

**CRPWREXH030A01,
CRPWREXH021A01-
CRPWREXH023A01
For Use With Vertical
EconomiSer™ IV or
EconomiSer™ 2 Only**

**Small Rooftop Units
Accessory Vertical Power Exhaust
Gas Heating/Electric Cooling,
Electric Cooling, and Heat Pump Units
2 to 12-1/2 Ton**

Installation Instructions

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IMPORTANT: Read these instructions completely before attempting to install the accessory power exhaust.

PACKAGE CONTENTS

QTY	CONTENTS
1	Power Exhaust Hood/Fan Assembly
1	Low Voltage Wiring Harness with plug ²
1	High Voltage Wiring Harness with plug ²
8	No. 10 x 1 in. (25.4mm) Mounting Screws
1	Gasketing Roll
1	Sealing Angle ¹

NOTES:

1. The sealing angle was included beginning with unit serial numbers 3502Gxxxxx. For use with Hinged Panel Units only.
2. Both wiring harnesses are shipped attached to the power exhaust assembly.

PACKAGE USAGE

UNIT SIZE	POWER EXHAUST PART NUMBER	POWER EXHAUST VOLTAGE
2 to 6 Ton (R-410A and R-22)	CRPWREXH030A01	208/230 V, 1 Ph
	CRPWREXH021A01	460 V, 3 Ph
7 1/2 to 12 1/2 Ton (R-22), and 7-1/2 to 10 Ton (R-410A)	CRPWREXH022A01	208/230 V, 1 Ph
	CRPWREXH023A01	460 V, 3 Ph


NOTE: For 575-v installations, a field-supplied and installed transformer (part no. HT01AH859) must be used with 208/230 V power exhaust.

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform the basic maintenance functions. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies a hazard which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

GENERAL

The accessory vertical power exhaust is used in conjunction with the vertical EconomiSer IV or EconomiSer2 accessories. For horizontal applications, this power exhaust accessory **cannot** be used. The horizontal power exhaust accessory must be used for horizontal applications.

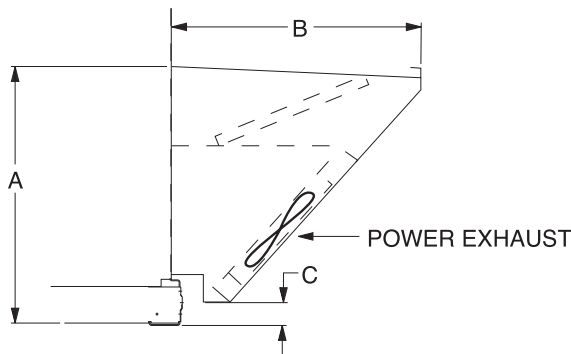
See Table 1 and 2 for EconomiSer usage. See Fig. 1 for dimensions.

Table 1 – Accessory Vertical Economi\$er Use

PART NO.	DESCRIPTION
CRECOMZR030A02	Economi\$er IV with W7212 controller.
CRECOMZR021A03	Economi\$er2 without controller (typically used with PremierLink or a field-supplied building management system).
CRECOMZR022A00	Economi\$er2 without controller (typically used with PremierLink or a field-supplied building management system).
CRECOMZR023A00	Economi\$er2 without controller (typically used with PremierLink or a field-supplied building management system).

Table 2 – Factory-Installed Vertical Economi\$er Use

BASE UNIT SERIAL	DESCRIPTION
From 4005Gxxxxx to current	Economi\$er IV with W7212 controller.
From 0802Gxxxxx to current	Economi\$er2 without controller (used with PremierLink or field-supplied building management system).



UNIT SIZE	"A"	"B"	"C"
2 to 6 Tons	1'-8 1/4" (514)	1'-6 1/2" (470)	7/16" (11.1)
7 to 12 1/2 Tons	2'-1" (635)	2'-2" (660)	0" (0)

NOTE: Measurements are in inches (mm)

Fig. 1 - Dimensions, Economi\$er with Power Exhaust

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INSTALLATION

IMPORTANT: Follow all applicable local and national electrical codes when installing this accessory.

The vertical power exhaust can be used with 2 different types of Economi\$ers. While the physical installation of the power exhaust assembly stays the same, the wiring differs between the two Economi\$er types. These instructions will clearly describe the installation and wiring for each type. The 2 types are:

1. Economi\$er2 without controller. It is generally used with a separate PremierLink controller or a field-supplied building management system.
2. Economi\$er IV with controller W7212.

To install the vertical power exhaust, perform the following procedure:

1. Turn off unit power supply and install lockout tag. For gas units, turn off the gas supply.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury and/or death.

Before beginning any modification, be certain that the main-line electrical disconnect switch is in the OFF position. Close the main gas supply shutoff valve. Tag disconnect switch and gas valve with suitable warning labels.

NOTE: Before installing, ensure voltage of power exhaust agrees with power supply to the equipment.

2. Install the vertical Economi\$er per the instructions provided with the Economi\$er. Do not install the rainhood shipped with the Economi\$er. Set aside the aluminum air filter for use with the power exhaust.
3. Remove the shipping blocks from the bottom of the accessory vertical power exhaust. (See Fig. 2.)
4. Remove the power exhaust knockout plugs located on the lower left side of the Economi\$er. (See Fig. 3.)
5. Remove the RTU unit filter panel to allow access to the inside of the rooftop.
6. The panel covering the horizontal return opening on the unit may also be removed for easier access and installation. Be sure to replace this panel when installation is complete.

