

SAFETY PRECAUTIONS

WARNING

Power Circuit Breakers are equipped with high speed, high energy operating mechanisms. The breakers and their enclosures are designed with several built-in interlocks and safety features intended to provide safe and proper operating sequences. To provide maximum protection for personnel associated with the installation, operation, and maintenance of these breakers, the following practices must be followed. Failure to follow these practices may result in death, personal injury or property damage.

- Only qualified persons, as defined in the National Electric Code, who are familiar with the installation and maintenance of power circuit breakers and their associated switchgear assemblies should perform any work associated with these breakers.
- Completely read and understand all instructions before attempting any installation, operation, maintenance, or modification of these breakers.
- Always turn off and lock out the power source feeding the breaker prior to attempting any installation, maintenance, or modification of the breaker. Do not use the circuit breaker as the sole means for isolating a high voltage circuit. Follow all lockout and tagging rules of the National Electric Code and all other applicable codes, regulations, and work rules.
- Do not work on a closed breaker or a breaker with the closing springs charged. Trip (open) the breaker and be sure the stored energy springs are discharged before performing any work. The breaker may trip open or the charging springs may discharge, causing crushing or cutting injuries.
- For drawout breakers, trip (open), and then remove the breaker to a well lighted work area before beginning work.
- Do not perform any maintenance, including breaker charging, closing, tripping, or any other function which could cause significant movement of the breaker while it is on the extension rails. Doing so may cause the breaker to slip from the rails and fall, potentially causing severe personal injury to those in the vicinity.
- Do not leave the breaker in an intermediate position in the switchgear cell. Always leave it in the **CONNECTED, TEST, or DISCONNECTED** position. Failure to do so could lead to improper positioning of the breaker and flashover, causing death, serious personal injury and/or property damage.
- **DO NOT DEFEAT ANY SAFETY INTERLOCK. SUCH INTERLOCKS ARE INTENDED TO PROTECT PERSONNEL AND EQUIPMENT FROM DAMAGE DUE TO FLASHOVER AND EXPOSED CONTACTS. DEFEATING AN INTERLOCK WILL LEAD TO DEATH, SEVERE PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

The instructions for installation, testing, maintenance or repair herein are provided for the use of the product in general commercial applications and may not be appropriate for use in a nuclear application. Additional instructions may be available upon specific request to replace, amend or supplement these instructions to qualify them for use with the product in safety-related applications in a nuclear facility.

The information, recommendations, descriptions and safety notations in this document are based on Westinghouse's experience and judgment with respect to **RETROFITTING OF POWER BREAKERS. THIS INFORMATION SHOULD NOT BE CONSIDERED TO BE ALL INCLUSIVE OR COVERING ALL CONTINGENCIES.** If further information is required, the Westinghouse Electric Corporation should be consulted.

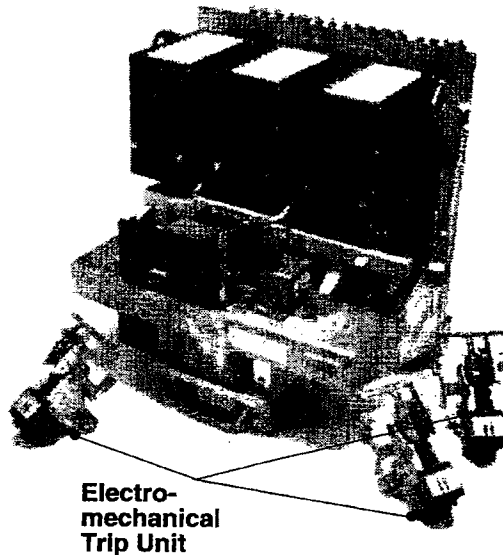
THERE ARE NO UNDERSTANDINGS, AGREEMENTS, REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OR SELLER. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY PRIOR OR EXISTING AGREEMENT, COMMITMENT OR RELATIONSHIP. In no event will Westinghouse be responsible to the user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever including but not limited to damage to or loss of use of equipment, plant or power system, cost of capital, loss of profits or revenues, cost of replacement power, additional expenses in the use of existing power facilities, or claims against the user by its customers resulting from the use of the information, recommendations, descriptions and safety notations contained herein.

