCH 036–240

Description		Item Number	Fits Model Sizes	Field-Installed	Factory-Installed
14" Roof Curb		14CURB3672B	3–6 tons	✓	
		14CURB90150	7.5–12.5 tons	✓	
		14CURB180240	15–20 tons	✓	
25% Manual Fresh Air Damper		D25FD3672	3–6 tons	✓	
		D25FD90150	7.5–12.5 tons	✓	
		D25FD180240	15–20 tons	✓	
25% Motorized Fresh Air Damper		D25MFD3672	3–6 tons	✓	
		D25MFD90150	7.5–12.5 tons	✓	
		D25MFD180240	15–20 tons	✓	
Burglar Bar Sleeves Includes Supply & Return		DNBBS3672B	3–6 tons	✓	
		DNBBS90150	7.5–12.5 tons	✓	
		DNBBS180240	15–20 tons	✓	
Concentric Duct Kit		CDK36	3 tons	✓	
		CDK4872	4–6 tons	✓	
		CDK90102	7.5–8.5 tons	✓	
		CDK120	10.0 tons	✓	
		CDK150	12.5 tons	✓	
		CDK180	15 tons	✓	
Condenser Coil Hail Guard (Standard on 15–20 Ton Units)		CDK240	20 tons	✓	
		HAILGD03D	3–5 tons	✓	
		HAILGD04D	6 tons	✓	
		HAILGD02D	7.5–8.5 tons	✓	
		HAILGD05D	12 tons	✓	
Downflow Economizer		DDNECNJ3672	3–6 tons	✓	✓
		DDNECNJ90150	7.5–12.5 tons	✓	✓
		DDNECNJ180240B	15–20 tons	✓	✓
Downflow Square-to-Round Adapter	16" Round	DDNSQRD16	3 tons	✓	
	18" Round	DDNSQRD18	4–6 tons	✓	
	20" Round	DDNSQRD20	4–6 tons	✓	
High-Static Kit (230/460v)		HSKT036B	3 tons	✓	
		HSKT048B	4 tons	✓	
		HSKT060B	5 tons	✓	
		HSKT072B	6 tons	✓	
		HSKT090G ^{1,2}	7.5 tons	✓	
		HSKT090 ¹	7.5–8.5 tons	✓	
		HSKT120 ¹	10.0 tons	✓	
		HSKT150 ¹	12.5 tons	✓	
		HSKT180G	15 tons	✓	
		HSKT240	20 tons	✓	
Horizontal Economizer		DHZECNJ3672	3–6 tons	✓	
		DHZECNJ90150	7.5–12.5 tons	✓	
Horizontal Discharge Curb	Side Discharge; duct openings on non-service side	HZCURB180240SDN	15–20 tons	✓	
	Side Discharge; duct openings on service side	HZCURB180240SDS	15–20 tons	✓	
Low-Ambient Kit		LAKT01	3–6 tons	✓	✓
		LAKT02	7.5–12.5 tons	✓	✓
		LAKT03 (for units with serial numbers >0909)	7.5–12.5 tons	✓	✓
		LAKT03	15–20 tons	✓	✓
LP Conversion Kit		LPT-03 ³ (DCG036045 only)	3 tons	✓	
		LPM-06 ³	3–6 tons	✓	
		LPKT90150	7.5–12.5 tons	✓	
		LPKT180300A	15–20 tons	✓	
Power Exhaust	208/230 Volt	DPE36722	3–6 tons	✓	
		DPE901502	7.5–12.5 tons	✓	
		DPE1802402	15–20 tons	✓	
	460 Volt	DPE36724	3–6 tons	✓	
		DPE901504	7.5–12.5 tons	✓	
		DPE1802404	15–20 tons	✓	
Horizontal Barometric Relief Damper ⁴		DBRD3672	All Models	✓	
Electric Heat Kits*		—	All Models	✓	✓
Hurricane Restraint Clip		GHRC-1	All Models	✓	
High-Altitude Kit		HA-02 ³	All Models	✓	
		HAKT36300	All Models	✓	
Convenience Outlet: Non Powered		—	All Models		✓
Convenience Outlet: Powered		—	All Models		✓
Disconnect Switch (non-fused)		—	All Models		✓
Smoke Detector		—	All Models		✓
Stainless-Steel Heat Exchanger (Type 409) ³		—	All Models		✓

* DCC units only

1. DCG High Static Kit (HSKT) are provided for standard single-speed belt-drive units only

2. DCC and DCG units only

3. DCG units only

4. 3–6 ton units require (1); 7.5–12.5 ton units require (2)

25% Fresh Air Damper Manual/Motorized

For Models DC 036–240

Application

Most building codes require a certain amount of fresh air to overcome the effects of CO₂ during times when the space is occupied. Use of fresh air dampers on HVAC equipment is an inexpensive way to allow fresh air into the building. Daikin offers both a manual and motorized fresh air damper to fit Daikin Light Commercial Packaged equipment. The manual fresh air damper is installed and fixed in place to allow a certain amount of fresh air to circulate at all times. The motorized fresh air damper includes a small two position actuator that opens the damper when the indoor blower is running and closes the damper when the blower turns OFF.

Determining Damper Set Point

While it is possible to estimate the amount of fresh air by visually adjusting the manual fresh air damper, a more accurate determination can be made using a digital thermometer and the equation below.

$$(To \times OA) + (Tr \times RA) = Tm$$

- To = Outdoor air temperature
- OA = Percent of outdoor air
- Tr = Return air temperature
- RA = Percent of return air
- Tm = Resulting mixed air temperature

Example:

Fresh air required is 10% outdoor air.
 Outdoor air temperature is 60 degrees F.
 Return air temperature is 75 degrees F.

$$(0.1 \times 60) + (0.9 \times 75) = 6.0 + 67.5 = 73.5$$

Mixed air temperature will be 73.5°F when the OA is 60°F and the RA is 75°F with 10% outdoor air.

Figure 1: Mixed Air Sensor Connections



Manual Fresh Air Damper Installation

1. Remove the damper assembly from its container and inspect for damage or shortages
2. Locate and remove the panel covering the horizontal return air opening. Retain the screws for step 3.
3. Attach the damper to the side of the machine using the screws from step 2 and weatherproof with silicone or other approved sealant.
4. Locate the 5/16 set screws at the bottom of the slide damper and loosen them.
5. Slide the damper down until the damper is positioned to provide the correct amount of fresh air.
6. Tighten the set screws.
7. For horizontal applications the damper can be mounted on the return air duct or evaporator access panel by field cutting a hole, mounting the damper over the hole and sealing around damper panel.

Motorized Fresh Air Damper Installation

1. Remove the damper assembly from its container and inspect for damage or shortages.
2. Remove the large evaporator access panel.
3. Slide the motorized damper section into the channels on the back of the manual damper.
4. See the instructions above for mounting the damper hood and setting the opening.
5. Remove the jumper plug from the economizer wiring harness and plug in the damper. (Note: It is a good idea to retain the jumper plug for emergencies.)
6. Replace the evaporator access panel.
7. For horizontal applications the damper can be mounted on the evaporator access panel by field-cutting a hole, mounting the damper over the hole and sealing around damper panel.

Figure 2: 25% Fresh Air Damper, 036–072 Model Sizes

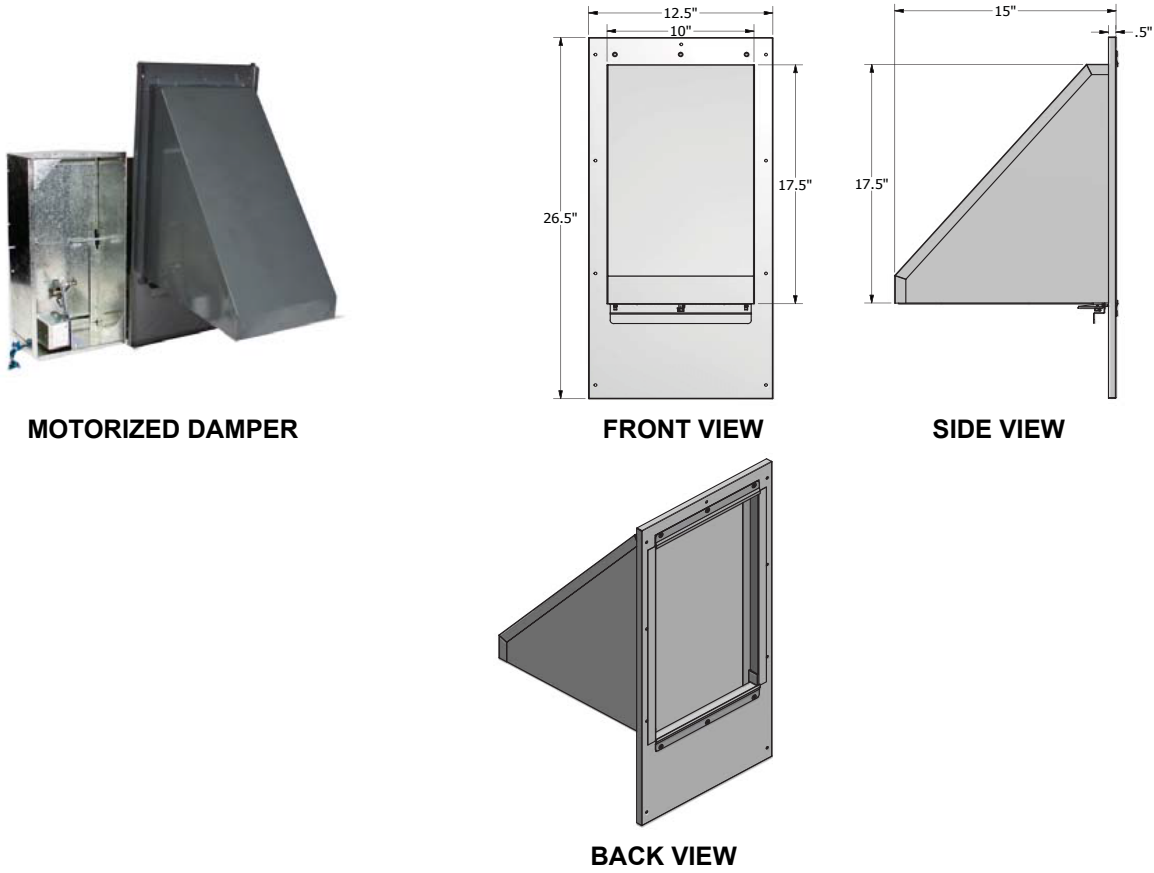


Figure 3: 25% Fresh Air Damper, 090–150 Model Sizes

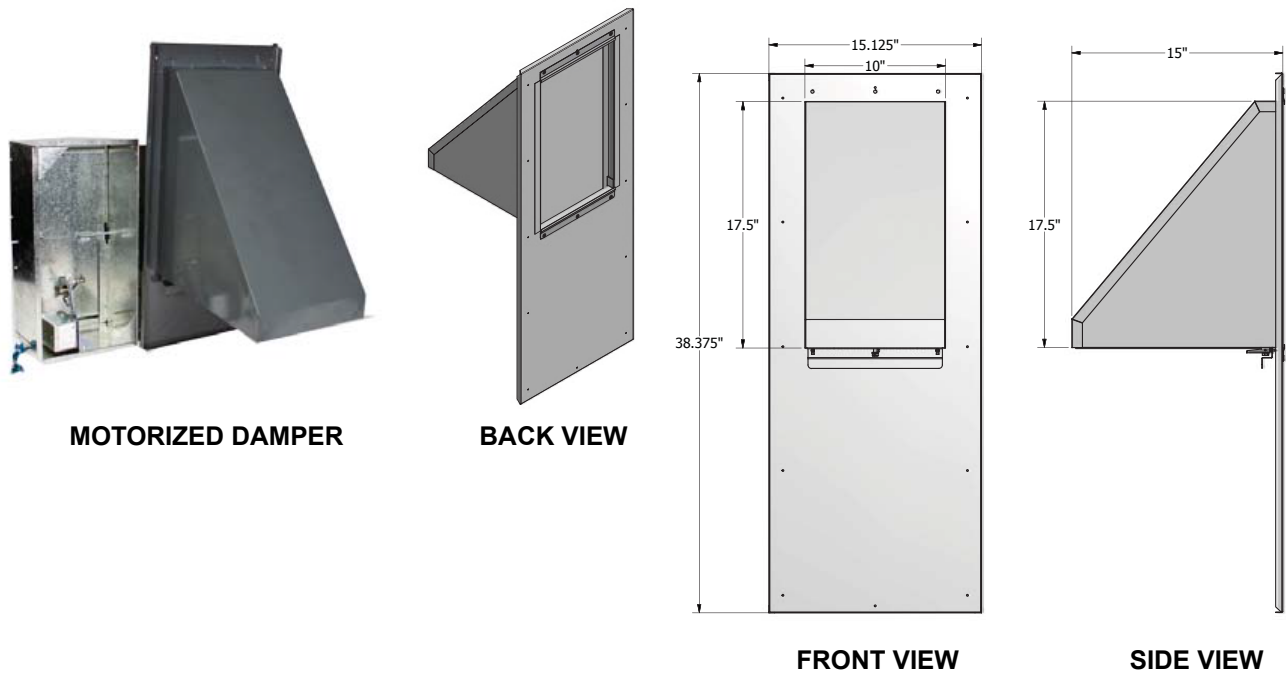
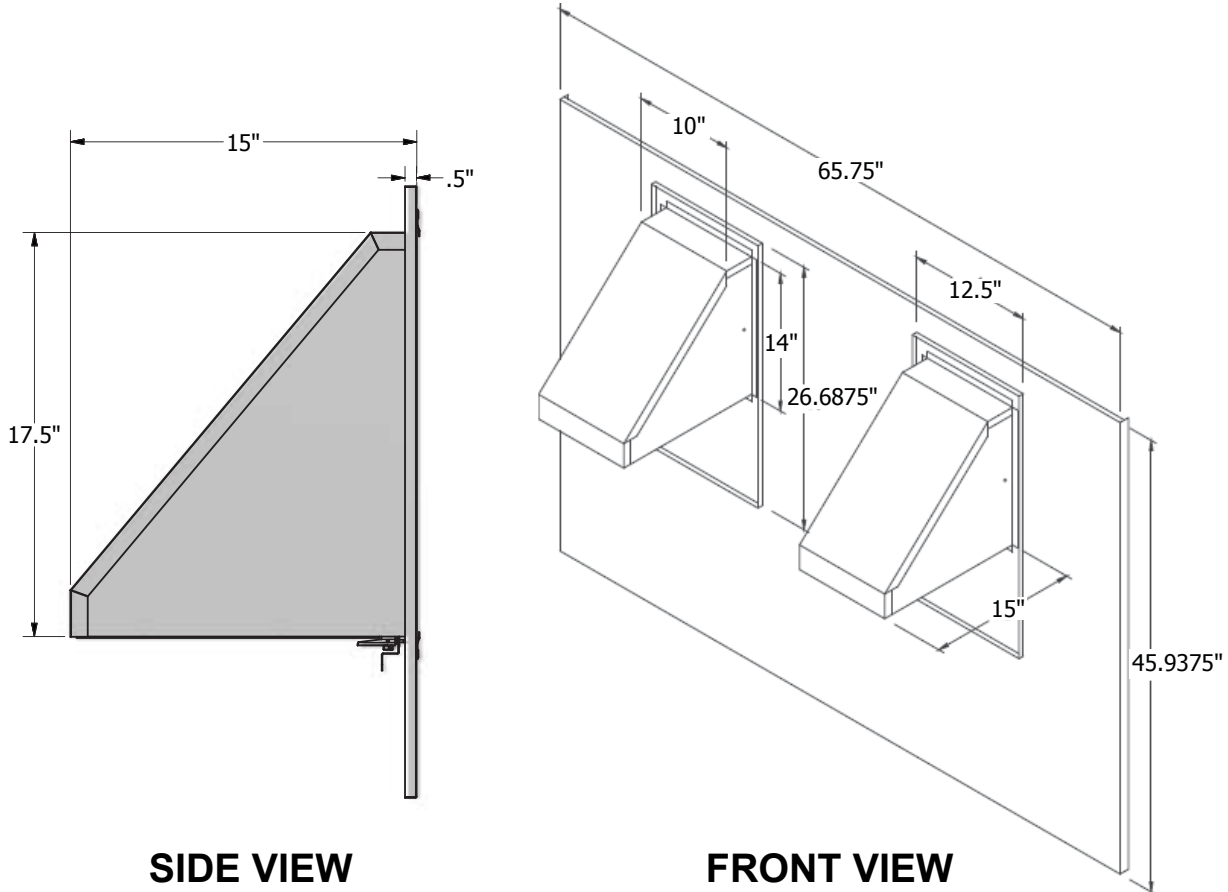


Figure 4: 25% Fresh Air Damper, 180–240 Model Sizes



SIDE VIEW

FRONT VIEW

Figure 5: Mixed Air Sensor and Bracket

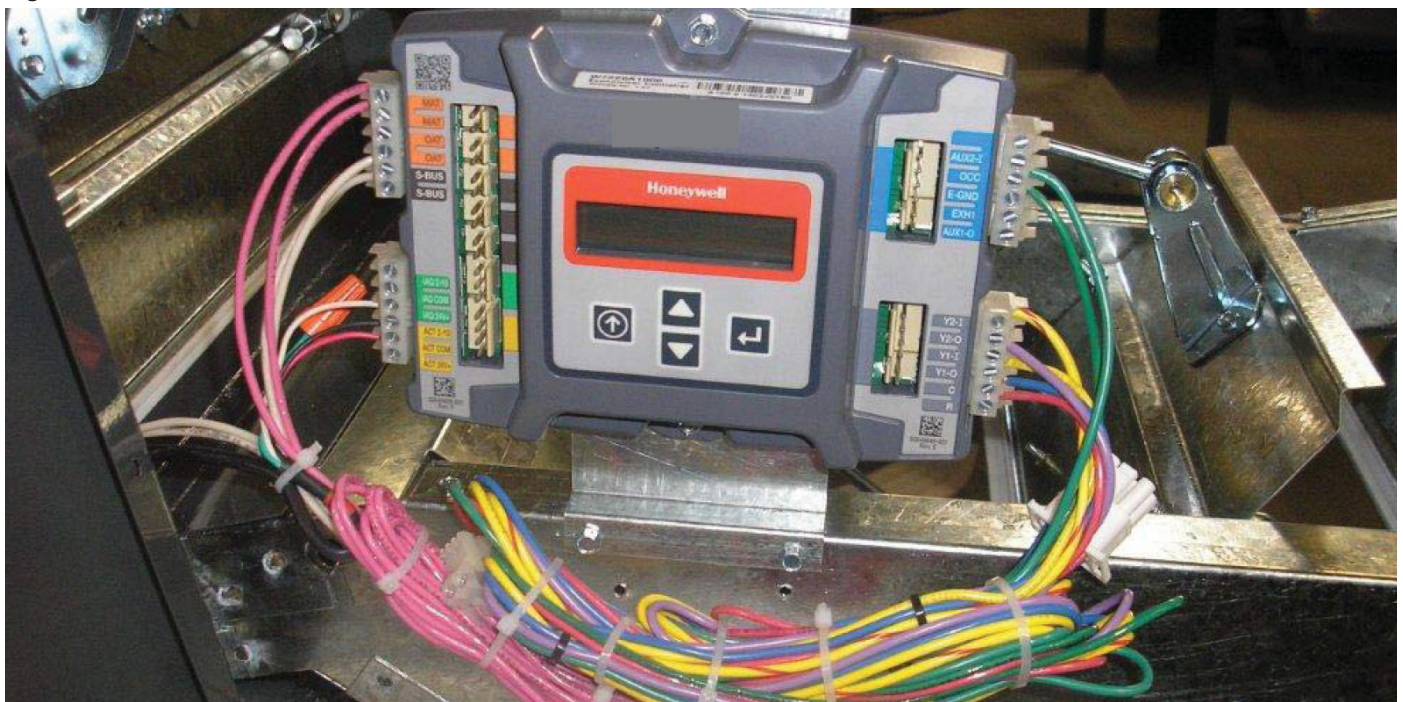
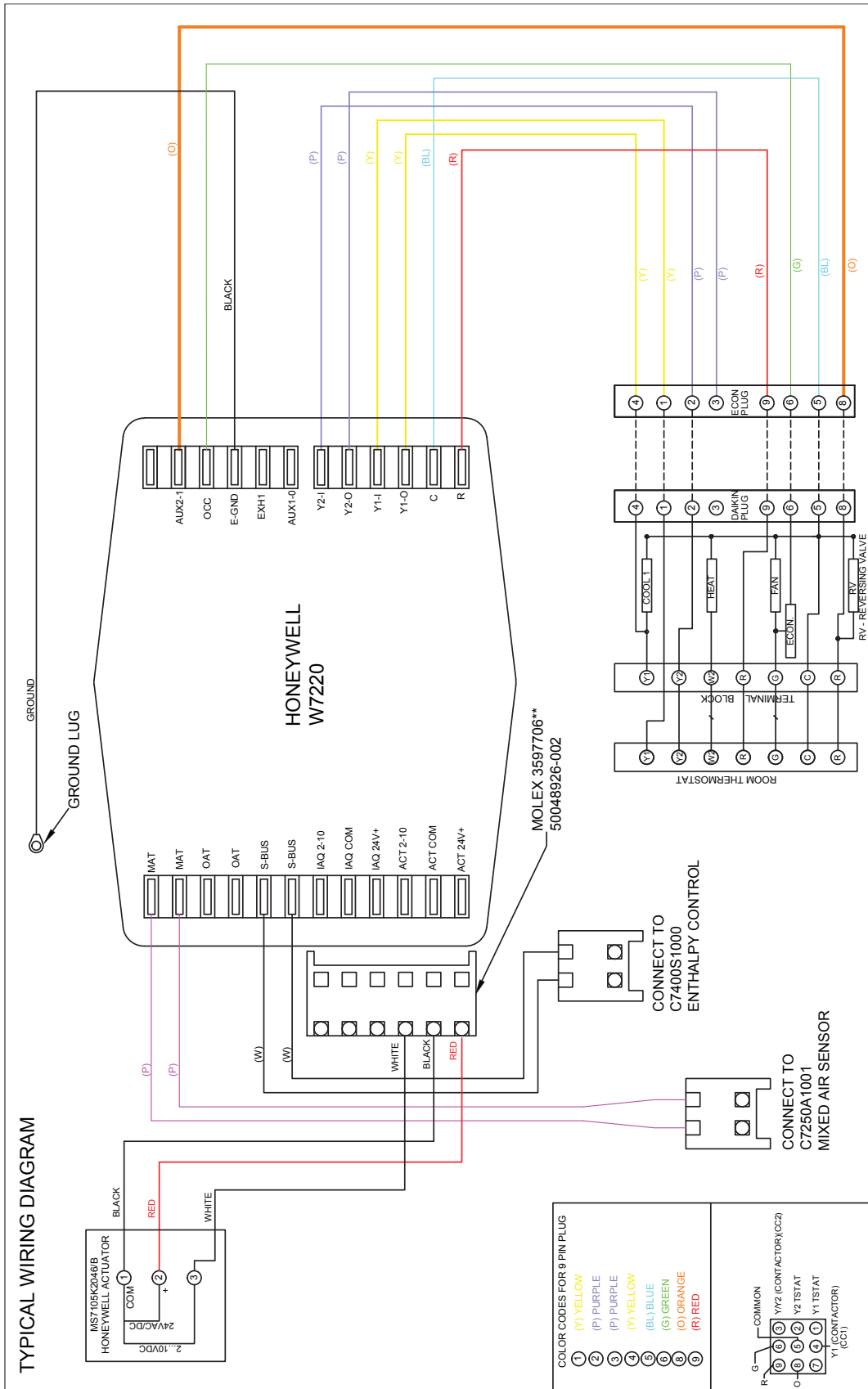


Figure 6: Typical Wiring Diagram



Downflow Jade Economizer

For Models DC 036–240

Application

Economizers are designed to provide “free” air conditioning when outside conditions are appropriate. When the outside air is cool and dry enough, the economizer automatically opens to introduce the cool air to the interior space, thereby eliminating the need to run the air conditioning compressor.

If the outside air becomes too warm or humid, the economizer automatically closes the fresh air damper and the compressor engages to begin cooling the space mechanically.

If a two-stage thermostat is used it is possible to use a combination of economizer and mechanical cooling to condition the space.

The economizer can also be set to allow a minimum amount of fresh air to enter the space when the equipment’s indoor blower is operating.

Economizers are valuable tools to enhance indoor air quality, save energy and prolong the life of the air conditioning equipment.

Sequence of Operation

This sequence assumes employment of a single enthalpy economizer using a two-stage thermostat.

1. A call for cooling comes from room thermostat.
2. The enthalpy sensor determines if the atmospheric conditions are conducive for using outside air for cooling. If YES, go to step 3. If NO, or if outdoor air temperature rises above enthalpy set point, go to step 4.
3. The outside air dampers open and modulate to maintain a mixed air temperature (outside air + indoor air) of 53 degrees F. If the outdoor air is insufficient to satisfy the thermostat alone and a second stage of cooling is required, the compressor starts and works in conjunction with the economizer to cool the space. In a system with two compressors, if the thermostat is still not satisfied by the economizer and stage 1 compressor, the Jade control will energize the second compressor. (Go to step 5.)
4. Outdoor air dampers open to minimum position and the compressor engages to provide mechanical cooling.
5. When the thermostat is satisfied the outside air dampers return to a minimum position.

Determining Damper Set Point

While it is possible to estimate the amount of fresh air by visually adjusting the manual fresh air damper, a more accurate determination can be made using a digital thermometer and the equation below.

$$(To \times OA) + (Tr \times RA) = Tm$$

To = Outdoor air temperature
 OA = Percent of outdoor air
 Tr = Return air temperature
 RA = Percent of return air
 Tm = Resulting mixed air temperature

Example:

Fresh air required is 10% outdoor air.
 Outdoor air temperature is 60 degrees F.
 Return air temperature is 75 degrees F.

$$(0.1 \times 60) + (0.9 \times 75) = 6.0 + 67.5 = 73.5$$

Mixed air temperature will be 73.5°F when the OA is 60°F and the RA is 75°F with 10% outdoor air.

Installation 036–072 Sizes

1. Open carton and inspect contents for shortages and damage.
2. Remove filter access and evaporator access panel from package unit. Keep the screws from the evaporator access panel.
3. Slide internal damper rack into the opening until the outside flanges of the assembly nest inside of the posts framing the opening (Figure 7).
4. Insert the red power wire into the inlet side of the Goodman unit power plug and feed the rest of the wire back to the unit control section. Connect the red to the red on the back of the terminal strip.
5. Plug 6-pin economizer plug into matching 6-pin plug in the unit.

NOTE: Ensure neither the wire nor the plugs interfere with the movement of the dampers during operation.

6. Install bottom portion of the new access panel on the unit.
7. Secure access panel to the unit with the screws removed in Step 2.
8. Remove the blower access panel from the unit and mount the mixed air sensor to the blower housing (Figure 9).
9. Feed the wire for the mixed air sensor back to the economizer and connect it on the side of the Jade control at MAT (Figure 10).
10. Power the unit and use the Honeywell Jade Economizer instructions provided and the 4 button interface on the Jade controller to configure the economizer for your application.
11. Assemble hood per the instructions (Figure 11 on page 10).
12. Attach the hood to the side of the unit over the economizer damper and in the place of the discarded evaporator access panel
13. Replace filter access panel on unit.

Figure 7: Installing the Internal Damper Rack



Figure 8: Mixed Air Sensor



Figure 9: Attached Mixed Air Sensor on Blower



Figure 10: Jade Control Connections



Figure 11: 036-072 Downflow Hood Assembly

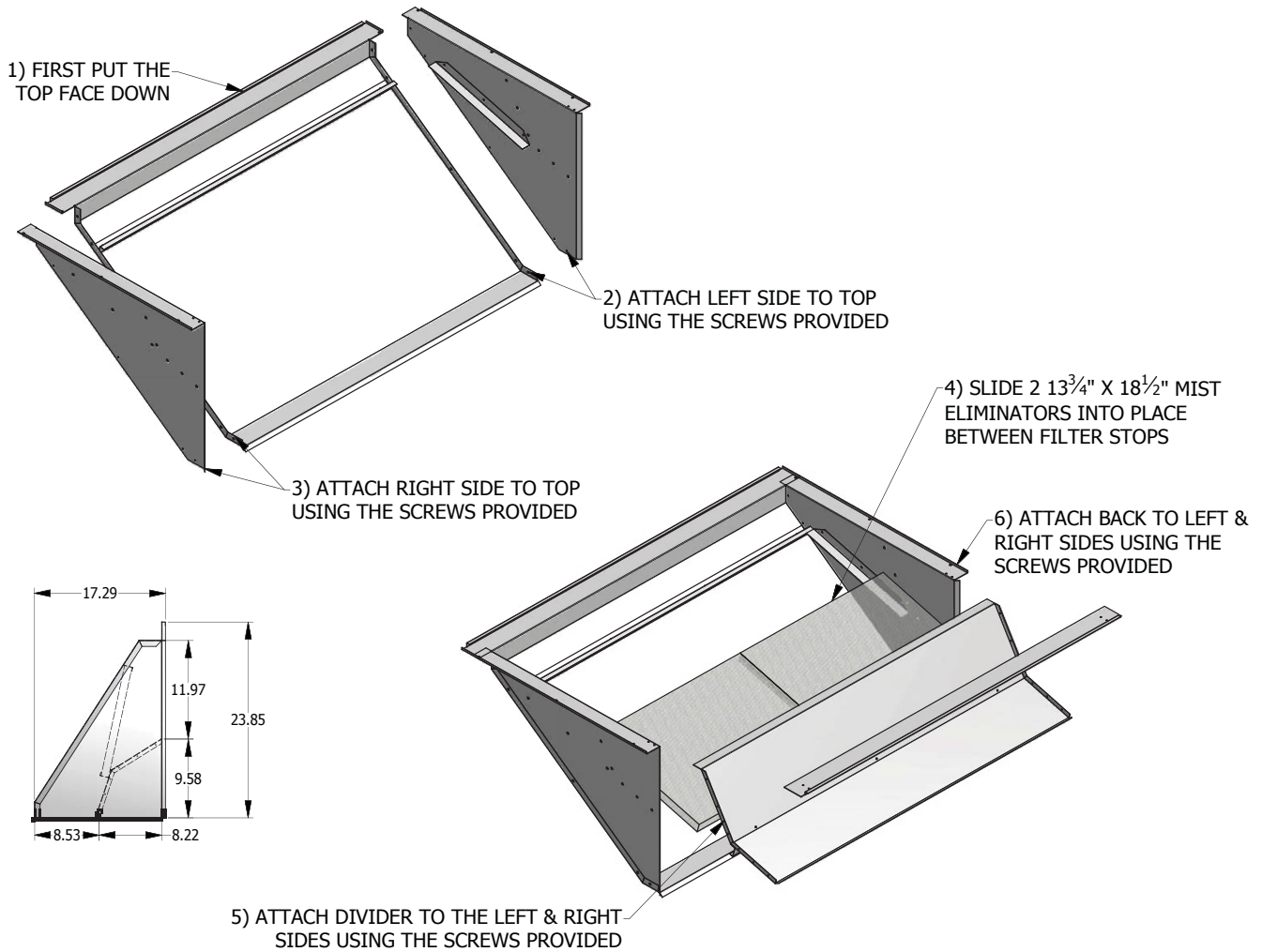


Table 2: 036-072 Contents

1	Damper rack with economizer controls
1	Hood Assembly
1	Fresh Air Mist Eliminator
1	Screw package
1	Bottom access panel
1	Installation/Component Manual
1	Mixed Air Sensor

Important Notes

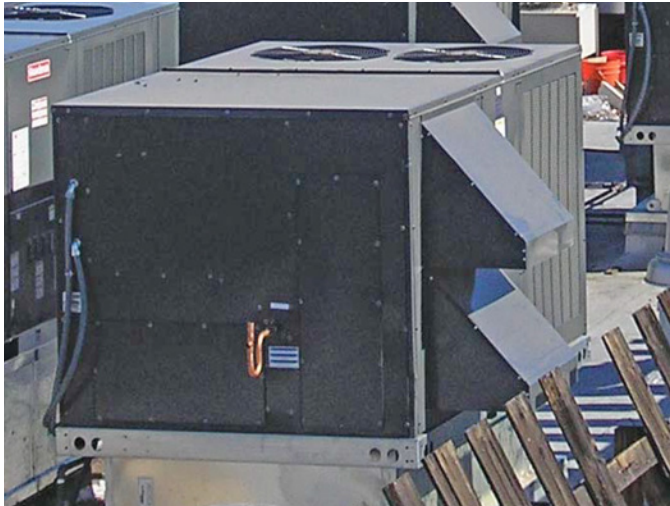
- Heat pump applications require Daikin part number IRKT-01 isolation relay kit.
- The fresh air mist eliminator should be flushed periodically with warm soapy water.
- A two-stage thermostat is recommended with this accessory.

Accessories/Capabilities

- Dual Enthalpy - Requires an additional C7400 enthalpy control installed in the return air duct.
- Demand Control Ventilation - Requires a CO₂ sensor.
- Power Exhaust - DPE3672(2/4) power exhaust used in applications where barometric relief is not sufficient.
- Remote Minimum Positioner - For applications requiring minimum position adjustments inside the conditioned space.

Installation 090–150 Sizes

Figure 12: Installed 090–150 Downflow Economizer



1. Open carton and inspect contents for shortages and damage.
 2. Remove large evaporator access panel from package unit and discard. Remove the smaller filter access panel and the horizontal return panel.
 3. Slide the damper rack into the large opening and pivot the damper into position around the post between the evaporator opening and the filter access opening. (Figure 13)
 4. Position the dampers in the opening until the front flanges are flush with the corner post and divider post between the filter access panel and the evaporator access panel. (Figure 14)
 5. Feed the pink wires for the mixed air sensor through the unit economizer plug mousehole into the blower section of the unit. Mount the mixed air sensor to the blower housing away from the center to avoid interfering with the rotation of the blower wheel and plug in the wires. (Figure 17)
 6. Attach the pink mixed air sensor wires to the controller. (Figure 18)
 7. From the horizontal return opening, plug 9-pin economizer plug into matching 9-pin plug in the unit.
- NOTE:** Ensure neither the wire nor the plugs interfere with the movement of the dampers during operation.
8. Replace the horizontal return cover.
 9. Install the new evaporator access panel on the unit.
 10. Secure access panel to the unit with the screws from step 2. New holes must be drilled to secure the panel to the 12.5 ton unit.
 11. Assemble the barometric relief hood and the fresh air hoods with the screws provided. Be sure to install the mist eliminators before installing the front filter access piece. (Figure 16)
 12. Install gasket material on the economizer panel outside of the hood openings using the hood mounting holes as a guide.
 13. Refer to enclosed documentation for the Jade controller for set up.
 14. Use the minimum set point equation (page 8) to determine the minimum position setting on the controller.
 15. Install barometric relief hood with screws provided through access panel and economizer.
 16. Install the fresh air hood with the screws provided through the access panel and economizer.
 17. Install the blockoff panel above the hoods on the 12.5 ton unit. (Figure 15)
 18. Run a bead of silicone or other approved sealant along the hood flanges to ensure a watertight seal.
 19. Replace filter access panel.

Figure 13: 090–150 Downflow Economizer



Figure 14: 090–150 Downflow Economizer Dampers



Figure 17: Attached Mixed Air Sensor on Blower

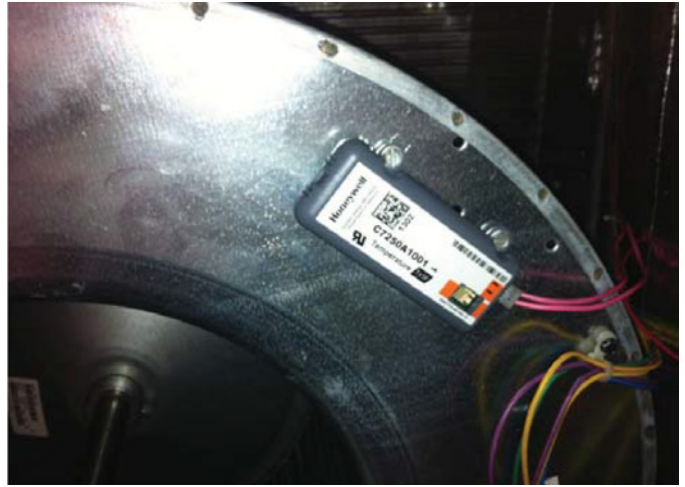


Figure 15: 090–150 Downflow Economizer Block Off Panel



Figure 18: Jade Control Connections



Figure 16: 090–150 Downflow Economizer



Accessories/Capabilities

- Dual Enthalpy - Requires an additional C7400 enthalpy control installed in the return air duct.
- Demand Control Ventilation - Requires a CO₂ sensor.
- Power Exhaust - DPE90150X power exhaust used in applications where barometric relief is not sufficient.

Important Notes

- The fresh air mist eliminator should be flushed periodically with warm soapy water.
- A two-stage thermostat is recommended with this accessory.

Figure 19: Downflow Hood Assembly

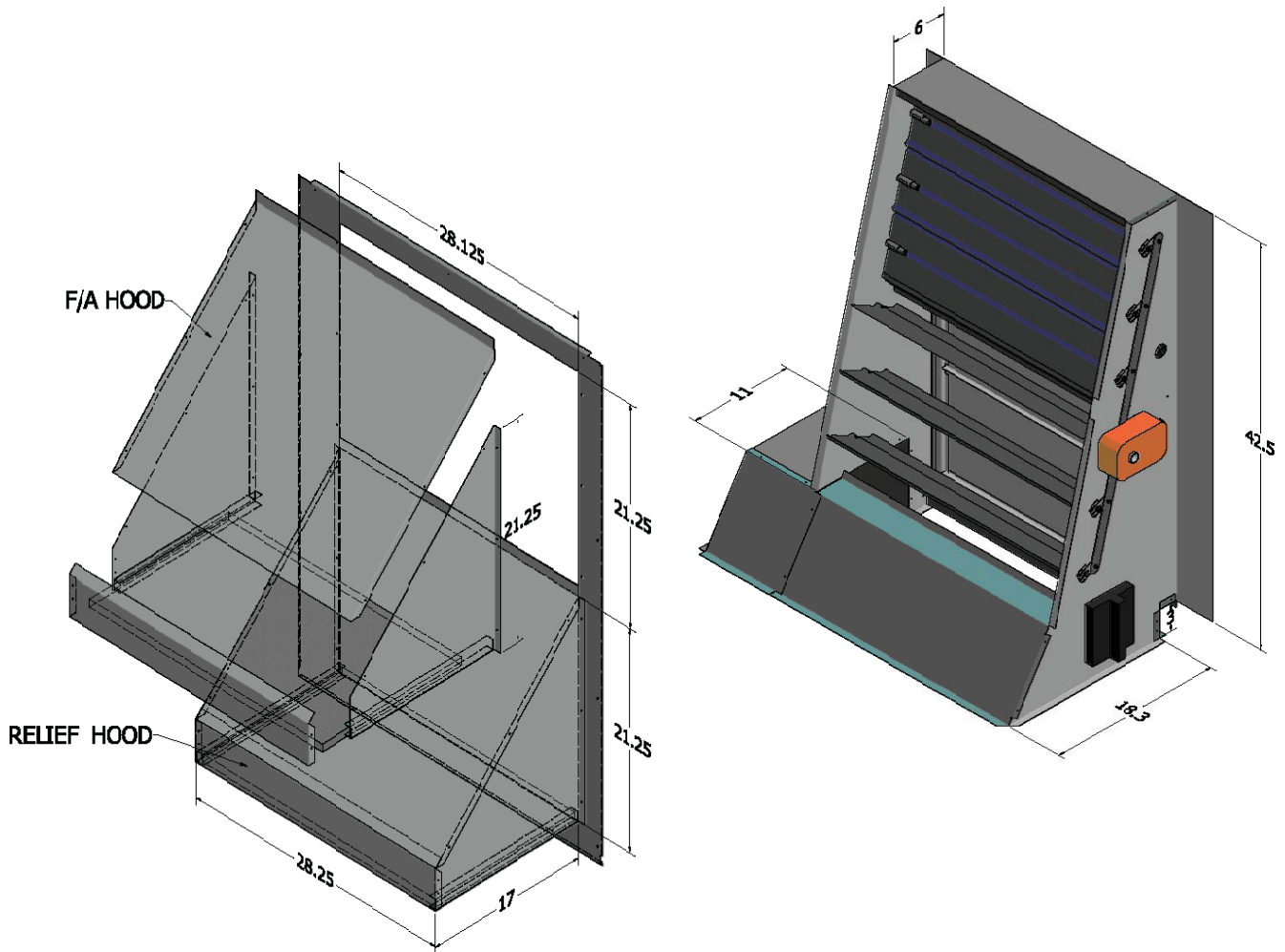


Table 3: Contents

1	Damper rack with economizer controls
2	Fresh air hood sides
1	Fresh air hood top
1	Fresh air hood filter access
2	Barometric relief hood sides
1	Barometric relief hood top
1	Barometric relief hood filter access
2	Mist eliminator
1	Evaporator Access Panel
1	Blockoff Panel for 12.5 Ton
1	Screw package and control jumpers
1	Installation Instructions and Component Manual
1	T1070 Gasket Material

Installation 180–240 Sizes

Figure 20: 180–240 Downflow Economizer



1. Open the containers and inspect the contents for shortages and damage.
2. Remove the large evaporator access panel from the package unit and discard. Remove the smaller filter access panel.
3. Slide the base plate into the opening with the wider flange toward the outside of the unit and place it over the return air opening. It should be centered between the evaporator opening side posts. (Figure 21)
4. Slide the damper rack into the large opening until the front flange is against the evaporator support bracket. (Figure 22)
5. Slide the damper rack to the right until the damper side flanges are even with the evaporator access panel opening flange. The top flange of the damper rack should be even with or just inside the top cap of the unit. (Figure 23 & Figure 24)
6. Remove the mist eliminator filters from the fresh air/ barometric relief hood.
7. Install gasket material on the front of the top flange of the hood assembly.
8. Install gasket material on the inside of the side flanges of the hood assembly.
9. Install the hood assembly taking care to slide the top flange of the hood under the top cap of the unit.
10. Secure the hood with the screws provided.
11. Reinstall the mist eliminators and secure them using the latches provided.
12. Locate the unit economizer 9-Pin plug inside the evaporator section near the filter access opening and plug it into the corresponding 9-Pin plug on the economizer.

NOTE: Ensure neither the wire nor the plugs interfere with the movement of the dampers during operation.

13. Remove the blower access panel on the unit and install the mixed air sensor on the blower housing toward the outside edge ensuring that the screws do not interfere with the blower wheel. (Figure 25)
14. Connect the pink mixed air sensor wire to the sensor and then feed the pink wire back to the Jade control and connect it on the MAT terminal.
15. Seal the hood using silicone or other approved method to ensure a water tight seal
16. Replace the blower and filter access panel.

Figure 21: Evaporator Opening Side Posts



Figure 22: Evaporator Support Brackets



Figure 23: Correct Damper Positioning



Figure 24: Correct Damper Positioning—Detail



Figure 25: Attached Mixed Air Sensor on Blower



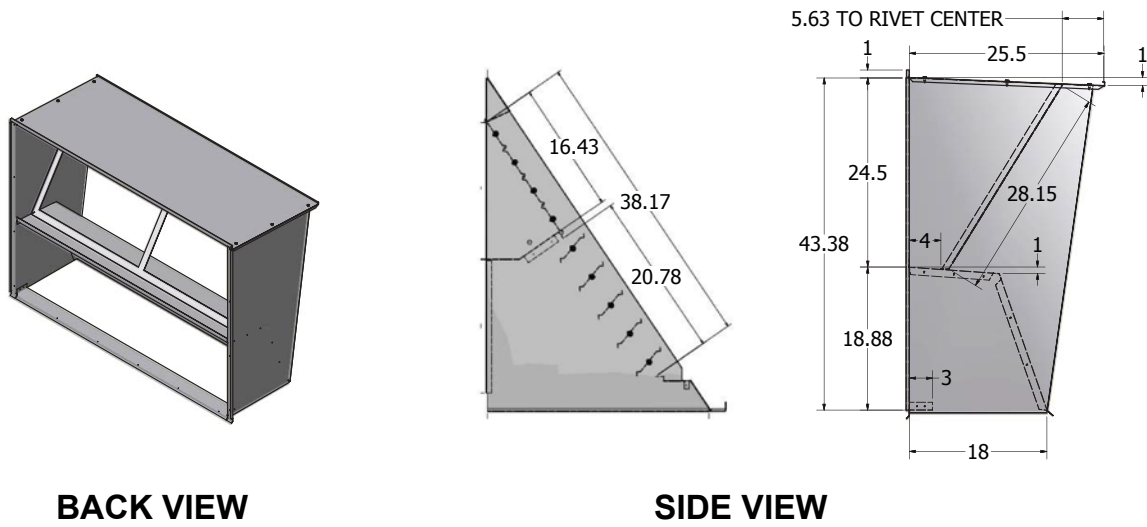
Accessories/Capabilities

- Dual Enthalpy - Requires an additional C7400 enthalpy control installed in the return air duct.
- Demand Control Ventilation - Requires a CO₂ sensor.
- Power Exhaust - DPE180240X power exhaust used in applications where barometric relief is not sufficient.

Important Notes

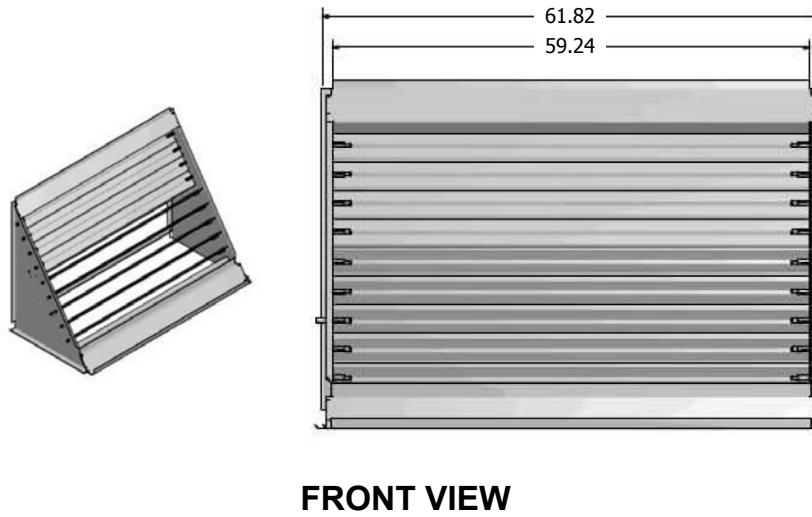
- The fresh air mist eliminator should be flushed periodically with warm soapy water.
- A two-stage thermostat is recommended with this accessory.

