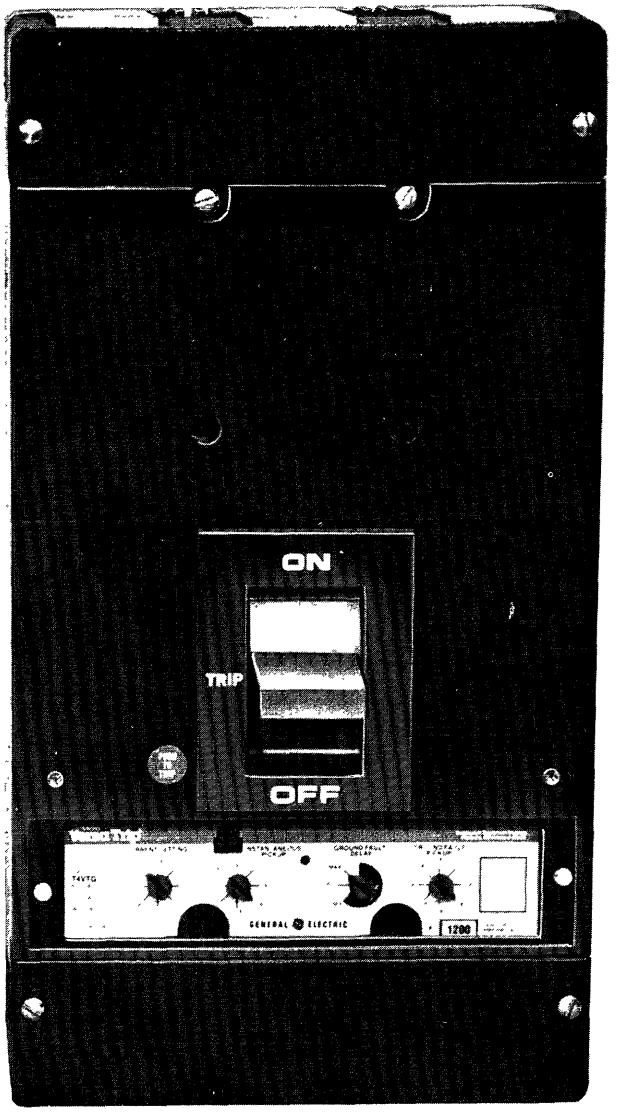
Assembly
Instructions for
Model 6
Circuit Breakers

Molded Case Circuit Breakers

MicroVersaTrip™ Types TK4V and THK4V



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 TK4V-THK4V Model 6 frame molded case circuit breakers with a 4-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 numbers TK4VF46, THK4VF46)
B. 4-function programmer (catalog number T4VT 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 (4 inch length)
- 1/16″ feeler gauge
- Flat blade screwdriver
- Pliers

