

Accessory Power Exhaust Packages

Single-Package Cooling Units (50 Series)
Combination Heating/Cooling Units (48 Series)
Single-Package Heat Pumps (50EQ)

GENERAL

NOTE: The accessory power exhaust is used with factory-installed or field-installed economizer. Do not install power exhaust on units unless economizer is used. The accessory power exhaust is applied to units as indicated in Table 1.

Before installing power exhaust, turn off power to unit.

If economizer is installed, make sure economizer outdoor air damper is open before turning off power. If economizer is being field-installed with power exhaust, install outdoor air damper in open position. Power exhaust configuration for each size unit is shown in Fig. 1.

Table 1 — Accessory Power Exhaust Application Data

UNIT MODEL	SIZE	V/PH/HZ*	ACCESSORY PACKAGE NO.
48/50DF 50EQ	024	208-230,460/3/60	48DF900161
		400/3/50	48DF900161
		575/3/60	48DF900171
48/50DF 50EQ	028	208-230,460/3/60	48DF900181
		400/3/50	48DF900181
		575/3/60	48DF900191
48/50DF 50EQ	034	208-230,460/3/60	48DF900201
		400/3/50	48DF900201
		575/3/60	48DF900211
→ 48/50DF 50DL	044	208-230,460/3/60	48DF900221
		400/3/50	48DF900221
		575/3/60	48DF900231
→ 48/50DF 50DL	054 064	208-230,460/3/60	48DF900241
		400/3/50	48DF900241
		575/3/60	48DF900251

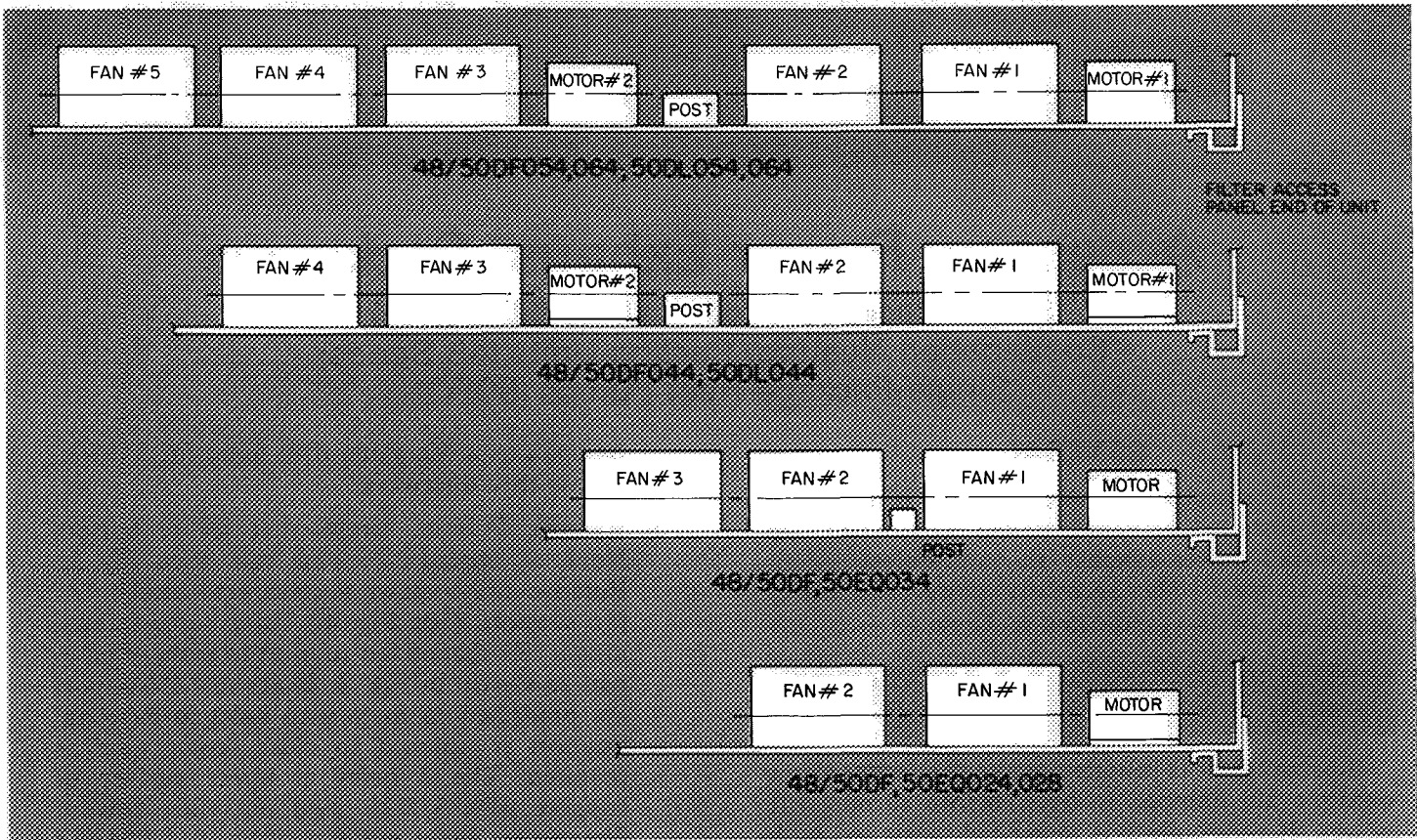
*208-230,460/3/60 units are wired for 460 volts 400/3/50 units are wired for 400 volts

