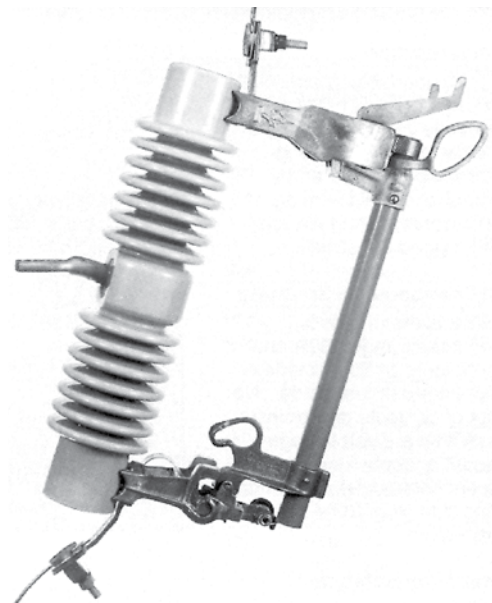
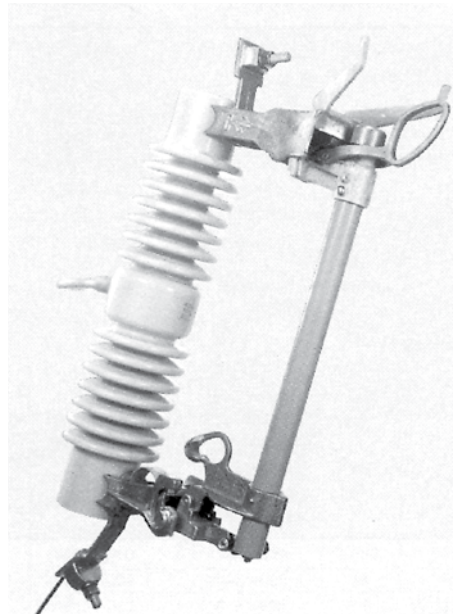


# HX open distribution cutout



## General

### Application versatility

Eaton's Cooper Power™ series HX open distribution cutouts can be quickly and economically adapted to double current rating or higher interrupting ratings as load and system capacity increases dictate. Simple blade changeout makes 300 A disconnects out of the HX cutout design. Fuseholders and blades are only stock items required for this broad versatility.

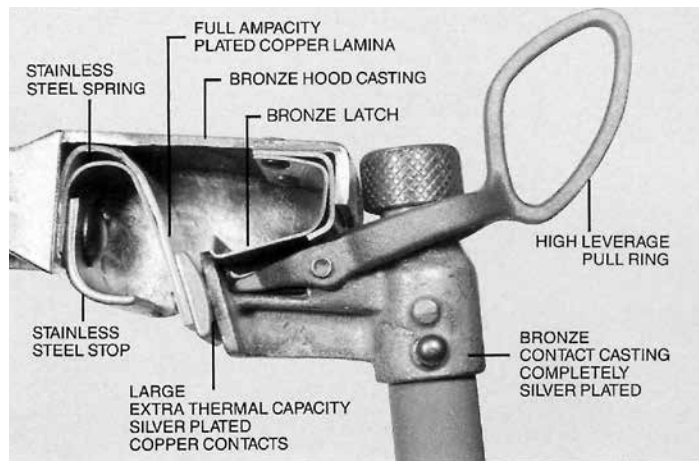
### Proven reliable operation

Highest reliability levels are endorsed by extensive field use records. Rugged design features make this possible:

- Reverse current loop contacts at both line and hinge ends increase contact pressure during high surges preventing pitting and burning
- Positive lever operated latch prevents accidental opening
- High quality bronze basic construction. Stainless steel utilized in selected pins and springs.
- Silver plated contact surfaces factory coated with effective contact aid

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**Figure 1. Upper contact durable metals assure long-term performance.**

**Table 1. Ratings**

|                             |                                             |
|-----------------------------|---------------------------------------------|
| 100 A and 200 A Fuseholders | 7.8 kV, 7.8/13.8 kV, 15 kV, 15/27 kV, 27 kV |
| 100 A Fuseholder            | 27/38 kV & 38 kV                            |
| 300 A Disconnect            | 7.8–38 kV                                   |

### Linkbreak

Linkbreak is designed so that it will break element of fuse links rated from 1/3 through 100 A with a minimum of effort. Fuseholder extinguishes load current as if fuse element had melted due to an overload condition.