Figure 26: 180–240 Downflow Economizer



BACK VIEW

SIDE VIEW

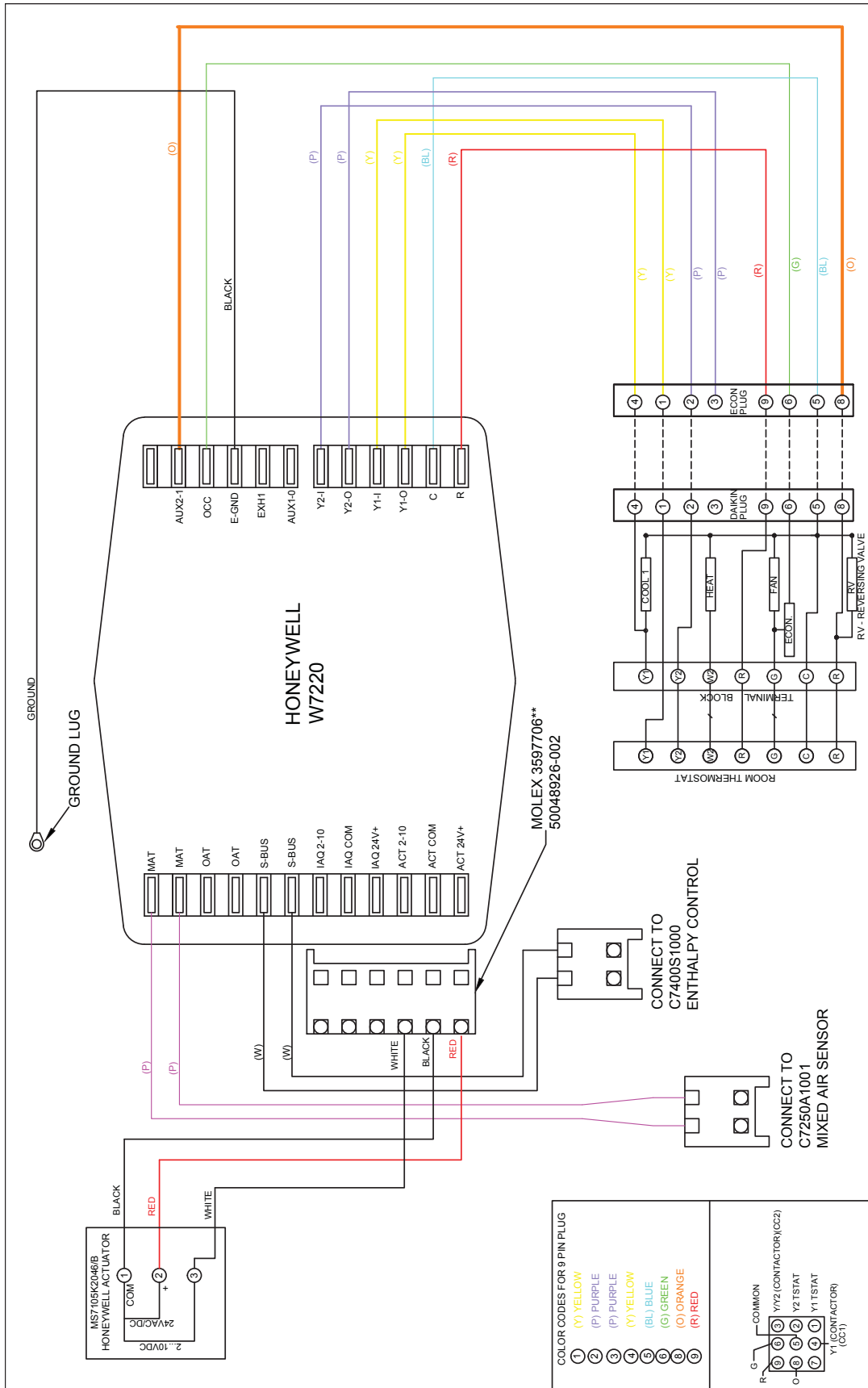


FRONT VIEW

Table 4: Contents

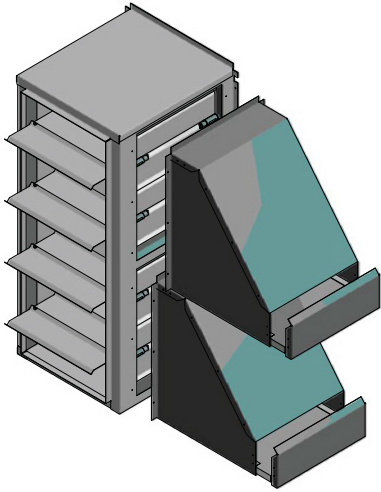
1	Base plate
1	Damper rack with economizer controls
1	Fresh air hood
2	Mist eliminator
1	Screw package and control jumpers
1	Installation Instructions and Component Manual

Figure 27: Economizer Controller Wiring Diagram



Horizontal Jade Economizer

For Models DC 036–150



Application

Economizers are designed to provide “free” air conditioning when outside conditions are appropriate. When the outside air is cool and dry enough, the economizer automatically opens to introduce the cool air to the interior space, thereby eliminating the need to run the air conditioning compressor. If the outside air becomes too warm or humid, the economizer automatically closes the fresh air damper and the compressor engages to begin cooling the space mechanically. If a two-stage thermostat is used it is possible to use a combination of economizer and mechanical cooling to condition the space.

The economizer can also be set to allow a minimum amount of fresh air to enter the space when the equipment’s indoor blower is operating.

Economizers are valuable tools to enhance indoor air quality, save energy and prolong the life of the air conditioning equipment.

Sequence of Operation

This sequence assumes employment of a single enthalpy economizer using a two-stage thermostat.

1. A call for cooling comes from room thermostat.
2. The enthalpy sensor determines if the atmospheric conditions are conducive for using outside air for cooling. If YES, go to step 3. If NO, or if outdoor air temperature rises above enthalpy set point, go to step 4.
3. The outside air dampers open and modulate to maintain a mixed air temperature (outside air + indoor air) of 53 degrees F. If the outdoor air is insufficient to satisfy the thermostat alone and a second stage of cooling is required, the compressor starts and works in conjunction with the economizer to cool the space. (Go to step 5.)
4. Outdoor air dampers open to minimum position and the compressor engages to provide mechanical cooling.
5. When the thermostat is satisfied the outside air dampers return to a closed position.

Determining Damper Set Point

While it is possible to estimate the amount of fresh air by visually adjusting the manual fresh air damper, a more accurate determination can be made using a digital thermometer and the equation below.

$$(To \times OA) + (Tr \times RA) = Tm$$

- To = Outdoor air temperature
- OA = Percent of outdoor air
- Tr = Return air temperature
- RA = Percent of return air
- Tm = Resulting mixed air temperature

Example:

Fresh air required is 10% outdoor air.
 Outdoor air temperature is 60 degrees F.
 Return air temperature is 75 degrees F.

$$(0.1 \times 60) + (0.9 \times 75) = 6.0 + 67.5 = 73.5$$

Mixed air temperature will be 73.5°F when the OA is 60°F and the RA is 75°F with 10% outdoor air.

Installation

1. Open carton and inspect contents for shortages and damage.
2. Remove the large evaporator access panel.
3. Remove the horizontal return air opening cover and secure it over the downflow return opening per unit installation instructions.
4. Feed the wiring harness through the return air opening.

NOTE: Ensure that the wiring harness is inside the return air opening and that no part of it is caught between the economizer and the side of the unit.

5. Attach the economizer to the unit over the horizontal return air opening by sliding the top flange of the economizer under the flange on the top of the unit and securing with sheet metal screws. Weatherproof the seam where the economizer and unit attach using silicone or other approved sealant.

NOTE: Ensure neither the wire nor the plugs interfere with the movement of the dampers during operation.

6. Locate the nine-pin plug in the unit and remove the jumper plug. Attach the plug from the economizer.
7. Remove the blower access panel and secure the mixed air sensor to the blower housing. (Figure 28)
8. Attach the pink mixed air sensor wires to the sensor and to MAT on the Jade control. (Figure 29)
9. Replace the blower access door and evaporator access door.
10. Attach field supplied duct to return air duct opening on the economizer.

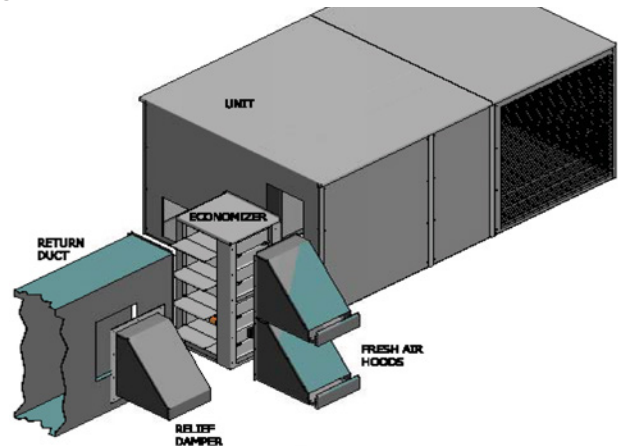
Figure 28: Attached Mixed Air Sensor on Blower



Figure 29: Jade Control Connections



Figure 30: Horizontal Economizer Placement



Accessories/Capabilities

- Dual Enthalpy - Requires an additional C7400 enthalpy control installed in the return air duct.
- Demand Control Ventilation - Requires a CO₂ sensor.
- Power Exhaust - DNPE3672 power exhaust used in applications where barometric relief is not sufficient. Requires PE3672BXHR duct mounted barometric relief damper.

Important Notes

- Heat pump applications require Daikin part number IRKT-01.
- The fresh air mist eliminator should be flushed periodically with warm soapy water.
- A two-stage thermostat is recommended with this accessory.

Figure 31: 036–072 Horizontal Economizer Installation

1. CUT HOLE IN DUCT TO SIZE SHOWN.
2. ATTACH RELIEF DAMPER TO DUCT.
3. ATTACH POWER EXHAUST OVER DAMPER PLATE.

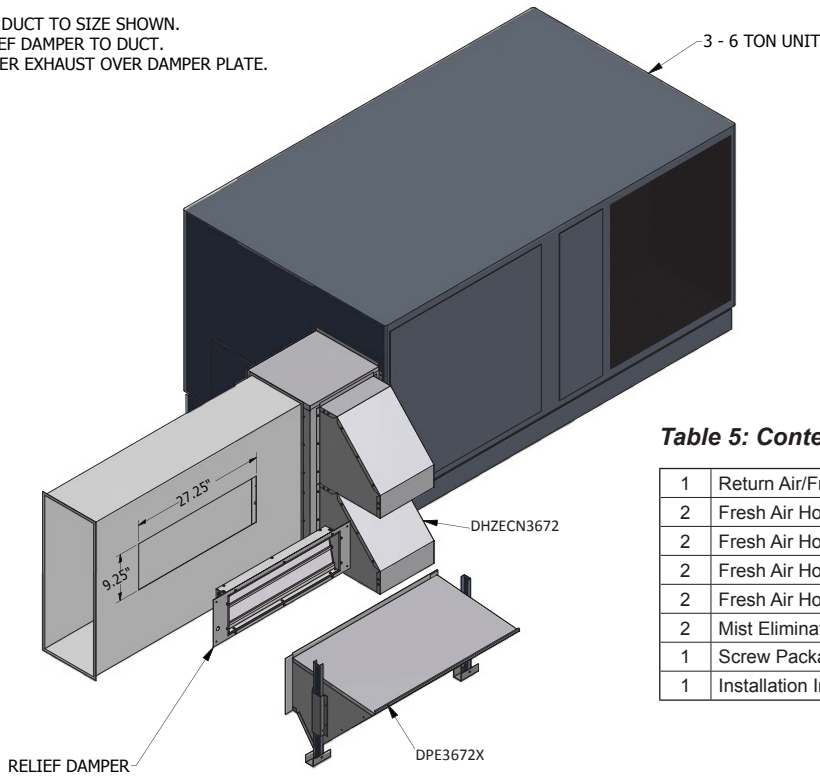


Table 5: Contents

1	Return Air/Fresh Air Damper Section
2	Fresh Air Hood Left Sides
2	Fresh Air Hood Right Sides
2	Fresh Air Hood Tops
2	Fresh Air Hood Front Filter Access
2	Mist Eliminators
1	Screw Package
1	Installation Instructions and Component Literature

Figure 32: 090–150 Horizontal Economizer Installation

1. CUT HOLE IN DUCT TO SIZE SHOWN.
2. ATTACH RELIEF DAMPER TO DUCT.
3. ATTACH POWER EXHAUST OVER DAMPER PLATE.

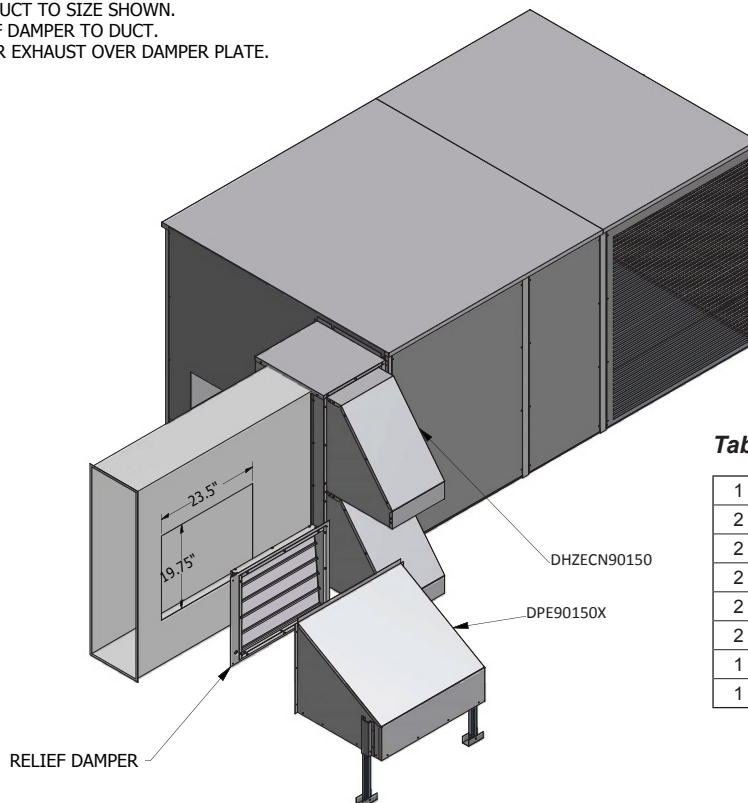
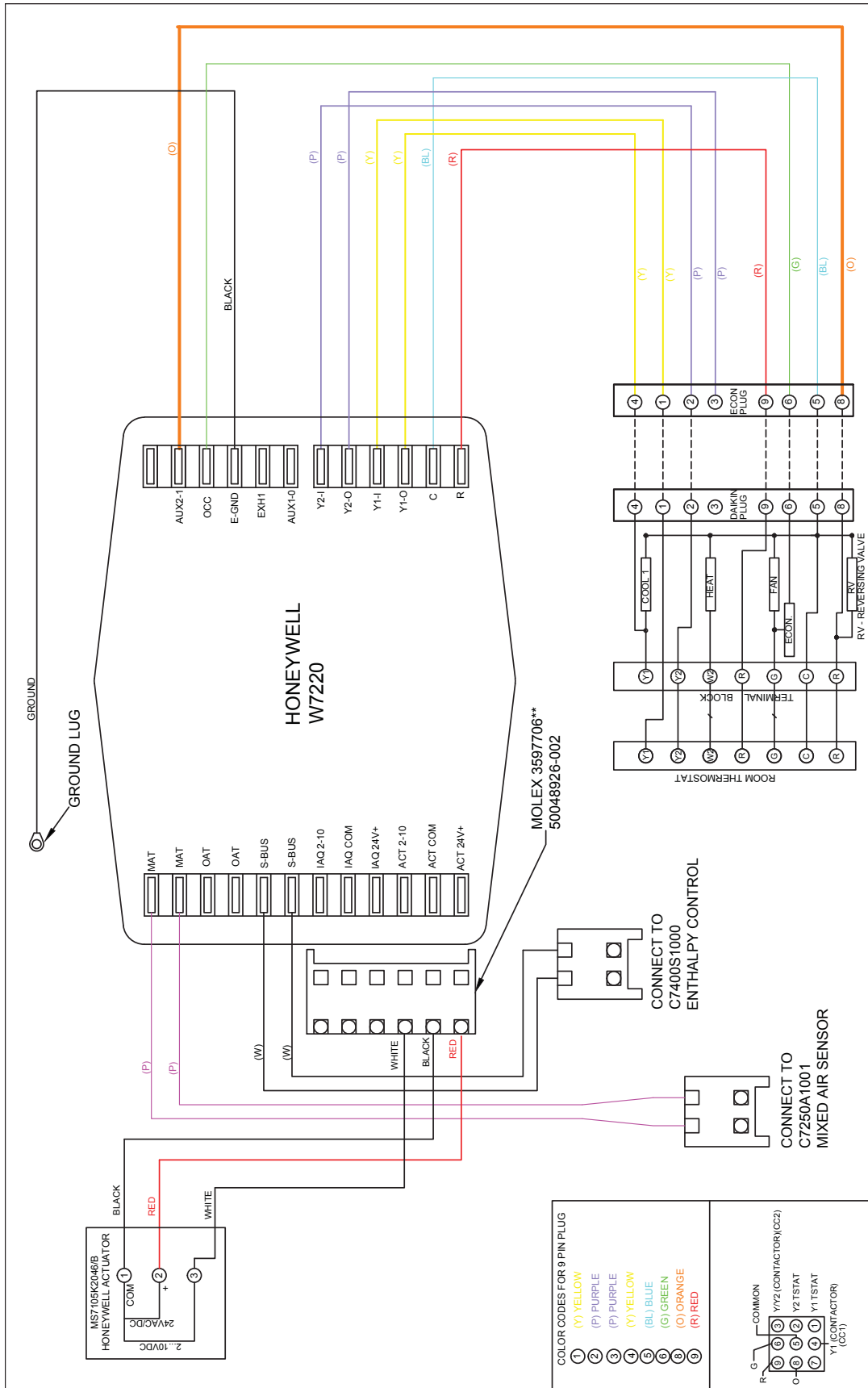


Table 6: Contents

1	Return Air/Fresh Air Damper Section
2	Fresh Air Hood Left Sides
2	Fresh Air Hood Right Sides
2	Fresh Air Hood Tops
2	Fresh Air Hood Front Filter Access
2	Mist Eliminators
1	Screw Package
1	Installation Instructions and Component Literature

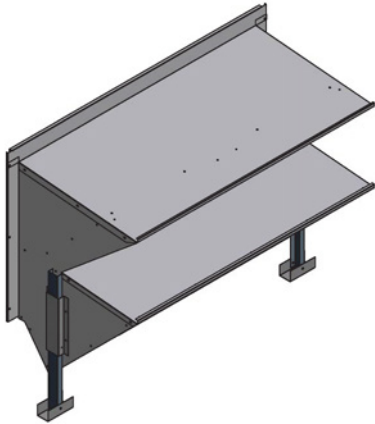
Figure 33: Economizer Controller Wiring Diagram



<p>COLOR CODES FOR 9 PIN PLUG</p> <p>(Y) YELLOW (P) PURPLE (Y) YELLOW (BL) BLUE (G) GREEN (O) ORANGE (R) RED</p>	
<p>CONNECT TO C7400S1000 ENTHALPY CONTROL</p>	
<p>CONNECT TO C7250A1001 MIXED AIR SENSOR</p>	
<p>COMMON</p> <p>R- (1) (2) (3) (4) (5) (6) (7) (8) (9)</p> <p>O- (1) (2) (3) (4) (5) (6) (7) (8) (9)</p> <p>Y1 (CONTACTOR) (CC1)</p>	<p>Y1 (CONTACTOR) (CC1)</p> <p>Y2 (CONTACTOR) (CC2)</p> <p>Y2 TSTAT</p> <p>Y1 TSTAT</p> <p>Y1 (CONTACTOR)</p>

Downflow Power Exhausts

For Models DC 036–072



Sequence of Operation

This sequence assumes employment of a single enthalpy economizer using a two-stage thermostat.

1. A call for cooling comes from room thermostat.
2. The enthalpy sensor determines if the atmospheric conditions are conducive for using outside air for cooling. If YES, the fresh air damper section of the economizer begins to open.
3. The EXH SET potentiometer should be set such that when the fresh air dampers are open approximately 70% of their full open capacity, EXH1 is energized and the power exhaust is powered to draw the relief air from the space. There is a 60 +/-30 second time delay built into the economizer control before the fan motor actually energizes.
4. When the dampers modulate below the 70% open position due to a satisfied thermostat or atmospheric conditions, the power exhaust disengages immediately.

Figure 34: 036–072 Power Exhaust on Unit

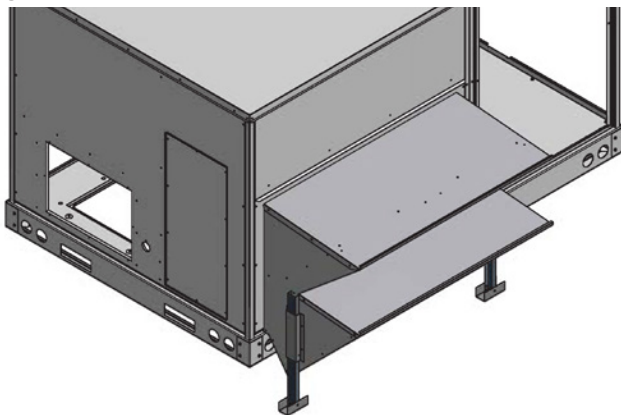


Table 7: Electrical Information

Model	Voltage	Motor				
		HP	RPM	Type	FLA	Speeds
DPE36722	208/230-1-60	1/3	1625	Direct Drive	2.0	3
DPE36724	460-1-60	1/3	1625	Direct Drive	9	2
DPE36727	575-1-60	1/2	1625	Direct Drive	1	1

Installation with Economizer

1. Open carton and inspect contents for shortages and damage.
2. Disconnect the power to the unit.
3. If the economizer is already fully installed, remove the economizer hoods. If a new installation, do not install the economizer hood.
4. If installing in conjunction with an economizer, install the damper section.
5. Remove the horizontal duct cover panel.
6. Slide the support legs through the guides. (Figure 36)
7. Feed the line voltage and low voltage wires through the knockouts provided in the damper section of the economizer (Figure 37).
8. Attach the power exhaust hood over the barometric relief opening. Extend the support legs and secure them using the screws provided.
9. Feed the line voltage leads to the control section of the package unit and attach them to T1 and T2 on the unit contactor per the included wiring diagram.
10. Attach the low voltage control leads to the Jade economizer controller per the included wiring diagram using the side connectors provided (Figure 38).
11. On the Jade control, set the position at which the exhaust will energize under the SETPOINTS menu.
12. Reinstall the horizontal duct cover panel and the filter access panel.

Figure 35: Dimensions—Power Exhaust, 036–072 Model Sizes

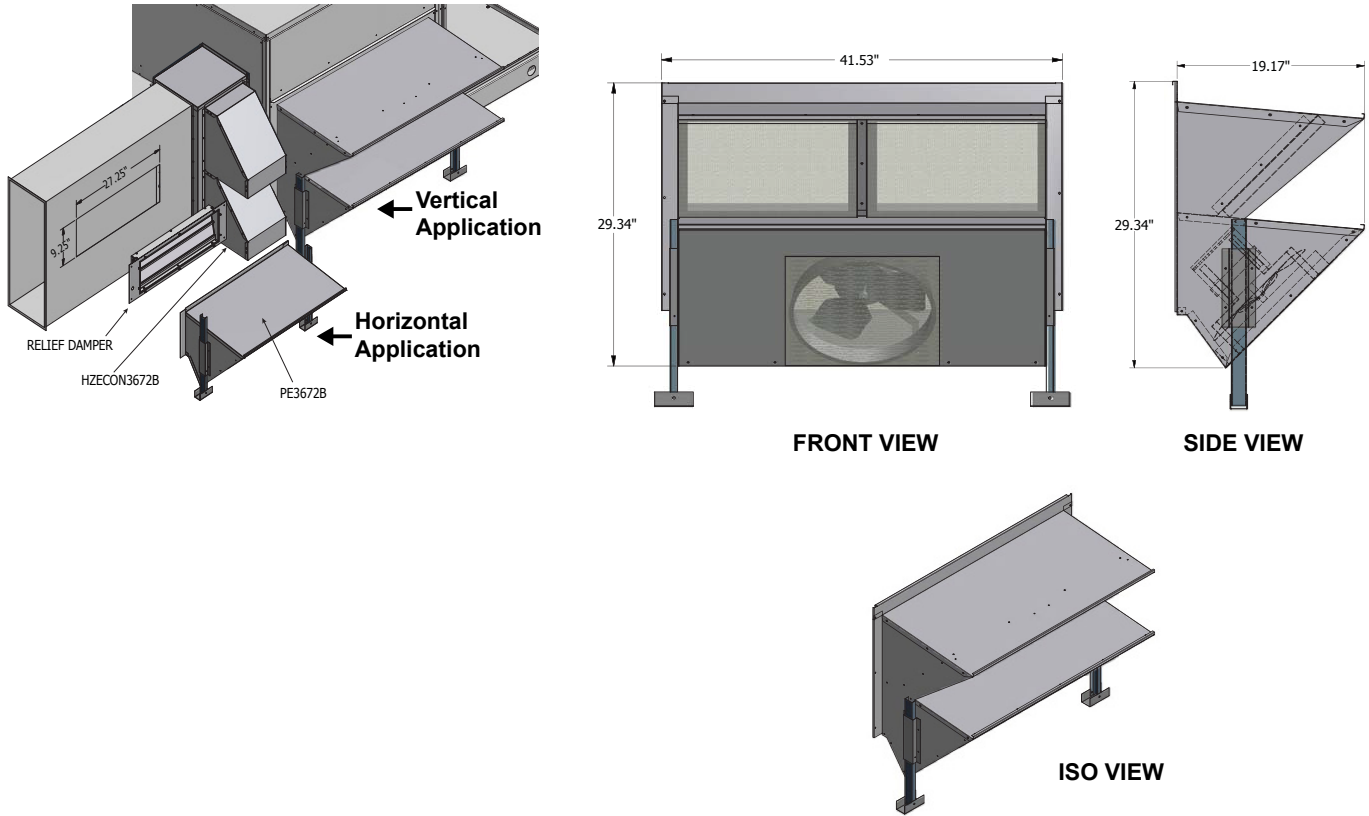


Figure 36: Support Leg Assembly

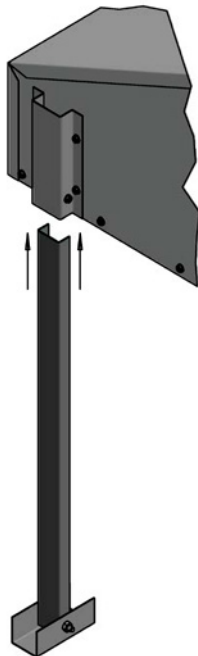


Table 8: 036–072 Contents

1	Power Exhaust Hood
2	Support Legs
2	Side Connectors
1	Installation Instructions

Figure 37: Electrical Knockouts



Figure 38: Controller Connections



Figure 39: Economizer Controller Wiring Diagram (4MB86 Motor)

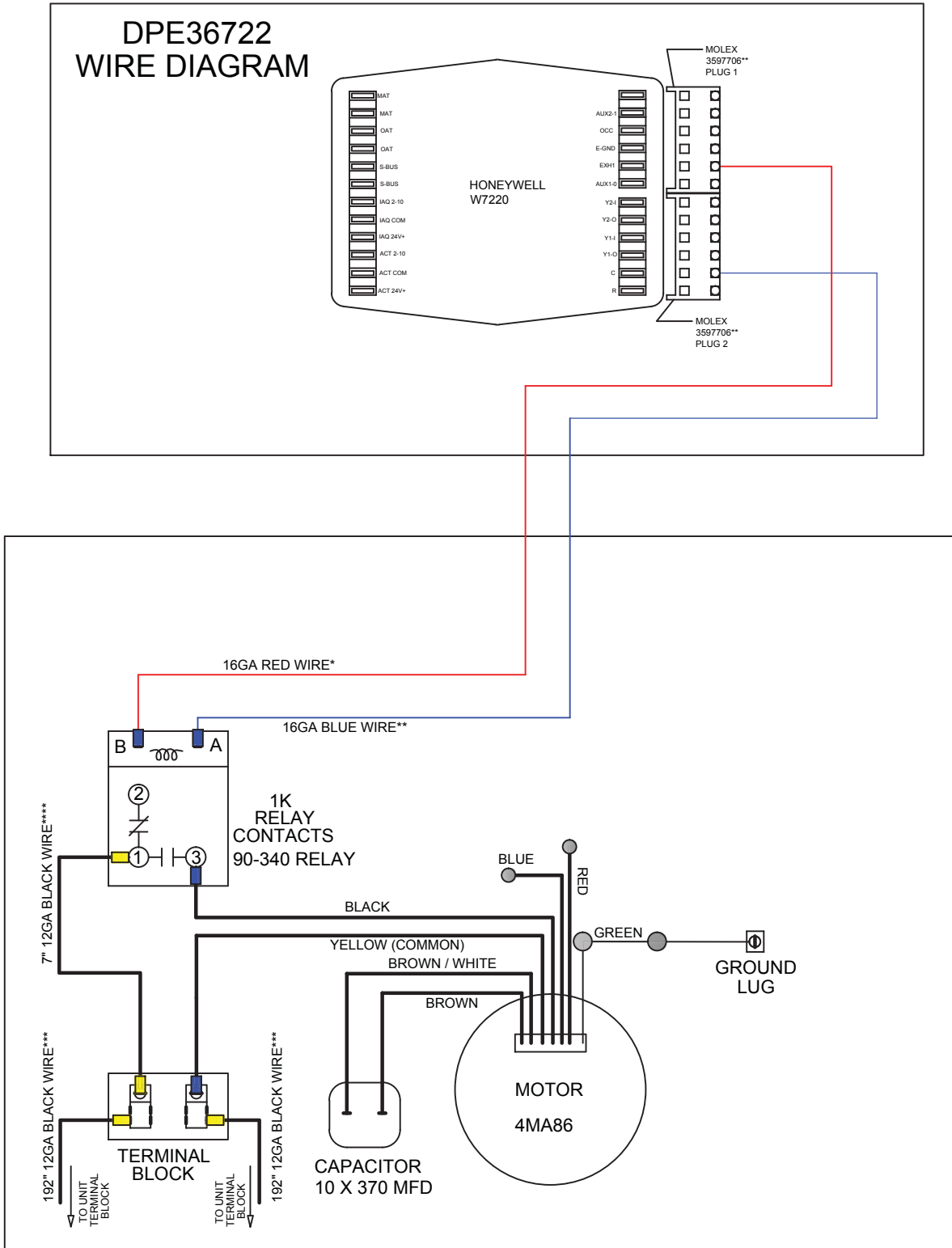


Figure 40: Economizer Controller Wiring Diagram (4MB91 Motor)

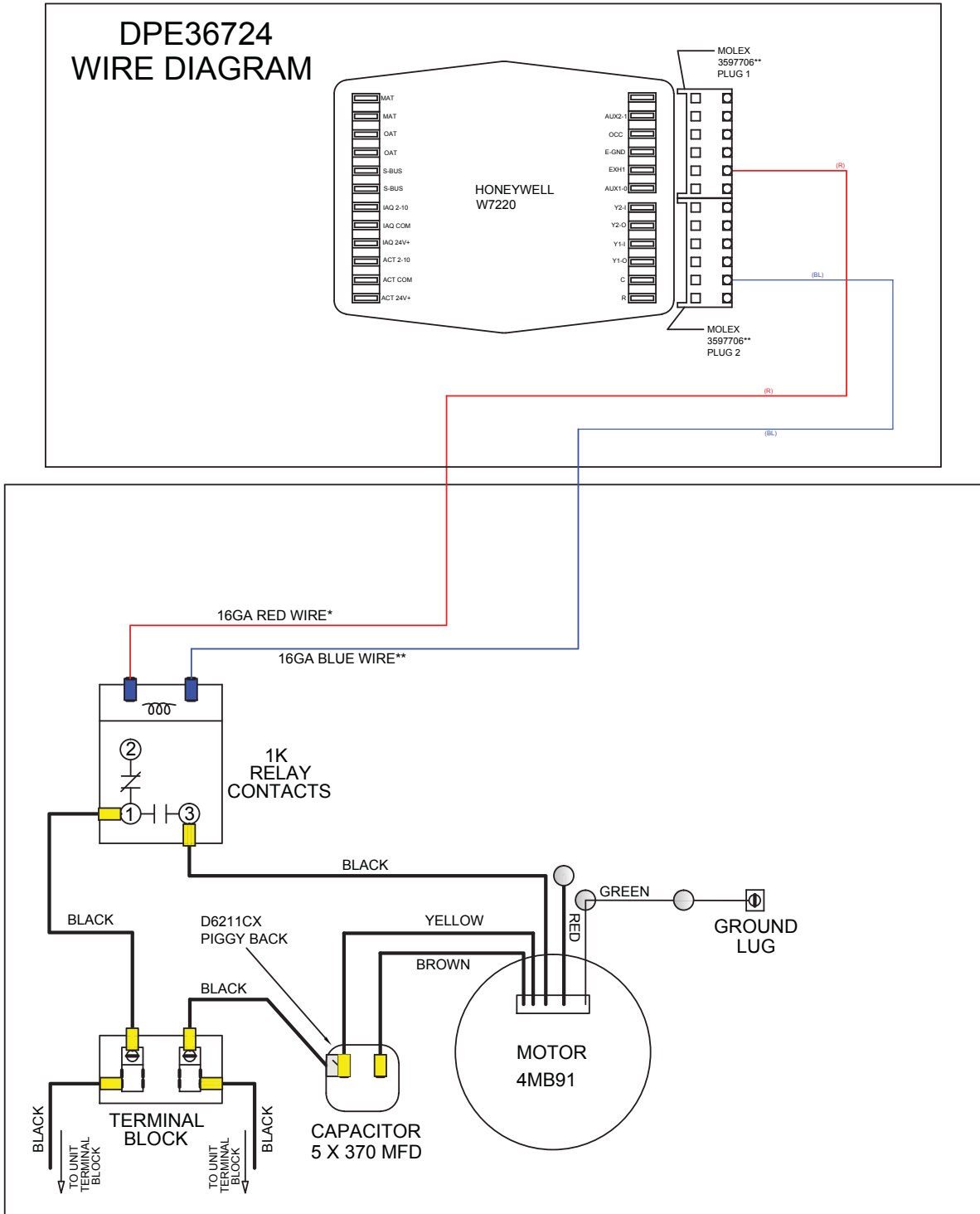
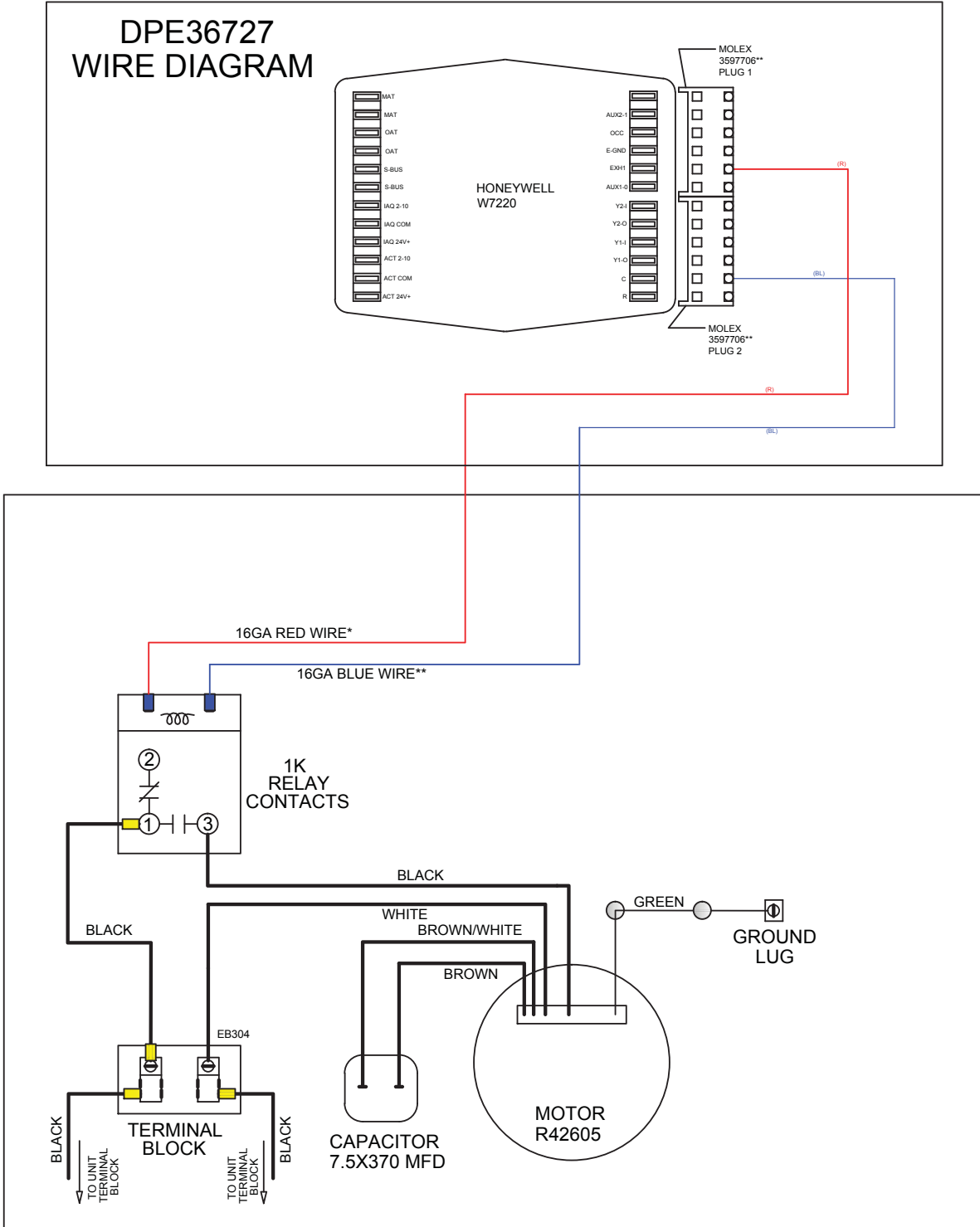
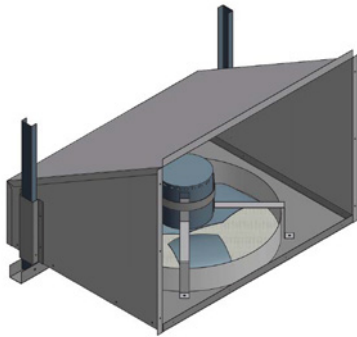


Figure 41: Economizer Controller Wiring Diagram (R42605 Motor)



Downflow Power Exhausts

For Models DC 090–150



Sequence of Operation

This sequence assumes employment of a single enthalpy economizer using a two-stage thermostat.

1. A call for cooling comes from room thermostat.
2. The enthalpy sensor determines if the atmospheric conditions are conducive for using outside air for cooling. If YES, the fresh air damper section of the economizer begins to open.
3. The EXH SET potentiometer should be set such that when the fresh air dampers are open approximately 70% of their full open capacity, EXH1 is energized and the power exhaust is powered to draw the relief air from the space. There is a 60 +/-30 second time delay built into the economizer control before the fan motor actually energizes.
4. When the dampers modulate below the 70% open position due to a satisfied thermostat or atmospheric conditions, the power exhaust disengages immediately.

Figure 42: 090–150 Power Exhaust on Unit

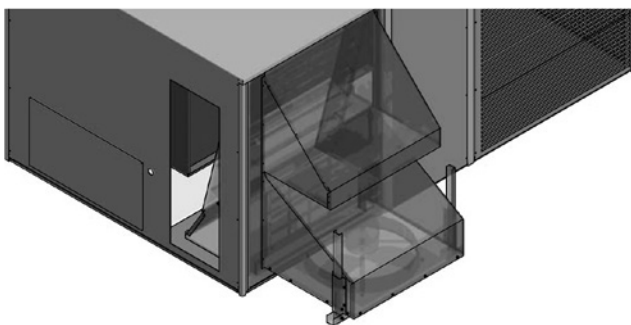


Table 9: Electrical Information

Model	Voltage	Motor				
		HP	RPM	Type	FLA	Speeds
DPE901502	208/230-1-60	1/2	1075	Direct Drive	2.4	1
DPE901504	460-1-60	1/2	1075	Direct Drive	1.2	1
DPE901507	575-1-60	1/2	1100	Direct Drive	1.0	1

Installation With Economizer

1. Open carton and inspect contents for shortages and damage.
2. Disconnect the power to the unit.
3. If the economizer is already fully installed, remove the economizer hoods. If a new installation, do not install the economizer hoods after installing the replacement panel that comes with the economizer.
4. Remove the horizontal duct cover panel.
5. Slide the support legs through the guides. (Figure 44)
6. Feed the line voltage and low voltage wires through the knockouts provided in the damper section of the economizer. (Figure 45)
7. Attach the power exhaust hood over the barometric relief opening. Extend the support legs and secure them using the screws provided.
8. Feed the line voltage leads to the control section of the package unit and attach them to T1 and T2 on the unit contactor per the included wiring diagram.
9. Attach the low voltage control leads to the Jade economizer controller per the included wiring diagram using the side connectors provided (Figure 46).
10. On the Jade control, set the position at which the exhaust will energize under the SETPOINTS menu.
11. Reinstall the horizontal duct cover panel and the filter access panel.

