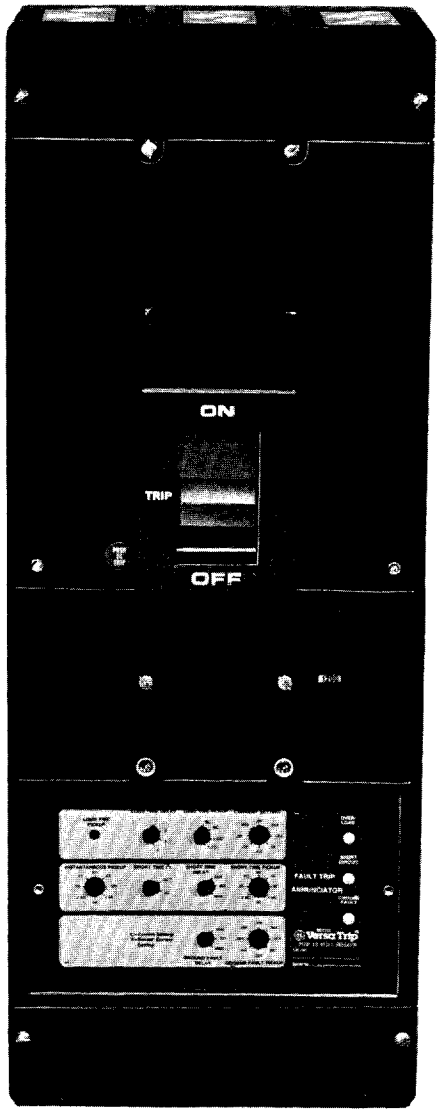
Assembly
Instructions for
Model 6
Circuit Breakers

Molded Case Circuit Breakers

MicroVersaTrip™ Type THK9V



GENERAL ELECTRIC

Assembling MicroVersaTrip™ Trip Unit Systems

General Information

Remove components from cartons and check catalog numbers on components against carton labels. Following is a list of components necessary to assemble the General Electric THK9V Model 6 frame molded case circuit breaker with a 9-function MicroVersaTrip trip unit (See FIGURE 1). A Model 6 circuit breaker frame is identified by a "MOD 6" stamp on the breaker side, and by an Underwriters Laboratories Inc. label in the handle. Presence of any other label, or of no label at all, in the handle, indicates that the breaker frame is not Model 6 and is NOT suitable for field installation of MicroVersaTrip components.

