



# POWER BREAK<sup>®</sup> Field Replacement Of Cam, Latch And Reset Fork

For 2500-4000A  
Frames

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

**WARNING:** Before removing cover, the breaker must be disconnected from all voltage sources both power and control. Breaker must be in off (open contact) condition and not charged. If charged and open, close the breaker contacts and then push the off button. Failure to follow the above sequence may result in mechanical damage.

## TOOLS REQUIRED

9/16" Hex Socket Wrench  
5/16" Wide Blade Screwdriver  
Retaining Ring Tool  
Adjustable Wrench  
Compression Type Force Gauge  
(0-72 oz. typical)

## COVER REMOVAL

Remove the escutcheon by unscrewing (4) escutcheon mounting screws, then unscrew the (4) cover mounting screws. Lift off the breaker cover. See Figure 1.

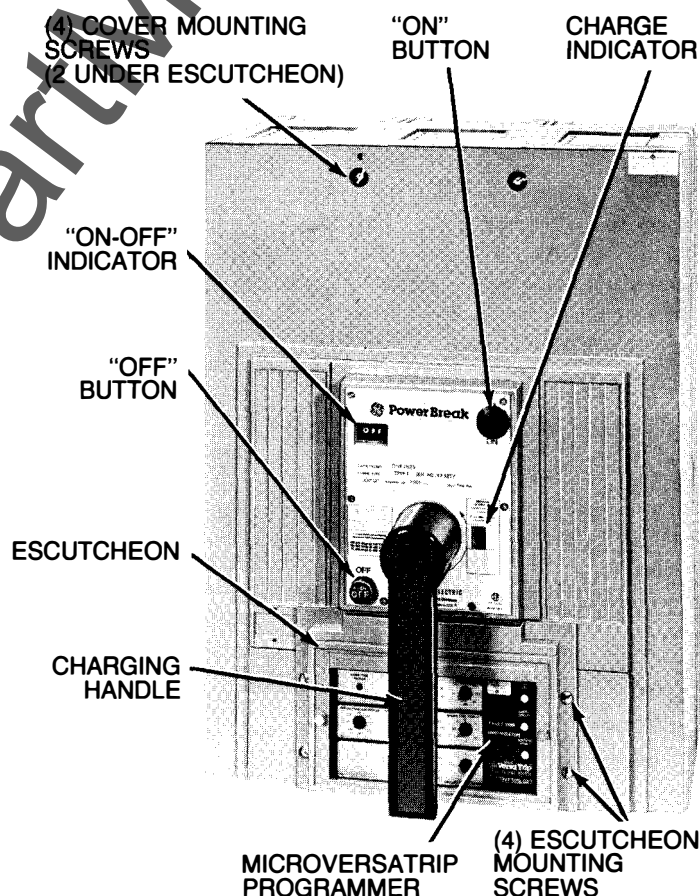


Figure 1.

## PROGRAMMER REMOVAL MICROVERSATRIP® DEVICES

Push in the locking lever. Lift programmer off mounting base and terminal plug. The locking lever and cover interlock will now swing out and lock over the base to prevent the breaker cover from being replaced without installing a programmer. See Figure 2.