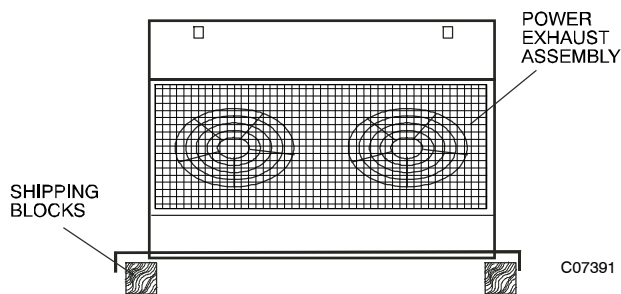


Fig. 2 - Shipping Block Removal

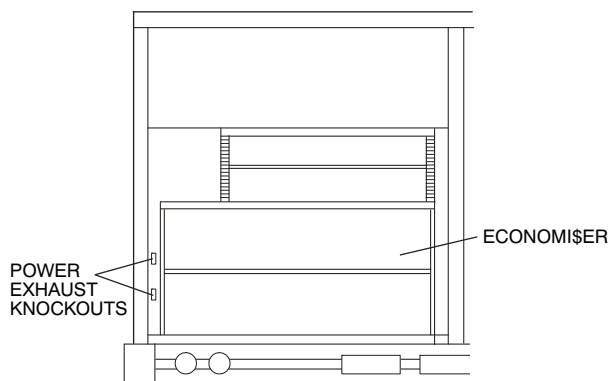


Fig. 3 - Power Exhaust Knockout Location

7. There may be a hinged door panel in place of the filter panel. Open the hinged door, remove the screws and hinges, remove the door and set it aside. Keep all screws and hinges.
8. Place the power exhaust close to the Economiser to allow for wiring harness connection.
9. Follow the wiring instructions specific to the Economiser. Be sure power exhaust wiring does not interfere with damper operation.

Power Exhaust Wiring with Economiser IV

Use these instructions and diagrams if using the vertical power exhaust with Economiser IV.

1. The 2-wire low voltage harness from the power exhaust and the 24 in (610mm). low voltage extension harness are plugged together for shipping. Unplug these 2 harnesses for installation.
2. Insert the 2-wire low voltage harness plug from the power exhaust into the top knockout on the Economiser. (See Fig. 3 and 4.)
3. From the rear of the Economiser, connect the 24 in (601mm). long low voltage extension harness plug to the power exhaust harness.

4. Route the other end of the 24 in. (610mm). low voltage extension harness to the Economiser controller. (See Fig. 4.) The harness is connected to the controller by connecting the terminal on the tan wire to the tan wire lead coming from the 24 VAC COM on the controller. The terminal on the gray wire is connected to terminal EF1 on the controller. Install the gray jumper wire on the controller from the exhaust fan terminal (EF), to the 24 VAC HOT terminals. See Fig. 5 and 6 for Economiser wiring diagrams.
5. The high voltage harness from the power exhaust and the [134 in. (3406mm) or 194 in. (4928mm)] high voltage extension harness are plugged together for shipping. Unplug these 2 harnesses for installation.
6. Insert the high voltage harness plug from the power exhaust into the bottom knockout on the Economiser. (See Fig. 3 and 4.)

R-410A Rooftop Models Only (2-10 ton):

For single point wiring application, connect the power exhaust power wire harness to the compressor contactor in the control box. Install the power exhaust power wire harness into the pressure lugs on the compressor contactor, used for the field power wiring also.

7. From the rear of the Economiser, connect the long high voltage extension harness plug to the power exhaust harness. (See Fig. 4.)
8. Route the other end of the long high voltage extension harness through the HVAC unit to the control box. (See Fig. 7.) The harness must be routed through the grommets provided in the unit. Do not drill routing holes. Be careful not to route the power exhaust harness on top of the indoor coil. Wire the end of the high voltage harness extension to the power exhaust power source. (See Fig. 5 and 6.)

Power Exhaust Wiring with Economiser2 and PremierLink Controller

Use these instructions when installing the vertical power exhaust with Economiser2 and PremierLink controller.

1. The low voltage extension harness for 004-007 size units is short [134 in. (3406mm)] and for 008-014 size units is long [194 in. (4928mm)]. These harnesses will be supplied with the Economiser2 (without controller) beginning with unit serial number 2703Gxxxxx. Prior to serial 2703Gxxxxx, the supplied low voltage extension harness [24 in. (610mm) long] is not long enough to reach the PremierLink control board and will have to be field extended.

The two-wire low voltage harness and the low voltage extension harness are plugged together for shipping. Unplug the harnesses for installation.

2. Insert the 2-wire low voltage harness plug from the power exhaust into the top knockout on the Economi\$er2. (See Fig. 3 and 8.)
3. From the rear of the Economi\$er2, connect the low voltage extension harness plug to the two-wire harness from the power exhaust. (See Fig. 8.)
4. Route the other end of the of the low voltage extension harness to the PremierLink controller. (See Fig. 8.)
5. The high voltage harness from the power exhaust and the [134 in. (3406mm) or 194 in.. (4928mm)] high voltage extension harness are plugged together for shipping. Unplug these 2 harnesses for installation.
6. Insert the high voltage harness plug from the power exhaust into the bottom knockout on the Economi\$er2. (See Fig. 3 and 8.)
7. From the rear of the Economi\$er2, connect the long high voltage extension harness plug to the power exhaust harness. (See Fig. 8.)
8. Route the other end of the long high voltage extension harness through the HVAC unit to the control box. (See Fig. 7.) The harness must be routed through the grommets provided in the unit. Do not drill routing holes. Be careful not to route the power exhaust harness on top of the indoor coil.
9. Wire the end of the high voltage harness extension to the power exhaust power source.

