

Fusing Equipment

Electrical Apparatus

K-SEC 010

Kearney™ Open Distribution Cutout - Type HX

GENERAL

Application Versatility

Cooper Power Systems Kearney™ HX 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 HX 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.
- Animal proofing. Completely independent of any organic substances.
- Silver plated contact surfaces factory coated with effective contact aid.

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.

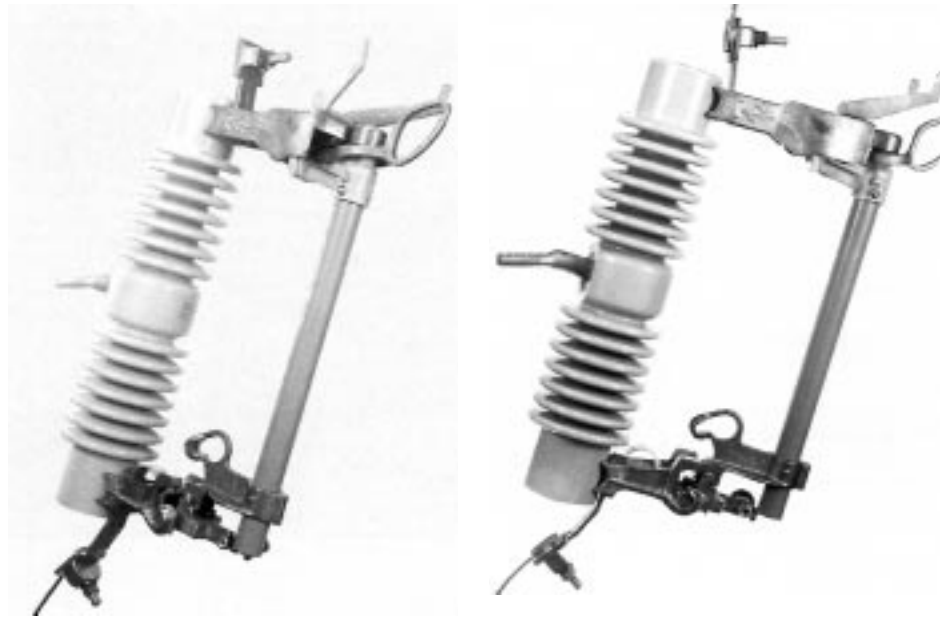


Figure 1.
HX cutout fuseholders.

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.

TABLE 1

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

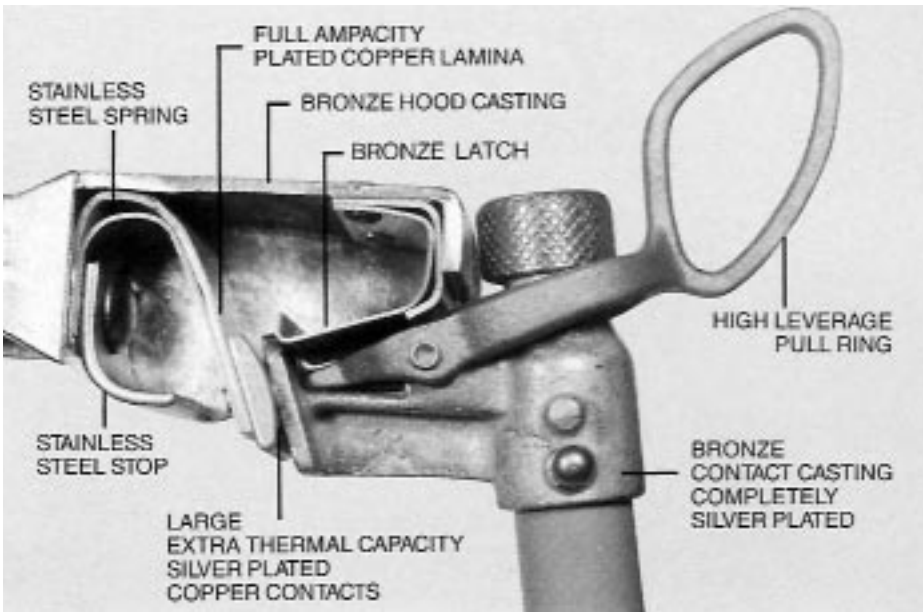


Figure 2.
Upper contact durable metals assure long-term performance.

Upper Contacts and Latch

HX 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.