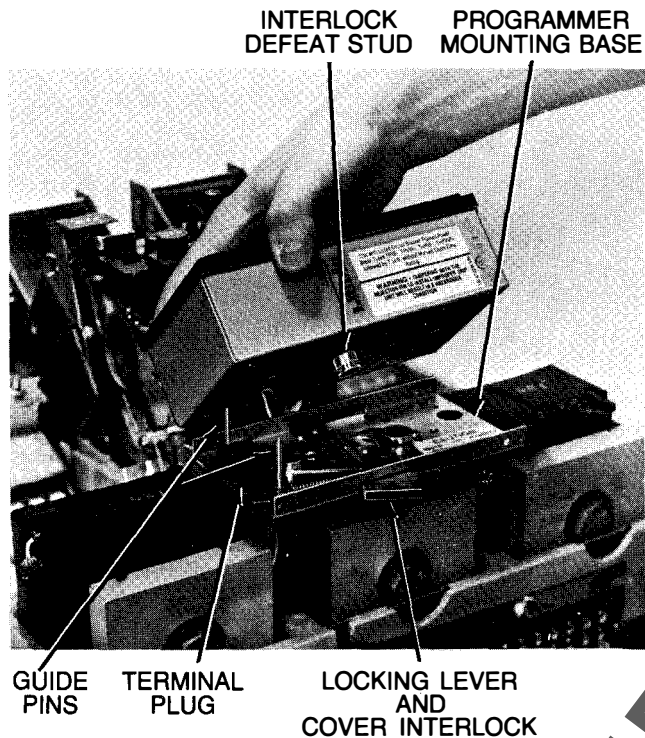


Figure 2.

## PROGRAMMER REMOVAL STATIC TRIP DEVICES

Remove the programmer mounting screws, unfasten the wiring plug, and remove the programmer. See Figure 3.

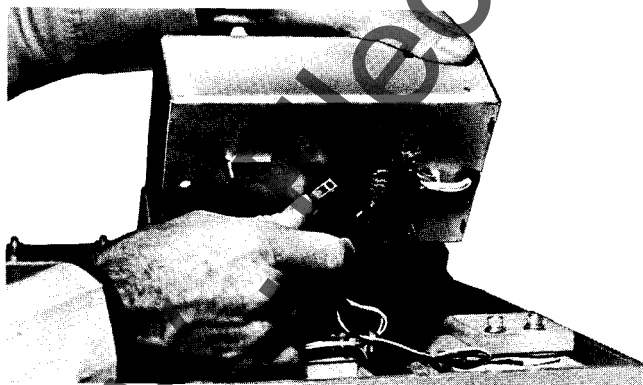


Figure 3.

## TRIP UNIT REMOVAL MAGNETRIP DEVICES

1. Unscrew the trip unit line connection hardware.
2. Unscrew the trip unit load connection hardware.
3. Unscrew the (4) trip unit mounting screws.
4. Lift the trip unit out of the breaker. See Figure 4.



Figure 4.

## CAM REMOVAL

1. Remove the cam stop by first blocking down the breaker crossbar at least 1"
2. Remove the side mounting screw, and then holding the cam stop assembly as shown, remove the rear mounting screw and lockwasher. See Figure 5.
3. Force the on-off indicator lever to the side and rotate and lift out the cam stop parts.

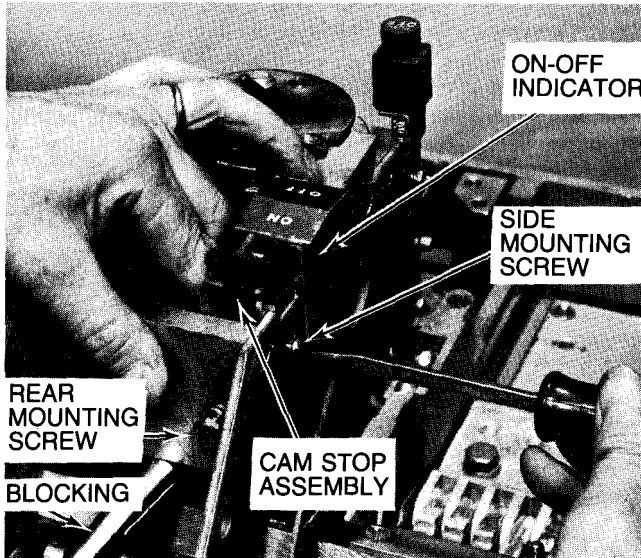


Figure 5.

