



TRI-BREAK[®] Fused Circuit Breaker

For Type TB6 and TB8 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

TRI-BREAK is a General Electric trademark for a line of molded case circuit breakers which utilizes the overload and moderate short circuit protecting action of a circuit breaker incorporated with the high level fault current limiting ability of integrally mounted current limiters. The limiter in this application is called a fuse-type current limiter because it does not interrupt overloads and moderate fault currents (which the breaker interrupts), but is designed specifically to coordinate with the circuit breaker and interrupt high level faults.

The fuse-type current limiter has a spring-loaded plunger which pops up when the fuse blows and trips the breaker, thereby eliminating single phasing which could take place if fuses alone were used.

The current limiter housing cover is interlocked so that the circuit breaker cannot be closed when the cover is removed (Figure 1). Also, if the circuit breaker is closed, removing the cover will cause the circuit breaker to trip. Interlocks are also provided so that the circuit breaker cannot be closed if a current limiter is either missing or has blown. (Figure 1 and Figure 3.)

TRI-BREAK fused circuit breakers are shipped complete with noninterchangeable trip units and current limiters installed. Check with factory if necessary to change the trip unit. Different current limiters are available for each frame size of TRI-BREAK device (see Table 1). See Figure 3 for proper installation procedure if line lugs are required.

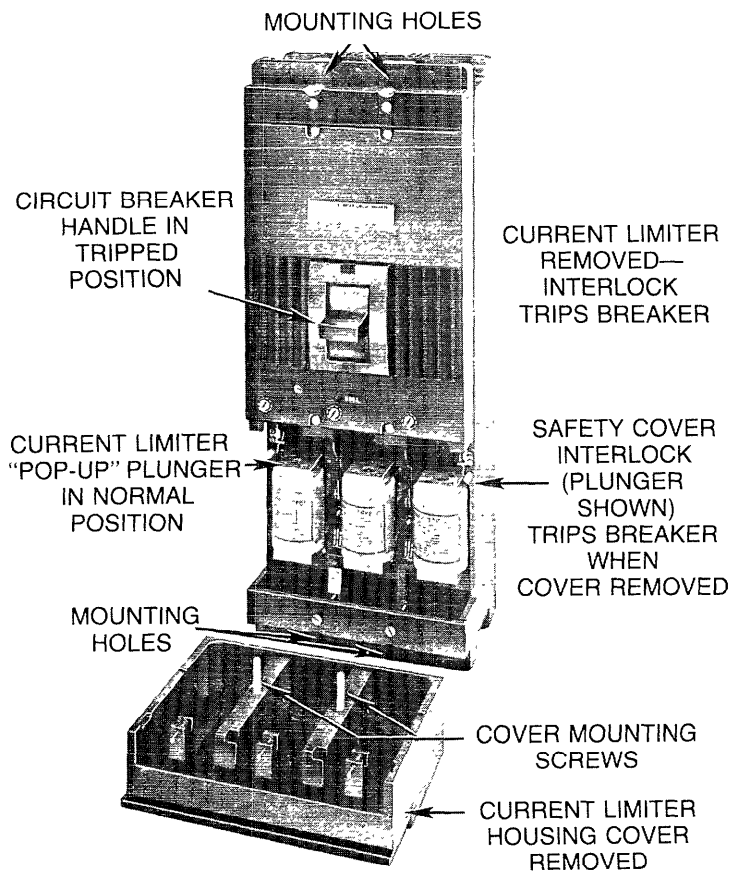


Figure 1. Typical TRI-BREAK protective device with current limiter housing cover removed

INSTALLATION INSTRUCTIONS

1. TRI-BREAK fused circuit breakers may be mounted with poles in either horizontal or vertical position.
2. Where necessary, remove lug covers to expose mounting holes.
3. Make certain all current connections are tight and limiters are properly fastened. On the TB6 and TB8, which utilize bolt-on limiters, the limiter screws should be tightened to 40 in. pounds. The fuse-type current limiter is a thermal device and loose connections can cause overheating and nuisance tripping. For proper lug terminal connecting procedure, see Figure 2.
4. TRI-BREAK fused circuit breakers are usually applied on high capacity systems; make certain bus is braced adequately and load wiring is tightly laced and secured.
5. TRI-BREAK fused circuit breakers are available with more than one type of current limiter. The complete fused circuit breaker is ordered and shipped with the proper current limiters required for the application. If they are removed, make certain they are replaced in the same device.

6. Mounting surface and holes should be prepared carefully to eliminate any possible twist or strain on the fused circuit breaker.

MAINTENANCE AND TROUBLE SHOOTING INSTRUCTIONS

1. NUISANCE TRIPPING—NO OVERLOAD EXISTS

Probable Cause	Remedy
High ambient temperature	Derate breaker or reduce ambient temperature.
Dirty terminal connections	Remove terminals and clean with an industry recognized contact cleaner.
Loose electrical connections	Tighten lugs and retighten cable connections (Figure 2).
Inadequate cable size	Verify cable size and temperature rating.

(Torque wrench should be used to obtain proper tightness.)