Assembly

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

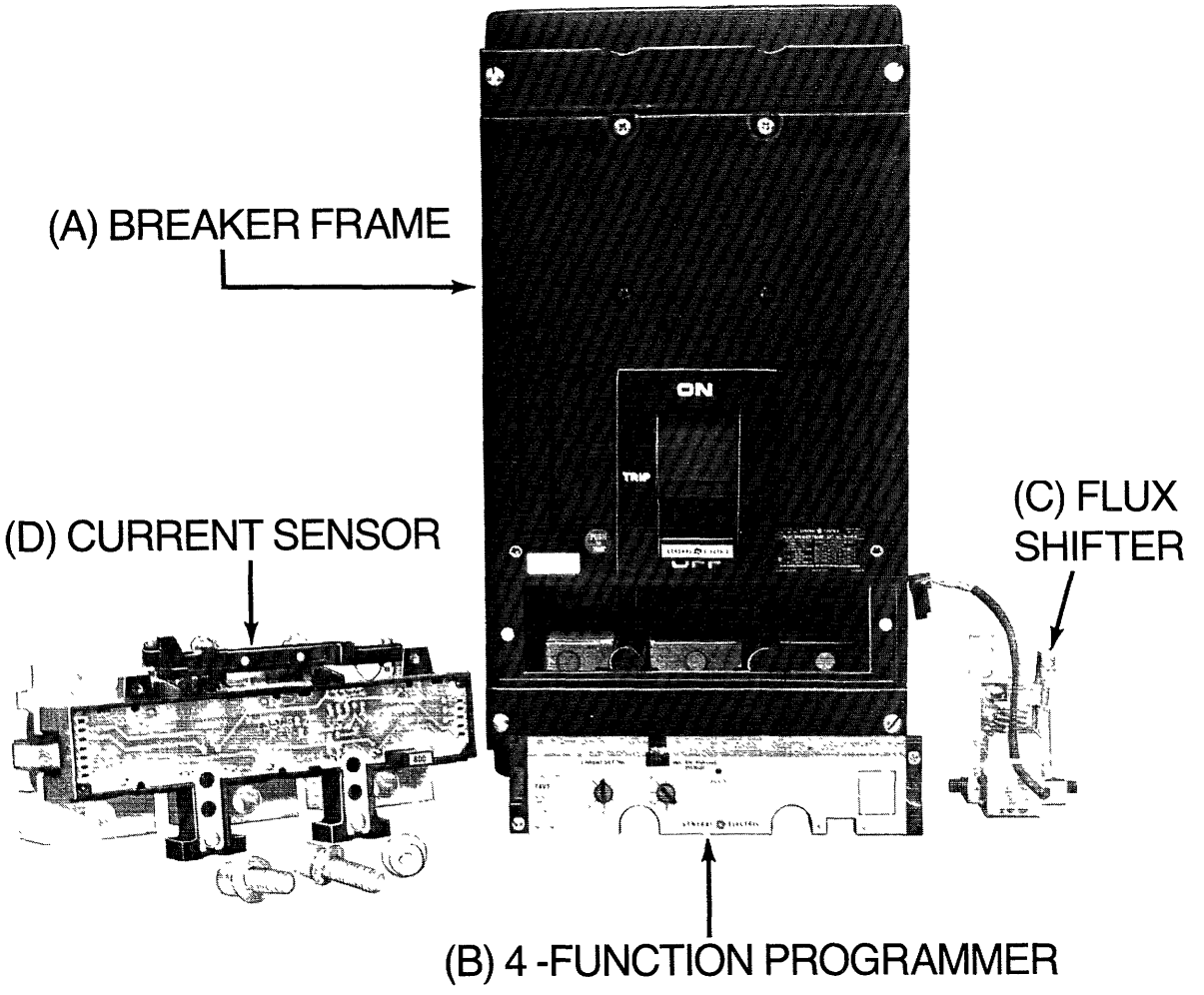


Fig. 1

Step 1

Remove the breaker cover

Two slot head screws secure the lug covers at the line and load ends. After removing the two lug covers, loosen the six Phillips head screws securing the breaker cover. Remove the cover and remove and discard the two tubular spacers shown in FIG. 2. Remove the two shutters from handle and set aside (See FIG. 11 for picture of handle 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 (FIG. 3). Push the handle toward the load end of the breaker to relieve pressure on the pin; remove and discard the cotter pin (breaker handle will move to the "TRIP" position). Position the three screws provided in the 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. 4), holding the breaker handle forward while sliding into position. When in place, tighten the three screws evenly to 125 inch-pounds. Hold trip bar back towards current sensor to reach center screw.

