

## POWER EXHAUST FANS

### Installation Instructions for Horizontal Power Exhaust Fans used with ZC,ZG,ZH 036,048,060 and ZC,ZG 092,102,120,150 Packaged Units

#### Shipping and Packing List

- 1 - Power Exhaust Assembly
- 1 - High Voltage Harness (3 pin)
- 1 - Hardware Bag
  - 1 - Instructions
  - 4 - #10-16 x 5/8" screws

Check packaging for shipping damage. Contact the last carrier immediately if any shipping damage is found.

#### Application

Power exhaust fans are applied to units equipped with an economizer in horizontal flow air discharge. The power exhaust fan option cannot be used in down flow air discharge applications. See Table 1.

Locate all other accessories to be installed. Install accessories in the following order:

- 1 - Economizer Dampers
- 2 - Sensors
- 3 - Power Exhaust Fans
- 4 - 575 volt transformer (if required)
- 5 - Filter Door
- 6 - Side Economizer Panel

Table - 1

Unit	Unit Voltage	Catalog No.
ZC,ZG,ZH 036,048,060 and ZC,ZG 092, 102,120,150	208/230v 1ph	Z1PWRE15A-1P
	460v 3ph	Z1PWRE15A-1G

1. For 575 applications, a field-supplied and installed transformer (Cat no. 59E02) must be used with a 208/230V power exhaust assembly.

#### Installation

1. Disconnect electrical power to unit.
2. Install horizontal economizer accessory using instructions provided with economizer.
3. Install any economizer related optional sensors. Attach horizontal return duct to horizontal economizer. Ducts should be transitioned to a minimum of 25" high to fit to power exhaust. (See Fig. 5.)
4. Remove filter door, side economizer panel, and indoor fan panel from unit. Retain screws and set aside for later use. (See Fig. 1.)
5. Cut 20" x 20" opening in the side of the return duct. Locate the opening and power exhaust within 18" of unit. (See Fig. 5.)
6. Route the power exhaust harness with 5 pin plug (P18) through the return duct and connect to economizer's power exhaust 5 pin plug (J18), which is at the top of the return damper. The power exhaust plug (J18), contains 2 wires for low voltage connection to the economizer controller for power exhaust activation, and 2 or 3 (depending on voltage) high voltage wires. (See Fig. 4.)
7. Gasket the backside of the power exhaust mating flanges. Set power exhaust over the 20" x 20" opening in return duct. Using (4) #10-16 x 5/8" screws, secure the power exhaust to duct through side flanges.

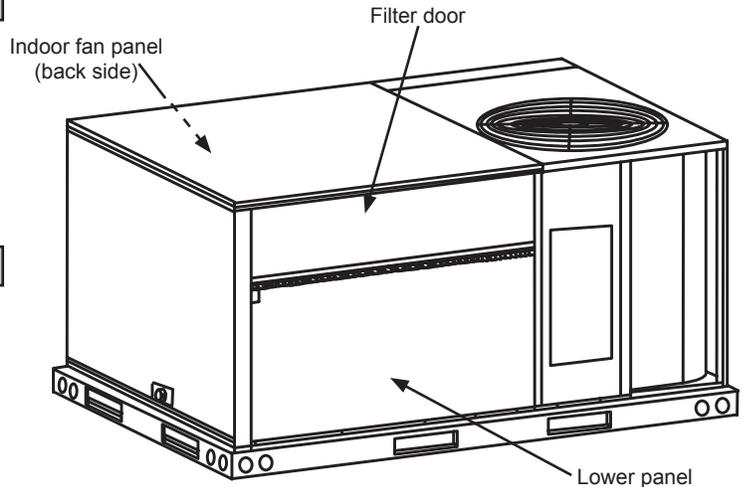


Figure 1

NOTE: Depending upon location, power exhaust and return duct may need field supports.