### Positive interruption

HX cutouts dependably interrupt all currents from minimum melting to maximum faults within the rating of the fuseholder. Consistent long term performance is assured by small bore tube; double venting on high fault currents; spring loaded flipper and rugged construction.

### Simplest changeout or up-rating

The 100 A and 200 A fuseholders, 300 A blade, and 100 A link linkbreak fuseholders within each voltage rating are interchangeable in the same mounting frame.

### Additional adaptability for system duty

Available with either plated bronze T-bolt as standard or optional parallel groove terminals for aluminum or copper conductor. Linkbreak (loadbreak) 100 A fuseholder or galvanized horns for portable loadbreak device are available as optional items.

### Upper contacts and latch

HX cutout upper contacts have extra thermal capacity and contact area for dependable, continuous operation at the 300 A disconnect rating. Their large, heat absorbing mass conducts the highest rated momentary currents without overheating.

Serviceability under all current conditions has been thoroughly lab tested and field proven.

High contact pressure is maintained permanently by flat springs that drive the shoe against the fuseholder contact. In addition, the connection between shoe and terminal forms a reverse current loop, which further increases contact pressure during high current faults and prevents pitting and burning. The contacts are self-aligning, full wiping, silver plated, and coated with an effective contact aid.

### Positive lever operated latch

A positive lever operated latch prevents opening from vibration, or violent impact to pole or the use of cover-up equipment. The pull ring assembly has exceptionally high leverage for easy release of the latch and gives linemen complete control over holder during opening operation. Flexible latch while securely retaining fuseholder minimizes required closing effort by an operator who may not be able to position himself directly in front of the cutout.

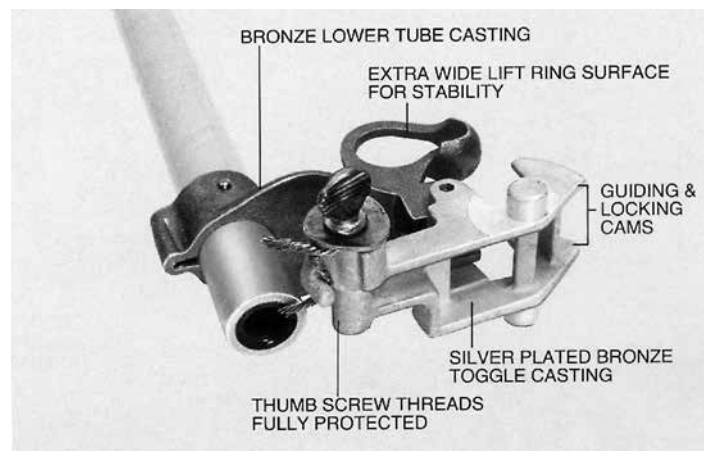
### Lower contacts and flippers

A reverse current loop auxiliary contact inside the hinge casting assures cool operation at all current levels, and prevents arcing at the trunnion during high current interruption. The toggle is silver plated. It is forced open by a stainless steel spring assuring withdrawal of the link from the tube on low current operations.

The cams visible at the right end of the toggle lock into the hinge housing. They guide the fuseholder into position when it is closed from any angle and prevent the fuseholder from jumping out of hinge during high current interruption.

A silicon bronze thumbscrew with a large head facilitates fuse link installation. The fuse link is easily positioned under the double lipped washer and momentarily secured by finger tightening the thumbscrew. A final turn with the pliers and snipping off the excess cable with the same pliers completes the installation. The threaded bolt end is completely protected as it does not extend beyond the casting.