INSTALLATION

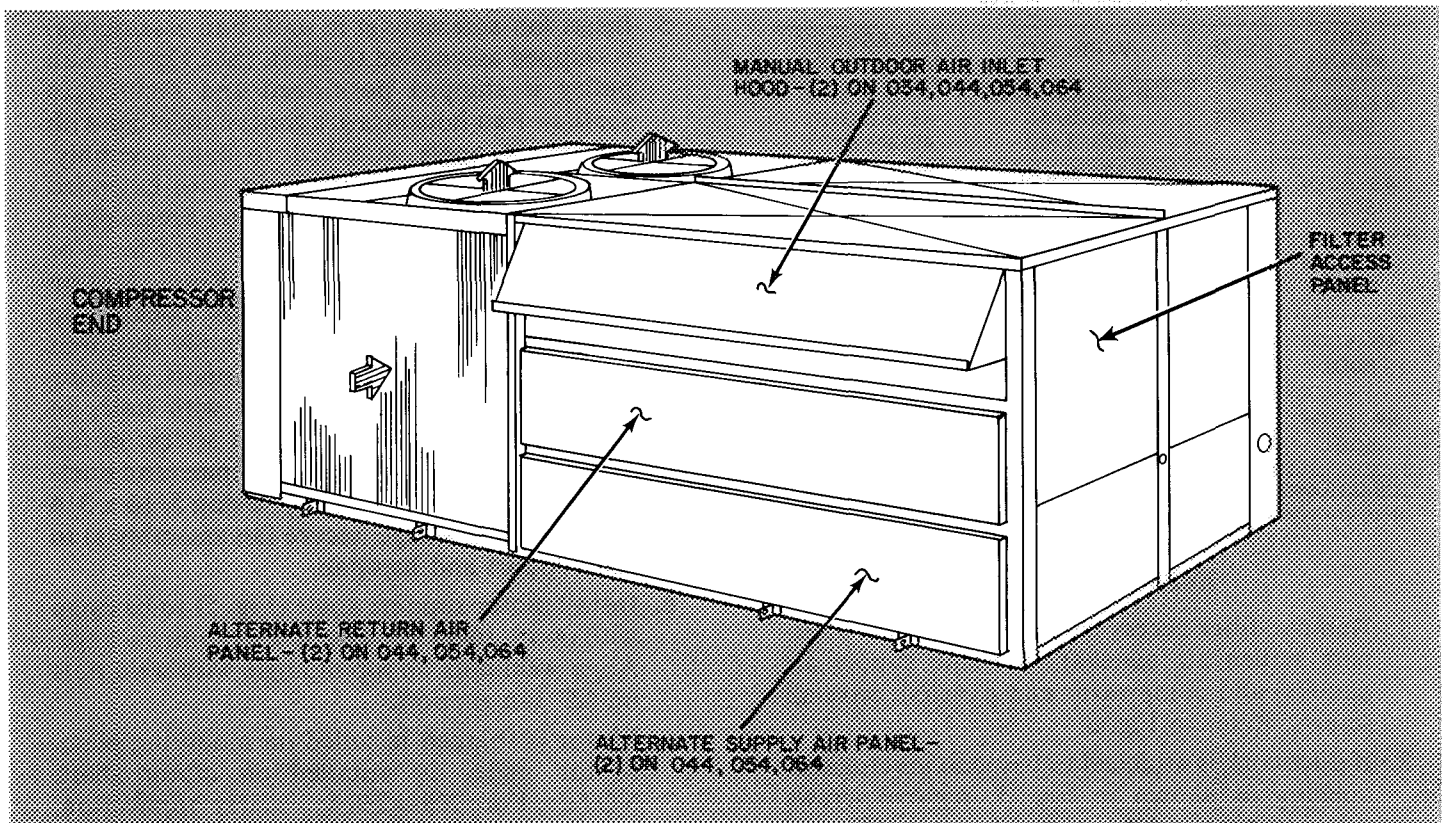
1. Remove filter access panel(s) and filters, alternate return air panel(s), alternate supply air panel(s) and compressor end panel(s). Save all screws. Refer to Fig. 2.
2. If ductwork is attached to basepan in return air opening as shown in Fig. 3, remove screws securing ductwork to edge of basepan. (Screws will interfere with subsequent fan installation.) Using factory-drilled holes in back edge of

basepan as a template, drill holes for 5/16-in. screws thru ductwork.

3. Remove 5/16-in. screws that secure bottom front of basepan to base rail. (See Fig. 3.) Remove only screws necessary to attach "Z" fan support. (See Fig. 4.) Using same screws, attach "Z" shaped fan support to front of basepan as shown in Fig. 3. Holes in "Z" support are predrilled to mate with holes in basepan. Support is notched to clear center post as required. The 2 holes in upper surface of support with 3/8-16 weld nuts face toward filter access panel end of unit. For 044, 054 and 064 units, 2 "Z" angle supports are required.
4. Before installing fan assembly, grease fan shaft(s) with rust protection grease from accessory package. (Also, grease exhaust motor shaft(s) at this time.)
5. Insert fan assembly(s) in unit. Fan assembly(s) is shipped assembled to shaft. (See Fig. 5.) Fan pulley is shipped positioned and secured to shaft(s). Fan housings are ganged together with a support angle attached to fan assembly. Install fan assembly(s) in unit with extended shaft end (with pulley) facing filter access panel end of unit. Insert fan assembly thru front or end opening of unit as required. Rotate fans on shaft 90 degrees with fan exhaust opening up to facilitate passage of fan assembly thru unit opening. Position fans on "Z" support, aligning holes in fan exhaust openings with holes in support. Holes in support angle at rear of fan assembly align with holes in basepan (and ductwork, if drilled as in step 2). Using 5/16 x 3/4 screws from package, secure fan assembly(s) to "Z" support and basepan.
6. Install motor support angle (Fig. 5) to basepan with two 5/16-18 x 3/4-in. screws from package. Align weld nuts on top of angle with weld nuts on "Z" fan support.
Motor is shipped installed on mounting plate. Motor pulley is installed on motor shaft. **NOTE:** For 208—230-v, 60-Hz application, power exhaust motor must be rewired. Motor is shipped wired for 460 v. Remove motor connection box cover and rewire motor as shown in