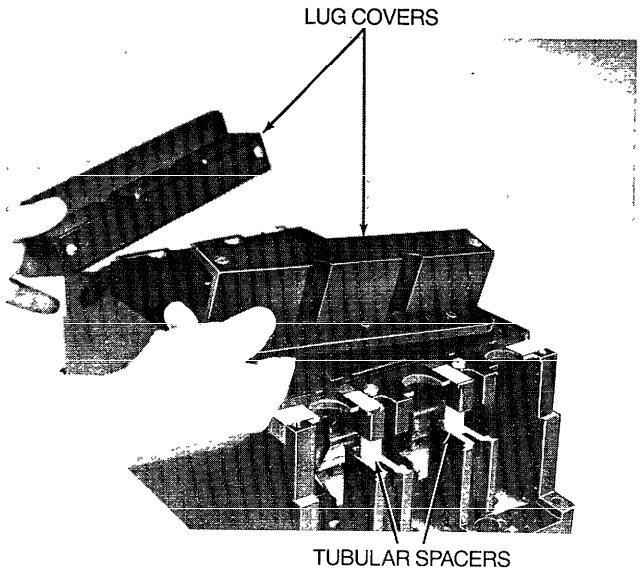


Fig. 2

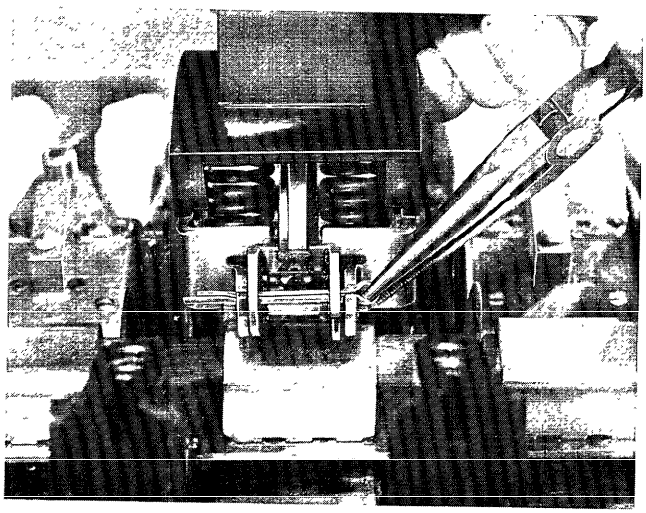


Fig. 3

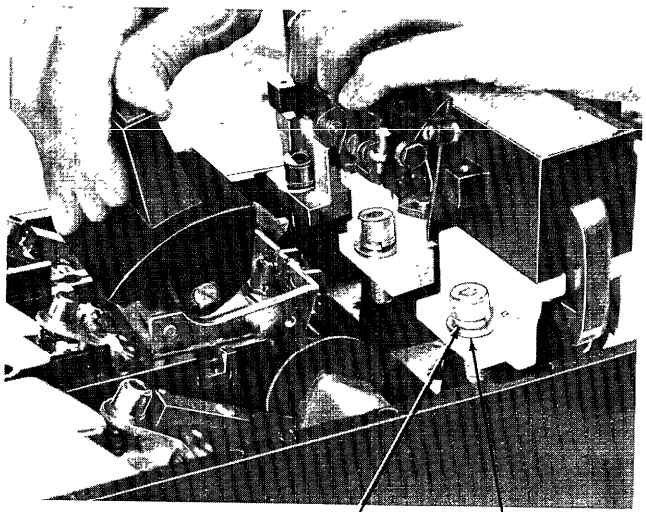


Fig. 4

Assembling MicroVersaTrip™ Trip Unit Systems

Step 3

Install Programmer and Flux Shifter

Plug the flux shifter into the programmer (FIG. 5).

Then, dress the wires neatly in the three retaining grips in the programmer recess (FIG. 6). Slide the black protective sheath over the wires toward the flux shifter to allow correct wire length in the recess. Position programmer on current sensor and tighten the two programmer mounting screws to 10 inch-pounds.

NOTE: The black plug may pop up when placing the programmer in position. If so, push the plug back down flush with the top surface of the programmer after the programmer mounting screws have been tightened.

Next, install the flux shifter (FIG. 7). Holding the flux shifter frame down in its slot in the breaker base, tighten the flux shifter mounting screw to 10 inch-pounds. Dress the flux shifter wire lead inside the breaker housing (FIG. 8). Pull wire forward to remove slack at programmer end; the wire should not be taut, but should clear the flux shifter reset lever.