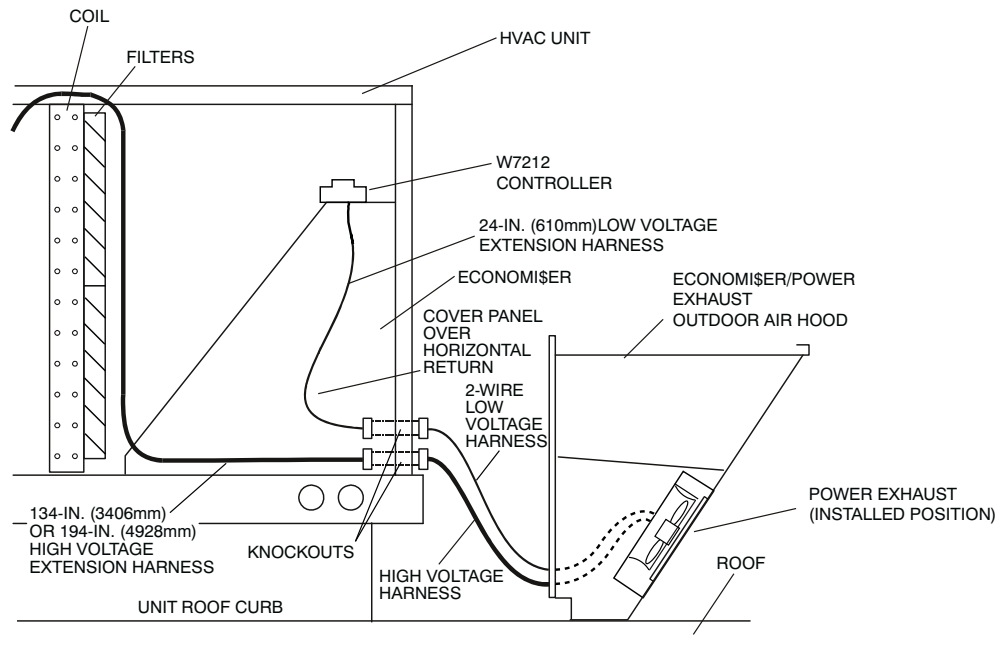


Fig. 4 - Power Exhaust Harness Installation for Economi\$er IV with W7212 Controller

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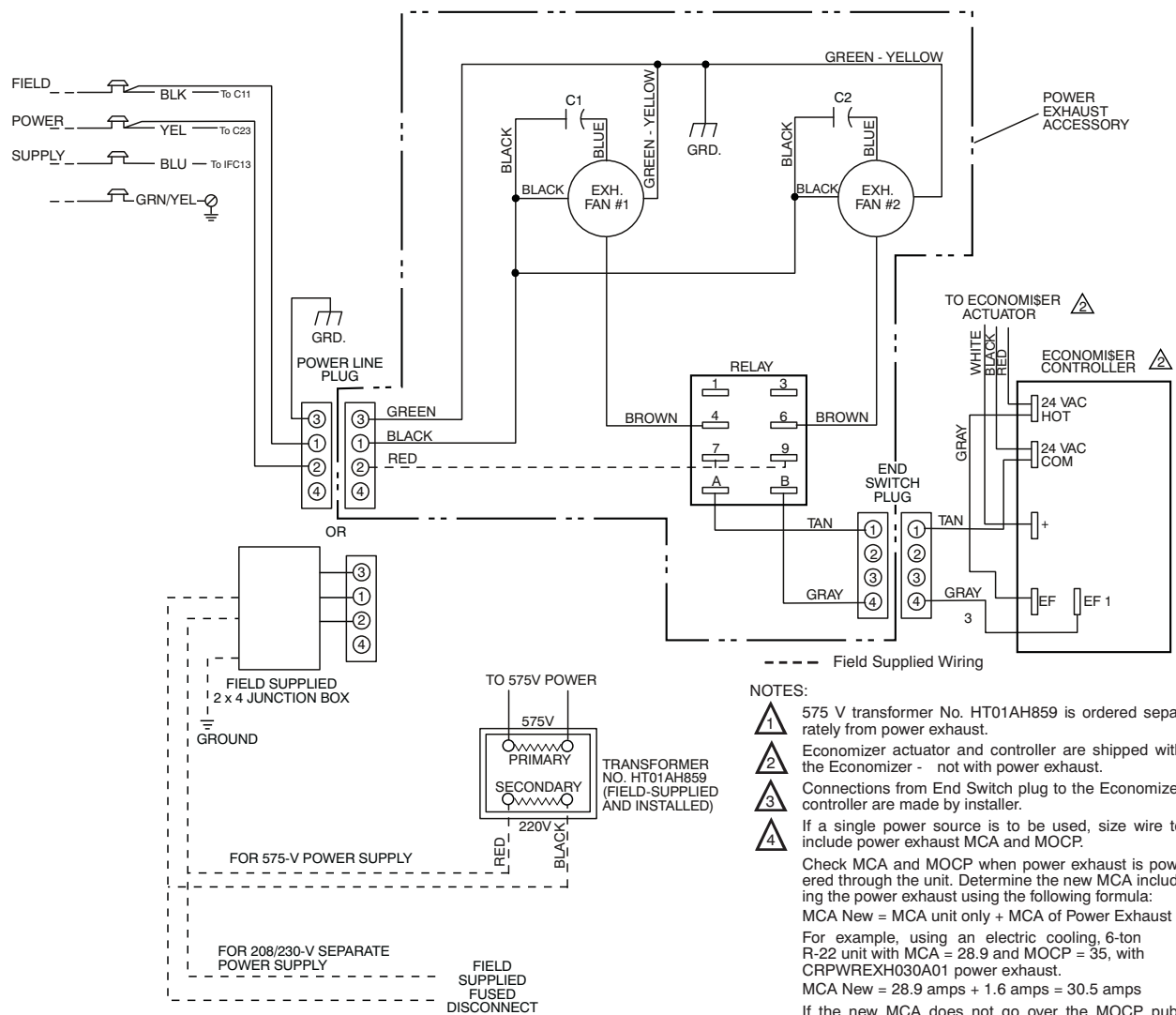