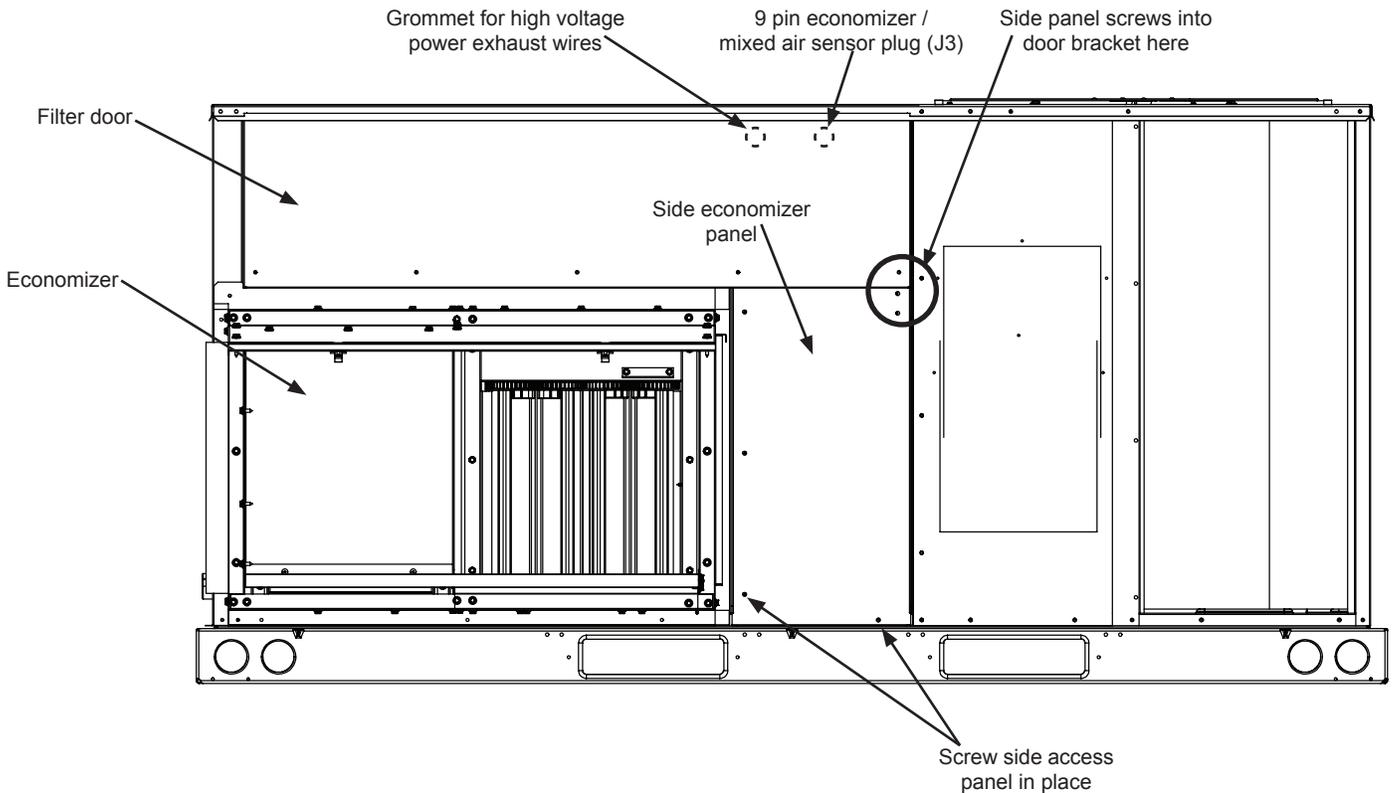
8. Secure wires from power exhaust in place so they do not interfere with gravity exhaust dampers.
9. Connect the 3 pin voltage harness shipped with the power exhaust (P24), to the 3 pin high voltage plug in the horizontal economizer (J24). (See Fig. 4.)



#### CAUTION

**Danger of sharp metallic edges. Can cause injury. Take care when servicing unit to avoid accidental contact with sharp edges.**

10. Remove 7/8" knock out from indoor top coil seal. Insert 7/8" webbed snap bushing into place. (See Fig. 2.)
11. Route the high voltage harness through bushing (see Fig. 2) into the supply air section. Then, continue to route the harness through the igniter wire port at the top of the panel on left side of supply air section, and to unit electrical control box. Secure wires in place.
12. Connect high voltage harness to power connections. (See Fig. 6 and 7.) NOTE: On 575 volt units a separate transformer (Cat no. 59E02) must be purchased and installed.
  - a. **208/230V - 1 and 3 PH**
    1. Temporarily remove pink and yellow wires from the transformer T1-240 and C terminals
    2. Attach Y-terminal adaptor to 240V terminal on the transformer.
    3. Attach High Voltage Power Exhaust (P24) red and yellow wires to open terminals T1-240 and C
    4. Reattach unit pink and yellow wires onto the open Y terminal on T1-240 and T1-C, resp.