→ **Fig. 1 — Power Exhaust Configurations — 48/50DF024-064;
50EQ024,028,034; 50DL044,054,064**



→ **Fig. 2 — Physical Data — 48/50DF024-064; 50EQ024,028,034; 50DL044,054,064**

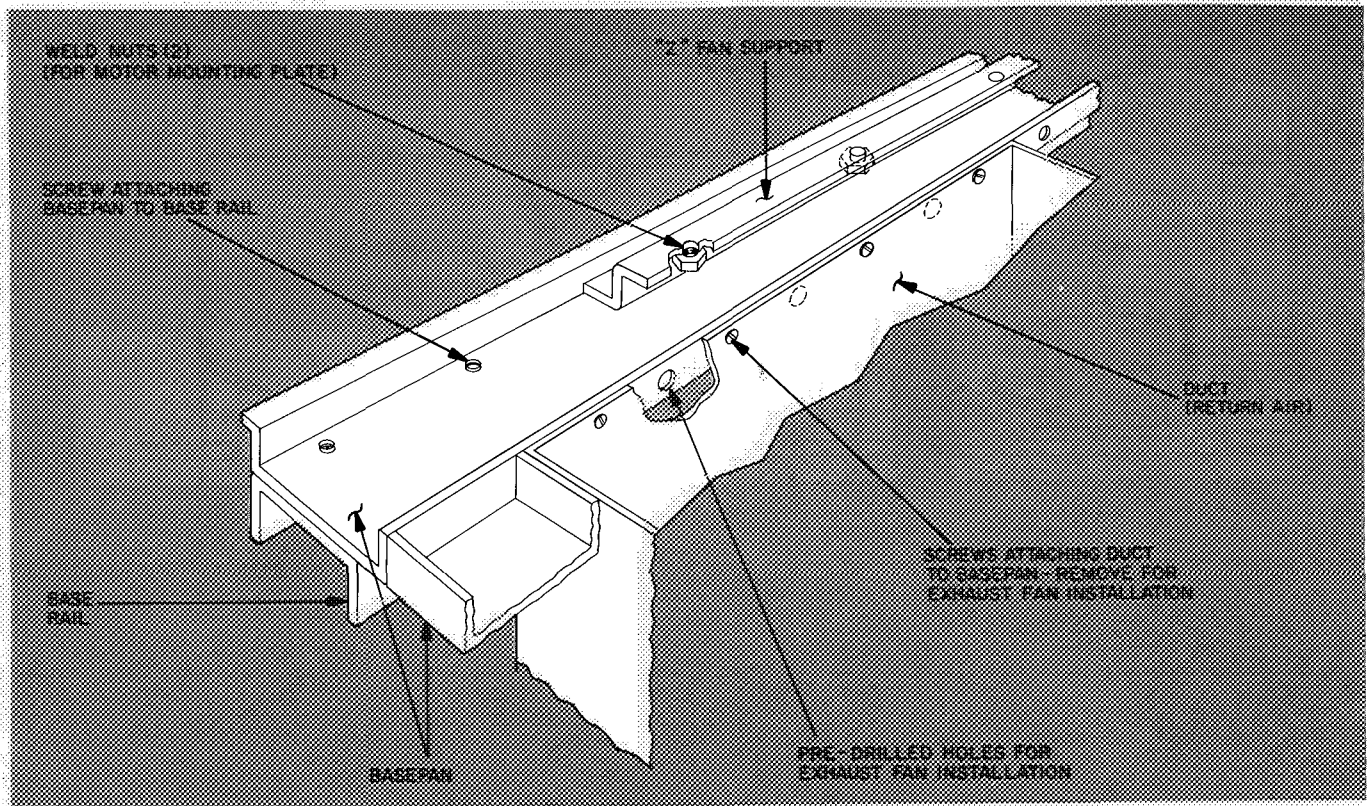


Fig. 3 — "Z" Exhaust Fan Support Installation

- Fig. 6 for 208-230 v and 230 v. Replace connection box cover. Position mounting plate with motor on "Z" fan support and motor support angle and loosely attach mounting plate to supports with four 3/8-in. bolts, washers and lock washers from package. Power exhaust motor conduit is to rear (inside) of unit (Fig. 7). Fan pulley and motor pulley should be in alignment. If not, loosen 3/8-in. bolts that secure motor to mounting plate and align pulleys. Tighten bolts. Install belts on pulleys. Adjust mounting plate so that pulleys have approximately 1/8-in. play. Tighten 3/8-in. bolts in mounting plate.
7. Install 1-3/8 in. snap bushing in horizontal deck (Fig. 7 and 8). Route power exhaust conduit thru bushing to upper filter track. Run conduit across top filter track to knockout in condenser section partition. Secure with wire ties at holes provided. (Reach in thru open economizer outdoor air damper blades to install wire ties. See Fig. 8.) Remove fan guard, fan and fan motor from condenser section adjacent to filter compartment. Secure conduit connector to condenser partition. Seal the connector and wiring extending into condenser compartment with RTV or equal. The seal must be watertight on both sides of partition. Form drip loop with wires in condenser section after passing thru partition.

On 044, 054 and 064 units with 2 motors, route conduit from back of no. 2 motor along basepan to knockout at bottom of condenser section partition (Fig. 9). Secure conduit connector to partition. Seal connector and wires extending thru partition with RTV or equal.

On all units, route wires from condenser partition to unit control box.

8. Install exhaust motor contactor (EMC) in control box location shown in Fig. 10. Replace fan motor fan and fan guard.
 9. Units are equipped with a damper motor auxiliary switch (DMAS) located on damper motor. This switch is factory set to prevent power exhaust fans from operating when economizer is less than 30% open. It is factory wired to control box thru Molex plug 5. When power exhaust assembly is not factory installed, orange and brown wires from receptacle side of plug 5 are spliced together inside unit control box.
- Remove splice and connect brown wire to exhaust motor contactor (EMC) C1. On 50EQ and 48/50DF and DL units with standard indoor fan motor connect orange wire to power exhaust relay (PER) terminal 5. On 48/50DF and DL units with two-speed indoor fan motor option connect orange wire to C1 Dummy Terminal 2. See Fig. 10 for typical component arrangement and Fig. 11 for typical schematic. Refer to base unit label diagram for specific applications.