Fig. 5 - Power Exhaust Wiring for Economiser IV with Controller W7212 — 208/230 V and 575 V Units

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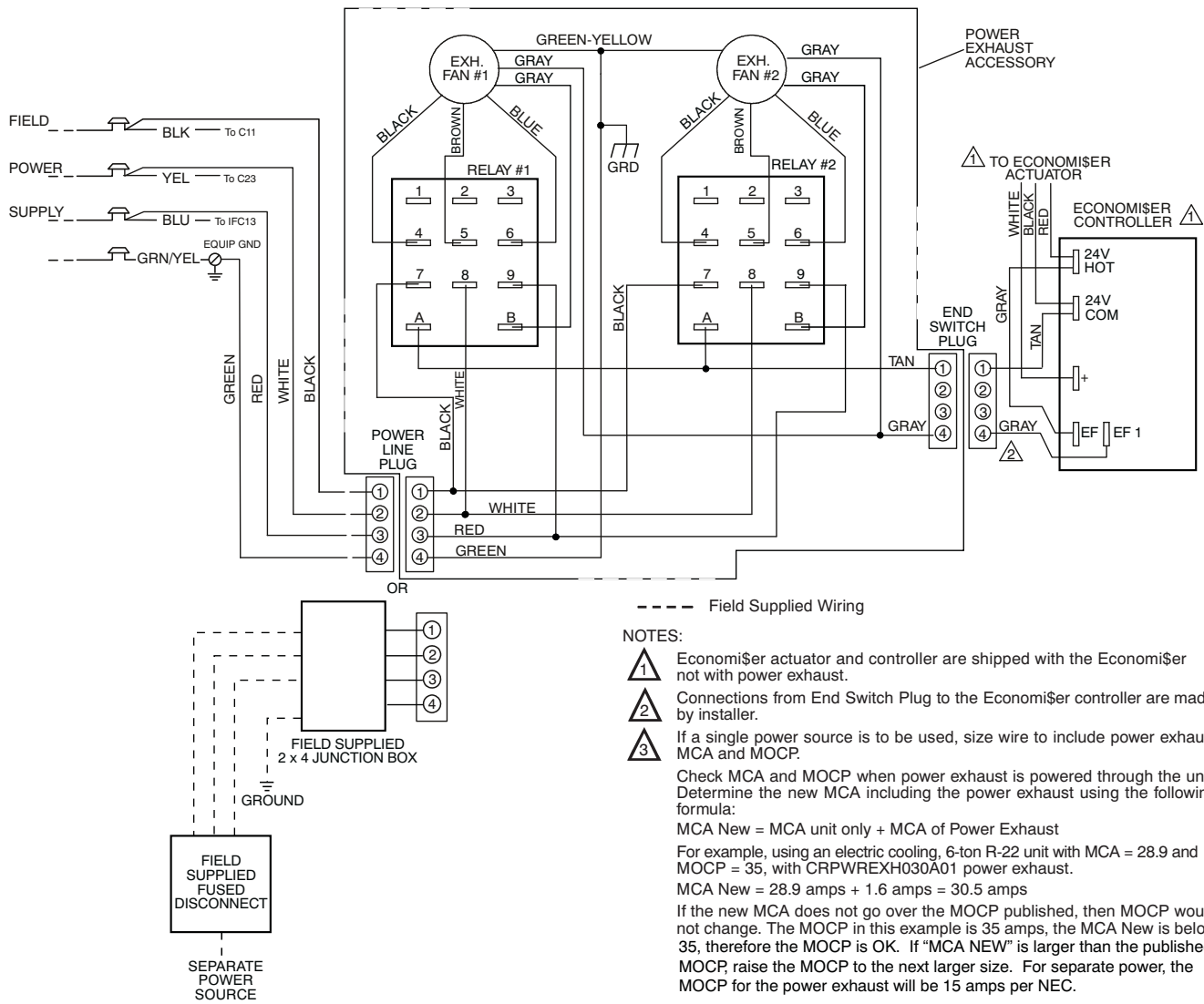


Fig. 6 - Power Exhaust Wiring for Economi\$er IV with Controller W7212 — 460 V Units

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Field-Installed PremierLink Control (Fig. 9)