A. Breaker frame (catalog number THK9VF46)

B. 9-function programmer (catalog number T9VT series)

C. Flux shifter (catalog number TKFS)

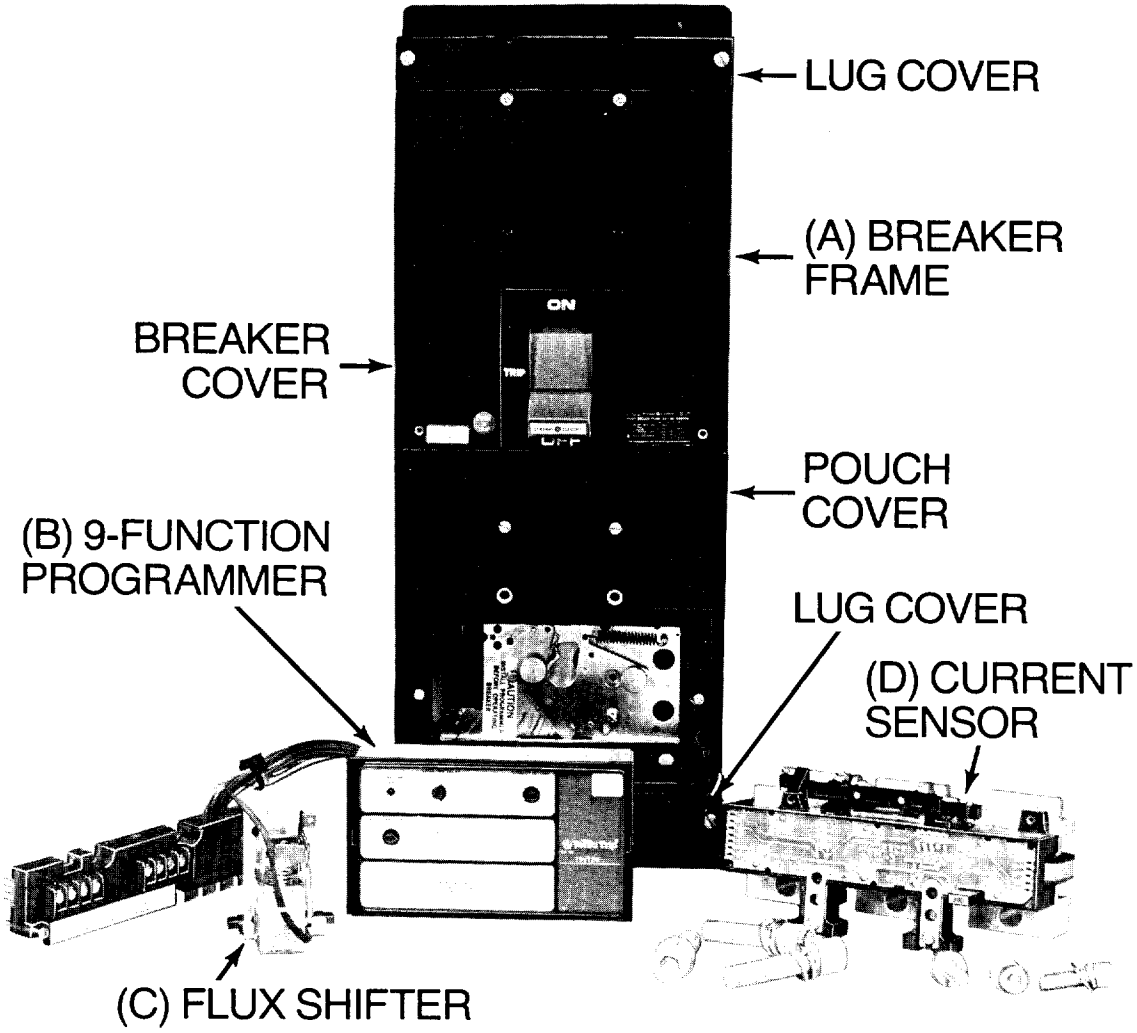
D. Current sensor (catalog number TKCT series)

Necessary Tools:

- Electrician's Phillips head screwdriver
- Torque screwdriver with Phillips and flat blade bit
- Torque wrench with 1/4 inch hex bit, 3/8 inch hex bit (both with 4 inch length)
- 1/16″ feeler gauge
- Flat blade screwdriver
- Pliers
- Circular file

Assembly

To assemble the breaker, follow the steps listed in order:



Step 1

Remove the breaker covers

Two slot head screws secure the lug covers at the line and load ends. After removing the lug covers, loosen the four Phillips head screws securing the pouch cover (FIG. 1). Then loosen the remaining four Phillips head screws and remove the breaker cover. Remove the two shutters from handle and set aside (see FIGURE 9 for a view of shutters).

Step 2

Install the Current Sensor

The breaker is held in the "ON" position during shipment by placement of a cotter pin in the breaker mechanism. To remove, use pliers to straighten the end of the cotter pin. Push the handle toward the load end of the breaker to relieve pressure on the pin; remove and discard the cotter pin (FIG. 2). The breaker handle will then move to the "TRIP" position. Position the three 3/8 inch hex screws in the line end left, center, and right mounting holes of the current sensor with the three flat washers provided (note a lockwasher is already captive on each screw). Slide the current sensor down into the cavity (FIG. 3), holding the breaker handle forward while sliding into position. Next, place the three 1/2 inch hex screws, each with split lockwasher and flat washer, in the load end mounting holes. Tighten the mounting screws evenly, holding the trip bar back towards the current sensor to reach center line end screw. Torque on the 3/8 inch hex screws should be 125 inch-pounds, and on the 1/2 inch hex screws, 250 inch-pounds.