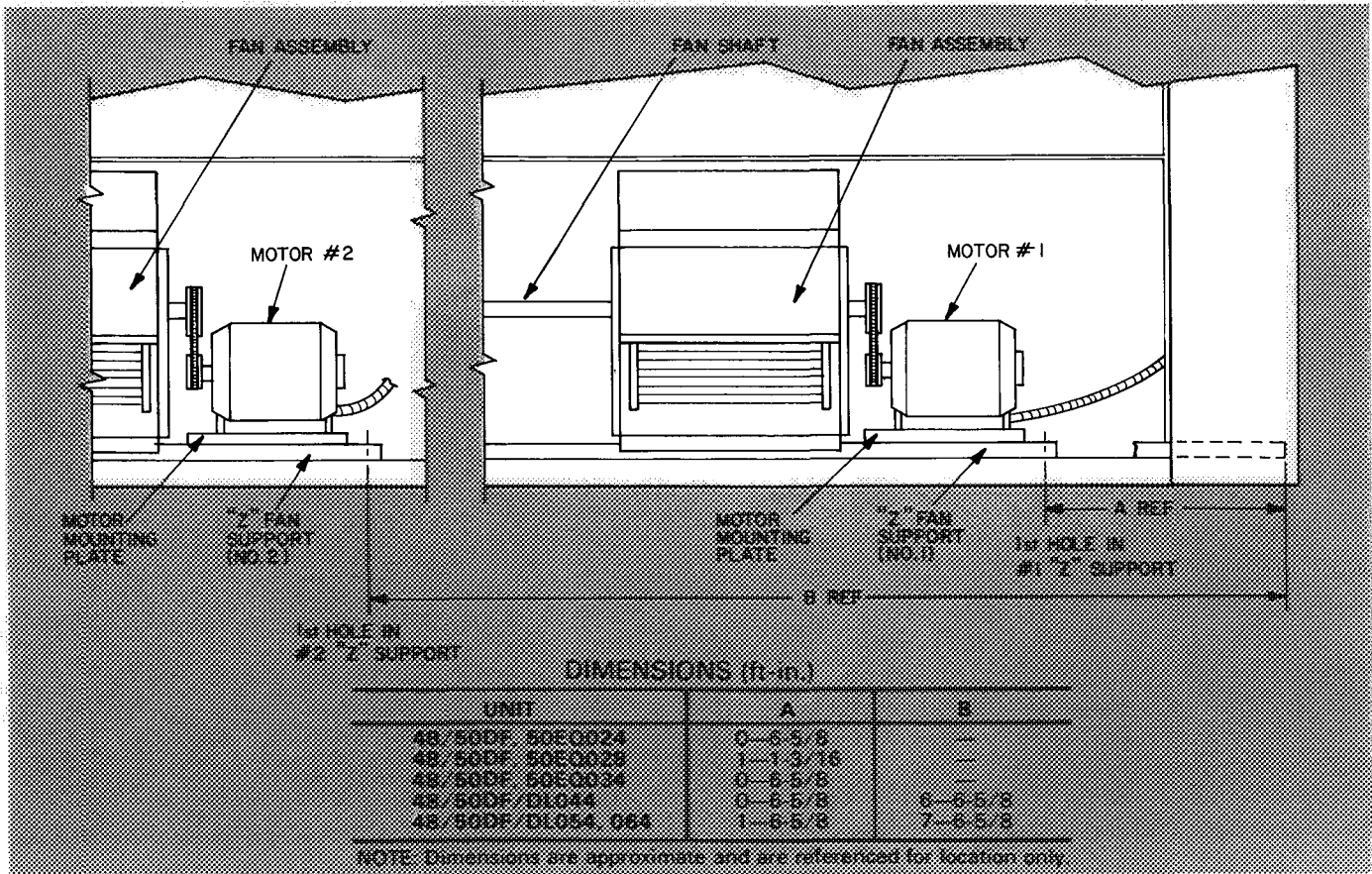


Fig. 4 — Accessory Power Exhaust Installation Dimensions

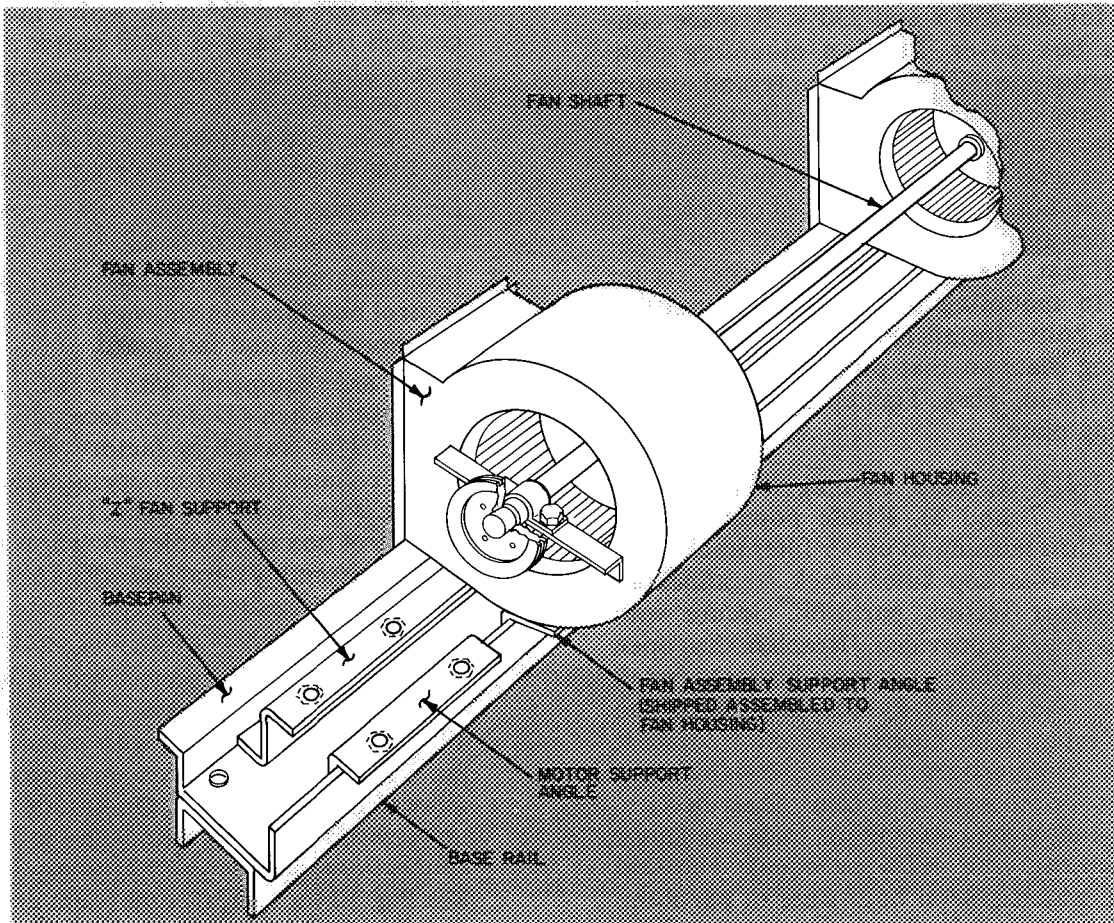