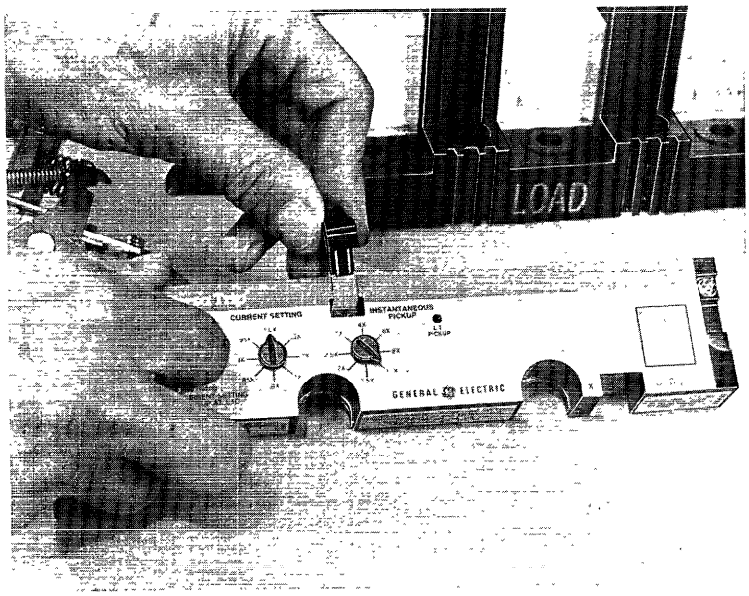
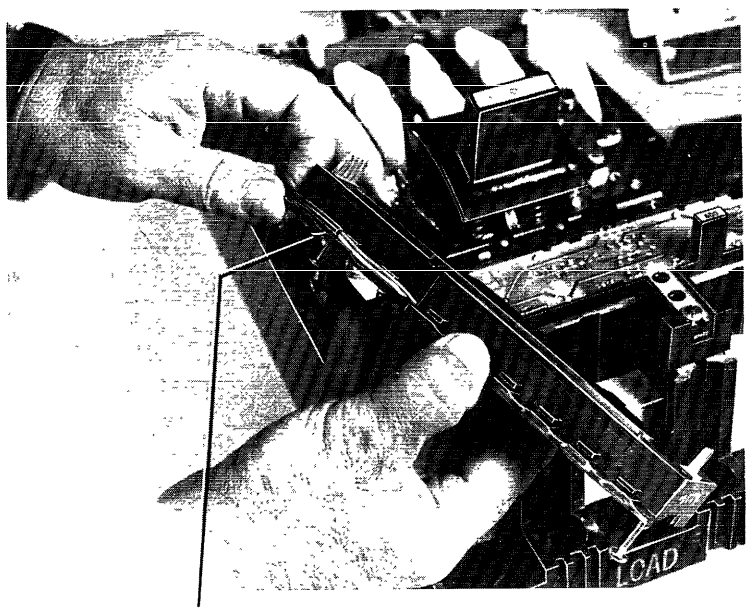


Fig. 5



SLIDE SHEATH OUT OF RECESS AREA

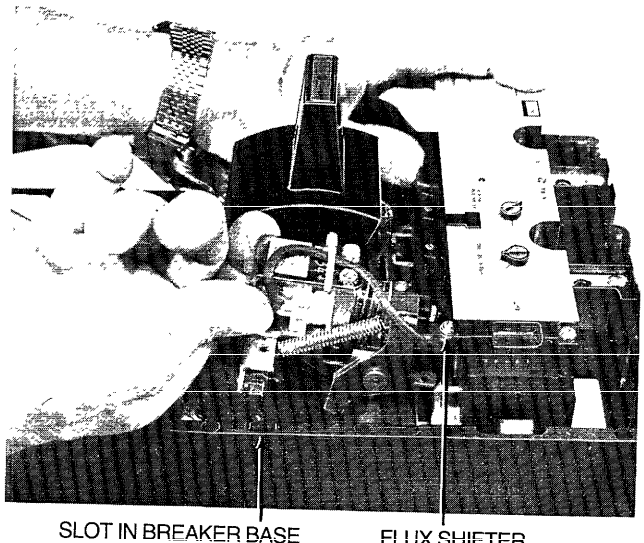
Fig. 6

Step 4

Clearance Check

NOTE: Flux shifter plug should be flush with programmer cover.

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 breaker "ON" by moving the handle toward the line end.