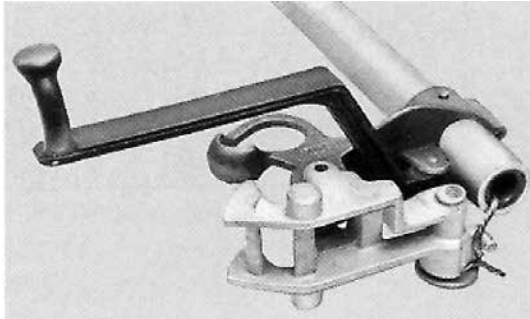
HX cutouts have a unique straight-through, box terminal design on 200 A fuseholders. Links with two or three leaders are as quickly and easily installed as those with one tail, since they are fed straight through both tube and terminal. The shoe and box completely confine the leader tails.



**Figure 2. Lower contact toggle.**

### Linkbreak attachment

The linkbreak attachment is designed so that it will break the element of the fuse link. The fuseholder uneventfully extinguishes the load current as if the fuse element had melted due to an overload condition.



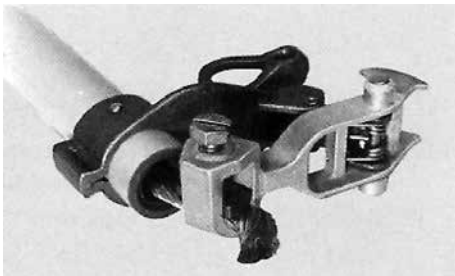
**Figure 3. 100 A fuseholder with Linkbreak attachment.**

#### Advantages of the Linkbreak Over Other Loadbreak Devices

- Low initial cost compared to cutouts with integral loadbreak devices.
- No complicated interrupter device to possibly fail.
- Can be hotstick operated from ground with standard or extendo stick. It is not necessary to climb the pole as it is for portable loadbreak tool in the event bucket truck is not available or location is such that it cannot be reached by bucket truck.

### Fuse terminals

Straight through arrangement eliminates difficulty of winding and securing large unwieldy cable or multiple cables around bolt or stud.



**Figure 4. 200 A fuse terminals.**

### Fuseholders and blades

Fuseholders for HX cutouts have small bore, double venting tubes and are equipped with spring loaded flippers.

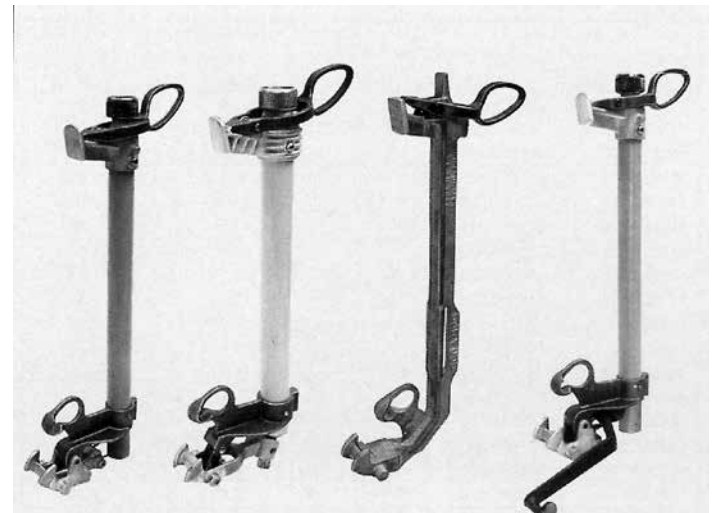
HX cutout will interrupt all values of current within their rating without blind spots. On low and medium fault currents the fuseholder is single venting out of the bottom. On higher fault currents the disc in the cap is expended assuring unrestricted gas venting out of the top and bottom, the double venting minimizes the mechanical stresses on the cutout and mounting. The gas stream is always in line with the tube, preventing flashovers.

Disconnect blades are fully silver-plated, and distinctively contoured to assure positive identification from the ground.

Switch stick handling is positive. The lift ring locks on the hook and has wide bearing surface to minimize swinging of the fuseholder. The high leverage latch release assures easy opening and the flexible latch easy closing.