Fig. 5 — Exhaust Fan Installation Details

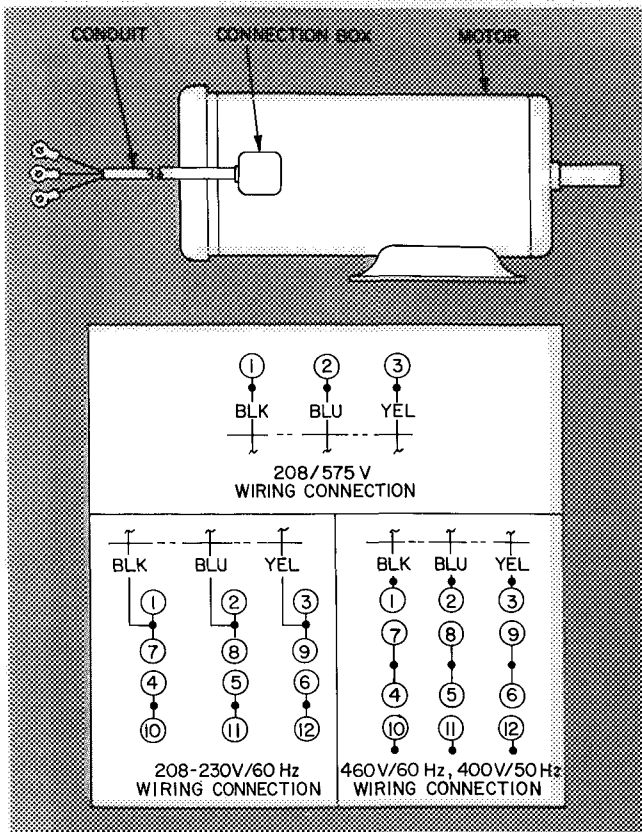


Fig. 6 — Power Exhaust Motor and Connection Diagram