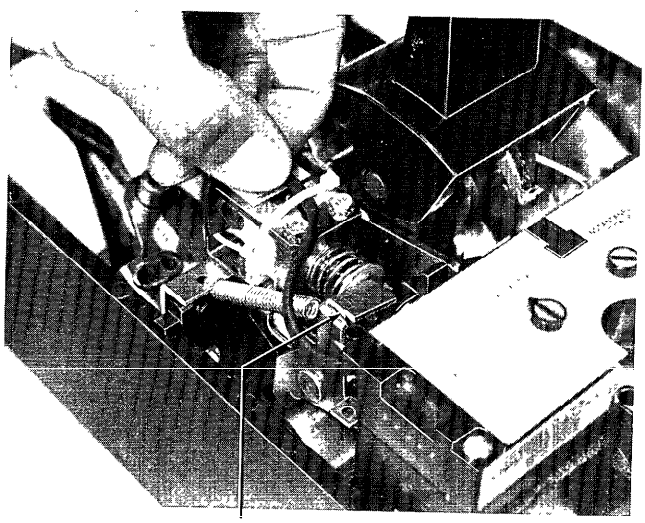


Fig. 8

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. 9). 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. 7

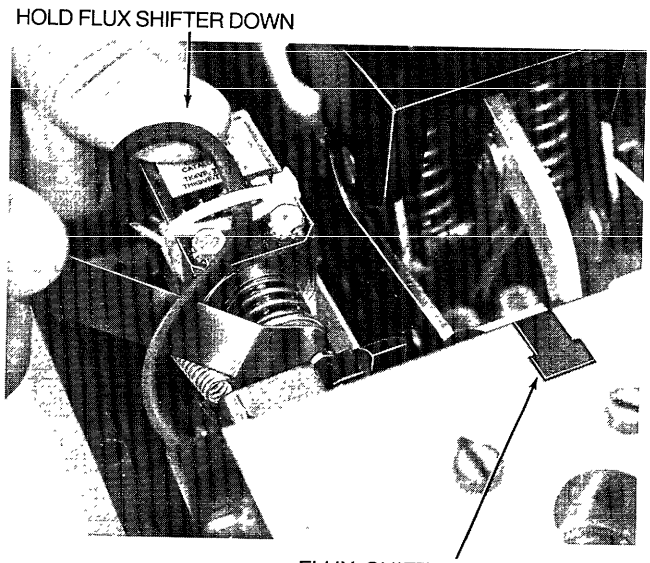


Fig. 9

Assembling MicroVersaTrip™ Trip Unit Systems

Step 5

Functional Check

NOTE: Flux shifter plug to be flush with programmer cover.

While holding 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. 10). 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.