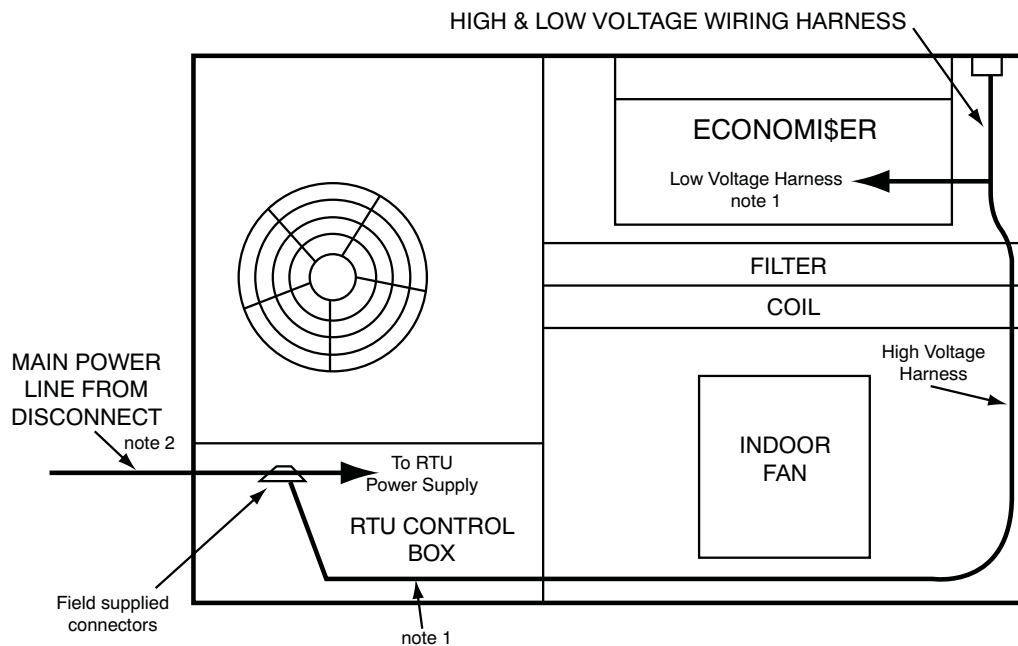
Wire the power exhaust to the orange wire of the HS3/EXH/RVS (terminal J8, pin 3) and a common terminal. Common is available from PremierLink terminal J1 or the common side of the unit control power transformer (the brown leads that go to unit ground).

NOTE: When the PremierLink board is configured for a heat pump, it does not require the HS3/EXH/RVS, allowing this terminal to be used for the power exhaust.

Connect the tan wire from the low voltage extension harness to J8-3 and the gray wire to common terminal. Common is available from PremierLink terminal J1 or the common side of the unit control power transformer (the brown leads that go to unit ground). The other end of the harness is connected to the power exhaust wiring.

Factory-Installed PremierLink Control

The PremierLink J8-3 terminal is factory wired to a terminal board TB2-8 (located in the low voltage section to the left of the control box). The tan wire from the harness should be routed and wired to TB2-8. The gray wire should be routed and wired to TB2-C (brown wires) on the terminal board.



Notes:

1. For units with EconomiSer 2, route high and low voltage wires to the RTU controller in RTU control box. Use separate knockout for high and low voltage wires.
2. Ensure main power line, disconnect and fuse/breaker are sized per National Electric Code

Fig. 7 - Power Line Harness Routing (Top View of Unit Shown)

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Operational Notes For Testing Purposes

If the “continuous power exhaust” function is disabled, the power exhaust fan will operate during EconomiSer purge cycles when the EconomiSer damper position is above the configured minimum value. If enabled, the power exhaust fan will follow the supply fan’s operation for PremierLink version 1.2 and will follow the occupancy configuration for PremierLink version 1.3.

The PremierLink “Auxiliary Output” function defines the specific use of the auxiliary output (HS3/EXH/RVS) for the power exhaust. The output will be energized or deenergized by the appropriate algorithm that uses that specific output. A setting of 1 = Exhaust fan output.

The Power Exhaust set point in the set point table determines the power exhaust damper “percent open” when the power exhaust is energized. The damper percentage set point has a 10% hysteresis.

If “Continuous” in the service configuration table is set to “enable”, the power exhaust output will energize when occupied (for PremierLink controls version 1.3 and later) and will be energized when the supply fan relay is on (for versions prior than 1.3).