Figure 43: Dimensions—Power Exhaust, 090–150 Model Sizes

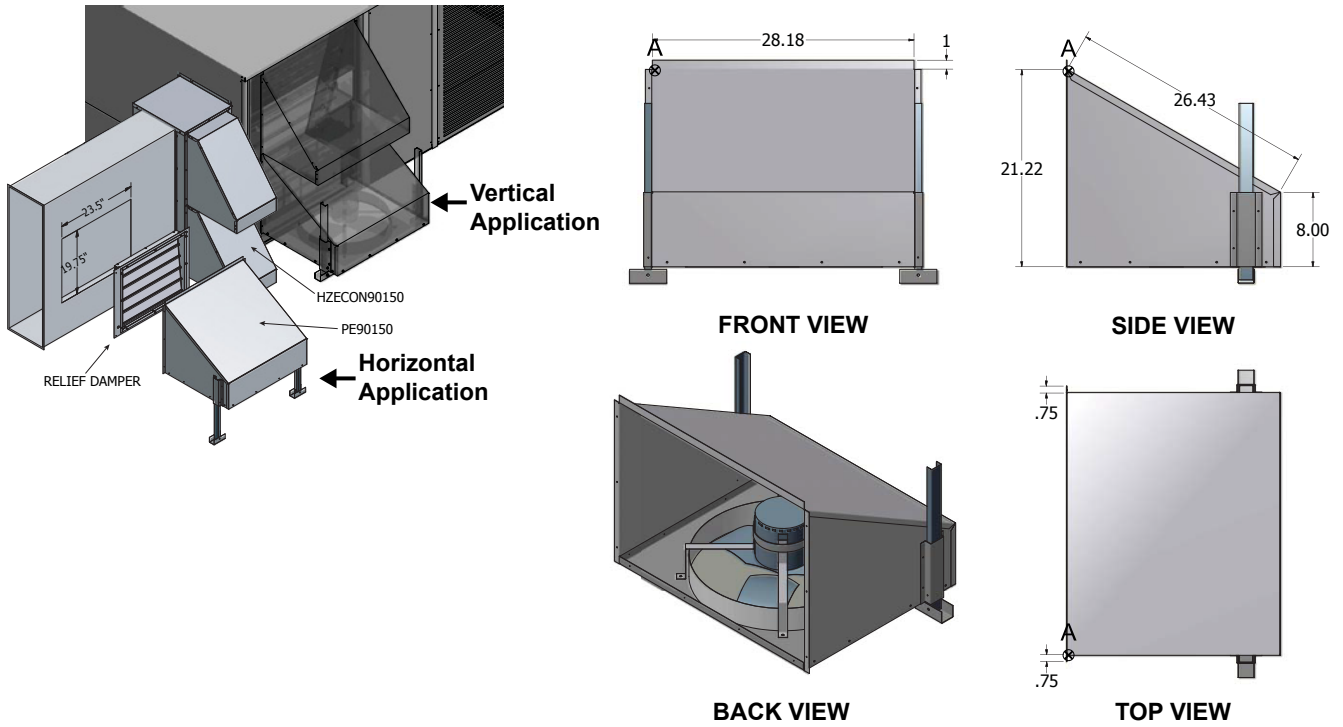


Figure 44: Support Leg Assembly

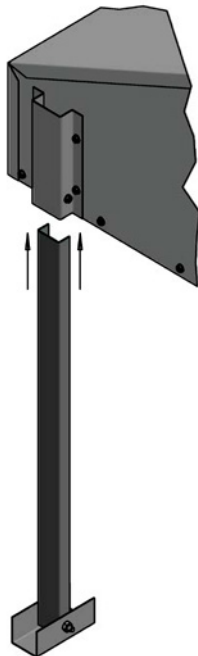


Table 10: 090–150 Contents

1	Power Exhaust Hood
2	Support Legs
2	Side Connectors
1	Installation Instructions

Figure 45: Electrical Knockouts



Figure 46: Controller Connections



Figure 47: Economizer Controller Wiring Diagram-02 (4MA46 Motor)

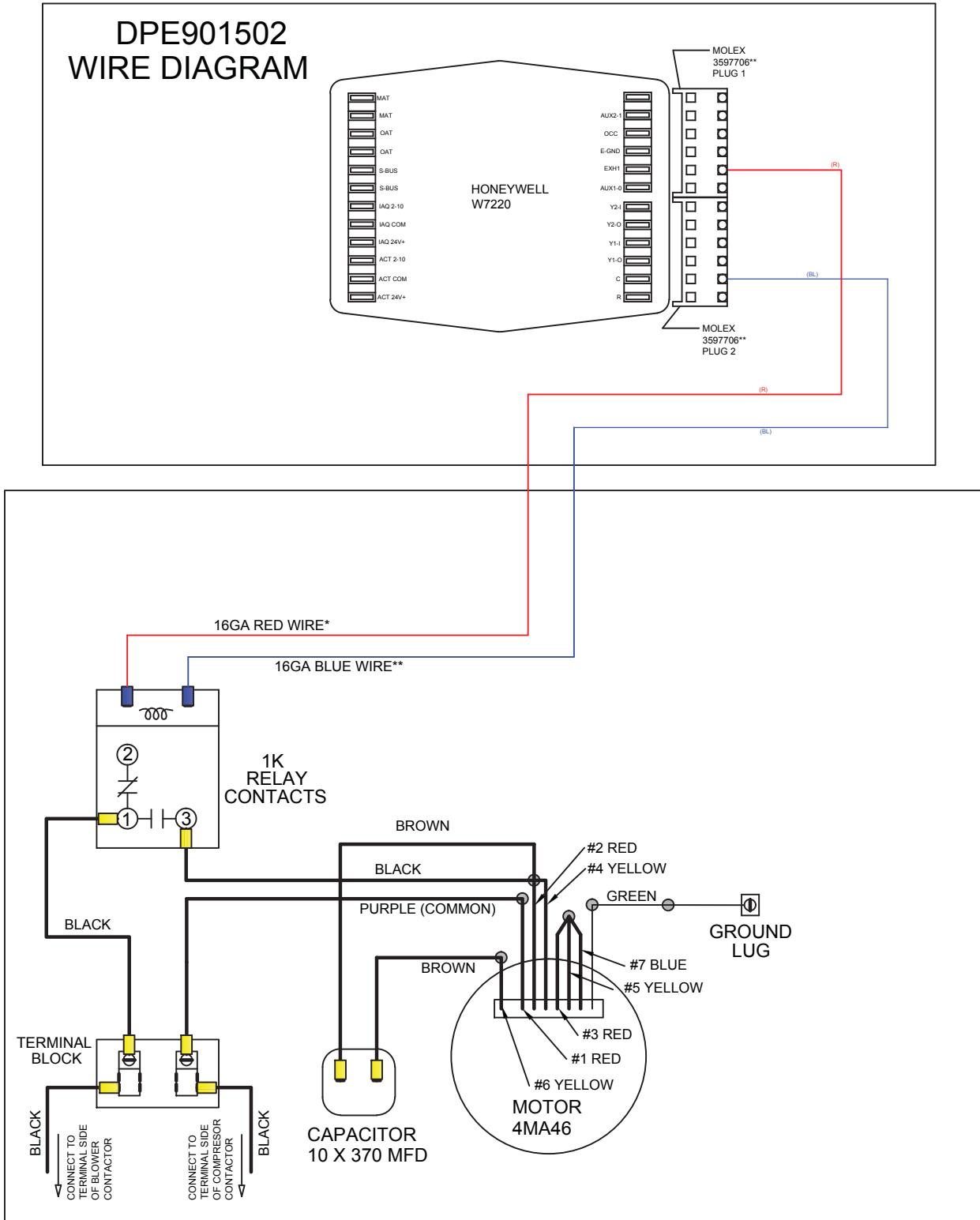


Figure 48: Economizer Controller Wiring Diagram-04 (4MA46 Motor)

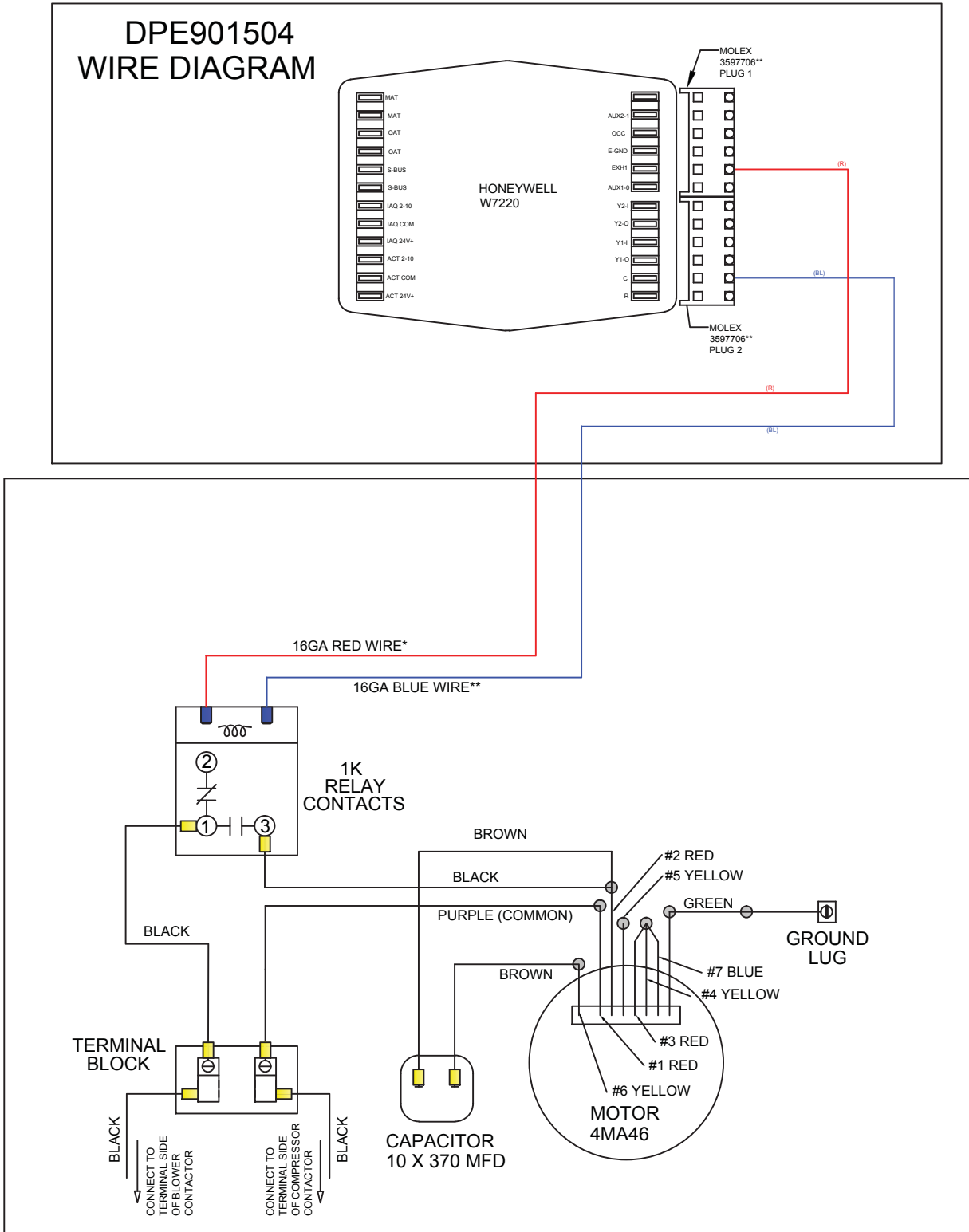
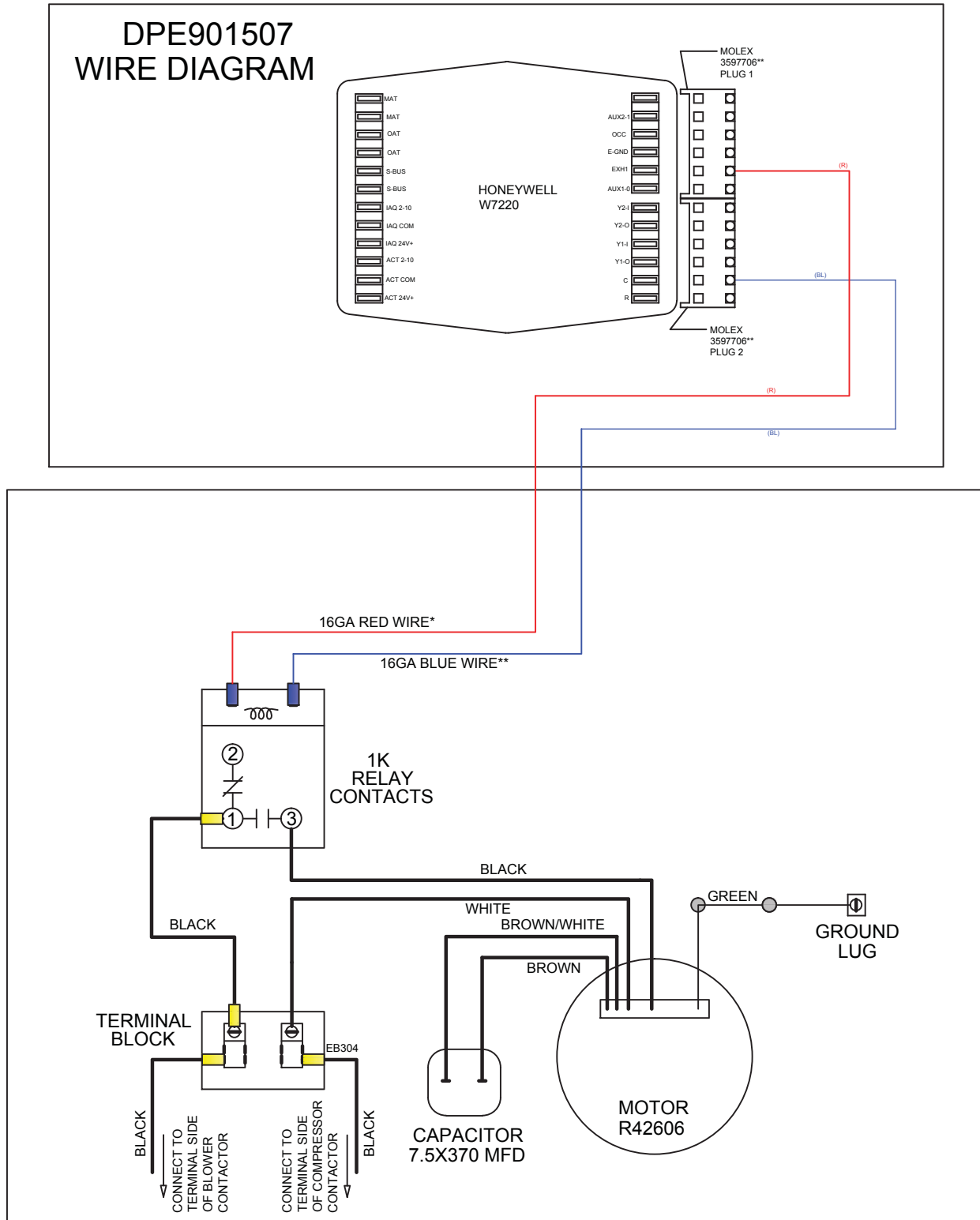
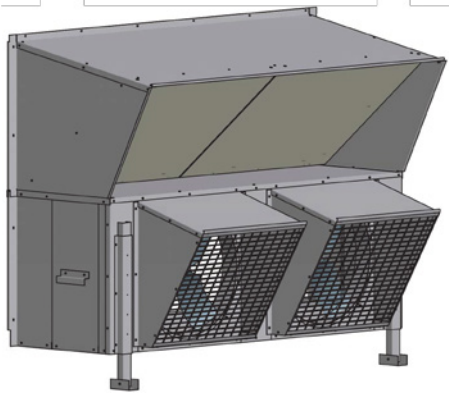


Figure 49: Economizer Controller Wiring Diagram (R42606 Motor)



Downflow Power Exhausts

For Models DC 180–240



Sequence of Operation

This sequence assumes employment of a single enthalpy economizer using a two-stage thermostat.

1. A call for cooling comes from room thermostat.
2. The enthalpy sensor determines if the atmospheric conditions are conducive for using outside air for cooling. If YES, the fresh air damper section of the economizer begins to open.
3. The EXH SET potentiometer should be set such that when the fresh air dampers are open approximately 70% of their full open capacity, EXH1 is energized and the power exhaust is powered to draw the relief air from the space. There is a 60 +/-30 second time delay built into the economizer control before the fan motor actually energizes.
4. When the dampers modulate below the 70% open position due to a satisfied thermostat or atmospheric conditions, the power exhaust disengages immediately.

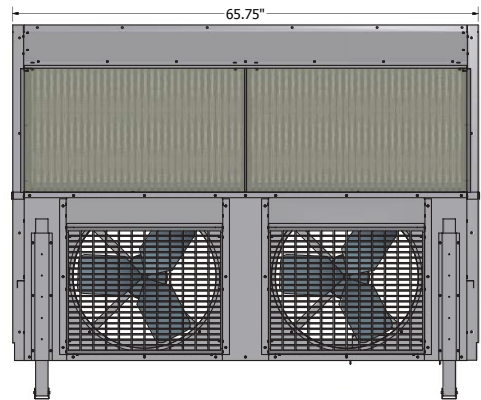
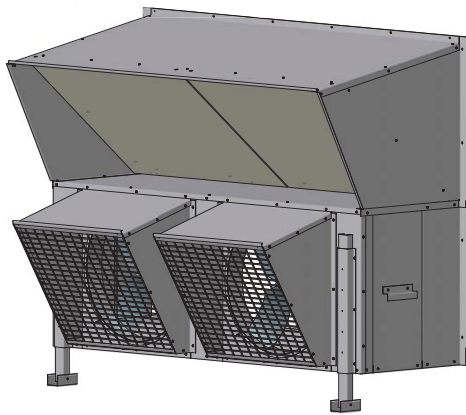
Installation with Economizer

1. Open carton and inspect contents for shortages and damage.
2. Disconnect the power to the unit.
3. If the economizer is already fully installed, remove the economizer hood. If a new installation, do not install the economizer hood.
4. Slide the support legs through the guides. (Figure 51)
5. Feed the line voltage and low voltage wires through the knockouts provided in the damper section of the economizer. (Figure 52)
6. Attach the power exhaust hood. Extend the support legs and secure them using the screws provided.
7. Feed the line voltage leads to the control section of the package unit and attach them to T1 and T2 on the main unit contactor per the included wiring diagram.
8. Attach the low voltage control leads to the Jade economizer controller per the included wiring diagram using the side connectors provided (Figure 53).
9. On the Jade control, set the position at which the exhaust will energize under the SETPOINTS menu.
10. Reinstall the filter access panel.

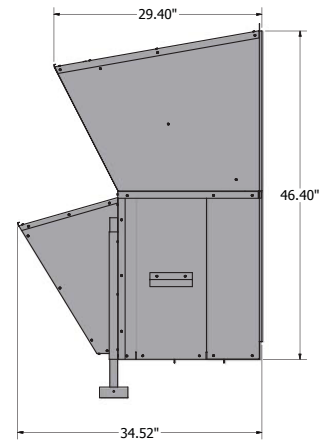
Table 11: 180–240 Electrical Information

Model	Voltage	Motor				
		HP	RPM	Type	FLA	Speeds
DPE1802402	208/230-1-60	1/2(2)	1075	Direct Drive	2.4	1
DPE1802404	460-1-60	1/2(2)	1075	Direct Drive	1.2	1
DPE1802407	575-1-60	1/2(2)	1100	Direct Drive	1.0	1

Figure 50: Dimensions—Power Exhaust, 150–240 Model Sizes



FRONT VIEW



SIDE VIEW

Figure 51: Support Leg Assembly

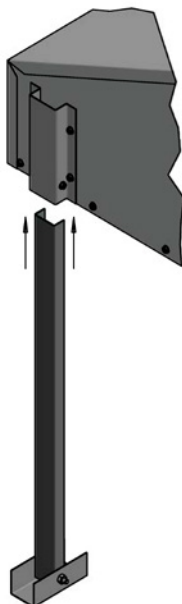


Table 12: 180–240 Contents

1	Power Exhaust Hood
2	Support Legs
2	Side Connectors
1	Installation Instructions

Figure 52: Electrical Knockouts



Figure 53: Controller Connections



Figure 54: Economizer Controller Wiring Diagram-02 (4MA46 Motor)

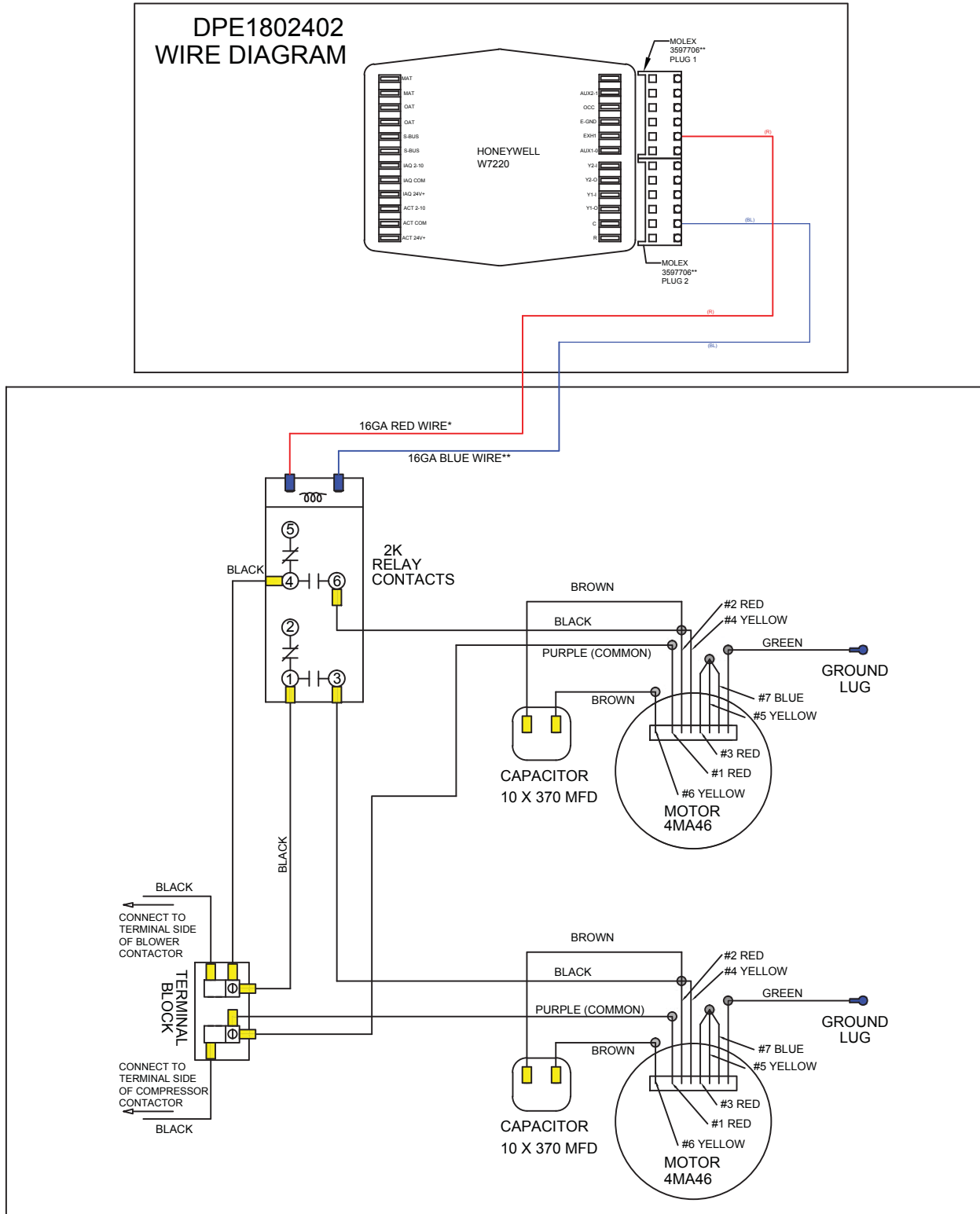


Figure 55: Economizer Controller Wiring Diagram-04 (4MA46 Motor)

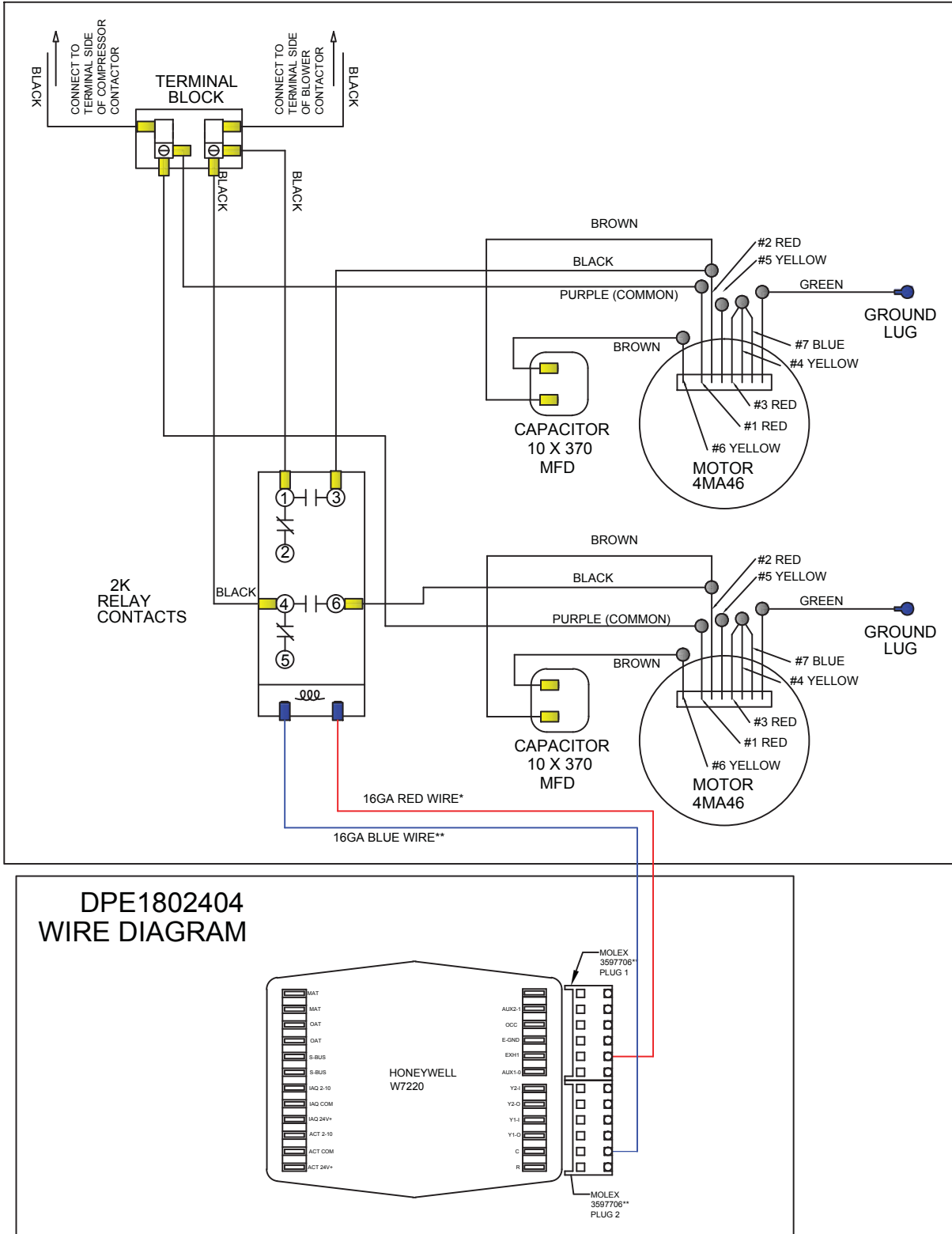
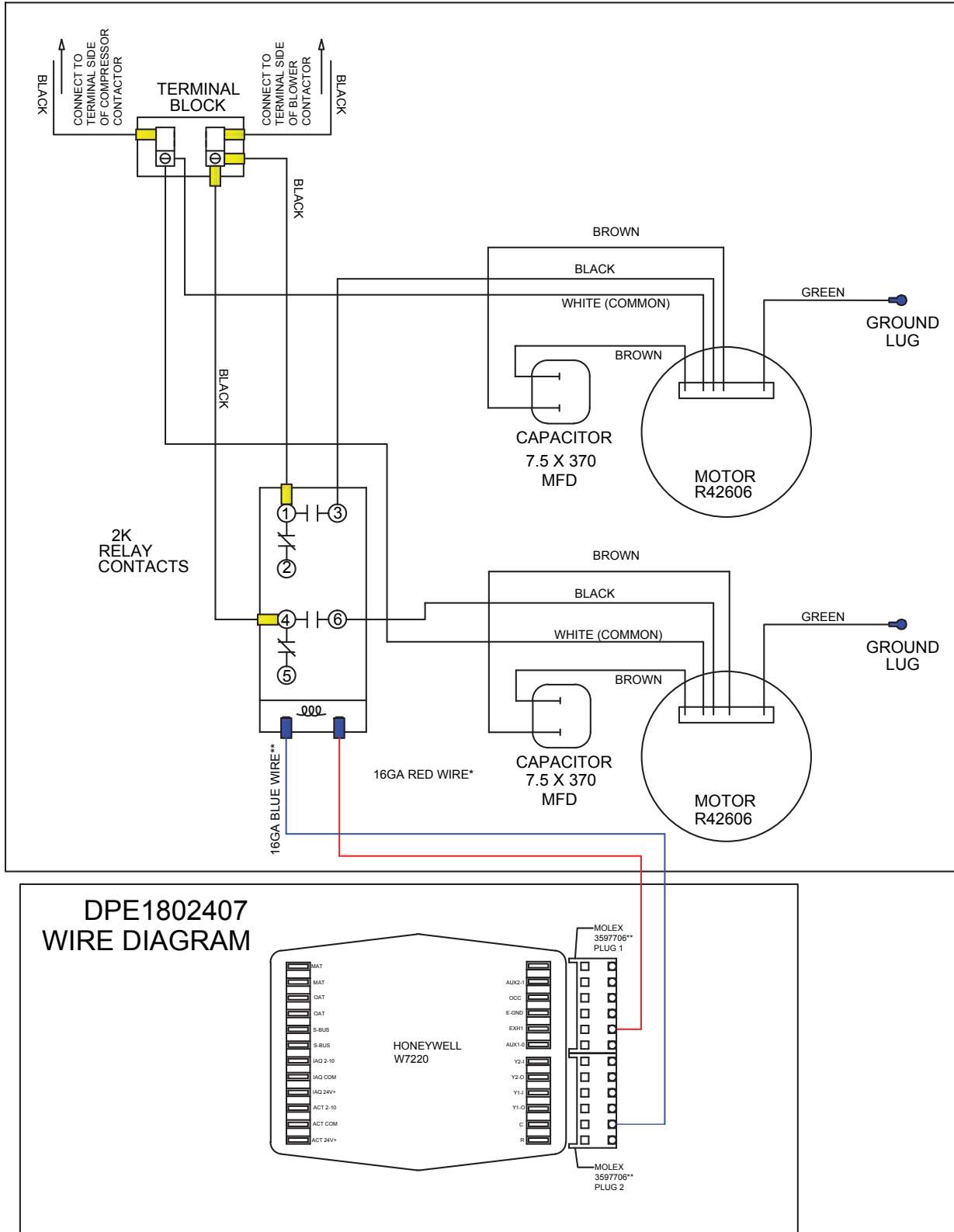
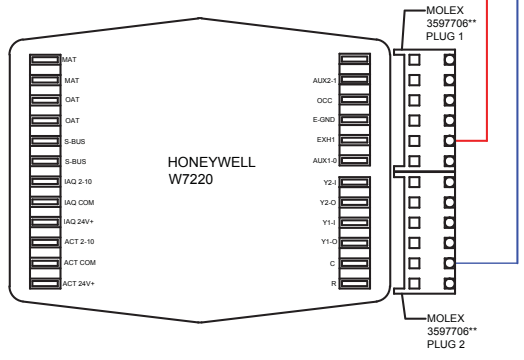


Figure 56: Economizer Controller Wiring Diagram (R42606 Motor)



DPE1802407 WIRE DIAGRAM



Horizontal Barometric Relief Damper

For Models DC 036–240

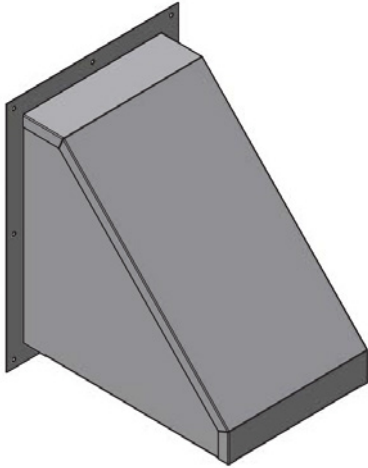
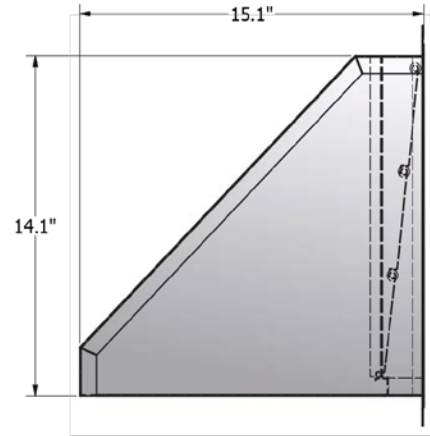
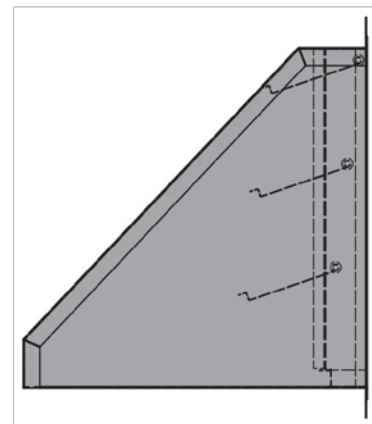


Figure 57: Barometric Relief Damper Dimensions



DAMPERS CLOSED



DAMPERS OPEN

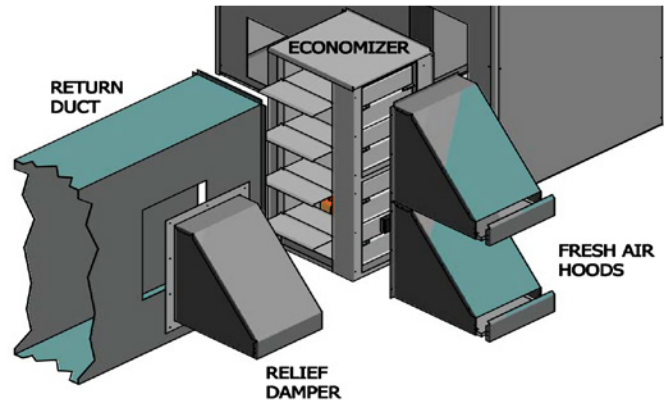
Application

Often when fresh air is introduced into a conditioned space through the use of economizers or like devices, positive pressure builds in the space and causes problems such as doors flying open. It is necessary, therefore, to provide an avenue for the air to be exhausted. A barometric relief damper allows air to move from the space to outside via the return air duct.

Barometric Relief Damper Installation

1. Determine the location of the barometric relief damper. Normally it is placed outside of the conditioned space on the return air duct upstream of the return air damper.
2. Cut a hole in the ductwork, taking care not to exceed the opening on the back or the BRD3672.
3. Attach the damper to the ductwork using approved fasteners.
4. Weatherproof with silicone or other approved sealant.

Figure 58: Barometric Relief Damper Position



14" Knocked Down Roof Curbs

For Models DC 036–240

General

Roof curbs are shipped unassembled. Field assembly, squaring, leveling and mounting on the roof structure are the responsibility of the installing contractor. All curb installations must comply with local codes and should be done in accordance with the established guidelines of the National Roofing Contractors Association.

- All required hardware necessary for the assembly of the sheet metal curb is included with the curb accessory.
- Full perimeter type curb accessories are available. Full perimeter curbs include duct connection frames to be attached to the curb. Cantilever type curbs are not available from the factory.
- Curbs must be supported on at least two parallel sides by roof members. Ensure that roof members do not penetrate supply and return duct opening areas.
- Curb insulation, cant strip, flashings and general roofing material are to be furnished by the roofing contractor. Wood nailer strip and curb gasket is to be furnished with the curb accessory.
- The unit and curb accessories are designed to allow vertical duct installation before unit placement. Duct installation after unit placement is not recommended.

CAUTION

All curbs look similar. To avoid incorrect curb positioning, check job plans carefully and verify markings on curb assembly.

Pre-Installation

1. Check package contents to ensure all the pieces are present.
2. Position perimeter pieces with the wood to the outside.
3. Insert hooked tabs into slots and press down firmly.
4. Install duct support pieces.
5. Install insulated panels, metal side up, across the top of the condenser section of the curb.
6. Level and square the curb. Both diagonal measurements should be equal within a tolerance of 1/8" of Diagonal dimensions in [Table 13](#). To level the curb, stretch two diagonal lines equipped with line levels. There must not be more than 1/8" spacing between the two lines at the point of intersection. Shim the curb unit if it is level. When the lines touch at the intersection, move the bottom line to the top and recheck.

Table 13: Dimensions for Squaring Roof Curb

Full Perimeter Roof Curb	Width (in.)	Length (in.)	Diagonal (in.)
Sizes 036–072	40.25	70.75	81.375
Sizes 090–150	53.25	92.25	130.5
Sizes 180–240	123.5	78.0	145.625

Table 14: Parts List

Item	036–072		090–150		180–240	
	Size (in.)	Qty	Size (in.)	Qty	Size (in.)	Qty
Long Side with Attached 1×4 Wood Nailer	67.875	2	92.25	2	60.812	4
Short Side with Attached 1×4 Wood Nailer	40.25	2	53.25	2	79.0	2
Insulation Panel	—	3	11.875	4	13.125	4
Duct Support Channel	40.25	1	53.25	1	79.0	1
	22.25	1	33.0	1	30.0	1
	34.25*	1	43.0*	1	28.5	1
T1070 ¼"×1" Gasket Tape	Roll	1	Rolls	2	Rolls	3
Brackets	—	—	—	—	12 Ga.	4
Nut and Bolt Package	—	—	—	—	PKG	1

* Duct Support Channel with drain hole

General Installation

1. Place assembled curb in proper position over roof opening. Verify curb is square and level per instructions above.
2. Attach curb to roof surface following industry accepted practices.
3. Install insulation, cant strip, roofing materials, flashing and counterflashing in accordance with the established guidelines of the National Roofing Contractors Association. The finished roof, including counterflashing around the curb, must be installed prior to setting the unit on the curb.

Vertical Discharge Duct Connections

The down flow curb accessory has been designed to encourage duct installation before unit placement. Duct installation after the unit placement is possible but not recommended. Ducts must never be fastened to the bottom of the unit causing the base pan to be penetrated. Flexible duct connectors in the ducts near the unit are recommended. Support all ducts by securing them to the building structure. Weatherproof all external ductwork, joints and roof openings with flashing and mastic in accordance with applicable codes. Ducts in an unconditioned space must be insulated and covered with a vapor barrier.

Downflow Duct Installation Instructions

1. Install duct support system in leveled and squared curb.
2. Fabricate ductwork with 1½" flange out on top opening and with an outside dimension that is ¼" smaller than inside dimension of duct openings created by duct support system.

NOTE: Ductwork is to be furnished by the contractor and is not included with the accessory.

3. Drop duct section through duct support opening so that the 1½" flange out rests on the support channel.

NOTE: It is not necessary to attach the duct to the duct supports with a mechanical fastener.

4. Install the included gasket material around the perimeter of the duct openings and around the top perimeter of the rest of the curb to insure an air tight seal.

Duct Installation After Unit Placement

Duct installation after the unit has been placed is possible but is strongly discouraged. If the ductwork must be installed after the unit is placed on the curb, a duct connection frame system should still be used. Apply gasket material to the curb and duct support frame before installing the unit. Attach duct sections to the vertical surfaces of the duct support frame using mechanical fasteners. Ducts must never be fastened to the bottom of the unit causing the base pan to be penetrated.

Figure 59: Roof Curb—Side Detail, All Model Sizes

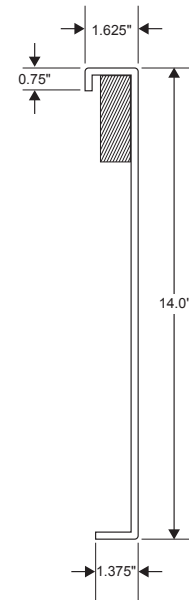


Figure 60: Roof Curb—036–072 Model Sizes

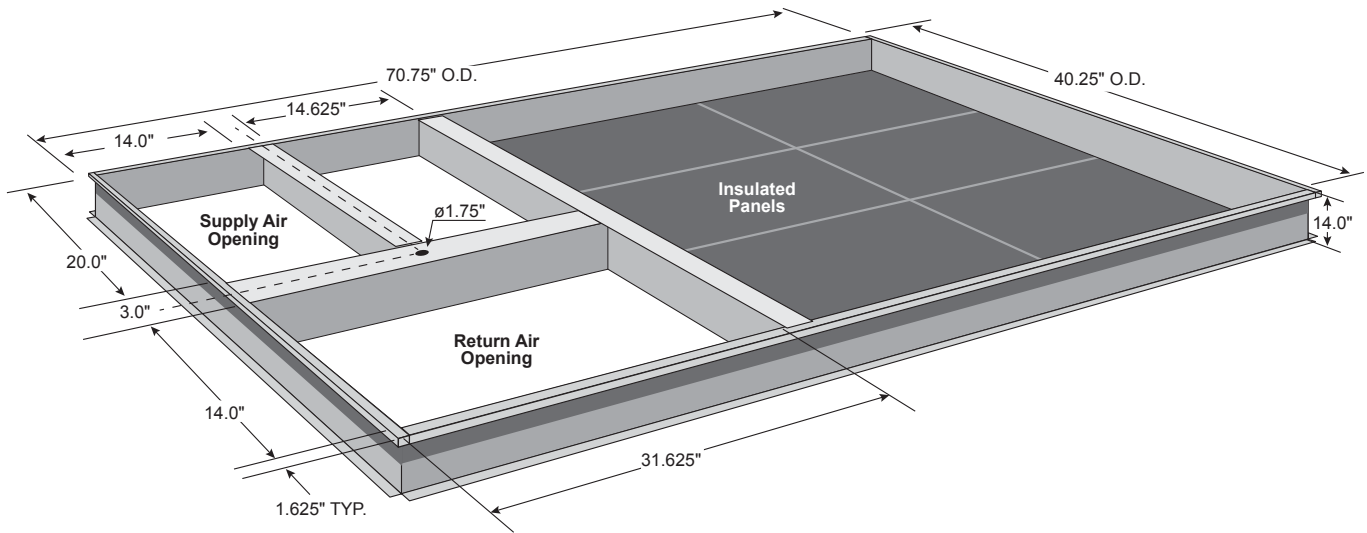


Figure 61: Roof Curb—090–150 Model Sizes

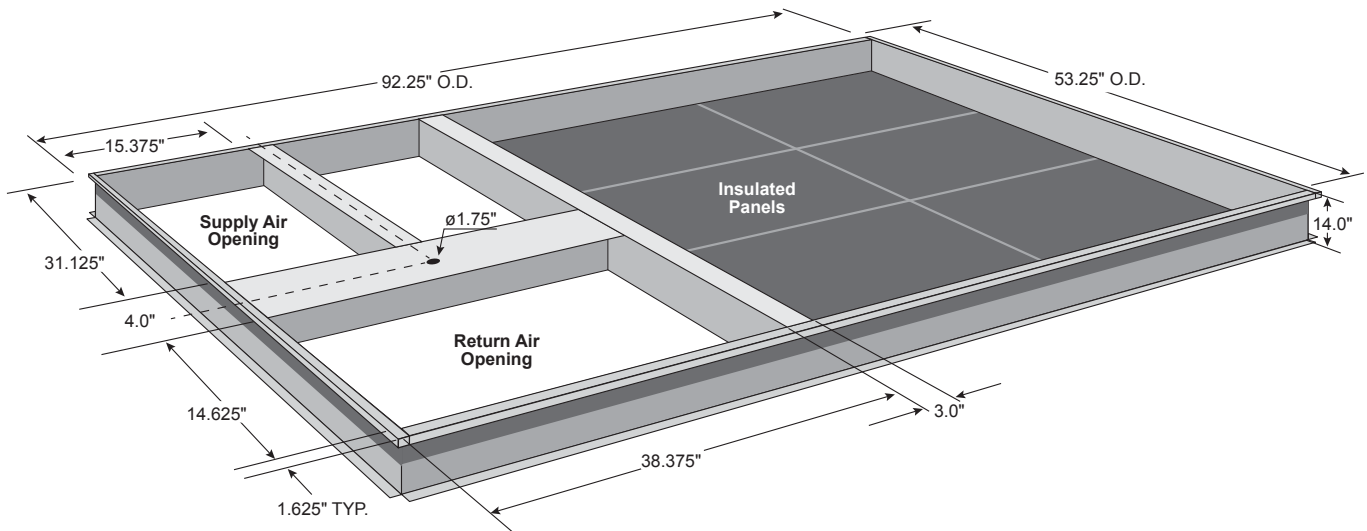
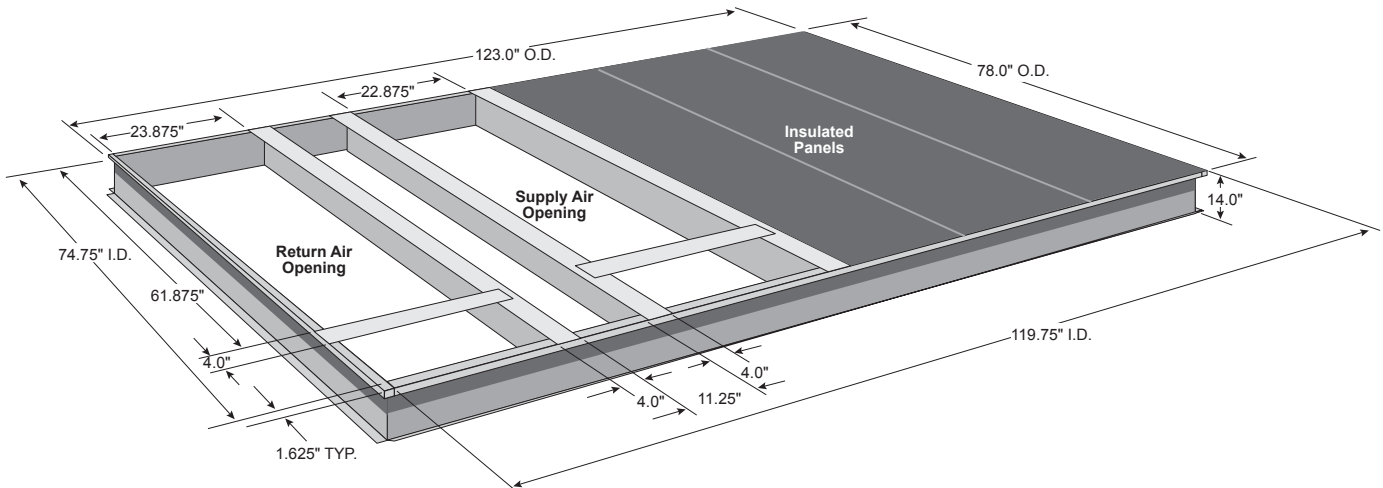


Figure 62: Roof Curb—180–240 Model Sizes



Horizontal Discharge Roof Curbs

For Models DC 180–240

General Information

Side Discharge Model - Service Side

HZCURB180240SD

Duct openings in the the side of the curb are configured with a right hand return. The curb is fully enclosed and insulated.

Side Discharge Model - Non-Service Side

HZCURB180240SDA

Duct openings in the the side of the curb are configured with a left hand return. The curb is fully enclosed and insulated.

End Discharge Model

HZCURB180240ED

Supply is located in the narrow end of the curb and the return is attached to the side of the machine or to the duct sleeve in the economizer hood if an economizer is present.