Step 1: Trip Breaker and remove from Cell. Take Breaker to a clean well lit work bench to perform the Retrofit.

Before attempting to perform the Retrofit, be sure to read and understand the Retrofit Application Data supplied with this kit.

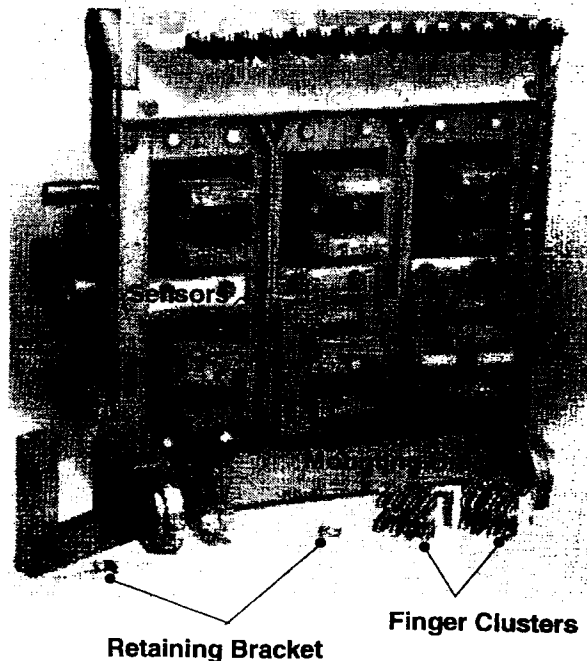
Refer to the components listing at the rear of this booklet. Lay out the components and hardware according to the steps as outlined. The components and hardware will be used to complete each assembly step that follows.

Step 2:



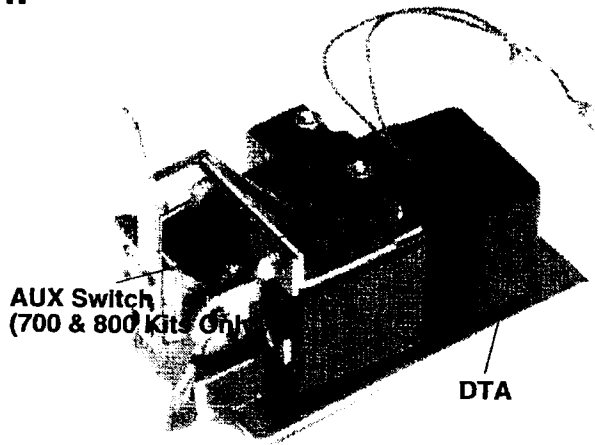
- A. Remove the three Electromechanical Trip Units from the bottom front of the breaker by removing the four hex mounting bolts from each.
- B. Remove the Trip Fingers from the Trip Bar directly above each Electromechanical Trip Unit.

Step 3:



- A. Remove both sets of bottom Finger Clusters from each phase of the breaker.
- B. Remove the two hex bolts from the center of each bottom stud.
- C. Install a Sensor Mounting Bracket with the spacers facing the breaker in the center of each bottom stud using the hardware provided.
- D. Install a Sensor with the terminals facing down and the nameplate facing out on each bottom stud.
- E. Secure each Sensor in place with a Retaining Bracket and the hardware provided.
- F. Install the Finger Clusters removed in Step 3A.