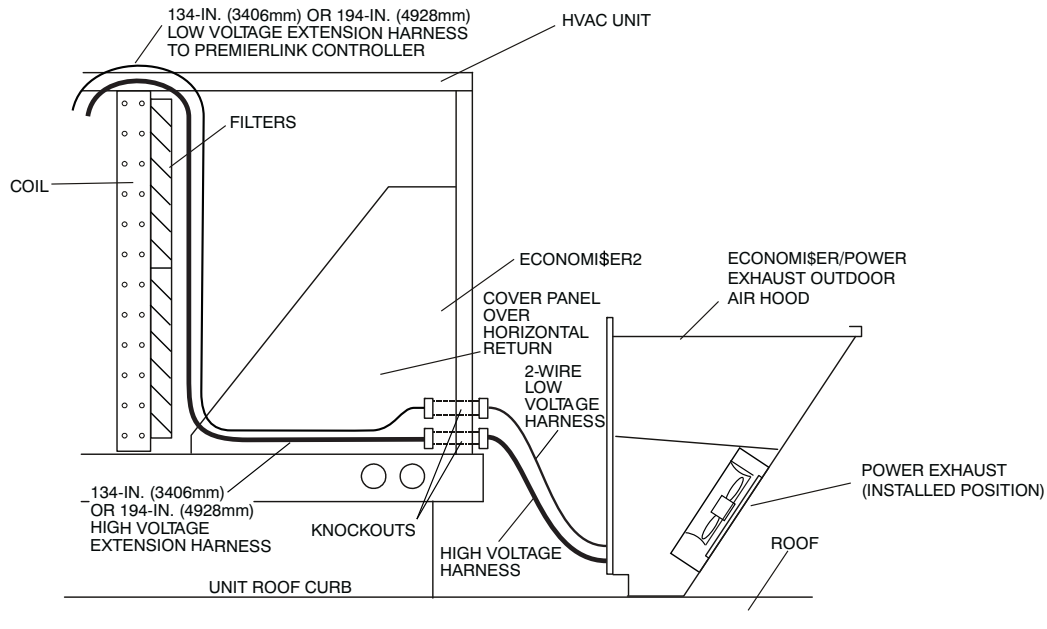


Fig. 8 - Power Exhaust Harness Installation with EconomiSer2 and PremierLink Controls

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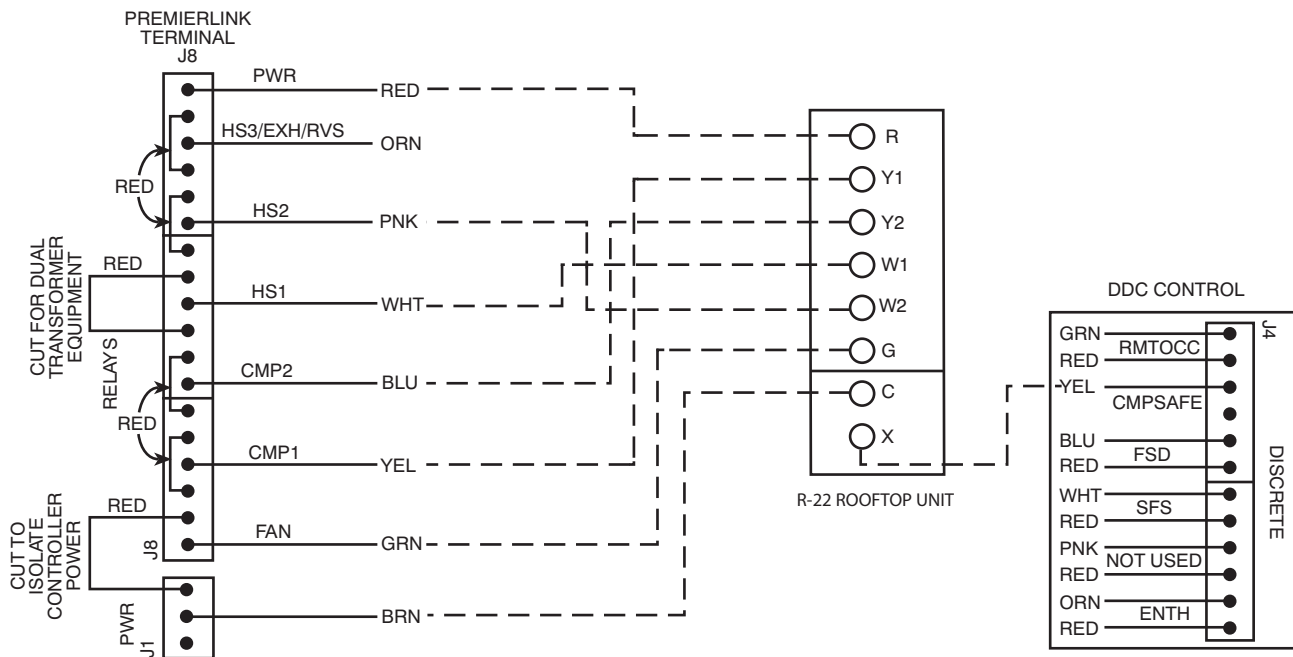


Fig. 9 - Typical PremierLink Control Wiring To Rooftop R-22 Units

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Connect Power Wiring

1. Wire the end of the power exhaust Power Line wiring harness to the power exhaust power source. See Fig. 5 and 6 for EconomiSer IV and EconomiSer2. Follow all local and NEC (National Electrical Code) codes. If a single power source is to be used, size the wire to include power exhaust MCA and MOCP. (See Table 3.)

Check MCA and MOCP when power exhaust is powered through the unit (must be in accordance with NEC and/or local codes). Determine the new MCA including the power exhaust using the following formula:

$MCA\ New = MCA\ unit\ only + MCA\ of\ Power\ Exhaust$

For example, using a R-22 gas heat, electric cooling, 6-ton unit with MCA = 28.9 and MOCP = 35, with CRPWREXH030A01 power exhaust.

$MCA\ New = 28.9\ amps + 1.6\ amps = 30.5\ amps$

If the new MCA does not exceed the published MOCP, then MOCP would not change. The MOCP in this example is 35 amps, the MCA New is below 35, therefore the MOCP is acceptable. If "MCA New" is larger than the published MOCP, raise the MOCP to the next larger size. For separate power, the MOCP for the power exhaust will be 15 amps per NEC.

