

## Auxiliary Switch Device

For Type TEB, TED, THED, TEC, THLC1, TLB1 And TB1 Circuit Breakers

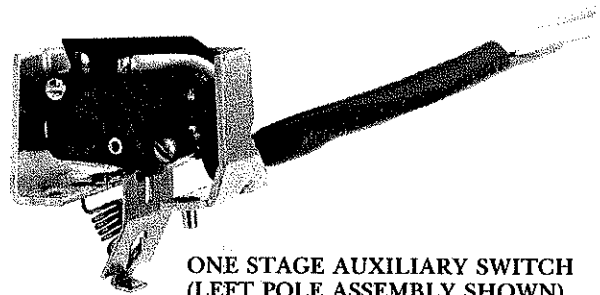
**CAUTION:** Before inspecting or beginning any maintenance work on the breaker, it must be disconnected from all voltage sources, both power and control, and breaker must be off (open).

**NOTE:** Any work requiring cover removal of a sealed breaker voids UL listing. The UL label must be destroyed.

### DESCRIPTION

These instructions pertain to both one and two stage auxiliary switch devices. The single stage devices can be modified to mount in either the left or right pole of a three pole circuit breaker (right pole only when installed in a two pole circuit breaker). The two stage auxiliary switches are unique left and right designs and install accordingly. The auxiliary switches are shown in Figure 1. Also shown is the actuator assembly which must be attached to the circuit breaker separately.

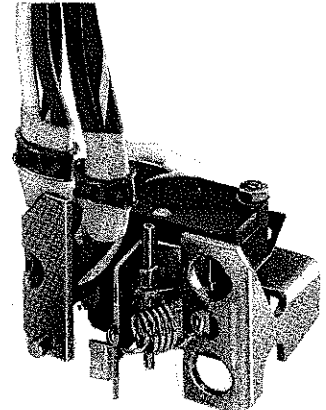
Each stage consists of an "A-B" element in which the "A" contact is in the same state (open or closed) as the circuit breaker contacts and the "B" contact.



ONE STAGE AUXILIARY SWITCH  
(LEFT POLE ASSEMBLY SHOWN)

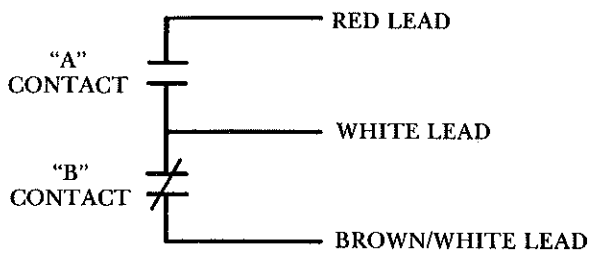


SWITCH ACTUATOR  
ASSEMBLY

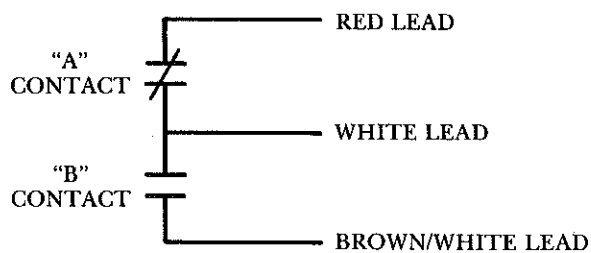


TWO STAGE AUXILIARY SWITCH  
(LEFT POLE ASSEMBLY SHOWN)

Figure 1. Auxiliary switches and actuator



A. Circuit Breaker Open (OFF) or Tripped



B. Circuit Breaker Closed (ON)

Figure 2. Schematic diagram of one "A-B" element

The available types of auxiliary switch devices are listed in Table 1.