4. Remove the charge indicator assembly by removing the (2) mounting screws, and lifting it out. Figure 6.

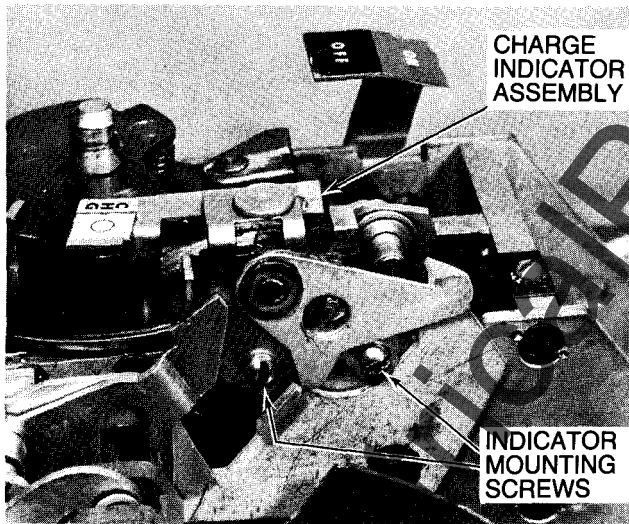


Figure 6.

5. Remove the cam by holding the nut behind the latch frame with a  $\frac{9}{16}$ " hex socket wrench (Figure 7) and using an adjustable wrench, rotate the cam shaft counter clockwise. Lift out the cam.

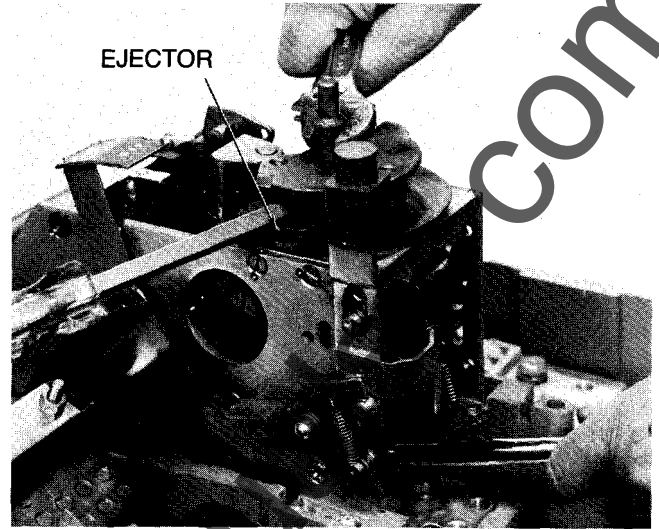


Figure 7.

### RESET FORK REMOVAL

1. For breakers equipped with a remote close and indicate option, remove the unit cover as shown in Figure 8 to expose the accessory mounting screws.



Figure 8.

2. Remove the accessory mounting screws Figure 9 and swing the accessory out of the way to expose the reset fork pivot pin.

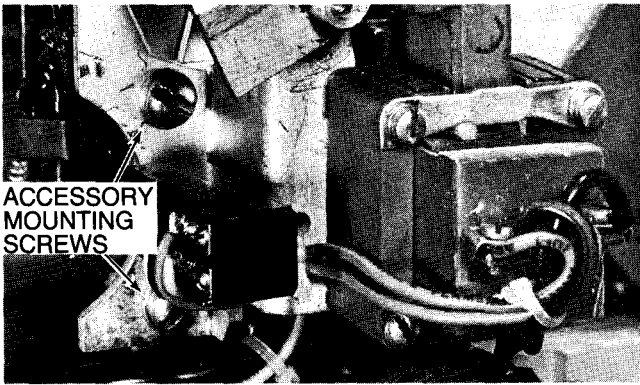


Figure 9.

3. Remove the pivot pin retaining ring Figure 10, drive the pin out of the mechanism, and lift out the reset fork. Figure 11.