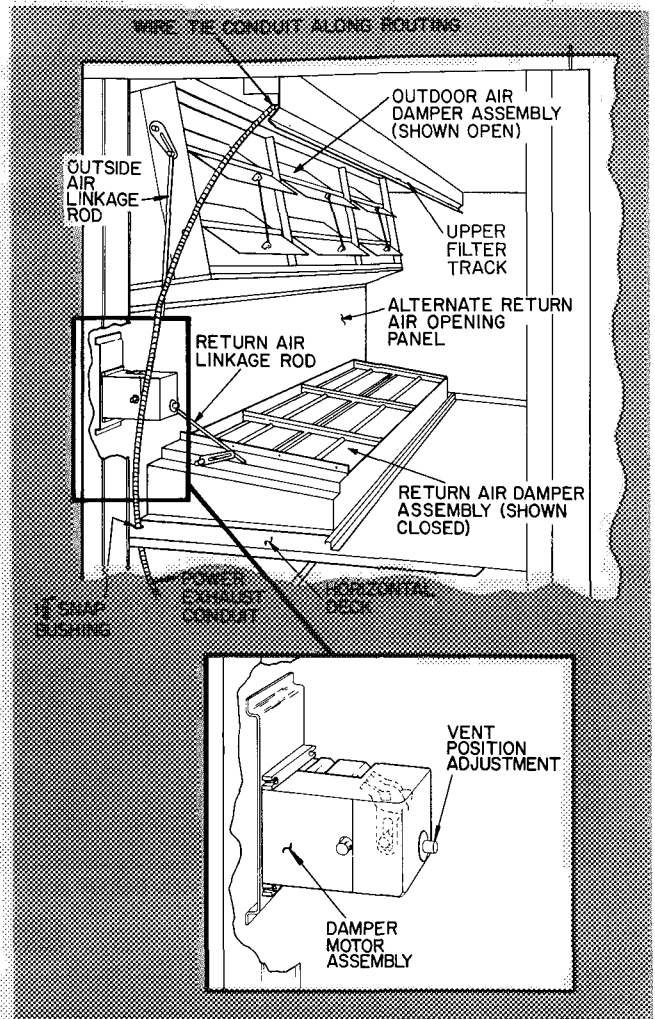


Fig. 8 — Exhaust Motor Conduit Routing

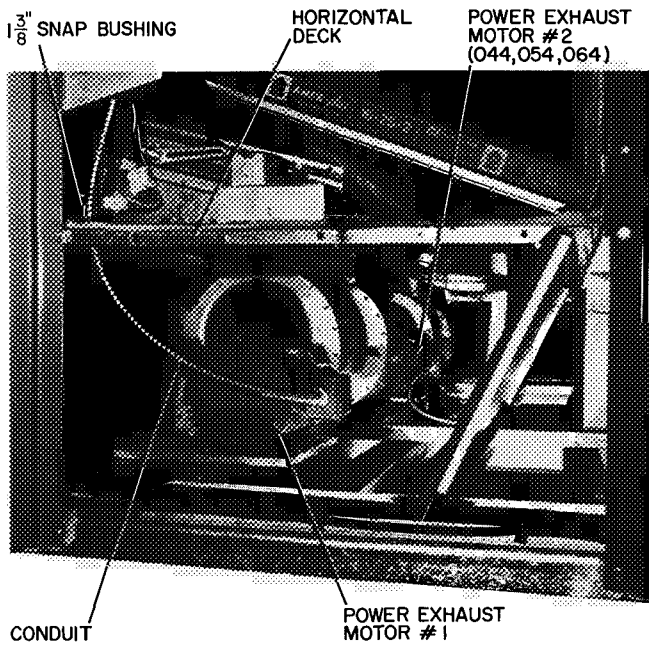


