

Manual Closing

The closing mechanism compresses a main spring which is held compressed until released. The handle is rotated counter-clockwise to the vertical position and pushed in to engage the clutch. Rotating the handle 180° clockwise fully charges the spring and as the internal crank passes through top-dead-centre, rotation is stopped, and held by the close release latch. Operation of this latch by means of the close push button Fig. 2 in the faceplate releases the spring energy to close the breaker. A multi-tooth ratchet wheel prevents recoil and permits the spring charging to be performed in several short strokes if desired. On frame sizes 1600 amperes and above, the handle is a pull-out extension type for ease of operation.

Electrical Closing

On all electrically operated units the motor charges the spring unit the close release latch engages. The close latch is operated by a solenoid energized from the push button in the faceplate, Fig. 2 or by a remote button. The closing stroke then follows in a similar manner to that of the manual type described above. A removable handle is provided to permit manual charging of the spring. A mechanical close button similar to that on the manually operated unit is not included. Emergency operation of the close release latch is accomplished by insertion of a pin through a small aperture in the faceplate, Fig. 2. A suitable pin is provided in the upper end of the manual charging handle.

BREAKER MAINTENANCE

The safe and successful operation of connected apparatus depends upon the proper operation of the circuit breaker. Therefore, it must have regular, systematic care and inspection. The following points require special attention.

1. Before inspecting or repairing the H-2 or HL-2 be sure it is disconnected from any electric power, either high voltage or control voltage. Also check that the main spring is discharged. If the breaker is electrically operated, turn the motor isolating switch on the faceplate to the 'off' position before tripping the unit to prevent the motor from recharging the spring. (Fig. 2).
2. Inspect the operating mechanism periodically and keep it clean.

REMOVING THE FACEPLATE (Fig. 2)

First remove the four oval head screws located at the corners of the faceplate and remove the faceplate and trim. The four mounting screws located at the base of the enclosure may now be removed and the enclosure withdrawn. When replacing the faceplate and trim it is important that the beveled edge of the trim be positioned on the side nearest the enclosure door hinge.

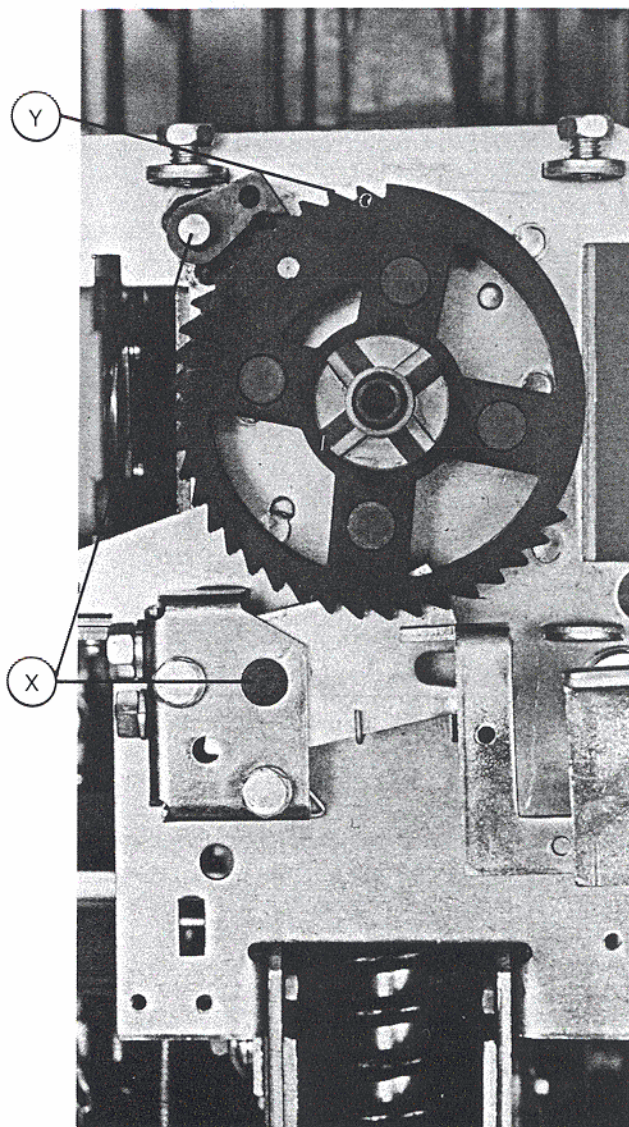
LUBRICATION

H-2 breakers have been tested for mechanical endurance to the prescribed number of operations by ANSI standards without lubrication during the tests. No seizing of the mechanism occurred and the

breakers were still operational. In service it is possible to encounter dust, corrosive atmospheres and other adverse conditions which may impair proper operation. Therefore we consider it prudent to lubricate and clean breakers periodically. ANSI standards recommend lubrication and servicing to be carried out at the following periods.