TABLE 1. AVAILABLE AUXILIARY SWITCHES

Catalog Number	Voltage Rating	Current Rating	"A-B" Stages	Pole Location
TEDAS2AB1L	240 VAC	6 AMPS	1	LEFT
TEDAS2AB1R	240 VAC	6 AMPS	1	RIGHT
TEDAS2AB2L	240 VAC	6 AMPS	2	LEFT
TEDAS2AB2R	240 VAC	6 AMPS	2	RIGHT
TEDAS6AB1L*	600 VAC	6 AMPS	1	LEFT
TEDAS6AB1R*	600 VAC	6 AMPS	1	RIGHT
TEDAS6AB2L*	600 VAC	6 AMPS	2	LEFT
TEDAS6AB2R*	600 VAC	6 AMPS	2	RIGHT

\*Not UL listed.

## INSTALLATION

**CAUTION:** When installing accessories, the breaker must be completely deenergized and disconnected from the electrical circuit. This is mandatory because the breaker must be ON during certain stages of installation and testing.

## PREPARATION

Open the contacts of the breaker by moving the handle to the OFF position. Remove the four cover screws using a Phillips head screwdriver (8 screws for THLC1 and TLB1.) One of the four screws is sealed with potting compound and it is necessary to scrape out the compound before that screw can be removed.

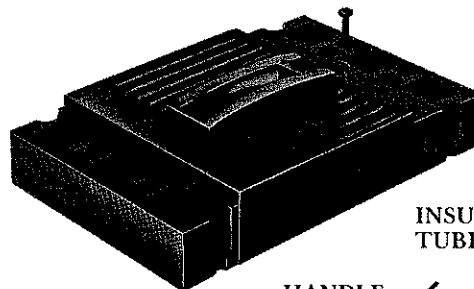
Lift the cover off the breaker. Remove and place aside the insulating tubes and the breaker handle, all of which are loose once the cover has been taken off. (See Figure 3.)

## INSTALLATION OF ACTUATOR

It is necessary to set the breaker mechanism in the ON position in order to install the actuator. This is accomplished by moving the steel handle lever in the middle pole towards the line end of the breaker.

The actuator which is shown in Figure 1 is to be installed in the right or left pole of the breaker, according to the intended location of the auxiliary switch device. The actuator attaches to the steel crank (painted black), which wraps around the common square crossbar, by means of the 1/4 inch long self-tapping Phillips head screw provided, as shown in Figure 4.

FOUR  
COVER SCREWS  
(EIGHT FOR  
THLC1, TLB 1)