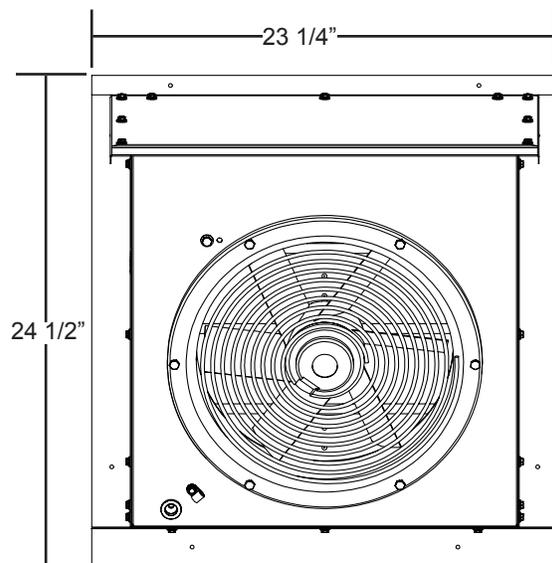
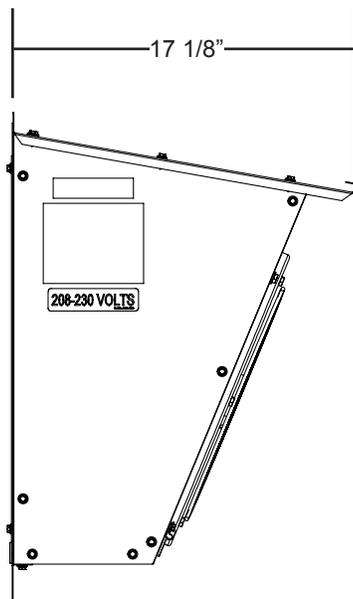
**Figure 2**

**b. 460 - 3 PH**

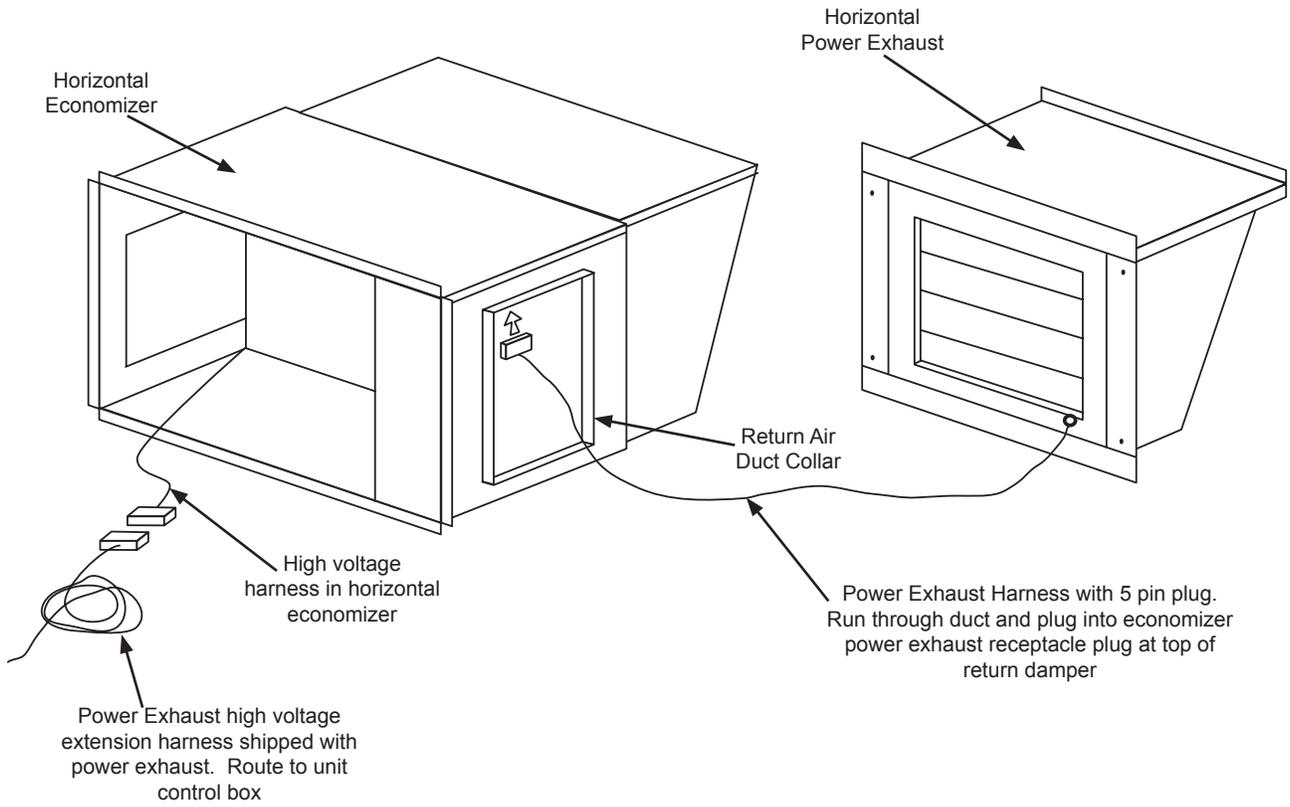
1. Temporarily remove pink and yellow wires from the transformer T1-480 and C terminals.
2. Attach High Voltage Power Exhaust (P24) red and yellow wires to open T1-480 and C terminals.
3. Attach High Voltage Power Exhaust (P24) blue wire onto K3-L3 terminals.
4. Reattach unit pink and yellow wires onto the open terminal on T1-480 and T1-C, resp.