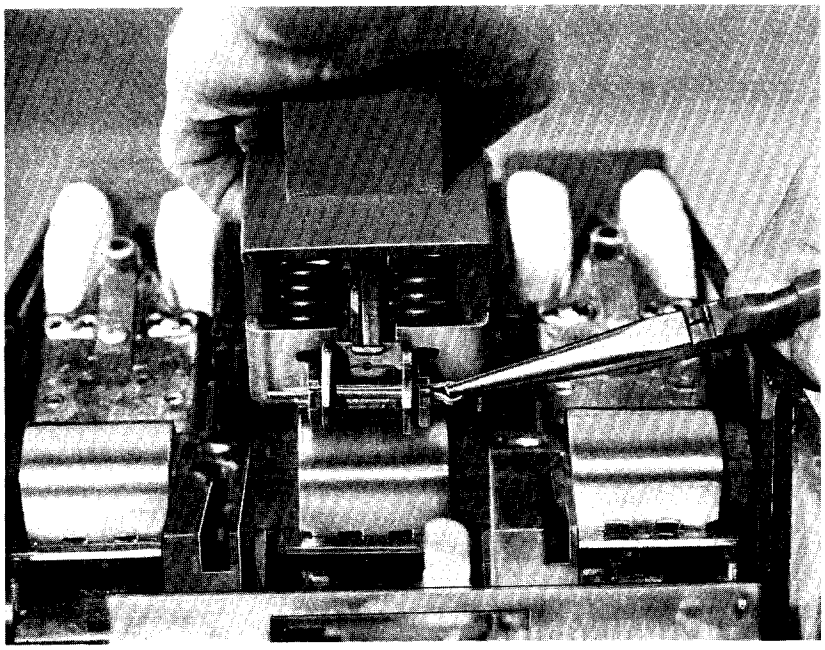
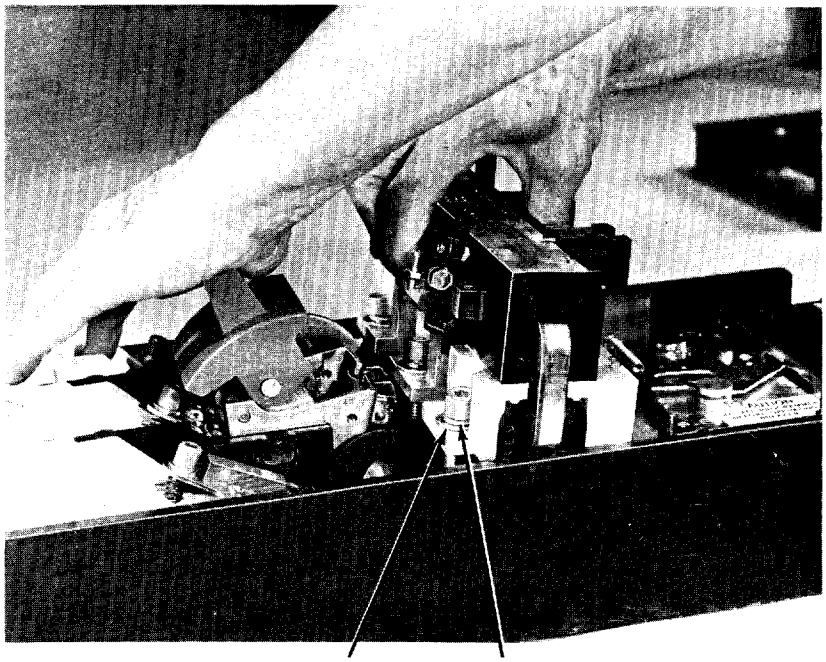


Fig. 2

Fig. 3



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Step 3

Install Programmer

Position programmer interface on the current sensor (FIG. 4). Align the clearance hole in the bottom of the programmer box with the pin located in the breaker base. Slide the programmer box straight down on to the mounting plate. Holding the programmer down with slight pressure, move Lever "A" toward its left-most position until it catches. The programmer is now latched in place (a slight rotation of the programmer is permissible, as the cover will later hold the programmer securely).