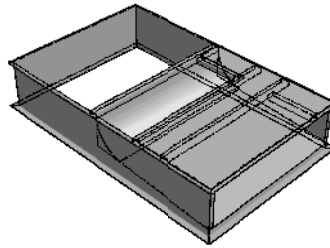


Figure 63: Side Discharge–Service Side Top View Dimensions

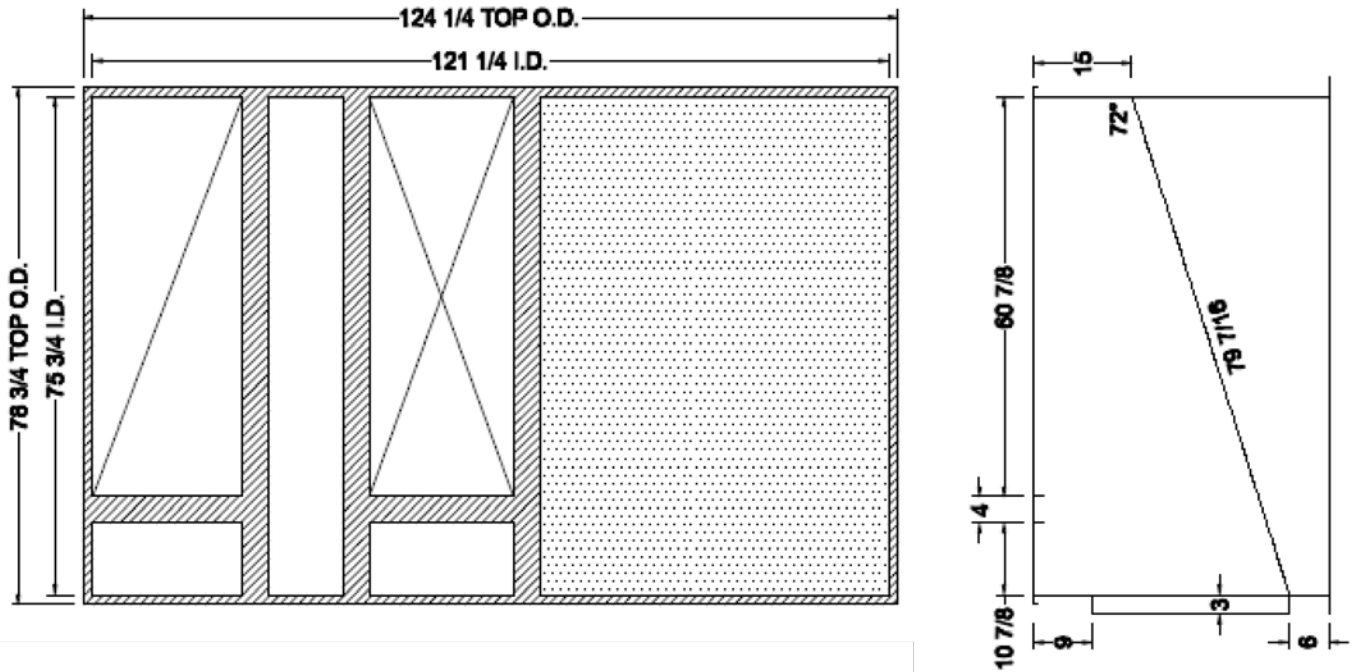


Figure 64: Side Discharge–Service Side Front View Dimensions

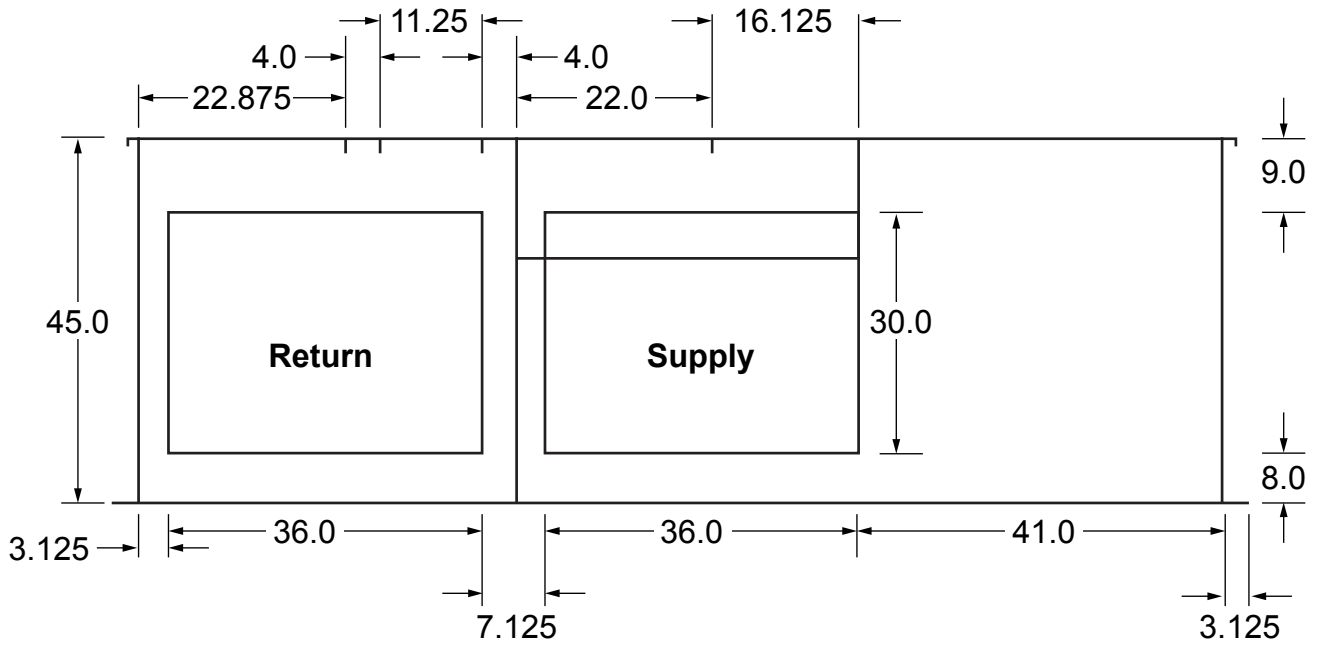


Figure 65: Side Discharge–Non-Service Side Top View Dimensions

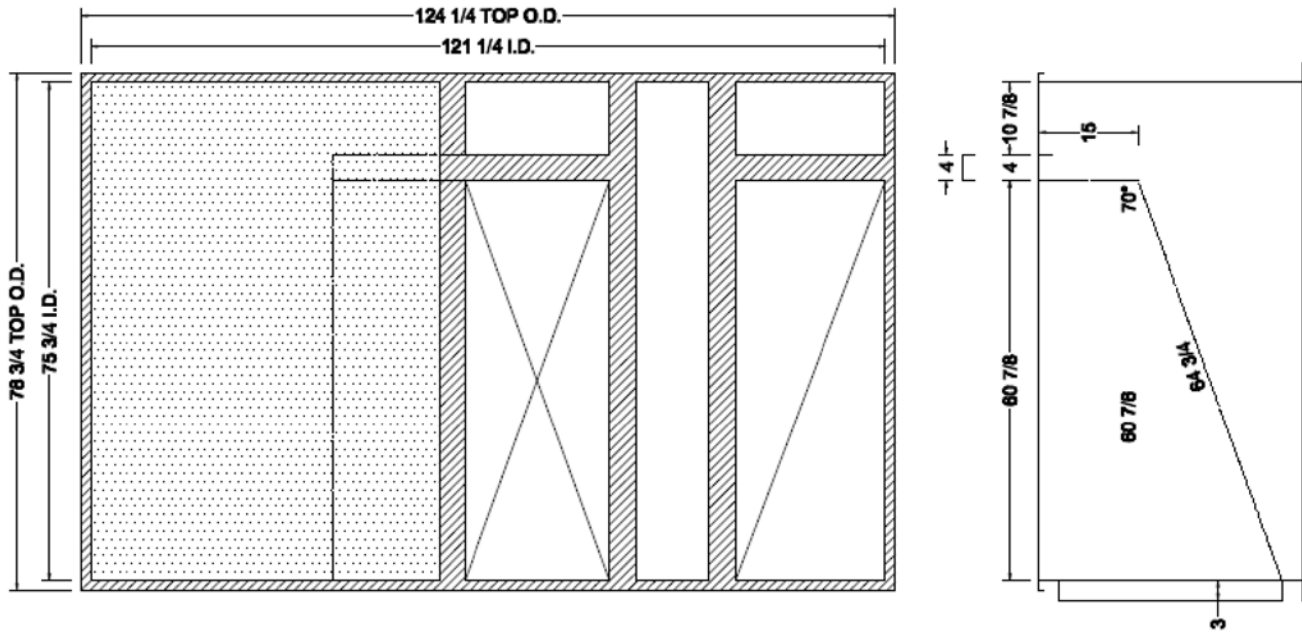


Figure 66: Side Discharge–Non-Service Side Front View Dimensions

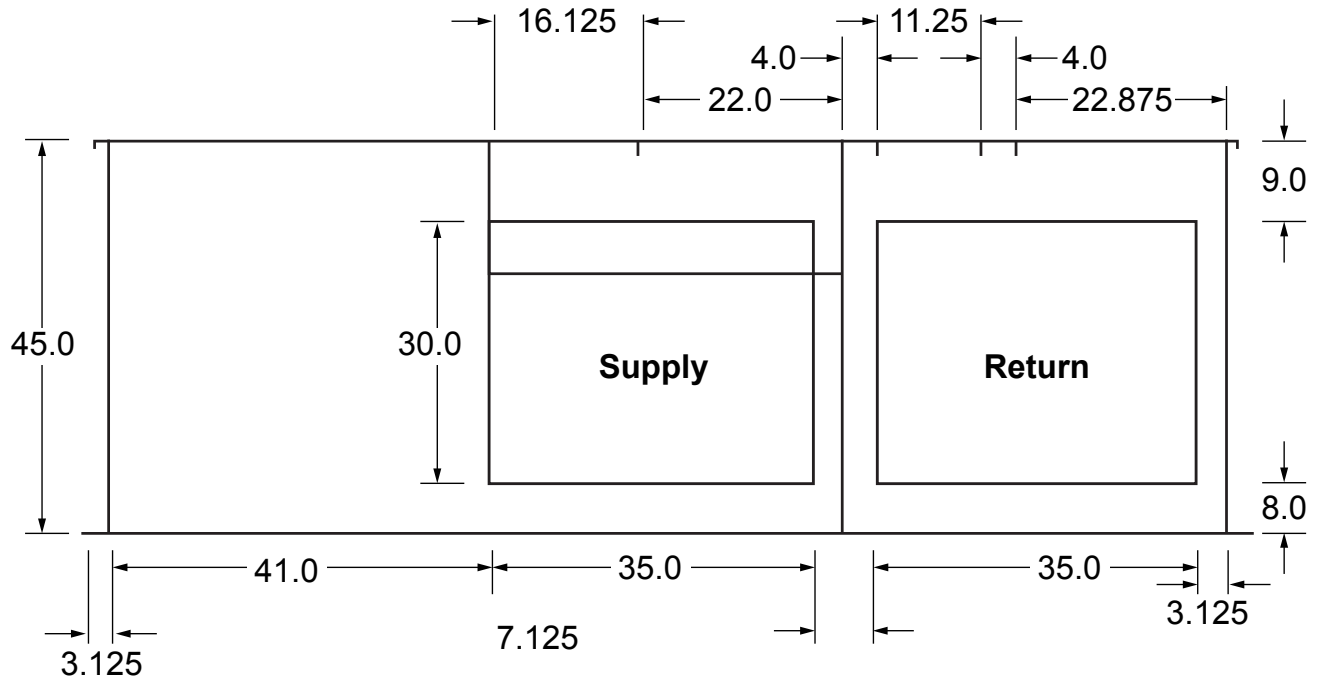
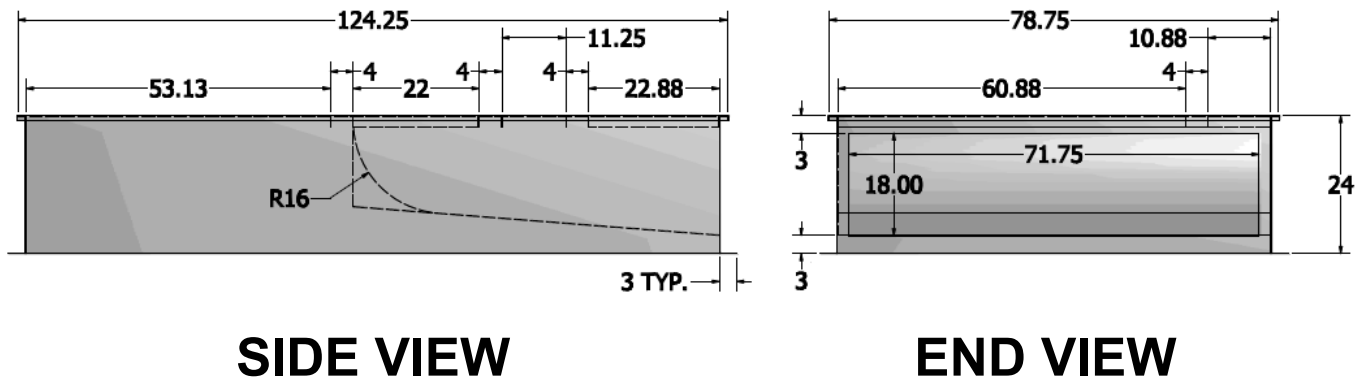


Figure 67: End Discharge Dimensions



SIDE VIEW

END VIEW

Downflow Square-to-Round Adapter

For Models DC 036–240

Instructions

1. Assemble the roof curb per curb installation instructions.
2. Attach duct to the appropriate square to round.
3. On the return, feed the duct through the opening created in the duct support and place the Square-to-Round into the opening with the flanges resting on top of the curb duct supports.
4. On the supply, feed the duct through the supply opening and install the Square-to-Round with the flanges resting on the perimeter of the curb and the duct support that divides the supply and return.
5. Install gasket material to the perimeter of the square opening and the rest of the roof curb.

Figure 68: Square-to-Round 16" Adapter, Model Sizes 036–072 Dimensions

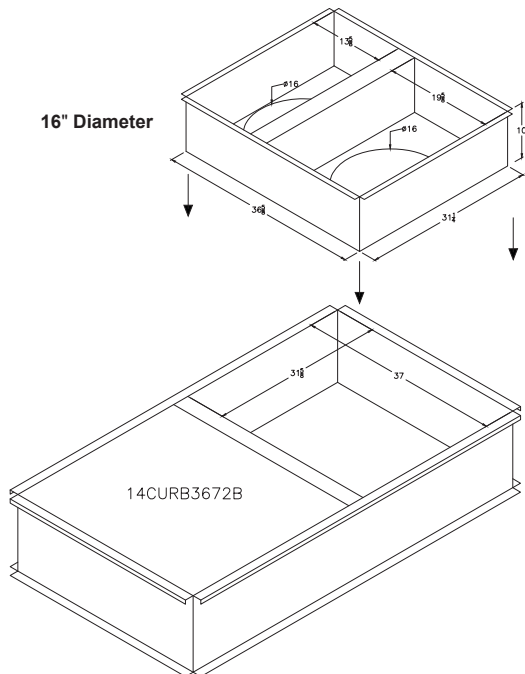


Figure 69: Square-to-Round 18" Adapter, Model Sizes 036–072 Dimensions

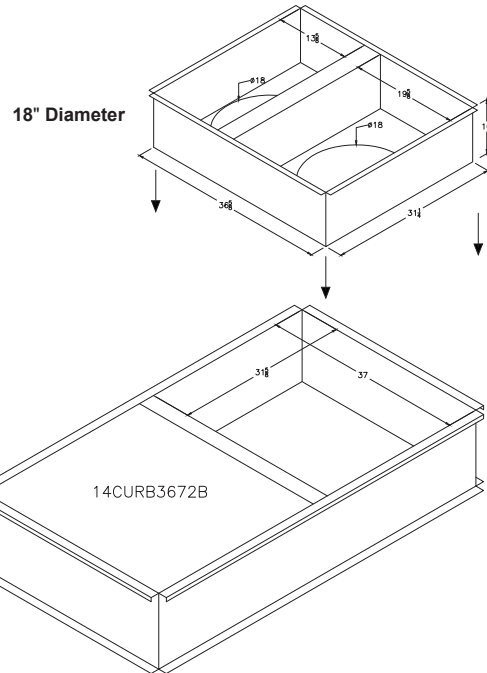
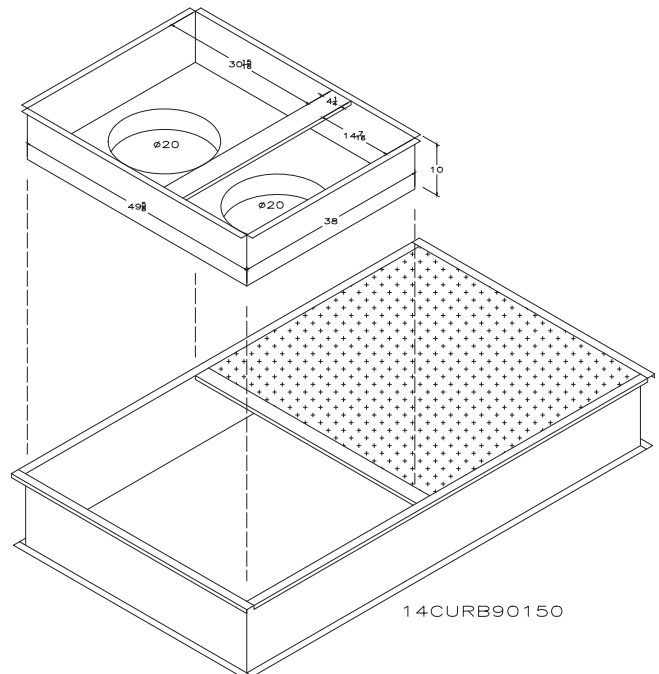


Figure 70: Square-to-Round 20" Adapter, Model Sizes 090–150 Dimensions



510 Series Concentric Diffuser Systems

For Models DC 036–240

Designed to provide a single point air distribution system. The systems may be used with either a "T-Bar" ceiling or a plaster ceiling.

Standard features include:

1. All aluminum diffuser with aluminum return air egg crate.
2. Built-in Anti-Sweat gasket.
3. Molded Fiberglass Transition (through five tons).
4. Built-in hanging supports.
5. Diffuser box constructed of fiberglass ductboard (through 7.5 tons) or sheet metal.

Standard benefits include:

1. Even four (4) way airflow.
2. Lightweight design.
3. Factory assembled and sealed.
4. Guaranteed not to "sweat".
5. Guaranteed not to recirculate air flow (short cycle).
6. Return air egg crate is easily removed.
7. Units are fully insulated (both supply and return).

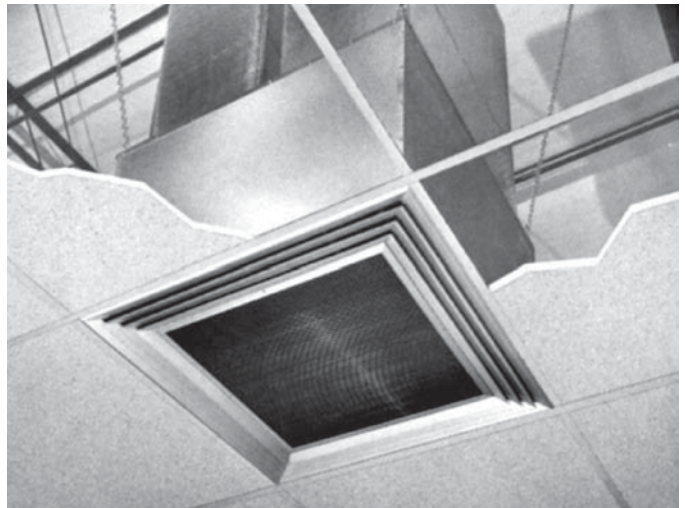
Typical Specifications

Furnish and install Daikin "510 SERIES" concentric diffuser systems. The system shall consist of an aluminum supply diffuser with an aluminum egg crate return. It shall also have a permanent (not adhesive) anti-sweat gasket and hanging supports. All units that are five (5) tons and smaller shall have a molded fiberglass interior transition.

Figure 71: 510 Series - Flush Mount Concentric Diffuser System



**Light Commercial
"T" Bar Ceiling**



**Commercial
"T" Bar Ceiling**

Figure 72: Diffuser Components

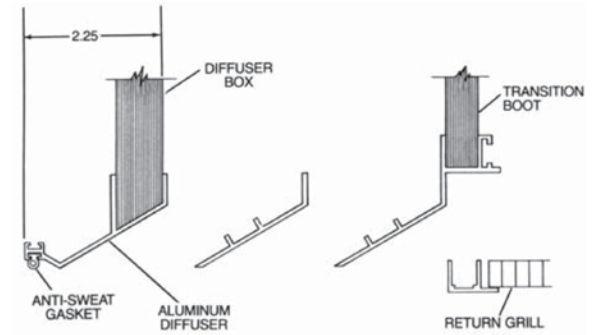
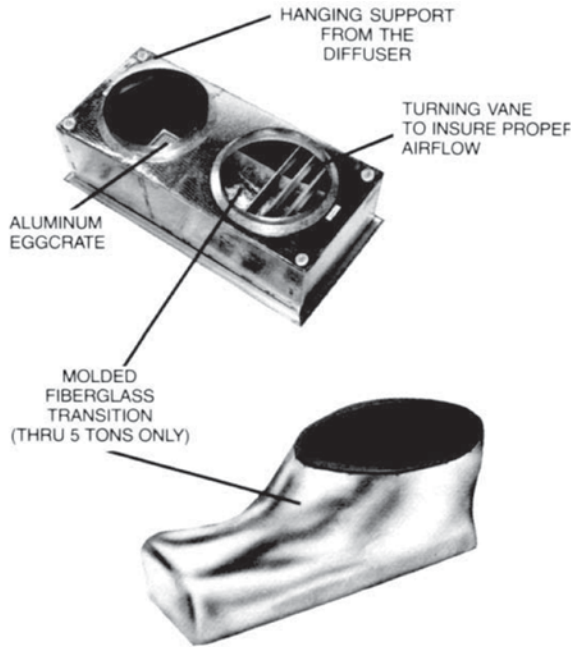


Figure 73: 510 Series—Flush Mount Concentric Diffuser System

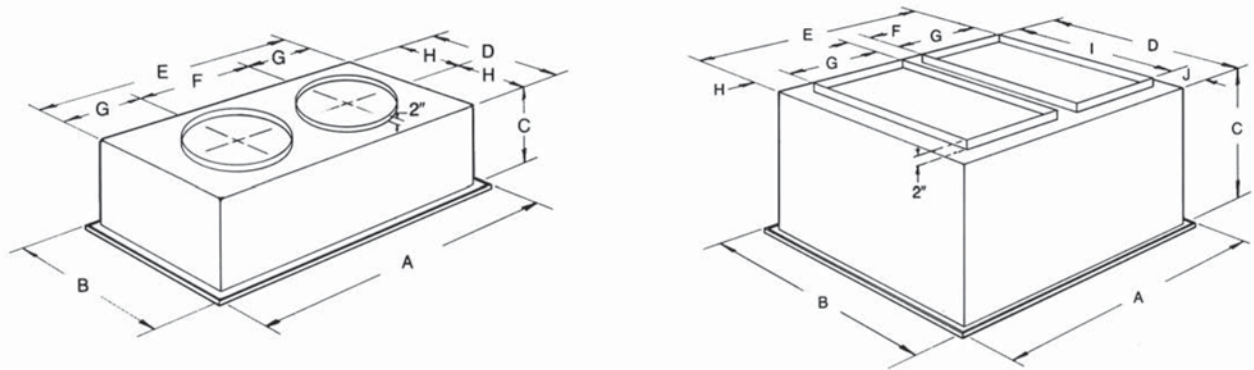


Table 15: 510 Series—Dimensions

Model Number	A	B	C	D	E	F	G	H	I	J	Duct Size
Round Duct											
CDK36	47-5/8	23-5/8	13-1/2	21	45	22-1/2	11-1/4	10-1/2	—	—	16RD
CDK4872		29-5/8	16-5/8	27				13-1/2			18RD
CDK90											20RD
Rectangular Duct											
CDK120	47-5/8	35-5/8	23-1/4	33	45	4-1/2	18	2-1/4	28	2-1/2	18×28
CDK150		41-5/8	29-1/4	39					32	3-1/4	18×32
CDK180		47-5/8		45					36	4-1/2	18×36
CDK140	59-5/8	35-1/4	57				24		48	1-1/2	24×48
CDK300									54		24×54

Table 16: 510 Series—Engineering Data

Part Number	CFM	Static Pressure	Throw Feet	Neck Velocity	Jet Velocity	Noise Level
CDK36	600	0.09	10–14	234	417	18
	800	0.11	12–18	313	556	20
	1000	0.14	15–20	391	694	20
	1200	0.17	16–22	469	833	25
	1400	0.20	17–24	547	972	30
CDK4872	1000	0.14	15–20	391	694	20
	1200	0.17	16–22	469	833	25
	1400	0.20	17–24	547	972	30
	1600	0.24	18–25	625	1111	30
	1800	0.30	20–28	703	1250	35
CDK90	2000	0.36	21–29	781	1389	40
	2200	0.40	22–30	859	1528	40
	2600	0.17	19–24	663	1294	30
	2800	0.20	20–28	714	1393	35
	3000	0.25	21–29	765	1492	35
CDK120	3200	0.31	22–29	816	1592	40
	3400	0.37	22–30	867	1692	40
	3600	0.17	22–29	844	1646	35
	3800	0.18	22–30	891	1737	40
	4000	0.21	24–33	938	1829	40
CDK150	4200	0.24	26–35	985	1920	40
	4400	0.27	28–37	1032	2011	40
	4600	0.31	25–34	922	1795	40
	4800	0.32	26–35	962	1873	40
	5000	0.34	27–36	1002	1951	40
CDK180	5200	0.36	30–39	1043	2029	45
	5400	0.39	32–41	1083	2107	45
	5600	0.36	28–37	1000	2082	45
	5800	0.39	29–38	1036	2156	45
	6000	0.42	40–50	1071	2230	45
	6200	0.46	42–51	1107	2308	50
	6400	0.50	43–52	1143	2379	50
	6600	0.54	45–56	1179	2454	50
	7200	0.39	26–35	996	2093	45
	7400	0.41	28–37	1024	2151	45
CDK240	7600	0.43	29–38	1051	2209	45
	7800	0.47	40–50	1079	2276	45
	8000	0.50	42–51	1107	2326	50
	8200	0.53	43–52	1134	2384	50
	8400	0.56	44–54	1162	2442	50
	8600	0.59	46–57	1189	2500	50
	8800	0.63	48–59	1217	2558	50
	9400	0.39	30–40	1014	2114	45
CDK300	9600	0.41	32–41	1036	2159	45
	9800	0.43	35–43	1057	2204	45
	10000	0.45	37–46	1079	2249	45
	10200	0.47	40–50	1101	2294	45
	10400	0.50	42–51	1122	2339	50
	10600	0.53	43–53	1144	2384	50

Notes: 1. All data is based on the Air Diffusion Council Guidelines
 2. Throw data is based on Terminal Velocities of 75 FPM using isothermal air
 3. Actual noise levels are less than those shown.

530 Series Concentric Diffuser Systems

For Models DC 036–240

Designed to provide a single point air distribution system with the added benefit of having directional air control. The systems may be used with either a "T-Bar" ceiling or a plaster ceiling.

Standard features include:

1. All aluminum diffuser with aluminum return air egg crate.
2. Double deflection diffuser with the blades secured by spring steel.
3. Built-in Anti-Sweat gasket.
4. Molded Fiberglass Transition (through five tons).
5. Built-in hanging supports.
6. Diffuser box constructed of fiberglass ductboard (through 7.5 tons) or sheet metal.

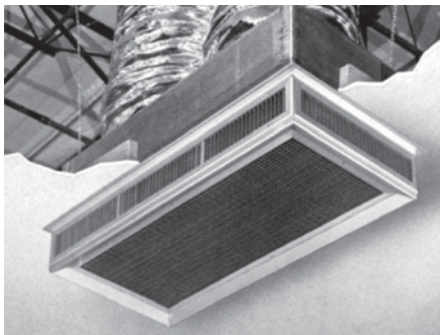
Standard benefits include:

1. Even four (4) way airflow.
2. All exposed surfaces (below ceiling) are brushed aluminum.
3. Factory assembled and sealed.
4. Guaranteed not to "sweat".
5. Guaranteed not to recirculate air flow (short cycle).
6. Return air egg crate is easily removed.
7. Units are fully insulated (both supply and return).
8. Lightweight design.

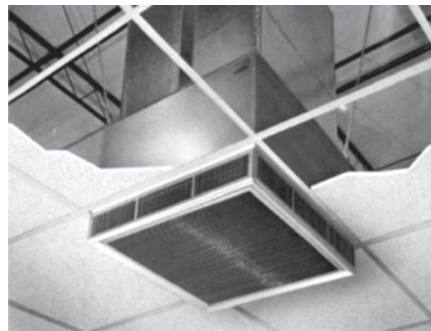
Typical Specifications

Furnish and install Daikin "530 Series" Concentric Diffuser Systems. The system shall consist of an aluminum double supply diffuser with an aluminum egg crate return. ALL EXPOSED SURFACES (BELOW CEILING) MUST BE BRUSHED ALUMINUM. It shall also have a permanent (not adhesive) anti-sweat gasket and hanging supports. All units that are five (5) tons and smaller shall have a molded fiberglass interior transition.

Figure 74: 530 Series - Flush Mount Concentric Diffuser System



Light Commercial
Plaster Ceiling



Commercial
"T" Bar Ceiling

Figure 75: Diffuser Components

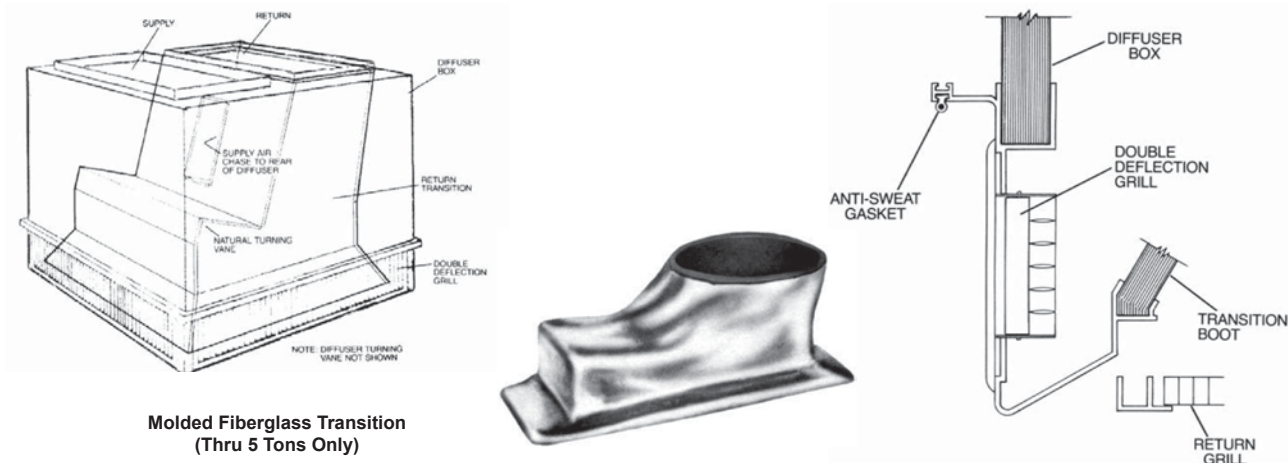


Figure 76: 530 Series—Flush Mount Concentric Diffuser System

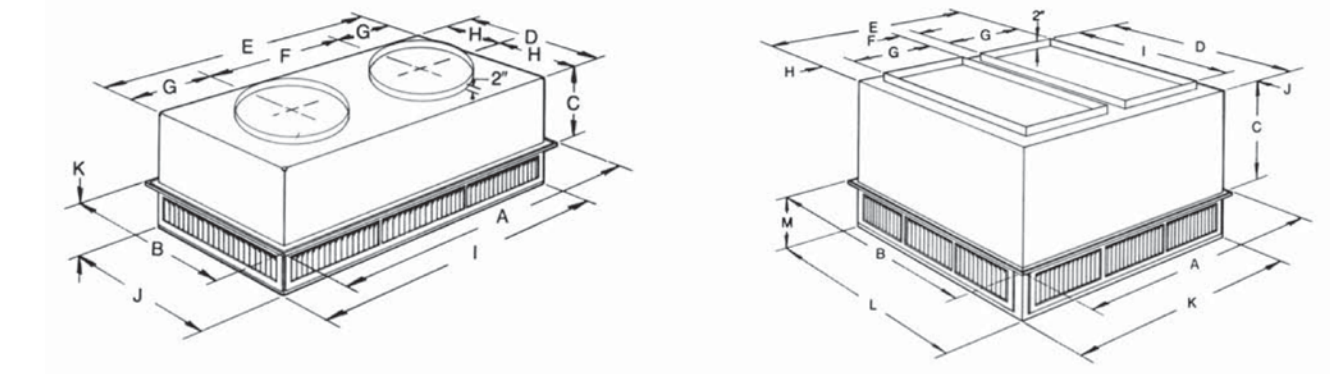


Table 17: 530 Series—Dimensions

Model Number	A	B	C	D	E	F	G	H	I	J	K	L	M	Duct Size
Round Duct														
CDK 36-530	47-5/8	23-5/8	11-3/8	21-1/2	45	22-1/2	11-1/2	10-3/4	45-1/2	21-1/2	7-1/8	—	—	16RD
CDK 4872-530		29-5/8	14-3/8	27-1/2				13-3/4		27-1/2	8-1/8			18RD
CDK 90-530														20RD
Rectangular Duct														
CDK 120-530	47-5/8	35-5/8	20-5/8	33-1/2	45-1/2	4-1/2	18	2-1/2	28	2-3/4	45-1/2	33-1/2	9-1/8	18×28
CDK 180-530		47-5/8	24-5/8	45-1/2					36			45-1/2	10-1/8	18×36
CDK 240-530		59-5/8	30-5/8	57-1/2					24			48	57-1/2	11-1/8

Table 18: 530 Series—Engineering Data

Part Number	CFM	Statistic Pressure	Throw Feet	Neck Velocity	Jet Velocity	Noise Level
CDK 36-530	600	0.09	8-15	210	210	20
	800	0.11	9-16	281	281	20
	1000	0.14	10-17	351	351	20
	1200	0.17	11-18	421	421	20
	1400	0.20	12-19	491	491	20
CDK 4872-530	1000	0.14	10-17	351	351	20
	1200	0.17	11-18	421	421	20
	1400	0.20	12-19	491	491	20
	1600	0.24	12-20	561	561	20
	1800	0.30	13-21	632	632	20
	2000	0.36	14-23	702	702	20
	2200	0.40	16-25	772	772	20
CDK 90-530	2600	0.17	24-29	669	669	20
	2800	0.20	25-30	720	720	25
	3000	0.25	27-33	772	772	25
	3200	0.31	28-35	823	823	25
	3400	0.37	30-37	874	874	30
CDK 120-530	3600	0.17	25-33	851	851	30
	3800	0.18	27-35	898	898	30
	4000	0.21	29-37	946	946	30
	4200	0.24	32-40	993	993	30
	4400	0.27	34-42	1040	1040	30
CDK 180-530	5600	0.36	39-49	920	920	30
	5800	0.39	42-51	954	954	30
	6000	0.42	44-54	1022	1022	30
	6200	0.46	45-55	1056	1056	30
	6400	0.50	46-55	1090	1090	30
	6600	0.54	47-56	1124	1124	30
CDK 240-530	7200	0.39	33-38	827	827	25
	7400	0.41	35-40	850	850	25
	7600	0.43	36-41	873	873	25
	7800	0.47	38-43	896	896	30
	8000	0.50	39-44	918	918	30
	8200	0.53	41-46	941	941	30
	8400	0.56	43-49	964	964	30
	8600	0.59	44-50	987	987	30
	8800	0.63	47-55	1010	1010	30

- Notes: 1. All data is based on the Air Diffusion Council Guidelines
 2. Throw data is based on Terminal Velocities of 75 FPM using isothermal air
 3. Actual noise levels are less than those shown.
 4. Throw is based on diffuser blades being directed in a straight pattern.

Low Ambient Kits

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Description

The LAKT01, LAKT02 and LAKT03 low ambient kits (for Light Commercial Models and Residential Splits) are temperature sensitive fan motor speed controls designed to regulate the outdoor section head pressure by varying the air volume through the outdoor coil and are required when operating below 55°F outdoor temperature.

This is achieved by sensing the liquid temperature at the coil by means of a thermistor probe. The probe provides an input signal to the control to increase the fan motor speed in relation to changes in the liquid temperature. Ensure all parts are included before beginning. If parts are missing from the kit contact the distributor where the kit was purchased.

NOTE: These kits are not approved for any 16 and 18 SEER outdoor units that utilize an ECM condenser fan motor.

The following accessories must be installed on all condensers and heat pumps when equipped with low ambient kits.

1. Crankcase heater must be installed if not factory installed.
2. Hard start kit for single phase units.
3. TXV kit installed on indoor evaporator coil, if not factory installed.
4. FSK01A - Freeze protection kit must be installed on indoor coil.
5. Wind buffer must be installed for temperatures below 0°F or areas with high prevailing winds. Wind buffer can be a wall fabricated from wood or masonry material that will prevent the prevailing wind from causing the outdoor fan to rotate.

NOTE: When wind buffer is installed, it is necessary to use minimum 4" risers to elevate the unit off of the pad to provide better airflow for moderate and high ambient temperatures.

SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Table 19: Parts List For Kits

Item	Part No.	Qty.
Pressure Control & Probe: LAKT0	0130M00058	1
Pressure Control & Probe: LAKT02 & LAKT03	0130M00059	1
Wire Assembly: LAKT01	—	8
Wire Assembly: LAKT02 & LAKT03	—	6
Terminals: LAKT01	—	4
Terminals: LAKT02 & LAKT03	—	7
Wire Ties: LAKT01	—	3
Wire Ties: LAKT02 & LAKT03	—	4
Mounting Bracket: LAKT01, LAKT02, LAKT03	0121M00047	1
Installation Instructions	IM 1223	1

Kit Installation

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

1. Disconnect all sources of power to the unit.
2. Remove access panels to blower compartment and control box.
3. Using the screws provided, secure the control to the mounting bracket provided (see [Figure 77](#)). Secure the new assembly on the condenser evaporator partition panel in the blower section of the unit.

For 3 to 12.5 ton light commercial, secure 2 inches below the hole where the fan and compressor leads exit the blower section. See [Figure 78](#).

For 15 to 20 ton light commercial, secure to the right of the capacitor assembly, located on the partition panel. See [Figure 79](#).

For residential 3 phase models, secure ICM to the control panel. See [Figure 80](#). (Do not use mounting bracket in this application.)

NOTE: Do not install the control in areas where the mounting screws can come into contact with the condenser coil or tubing.

4. Connect the electrical wiring as shown in the wiring diagrams starting on [page 58](#)
5. **For light commercial**, install temperature probe between the fins, at the middle to upper section of the condenser coil (see [Figure 81](#)).
- For Residential Split Condensers and heat pumps**, install the probe on the liquid line before the filter/dryer. Ensure the probe body is completely attached to the body of the liquid tube before securing with the tape (See [Figure 82](#)).
6. Connect the probe leads to the terminal marked PROBE S1. For systems with multiple refrigeration circuits, attach the second probe to PROBE S2 or PROBE S3. LAKT02 and LAKT03 are shipped with two probes. See control instruction manual for multiple probe connection and operation.

Figure 77: Mounting Controller to Bracket

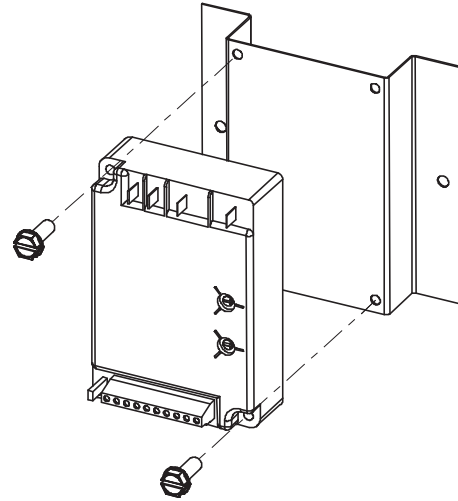


Figure 78: Mounting Controller to 036–150 Units

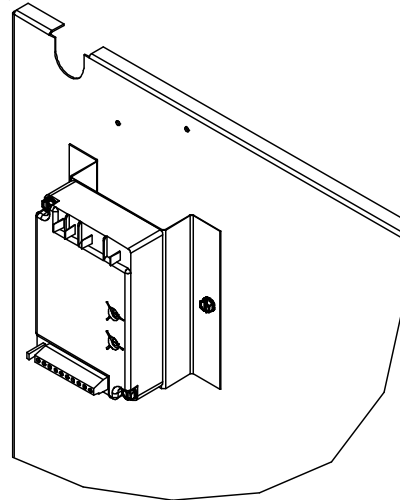


Figure 79: Mounting Controller to 180–240 Units

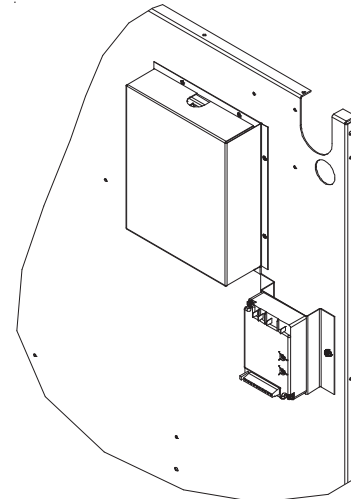


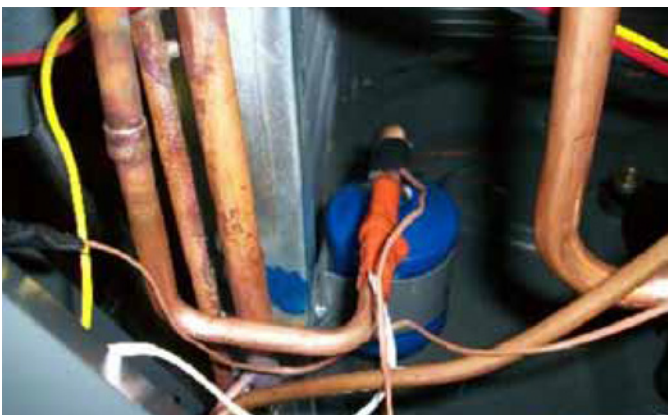
Figure 80: Mounting Controller to Unit



Figure 81: Mounting Temperature Probe near Condenser Coil



Figure 82: Mounting Temperature Probe near Liquid Line Tube



Wiring Diagrams and Application

The LAKT01, LAKT02 and LAKT03 kits are shipped with wiring diagram included. Affix the low ambient kit wiring diagram on the control box door next to the unit wiring diagram.

NOTE: The low ambient kit is pre-set at the factory and requires no further adjustment. Altering the setting may greatly reduce motor life.

LAKT01 (3 thru 6 tons): Figure 83 - use with AC and HP units, three phase and single phase application.

For residential 3 phase condensers, connect wires per Figure 83 wiring diagram.

For residential 3 phase heat pumps, connect wires per page 59.

LAKT02 & LAKT03 (7½ tons thru 12½ tons): Figure 84 - use with AC and HP units, three phase application.

LAKT03 (15 tons and up): Figure 85 - use with AC and HP units.

- A. Wiring diagrams show the controller connection for 120/277 volts supply. For 480/600 volts application, connect the power supply leads to the 480/600 vac terminal.
- B. Alternate wiring for heat pump application: Make a parallel connection from the reversing valve 24 VAC power supply to the heat pump terminals on the control.

Wiring Procedure for LAKT01

1. Connect the wiring as described on page 57.
2. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
3. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
4. Reinstall access panel.
5. Restore power and verify system operation.

Wiring Procedure for LAKT02 & LAKT03

1. Find the three (3) fan motor leads (purple, black & brown) from condenser motor circuit #2. (These leads pass through the partition panel just above the area where the controller is mounted.) Disconnect the leads at the junctions.
2. From the kit, install one of the “Y” push-on terminal adapters onto the controller terminal marked Motor 2 and another onto terminal Line 1/Motor 1.

NOTE: Make sure the correct voltage tap is selected.

3. Connect the black wire from condenser motor circuit #2 to one side of the connector on the Motor 2 terminal of the controller. Using the male/female black adapter wire from the kit, connect the black wire coming from the control box to the Line 2 terminal on the controller.
4. Connect the male/female purple adapter wire from the kit to the purple wire coming from the control box and to one side of the Line 1/Motor 1 terminal on the controller.
5. Find the three fan motor leads (purple, black & brown) going to condenser motor circuit #1. (These leads exit through the partition panel on the opposite side of the controller.) Cut the black and purple wires so that those leads will connect to the controller. Attach the provided terminals to each of the leads and connect the purple lead to the Line 1/Motor 1 terminal. Attach the black wire to the other side of the “Y” push-on terminal adapters on the Motor 2 terminal on the controller.
6. Remove or tape up the ends of the cut purple and black wires.
7. Locate the red wire connecting FC1 (fan capacitor #1) to T2 of the compressor contactor #1. Disconnect the wire from T2 and connect it to the terminal on FC2 (fan capacitor #2) that has three black wires. Remove the black wire from FC1 (fan capacitor #1) and connect to T2 of the compressor contactor 1.
8. Connect YL and BL wire to 24 vac connection on the controller and then to YI and C respectively, on the terminal block in the control box.
9. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
10. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
11. Reinstall access panel.
12. Restore power and verify system operation.

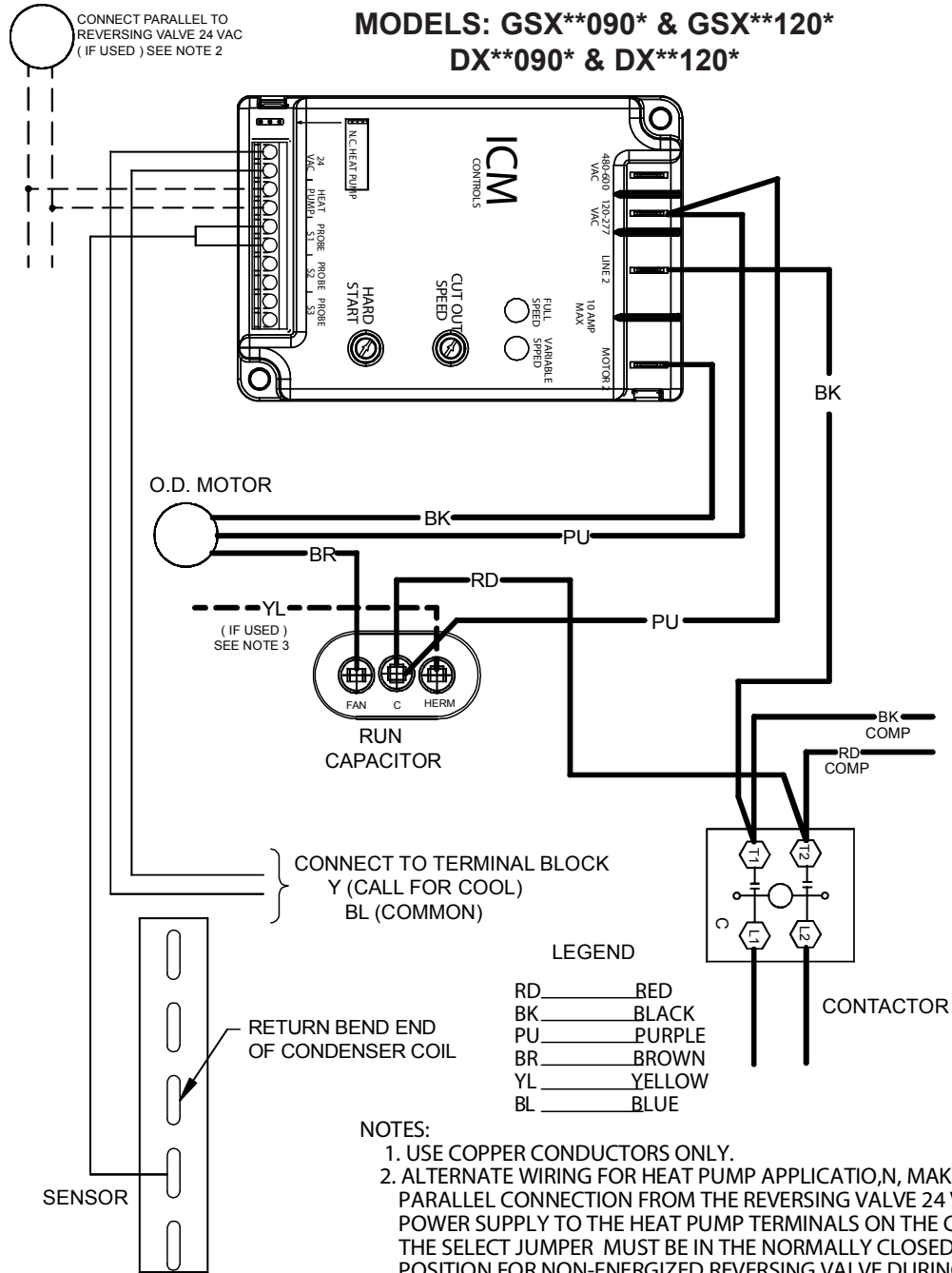
Wiring Procedure For LAKT03

1. Remove the cover on the capacitor assembly that is located next to the controller. Disconnect the red and black leads that are coming from the control box assembly. They are connected to the furthest right capacitor and the terminal block respectively.
2. From the kit, install one of the Y push on terminal adapters onto the controller terminal marked Line 1 / Motor 1.
3. Connect the disconnected black wire to Line 2 terminal on the controller. Connect the disconnected red wire onto one of the Y push on terminals now located on the Line 1 / Motor 1 terminal of the controller.
4. From the kit, connect the red wire between the remaining Y terminal on Line 1 / Motor 1 and the location on the furthest right capacitor where the red wire had previously been removed.
5. From the kit, connect the black wire between the Motor 2 terminal on the controller and the terminal block where the black wire had previously been removed.
6. Connect the blue wire and the yellow wire to the controller on the 24 VAC connection as shown on the diagram.
7. Route wires along tubing, under evaporator, and into the bottom opening of control box. Connect the yellow wire to Y1 on the low voltage terminal strip and the blue wire to C.
8. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
9. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
10. Reinstall access panel.
11. Restore power and verify system operation.

Figure 83: Wiring Diagram for LAKT01



High Voltage! Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.



- NOTES:
1. USE COPPER CONDUCTORS ONLY.
 2. ALTERNATE WIRING FOR HEAT PUMP APPLICATION, MAKE A PARALLEL CONNECTION FROM THE REVERSING VALVE 24 VAC POWER SUPPLY TO THE HEAT PUMP TERMINALS ON THE CONTROL. THE SELECT JUMPER MUST BE IN THE NORMALLY CLOSED POSITION FOR NON-ENERGIZED REVERSING VALVE DURING HEATING.
 3. ALTERNATE WIRING FOR SINGLE PHASE APPLICATION; THREE PHASE MODELS DOES NOT REQUIRE A DUAL RUN CAPACITOR.
 4. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY; FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600 VAC TERMINALS.