**c. 575V - 3 PH**

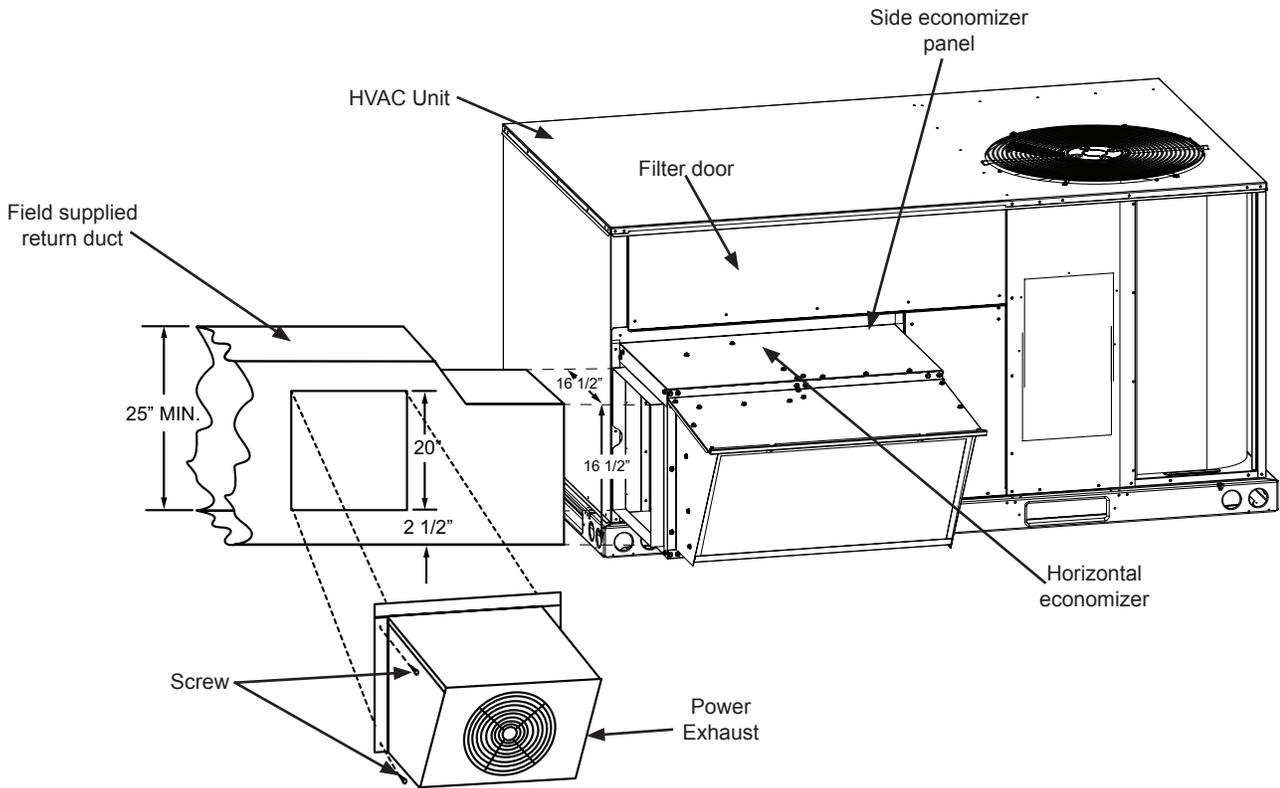
1. Temporarily remove pink and yellow wires from transformer T1 terminals 600V and C.
2. Attach the red and yellow wires from the 575V transformer T10 to the transformer T1 terminals 600V and C.
3. Insert T10 black wire into P24 red wire.
4. Attach P24 yellow wire onto T1 transformer terminal C.
5. Reattach unit pink and yellow wires to open T1-600V and C terminals.
13. Adjust power exhaust setpoint on economizer control module.
14. Reinstall filter door above economizer, and side panel to the right of the economizer. (See Fig. 5.)
15. Reapply power to unit.