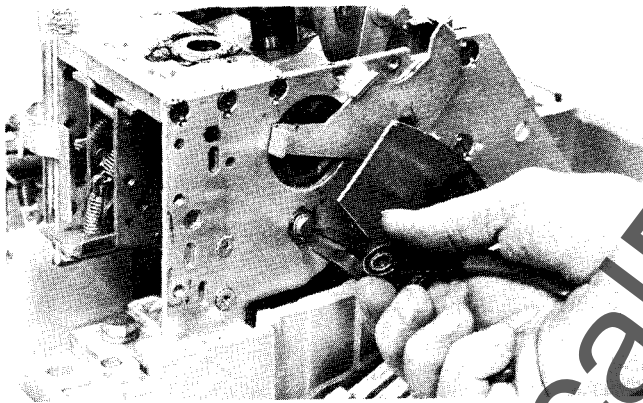


Figure 10.

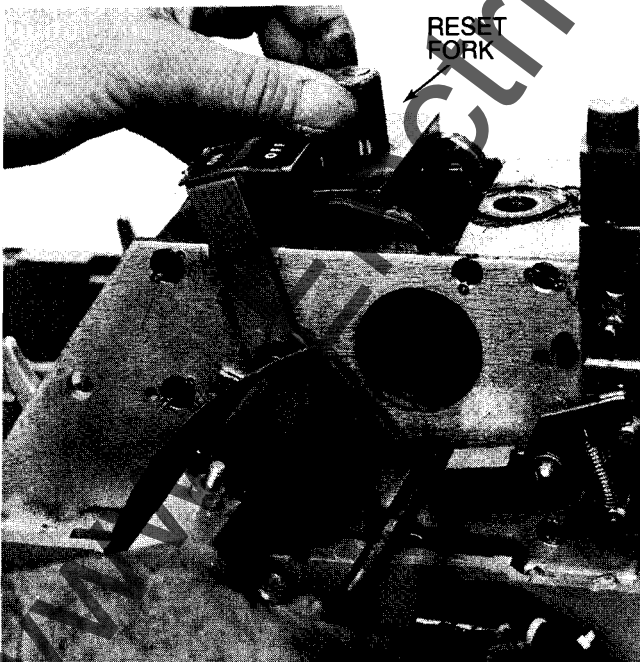


Figure 11.

## TRIP SLIDE AND ACCESSORY REMOVAL

**Note:** If the breaker is equipped with any center pole mounted accessory, it must be removed to provide access to the latch lower mounting screws, but first the trip slide must be removed as follows.

1. Unhook the cover interlock spring from the cover interlock, and remove the trip slide return spring.
2. Remove and save the trip slide mounting hardware shown in Figures 12 and 13.

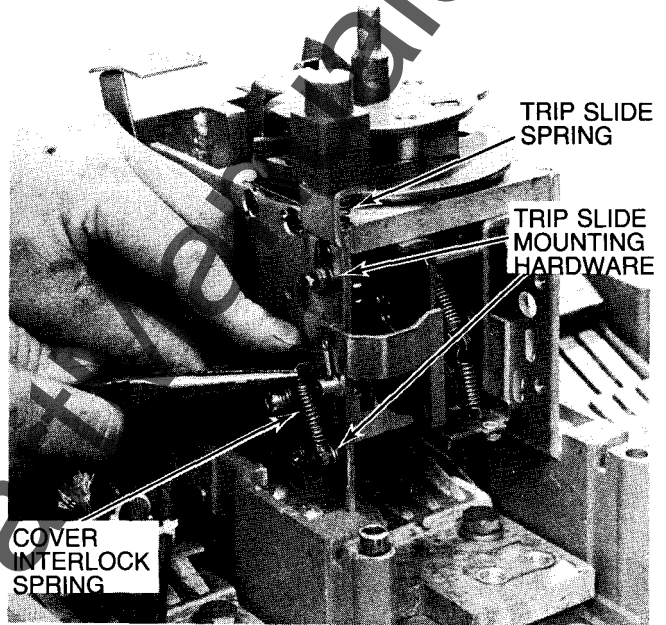


Figure 12.