### Additional features

- Fuseholders have complete rating data permanently embossed on the lower tube casting
- All top and bottom insulator attachments place the porcelain in compression, the time proven, trouble free method
- Center cemented stud minimizes the possibility of animal caused flashovers
- 7.8 and 7.8/13.8 kV ratings include ANSI® Type A normal duty 15 kV ratings and above ANSI® Type B heavy-duty crossarm hangers
- Both fuseholders and insulator permanently marked with month and year of manufacture
- Hooks for a portable loadbreak device factory installed as an option



**Figure 5. 100 A Fuseholder, 200 A Fuseholder, 300 A Blade, and 100 A Linkbreak Fuseholder.**

**Table 2. Single Insulator Catalog Numbers**

| Cat. No. with T-Bolt Conn. | Cat. No. with Par. Gr. | kV       | Continuous Current (A) | Interrupting Capacity kA |      | ANSI BIL Rating kV | Creep Distance Inches | Replacement Fuseholder | Replacement Expendable Caps |
|----------------------------|------------------------|----------|------------------------|--------------------------|------|--------------------|-----------------------|------------------------|-----------------------------|
|                            |                        |          |                        | Asym.                    | Sym. |                    |                       |                        |                             |
| 144161-000                 | 144161-020             | 7.8      | 100                    | 10.0                     | 7.1  | 110                | 9.5                   | 184101-000S6           | 36361-3                     |
| 148161-000                 | 148161-020             | 7.8      | 200                    | 20.0                     | 13.3 | 110                | 9.5                   | 188101-000S6           | 129023                      |
| 144561-000                 | 144561-020             | 7.8/13.8 | 100                    | 10.0                     | 7.1  | 110                | 9.5                   | 184501-000S6           | 129052                      |
| 146561-000                 | 146561-020             | 7.8/13.8 | 100                    | 16.0                     | 10.7 | 110                | 9.5                   | 186501-000S6           | 129052                      |
| 148561-000                 | 148561-020             | 7.8/13.8 | 200                    | 20.0                     | 13.3 | 110                | 9.5                   | 188501-000S6           | 129023                      |
| 144261-000                 | 144261-020             | 15       | 100                    | 10.0                     | 7.1  | 125                | 15.0                  | 184201-000S6           | 36361-3                     |
| 146261-000                 | 146261-020             | 15       | 100                    | 14.0                     | 9.3  | 125                | 15.0                  | 186201-000S6           | 129052                      |
| 148261-000                 | 148261-020             | 15       | 200                    | 16.0                     | 10.7 | 125                | 15.0                  | 188201-000S6           | 129023                      |
| 146661-000                 | 146661-020             | 15/27    | 100                    | 14.0                     | 9.3  | 150                | 17.0                  | 186601-000S6           | 129052                      |
| 148661-000                 | 148661-020             | 15/27    | 200                    | 16.0                     | 10.7 | 150                | 17.0                  | 188601-000S6           | 129023                      |
| 144363-000                 | 144363-020             | 27       | 100                    | 6.0                      | 4.0  | 150                | 17.0                  | 184303-000S6           | 36361-3                     |
| 146363-000                 | 146363-020             | 27       | 100                    | 12.0                     | 8.0  | 150                | 17.0                  | 186303-000S6           | 129052                      |
| 148363-000                 | 148363-020             | 27       | 200                    | 10.0                     | 7.1  | 150                | 17.0                  | 188303-000S6           | 129023                      |
| 146861-000                 | 146861-020             | 27/35    | 100                    | 12.0                     | 8.0  | 150                | 17.0                  | 186801-000S6           | 129052                      |
| 146961-000                 | 146961-020             | 38       | 100                    | 10.0                     | 7.1  | 170                | 26.0                  | 186901-000S6           | 129300-2*                   |
| 144161-002                 | 144161-022             | 7.8      | 300 Amp Disc.          | 12 kA Momentary Current  |      | 110                | 9.5                   | 120083-S6              | N/A                         |
| 144561-002                 | 144561-022             | 7.8/13.8 |                        |                          |      | 110                | 9.5                   | 120083-S6              | N/A                         |
| 144261-002                 | 144261-022             | 15       |                        |                          |      | 125                | 15.0                  | 120082-S6              | N/A                         |
| 146661-002                 | 146661-022             | 15/27    |                        |                          |      | 150                | 17.0                  | 120087-S6              | N/A                         |
| 146363-002                 | 146363-022             | 27       |                        |                          |      | 150                | 17.0                  | 120087-S6              | N/A                         |
| 146961-002                 | 146961-022             | 38       |                        |                          |      | 170                | 26                    | 120087-S6              | N/A                         |

\* Solid cap cutout with arc-shortening rod requiring removable Button Fuse Links.