In frame sizes up to and including 2000 amps, this interval is 500 operations, and in sizes 3000 amps and above, 250 operations. The following points should receive attention:-

FIGURE 3
LUBRICATION



MANUALLY OPERATED

X — Oil - SAE 30

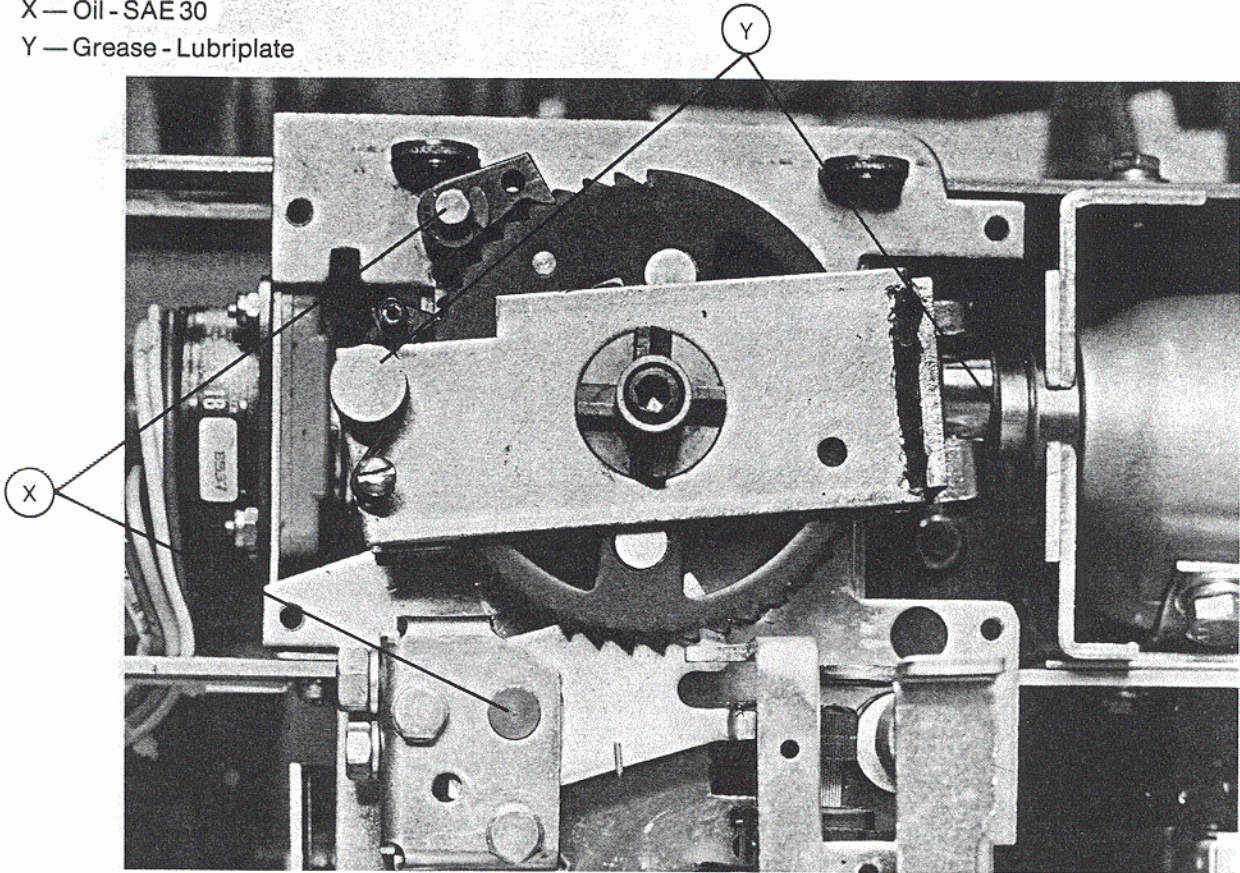
Y — Grease - Lubriplate

FIGURE 3
LUBRICATION

ELECTRICALLY OPERATED

X — Oil - SAE 30

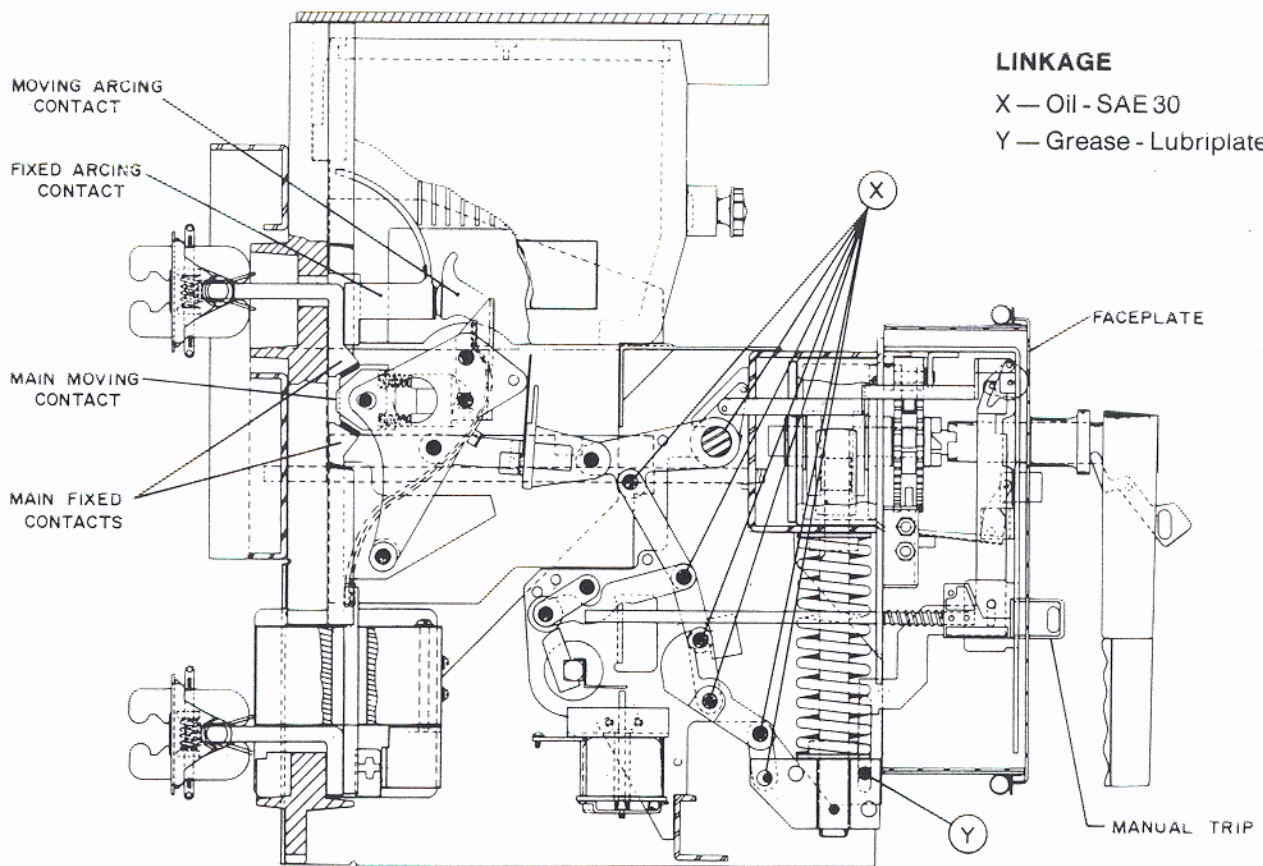
Y — Grease - Lubriplate



LINKAGE

X — Oil - SAE 30

Y — Grease - Lubriplate



MANUALLY OPERATED MECHANISM

(Ref. Fig. 3).

Oil - SAE 30

1. All linkage pivots within the mechanism compartment.
2. All closing shaft bearings.
3. Holding pawl pivot (located within the faceplate enclosure - upper left hand corner).
4. Close latch pivot (located below the main ratchet wheel).

Grease - Lubriplate Lo-Temp.

1. Spring guide pin (located at the lower end of the closing spring).
2. Ratchet wheel teeth.

ELECTRICALLY OPERATED MECHANISM

(Ref. Fig. 3).

Oil - SAE 30

1. All linkage pivots within the mechanism compartment.
2. All closing shaft bearings.
3. Holding pawl pivot (located within the faceplate enclosure - upper left hand corner).
4. Motor limit switch lever pivot (located within the front channel - left hand corner).
5. Close latch pivot (located below the main ratchet wheel).

Grease - Lubriplate Lo-Temp.

1. Spring guide pin (located at the lower end of the

closing spring).

2. Ratchet wheel teeth.
3. Front face of the ratchet wheel.
4. Oscillating lever - right hand end (at the motor drive cam).
5. Driving pawl pivot and springs (located on left hand end of the closing spring).

CLOSE LATCH ADJUSTMENT (Fig. 6)

The function of the close latch is to arrest or hold the ratchet wheel at a point 12 degrees past top-dead-centre, with the spring fully charged in readiness to close. The closing stroke is initiated by release of the latch, either manually by means of the mechanical push button in the faceplate or electrically by means of the close solenoid. Insufficient engagement of the latch may allow the closing stroke to occur at completion of the charging of the spring. Referring to Figure 6, the adjustment procedure is as follows. The ratchet wheel assembly (Item 1) is made up of two plates riveted together. The two plates are held apart by spacers located between the plates on the four rivets. Rotate the ratchet wheel until one of the spacers on a rivet is directly above the nose of the cam latch (Item 2). Loosen locknut (Item 3). Turning the stop screw (Item 4) counter-clockwise adjusts the cam latch up. Adjust the cam latch height until there is approximately 1/32 inch (.8 mm) clearance between the spacer and the nose of the cam latch. Tighten the locknut securely.

**FIGURE 4
MANUALLY OPERATED**