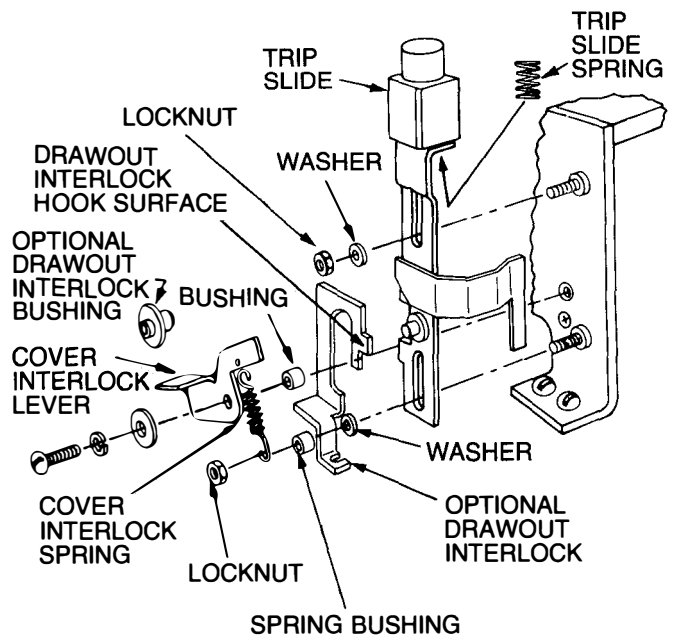


Figure 13.

For information on removal and reinstallation of accessories, see the following instruction sheets.

Shunt Trips including Trip Slide Removal, GEH-3400.

Undervoltage Release Device, GEH-3401.

Bell Alarm Devices:

MagneTrip version, GEH-3403

Solid State version, GEH-4358

## LATCH REMOVAL

1. Remove the upper (2) mounting screws (flat head) and the lower (2) mounting screws (round head) and remove the latch assembly. See Figure 14.
2. If the breaker is a solid state version remove the flux shifter mounting screws, cut the wire tie, lift out and lay aside the flux shifter and remove the old latch. See Figures 14 and 17.

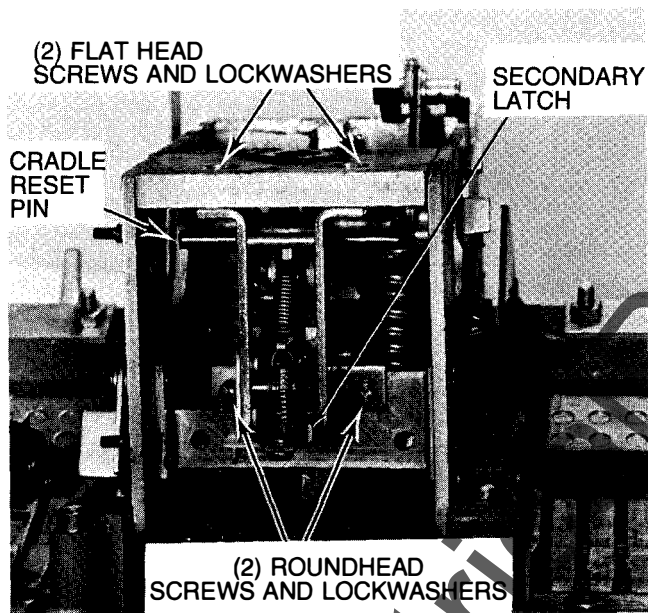


Figure 14

## LATCH INSTALLATION

**CAUTION:** The secondary latch must be held down (tripped) during the entire assembly operation that follows or the latch may be damaged.

1. Holding the secondary latch down, position the latch and loosely first install the flat head screws and washers then the round head screws.

**CAUTION:** On solid state breakers make sure the mechanism end of the reset lever is behind the cradle reset pin.

2. Tighten first the flat head screws and last the round head screws.

## RESET FORK INSTALLATION

1. Slide the reset fork into the mechanism as shown in Figure 11 with the roller facing towards the cam pivot block.
2. Install the reset fork pivot pin and its retaining ring. See Figure 10.