INSULATING  
TUBES

HANDLE

PUSH TO TRIP

PUSH  
TO TRIP

LINE  
END

INSULATING  
TUBES

LOAD  
END

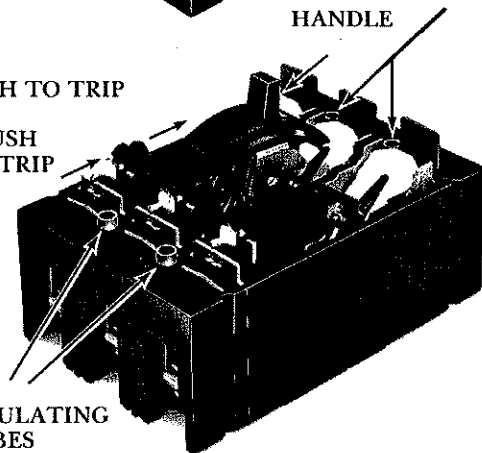


Figure 3. TED Breaker with cover removed

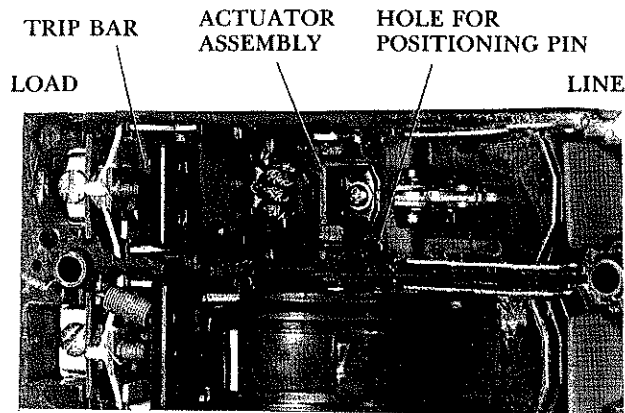


Figure 4. Actuator assembly installed in left pole

### INSTALLATION OF AUXILIARY SWITCH DEVICE

It is necessary that the breaker mechanism be in the tripped position in order to install the auxiliary switch. This is accomplished by rotating the common trip bar shown in Figure 4, downward into the breaker (or forward towards the line end). Be sure to do this on one of the outside poles taking care to keep fingers away from the latch area in the center pole. The cradle springs upward with substantial force when the mechanism is tripped.

#### SINGLE SWITCH ONLY

The leads on the auxiliary switch are formed to the left for left pole mounting. If it is desired to mount the switch in the right pole (single switch only), the bundle of leads must be undone and then reroute towards the right.

#### TWO STAGE SWITCH

The leads for either the left or right mount switch have been formed at the factory. The wire restraints have been preassembled at the factory for ease of assembly.

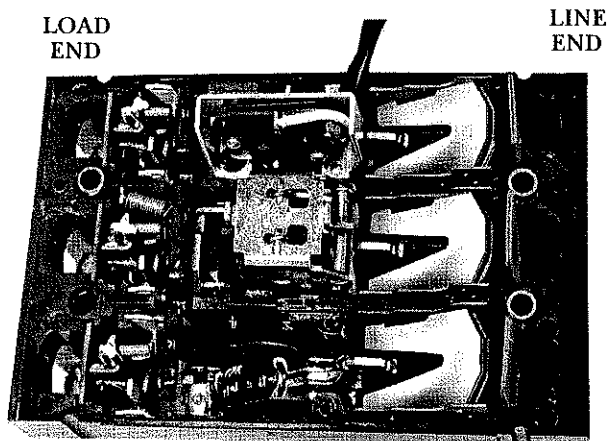


Figure 5. One Stage Auxiliary Switch Installed in Left Pole

### GENERAL

To install the switch, simply position the device in either the right or left pole of the breaker base by inserting the positioning pin in the location hole in the molded base. This hole is just below the arc chute and is to the right of the contact arm. No screws or fasteners are required. (See Figure 5).

### SINGLE STAGE ASSEMBLY

#### DRILLING OF HOLE IN BREAKER COVER (SINGLE SWITCH ONLY)

The leads of the auxiliary switch are intended to exit the breaker through the cover. Accordingly, a 1/2 inch hole must be drilled in the side of the cover. The hole must be drilled on the same side that the device is installed. The dimensions for the location of the hole are given in Figure 6.

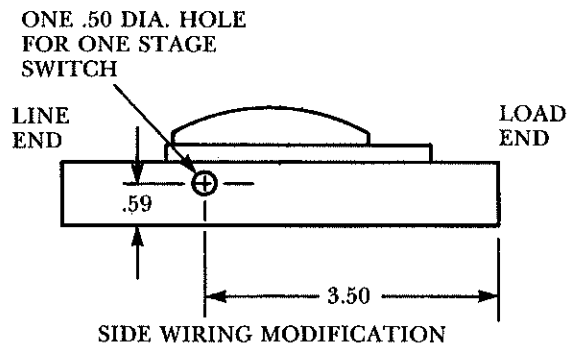


Figure 6. Cover Drilling Dimensions for Lead Hole, (Left Side Mounting), For Single Switch Only

#### REASSEMBLY OF BREAKER (SINGLE SWITCH ONLY)

Thread the three leads through the hole in the cover (three wires per hole). Replace the handle and the insulating tubes to their positions in the base of the breaker as shown in Figure 3. Before lowering the cover into position, be sure to reinstall all barriers and parts that may have inadvertently been removed from their proper location.