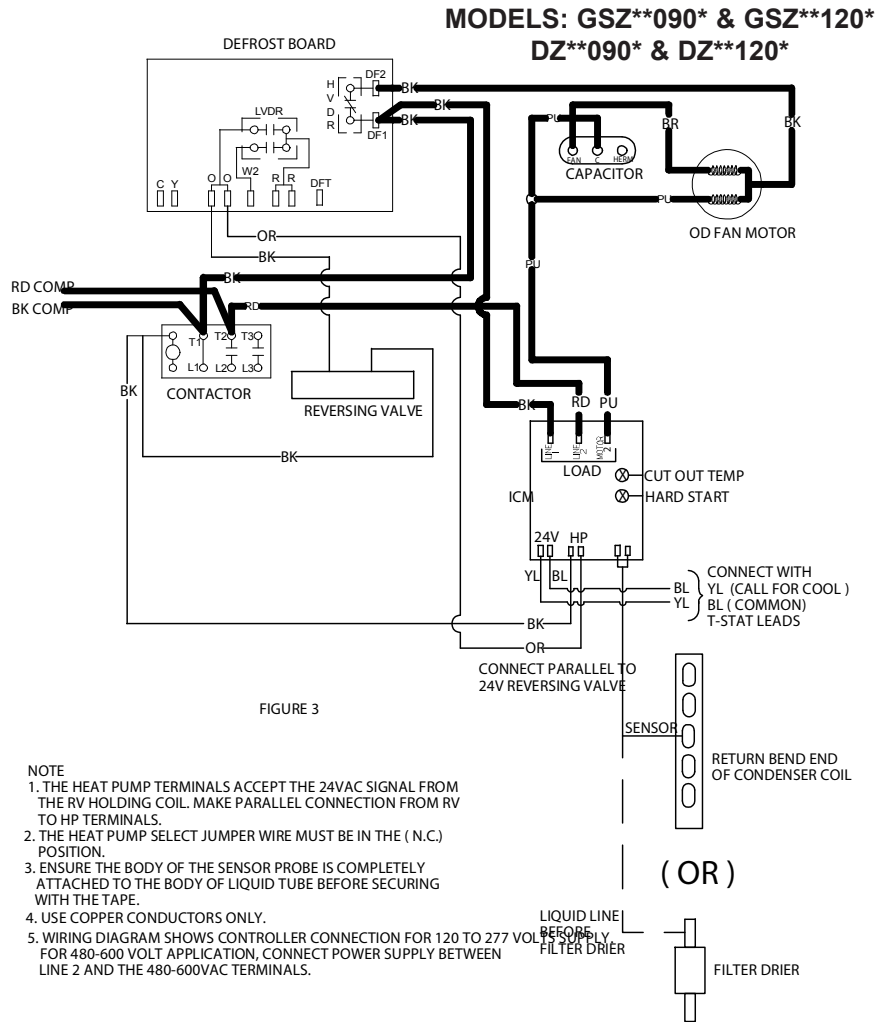
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Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

Figure 83 continued: Wiring Diagram for LAKT01



High Voltage! Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.



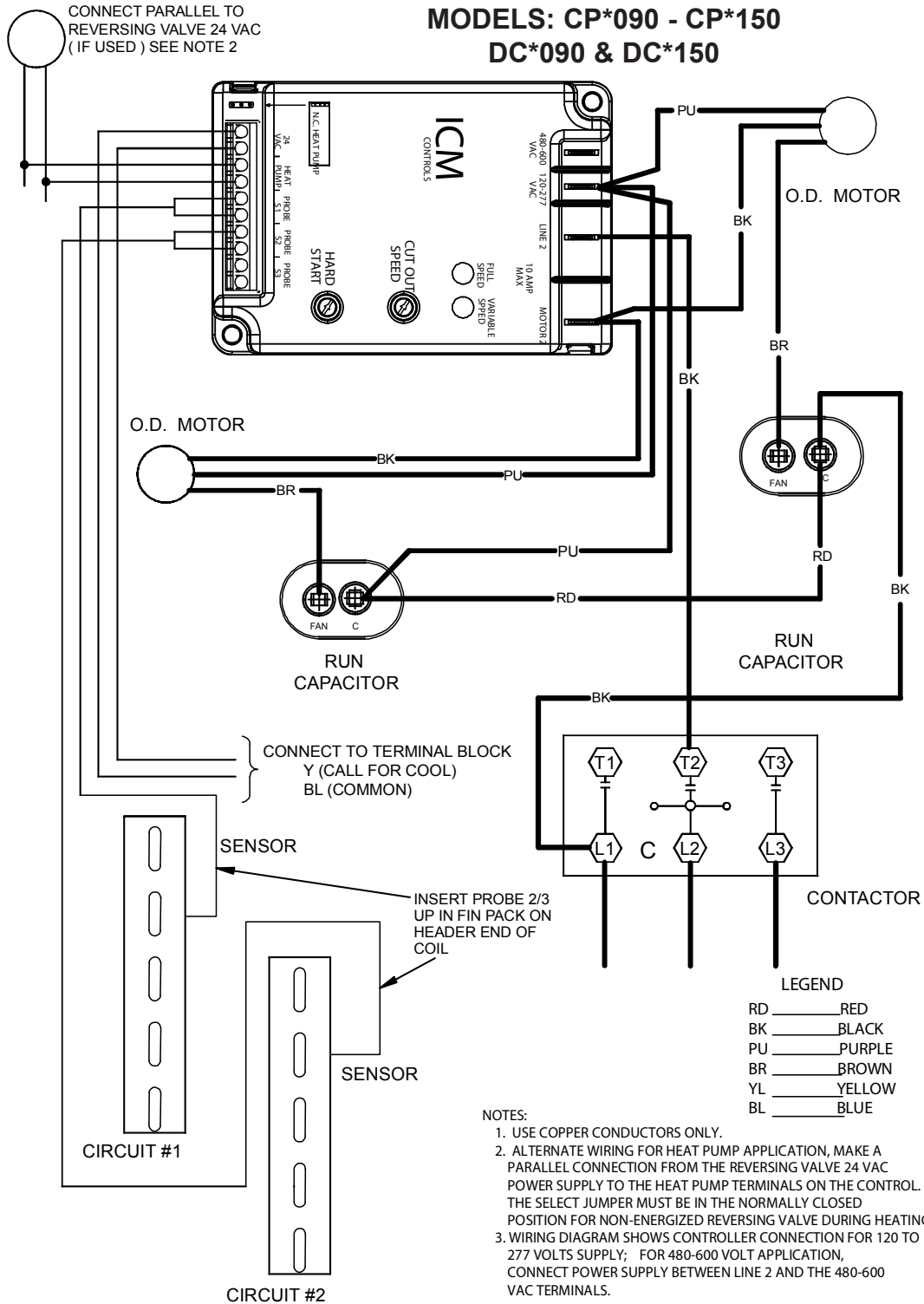
0140R00167

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

Figure 84: Wiring Diagram for LAKT02 & LAKT03

⚠ DANGER

High Voltage! Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.



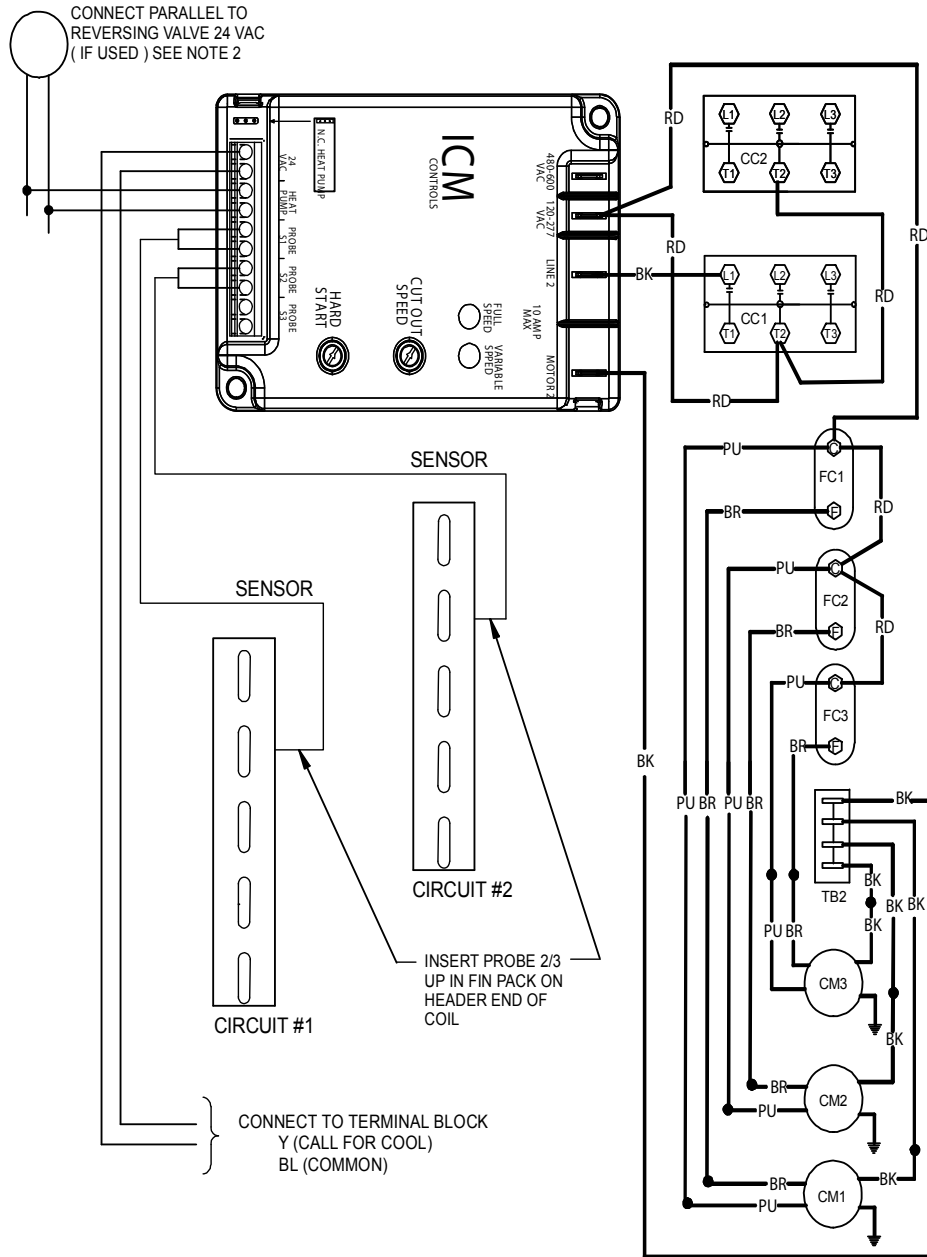
0140L01007 REV A

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

Figure 85: Wiring Diagram for LAKT03

⚠ DANGER

High Voltage! Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.



LEGEND
 RD _____ RED
 BK _____ BLACK
 PU _____ PURPLE
 BR _____ BROWN
 YL _____ YELLOW
 BL _____ BLUE

NOTES:
 1. USE COPPER CONDUCTORS ONLY.
 2. ALTERNATE WIRING FOR HEAT PUMP APPLICATION, MAKE A PARALLEL CONNECTION FROM THE REVERSING VALVE 24 VAC POWER SUPPLY TO THE HEAT PUMP TERMINALS ON THE CONTROL. THE SELECT JUMPER MUST BE IN THE NORMALLY CLOSED POSITION FOR NON-ENERGIZED REVERSING VALVE DURING HEATING.
 3. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY; FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600 VAC TERMINALS.

0140L01008 REV A

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

HAKT-36300 High Static Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

These installation instructions are for installing High Static kits in the 2-Speed, light commercial models.

Important Information

WARNING
Personal injury may result from improper installation or maintenance performed by untrained personnel. Call your installing dealer or other qualified service companies to perform the installation or maintenance inspection.

CAUTION
Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

DANGER
High Voltage
Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING
If any doubt exists about the condition of any component within the conversion kit, do not use the items and contact your supplier for new components or a new kit.

Installation

1. Disconnect all power to the unit. Lock out power at disconnect box.
2. Remove indoor blower compartment access panel.
3. Open front panel of motor circuit breaker box. Disconnect all motor wires from circuit breakers.
4. Remove and discard motor circuit breaker box (if required).
5. The harness connecting the motor to the circuit breaker is needed so open the motor electrical access box and disconnect the harness from the motor leads and set aside.
6. Loosen motor from mounting bracket.
7. Remove belt and set aside.

NOTE: Some kits require this belt to be reused with the new motor.

8. Most kits require a new motor. Remove and discard evaporator blower motor (if required).
9. Some kits require a different blower pulley/sheave. If required, remove blower pulley/sheave.
10. Add new blower pulley/sheave, if required. Torque set screws to 145 in.-lbs.
11. Position the motor and fasten it to the mounting plate with 90 in.-lbs. Some kits require a larger motor mounting plate. In this event, replace existing plate with the one supplied.
12. Position the adjustable sheave on the motor shaft. Check alignment with blower pulley. Add new or existing belt. Fasten set screw to the motor shaft with 145 in.-lbs. torque. Tension belt and tighten motor mounting bracket to blower deck.
13. Make motor wire connections. Supply power coming from control box will connect to the top of the circuit breakers (L1, L2, L3). See wiring diagram on Figure 2. The left circuit breaker is high speed while the right is for low speed. The harness that was set aside in previous step will be used to connect circuit breaker to the motor leads. The motor leads will connect to the circuit breakers on the bottom (T1, T2, T3). See wiring diagram on Figure 2. Add cover to circuit breaker box. Confirm that each circuit breaker switch is on by noticing if the knob is in the vertical direction.
14. Attach motor circuit breaker box to divider panel.
15. With the unit blower access panel still removed, connect or re-establish power to the unit. Check for correct blower wheel rotation.
16. Replace blower access panel on the unit.

Figure 86: Motor circuit breaker box

Motor circuit breaker box

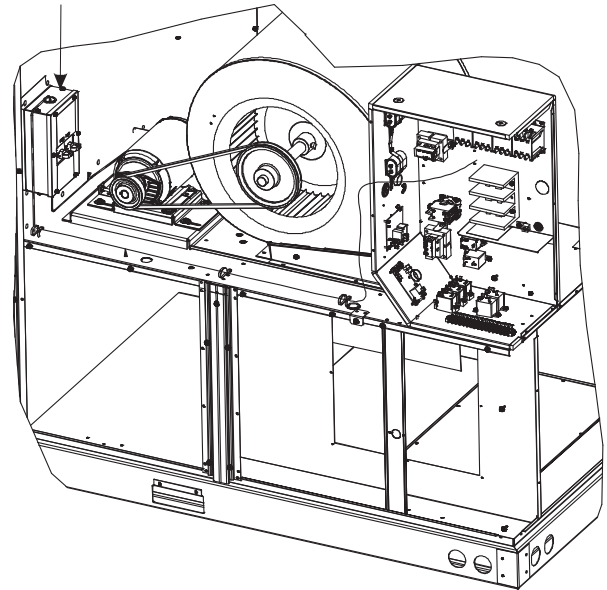
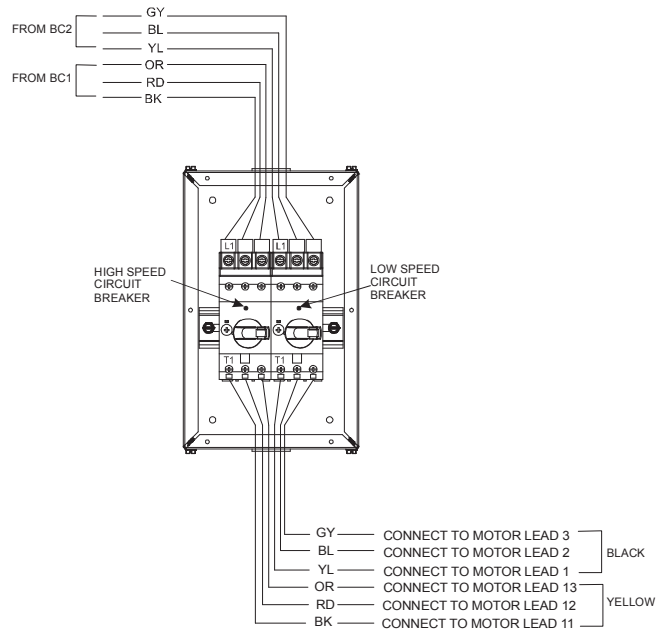


Figure 87: Wiring Diagram



Blower Performance Data – 10 Ton Models

Table 20: DCC/DCH120 Horizontal High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	Turns Open																			
	0			1			2			3			4			5				
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP		
0.8	DO NOT OPERATE																	4602	884	2.13
1.0															4749	940	2.44	4180	885	1.89
1.2															4251	945	2.12	3642	896	1.58
1.4												4443	1001	2.5	3744	951	1.8			
1.6										4587	1056	2.82	3971	1006	2.17					
1.8							4760	1105	3.23	4071	1061	2.43	3342	1012	1.86					
2.0							4364	1114	2.91	3579	1067	2.05								

Table 21: DCC/DCH120 Down-Shot High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN																	
	0			1			2			3			4			5		
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP
0.8													4435	940	2.22	4078	886	1.82
1.0										4462	997	2.47	4103	944.5	2.05	3539	892	1.52
1.2							4513	1054	2.75	4127	1003	2.26	3568	950	1.71			
1.4							4126	1064	2.52	3597	1008	1.92						
1.6				4438	1116	2.97	3759	1069	2.25									
1.8				3956	1124	2.55												
2.0	4050	1179	3.05	3473	1132	2.32												

Table 22: DCG120 High Static Belt-Drive Horizontal includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN																						
	0			1			2			3			4			5							
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP					
0.8	DO NOT OPERATE																	4408	885	2.02			
1.0															464	940	2.29	3929	891	1.76			
1.2															4585	996	2.58	4026	946	2.0	3436	897	1.46
1.4										4697	1049	2.92	4141	1001	2.26	3509	951	1.7					
1.6										4264	1056	2.58	3663	1007	1.96								
1.8							4359	1105	2.85	3785	1061	2.22											
2.0							3907	1114	2.49														

Table 23: DCG120 Down-Shot, High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN																	
	0			1			2			3			4			5		
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP
0.8													4188	943	2.11	3793	889	1.67
1.0										4305	1002	2.39	3836	946	1.89	3416	893	1.45
1.2							4324	1053	2.63	3879	1003	2.11	3425	951	1.63			
1.4				4428	1109	2.92	3973	1056	2.35	3434	1009	1.8						
1.6	4465	1160	3.2	4088	1113	2.67	3506	1068	2.1									
1.8	4129	1168	2.9	3625	1122	2.3												
2.0	3694	1175	2.65															

NOTE: High static airflow requires installation of high static kit (HSKTW***).

Airflow table represents high speed dry coil and filters installed; SCFM correction factor for wet coil is 4%.

Blower Performance Data - 15 Ton Models

Table 24: DCC180 High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN														
	0		1		2		3		4		5		6		
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
1.0												7120	3.26	6223	2.55
1.2									6927	3.39	5924	2.61			
1.4							6739	3.52	5602	2.65					
1.6					6587	3.69	5245	2.67							
1.8			6419	3.84	4877	2.70									
2.0	6261	4.01													

Table 25: DCG180 High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN													
	0		1		2		3		4		5		6	
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1.0									6690	3.69	6008	3.02	5321	2.43
1.2							6653	3.95	5922	3.22	5182	2.58		
1.4					6634	2.80	5857	3.44	5056	2.74				
1.6			6638	4.55	5808	2.43	4948	2.91						
1.8	6683	4.93	5784	3.95	4855	2.05								
2.0	5803	4.27	4788	3.32										

Blower Performance Data - 20 Ton Models

Table 26: DCC240 High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN													
	0		1		2		3		4		5		6	
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1.0									9090	5.79	8297	5.06	7479	3.62
1.2							8774	5.60	7914	4.83	6989	4.07		
1.4					8471	5.43	7549	4.63						
1.6			8209	6.14	7194	4.45								
1.8	7967	6.02	6883	5.01										
2.0	6594	4.87												

Table 27: DCG240 High Static Belt-Drive includes 2-Speed Models at High Speed

ESP, (In. H ₂ O)	TURNS OPEN													
	0		1		2		3		4		5		6	
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1.0							9001	6.83	8394	6.01	7797	4.78	7227	4.28
1.2					8891	6.83	8262	6.15	7632	5.35	7012	4.20		
1.4			8811	6.86	8148	6.15	7495	5.48	6841	4.71				
1.6			8065	6.19	7377	5.48								
1.8	7998	6.89	7290	5.52										
2.0	7221	6.10												

NOTE: High static airflow requires installation of high static kit (HSKTW***).

Airflow table represents high speed dry coil and filters installed; SCFM correction factor for wet coil is 4%.

Models DCC, DCG and DCH Standard Factory to High Static Conversion Kits
Table 28: High Static Kits Descriptions

Kit Part Number	Size (Tons)	Electrical Rating	Motor HP	Circuit Breaker Box for Evap Blower Motor	Motor Sheave	Blower Pulley	Belt	Motor Adaptor Plate
HSKT036B ¹	3 Ton C/G/H	208-230/3/60 460/3/60	1.5		1VL44 × 7/8	AK61 × 1		
HSKT048B ¹	4 Ton C/G/H	208-230/3/60 460/3/60	1.5		1VM50 × 7/8			
HSKT060B ¹	5 Ton C/G/H	208-230/3/60 460/3/60	1.5		1VM50 × 7/8			
HSKT072B ¹	6 Ton C/G/H	208-230/3/60 460/3/60	2.0		1VM50 × 7/8			
HSKT090 ²	7.5 Ton C/H				1VL44 × 7/8	AK61 × 1	AX49	
HSKT090G ²	7.5 Ton G	208-230/3/60 460/3/60	2.0		1VL44 × 7/8	AK61 × 1	AX49	
HSKT090 ²	8 Ton C/G/H	208-230/3/60 460/3/60			1VL44 × 7/8	AK61 × 1	AX49	
HSKT120 ²	10 Ton C/G/H	208-230/3/60 460/3/60	3		1VL44 × 7/8	AK61 × 1	AX49	
HSTKW120-3	10 Ton C/G/H	208-230/3/60	3	Yes	1VP44 × 1-1/8	AK61 × 1	AX48	
HSTKW120-4	10 Ton C/G/H	460/3/60	3	Yes	1VP44 × 1-1/8	AK61 × 1	AX48	
HSTKW120-7	10 Ton C/G/H	575/3/60	3	Yes	1VP44 × 1-1/8	AK61 × 1	AX48	
HSKT150 ²	12.5 Ton C/G/H	208-230/3/60 460/3/60	5		1VP50 × 1-1/8			Yes
HSKT180 ³	15 Ton C	208-230/3/60 460/3/60	5					
HSKT180G ³	15 Ton G					BK75 × 1-3/16	BX41	
HSTKW180-3	15 Ton C	208-230/3/60	7.5	Yes	1VP60 × 1-3/8	BK100 × 1-3/16	BX45	Yes
HSTKW180-4	15 Ton C	460/3/60	7.5	Yes	1VP60 × 1-3/8	BK100 × 1-3/16	BX45	Yes
HSTKW180-7	15 Ton C	575/3/60	7.5	Yes	1VP60 × 1-3/8	BK100 × 1-3/16	BX45	Yes
HSTKW180G-3	15 Ton G	208-230/3/60	7.5	Yes	1VP68 × 1-3/8	BK100 × 1-3/16	BX45	
HSTKW180G-4	15 Ton G	460/3/60	7.5	Yes	1VP68 × 1-3/8	BK100 × 1-3/16	BX45	
HSTKW180G-7	15 Ton G	575/3/60	7.5	Yes	1VP68 × 1-3/8	BK100 × 1-3/16	BX45	
HSKT240 ³	20 Ton C/G	208-230/3/60 460/3/60	7		1VP60 × 1-3/8	BK85 × 1-7/16		Yes
HSTKW240-3	20 Ton C/G	208-230/3/60	7.5	Yes	1VP60 × 1-3/8	BK85 × 1-7/16	BX42	
HSTKW240-4	20 Ton C/G	460/3/60	7.5	Yes	1VP60 × 1-3/8	BK85 × 1-7/16	BX42	
HSTKW240-7	20 Ton C/G	575/3/60	7.5	Yes	1VP60 × 1-3/8	BK85 × 1-7/16	BX42	

1. See Figure 88 on page 67

2. See Figure 89 on page 67

3. See Figure 90 on page 68

Figure 88: 3–6 Ton High Static Conversion Kit Components

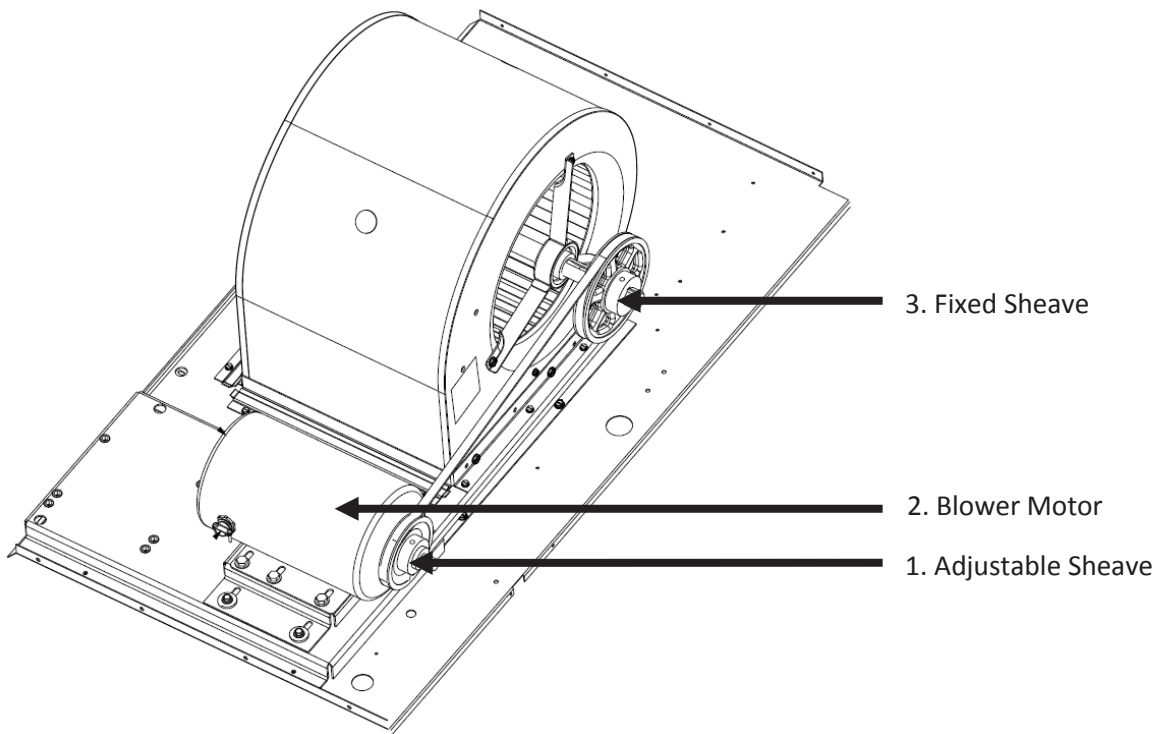


Figure 89: 7.5–12.5 Ton High Static Conversion Kit Components

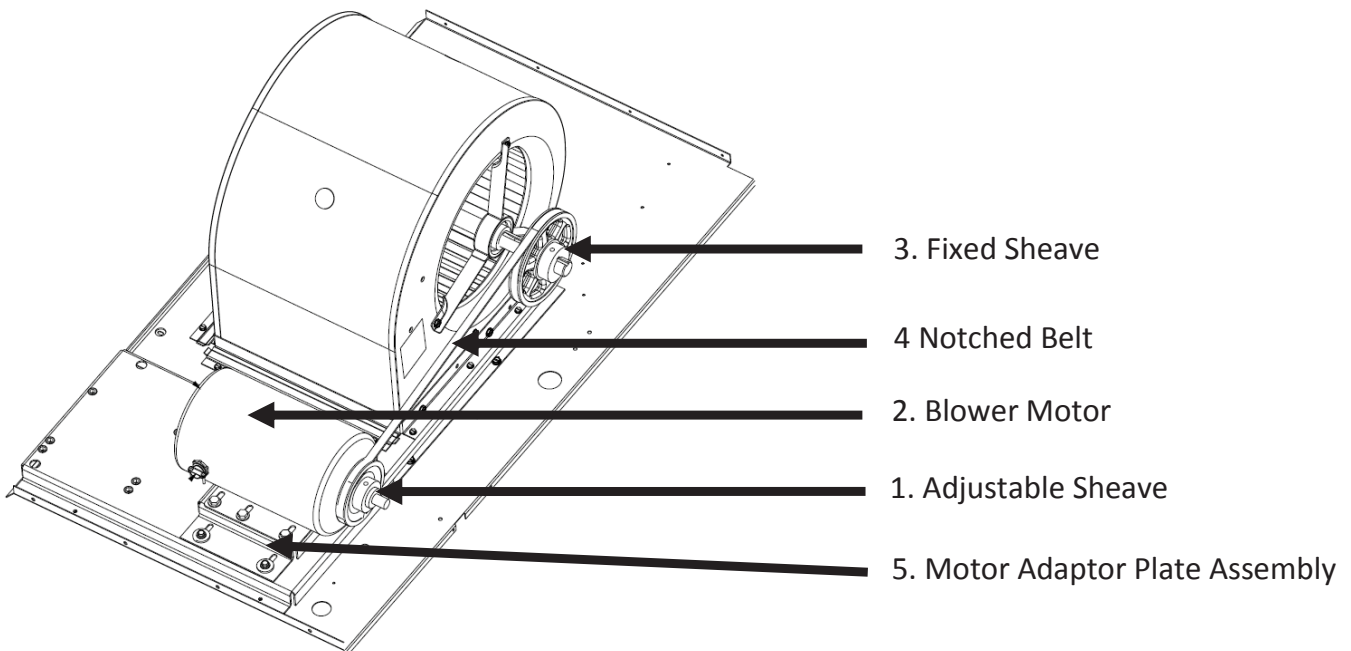
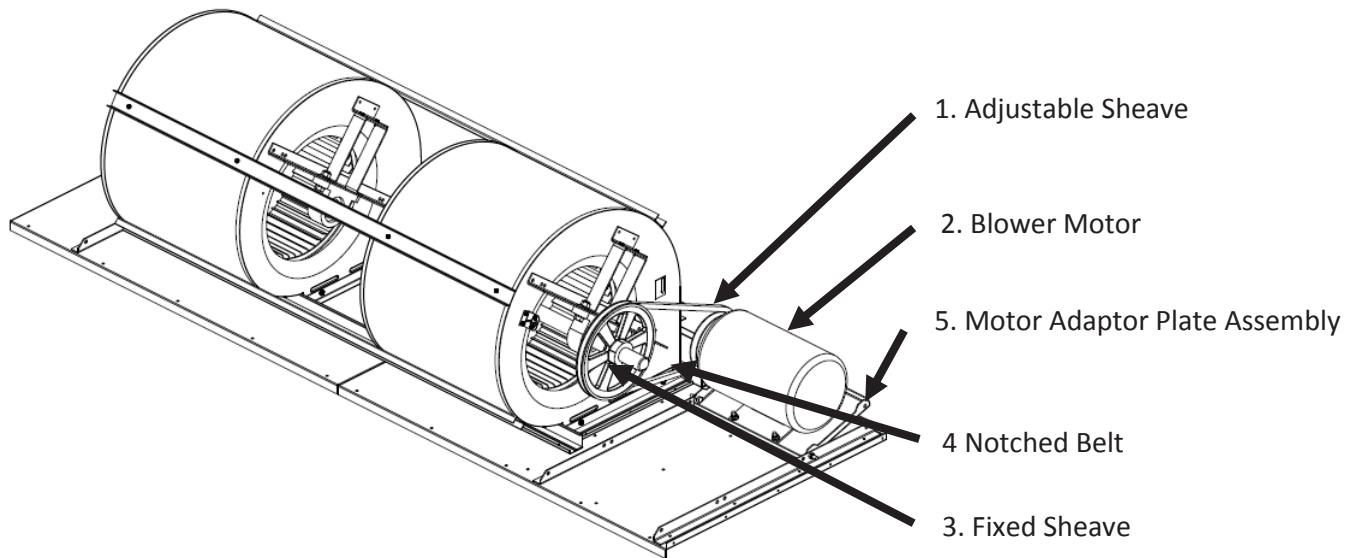


Figure 90: 15–20 Ton High Static Conversion Kit Components



Factory-Installed Electrical Disconnect Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This Installation and Operation manual covers Factory-Installed Electrical Disconnects for Daikin Commercial Package Units.

Important Information

⚠ WARNING

High Voltage

To avoid the risk of electrical shock, wiring to the unit must be polarized and grounded.

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

⚠ WARNING

High Voltage

To avoid personal injury or death due to electrical shock, disconnect electrical power Before servicing or changing any electrical wiring.

⚠ CAUTION

All field wiring must be per the National Electric Code. Use Copper Conductors only.

Installation Instructions

1. Remove disconnect panel from unit making sure to keep the panel mounting screws.
2. Remove “label” that is covering the Disconnect Shaft opening.
3. Route field wiring through the wire inlet and connect to the top lugs of the disconnect switch (Figure 91).

NOTE: Disconnect switches are functional in any position. Some might be mounted “upside down”. Field wiring should connect in the top as shown.

4. Attach Handle Assembly to Disconnect Panel with handle oriented as shown in Figure 92. Make sure the handle is in the “OFF” position.
5. Insert “shaft” into the opening on the DISCONNECT SWITCH (Figure 93). Make sure switch is in the “OFF” position (rotated fully counter-clockwise). The “pin” at the handle end of the shaft will be in the horizontal position.

NOTE: Some shafts have a “chamfer” along one edge. This chamfer should be oriented to the “bottom left” when the switch is in the “OFF” position.

6. Align shaft with the opening in the Handle Assembly and slide Panel/Handle Assembly into place.
7. Secure the panel with the panel mounting screws (Figure 94).

Figure 93: Disconnect Switch

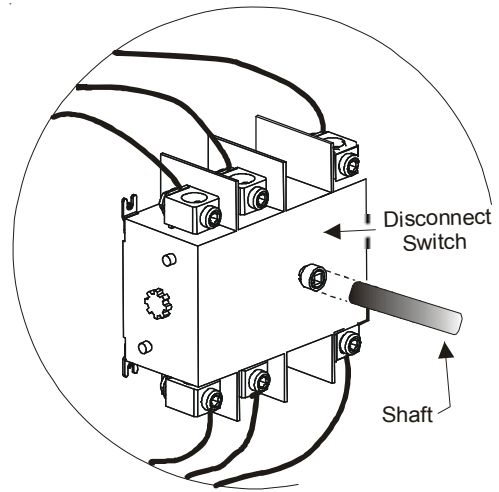


Figure 94: Disconnect Panel

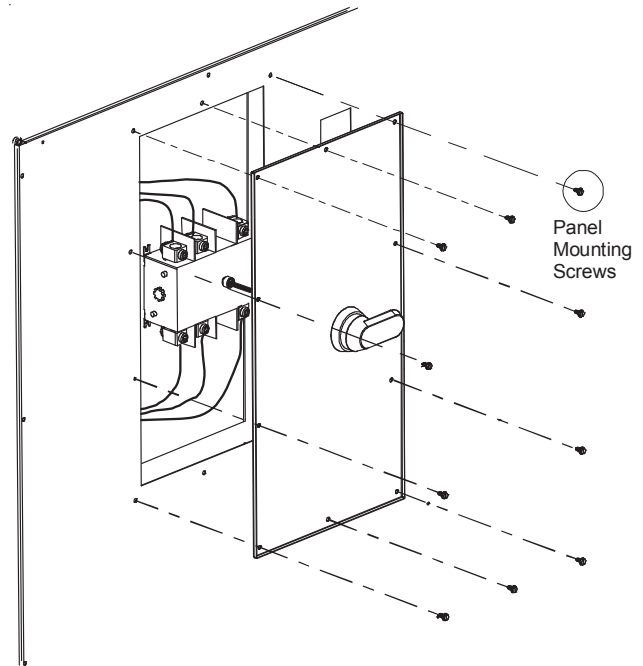
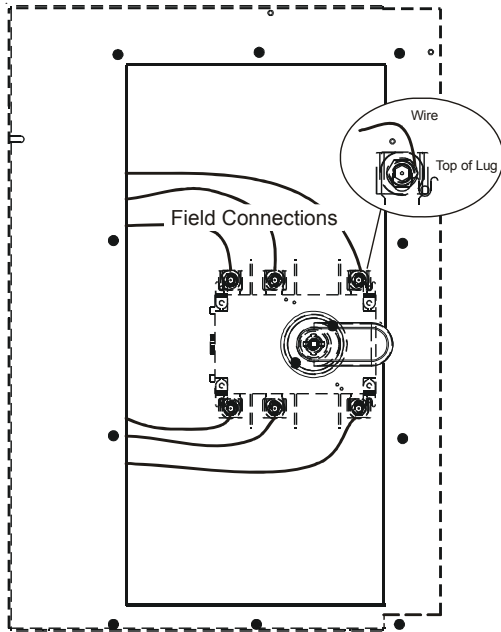


Figure 91: Field Wiring Connections



NOTE: For illustration purposes ONLY.
Unit may not be exactly as shown.

Figure 92: Disconnect Handle Position

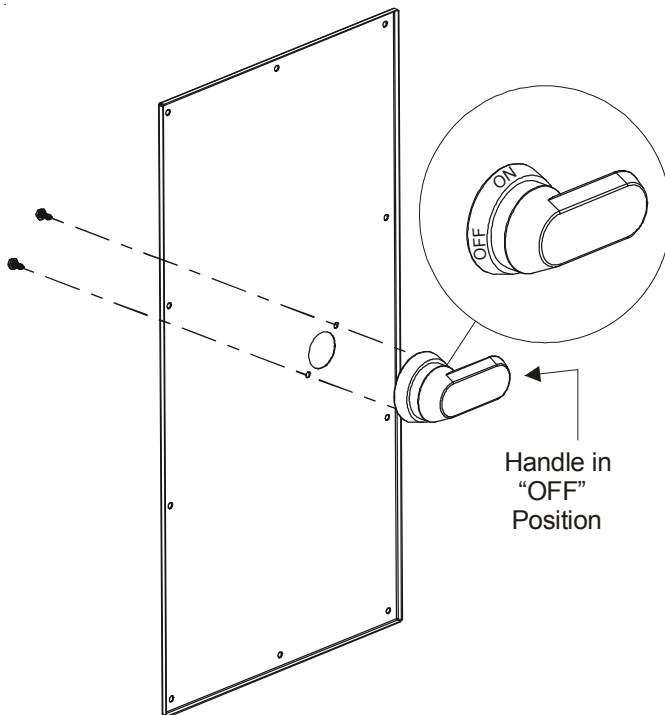
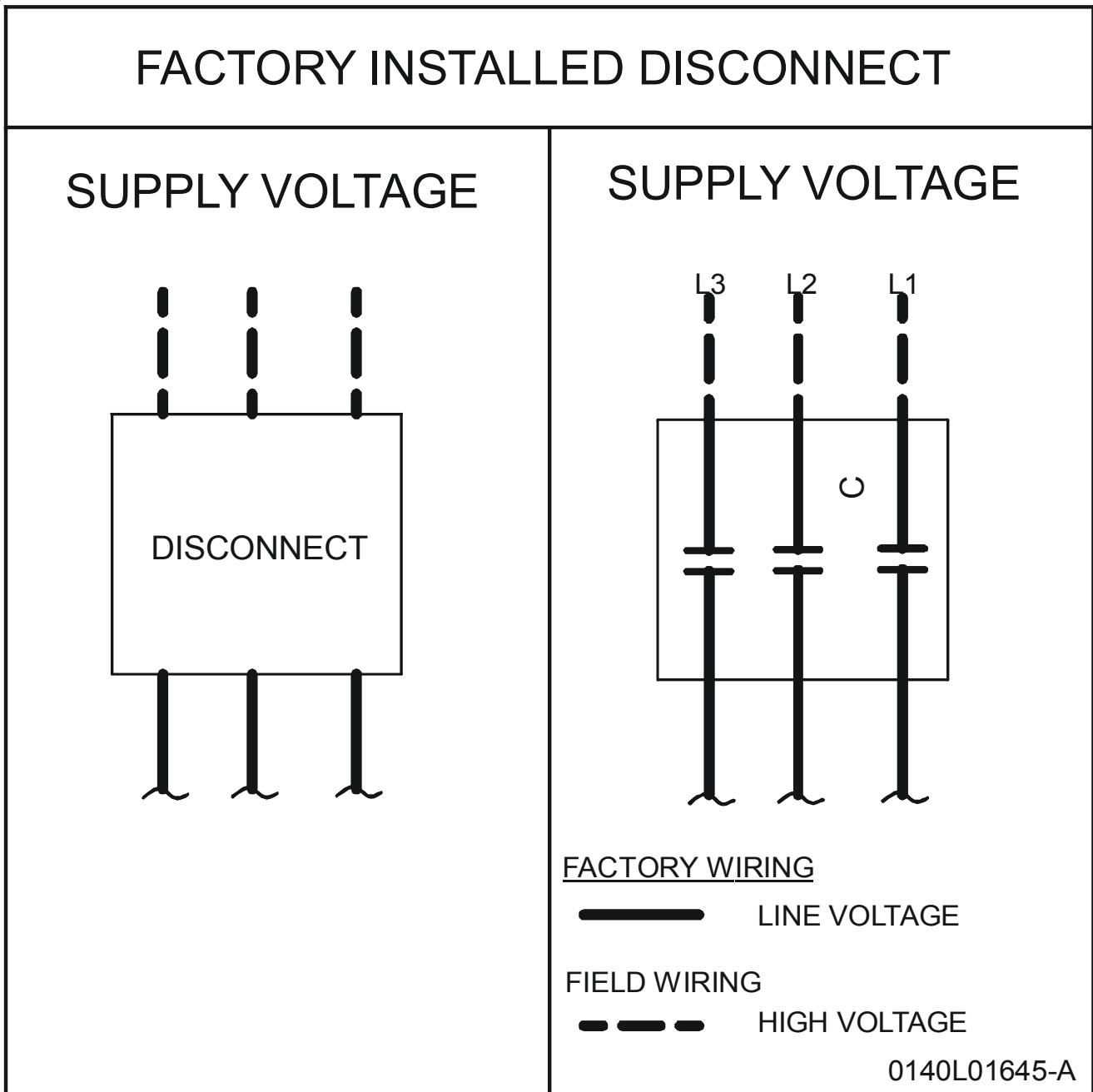


Figure 95: Wiring Diagram





WARNING

HIGH VOLTAGE!
 DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

GFCI Outlet Powered and Non-Powered Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

- A GFCI receptacle is different from conventional receptacles. In the event of a ground fault, a GFCI will trip and quickly stop the flow of electricity to prevent serious injury.
- A GFCI receptacle does NOT protect against circuit overloads, short circuits, or shocks. For example, you can still be shocked if you touch bare wires while standing on a non-conducting surface such as a wood floor.
- Your unit has been built with either a powered or non-powered 115V / 15A GFCI outlet for your convenience. This is to only be used while servicing the unit.
- Use this GFCI with copper or copper-clad wire. Do not use it with aluminum wire.
- Do not install this GFCI receptacle on a circuit that powers life support equipment because if the GFCI trips it will shut down the equipment.
- The GFCI receptacle must be kept dry by a weather proof cover and box at all times.
- Test the outlet before use to make sure it has not incurred any damage during shipping. Perform the [See Operation Check on page 74](#).

Important Information

⚠ WARNING

High Voltage

To avoid the risk of electrical shock, wiring to the unit must be polarized and grounded.

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

⚠ WARNING

High Voltage

To avoid personal injury or death due to Electrical shock, disconnect electrical power Before servicing or changing any electrical wiring.

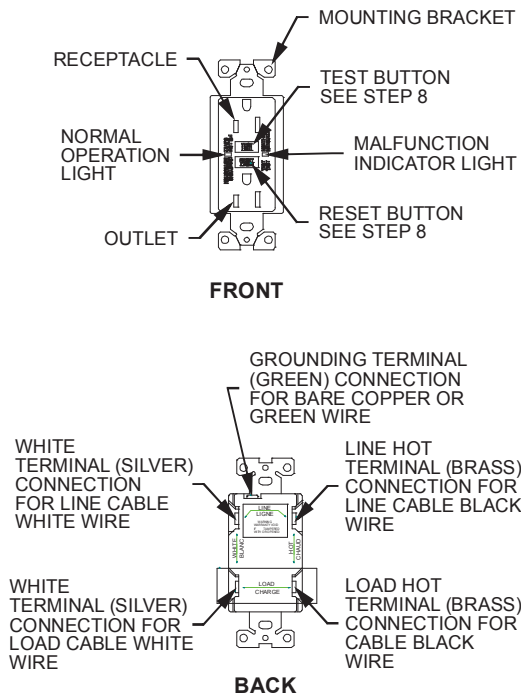
⚠ CAUTION

All field wiring must be per the National Electric Code. Use Copper Conductors only.

Your unit will have either a powered or non-powered GFCI outlet. If your unit has a factory-installed powered convenience outlet, the outlet is ready for use once the unit is installed and operating. See [Figure 97](#) for component locations of the powered outlet.

If the power for either needs to be altered from 230V to 208V, please review and follow the instructions listed on the outlet wiring diagram next to the unit diagram. Ensure unit power is OFF before making any wiring changes. See [Figure 98](#) for your convenience.