## CAM INSTALLATION

1. Install the cam through the upper pivot block and lower support holes making sure the (2) shim washers are located just below the cam plate.
2. Install the anti-friction plate with the black composition side down so it will face the washer which is installed before starting the locknut.
3. Wedge the ejector against the stop on the cam assembly top plate as shown in Figure 6 and holding the locknut with a  $\frac{9}{16}$ " socket wrench, use an adjustable wrench to rotate the cam shaft clockwise until it is just snug, then back off  $\frac{1}{4}$  turn. Remove the ejector blocking means.
4. Reinstall the charge indicator assembly. See Figure 6.

## CAM STOP ASSEMBLY AND INSTALLATION

Hold the cam stop parts as shown in Figure 15.

1. Bend the breaker contact position indicator to the side and position the cam stop as shown in Figure 5. It will be necessary to maneuver the parts to get them into their correct position in the corner of the mechanism frame and with the cam stop frame engaged into the notch in the mechanism side frame. Install but do not tighten the rear mounting screw and lockwasher.
2. Install and tighten the side mounting screw, then tighten the rear mounting screw.
3. Bend back the contact arm position indicator, and remove the contact arm blocking means.

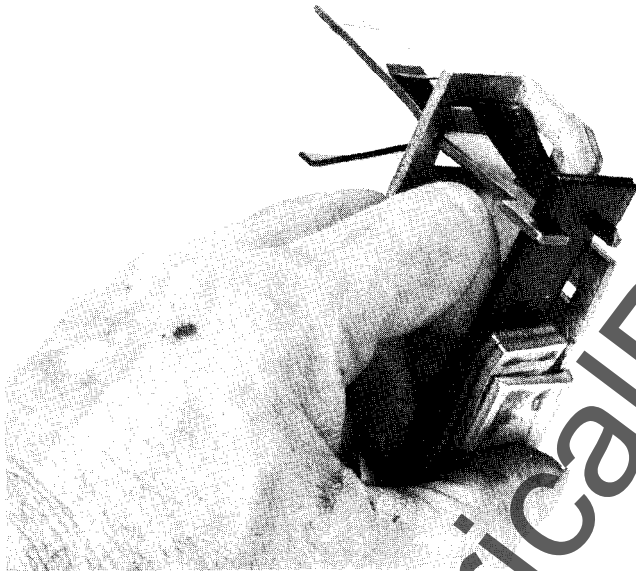


Figure 15.

## LATCH FORCE CHECK

The force required to trip the breaker must be less than 36 ounces to assure that the tripping device, and any accessory which trips the latch, will function.

Perform the following tests being very careful to keep hands away from any moving parts.

1. Temporarily install the breaker cover and charge the breaker mechanism, then close the breaker contacts.
2. Remove the breaker cover and using a compression type force gauge, push at a point beside the hole or screw in the breaker latch. Push down slowly and steadily and observe the maximum force to trip the breaker. See Figure 16.
3. Perform this test at least three times to get a good average reading.
4. If the force exceeds 36 ounces, the latch must be replaced.
5. If the force is less than 36 ounces, it will perform satisfactorily and you may proceed with the assembly.

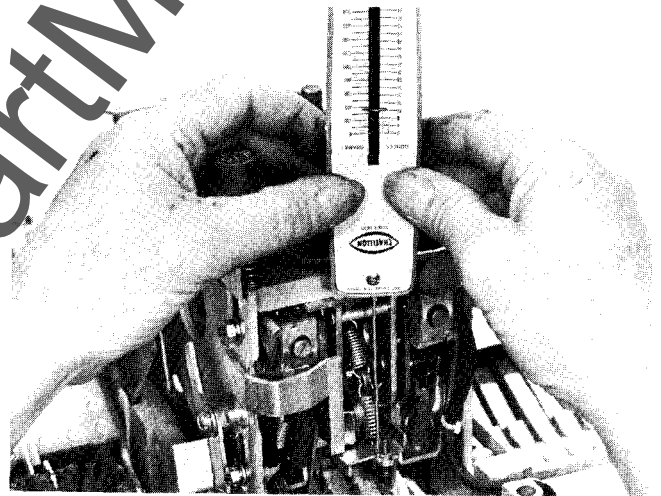


Figure 16.