Tighten the two interface mounting screws to 10 inch-pounds.

Step 4

Install Flux Shifter

Insert the flux shifter plug into the programmer interface (FIG. 5). Dress the wires neatly in the retaining grips on the interface; slide the black protective sheath over the wires toward the flux shifter to allow correct wire length in the grips (FIG. 6). Slide the flux shifter into place. Holding the flux shifter down firmly so that its frame rests in the slot provided in the base, tighten the flux shifter mounting screw to 10 inch-pounds. Pull flux shifter wire lead forward to remove slack at programmer end; the wire should not be taut, but should clear the flux shifter reset lever as in Figure 6. Check that the black flux shifter plug is pushed down to be flush with the surface of the programmer interface.

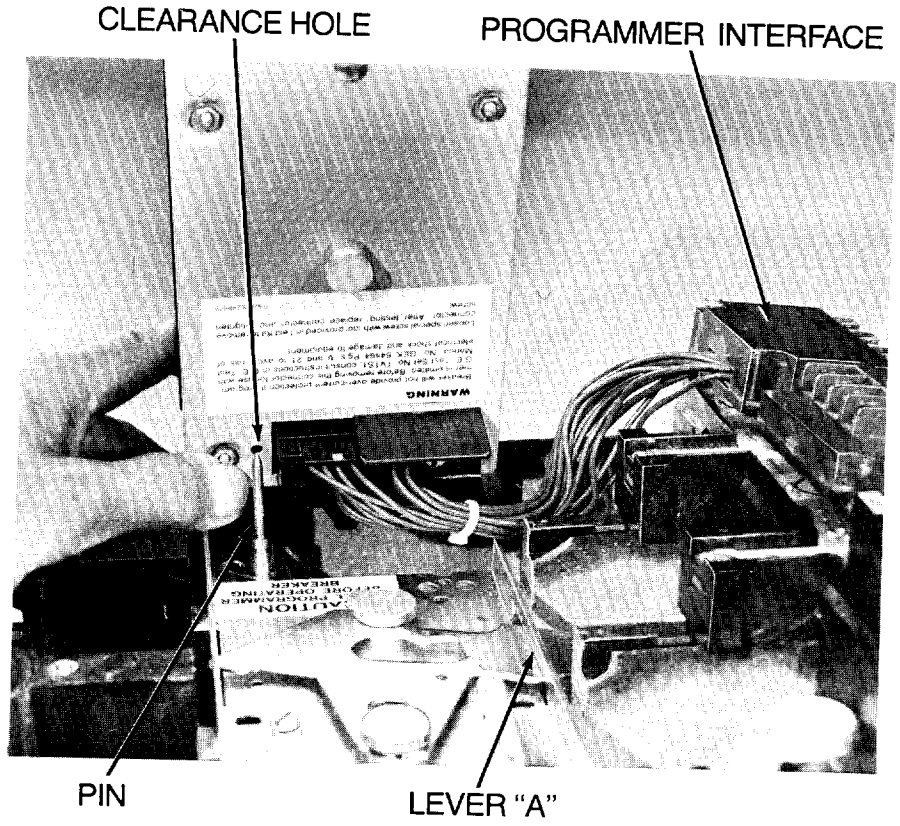


Fig. 4

Fig. 5

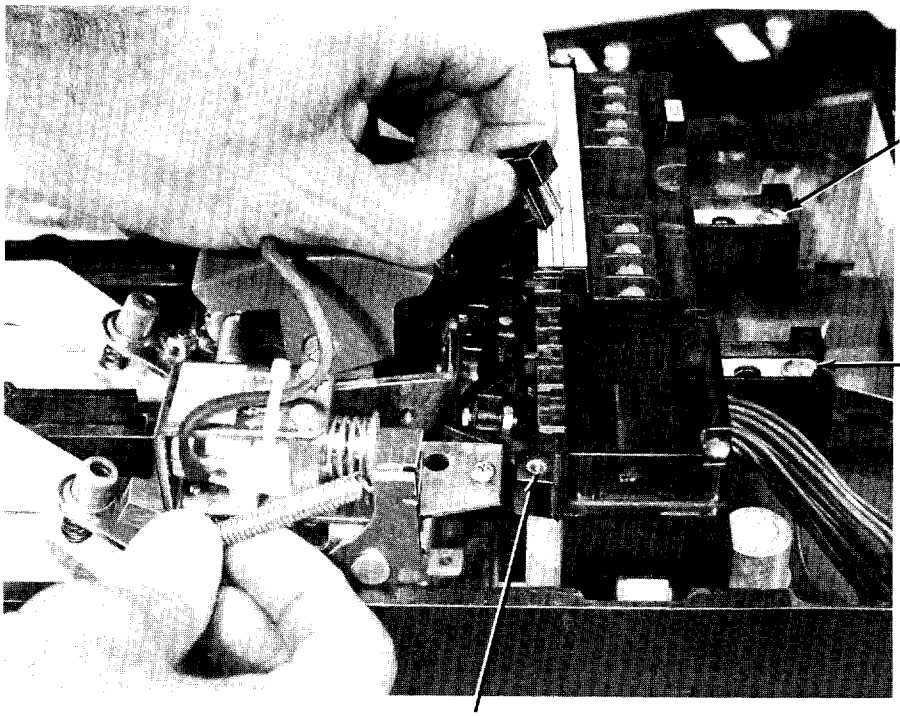
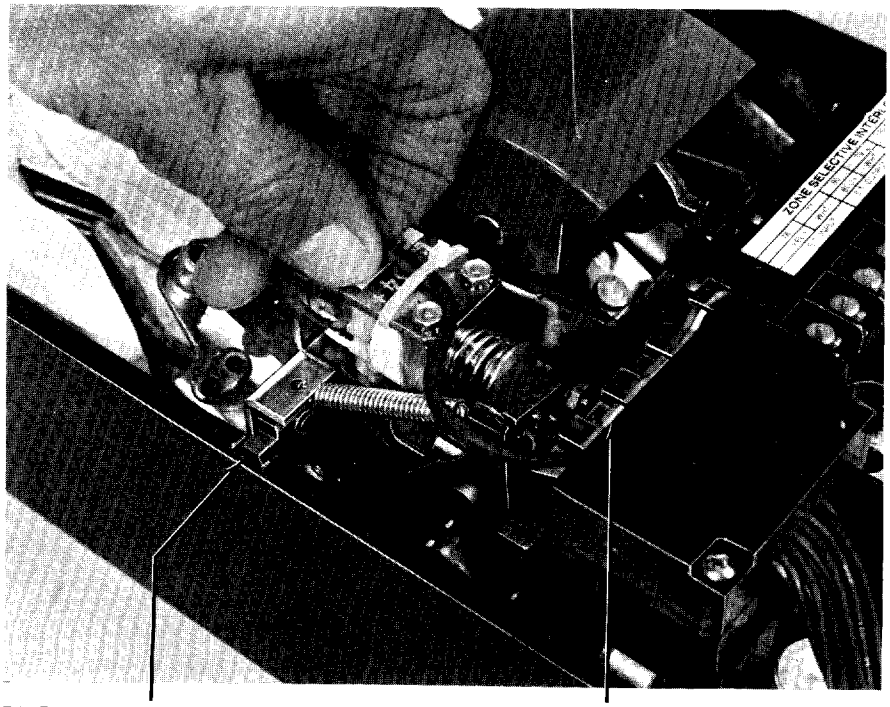

EXTERNAL GROUND
FAULT NEUTRAL
CURRENT TRANSFORMER
CONNECTION TERMINAL
(WHITE WIRE)
EXTERNAL GROUND
FAULT NEUTRAL
CURRENT TRANSFORMER
CONNECTION TERMINAL
(BLACK WIRE)
FLUX SHIFTER
MOUNTING SCREW HOLE

Fig. 6


SLOT IN BREAKER BASE
FOR FLUX SHIFTER FRAME
DRESSED WIRES

Assembling MicroVersaTrip™ Trip Unit Systems

Step 5

Clearance Check

NOTE: Flux shifter plug must be flush with programmer interface.