Figure 96: GFCI Features



SCREW (TERMINAL) COLORS:
 GREEN = GROUNDING TERMINAL
 SILVER = WHITE TERMINALS
 BRASS = HOT TERMINALS

Figure 97: Component Locations

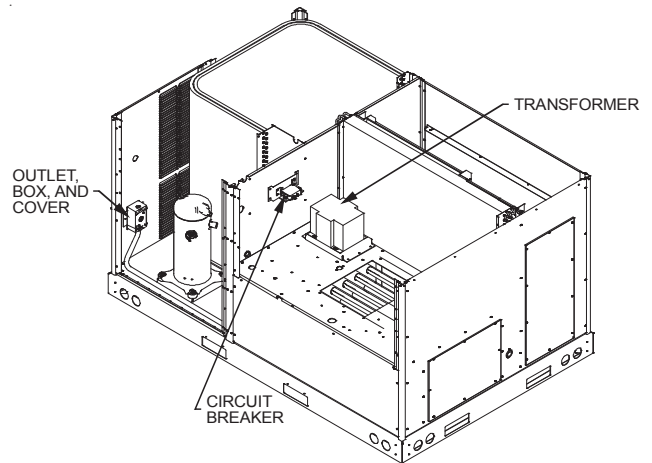
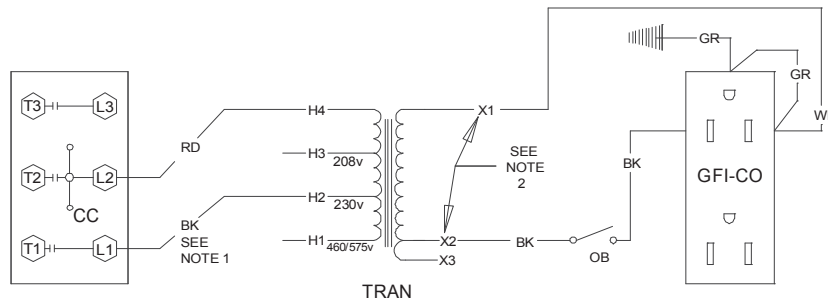


Figure 98: Unit Mounted Wiring Diagram



NOTES:

1. FOR 208V OPERATION MOVE BLACK WIRE FROM H2 TO H3 ON TRANSFORMER(S). 460V AND 575V UNITS WILL LEAVE FACTORY WITH BK WIRE CONNECTED TO H1.
2. FOR 575V MODELS, BK WILL GO TO X1 ON TRANSFORMER AND WH WILL GO TO X3.

LEGEND:

- CC - COMPRESSOR CONTACTOR
- TRAN - OUTLET TRANSFORMER
- OB - OUTLET BREAKER
- GFI-CO - GROUND FAULT INTERRUPTED - CONVENIENCE OUTLET

NOTE: There is a 15A breaker mounted to the indoor section of the unit. If outlet is not powered, check the breaker to make sure it is in the ON position. If the breaker has been tripped, check for shorts in the wiring.

0140L00698-A

Installation Instructions

Non-Powered GFCI Outlet Line

1. Turn power OFF to unit and power source used to power the outlet.
2. Locate the outlet on your unit. It will be on the condenser end, on the same panel where the electrical entrances for the unit are located.
3. Remove cover, gasket, and outlet.
4. Bring power into the outlet box as shown. Ensure the wiring is suitable for outdoor conditions. Connect the white wire to the WHITE terminal (Silver).
5. Connect the black wire to the HOT terminal (Brass).
6. Connect a 6-inch bare copper (or GREEN) 12 or 14 AWG wire to the grounding terminal on the GFCI, and a similar wire to the grounding terminal on the box. Connect the ends of these wires to the LINE cable's bare copper (or GREEN) wire using a wire connector.
7. Fold the wires into the box, keeping the grounding wire away from the WHITE and HOT terminals. Screw the receptacle to the box.
8. Replace gasket and cover.

Figure 99: Outlet Location

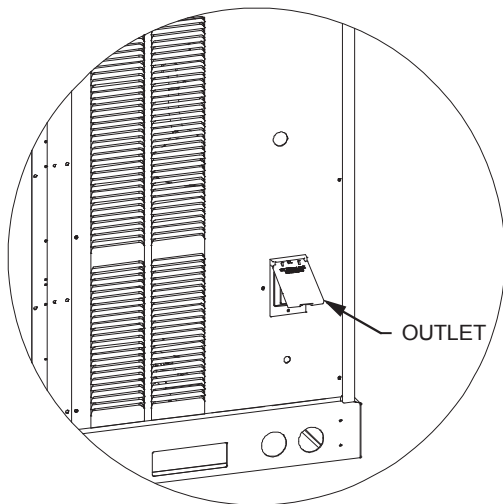
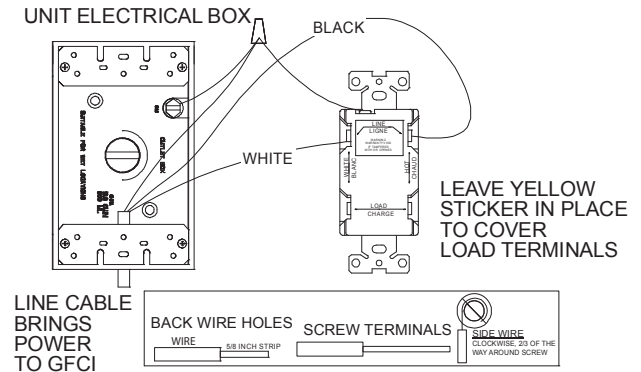


Figure 100: Receptacle Wiring



Operation Check

1. Turn power ON. Press the RESET button fully. Plug a lamp or radio into the GFCI (and leave it plugged-in) to verify that the power is ON.
2. Next, press the TEST button to trip the device. The radio or lamp should shut OFF and the RESET button will pop-out. To restore power, press the RESET button.
3. If the malfunction indicator light (end-of-life indicator LED) (red) lights, the GFCI has stopped functioning and needs to be replaced.

If the outlet does not work as described, turn power OFF and check the wire connections against the diagram shown above. Ensure that there are not loose wires or loose connections.

If the RESET button does not work, check the LINE and LOAD connections. They could be reversed. If there are no wiring mistakes, the receptacle could be damaged and will need to be replaced. If the connections are rewired to the GFCI, please perform the Operation Check again.

NOTE: There is a 15A breaker mounted to the indoor section of the unit. If outlet is not powered, check the breaker to make sure it is in the ON position. If the breaker has been tripped, check for shorts in the wiring.

4. Check the TEST and RESET buttons monthly to assure proper operation.

Smoke Detector Kits

For Models DC 036–072

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This installation and operating section covers factory-installed smoke detectors for Daikin Commercial package models. The detectors may be for supply and return air, supply air only or return air only. Refer to the Commercial Packaged Unit model nomenclature in the product installation and instruction manual to determine the detector setup. Technical specifications for the smoke detector sensor and control are listed in the System Sensor Installation and Maintenance Instructions included in the literature pack for each model.

Important Information

⚠ WARNING
High Voltage
 To avoid the risk of electrical shock, wiring to the unit must be polarized and grounded.

⚠ DANGER
High Voltage
 Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

⚠ WARNING
High Voltage
 To avoid personal injury or death due to Electrical shock, disconnect electrical power Before servicing or changing any electrical wiring.

⚠ CAUTION
 All field wiring must be per the National Electric Code. Use Copper Conductors only.

Important! Read the installation and maintenance instructions provided by system sensor before completing installation in the Daikin HVAC unit.

⚠ WARNING
Limitations of Duct Smoke Detectors!
 The National Fire Protection Association has established that duct detectors must not be used as a substitute for open area detector protection as a means of providing life safety. Nor are they a substitute for early warning in a building's regular fire detection system. The smoke detector installed in this unit is to be used in conjunction with the safety system(s) required by state and local building and fire codes. Refer to NFPA72 and 90A for additional information.

Drywall Dust

If any unitary packaged air conditioning units are run during the drywall installation phase of any building under construction to accelerate the drying of joint compound, the subsequent sanding of those drywall joints and resulting dust may compromise the sensor heads in duct smoke detectors.

The 2D51 Sensor Head in the InnovairFlex™ Duct Smoke Detector models D4120, D4120W and D4S may exhibit a “maintenance” condition that will require cleaning of the sensing chambers on the sensor head or replacement of the sensor head. The “maintenance” condition is indicated at the fire alarm panel if present or on the sensor or power board of the duct smoke detector (the sensor LED will blink “red” every five seconds and the power board LED will blink “amber” every five seconds).

To avoid this condition, it is recommended that the sensor heads be removed during the construction phase and replaced once construction is completed and the Certificate of Occupancy is issued. The sensor head will twist out for removal and will twist in for insertion.

Initial System Inspection

The smoke detector system must be inspected for proper assembly and structural integrity prior to unit start-up. Review the system photos and diagrams in this manual to verify smoke detector control and sensor mounting locations, tubing routing and mountings, wiring connections and that there is no damage to any components. The air sampling tubing and sensor(s) must be free of obstructions. The smoke detector must be fully tested upon installation and start-up. Initial system inspection

The smoke detector system must be inspected for proper assembly and structural integrity prior to unit start-up. Review the system photos and diagrams in this manual to verify smoke detector control and sensor mounting locations, tubing routing and mountings, wiring connections and that there is no damage to any components. The air sampling tubing and sensor(s) must be free of obstructions. The smoke detector must be fully tested upon installation and start-up.

Supply Air Smoke Detector

If your unit is factory equipped with a supply air smoke detector, it is completely installed at the factory. Refer to System Sensor manual provided for testing or other details.

Return Air Smoke Detector

If your unit is factory equipped with a return air smoke detector, the supplied return air sampling tube must be installed.

1. Take off the blower door and remove the return air tube taped to the blower deck.
2. Take the sampling tube to the other side of the unit and remove the filter door (Figure 102).
3. Stick the plastic end of the sampling tube through the grommet that is located on the evaporator block off. Maneuver the tube through the grommet until you can reach the tube from the blower side of the unit (Figure 103).
4. Reach behind the smoke detectors and grab the tube. Snap the plastic end into the top sensor. Pull on the tube to make sure the plastic piece is fully snapped into the sensor (Figure 104).
5. When finished, the part of the return tube with the holes should be at an approximate 45° angle to the duct panel. See Figure 105
6. Once the return tube is installed properly, refer to System Sensor manual provided for testing and other details.
7. Inspect the wiring between the control and the sensor(s).

NOTE: The wiring is factory installed but should be verified against the wiring diagram (Figure 106).

8. A three-position dip switch is located in the smoke detector control unit.
 - a. The first switch is used to determine if there are one or two sensors connected to the power board.
 - b. The second switch selects an instantaneous or 7 minute tamper delay. This has been factory set for the 7 minute delay.
 - c. The third switch is used to turn the “Shutdown on Trouble” feature ON or OFF. This has been factory set for ON.

Maintenance

The smoke detector system must be tested upon installation. To insure proper operation, the smoke detector system must be maintained and tested on a regular basis. It is recommended that the smoke detector system be tested every time the unit’s filters are replaced. The sensor should be cleaned at least once a year. If the unit contains both supply and return air smoke detectors then both detectors require testing and cleaning. For detector check procedures, cleaning procedures, alarm test procedures and troubleshooting, refer to the System Sensor Installation and Maintenance Instructions.

If a remote control panel is not used it is highly recommended that an accessory remote test station be used for improved monitoring and testing capability. The accessory remote test station can be obtained from System Sensor®.

Detector Status

Detector status is indicated by the LED sensor and the corresponding LED on the power board. The power board has two separate LED's to indicate the status of each sensor connected to it. For more information about detector status indication refer to the System Sensor Installation and Maintenance Instructions.

Figure 101: Return Air Sampling Tube

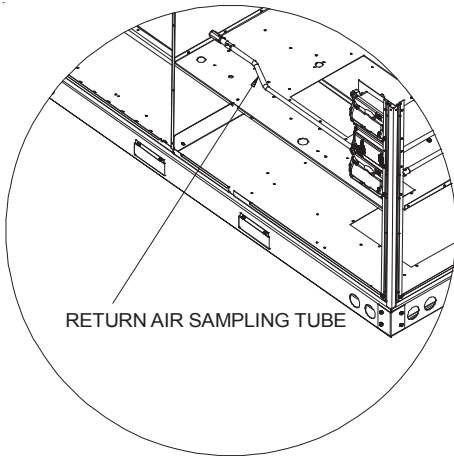


Figure 102: Filter Door Location

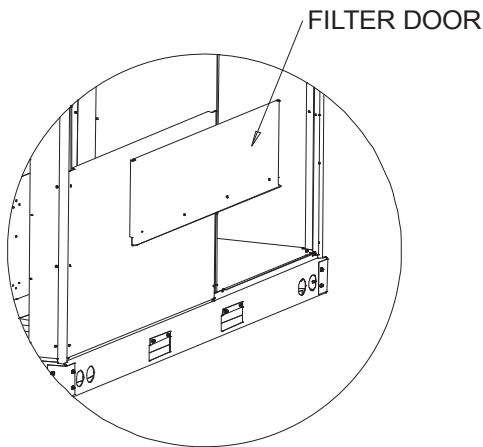


Figure 103: Grommet on the Evaporator Block Off

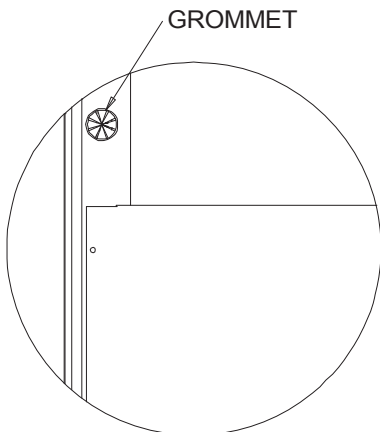


Figure 104: Sampling Components

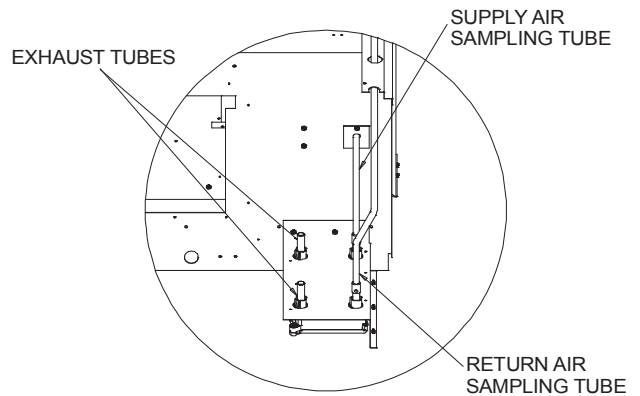


Figure 105: Checking for Correct Angle

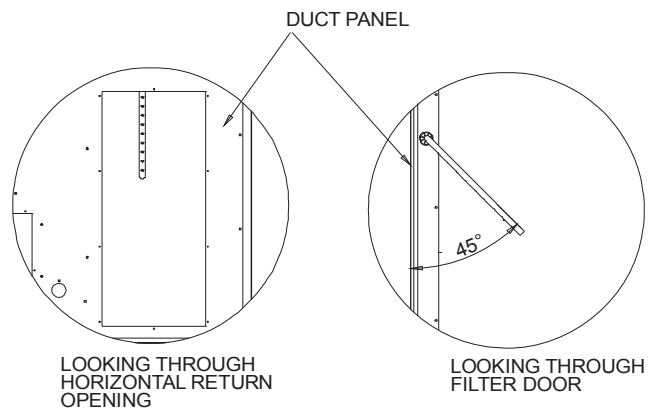
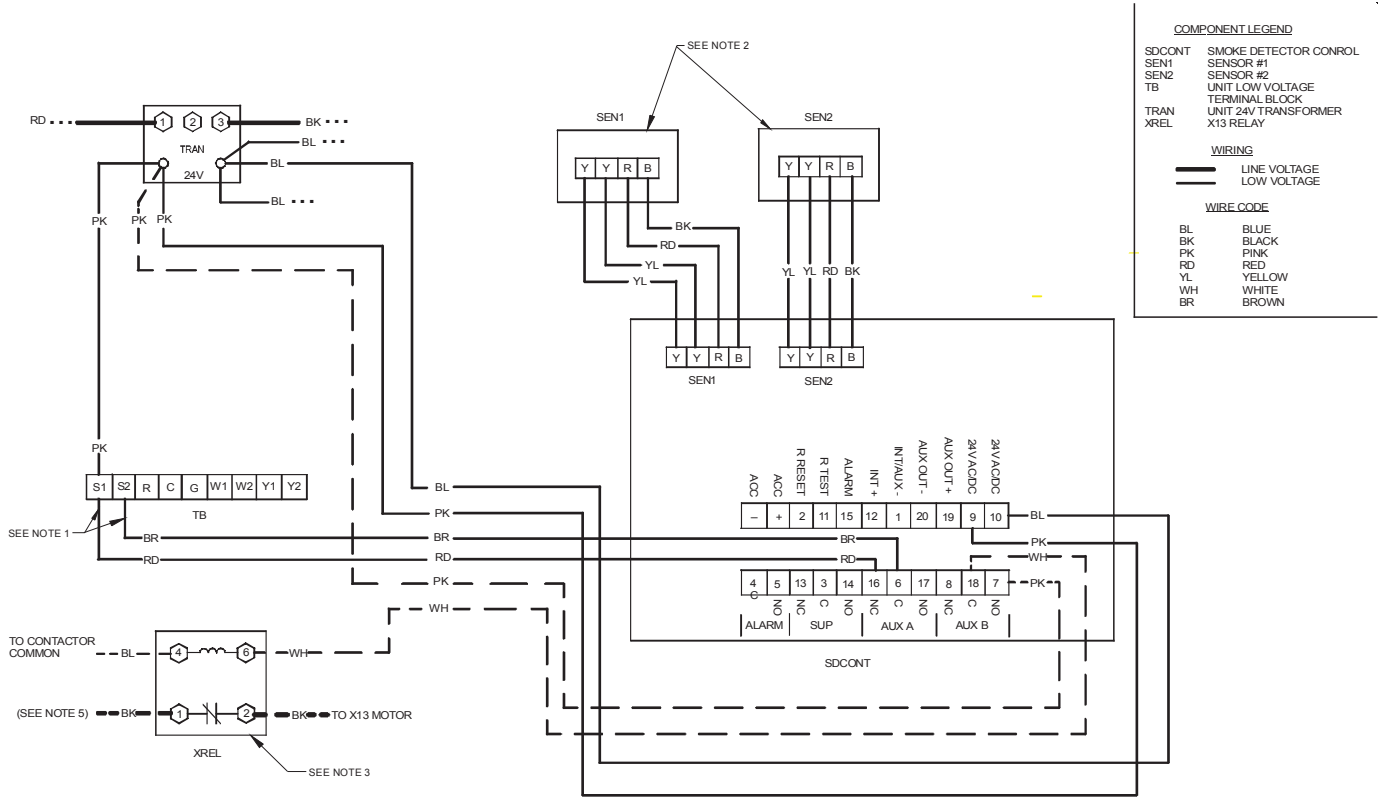


Figure 106: Sensor Wiring



COMPONENT LEGEND	
SDCONT	SMOKE DETECTOR CONTROL
SEN1	SENSOR #1
SEN2	SENSOR #2
TB	UNIT LOW VOLTAGE TERMINAL BLOCK
TRAN	UNIT 24V TRANSFORMER
XREL	X13 RELAY

WIRING	
(Thick line)	LINE VOLTAGE
(Thin line)	LOW VOLTAGE

WIRE CODE	
BL	BLUE
BK	BLACK
PK	PINK
RD	RED
YL	YELLOW
WH	WHITE
BR	BROWN

- NOTES:
1. RED JUMPER SHOWN ON UNIT DIAGRAM IS REMOVED AND REPLACED WITH WIRES SHOWN.
 2. NUMBER OF SENSORS MAY VARY DEPENDING ON WHICH KIT IS INSTALLED.
 3. XREL AND DASHED WIRES ARE ONLY USED ON MODEL NUMBERS DCG0601403D*, DCG0600903D*, DCC060XXX3D*, AND DCH060XXX3D*.
 4. WIRES ENDING IN (•••) ARE SHOWN FOR REFERENCE ONLY.
 5. WIRE CONNECTS TO L1 ON CONTACTOR FOR AC & HP; CONNECTS TO TRANSFORMER TERMINAL 3 ON GAS UNITS.

0140L00766 REV A

For Models DC 090–240

Installation Instructions

Drywall Dust

If any unitary packaged air conditioning units are run during the drywall installation phase of any building under construction to accelerate the drying of joint compound, the subsequent sanding of those drywall joints and resulting dust may compromise the sensor heads in duct smoke detectors.

The 2D51 Sensor Head in the InnovairFlex™ Duct Smoke Detector models D4120, D4120W and D4S may exhibit a “maintenance” condition that will require cleaning of the sensing chambers on the sensor head or replacement of the sensor head. The “maintenance” condition is indicated at the fire alarm panel if present or on the sensor or power board of the duct smoke detector (the sensor LED will blink “red” every five seconds and the power board LED will blink “amber” every five seconds).

To avoid this condition, it is recommended that the sensor heads be removed during the construction phase and replaced once construction is completed and the Certificate of Occupancy is issued. The sensor head will twist out for removal and will twist in for insertion.

Initial System Inspection

The smoke detector system must be inspected for proper assembly and structural integrity prior to unit start-up. Review the system diagrams in this manual to verify smoke detector control and sensor mounting locations, tubing routing and mountings, wiring connections and that there is no damage to any components. The air sampling tubing and sensor(s) must be free of obstructions. The smoke detector must be fully tested upon installation and start-up.

Sensors and Control

1. Locate the smoke detector sensors and control.
2. Inspect the wiring between the control and the sensor(s).

NOTE: The wiring is factory installed but should be verified against the wiring diagram.

3. A three position dip switch is located in the smoke detector control unit.
 - a. The first switch is used to determine if there are one or two sensors connected to the power board.
 - b. The second switch selects an instantaneous or 7 minute tamper delay. This has been factory set for the 7 minute delay.
 - c. The third switch is used to turn the “Shutdown on Trouble” feature ON or OFF. This has been factory set for ON.

System Tubing

1. Locate the smoke detector sampling tubes (Figure 107 or Figure 108).
2. Inspect the tubes to make sure one end is properly installed into a detector sensor. The plastic end of the sampling tube snaps into the housing of the detector sensor. Check that the other end of the sampling tubes is supported and secured inside the unit.
3. There are several holes in the sampling tubes. Verify the holes in the sampling tubes are oriented properly (Figure 109 or Figure 110).

Maintenance

The smoke detector system must be tested upon installation. To insure proper operation the smoke detector system must be maintained and tested on a regular basis. It is recommended that the smoke detector system be tested every time the unit's filters are replaced. The sensor should be cleaned at least once a year. If the unit contains both supply and return air smoke detectors then both detectors require testing and cleaning. For detector check procedures, cleaning procedures, alarm test procedures and troubleshooting, refer to the System Sensor Installation and Maintenance Instructions.

If a remote control panel is not used it is highly recommended that an accessory remote test station be used for improved monitoring and testing capability. The accessory remote test station can be obtained from System Sensor®.

Detector Status

Detector status is indicated by the LED sensor and the corresponding LED on the power board. The power board has two separate LED's to indicate the status of each sensor connected to it. For more information about detector status indication refer to the System Sensor Installation and Maintenance Instructions.

Figure 107: Component Locations for 7.5 – 12.5 Ton Units

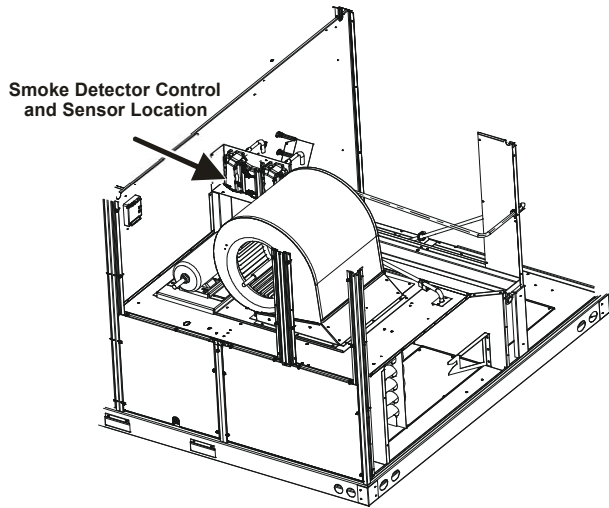


Figure 109: System Tubing for 7.5–12.5 Ton Units

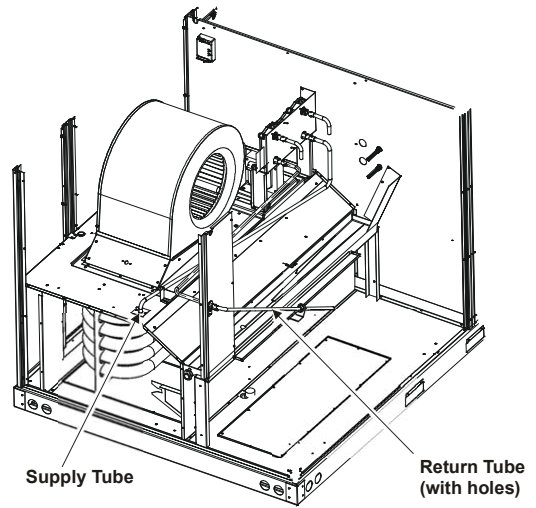


Figure 108: Component Locations for 15 and 20 Ton Units

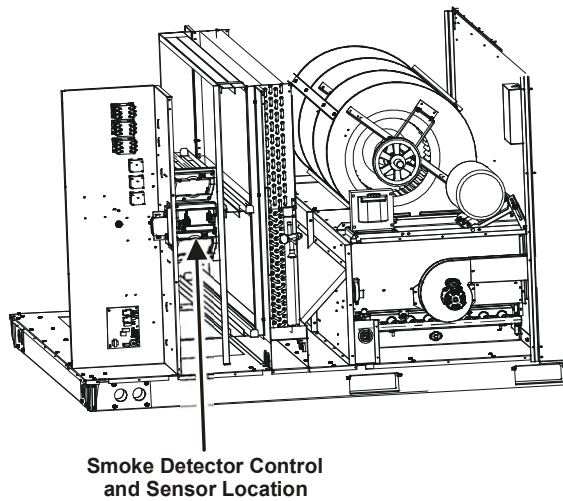


Figure 110: System Tubing for 15–20 Ton Units

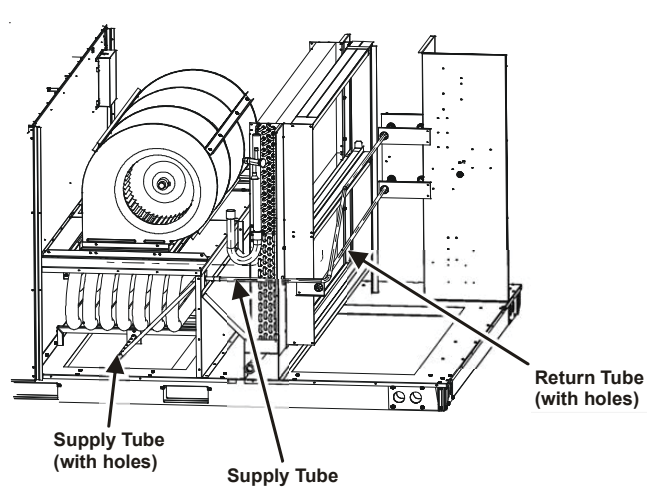
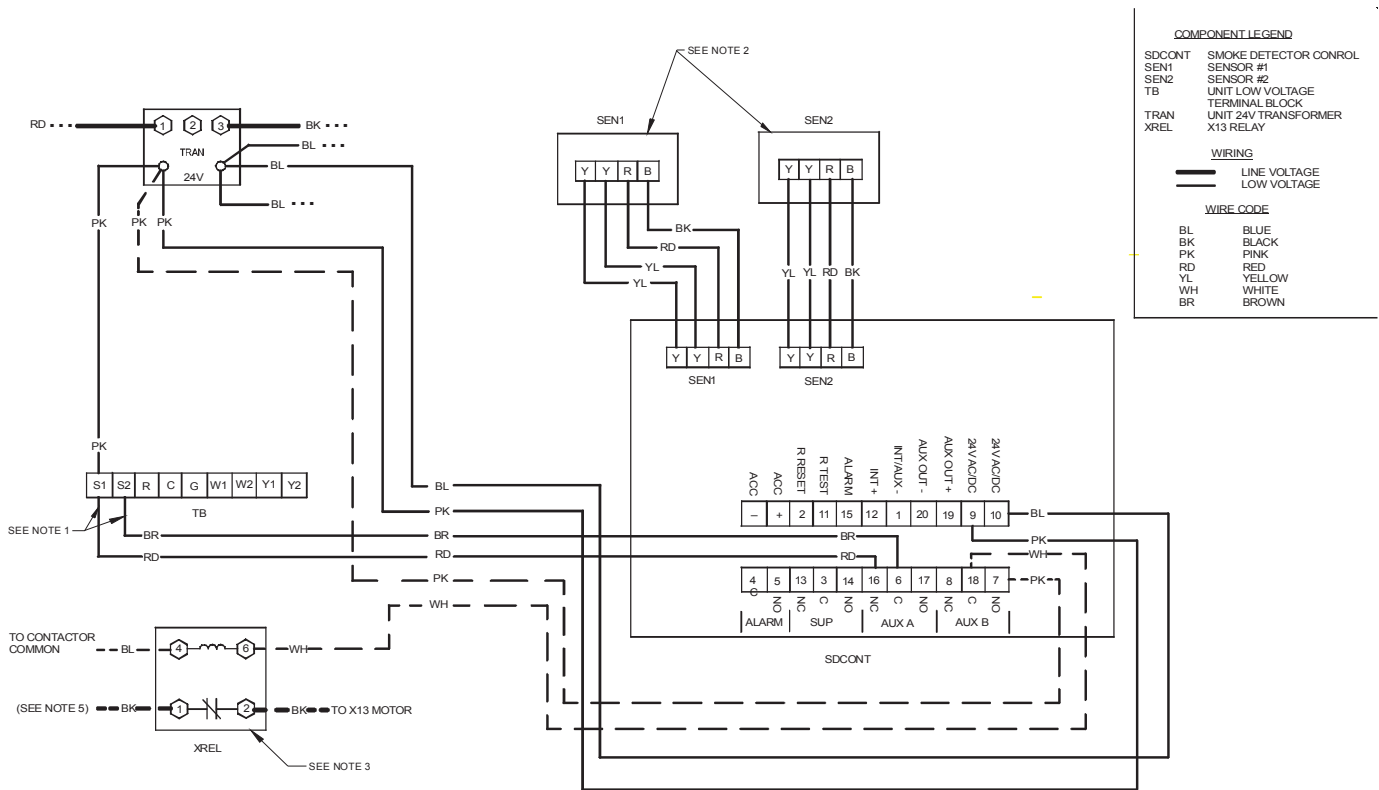


Figure 111: Sensor Wiring



NOTES:

1. RED JUMPER SHOWN ON UNIT DIAGRAM IS REMOVED AND REPLACED WITH WIRES SHOWN.
2. NUMBER OF SENSORS MAY VARY DEPENDING ON WHICH KIT IS INSTALLED.
3. XREL AND DASHED WIRES ARE ONLY USED ON MODEL NUMBERS DCG0601403D*, DCG0600903D*, DCC060XXX3D*, AND DCH060XXX3D*
4. WIRES ENDING IN (•••) ARE SHOWN FOR REFERENCE ONLY.
5. WIRE CONNECTS TO L1 ON CONTACTOR FOR AC & HP; CONNECTS TO TRANSFORMER TERMINAL 3 ON GAS UNITS.

0140L00786 REV A

LPT-00A and LPT-01A Conversion Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This Natural Gas to L.P. Gas conversion kit allows the 36F22 (B1282626), 36G22 (B1282628) and VR-8205 (B1282615) Series gas valves to be used on L.P. gas applications. This conversion kit is for use on all single stage maximum regulation valves.

Table 29: Required Tools for Conversion Kit Installation

Number	Description
2	Pipe Wrenches, properly sized to accommodate the gas piping and connectors
1	7/16" box wrench or socket wrench
1	5/16" Nut driver
1	1/4" regular (flatblade) screwdriver
1	3/32" Allen wrench
2	Manometers to read inlet & outlet pressure of the gas valve (Minimum range: 0" - 15" W.C.)
	Pipe joint compound or pipe thread tape
	Gas leak detection solution, like a soap and water solution. Always wipe the solution from the joints when testing is complete.

Important Information

Prior to performing this conversion refer to the National Fuel Gas Code (ANSI Z223.1) or in Canada, CAN/CGA-B149.2M91 to ensure that the installation is in compliance with those and all local codes.

PLEASE READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

⚠ CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

⚠ WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

⚠ DANGER

Carbon Monoxide Poisoning Hazard

Carbon monoxide (CO) can cause serious illness including permanent brain damage or death.

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Enclosures

Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplies about installing a gas detecting warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method to detect a propane gas leak.

WARNING

Daikin will not be responsible for any injury or property damage arising from improper service or service procedures. This Liquid Petroleum (LP) conversion kit **MUST** be installed by a qualified service person or agency in accordance with the manufacturer'd instructions and all applicable codes and requirements of the authority having jurisdiction.

Failure to follow these instructions explicitly may cause a fire, explosion or the production of carbon monoxide, which can cause property damage, personal injury or death. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heatin and air conditioning equipment.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact you propane supplier about installing a gas detection warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method of detecting a propane gas leak.

CAUTION

To avoid the risk of property damage, personal injury or fire, shut off the gas supply first, then disconnect the electrical supply before proceeding with conversion or service.

Installation

NOTE: For low NOx models, see [page 85](#) for NOx screens.

1. Remove the furnace control access panel.
2. Separate the gas supply union and remove associated downstream piping.
3. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
4. Remove the wires from the gas valve.
5. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
6. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
7. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.

8. **For 36G22 valve:** Using a 3/32" Allen wrench, loosen the inlet and outlet pressure tap screw one (1) turn only (DO NOT REMOVE). Attach a length of 5/16" hose to each of the pressure tap bosses. Connect the 5/16" hose to two (2) separate water manometers or other adequate gauges having a scale range of at least 0" to 15" of water column.

For all other valves: Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" taped holes of the gas valve. Connect the manometers to the barbed fittings.

9. Using a flat blade screwdriver, remove the regulator cover screw.
10. Remove plastic regulator adjustment screw located beneath the cover screw.
11. Remove the natural gas regulator spring from the regulator sleeve.
12. Insert the kit provided L.P. regulator spring into the regulator sleeve.
13. Replace the regulator adjustment screw.
14. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed. Note: the pipe joint compound must be resistant to L.P. gas.
15. Turn on the gas supply and check for leaks.
16. Turn on the electrical supply.
17. Adjust the room thermostat to allow for constant operation.
18. After the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.

19. If gas inlet pressure falls outside the range of 11" to 13" W.C., then make necessary pressure regulator adjustments, check piping size, etc., and/or consult with local utility.
20. Check manifold pressure. For propane gas, the manifold pressure must be between 9.5" and 10" W.C.
21. Turn adjustment screw out (counterclockwise) to decrease pressure, turn in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
22. Reset all other appliances so they function normally.

23. **For 36G22 valve:** Turn off gas and electrical supply to the furnace, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.
For all other valves: Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.
24. If regulator adjustment screw (removed in Step 10) is white, the gasket supplied with the kit must be installed on the regulator cover screw. The gasket is not required if the regulator adjustment screw is black. Replace the regulator cover screw on the regulator sleeve.
25. Attach the kit provided WARNING label to the gas valve where it can be readily seen. Also attach the small round L.P. label to the top of the regulator cover screw.
26. Turn on the gas and electrical supply, energize the appliance and recheck for leaks.
27. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
28. Reinstall the access panels.

Figure 112: 36G22 Valve Components

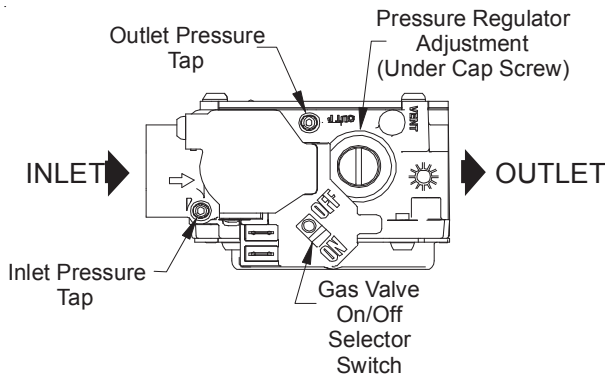


Figure 113: 36F22 Valve Components

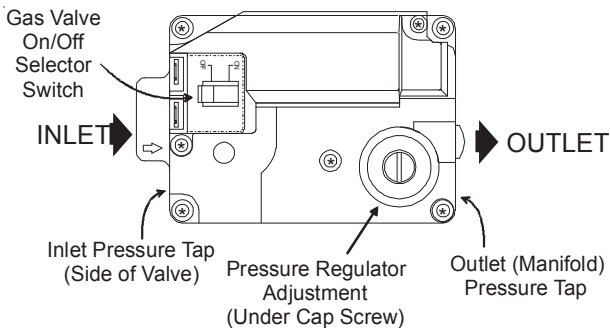


Figure 114: VR8205 Valve Components

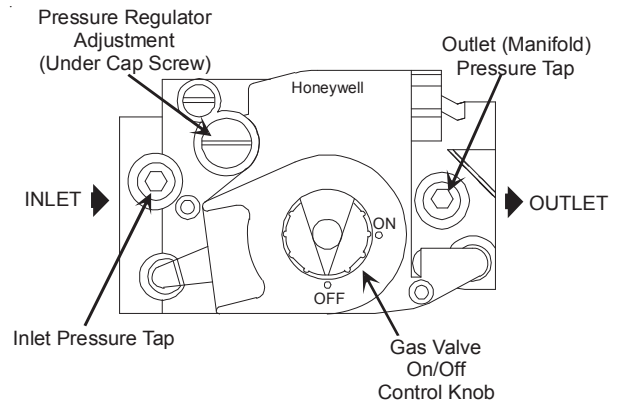
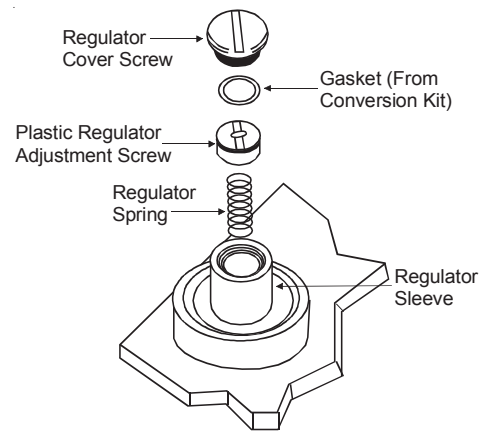


Figure 115: 36G22 Pressure Regulator Components



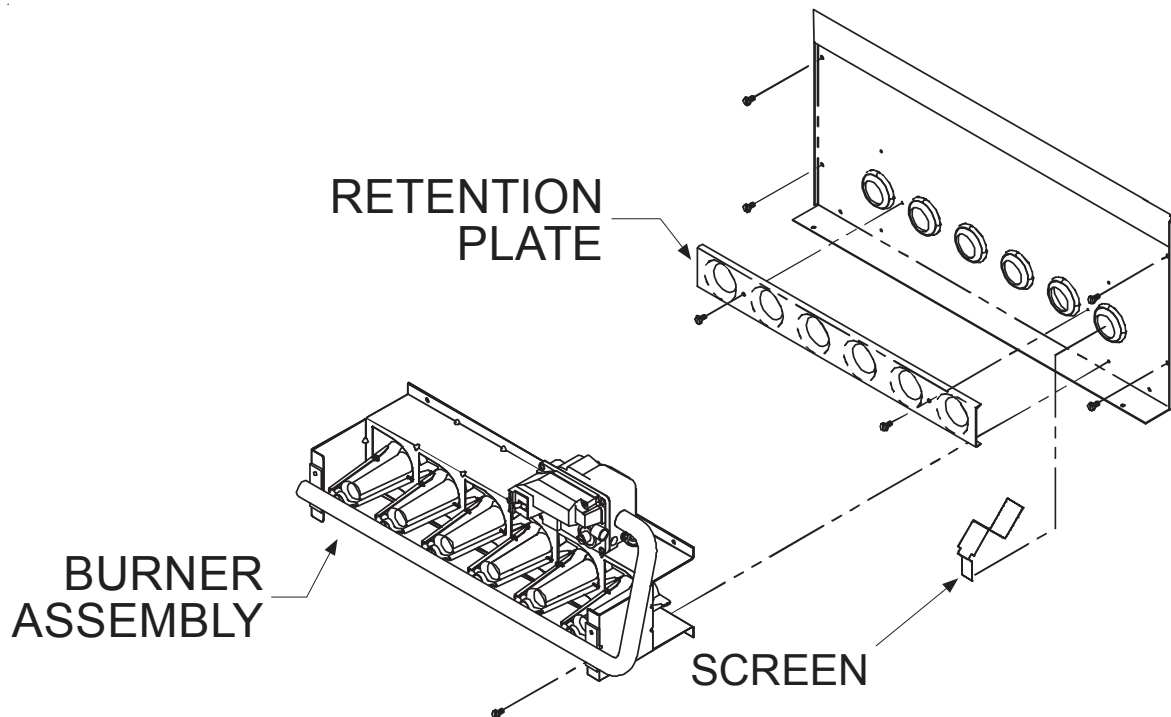
NOx SCREEN REMOVAL

NOTE: To prevent premature heat exchanger failure, follow the instructions below to remove all metal screen inserts from the entrance of heat exchanger tubes during propane conversions. Not all models will have metal screen inserts.

NON-CONDENSING FURNACES AND PACKAGE GAS-ELECTRIC

1. Remove the screws securing the burner box to the partition panel. Separate burner box from unit.
2. Remove the screw(s) securing the NOx screen retention plate and remove the plate.
3. Remove and discard NOx screens.
4. Reinstall the NOx screen retention plate and burner box.

Figure 116: Typical NOx Screen Removal



LPM-06 2-Stage Furnace Conversion Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This natural gas to L.P. (liquid petroleum) gas conversion kit allows White-Rodgers gas valve 36G54 (0151F00000P) or Honeywell VR9205Q (0151M00014 / 0151M00028) to be used on L.P. gas applications.

Use the following parts list to ensure that all parts listed below are present and in an undamaged condition. IF ANY DOUBT EXISTS ABOUT THE CONDITIONS OF ANY COMPONENT WITHIN THIS KIT, DO NOT USE THIS KIT AND CONTACT YOUR SUPPLIER FOR A NEW KIT.

Table 30: Contents of Kit List

Part Number	Description	Quantity
0163F00000P	White-Rodgers LP Conversion Kit F92-1008	1
0163M00139	Honeywell LP Conversion Kit 50033841	1
B14933151	Conversion Label	1
B4089955	Spud Orifice Assembly	1
0151K00000S	36G54 Pressure Check Kit Valve	1
IM 1223	LPM-06 Installation Instructions	1

Table 31: Required Tools for Conversion Kit Installation

Quantity	Description
2	Pipe wrenches, properly sized to accommodate the gas piping and connectors
1	7/16" box wrench or socket wrench
1	5/16" nut driver
1	3/16" flat blade screwdriver
1	1/4" flat blade screwdriver
1	3/16" allen wrench
1	Manometer to read inlet and outlet pressure of the gas valve (Minimum range: 0"-20" W.C.)
	Pipe joint compound or pipe thread tape
	Gas leak detection solution like a soap and water solution. Always wipe the solution from the joints when testing is completed.

IMPORTANT INFORMATION

With the exception of the natural gas burner orifices, all of the fasteners and other components removed to perform this conversion are to be reused. Any component found to be damaged due to this conversion must be replaced with factory authorized replacement parts before this furnace can be put into operation.

This furnace is equipped for two-stage heating operation. The gas valve manifold pressure must be set with first stage operating at 6" +/-0.3" W.C. manifold pressure and the second stage must be set at 10" +/-0.3" W.C. manifold pressure. The accuracy of these pressures must be checked as shown in steps 25 and 26 of these instructions.

The gas valve is equipped with a 3-pin polarized plug which prevents this wiring from being installed incorrectly.

NOTE: Do not use power tools for any adjustments on gas valves.

Prior to performing this conversion, refer to the National Fuel Gas Code (NFPA 54-02) or in Canada, CAN/CSA-B149.2-05 to ensure that the installation is in compliance with those and all local codes.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

⚠ DANGER

Carbon Monoxide Poisoning Hazard

Carbon monoxide (CO) can cause serious illness including permanent brain damage or death.

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Enclosures

Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

⚠ WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplier about installing a gas detection warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method of detecting a propane gas leak.

⚠ CAUTION

To avoid the risk of property damage, personal injury or fire, shut off the gas supply first, then disconnect the electrical supply before proceeding with conversion or service.

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

⚠ WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplies about installing a gas detecting warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method to detect a propane gas leak.

⚠ WARNING

Daikin will not be responsible for any injury or property damage arising from improper service or service procedures. This Liquid Petroleum (LP) conversion kit **MUST** be installed by a qualified service person or agency in accordance with the manufacturer'd instructions and all applicable codes and requirements of the authority having jurisdiction.

Failure to follow these instructions explicitly may cause a fire, explosion or the production of carbon monoxide, which can cause property damage, personal injury or death. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heatin and air conditioning equipment.

White-Rodgers 36G54 Conversion Instructions

DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

CAUTION

If NOx screens are present, remove as described in [See NOx SCREEN REMOVAL on page 91](#).

CAUTION

To prevent unsatisfactory furnace operation, the proper gas conversion kit must be used for the gas valve. Use the White-Rodgers spring kits only with White-Rodgers gas valves.

WARNING

To prevent the possibility of gas leaks, the pipe joint compound **MUST** be LP gas resistant.

WARNING

Attach the Warning label provided in the kit to the gas valve where it can readily be seen.

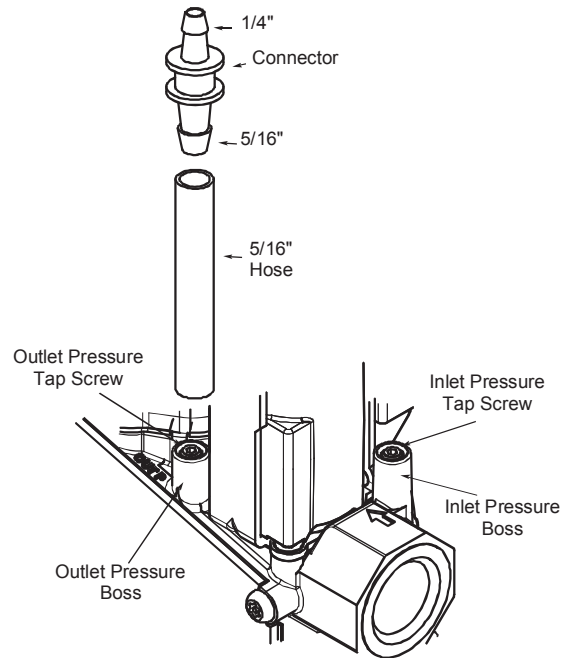
Attach the small, round LP labels to the top of the regulator screws.

NOTE: For low NOx models, see [page 91](#) for NOx screens.

1. Turn off the gas supply to the furnace.
2. Turn off the electrical power to the furnace.
3. Remove the furnace control access panel.
4. Check for the presence of NOx screen and remove per NOx instruction.
5. Separate the gas supply union and remove associated downstream piping.
6. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
7. Remove the wires from the gas valve.
8. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
9. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.

10. Install water manometer using Valve Pressure Check Kit P/N 0151K00000S included with this kit. Using the included 3/32" hex wrench, rotate outlet pressure tap screw one revolution counterclockwise. Attach the included 5/16" hose to the inlet and outlet pressure boss of the valve. Hose should overlap boss 3/8". Connect 5/16" side of included connector to the hose on the outlet boss. Connect 1/4" side of the connector to the manometer hose. The manometer must have a scale range of at least 0" to 20" of water column.