Fig. 7 — Power Exhaust Details

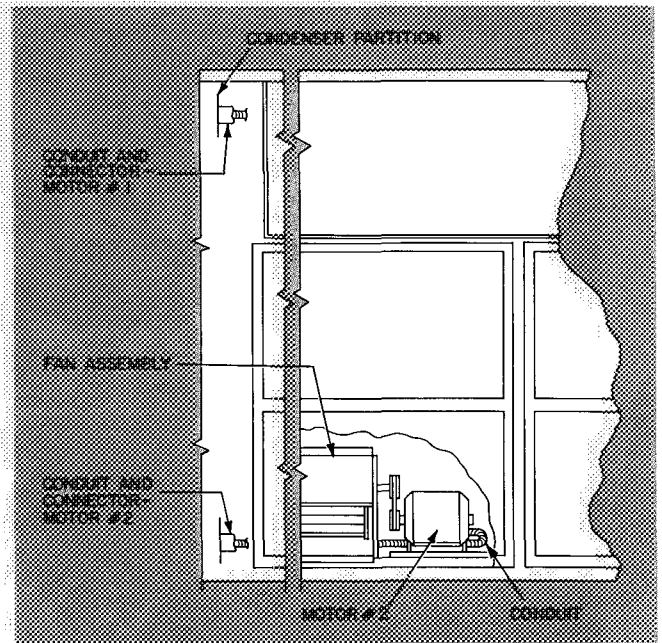
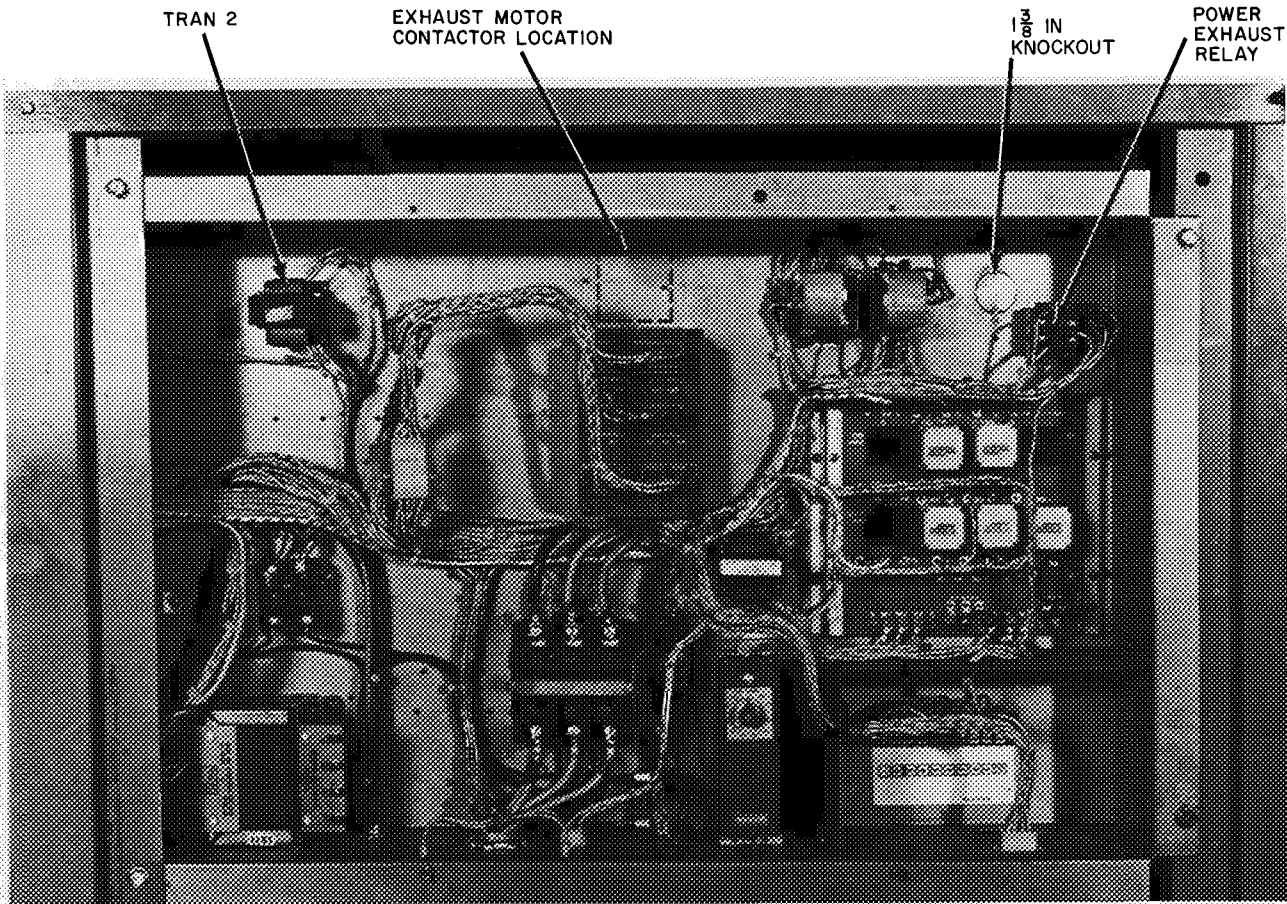
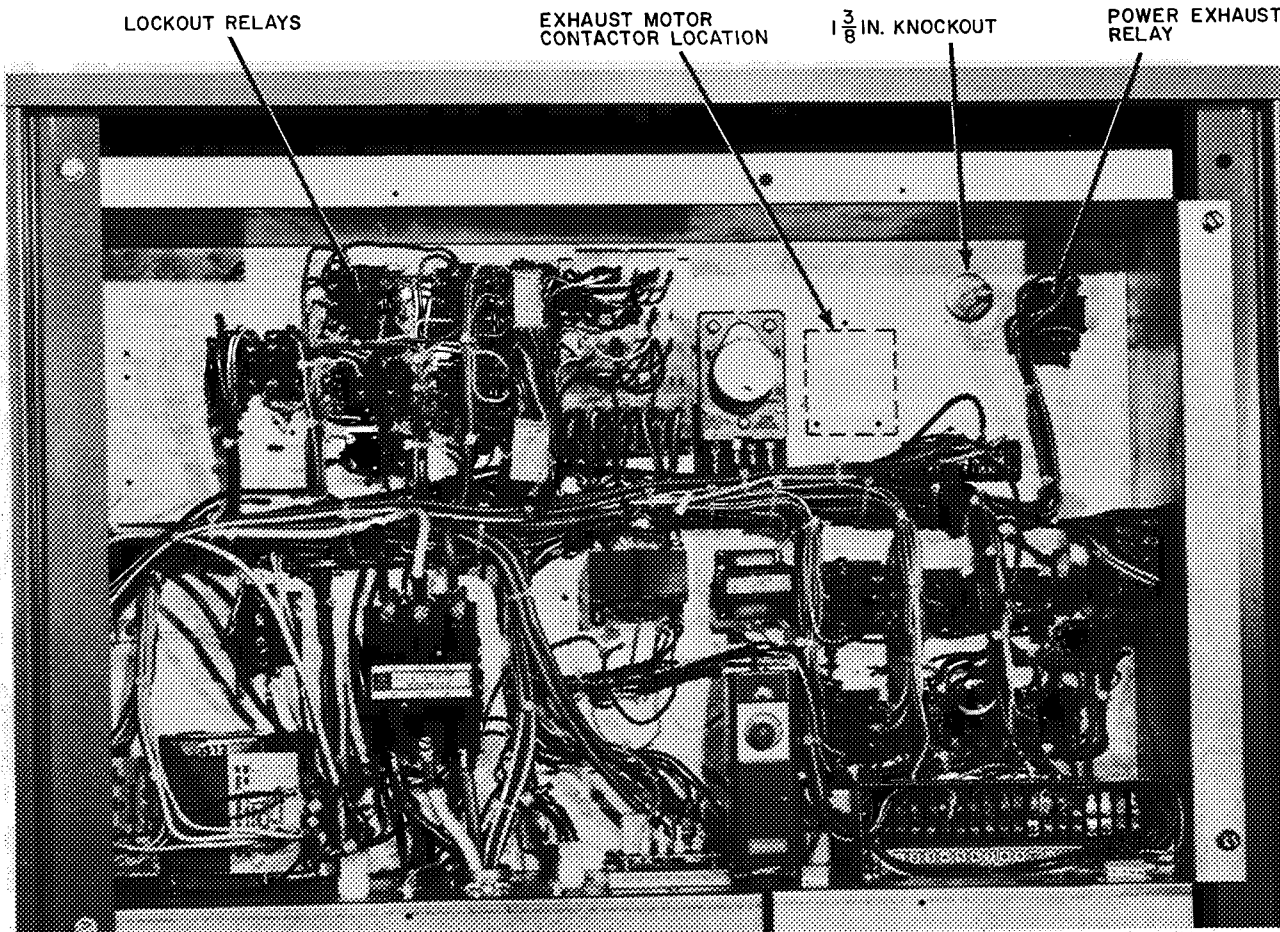