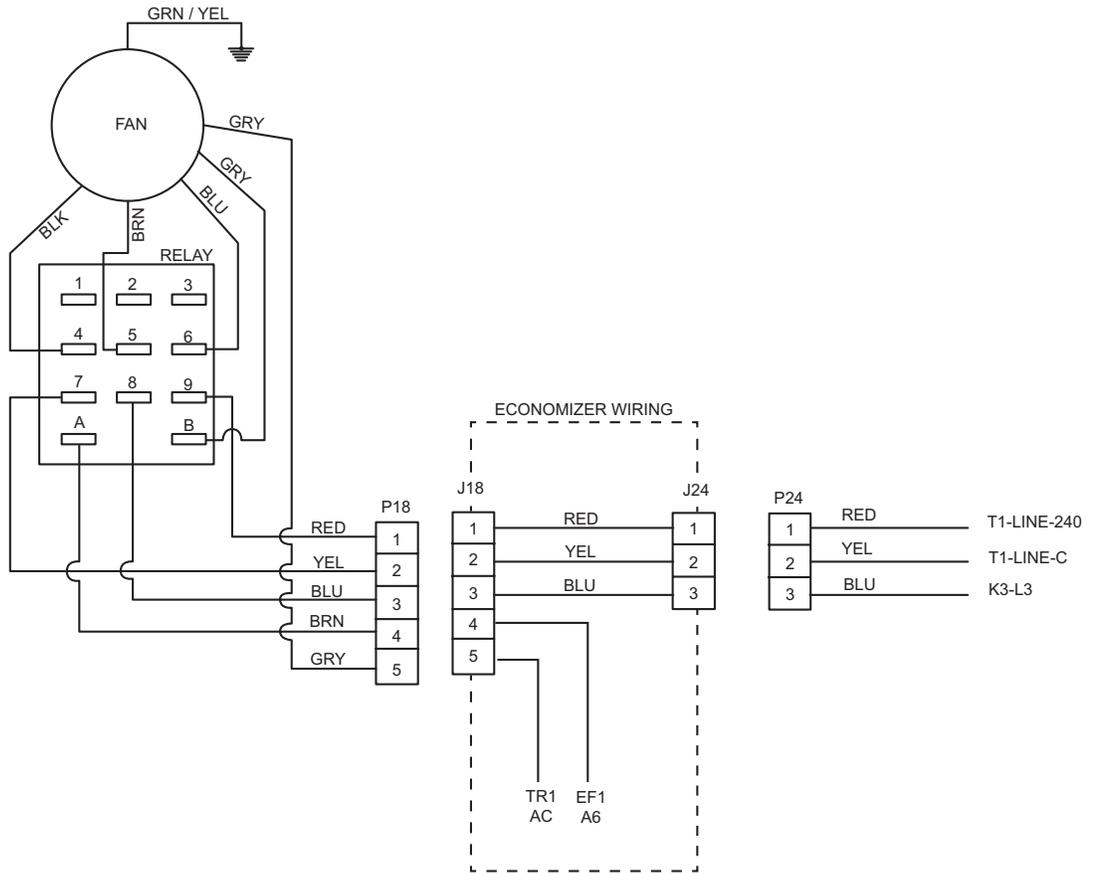
**Figure 3 - Horizontal Power Exhaust**



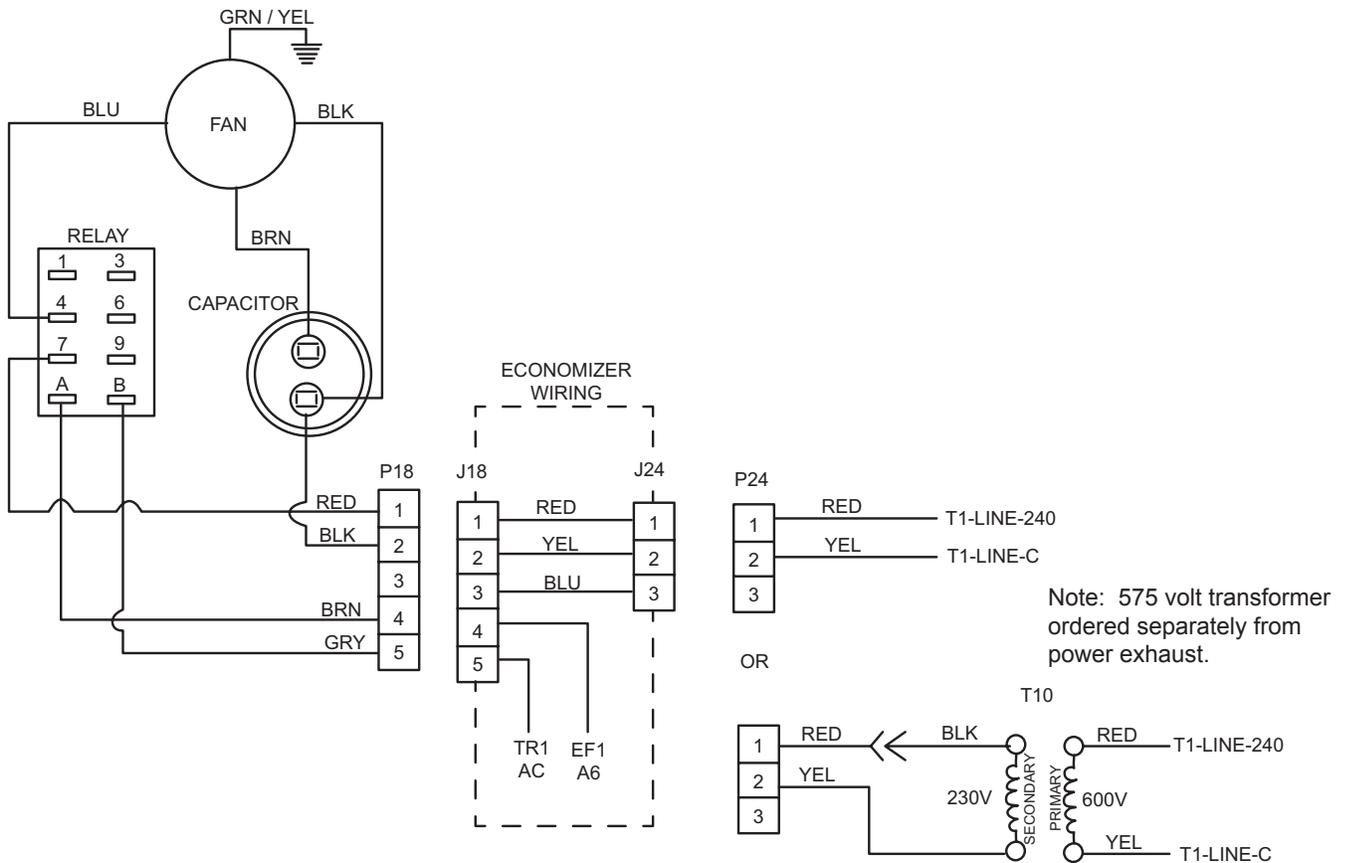
**Figure 4**



**Figure 5**



**Figure 6 - Wiring Diagram for 460v 3PH**



**Figure 7 - Wiring Diagram for 230 volt and 575 volt**