NOTE: For 575-v installations, a field-supplied and installed transformer (part no. HT01AH859) must be used with 208/230-v power exhaust. (See Fig. 5.)

2. Make sure all wiring is secure. Use field-supplied wire ties if necessary. Be sure that wiring does not interfere with operation of the HVAC unit, EconomiSer, or power exhaust.
3. For units with a standard filter panel (i.e., no hinged door): Install the gasketing (provided) on the back of power exhaust side mating flanges.

NOTE: This step does not apply to units with a hinged door.

4. Lift power exhaust and install over EconomiSer using the no. 10 x 1 in. long screws provided. Make sure wiring harnesses are properly secured.
5. Locate the aluminum filter shipped with the EconomiSer. Open the filter clips under the top hood of the power exhaust. Slide aluminum filter into the outside air opening of the power exhaust. Filter will slide past filter clips. Close filter clips, which will lock filter in place.
6. Adjust the power exhaust set point on the EconomiSer controller to the desired activation point.
7. For units with a standard filter access panel, reinstall the unit filter access door.

For units with a hinged access door, install the hinged door seal angle included in the power exhaust kit using the instructions in this instruction. Do not proceed unless the sealing angle is installed. Units with a hinged door that do not have a sealing angle may not have a watertight seal.

8. Return power to unit and remove lockout tag.
9. Test power exhaust operation by setting the power exhaust set point on the EconomiSer controller to 0%. Power exhaust performance is shown in Fig. 10.

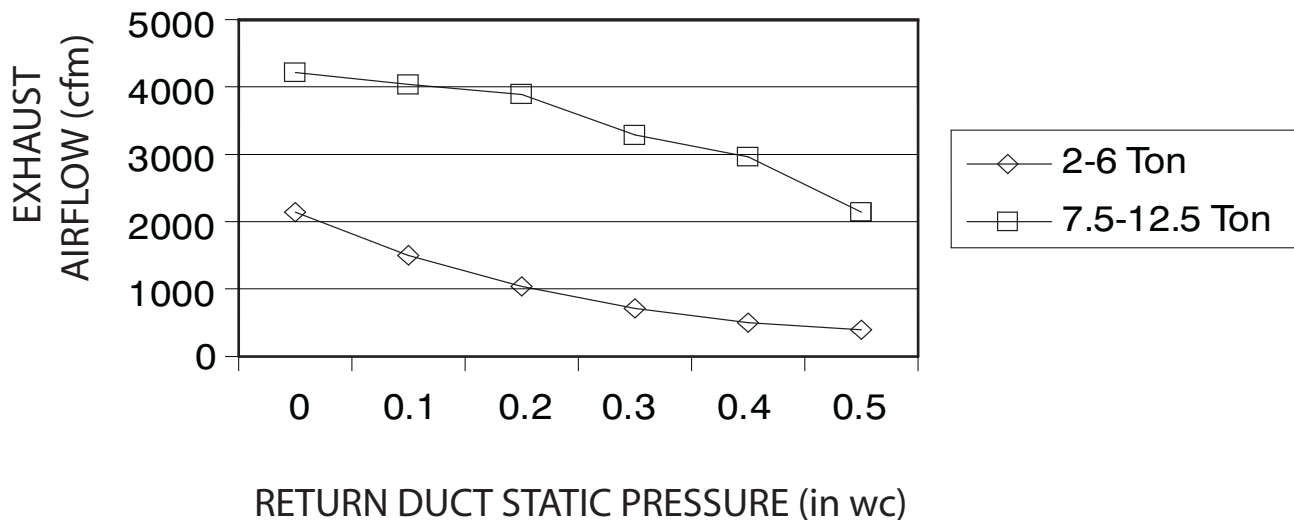


Fig. 10 - Power Exhaust Performance

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Table 3 – Power Exhaust Electrical Data

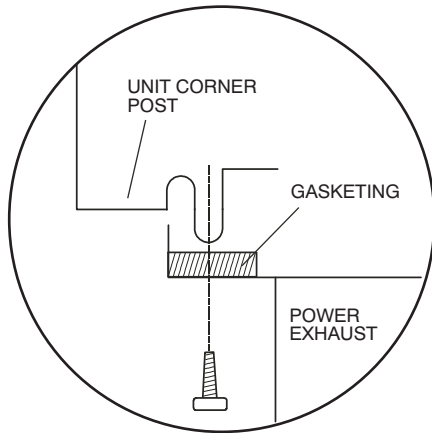
POWER EXHAUST PART NO.	MCA (230 v)	MCA (460 v)	MCA (575 v)	MOCP (for separate power source)
CRPWREXH030A01	1.5	N/A	0.64	15
CRPWREXH021A01	N/A	0.9	N/A	15
CRPWREXH022A01	3.3	N/A	1.32	15
CRPWREXH023A01	N/A	1.8	N/A	15

LEGEND

MCA – Minimum Circuit Amps

MOCP – Maximum Overcurrent Protection

N/A – Not Applicable



**Fig. 11 - Gasketing Location Detail
(Standard Filter Panel Only)**

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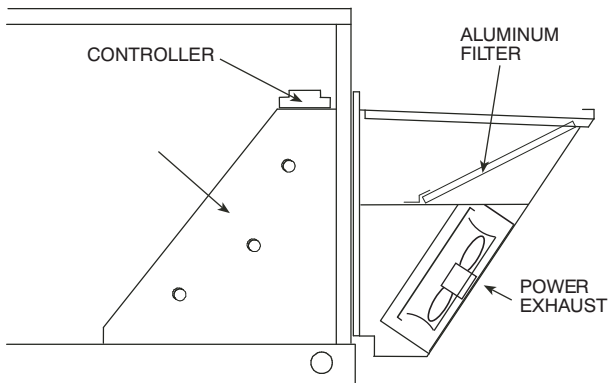


Fig. 12 - Power Exhaust Installed on Unit

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Install the Hinged Door Angle

Follow these instructions if the unit has a hinged panel instead of a standard filter panel. Hinged Door Angle CRPECONV003A00 is for 2 to 6 ton units and CRPECONV004A00 is for 7¹/₂ to 12¹/₂ ton units.