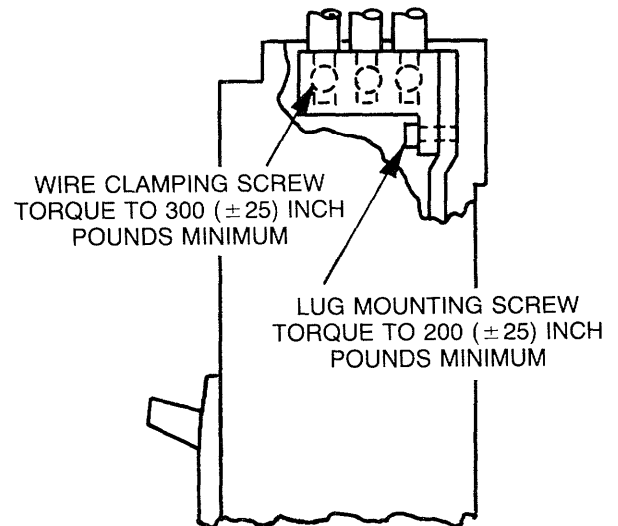


Figure 2. TB6 and TB8

2. OVERLOAD TRIPPING CHARACTERISTICS

- A. Circuit breaker will be hot due to overload current.
- B. Circuit breaker will not reset for several minutes until thermal element cools.
- C. Fuse-type current limiters may be hot, but not blown.

3. MODERATE FAULT SHORT CIRCUIT TRIPPING CHARACTERISTICS

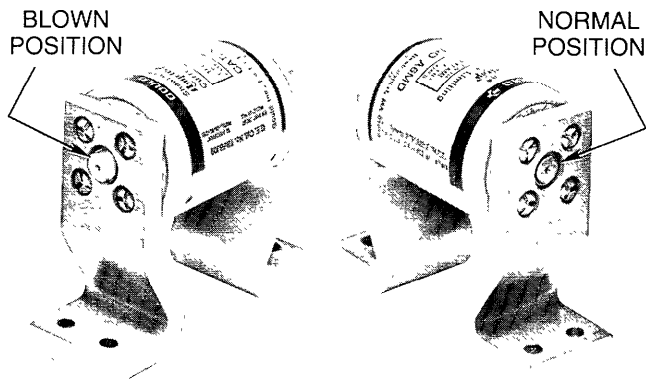
- A. Circuit breaker can be reset immediately as tripping was caused by instantaneous magnetic trip.
- B. Fuse-type current limiters may be hot, but not blown.

4. HIGH LEVEL SHORT CIRCUIT TRIPPING CHARACTERISTICS

Circuit breaker cannot be reclosed due to "pop-up" plunger of fuse-type current limiter actuating trip (Figure 3); replace blown limiter, see step 5 below.

5. CURRENT LIMITER REPLACEMENT

- A. Remove current limiter cover and replace blown limiters. (Blown fuse-type current limiters can be identified by the "pop-up" plunger in the "pop-up" position—Figure 3.)
- B. The fuse-type current limiters originally furnished were selected on the basis of circuit application and should be replaced with limiters of identical catalog number.



SPRING-LOADED "POP-UP" PLUNGER RELEASED BY FUSED ELEMENT

Figure 3. Current Limiters

TABLE 1

For Use With:	Fuse-Type Current Limiter Catalog Numbers	
	General Electric	Chase Shawmut
TB6 600A Frame	TB10BJ14	A6MC
TB8 800A Frame	TB15K22	A6MH

ACCESSORIES

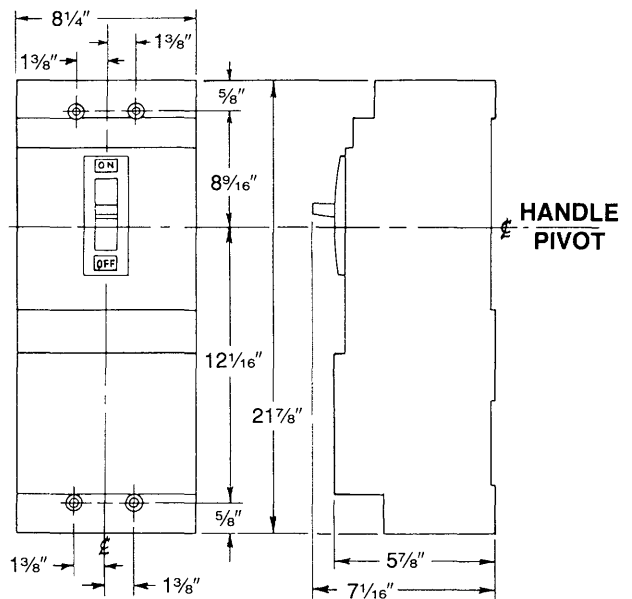
Factory mounted internal accessories can be used with TRI-BREAK fused circuit breakers.

Standard externally mounted accessories such as motor-operated mechanisms and integral handles may be mounted and used in the field.

CAUTION NOTES

1. TRI-BREAK fused circuit breakers are ordered and shipped with the proper fuse-type current limiters required for specific application which should be replaced with limiters of identical catalog number.
2. TRI-BREAK fused circuit breakers should not be reverse fed as this would keep current limiters and their contacts energized even when circuit breaker contacts are open. Fuse-type current limiter and current limiter cover interlocks provide maximum personal safety when device is properly installed.
3. Experience has shown that stranded copper or aluminum cable will relax or cold flow after initial tightening. The lug screws should be retightened at least once (Figure 2). When aluminum cable is used, special connection compound recommended by the aluminum cable manufacturer should be used.
4. Normally, not more than two internal accessories may be mounted in TRI-BREAK fused circuit breakers. If more than two are required, consult factory.

OUTLINE AND MOUNTING DIMENSIONS (FOR ESTIMATING ONLY)



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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