### Slant rated cutout application information

The HX slant-rated cutouts offer maximum performance when applied according to certain established circuitry principles. Slant rated cutouts are suitable for application on single phase circuits having maximum line-to-ground voltage not exceeding the lower kV (voltage to the left of the diagonal). For three-phase circuits the maximum line- to-line voltage should not exceed the higher kV (voltage to the right of the diagonal).

### How to specify optional features

#### Loadbreak hooks

To order the HX cutout with loadbreak hooks, change the suffix as follows: "-000" would become "-010" and "-020" would become "-030." For example 144161-000 with load break hooks would be 144161-010 and 146161-020 would become 146161-030.

#### Linkbreak hooks

To order the HX cutout with linkbreak fuseholder, change the last digit of the suffix from "0" to "1." For example 144161-000 with linkbreak would be 144161-001 and 144161-020 with linkbreak would become 144161-021.

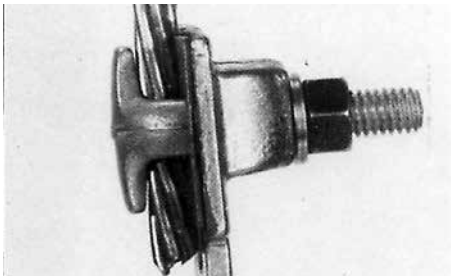
#### Crossarm hanger

To omit the crossarm hanger, change the first digit suffix from "0" to "8." For example 144161-000 without the mounting bracket would be 144161-800 or 144161-020 would be 144161-820.

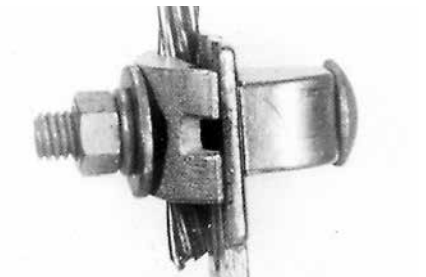
**Terminal connector options**

- Wide range, plated bronze T-bolt and washers with exceptionally long conductor engagement surface furnished as standard. Accepts 6 Sol. through 4/0 ACSR or 250 MCM Stranded.
- Plated bronze parallel groove clamp has large contact area. Accepts 6 Sol. through 4/0 ACSR or 250 MCM Stranded.

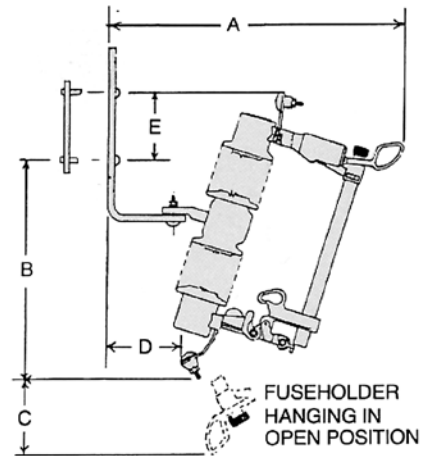
All terminals are easily worked with standard hot line tools.



**Figure 6. T-Bolt.**



**Figure 7. Parallel Groove.**



**Figure 8. Single Insulator.**

**Table 3. Single Insulator Dimensions**

| kV       | A      | B      | C      | D     | E     |
|----------|--------|--------|--------|-------|-------|
| 7.8      | 18     | 11 7/8 | 10     | 3 1/4 | 6 1/8 |
| 7.8/13.8 | 18     | 11 7/8 | 10     | 3 1/4 | 6 1/8 |
| 15       | 19     | 13 7/8 | 13 7/8 | 2 7/8 | 7 5/8 |
| 15/27    | 19 3/8 | 14 1/4 | 15 5/8 | 2 1/2 | 8     |
| 27       | 19 3/8 | 14 1/4 | 15 5/8 | 2 1/2 | 8     |
| 27/35    | 19 3/8 | 14 1/4 | 15 5/8 | 2 1/2 | 8     |
| 38       | 19 3/8 | 13 1/8 | 13 1/2 | 3 1/8 | 6     |