1. Find the sealing angle and three screws provided in the power exhaust kit.
2. Attach the sealing angle to the top of the power exhaust hood using the screws provided. Refer to Fig. 14. Note that the gasketing flange will be facing out.
3. *If there are NO pre-drilled holes in the Power Exhaust hood:* Lay the hinged panel, insulation side up, on top of the hood so that the hinge screw holes align with the pre-drilled screw holes in the sealing angle. (For hoods with pre-drilled holes, skip to Step 7.)
4. Check the alignment of the hinged door with the side of the filter opening to be sure it will close properly.
5. Use a pencil to mark the hood where the screw holes will be.
6. Remove the hinged door and drill four (4) 1¹/₆₄ in. holes where the marks are.

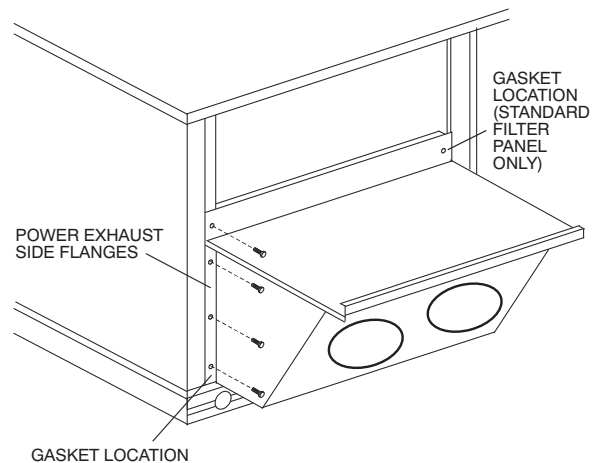


Fig. 13 - Power Exhaust Installation

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NOTE: The sealing angle will be in place; use the holes in it as a guide.

7. Place the door and hinges back on the unit. Screw through the door hinges and sealing angle into the flanged top of the hood using the 4 screws set aside when the hinged door was removed. (See Fig. 15.)
8. Close the hinged door and adjust handles if necessary.

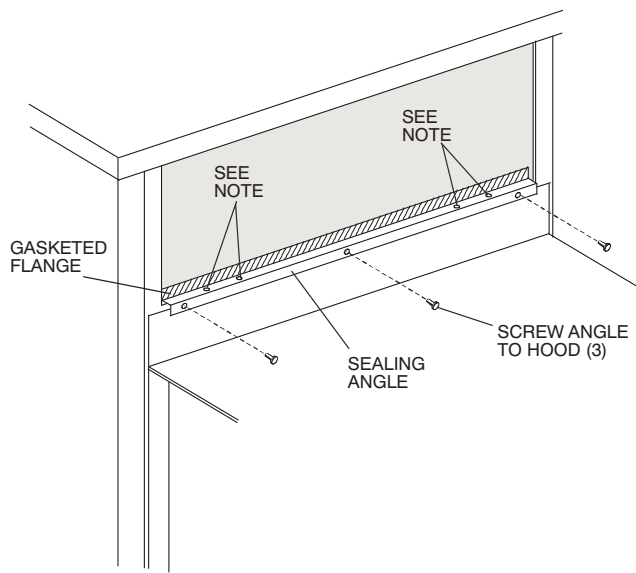


Fig. 14 - Install Sealing Angle

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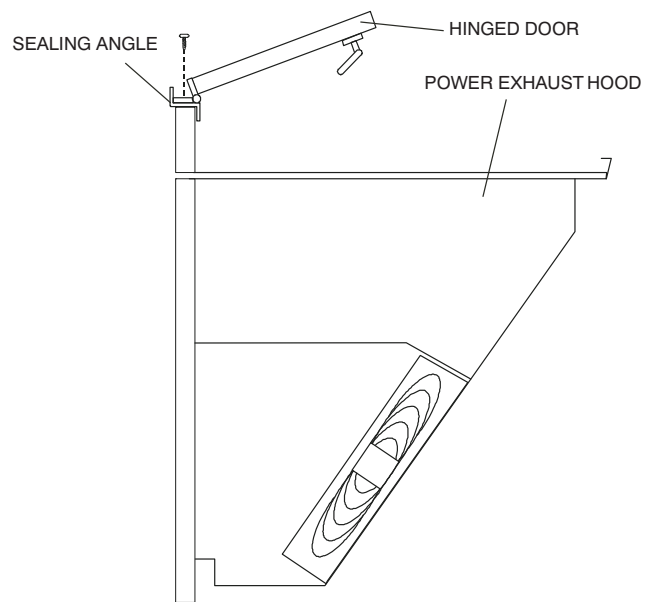


Fig. 15 - Re-Install the Hinged Door

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