Fig. 9 — Motor Conduit Connection Details

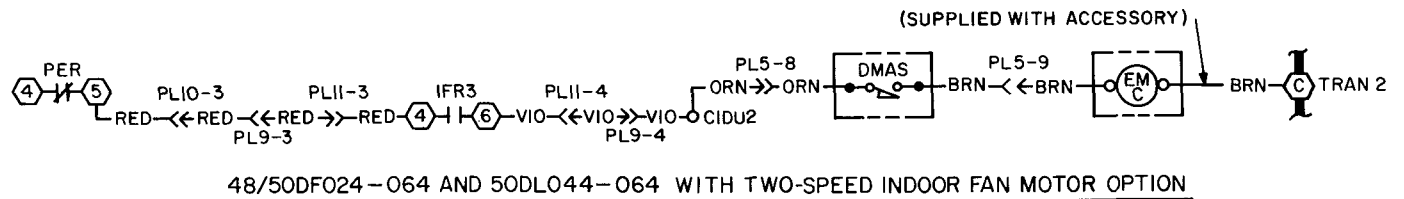
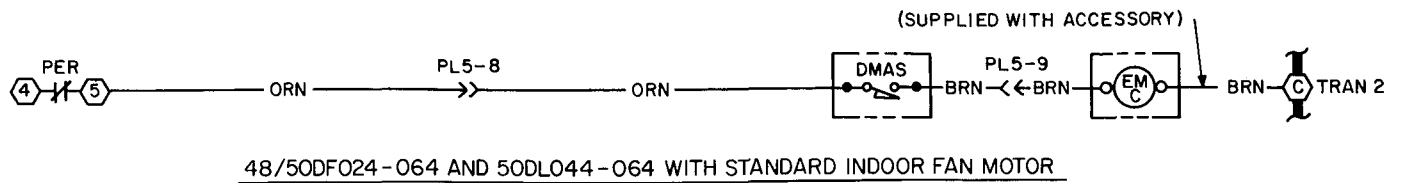
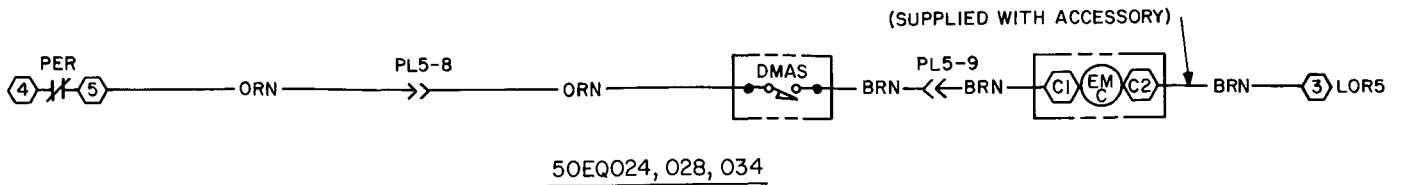


→ a. 48/50DF and 50DL Typical Control Box



b. 50EQ Typical Control Box

Fig. 10 — Typical Component Locations



LEGEND

C — Contactor, Compressor	EMC — Exhaust Motor Contactor	PER — Power Exhaust Relay
DMAS — Damper Motor Auxiliary Switch	IFR — Indoor Fan Relay	PL — Plug
DU — Dummy Terminal	LOR — Lockout Relay (50 EQ Only)	TRAN — Transformer

Fig. 11 — Typical Control Wiring Schematic
(Refer to base unit label diagram for specific applications)

- For 48/50DF and 50DL units connect 35-in. long brown wire (supplied with power exhaust accessory) between terminal C of transformer 2 and C2 of exhaust motor contactor (EMC). Refer to Fig. 10, 11 and base unit label diagram.
- For 50EQ units connect 35-in. long brown wire (supplied with power exhaust accessory) between terminal 5 of lockout relay (LOR) 5 and C2 of exhaust motor contactor (EMC). Refer to Fig. 10, 11 and base unit label diagram.
- 10. Using screws removed in step 1: Install insulated accessory duct cover panel(s) (Fig. 12). Panel openings should be free of insulation. Attach duct cover panel(s) to unit at bottom and sides.

Reinstall alternate return air panel(s). Lower flange of alternate panel(s) overlaps upper flange of accessory duct cover panel(s), securing both panels to unit.

11. Using #10-16 x 7/16-in. self-drilling screws (or by drilling holes), secure duct cover panel(s) to fan housing flanges as shown in Fig. 12. Six self-drilling screws are required per fan housing.
12. Using #10-24 x 3/4-in. Type D screws from package, install exhaust hoods to duct cover panel(s). See Fig. 12 and 13.
13. Replace filters, filter access panel(s) and compressor end panel(s).

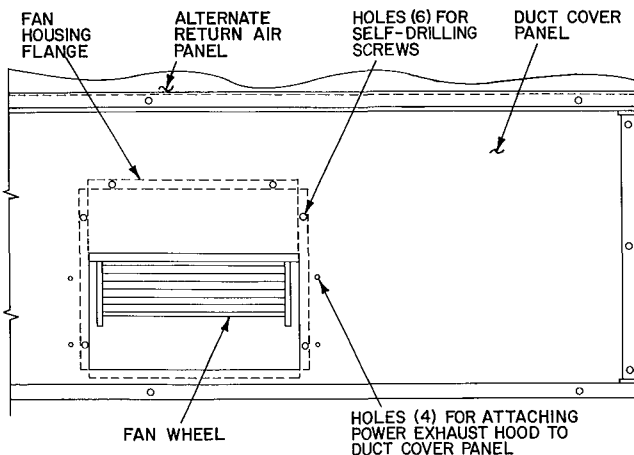


Fig. 12 — Duct Cover Panel Details

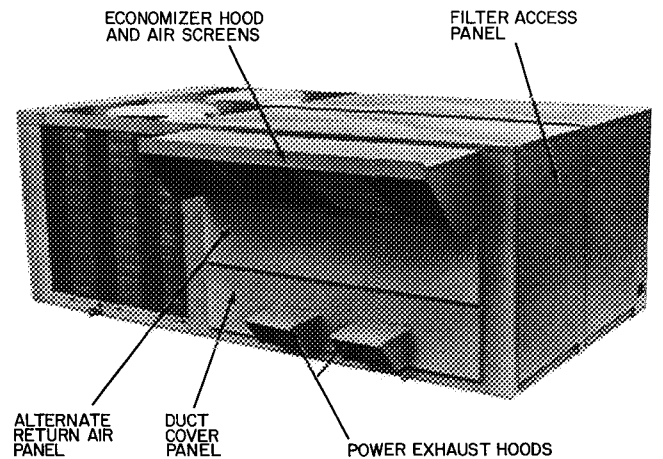


Fig. 13 — Typical Power Exhaust Hood Installation

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

Book	1
Tab	1a

Form 48DF-23SI Supersedes 48DF-17SI

Printed in U S A

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Catalog No 534-896