Step 4:

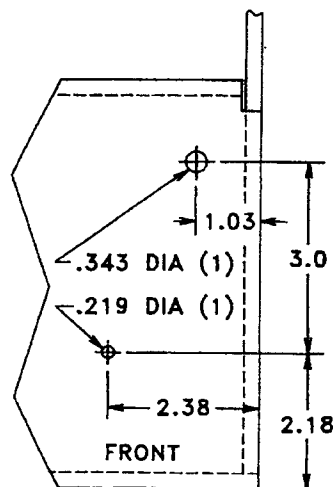


- A. *RMS/R 700 and 800 Kits Only.*
Mount the Microswitch to the Mounting Bracket with the hardware provided.
- B. *RMS/R 700 and 800 Kits Only.*
Mount the Microswitch Assembly on the Direct Trip Actuator (DTA) with hardware provided as shown.
- C. *RMS/R 700 and 800 Kits Only.*
Make sure the Microswitch works when the DTA Reset is pushed back.

Step 5:



- A. Install the Trip Finger on the Breaker Trip Bar as shown with hardware provided. The center of the Trip Finger is to be 2.62" from the outer right side of the breaker.
- B. Layout and drill the breaker platform per Drilling Plan 'A'.
- C. Mount the DTA and Mounting Clip on the breaker platform as shown with the hardware provided in the holes just drilled.
- D. Close the breaker manually. Check the gap between the DTA Trip Tab and the Trip Finger. The gap should be about 1/8 inch, if not adjust.



DRILLING PLAN 'A'
(BREAKER PLATFORM)

- E. Connect a 24V DC power supply to the DTA Terminals, positive to positive and negative to negative. Close the Breaker manually. Energize the DTA to trip the Breaker, deenergize when Breaker trips. Make certain that the DTA resets.

Step 6:

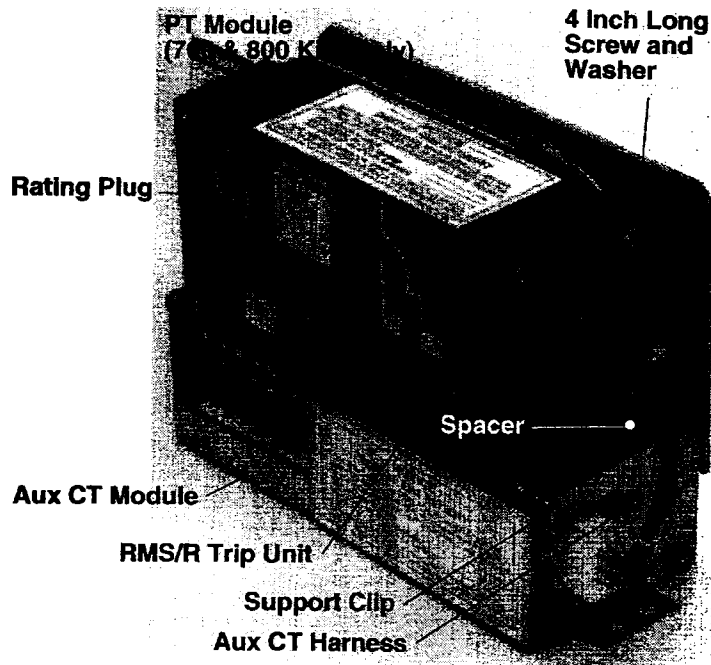


A. Mount the RMS/R Trip Unit on top of the Aux. CT Module with 4 in. long screws, washers and spacers as shown. Do not tighten firmly yet.

B. Mount the left and right Trip Unit Support Clips on to the sides of the Aux. CT Module and into the bottom front slots of the Trip Unit.

C. Tighten 4 in. long screws.

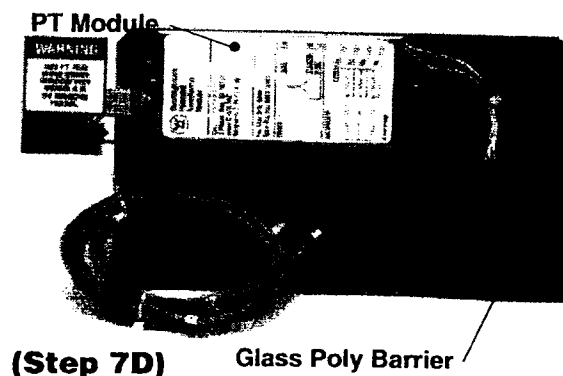
D. *RMS/R 700 and 800 Kits Only.* Mount the PT Module on the Glass Poly (red) Barrier with the hardware provided as shown.