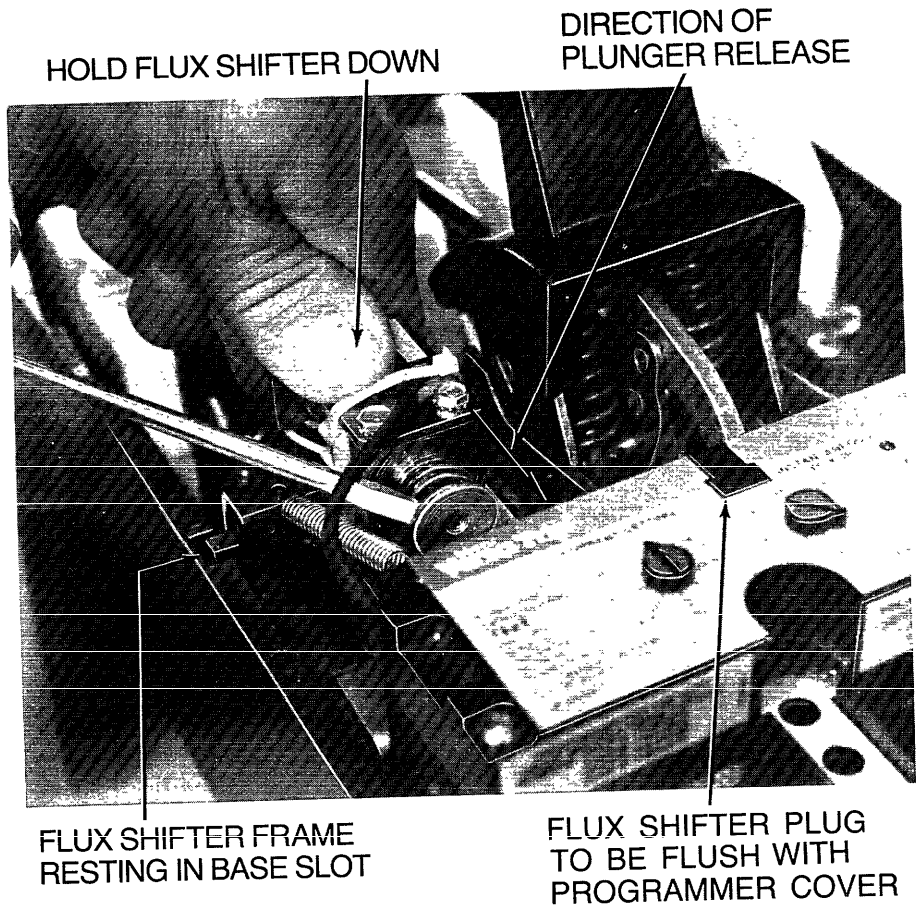


Fig. 10

Step 6

Replace the breaker cover

Replace the two shutters over breaker handle as shown in FIG. 11; 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 the breaker cover, and torque the six cover mounting screws to 25 inch-pounds (FIG. 12). For breakers requiring external ground fault connection, attach ground wire leads as indicated to the terminals shown in FIG. 12. 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 Neutral Current Transformer installation, refer to instruction No. GEK-72104.

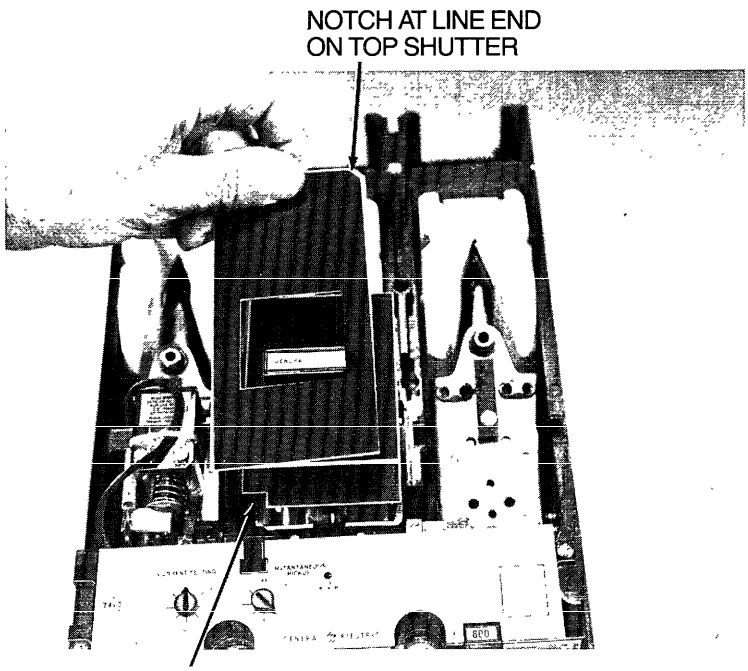


Fig. 11

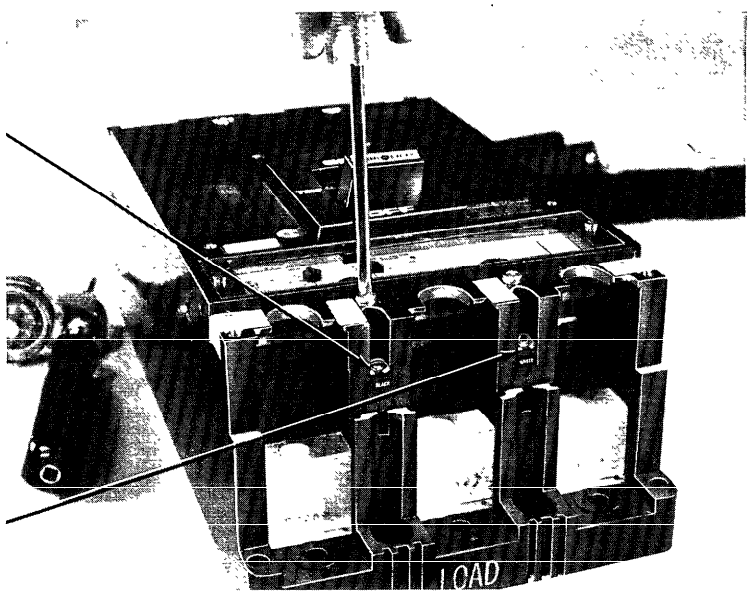


Fig. 12

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 . . .

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