Align the cover over the base of the breaker. The auxiliary switch may pop out of position when the leads are being threaded through the cover and/or when the cover is being placed on the base. If this occurs, it will have to be carefully manipulated into position. This can be accomplished by lowering the cover as far as possible and then popping the pin on the auxiliary switch into the locating hole by means of a narrow screwdriver or shim slid between the case and cover along the side of the breaker. The cover will not close onto the breaker properly unless the auxiliary switch is in place. When the switch is properly located, the breaker cover should snap into place over the base.

Fasten the cover by means of the four cover screws which were initially removed as shown in Figure 3. The one screw, which was originally covered with sealing compound, must remain unsealed as an indicator that the breaker cover has been removed.

## STRAIN RELIEF FOR LEADS (SINGLE STAGE)

A strain relief plug (Heyco type 5N-4) is provided to protect the leads at the point where they exit the breaker. The plug, as shown in Figure 7, is to be closed over the three leads with its narrow end slid as closely as possible to the lead exit hole in the breaker cover. The plug should then be clamped shut with pliers and pushed into the hole until it snaps into position.

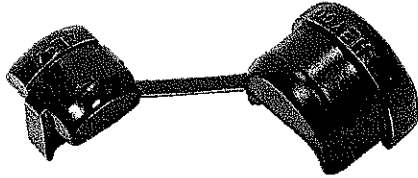
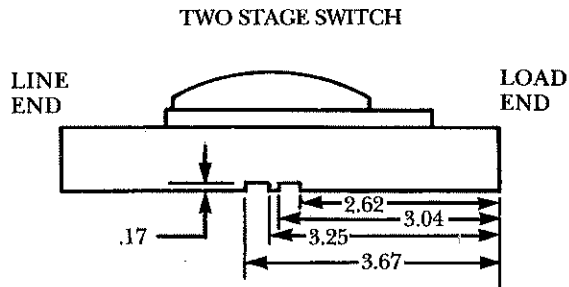


Figure 7. Strain relief plug

## TWO STAGE ASSEMBLY

### SLOTTING THE BREAKER COVER (TWO STAGE SWITCH)

Slot the cover on the same side as the auxiliary switch is to be installed. There should be two slots, one for each set of three wire leads. See Figure 8 for shape and location of slots to be filed.



SLOT AS SHOWN, SIDE WIRING MODIFICATION  
(FOR LEFT SIDE MOUNTING)

Figure 8.

## REASSEMBLY OF THE BREAKER (TWO STAGE SWITCH)

Replace the handle and the insulating tubes to their positions in the base of the breaker as shown in Figure 3. Before lowering the cover into position, be sure to reinstall all barriers and parts that may have inadvertently been removed from their proper location.

Align the cover over the base of the breaker. Lower the cover onto the base encompassing the auxiliary switch. Ensure the alignment pin of the auxiliary switch is correctly located in the locating hole of the base. Carefully position the factory installed wire restraints within the slots of the cover. The cover will not close onto the breaker base properly unless the auxiliary switch is in place. (See Figure 9).

Fasten the cover by means of the four cover screws which were initially removed as shown in Figure 3. The one screw, which was originally covered with sealing compound, must remain unsealed as an indicator that the breaker cover has been removed.

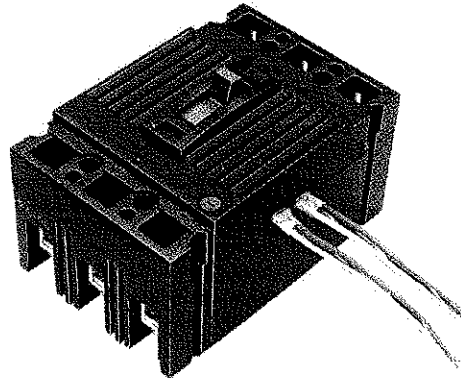


Figure 9.

## CIRCUIT CHECK

Before being connected to external wiring, the contacts of the auxiliary switch should be electrically checked using a continuity tester with the circuit breaker in the OFF, ON, and tripped positions. The state of the contacts should agree with the schematics in Figure 2. Use the red "Twist to Trip" button to trip the breaker.

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 GE Company.

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