While holding the flux shifter down firmly so that its frame rests in the slot provided in the base, latch the breaker by moving the handle toward the load end, then turn the circuit breaker "ON" by moving the handle toward the line end.

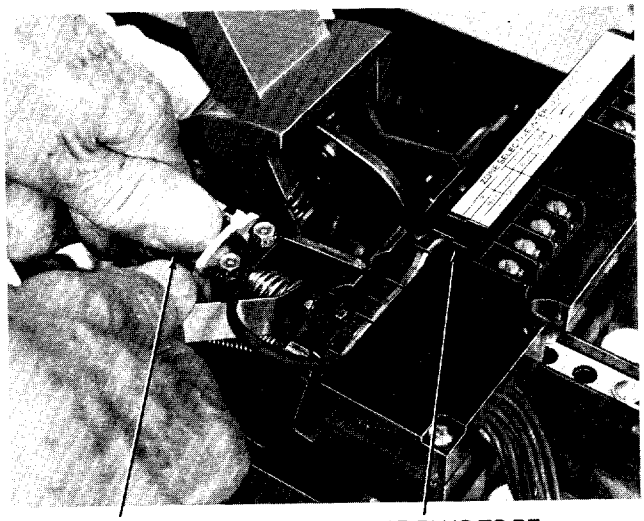


Fig. 7

NOTE: KEEP HANDS CLEAR OF BREAKER HANDLE AND MECHANISM DURING CHECK

Next, still holding flux shifter down firmly in base, check that the clearance between the flux shifter plunger and the trip bar adjusting screw is between .001 to .063 inch (FIG. 7). If the measurement is off, do not attempt to adjust or use the breaker. Notify GE Construction Equipment Product Service, Plainville, Connecticut, that breaker does not meet the clearance specification.

NOTE: Discharge breaker mechanism by moving trip bar back towards current sensor BEFORE releasing pressure on the flux shifter.

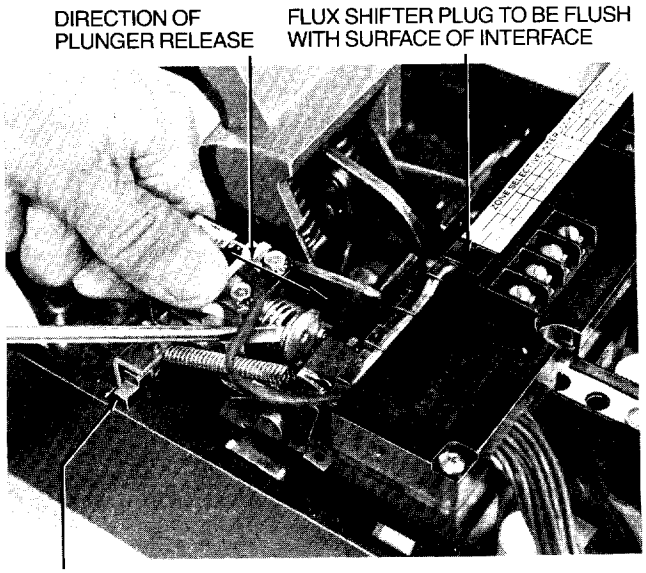


Fig. 8

Step 6

Functional Check

While holding the flux shifter down firmly so that its frame rests in the slot provided in the breaker base, latch the breaker by moving the handle toward the load end, then turn the circuit breaker "ON" by moving the handle toward the line end. Still holding the flux shifter down firmly in the base, place a screwdriver against the back face of flux shifter plunger and flux shifter frame (FIG. 8). A slight leverage force will release the plunger and trip the breaker.

NOTE: KEEP HANDS AWAY FROM BREAKER HANDLE AND MECHANISM DURING CHECK.

Notify GE Construction Equipment Product Service, Plainville, Connecticut, if breaker is not working properly.

