These instruction cover all the necessary information to properly field install Power Exhaust Kits model numbers 2PE04700925 (208/230-1-60 volt) and 2PE04700946 (460-1-60 volt) on single package rooftop air conditioners or heat pumps, in cooling capacities from 90 through 150 Mbh (7 1\(\frac{1}{2}\) thru 12 1\(\frac{1}{2}\) ton). These kits are wired for single phase applications, however, they are compatible with three phase applications. See Figures 7 and 8.

These power exhaust kits are normally used concurrently with economizers, however, economizers are not required for operation. Stale air is removed from a building or the building is depressurized via the return air duct and is controlled by the rooftop equipment and/or accessories. See Figure 9 for dimensions.

INITIAL INSPECTION AND HANDLING

After opening carton or crate, look for concealed damage. If concealed damage is found, immediately file claim with carrier.

INSTALLATION

1. Disconnect power from rooftop unit.
2. If attaching directly to the rooftop unit for downshot applications, remove the rooftop unit horizontal return air duct cover and discard. If attaching to the horizontal return air duct, for side supply/return applications, cut a hole to fit the opening of the power exhaust unit.
3. Remove the rooftop unit’s filter access panel.
4. Remove control box from kit assembly and mount inside fresh air compartment of unit. Drill hole in divider panel between fresh air and return air compartments of unit and route plug from control box through this hole. Connect harness leads of power exhaust accessory to independent power supply. (Units wired for 230 volt can be converted to 208 volt by removing orange wire from transformer to the relay and replacing it with the red wire from the transformer).
5. Ground unit with a suitable ground connection either through unit supply wiring or an earth ground.

6. Position low voltage end switch on economizer damper motor so that it activates the power exhaust at the desired setting. Refer to "Installation of End Switch" for mounting. If used without the economizer, run low voltage wire to coil of blower contact. Place these wires in parallel with this coil.
7. Connect plug from power exhaust unit with connector from control box. Attach power exhaust unit to opening with sheet metal screws to secure into place.
8. Assemble knockdown exhaust hood that includes barometric damper and bird screen.
9. Attach exhaust hood to face of power exhaust panel with sheet metal screw to secure.
10. Replace filter access panel onto rooftop unit and secure with sheet metal screws.
11. Clean up once unit is operating properly, caulk any open joints, holes or seams to make the unit completely air and water tight.

MAINTENANCE

All motors use sealed bearings; no lubrication is necessary. Make visual inspection of dampers; linkage assemblies; fan blades or blower wheels and motors. Check for dirt accumulations; unusual noises or vibrations; overheating; sheaves and belts; high motor current; poor wiring or overheated connections; loose mounting bolts and worn relay contacts.

INSTALLATION OF END SWITCH

1. Determine the crank arm stroke range (See Fig. 1) by running the actuator through one complete cycle. Mount the end switch on the side opposite of the crank arm stroke range.
2. Disconnect power to the actuator and the device to be controlled by the end switch.
3. Assemble the end switch and plastic insulating boot (See Fig. 2). Attach the end switch and plastic insulating boot to the switch mounting plate with the two #4-40 screws, two washers and two lock washers provided with the end switch assembly.

4. Mark the actuator crank arm position on the actuator panel with a pencil, pen or tape.

5. Remove the actuator crank arm.

6. Based on the determination of the crank arm stroke range in Step 1 above, remove the screw from the upper actuator corner where the switch mounting plate is to be assembled. (See Fig. 1)

7. Place the switch mounting plate over the actuator drive spindle and fasten it in place with the actuator corner screw from Step 6 (See Fig. 3). Center the screw in the switch mounting plate slot.

8. Place the actuator crank arm over the switch mounting plate, aligning the crank arm with the placement marks from Step 4.

9. Determine at which point in the actuator crank arm rotation the end switch should close. Install the circular switch cam over the actuator crank arm, positioning one of the small reference holes in the circular switch cam at the end switch close point on the actuator crank arm (See Fig. 4). The two small holes in the circular switch cam are references for the make/break point of the end switch. The portion of the circular switch cam shown with a dotted line in Fig. 4 identifies the cam area that will close the end switch when the actuator crank arm rotates.

**NOTE:** Two small protrusions on the bottom of the circular switch cam fit into holes on the actuator crank arm to position the cam.

10. Bend the metal arm on the end switch arm loop (if necessary) by using a small screwdriver blade to adjust the end switch open and close points on each side of the reference hole (See Fig. 5).

**FIGURE 2** - END SWITCH AND INSULATING BOOT ASSEMBLY

**NOTE:** The #4-40 screws provided with the end switch assembly are sized to allow the switch mounting plate to mount flush against the actuator side panel.

**FIGURE 3** - SWITCH MOUNTING PLATE LOCATION

**FIGURE 4** - CIRCULAR SWITCH CAM

**FIGURE 5** - END SWITCH ARM LOOP ADJUSTMENT

ADJUSTMENT

If a finer adjustment is necessary, loosen the screw holding the switch mounting plate on the actuator and move the switch mounting plate to correctly place the end switch arm loop on the circular switch cam. Carefully tighten the Phillips screw. Do not over torque the screw to prevent stripping the actuator plastic case threads.

**FIGURE 6** - EXTERNAL STATIC PRESSURE VS CFM PERFORMANCE
**TABLE 1 - ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>VOLTAGE</th>
<th>MOTOR</th>
<th>UNIT</th>
<th>FUSE SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PE04700925</td>
<td>208/230</td>
<td>0.75 1075</td>
<td>HP RPM QTY/TYP</td>
<td>LRA FLA MCA</td>
</tr>
<tr>
<td>2PE04700946</td>
<td>460</td>
<td>0.75 1050</td>
<td>1 direct dive</td>
<td>5.0 2.2 2.8</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Connect harness leads to load side of blower contactor.
2. A. Power Exhaust wired for HI speed.
   B. For MED speed disconnect BLK wire from relay attach WHT wire and connect BLK and BLU wires together.
   C. For LOW speed disconnect BLK wire from relay attach YEL wire and connect BLK and BLU wires together, also, connect WHT and ORG wires together.
3. Be sure all leads from motor have been covered with tape.

**LEGEND:**
- C: Capacitor
- ES1: End Switch
- FB: Fuse Block
- FM: Fan Motor
- GRD: Ground
- P1: Fan Plug Male
- R1: Relay
- S1: Control Box Female
- T: Transformer

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3. Be sure all leads from motor have been covered with tape.
FIGURE 9 - POWER EXHAUST ACCESSORY DIMENSIONS (inches)