

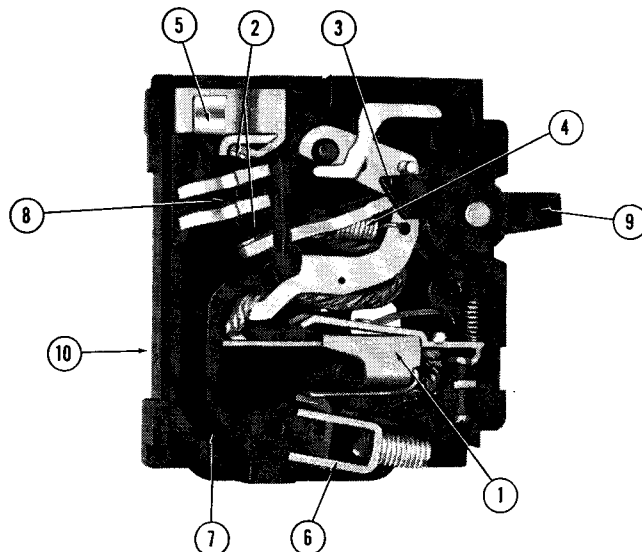


## DESCRIPTION

A molded-case circuit breaker is both a disconnecting means and a automatic protective device assembled in an integral housing of insulating material. Designed for

operation under normal and abnormal conditions without injury to itself, it will provide years of trouble-free service provided it is properly applied.

### CONSTRUCTION FEATURES—EQ® NORMAL-DUTY CIRCUIT BREAKERS



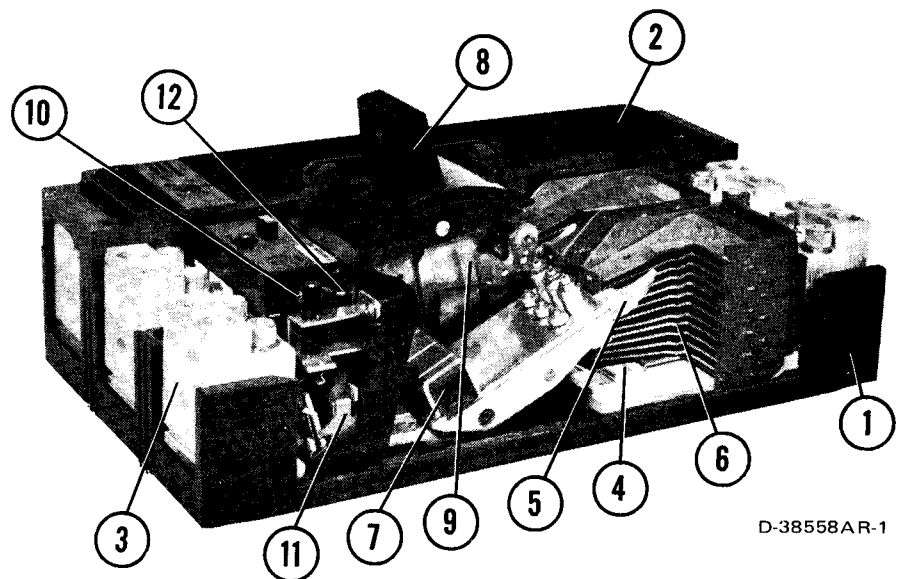
1. Thermal-magnetic trip
2. Stationary and moving contact assembly
3. Trip-free operating handle assembly
4. Quick-make, quick-break operating mechanism
5. Line end clip
6. Load end pressure wire connector
7. Load end arc vent
8. Arc chute assembly
9. Operating handle
10. Base

F-41806R

Construction features of an EQ®-P, normal-duty plug-in circuit breaker.

### CONSTRUCTION FEATURES—ET® HEAVY-DUTY CIRCUIT BREAKERS

1. Base
2. Cover
3. Pressure wire connectors
4. Stationary contact assembly
5. Moving contact assembly
6. Arc chute assembly
7. Connector bar
8. Operating handle
9. Over-center toggle mechanism
10. Common tripper bar
11. Magnetic trip
12. Thermal trip



D-38558AR-1

Construction features of an ET® KM-Frame, heavy-duty, interchangeable-trip unit circuit breaker.



## DESCRIPTION (continued)

### DESIGN FEATURES

#### THERMAL-MAGNETIC TRIP

The thermal-magnetic trip operates on the inverse-time element principle to provide overload protection without circuit interruption on harmless overloads and assures split-second tripping on short circuits.

The thermal trip consists of a bimetal heated either directly or indirectly by the load current. Because of the difference in the coefficient of expansion of the metals, the bimetallic element will deflect when heated. This deflection actuates the trip mechanism of the breaker, causing the contacts to open. There is one thermal trip element in each pole of the circuit breaker. Multi-pole breakers have a common tripper bar; thus, an overcurrent on any pole will cause all poles to open simultaneously.

The thermal trips are augmented by an electromagnet which trips the breaker instantaneously when the fault current reaches a predetermined value. The instantaneous trip in each pole acts directly on the common tripper bar, opening all poles of the breaker simultaneously.

#### OPERATING MECHANISM

The operating mechanism is designed to assure quick-make and quick-break operation of the separable contacts and maintain high contact pressure. The contacts cannot be held closed against an overload or short circuit condition due to a trip-free mechanism which operates independent of the breaker handle position.

#### CONTACTS

Non-welding moving and stationary contacts are of the butt-type and constructed of a special silver alloy. Operation of the breaker provides a wiping action between

moving and stationary contacts to assure long-life, low watt loss and elimination of contact maintenance.

#### LATCHES AND CURRENT-CARRYING PARTS

All latches and latching surfaces are hardened and polished to micro-finishes to provide true time-current characteristics. Current-carrying parts are silver-plated to prevent oxidation and to maintain good conductivity.

#### ARC QUENCHERS

A series of steel plates with their supports form an insulated expansion chamber partially surrounding the contacts. When the contacts open under load, the arc is drawn into the steel plates where it is cooled, divided and de-ionized. This action dissipates the energy without harm to the breaker.

#### HOUSING

The molded-plastic breaker housing is thermo-set to minimize expansion and contraction, thus assuring proper time-current characteristics. Terminals are enclosed for safety but conveniently accessible to authorized personnel. Breaker handles indicate whether breaker is "on", "off" or "tripped".

#### CABLE CONNECTORS

All standard cable connectors are of the solderless pressure wire type and are suitable to accept either copper or aluminum cable.