Step 7

External Ground Fault Connection

For breakers requiring external ground fault connection, attach ground wire leads as indicated to the terminals on the current sensor (FIG. 5). File break-out locations in the bottom cover with circular file. Route the ground fault leads out of bottom cover, being careful not to pinch leads.

Step 8

Replace the breaker covers

Replace the two shutters over breaker handle as shown in FIG. 9; the shutters must be oriented as shown to allow for proper cover placement. Slide shutters toward line end of breaker as far as shutter handle openings allow. Replace breaker cover and torque the four breaker cover mounting screws to 25 inch-pounds. Replace the pouch cover and torque the four screws to 25 inch-pounds. Replace the line and load end lug covers, and tighten the slot head screws to 25 inch-pounds. The breaker may again be checked by moving the handle to the "OFF" then "ON" position, and depressing the "PUSH TO TRIP" button.

The breaker is now ready to be installed.

Note that changes to the programmer settings may be made by removing the programmer window.

NOTE: For information on zone selective interlock connections, refer to instruction No. GEK-64467. For information on Neutral Current Transformer installation, refer to instruction No. GEK-72104.

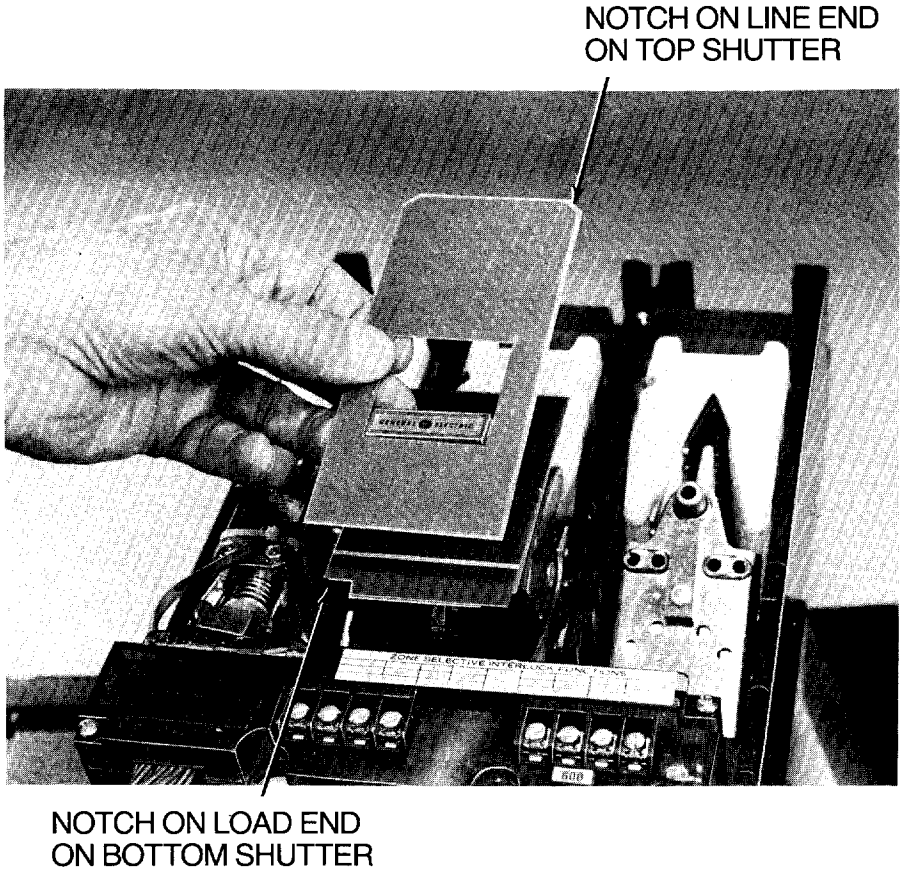


Fig. 9

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

For further information call or write your local General Electric Sales Office or . . .

General Electric
Construction Equipment
41 Woodford Avenue
Plainville, CT 06062 U.S.A.

Outside the U.S. write Construction Equipment Export Operation
411 Theodore Fremd Ave., Rye, NY 10580

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