## FLUX SHIFTER INSTALLATION AND ADJUSTMENT

1. With the breaker open and not charged, push in the flux shifter plunger until it is magnetically seated, and install it as shown in Figure 17 leaving the screws loose.



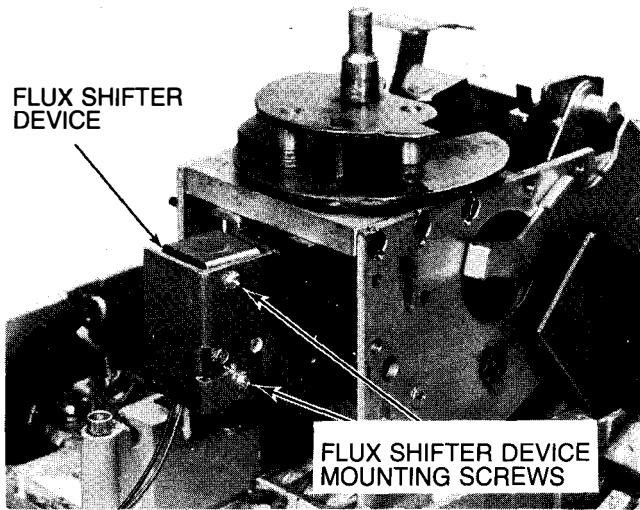


Figure 17.

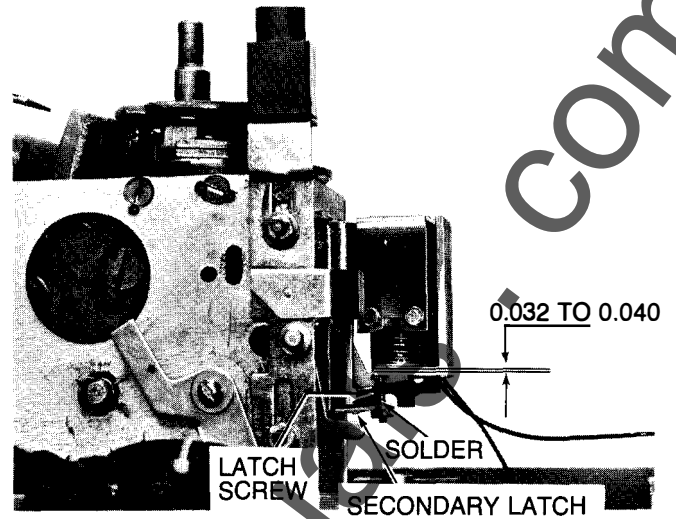


Figure 18.

2. From the point where the unit is just resting on the reset lever, push it down  $\frac{1}{32}$ " and tighten the mounting screws.
3. Now temporarily install the breaker cover and charge and close the breaker as before. Check that there is a gap between the face of the flux shifter plunger, and the top of the latch screw as shown in Figure 18. If adjustment is required, a soldering iron must be used to loosen the screw. If a new latch was installed, adjust the screw as required and lock with a rosin core solder such as Kester #44.

### FLUX SHIFTER FUNCTIONAL CHECK

1. With the breaker closed and being very careful to keep hands away from any moving parts, hold the breaker latch up towards the flux shifter.
2. Break loose the flux shifter plunger so it drops down on the breaker latch screw and then slowly let the latch drop until tripping occurs. If the plunger contacts the reset lever before tripping occurs, the latch screw is not properly adjusted, in which case, push the latch back up and reset the flux shifter and readjust as required.

3. Recheck as above until tripping occurs.

Reinstall accessories removed earlier and adjust as described in their individual instruction sheets.

Reinstall the remote close accessory if supplied.

Reinstall the trip slide and cover interlock.

Reinstall the trip unit or programmer.

Reinstall the breaker cover.

Recheck all functions before returning the breaker to service.

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*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.*

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