Figure 117: Manometer Connection



11. Remove both regulator cover screws.
12. Using a 1/4" flat blade screwdriver, remove both regulator adjustment screws (beneath the cover screws).
13. Remove both Natural Gas regulator springs (color-coded silver/plain) from regulator sleeves and retain with the Natural Gas orifices for future reconversion.
14. Insert the L.P. regulator springs (provided in the conversion kit and color-coded white) into the regulator sleeves.
15. Replace the High regulator adjustment screw and adjust approximately 12 turns to the bottom stop.
16. Replace the Low regulator adjustment screw and adjust approximately 8 turns.
17. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
18. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed.

19. Turn on the gas supply.
20. Using a soap and water solution, check for leaks around the gas valve/manifold connection.
21. Turn on the electrical supply.
22. Adjust the room thermostat to obtain a first stage (W1 only) burner operation.
23. Using a soap and water solution, check for leaks around the gas valve/manifold connection and the burner orifices. Repair any leaks before continuing.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.

24. After the furnace has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C. If the gas inlet pressure falls outside of this range, then make necessary L.P. service regulator(s) adjustments; check piping size, etc., and /or consult with L.P. provider.
25. With the furnace operating in its low-fire (W1) condition, the manifold pressure should be 6" W.C. \pm 0.30". If necessary, this pressure can be adjusted using the gas valve low regulator adjustment screw. Turn clockwise to increase pressure and counterclockwise to decrease manifold pressure.
26. Readjust the room thermostat to obtain a second stage call for heat (W2). The manifold pressure for the W2 condition should be 10" W.C. \pm 0.30" W.C. Adjustments to this pressure can be made using the high regulator adjustment screw.
27. Using the room thermostat to cycle the unit, observe a minimum of three (3) smooth ignition cycles.
28. Turn off gas and electrical supply to the furnace, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.
29. Replace both regulator cover screws on the regulator sleeve.

NOTE: IMPORTANT, Apply the conversion label (B14933-151) provided with the conversion kit. This label must be attached adjacent to the rating plate.

30. Reinstall the access panels.
31. Turn on the gas and electrical supply.
32. Reset all other appliances so they function normally.

Figure 118: White-Rodgers 36G54

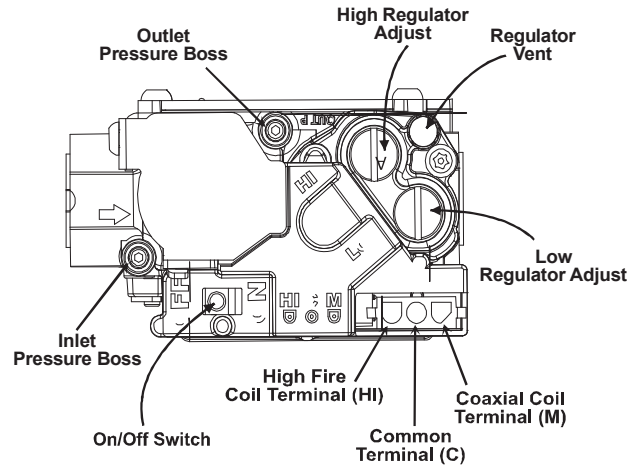
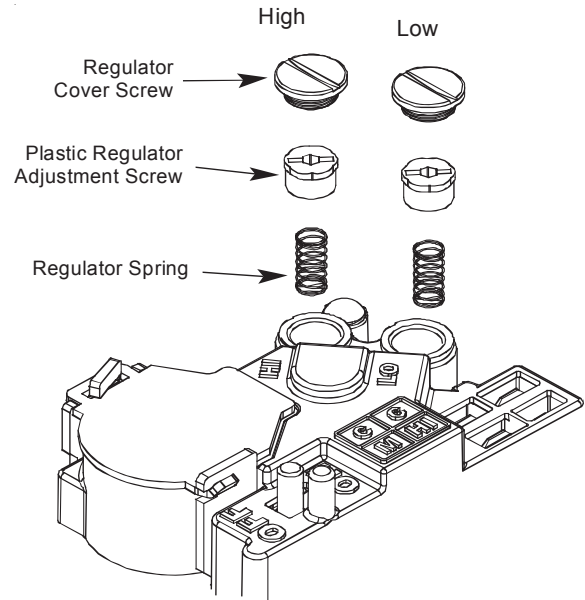


Figure 119: White-Rodgers 36G54 Springs and Regulator Screws



Honeywell VR9205Q Conversion Instructions

⚠ DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

⚠ WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

⚠ CAUTION

If NOx screens are present, remove as described in XXX, pageXX.

⚠ CAUTION

To prevent unsatisfactory furnace operation, the proper gas conversion kit must be used for the gas valve. Use the White-Rodges spring kits only with White-Rodgers gas valves.

⚠ WARNING

To prevent the possibility of gas leaks, the pipe joint compound **MUST** be LP gas resistant.

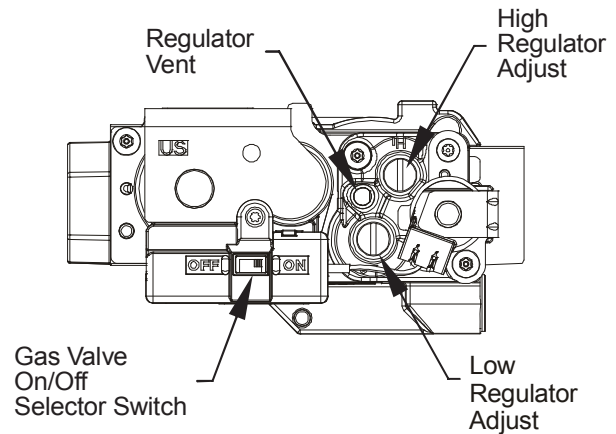
⚠ WARNING

Attach the Attention label provided in the kit to the gas valve where it can readily be seen.

NOTE: For low NOx models, see [page 91](#) for NOx Screen section.

1. Turn off the gas supply to the furnace.
2. Turn off the electrical power to the furnace.
3. Remove the furnace control access panel.
4. Check for the presence of NOx screen and remove per NOx instruction.
5. Separate the gas supply union and remove associated downstream piping.
6. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
7. Remove the wires from the gas valve.
8. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
9. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.

Figure 120: Honeywell VR9205Q Gas Valve



10. Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers, into the 1/8" NPT holes of the gas valve. Connect the manometers to the barbed fittings.
11. Remove both regulator cover screws and retain with the Natural Gas orifices for future reconversion.
12. Using a T-25 Torx driver (L Torx tool included in kit) or 3/16" flat head screwdriver, remove both regulator adjustment screws.
13. Remove both silver colored Natural Gas regulator springs from the regulator sleeves and retain with the Natural Gas orifices for future reconversion.
14. Insert the L.P. regulator springs (provided in the conversion kit and color-coded red) into the regulator sleeves.
15. Install the high regulator adjustment screw provided with the kit by threading all the way down until lightly seated and then back off 1-1/2 turns.
16. Install the low regulator adjustment screw provided with the kit by threading all the way down until lightly seated and then back off 1-1/2 turns.
17. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
18. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed.

NOTE: The pipe joint compound must be resistant to L.P. gas.

19. Turn on the gas supply.
20. Using a soap and water solution, check for leaks around the gas valve/manifold connection.
21. Turn on the electrical supply.
22. Adjust the room thermostat to obtain a first stage (W1 only) burner operation.
23. Using a soap and water solution, check for leaks around the gas valve/manifold connection and the burner orifices. Repair any leaks before continuing.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.

After the furnace has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C. If the gas inlet pressure falls outside of this range, then make necessary L.P. service regulator(s) adjustments; check piping size, etc., and /or consult with local L.P. provider.

24. With the furnace operating in its low-fire (W1) condition, the manifold pressure should be 6" W.C.± 0.30". If necessary, this pressure can be adjusted using the low regulator adjustment screw. Turn clockwise to increase pressure and counterclockwise to decrease manifold pressure.
25. Readjust the room thermostat to obtain a second stage call for heat (W2). The manifold pressure for the W2 condition should be 10" ± 0.30" W.C. Adjustments to this pressure can be made using the high regulator adjustment screw.
26. Using the room thermostat to cycle the unit, observe a minimum of three (3) smooth ignition cycles.
27. Turn off gas and electrical supply to the furnace. Remove the barbed manometer fittings from the 1/8" NPT holes in the gas valve. Seal inlet and outlet plugs removed earlier with pipe joint compound or pipe thread tape and reinstall.
28. Install the regulator cover screws provided with the conversion kit.

NOTE: IMPORTANT: Apply the conversion label (B14933151) provided with the conversion kit. This label must be attached adjacent to the rating plate.

29. Reinstall the access panels.
30. Turn on the gas and electrical supply.
31. Reset all other appliances so they function normally.

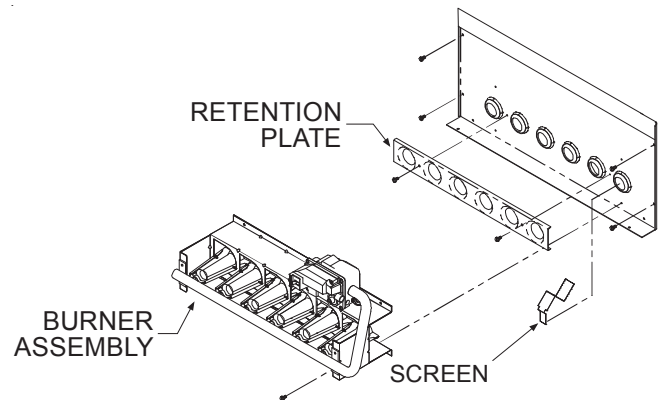
NOx SCREEN REMOVAL

NOTE: To prevent premature heat exchanger failure, follow the instructions below to remove all metal screen inserts from the entrance of heat exchanger tubes during propane conversions. Not all models will have metal screen inserts.

NON-CONDENSING FURNACES AND PACKAGE GAS-ELECTRIC

1. Remove the screws securing the burner box to the partition panel. Separate burner box from unit.
2. Remove the screw(s) securing the NOx screen retention plate and remove the plate.
3. Remove and discard NOx screens.
4. Reinstall the NOx screen retention plate and burner box.

Figure 121: Typical NOx Screen Removal



LPKT-36150 Conversion Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This Natural Gas to LP Gas conversion kit allows the 36H54 (0151L00000) and 36G22 (B1282628) Series gas valves to be used on CPG light commercial LP gas applications.

Table 32: Required Tools for Kit Installation

Qty	Description
2	Pipe Wrenches, properly sized to accommodate the gas piping and connectors
1	7/16" box wrench or socket wrench
1	5/16" Nut driver
1	1/4" regular (flatblade) screwdriver
1	3/32" Allen wrench
2	Manometers to read inlet & outlet pressure of the gas valve (Minimum range: 0" - 15" W.C.)
	Pipe joint compound or pipe thread tape
	Gas leak detection solution, like a soap and water solution. Always wipe the solution from the joints when testing is complete.

Using the parts list in [Table 33](#), ensure that all parts included in this list are present and in an undamaged condition.

Table 33: Kit Contents

Qty	Part Number	Description
1	B14933-63	Conversion Label
4	0140M00096	Limit Conversion Label
1	0163F00000P	Regulator Spring Kit
1	B1880007	LP Spring Kit
1	IM 1223	Installation Instructions
1 Pack (6 per pack)	0163L00008	Burner Orifice – #52 (LPKT 36150)
1	0130L00001	Limit

Important Information

Prior to performing this conversion refer to the National Fuel Gas Code (ANSI Z223.1) or in Canada, CAN/CGA-B149.2M91 to ensure that the installation is in compliance with those and all local codes.

PLEASE READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplies about installing a gas detecting warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method to detect a propane gas leak.

⚠ DANGER

Carbon Monoxide Poisoning Hazard

Carbon monoxide (CO) can cause serious illness including permanent brain damage or death.

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Enclosures

Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

⚠ WARNING

Daikin will not be responsible for any injury or property damage arising from improper service or service procedures. This Liquid Petroleum (LP) conversion kit MUST be installed by a qualified service person or agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction.

Failure to follow these instructions explicitly may cause a fire, explosion or the production of carbon monoxide, which can cause property damage, personal injury or death. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.

⚠ WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplier about installing a gas detection warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method of detecting a propane gas leak.

⚠ CAUTION

To avoid the risk of property damage, personal injury or fire, shut off the gas supply first, then disconnect the electrical supply before proceeding with conversion or service.

⚠ WARNING

If the furnace is installed in a basement, an excavated area or a confined space, it is strongly recommended to contact a propane supplier to install a gas detecting warning device in case of a gas leak.

- Since propane gas is heavier than air, any leaking gas can settle in low areas or confined spaces
- Propane odorant may fade, making the gas undetectable except with a warning device

Installation

NOTE: For low NOx models, see [page 95](#) for NOx screens.

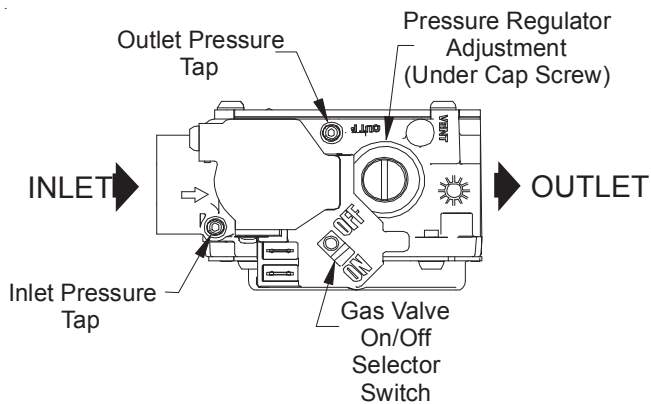
1. Turn off electrical power and gas supply.
2. Remove the furnace control access panel.
3. Separate the gas supply union and remove associated downstream piping.
4. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
5. Remove the wires from the gas valve.
6. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
7. Using the 7/16" wrench, remove all existing natural gas orifices and replace with the appropriate LP gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
8. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
9. **Single Stage Models (36G22 valve)** Using a 3/32" Allen wrench, loosen the inlet and outlet pressure tap screw one (1) turn only (DO NOT REMOVE). Attach a length of 5/16" hose to each of the pressure tap bosses. Connect the 5/16" hose to two (2) separate water manometers or other adequate gauges having a scale range of at least 0" to 15" of water column.
- Two-stage Models (36H54 valve)** Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" taped holes of the gas valve. Connect the manometers to the barbed fittings.
10. Using a flat blade screwdriver, remove the regulator cover screw(s).
11. Remove plastic regulator adjustment screw(s) located beneath the cover screw(s).
12. Remove the natural gas regulator spring(s) from the regulator sleeve(s).

13. Insert the supplied LP regulator spring(s) into the regulator sleeve(s).
14. Replace the regulator adjustment screw(s).
15. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed. Note: the pipe joint compound must be resistant to LP gas.
16. Turn on the gas supply and check for leaks.
17. Turn on the electrical supply.
18. Adjust the room thermostat to allow for constant operation. For all models using 36H54 (two-stage valve), place jumper wire between W1 and W2 to ensure unit is on high fire.
19. After the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.

20. If gas inlet pressure falls outside the range of 11" to 13" W.C., then make necessary pressure regulator adjustments, check piping size, etc., and/or consult with local utility.
21. Check manifold pressure. For propane gas, the manifold pressure must be between 9.5" and 10" W.C.
22. Turn adjustment screw (for two-stage, the high fire adjustment screw) out (counterclockwise) to decrease pressure and in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
23. Reset all other appliances so they function normally.

Figure 122: White-Rodgers 36G22 Gas Valve



24. **Single Stage Models (36G22 valve)** Turn off gas and electrical supply to the furnace, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.

If regulator adjustment screw (removed in Step 10) is white, the gasket supplied with the kit must be installed on the regulator cover screw. The gasket is not required if the regulator adjustment screw is black.

Two-stage Models (36H54 valve)

Remove jumper wire between W1 and W2. Also remove thermostat wire to W2 to ensure unit is on low fire. Repeat steps 9-16 and 21-22.

NOTE: On low fire, the manifold pressure must be between 6.7" and 7.3" W.C.

Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.

25. Replace the regulator cover screw(s) on the regulator sleeve(s).
26. Attach the supplied WARNING label to the gas valve where it can be readily seen. Also attach the small round LP label to the top of the regulator cover screw.
27. Turn on the gas supply and test for leaks using a soap and water solution. Repair any gas leaks. Turn on the electrical supply.
28. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
29. Reinstall the access panels.

Figure 123: White-Rodgers 36H54 Gas Valve

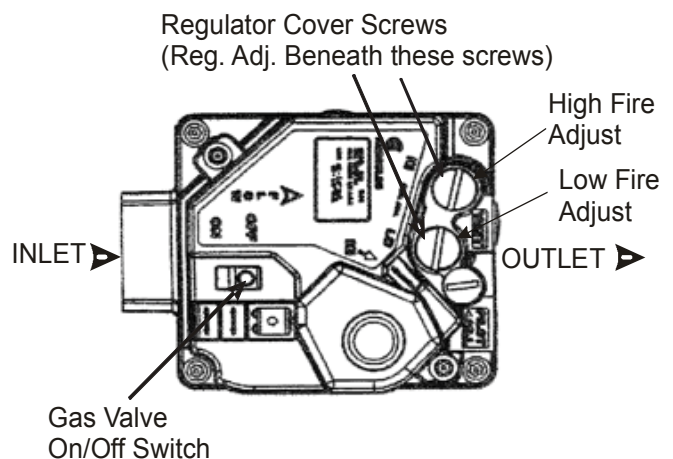


Figure 124: White-Rodgers 36H54 Gas Valve Regulator Cover

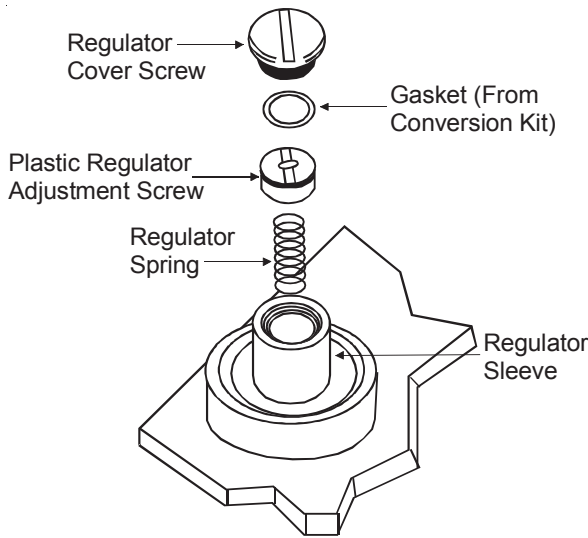
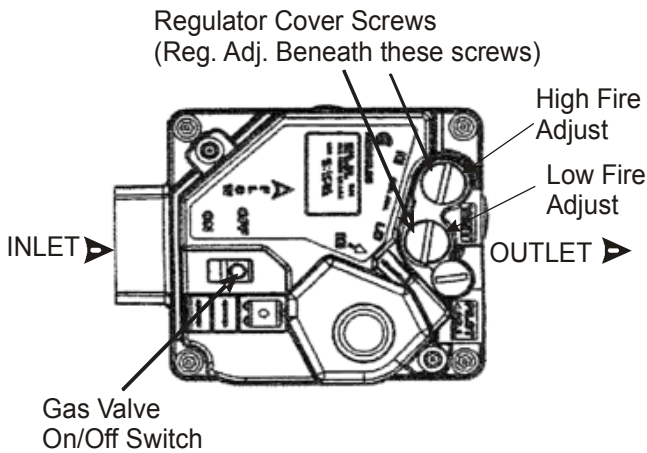


Figure 125: White-Rodgers 36H54 Gas Valve

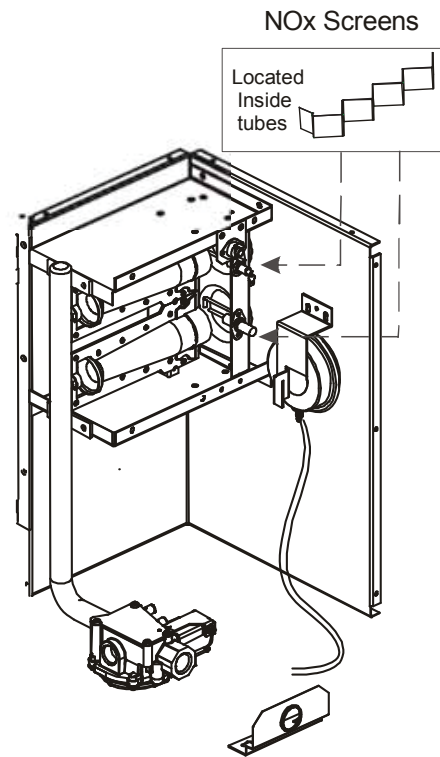


NOx SCREEN REMOVAL

NOTE: To prevent premature heat exchanger failure, follow the instructions below to remove all metal screen inserts from the entrance of heat exchanger tubes during propane conversions. Not all models will have metal screen inserts.

1. Remove the eight screws securing the burner box to the partition panel. Separate burner box from unit.
2. Remove and discard NOx screens.
3. Reinstall the NOx screen retention plate and burner box.

Figure 126: Typical NOx Screen Removal



****G0360701DXXX, **G0360703DXXX,
**G0480701DXXX and **G0480703BXXX
Models Only**

For all units converted to LP (Propane) Installations with Horizontal discharge, the main limit switch must be changed from 200°F to 180°F (Daikin part number 0130L00001).

1. Locate heat exchanger door below the control box. Remove screws attaching heat exchanger door to unit. Save screws to re-attach to door (Figure 127).
2. With door removed locate main limit/support post. Main limit will be in the center of the post (Figure 128).
3. Remove two red wires from limit.
4. Remove two screws securing 200°F limit (part number B1370189).
5. Install supplied main limit switch (Daikin part number 0130L00001) using the two screws removed in step 4.
6. Re-attach wires removed in step 3.
7. Replace heat exchanger door using screws removed in step 1.
8. Apply the limit conversion label to the heat exchanger door or next to the rating plate.
9. Operate appliance for two cycles to ensure proper operation.

Figure 127: Heat exchanger door

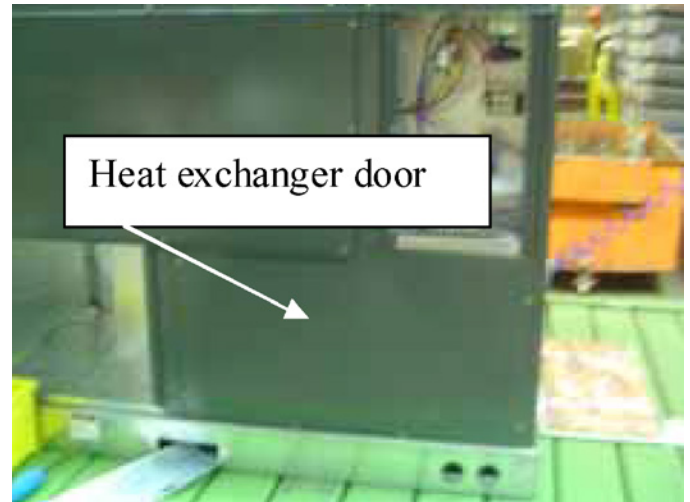
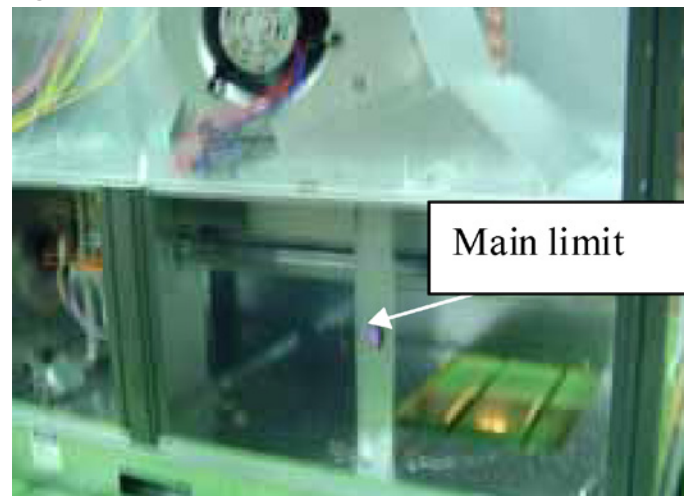


Figure 128: Main limit



LPKT180300 Conversion Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This Natural Gas to L.P. Gas conversion kit allows the White-Rodgers 36H54 (0151L00000) gas valve or VR8305Q (0151M00015) gas valve to be used on CPG light commercial L.P. gas applications.

Table 34: Required Tools for Kit Installation

Qty	Description
2	Pipe Wrenches, properly sized to accommodate the gas piping and connectors
1	9/16" box wrench or socket wrench
1	5/16" Nut driver
1	1/4" regular (flatblade) screwdriver
1	3/16" Allen wrench
1	3/32" Allen wrench
2	Manometers to read inlet & outlet pressure of the gas valve (Minimum range: 0" - 15" W.C.)
	Pipe joint compound or pipe thread tape
	Gas leak detection solution, like a soap and water solution. Always wipe the solution from the joints when testing is complete.

Using the parts list in [Table 35](#), ensure that all parts included in this list are present and in an undamaged condition.

Table 35: Kit Contents

Qty	Part Number	Description
1	B14933-63	Conversion Label
1	IM 1223	Installation Instructions
1	0163F00000P	White-Rodgers Spring Kit
1	0163M00076	Honeywell LP Spring Kit

Important Information

Prior to performing this conversion refer to the National Fuel Gas Code (ANSI Z223.1) or in Canada, CAN/CGA-B149.2M91 to ensure that the installation is in compliance with those and all local codes.

PLEASE READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplies about installing a gas detecting warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method to detect a propane gas leak.

CAUTION

To avoid the risk of property damage, personal injury or fire, shut off the gas supply first, then disconnect the electrical supply before proceeding with conversion or service.

⚠ DANGER

Carbon Monoxide Poisoning Hazard

Carbon monoxide (CO) can cause serious illness including permanent brain damage or death.

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Enclosures

Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

⚠ WARNING

Daikin will not be responsible for any injury or property damage arising from improper service or service procedures. This Liquid Petroleum (LP) conversion kit **MUST** be installed by a qualified service person or agency in accordance with the manufacturer'd instructions and all applicable codes and requirements of the authority having jurisdiction.

Failure to follow these instructions explicitly may cause a fire, explosion or the production of carbon monoxide, which can cause property damage, personal injury or death. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heatin and air conditioning equipment.

⚠ WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact you propane supplier about installing a gas detection warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method of detecting a propane gas leak.

⚠ WARNING

If the furnace is installed in a basement, an excavated area or a confined space, it is strongly recommended to contact a propane supplier to install a gas detecting warning device in case of a gas leak.

- Since propane gas is heavier than air, any leaking gas can settle in low areas or confined spaces
- Propane orodorant may fade, making the gas undetectable except with a warning device

Installation

White-Rodgers 36H54 Valve

1. Turn off electrical power and gas supply.
2. Remove the package unit control access panel.
3. Remove the unit control access panel.
4. Separate the gas supply union and remove associated downstream piping.
5. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
6. Remove the wires from the gas valve.
7. Remove the 4 sheet metal screws that fasten the manifold/ gas valve assembly to the burner box.
8. Using the 9/16" wrench, remove all existing natural gas orifices and replace with the appropriate L.P. gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
9. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
10. Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" tapped holes of the gas valve. Connect the manometers to the barbed fittings.
11. Using a flat blade screwdriver, remove the high and low stage regulator cover screws.
12. Remove plastic regulator adjustment screws located beneath the high and low stage cover screw.
13. Remove the natural gas regulator springs from the high and low stage regulator sleeve.
14. Insert the kit provided L.P. regulator springs into the high and low stage regulator sleeve.
15. Replace the regulator adjustment screws.
16. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed. Note: the pipe joint compound must be resistant to L.P. gas.
17. Turn on the gas supply and check for leaks.
18. Turn on the electrical supply.
19. Adjust the room thermostat to allow for constant operation. For all two-stage heating models, place jumper wire between W1 and W2 to ensure unit is on high fire.
20. After the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C.

NOTE: Any other gas-fired equipment should be ON before any adjustments are made.

21. If gas inlet pressure falls outside the range of 11" to 13" W.C., then make necessary pressure regulator adjustments, check piping size, etc., and/or consult with local utility.
22. Check manifold pressure. For propane gas, the manifold pressure must be between 9.7" and 10.3" W.C.
23. Turn high stage adjustment screw out (counterclockwise) to decrease pressure, turn in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the unit must not exceed the rating specified on the unit rating plate.
24. For all two-stage heating models: Remove jumper wire between W1 and W2. Also remove thermostat wire to W2 to ensure unit is on low fire. Repeat steps 23-24 using the low stage adjustment screw to adjust pressure for low stage operation. Manifold pressure must be between 6.7" and 7.3" W.C.
25. Reset all other appliances so they function normally.
26. Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.
27. Replace the thermostat wire removed from W2.
28. Replace the regulator cover screws on the regulator sleeves.
29. Attach the kit provided WARNING label to the gas valve where it can be readily seen. Also attach the small round L.P. label to the top of the high stage regulator cover screw.
30. Turn on the gas supply and test for leaks using a soap and water solution. Repair any gas leaks. Turn on the electrical supply.
31. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
32. Reinstall the access panels.

Figure 129: White-Rodgers 36H54 Valve

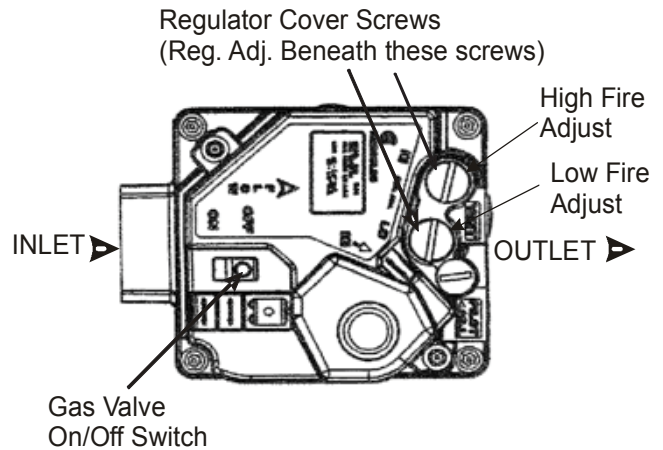
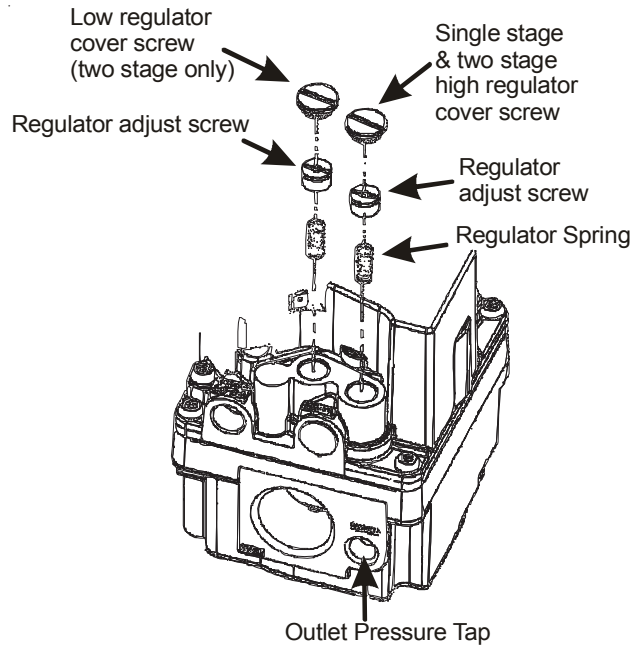


Figure 130: White-Rodgers 36H54 Valve Regulator Cover



Honeywell VR8305Q Valve

1. Turn off electrical power and gas supply.
 2. Remove the package unit control access panel.
 3. Separate the gas supply union and remove associated downstream piping.
 4. Always use a backup wrench when removing or replacing piping to avoid any undue strains or rotation of controls.
 5. Remove the wires from the gas valve.
 6. Remove the 4 sheet metal screws that fasten the manifold/gas valve assembly to the burner box.
 7. Using the 9/16" wrench, remove all existing natural gas orifices and replace with the appropriate LP gas orifices contained in this kit. Tighten the orifices to prevent gas leaks, but do not overtighten. Retain the natural gas orifices for future reconversion.
 8. Reinstall the manifold/gas valve assembly into the appliance. Rewire the gas valve.
 9. Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" tapped holes of the gas valve. Connect the manometers to the barbed fittings.
 10. Remove the regulator cover assembly as shown.
 11. Remove the natural gas (white) stem/spring assembly as shown.
 12. Install the LP gas (black) stem/spring assembly into the valve. Replace the pressure regulator cover assembly and tighten the screws.
 13. Apply a liberal amount of pipe joint compound or pipe thread tape to the threads and reassemble the piping previously removed.
- NOTE:** The pipe joint compound must be resistant to LP gas.
14. Turn on the gas supply and check for leaks.
 15. Turn on the electrical supply.
 16. Adjust the room thermostat to allow for constant operation. Place a jumper wire between W1 and W2 to ensure unit is on high fire.
 17. After the unit has been in operation for 15 minutes, adjust the gas supply pressure (not manifold pressure) to obtain a range between 11" and 13" W.C.
- NOTE:** Any other gas-fired equipment should be ON before any adjustments are made.
18. If gas inlet pressure falls outside the range of 11" to 13" W.C., then make necessary pressure regulator adjustments, check piping size, etc., and/or consult with local utility.
 19. Check manifold pressure. For propane gas, the high fire manifold pressure must be between 9.7" and 10.3" W.C.
 20. Remove the plastic cover from the pressure regulator cover assembly
 21. Using a 3/32" allen wrench, turn high fire adjustment screw out (counterclockwise) to decrease pressure and in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
 22. For all two-stage heating models: Remove jumper wire between W1 and W2. Also remove thermostat wire to W2 to ensure unit is on low fire. On low fire, the manifold pressure must be between 6.7" and 7.3" W.C.
 23. Using a 3/32" allen wrench, turn low fire adjustment screw out (counterclockwise) to decrease pressure and in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3" water column from the specified nominal pressure. Any major changes in flow should be made by changing the size of the burner orifices. The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.
 24. Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs; seal using pipe joint compound or tape.
 25. Replace the thermostat wire removed from W2.
 26. Replace the pressure regulator cover.
 27. Attach the supplied ATTENTION label to the gas valve where it can be readily seen. Also attach the small round LP label to the top of the regulator cover screw.
 28. Turn on the gas supply and test for leaks using a soap and water solution. Ensure to check for leaks around the pressure regulator cover assembly on the valve. Repair any gas leaks. Turn on the electrical supply.
 29. Observe at least 3 ignition cycles to assure quick and smooth ignition and burner operation.
 30. Reinstall the access panels.
 31. Reset all other appliances so they function normally.

Figure 131: Honeywell VR8305Q Valve

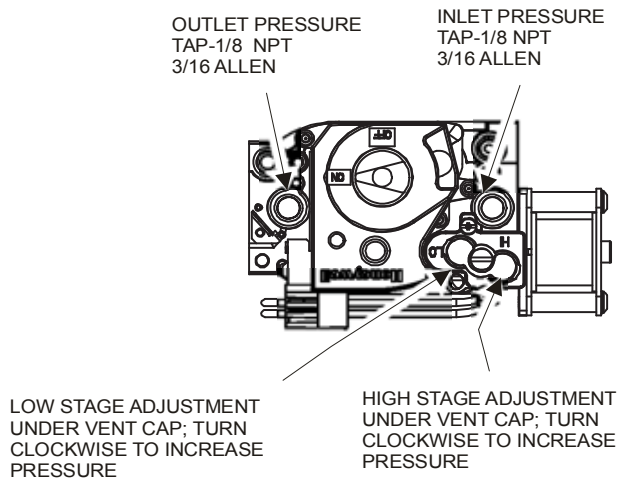
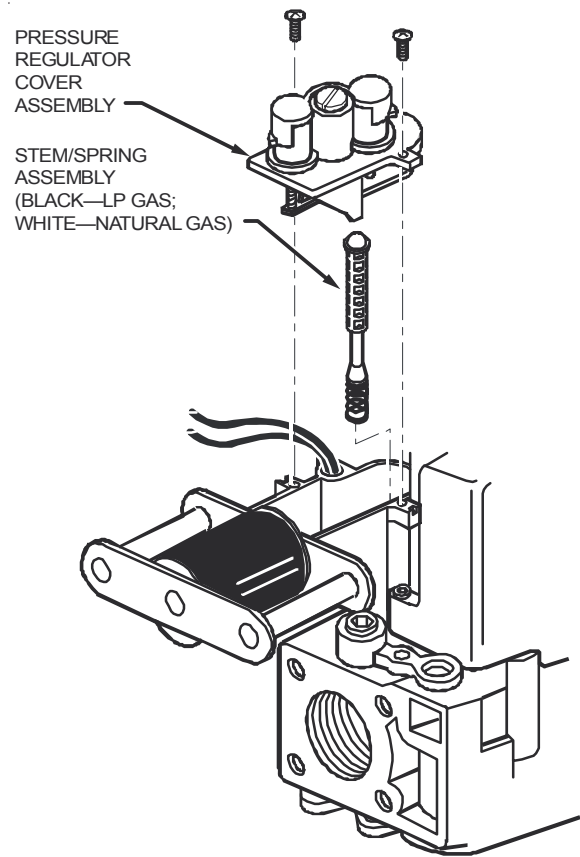


Figure 132: Honeywell VR8305Q Valve Regulator



HAKT-36300 High Altitude Conversion Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

This high altitude conversion kit is intended to convert the CPG light commercial gas package unit for higher altitude installation.

Table 36: Tools Required For Installation

Qty	Description
2	Pipe Wrenches. These wrenches shall be suitably sized to handle the supply piping and its ground joint union.
1	7/16" or 9/16" open or closed wrench. Do not use an adjustable wrench when removing or installing burner orifices.
1	5/16" nut driver
1	Flat blade screw driver
1	3/16" Allen wrench. The Allen wrench is required to remove gas valve inlet and outlet plugs.
2	Water Column manometers. Manometers are to be capable of reading a range between 0 and 20 inches with 1" increments.
	Pipe thread compound. Pipe thread compound used must be listed as appropriate material for L.P. gas.
	Soap solution and application brush.

Using the parts list in [Table 37](#), ensure that all parts included in this list are present and in an undamaged condition.

Table 37: Kit Contents

Qty	Part Number	Description
1	B14933-63	Conversion Label
1	IM 1223	Installation Instructions
1 pack (6 per pack)	10716002	Burner Orifice - #54
	0163L00018	Burner Orifice - #53
	0163L00019	Burner Orifice - #35
	0163L00020	Burner Orifice - #36
	0163L00021	Burner Orifice - #37
	0163L00022	Burner Orifice - #38
	0163L00023	Burner Orifice - #39
	0163L00013	Burner Orifice - #29
1 pack (8 per pack)	0163L00014	Burner Orifice - #30
	0163L00015	Burner Orifice - #31
	0163L00017	Burner Orifice - #49
	B3239750	Burner Orifice - #50

Important Information

These instructions are intended for the use of qualified individuals who are trained and experienced in the installation and conversion of this type of equipment. Personnel performing this task are required in some states to be licensed. Under no circumstances should this conversion, or equipment installation be performed by personnel who are not qualified. Failure to observe this warning may result in equipment damage, fire, or life threatening danger. Refer to the equipment installation manual, the National Fuel Gas Code (ANSI Z223.1), or in Canada (CAN/CSA-B149.2, latest edition), and local codes.

PLEASE READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test for leaks.

DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplier about installing a gas detecting warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method to detect a propane gas leak.

CAUTION

To avoid the risk of property damage, personal injury or fire, shut off the gas supply first, then disconnect the electrical supply before proceeding with conversion or service.

DANGER

Carbon Monoxide Poisoning Hazard

Carbon monoxide (CO) can cause serious illness including permanent brain damage or death.

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Enclosures

Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

WARNING

Daikin will not be responsible for any injury or property damage arising from improper service or service procedures. This Liquid Petroleum (LP) conversion kit **MUST** be installed by a qualified service person or agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction.

Failure to follow these instructions explicitly may cause a fire, explosion or the production of carbon monoxide, which can cause property damage, personal injury or death. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.

WARNING

To avoid personal injury, property damage or death, due to leaking gas, contact your propane supplier about installing a gas detection warning device. Iron oxide (rust) can reduce the level of odorant in propane gas. A gas detecting device is the only reliable method of detecting a propane gas leak.

WARNING

If the furnace is installed in a basement, an excavated area or a confined space, it is strongly recommended to contact a propane supplier to install a gas detecting warning device in case of a gas leak.

- Since propane gas is heavier than air, any leaking gas can settle in low areas or confined spaces
- Propane odorant may fade, making the gas undetectable except with a warning device

WARNING

Personal injury may result from improper installation or maintenance performed by untrained personnel. Call your installing dealer or other qualified service companies to perform the installation or maintenance inspection.

WARNING

If any doubt exists about the condition of any component within the conversion kit, do not use the items and contact your supplier for new components or a new kit.

WARNING

To avoid the possibility of explosion or fire, never use a match or open flame to test the gas supply line, gas valve inlet and outlet pressure areas or the threaded portions of the burner orifices for gas leaks.

Installation

1. Prior to performing this conversion, refer to the Installation & Operation Manual supplied with the unit, the National Fuel Gas Code (ANSI Z223.1) or in Canada (CAN/CSAB149.2, latest edition), and local codes to ensure that this appliance is installed correctly and in compliance with these codes/manuals.
2. Disconnect power and gas supply.
3. Set the room thermostat to its lowest possible setting.
4. Remove the package gas unit burner access door. See [Figure 133](#) for the location of these components.
5. Loosen the gas supply ground union, and remove the gas valve supply line. Use one pipe wrench as a back-up to prevent damage/rotation of any controls.
6. Remove the (4) sheet metal screws which fasten the gas manifold to the burner box. See [Figure 134](#) for component location.
7. Using the 7/16" or 9/16" wrench, remove the existing natural gas orifices from the burner manifold. Save the natural gas orifices for future use if the unit is converted back to natural gas.
8. Install the orifices supplied with this kit into the gas manifold. Look at sizes stamped on orifice face to insure that all the same are installed. Tighten these orifices adequately to prevent gas leakage. Refer to [Table 38](#) for the correct burner orifices.
9. **For 36G22 valves:** Using a 3/32" Allen wrench, loosen the inlet and outlet pressure tap screw one (1) turn only (DO NOT REMOVE). Attach a length of 5/16" hose to each of the pressure tap bosses. Connect the 5/16" hose to two (2) separate water manometers or other adequate gauges having a scale range of at least 0" to 15" of water column.
For 36H54 valves: Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" taped holes of the gas valve. Connect the manometers to the barbed fittings.
10. Reinstall gas manifold assembly into package unit.
11. Connect both the inlet and outlet gas valve barb fittings (installed in step 9) to (2) separate manometers. See [Figure 135](#).
12. Install the gas supply piping and its ground union joint using a pipe wrench. Use a second pipe wrench as a back up.
13. Turn on the gas supply to the unit. Using a soap and water solution, check the gas supply line, gas valve inlet and outlet pressure areas. Repair any gas leaks detected.
14. Turn on the electric supply to the package unit.
15. Adjust the room thermostat to obtain continuous burner operation. On models with two-stage heat, place jumper between W1 and W2.
16. After the burner is in operation for 15 minutes, check and adjust, if needed, the supply and manifold pressure. See [Figure 135](#).
17. **For 36H54 valves (two-stage heat):** Remove jumper wire between W1 and W2. Also remove the thermostat wire from W2 and repeat step 15 on low stage heat.
18. Turn off the gas and electrical supply to the unit.
19. Apply the conversion label adjacent to the rating plate.
20. **For 36G22 valves:** Turn off gas and electrical supply to the unit, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.
For 36H54 valves: Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.
21. Turn on the gas supply and test for leaks using a soap and water solution. Repair any gas leaks. Turn on the electrical supply. Adjust the room thermostat to ensure continuous burner operation.
22. Using a soap solution check the gas supply, gas valve inlet and outlet pressure areas, and threaded portions of the burner orifices for leaks. Repair any gas leaks detected.
23. Observe at least three ignition cycles to ensure smooth and quiet ignition.
24. Install the control access panel.

Figure 133: Burner Access Panel

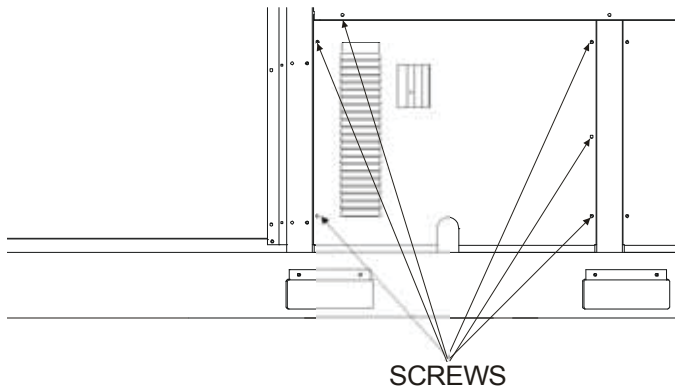


Figure 134: Gas Valve Location

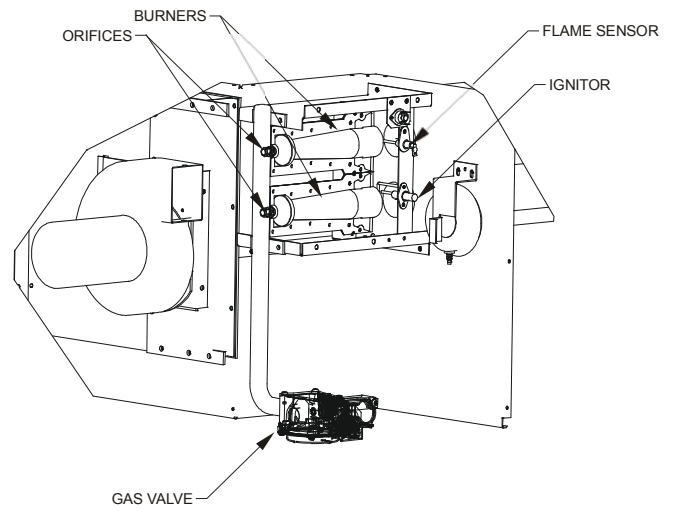


Figure 135: Manometer Placement

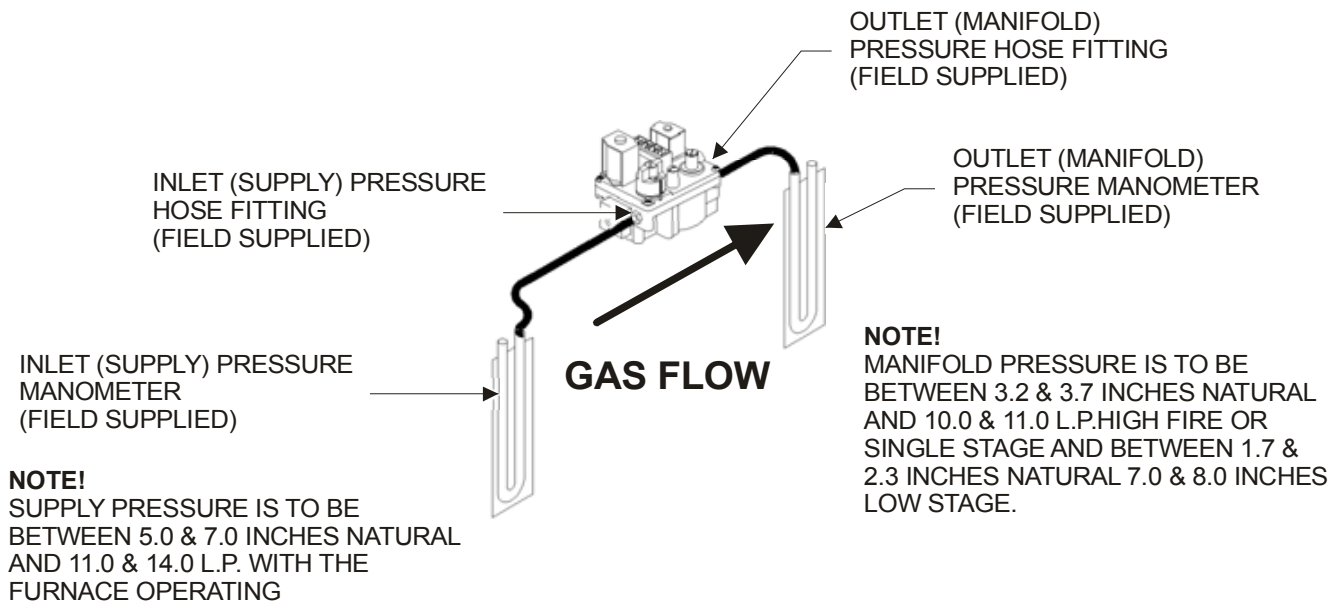


Table 38 and Table 39 are based upon the furnace input being reduced for altitudes above sea level. U.S. 4% per 1000 feet. Canada 10% derate for 2000-4500 feet. To determine input/burner, locate input rate on plate and divide by number of burners.