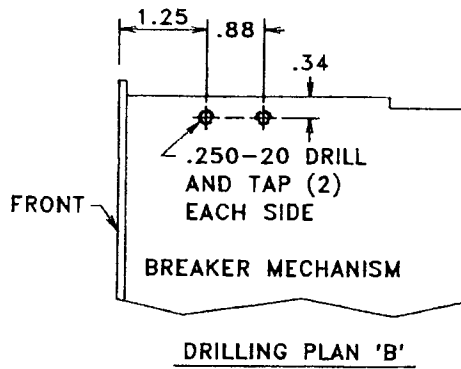
E. Mount the Glass Poly Barrier (red) on to the back of the Aux. CT Module with the hardware provided. (700 and 800 kits will have the PT Module mounted on it. Mount a nylon wire clamp on each screw. These are used to hold the PT wires in Step 10A.)

F. Remove Trip Unit Cover and install Rating Plug, replace cover.

G. Install Aux. CT harness between trip unit and Aux. CT Module.



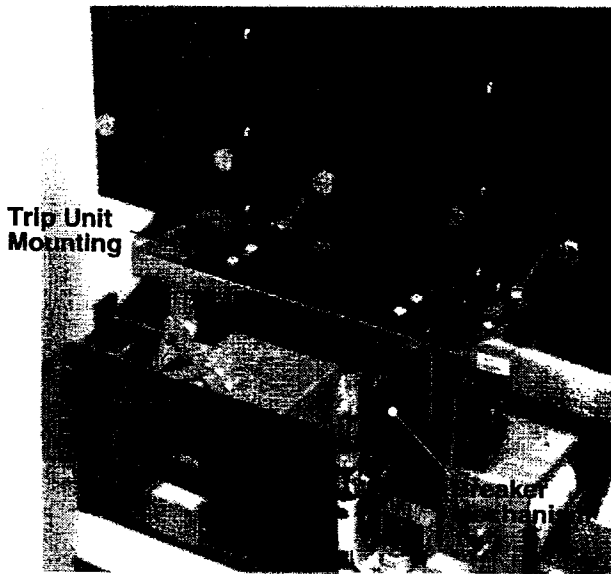
Step 7:



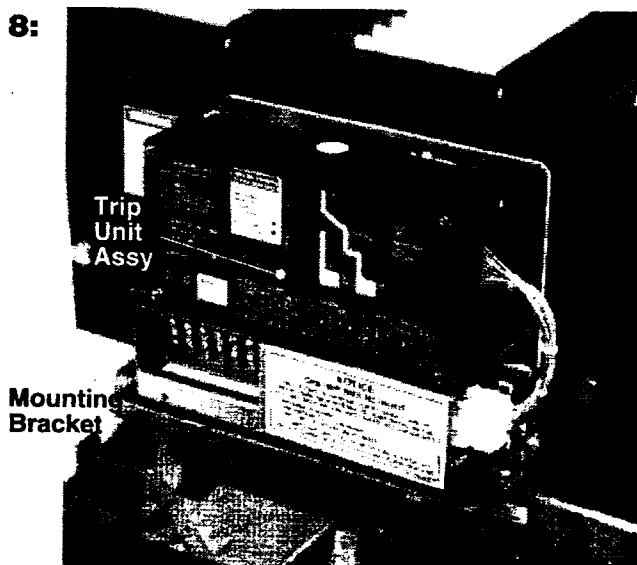
- A. Layout and drill each side of the breaker mechanism per Drilling Plan 'B'.

Note: Cover the area (both inside and outside) below to prevent the drilling chips from falling into the Breaker Mechanism.

- B. Mount the Trip Unit Mounting Bracket on top of the breaker mechanism as shown with the hardware provided using the holes just drilled.



Step 8:



- A. Mount the Trip Unit Assy. on the Mounting Bracket as shown with the hardware provided.