If specific input/burner is not listed, use the values of the next lower table (i.e. If input/burner is 44,500, use the values in Table 38).

Table 38: Natural Gas and LP Gas Installations at Altitudes > 2000 Ft.

Input/Burner	High Altitude Kit	35,000 Btuh Nat/33,000 Btuh/LP							
		Elevation Above Sea-Level (Feet)							
		2000	3000	4000	4500	5000	6000	7000	8000
U.S. Burner Orifice	HAKT36300	35/53	36/53	36/53	—	37/53	37/53	38/53	39/54
Canada Burner Orifice	HAKT36300	35/53	—	—	39/54	—	—	—	—

Table 39: Values for Specific Input/Burner not Listed

Input/Burner	High Altitude Kit	50,000 Btuh Nat/45,000 Btuh/LP							
		Elevation Above Sea-Level (Feet)							
		2000	3000	4000	4500	5000	6000	7000	8000
U.S. Burner Orifice	HAKT36300	29/48	30/48	30/49	—	30/49	30/49	31/50	31/50
Canada Burner Orifice	HAKT36300	29/48	—	—	31/50	—	—	—	—

EHK Electric Heat Kit

For Models DC 036–240

Installation Instructions

Attention Installing Personnel

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Recognize These Symbol as a Safety Precaution



Description

The following installation instructions supplement is for the EHK heater kits for installation in the following models:

Cooling only: **C036, **C048, **C060, **C072

Heat Pump: **H036, **H048, **H060, **H072

These instructions should be used only as a supplement to the installation instructions provided with the above units.

Important Information

DANGER

High Voltage

Disconnect all power before servicing or installing this kit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury and/or death.

CAUTION

To avoid possible personal injury, use extreme caution if using power tools to remove the small breaker mounting brackets. The brackets may quickly rotate and cause injury.

Installation Instructions for 036–072

1. Disconnect all power to the unit, both indoor and outdoor.
2. Remove control box door.
3. Remove blower door.
4. Remove heat access door.
5. Locate heater box. Remove screws holding the heater box cover in place (Figure 136).
6. Remove EHK Heater Kit from box.
7. Install Heater Kit in opening using screws from heater box cover. Ensure the elements are positioned in the retaining bracket as shown in Figure 137. It may be necessary to remove the horizontal supply cover to observe the bracket. The heater box cover can be discarded.
8. Connect power to kit.
 - Install Single Point Kit SPKT01 or SPKT02 per instructions shipped with the kit.
 - Remove leads from EHK box.
 - Connect leads to breakers with one lead for each power leg.
 - Route all leads through the blower deck and into the control box as shown in Figure 138.
 - Connect the leads to the single point block with the far left lug (L1), the middle lug (L2), and the far right lug (L3). NOTE: Single phase kits will only have 2 lugs (L1 and L2).
9. Locate 9-pin plug in unit.
10. Connect the plug to the mating 9-pin plug attached to heater kit. See Figure 139.

11. Install control box door, blower door, and heat access door.
12. Reconnect power.
13. Use airflow tables starting on [page 114](#) to set minimum CFM for unit. Refer to tables starting on [page 114](#) for appropriate minimum CFM for your heater kit. See unit literature for instructions on how to change fan CFM.
14. Test unit to ensure it is functioning properly.

Figure 136: Removing Panels

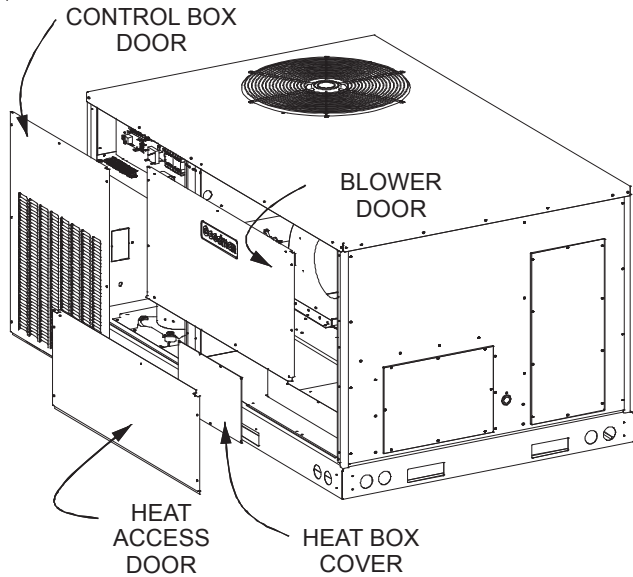


Figure 137: Retaining Bracket Location

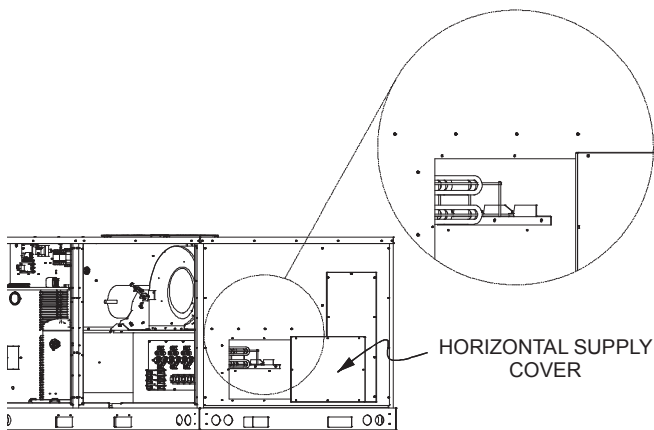


Figure 138: Routing Wiring

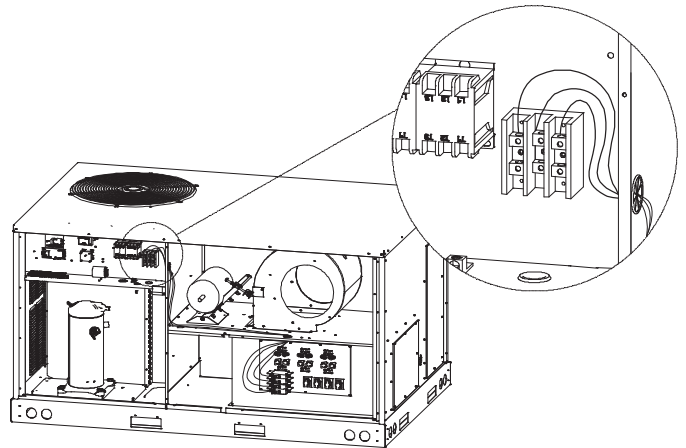
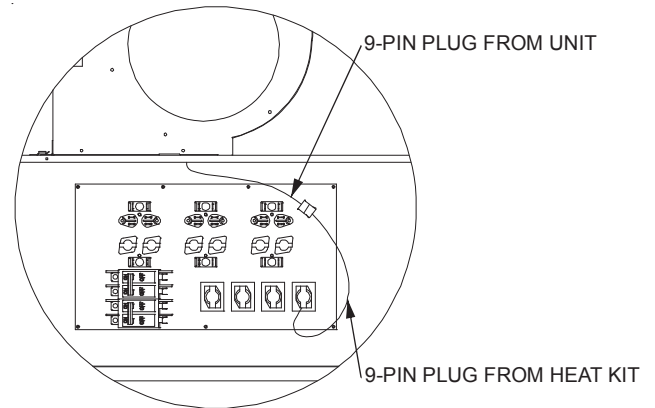


Figure 139: 9-Pin Plug Connections



For Models DC 090–150

Description

The following installation instructions supplement is for the EHK heater kits for installation in the following models:

DCC090, DCC102, DCC120, DCC150,
DCH090, DCH102, DCH120, DCH150

These instructions should be used only as a supplement to the installation instructions provided with the above units.

Installation Instructions for 090–150

1. Disconnect all power to the unit, both indoor and outdoor.
2. Remove control box door.
3. Remove blower door.
4. Remove heat access door.
5. Locate heater box. Remove screws holding the heater box cover in place. See [Figure 140](#).
6. Remove EHK Heater Kit from box. Locate support legs and retainer clips.
7. Install support legs on heater element bracket, orienting the support legs down and shifted in the same direction as shown in [Figure 141](#). Install support leg retaining clips on each heater element bracket.

NOTE: The support legs must be installed as shown to provide clearance of bottom supply air opening.

8. Completed heater kit assembly should resemble [Figure 142](#).
9. Install Heater Kit in opening using screws from cover. Ensure legs are resting on base pan.
10. Route the EHK orange, black and red wires through the hole in the blower deck and into the control box as shown.
11. Connect EHK wires to the single point wire kit as shown in [Figure 143](#).
12. Locate the 9-pin harness in the unit and remove and discard the empty male plug if so equipped.
13. Connect the 9-pin plug from the unit to the 9-pin plug in the heater kit.
14. Remove 3 amp fuse from time delay control board, located in the control box. Replace with 5 amp fuse included in heater kit.
15. Set minimum CFM for unit based on tables starting on [page 114](#), Minimum Airflow for Electric Heat Table ([Table 50 on page 122](#)). See unit literature for instructions on how to change fan CFM.
16. Install control box door, blower door, and heat access door.
17. Reconnect power.
18. Test unit to ensure it is functioning properly.

Figure 140: Heater Box Cover

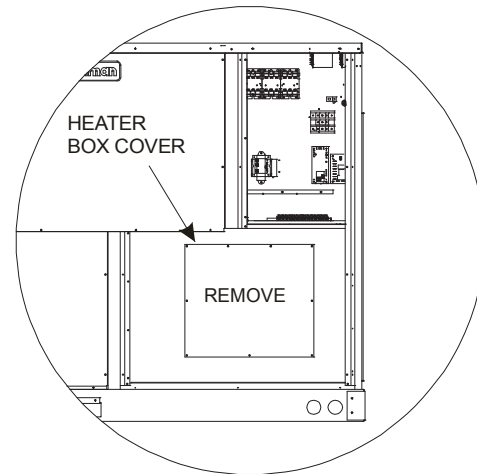


Figure 141: Support Legs on Heater Element

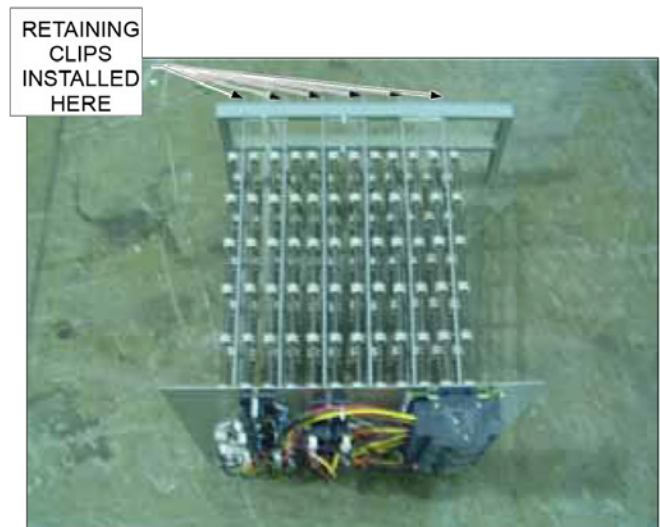


Figure 142: Completed Heater Assembly

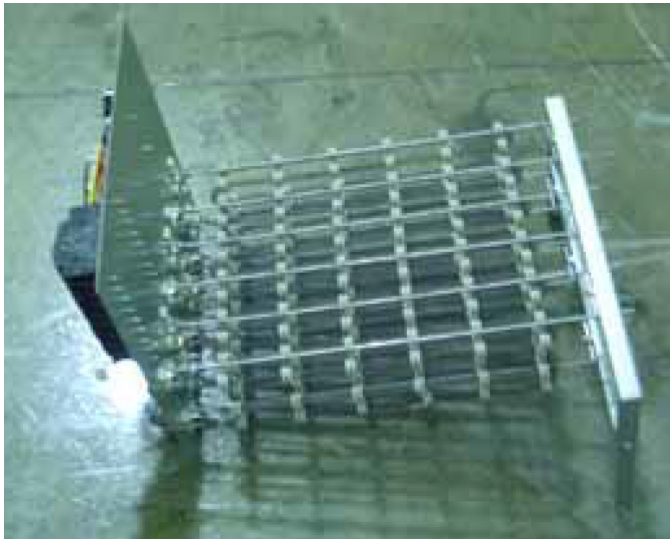


Figure 143: Wire Routing

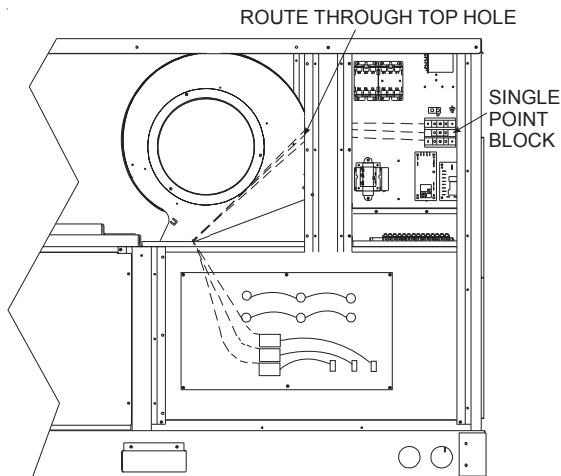
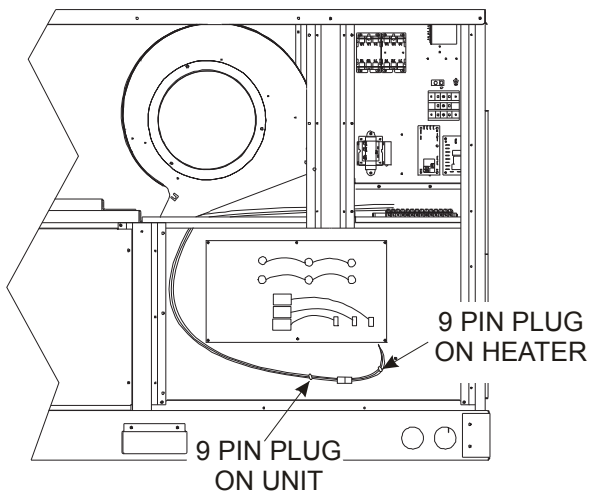


Figure 144: 9-Pin Plug Connection



Description

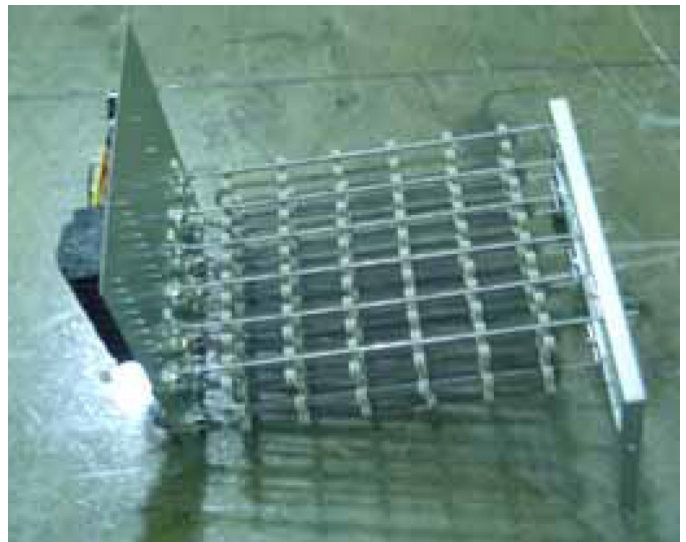
The following EHK kit instructions supplement is for installation in the 7.5 tons and larger light commercial DCC and DCH models.

These instructions should be used only as a supplement to the above units.

Installation of Time Delay Relay

1. Mount time delay relay onto the heater kit plate or on the side of the heater compartment, using the screw provided. Make sure it is clear of any other wiring and components.
2. Remove the brown wire from the 2nd stage sequencers on the heater to the Molex plug and connect it to “COM” terminal on the time delay relay.
3. Connect the white wire from the kit between T2 on the time delay relay and any open terminal on the white wire side of the 1st stage sequencers on the heater.
4. Connect the brown wire from the kit between “NO” terminal on the time delay relay and the sequencer terminal on the heater where the brown wire from the Molex plug had previously been removed.
5. Connect the blue wire from the kit between T1 on the time delay relay and to any open terminal on the common (blue) side of the 2nd stage sequencers on the heater.
6. Set time delay on the relay to the first setting line above 10 seconds.
7. Replace the 3 amp fuse on the time delay board in the unit control box with the 5 amp fuse from the kit.

Figure 145: Time Delay Relay



For Models DC 180–240

Description

The following installation instructions supplement is for the EHK heater kits for installation in the following models:

DCC180 & DCC240

These instructions should be used only as a supplement to the installation instructions provided with the above units.

Installation Instructions for 180–240

1. Disconnect all power to the unit.
2. Remove control box door.
3. Remove filter door.
4. Remove heat access door.
5. Remove EHK Heater Kit from box. Orient the heater element bracket as shown in [Figure 147](#).
6. Install heater kit in opening using screws and align with mounting plate holes. Ensure that the other side of the heater kit is resting on the support channel.
7. Route the EHK yellow, black and red wires through the hole in the blower deck and into the control box as shown in [Figure 148](#).
8. Connect EHK wires to the single point wire kit as shown in [Figure 149](#).
9. Locate the 9-pin harness in the unit and remove and discard the empty male plug if so equipped.
10. Connect the 9-pin plug from the unit to the 9-pin plug in the heater kit.
11. Remove 3 amp fuse from time delay control board, located in control box. Replace with 5 amp fuse included in heater kit.
12. Set minimum CFM for unit based on tables starting on [page 114](#), Minimum Airflow for Electric Heat Table ([Table 50 on page 122](#)). See unit literature for instructions on how to change fan CFM.
13. Install control box door, filter and heat access door.
14. Reconnect power.
15. Test unit to ensure it is functioning properly.

Figure 146: Blower Section with Electric Heat Kit

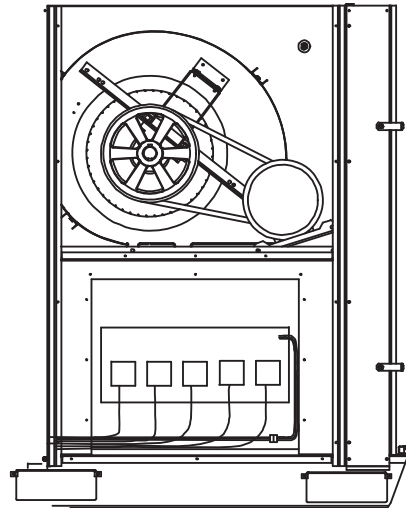


Figure 147: Heater Element Orientation

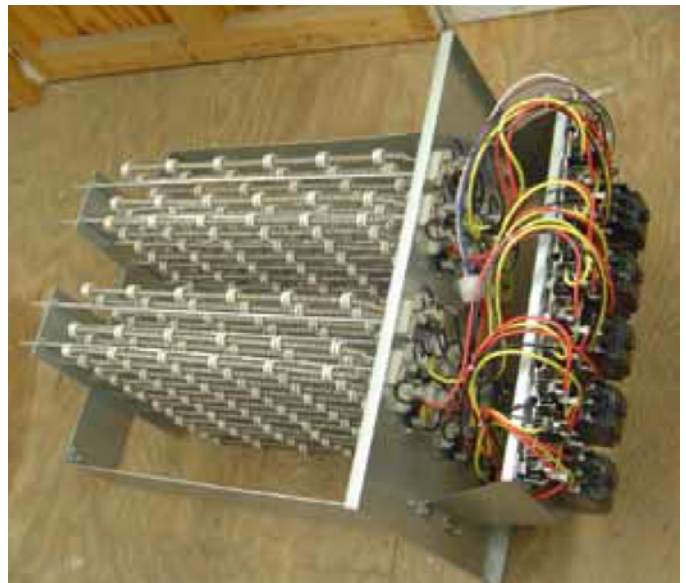


Figure 148: Single Point Kit Location

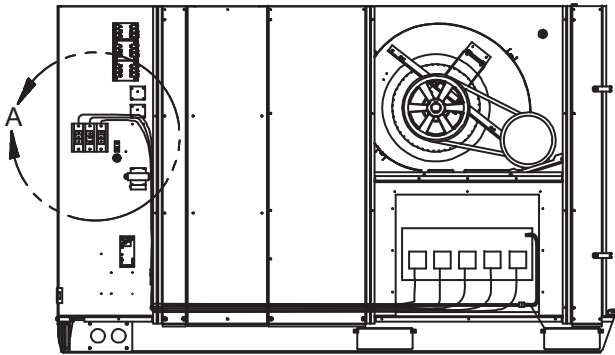


Figure 149: Single Point Kit – Detail A

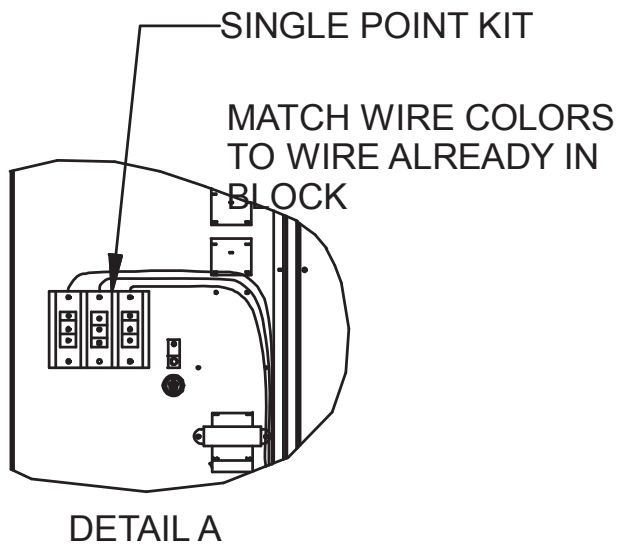


Figure 150: 9-Pin Plug

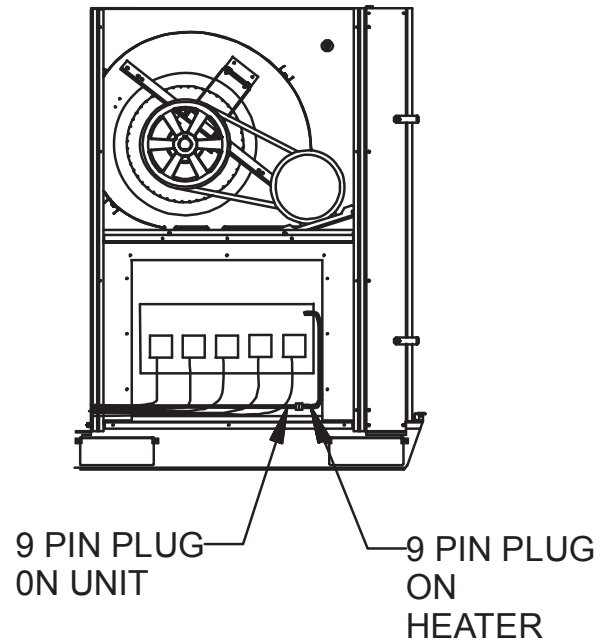
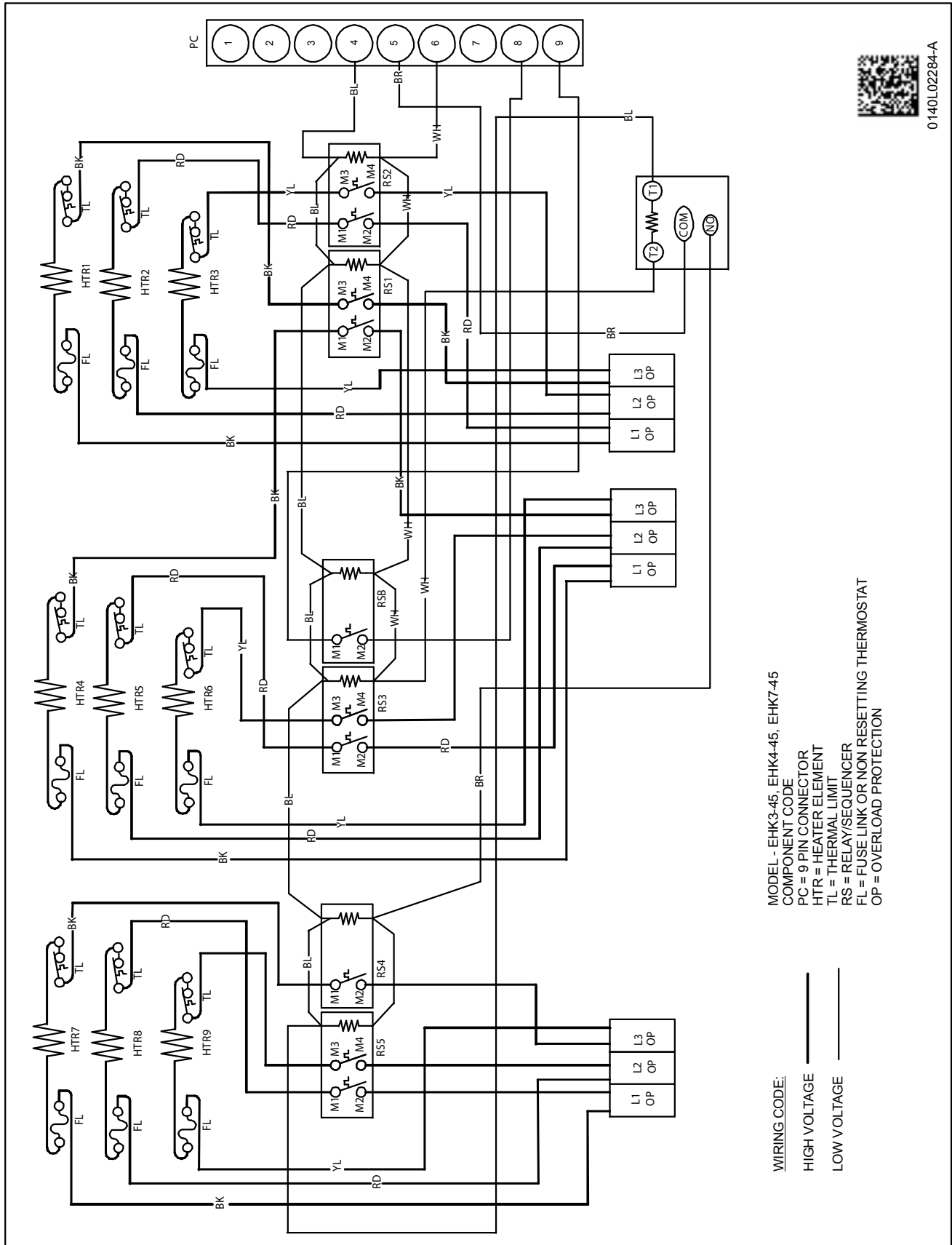


Figure 151: Time Delay Relay Wiring Diagram



Blower Performance Tables – Direct-Drive

Table 40: DCC/H036 Direct-Drive Down Shot

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
Low	0.10	1287	1.66	350	770
	0.20	1233	1.63	342	815
	0.30	1176	1.59	332	858
	0.40	1107	1.55	320	891
	0.50	1044	1.51	312	924
	0.60	965	1.45	296	957
Med	0.10	1476	2.08	446	866
	0.20	1421	2.03	432	885
	0.30	1334	1.96	414	918
	0.40	1255	1.90	396	945
	0.50	1180	1.84	386	971
	0.60	1085	1.78	368	990
	0.70	964	1.70	344	1023
High	0.30	1455	2.31	490	962
	0.40	1367	2.25	476	984
	0.50	1277	2.16	454	1006
	0.60	1180	2.09	438	1025
	0.70	1080	2.02	418	1039
	0.80	922	1.90	386	1067

Table 41: DCC/H036 Direct-Drive Horizontal

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
Low	0.10	1296	1.67	356	764
	0.20	1245	1.60	334	830
	0.30	1174	1.56	325	861
	0.40	1103	1.52	316	891
	0.50	1013	1.46	300	935
Med	0.10	1502	2.10	456	836
	0.20	1449	2.06	444	864
	0.30	1396	2.02	432	891
	0.40	1335	1.97	418	916
	0.50	1273	1.91	404	940
	0.60	1153	1.83	380	973
	0.70	996	1.71	346	1017
High	0.20	1516	2.36	506	940
	0.30	1454	2.31	496	960
	0.40	1392	2.26	486	979
	0.50	1273	2.17	458	1006
	0.60	1183	2.09	441	1023
	0.70	1092	2.02	424	1039
	0.80	920	1.90	390	1067

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P. SCFM correction for wet coil = 4 %

3 Ton models are shipped from the factory with speed tap set on LOW.

Table 42: DCC/H048 Direct-Drive Down Shot

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
Low	0.10	1602	2.48	528	835
	0.20	1538	2.37	506	878
	0.30	1474	2.26	484	921
	0.40	1390	2.15	460	950
	0.50	1306	2.04	436	979
Med	0.10	1805	2.84	620	935
	0.20	1704	2.71	590	967
	0.30	1625	2.59	558	990
	0.40	1549	2.47	540	1012
	0.50	1437	2.38	516	1030
	0.60	1301	2.23	480	1050
High	0.70	1158	2.09	444	1072
	0.10	1971	3.22	706	968
	0.20	1828	3.03	664	998
	0.30	1744	2.94	632	1017
	0.40	1628	2.80	606	1034
	0.50	1510	2.69	582	1050
	0.60	1402	2.57	552	1067

Table 43: DCCC/H048 Direct-Drive Horizontal

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
Low	0.10	1622	2.54	539	809
	0.20	1558	2.43	517	852
	0.30	1494	2.32	495	895
	0.40	1410	2.21	471	924
	0.50	1326	2.10	447	953
Med	0.10	1861	3.11	670	886
	0.20	1733	2.78	606	918
	0.30	1639	2.64	568	960
	0.40	1564	2.51	542	984
	0.50	1434	2.35	508	1017
	0.60	1320	2.25	482	1039
High	0.70	1156	2.08	446	1067
	0.10	1984	3.34	734	949
	0.20	1883	3.18	694	977
	0.30	1770	3.03	654	1001
	0.40	1656	2.87	620	1027
	0.50	1540	2.76	590	1044
	0.60	1415	2.62	558	1061

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P. SCFM correction for wet coil = 4 %

4 Ton models are shipped from the factory with speed tap set on MED..

Table 44: DCC/H060 Direct-Drive Down Shot

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
T1	0.	1334	1.65	180	627
	0.20	1286	1.75	192	665
	0.30	1212	1.83	202	715
	0.40	1144	1.94	216	759
	0.50	1077	1.99	222	792
	0.60	1039	2.10	238	830
	0.70	953	2.17	248	874
	0.80	904	2.27	258	913
T2	0.90	825	2.30	266	940
	0.10	1512	2.12	240	682
	0.	1469	2.24	254	720
	0.30	1397	2.31	264	759
	0.40	1333	2.44	282	803
	0.50	1285	2.54	296	836
	0.60	1221	2.59	304	874
	0.70	1173	2.72	322	913
T3	0.80	1118	2.77	328	946
	0.90	1049	2.90	344	984
	0.10	2053	4.27	540	869
	0.20	2014	4.39	558	896
	0.	1999	4.60	576	929
	0.40	1947	4.68	588	957
	0.50	1897	4.79	608	989
	0.60	1857	4.87	620	1012
T4	0.70	1763	4.99	640	1050
	0.80	1741	5.06	650	1072
	0.90	1669	5.19	668	1105
	0.10	2137	4.95	634	913
	0.20	2093	5.07	652	940
	0.30	2095	5.19	670	962
	0.	2026	5.28	682	990
	0.50	1980	5.40	698	1018
T5	0.60	1961	5.49	720	1039
	0.70	1914	5.58	732	1072
	0.80	1845	5.70	742	1100
	0.90	1766	5.69	740	1127
	0.10	2299	5.70	742	942
	0.20	2233	5.80	748	969
	0.30	2217	5.90	768	990
	0.40	2157	6.07	786	1018
T5	0.	2131	6.12	804	1045
	0.60	2060	6.21	816	1073
	0.70	2015	6.30	820	1095
	0.80	1940	6.27	816	1111
	0.90	1862	6.13	790	1128

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P. SCFM correction for wet coil = 4 %.

5 Ton models are shipped from the factory with speed tap set on T4.

Table 45: DCC/H060 Direct-Drive Horizontal

Speed Tap	External Static Pressure (ESP) in W.C.	Standard CFM	Amps	Watts	RPM
T1	0.10	1355	1.57	174	599
	0.20	1281	1.66	182	651
	0.30	1235	1.76	196	693
	0.40	1168	1.81	202	726
	0.50	1118	1.94	218	775
	0.60	1049	2.03	232	819
	0.70	982	2.10	240	858
	0.80	922	2.14	246	885
T2	0.90	871	2.25	260	927
	0.10	1544	2.04	234	660
	0.20	1490	2.17	250	704
	0.30	1427	2.25	260	742
	0.40	1370	2.35	276	781
	0.50	1319	2.42	282	809
	0.60	1274	2.52	296	849
	0.70	1210	2.62	316	891
T3	0.80	1137	2.73	326	935
	0.90	1106	2.77	336	957
	0.10	2099	4.13	516	825
	0.20	2068	4.25	536	852
	0.30	2029	4.37	552	885
	0.40	1971	4.48	568	913
	0.50	1911	4.61	586	950
	0.60	1876	4.73	604	973
T4	0.70	1821	4.86	622	1012
	0.80	1792	4.91	630	1028
	0.90	1740	5.03	648	1067
	0.10	2233	4.76	608	863
	0.20	2168	4.91	628	896
	0.30	2125	5.02	640	924
	0.40	2070	5.14	660	951
	0.50	2050	5.27	678	979
T5	0.60	1980	5.41	696	1012
	0.70	1954	5.47	704	1034
	0.80	1893	5.60	724	1067
	0.90	1852	5.70	736	1089
	0.10	2322	5.44	710	904
	0.20	2294	5.55	726	934
	0.30	2254	5.68	742	958
	0.40	2201	5.80	766	990
T5	0.50	2147	5.93	782	1017
	0.60	2117	6.01	788	1039
	0.70	2081	6.12	808	1060
	0.80	2017	6.22	822	1094
	0.90	1932	6.10	804	1111

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P. SCFM correction for wet coil = 4 %.

5 Ton models are shipped from the factory with speed tap set on T4.

Blower Performance Tables – Belt Drive

Table 46: Standard Belt-Drive Down Shot

ESP, In H ₂ O	Turns Open													
	0		1		2		3		4		5		6	
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BPH
DCC/H036														
0.2									1424	0.30	1239	0.23		
0.4					1520	0.39	1292	0.29	1073	0.22	779	0.14		
0.6			1439	0.40	1192	0.30	944	0.21	619	0.12				
0.8	1350	0.42	1101	0.31	864	0.22								
1.0	1028	0.31	729	0.21										
1.2	675	0.20												
DCC/H048														
0.2							2129	0.64	1795	0.47	1550	0.35		
0.4					1994	0.65	1701	0.49	1433	0.36	1163	0.22		
0.6			1905	0.67	1606	0.50	1326	0.36	1025	0.22				
0.8	1808	0.69	1565	0.54	1216	0.36								
1.0	1473	0.55	1137	0.32										
1.2	1103	0.41												
DCC/H060														
0.2					2579	1.01	2368	0.85	2175	0.69	1961	0.55		
0.4			2513	1.05	2318	0.89	2089	0.73	1906	0.59	1666	0.44		
0.6	2514	1.14	2276	0.94	2045	0.77	1797	0.60	1604	0.47				
0.8	2261	1.01	2017	0.82	1760	0.63								
1.0	1989	0.87	1730	0.68										
1.2	1695	0.72												
DCC/H072														
0.2					2771	1.27	2567	1.05	2421	0.88	2220	0.71		
0.4			2753	1.38	2573	1.15	2382	0.95	2186	0.77	1980	0.61		
0.6	2655	1.42	2548	1.24	2360	1.02	2119	0.81	1934	0.65				
0.8	2470	1.30	2331	1.11	2111	0.89	1868	0.69						
1.0	2296	1.18	2078	0.96	1840	0.75								
1.2	2040	1.02												
DCC/H180														
0.2											7203	2.18	6718	1.94
0.4							7306	2.54	6777	2.14	6257	1.80	5711	1.66
0.6			7477	2.97	6899	2.51	6323	2.10	5716	1.72	5103	1.39		
0.8	7112	2.96	6467	2.46	5795	2.01	5101	1.61						
1.0	5983	2.38	5190	1.89										
1.2	4426	1.71												
DCC/H240														
0.2													9664	4.05
0.4									9570	4.08	9197	3.82	8702	3.51
0.6							9038	3.82	8460	3.46	7949	3.14		
0.8			8171	2.93	7630	3.70	7068	2.79						
1.0			7901	2.85	7203	3.42								
1.2	7344	4.35												

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P.
 High static airflow requires installation of high static kit. Unit factory shipped with sheave set at 2.5 turns open. Air flow table represent dry coil with filters installed; SCFM correction factor for wet coil is 4%.

Table 47: Standard Belt-Drive Horizontal

ESP, In H ₂ O	TURNS OPEN											
	0		1		2		3		4		5	
	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
DCC/H036												
0.2									1658	0.35	1489	0.28
0.4							1560	0.36	1339	0.28	1129	0.21
0.6			1682	0.47	1436	0.36	1196	0.27	949	0.19		
0.8	1581	0.50	1354	0.38	1096	0.28	828	0.18				
1.0	1266	0.39	994	0.28	756	0.19						
1.2	923	0.28										
DCC/H048												
0.2									1943	0.52	1714	0.40
0.4					2187	0.72	1876	0.55	1566	0.40	1270	0.26
0.6			2044	0.72	1761	0.56	1444	0.40	1136	0.26		
0.8	1947	0.74	1704	0.59	1335	0.40						
1.0	1598	0.60	1275	0.36								
1.1	1208	0.45										
DCC/H060												
0.2									2420	0.79	2198	0.64
0.4					2605	1.02	2358	0.84	2133	0.67	1874	0.52
0.6			2526	1.06	2300	0.88	2026	0.70	1806	0.55		
0.8	2529	1.15	2252	0.93	1975	0.73	1670	0.54				
1.0	2233	0.99	1943	0.78	1628	0.57						
1.2	1907	0.83	1582	0.61								
DCC/H072												
0.2							2784	1.30	2582	0.83	2411	0.79
0.4					2814	1.34	2620	1.19	2342	0.72	2105	0.66
0.6			2665	1.34	2583	1.19	2398	1.06	2103	0.62	1902	0.57
0.8	2689	1.38	2492	1.22	2370	1.07	2142	0.91	1816	0.51		
1.0	2438	1.22	2275	1.09	2098	0.92	1883	0.78				
1.2	2250	1.10	1996	0.92								

NOTE: Tables represent dry coil without filter, to compensate for filter add 0.08" to measured E.S.P.

Table 48: Standard Belt-Drive Horizontal includes 2-Speed Models at High Speed

ESP, In H ₂ O	TURNS OPEN																	
	0			1			2			3			4			5		
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP
DCC/H090																		
0.1													3625	701	1.08	3309	660	0.86
0.3							3815	797	1.44	3468	747	1.11	3177	703	0.88	2796	663	0.68
0.5				3780	841	1.52	3405	803	1.23	3053	753	0.94	2608	709	0.68	2225	665	0.53
0.7	3687	885	1.6	3327	847	1.29	2968	805	1.02	2423	758	0.73						
0.9	3236	891	1.39	2850	852	1.1	2352	807	0.8									
1.1	2713	896	1.17															
DCC/H102																		
0.1													3475	698	1.05	3159	657	0.83
0.3							3665	794	1.41	3318	744	1.08	3027	700	0.85	2646	660	0.65
0.5				3630	838	1.49	3255	800	1.2	2903	750	0.91	2458	706	0.65			
0.7	3537	882	1.57	3177	844	1.26	2818	802	0.99									
0.9	3086	888	1.36	2700	849	1.07												
1.1	2563	893	1.14															
DCC/H120																		
0.2										4562	736	1.58	4253	691	1.29	3893	642	1.0
0.4							4497	780	1.7	4200	736	1.41	3735	691	1.06	3322	648	0.83
0.6				4467	824	1.81	4221	784	1.55	3689	741	1.18						
0.8	4564	873	2.06	4170	830	1.68	3677	785	1.29									
1.0	4129	875	1.81	3498	835	1.34												
1.2	3558	879	1.49															
DCC/H150																		
0.2										5570		2.27	4935		1.70	4584		1.36
0.4	5871		3.20	5639		2.77	5307		2.31	4902		1.88	4637		1.55	4178		1.19
0.6	5610		3.00	5358		2.57	5051		2.15	4603		1.72	4341		1.41			
0.8	5391		2.83	5010		2.33	4799		2.00	4393		1.61						
1.0	5078		2.59	4676		2.11	4448		1.79									
1.2	4521		2.20	4226		1.83												

NOTE: High Static airflow requires installation of High Static Kit (HSKT*). Unit factory shipped at 2.5 turns open.

Tables represent dry coil without filter. To compensate for filter, add 0.08" to measured E.S.P. SCFM correction for wet coil = 4%.

Table 49: Standard Belt-Drive Down Shot includes 2-Speed Models at High Speed

ESP, In H ₂ O	TURNS OPEN																	
	0			1			2			3			4			5		
	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP	CFM	RPM	BHP
DCC/H090																		
0.1													3617	704	1.07	3293	653	0.84
0.3										3541	749	1.15	3179	704	0.88	2757	656	0.66
0.5							3447	798	1.23	3049	754	0.94	2606	710	0.71			
0.7				3400	848	1.33	2950	798	1.01	2474	754	0.75						
0.9	3303	890	1.41	2871	848	1.11	2408	804	0.82									
1.1	2838	897	1.23															
DCC/H102																		
0.1										3372	747	1.11	3078	703	0.91	2814	658	0.70
0.3							3187	797	1.16	2952	753	0.97	2650	703	0.73			
0.5				3237	841	1.29	2684	803	0.96	2453	754	0.77						
0.7	3303	890	1.47	2753	847	1.09												
0.9	2807	896	1.26															
DCC/H120																		
0.2							4632	781	1.76	4203	742	1.41	3927	691	1.17	3510	658	0.9
0.4				4488	825	1.85	4183	783	1.54	3733	748	1.23	3512	693	1.0			
0.6	4442	880	2.02	4066	830	1.63	3717	786	1.31									
0.8	4001	885	1.77	3622	835	1.41												
1.0	3603	890	1.55															
DCC/H150																		
0.2							5378		2.35	4967		1.92	4710		1.59	4512		1.33
0.4	5514		2.92	5349		2.56	4750		1.97	4583		1.71	4319		1.40	4030		1.13
0.6	5204		2.69	4919		2.27	4488		1.81	4258		1.54						
0.8	4830		2.42	4649		2.09	4019		1.55									
1.0	4497		2.19	4264		1.86												

NOTE: High Static airflow requires installation of High Static Kit (HSKT*). Unit factory shipped at 2.5 turns open.
 Tables represent dry coil without filter. To compensate for filter, add 0.08" to measured E.S.P. SCFM correction for wet coil = 4%.

Table 50: Minimum Air Flow for Electric Heat

Unit	Heater Kit Model Number	Minimum CFM (Horizontal)	Minimum CFM (Down Shot)
3 Ton	EHK-10	1250	
	EHK-15	1250	
	EHK-10	1300	
4 Ton	EHK-15	1400	
	EHK-18	1400	
	EHK-10	1700	
5 Ton	EHK-15	1700	
	EHK-20	1800	
	EHK-10	2100	
6 Ton	EHK-15	2100	
	EHK-20	2100	
	EHK-25	2100	
7.5 Ton	EHK-16	3000	3200
	EHK-30	3000	3200
	EHK-45	3000	3200
8.5 Ton	EHK-16	3400	3400
	EHK-30	3400	3400
	EHK-45	3400	3400
10 Ton	EHK-16	3500	3500
	EHK-30	3500	3500
	EHK-45	4000	4000
12.5 Ton	EHK-16	4000	4000
	EHK-30	4300	4300
	EHK-45	4500	4500
15 Ton	EHK3-31		5250
	EHK3-46		5250
	EHK3-60		5250
	EHK4-31		5250
	EHK4-46		5250
	EHK4-60		5250
	EHK7-31		5250
	EHK7-46		5250
	EHK7-60		5250
20 Ton	EHK3-31		7000
	EHK3-46		7000
	EHK3-60		7000
	EHK3-75		7000
	EHK4-31		7000
	EHK4-46		7000
	EHK4-60		7000
	EHK4-75		7000
	EHK7-31		7000
	EHK7-46		7000
	EHK7-60		7000
	EHK7-75		7000

⚠ IMPORTANT

Attention Installing Personnel

Use only the heater kit specified for each model as dictated by the table above.

When using electric heat kit for 15 and 20 Ton units, installation and use of the single point kit in the unit is required to meet UL requirements.



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