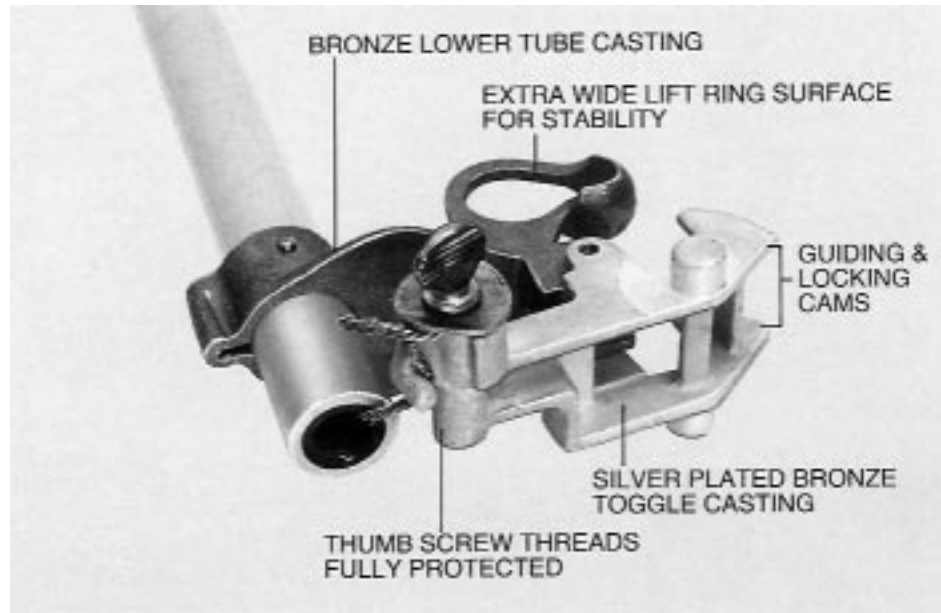


Figure 3.
Lower contact toggle with draws link during operation.

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 4.
100 A fuseholder with Linkbreak attachment.

Linkbreak Attachment

The linkbreak 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.

Advantages of the Linkbreak Over Other Loadbreak Devices

1. Low initial cost compared to cutouts with integral loadbreak devices.
2. No complicated interrupter device to possibly fail.
3. Can be hookstick 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.

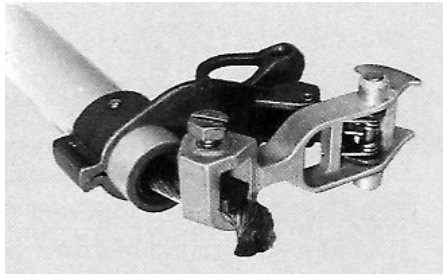


Figure 5.
200 A fuse terminals.

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.

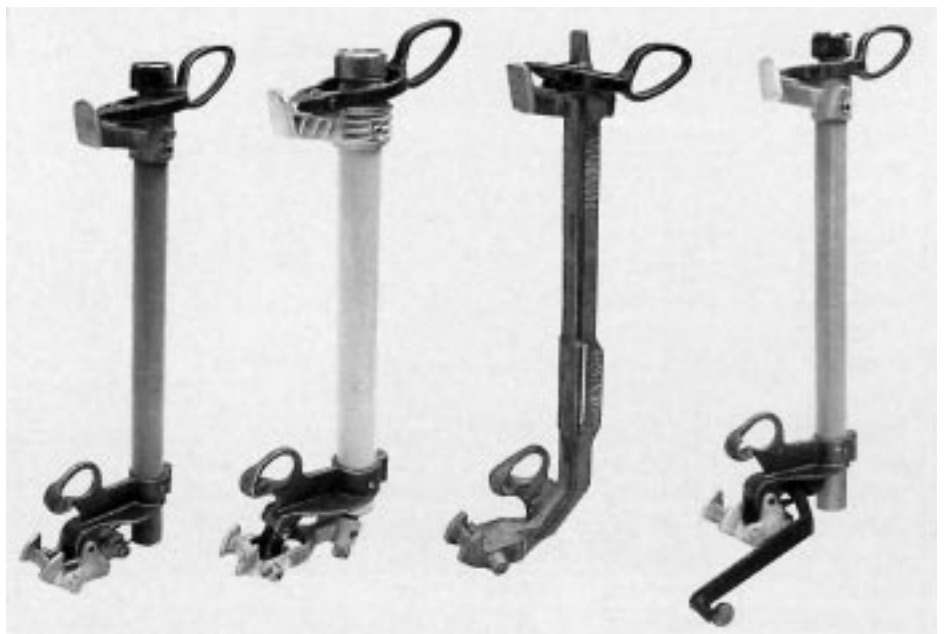


Figure 6.
100 A Fuseholder, 200 A Fuseholder, 300 A Blade, and 100 A Linkbreak Fuseholder.

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.

TABLE 2
Single Insulator Catalog Numbers

| Cat. No. with T-Bolt Conn. | Cat. No. with Par. Gr. | kV | Cont. Current A | Interrupting Capacity kA | | ANSI BIL Rating kV | Leakage Distance Inches | Replacement Fuseholder | Replacement Expendable Caps |
|--|--|--------------------------------------|--------------------|-------------------------------|---------------------|-------------------------------|--------------------------------------|--|-----------------------------|
| | | | | Asym. | Sym. | | | | |
| 144161-000 148161-000 | 144161-020 148161-020 | 7.8 7.8 | 100 200 | 10.0 20.0 | 7.1 13.3 | 95 95 | 10.5 10.5 | 184101-00056 188101-00056 | 36362-3 129023 |
| 144561-000 146561-000 148561-000 | 144561-020 146561-020 148561-020 | 7.8/13.8 7.8/13.8 7.8/13.8 | 100 100 200 | 10.0 16.0 20.0 | 7.1 10.7 13.3 | 95 95 95 | 10.5 10.5 10.5 | 184501-00056 186501-00056 188501-00056 | 129052 129052 129023 |
| 144261-000 146261-020 148261 000 | 144261-020 146261-020 148261-020 | 15 15 15 | 100 100 200 | 10.0 14.0 16.0 | 7.1 9.3 10.7 | 95 95 95 | 15.0 15.0 15.0 | 184201-00056 186201-00056 188201-00056 | 36361-3 129052 129023 |
| 146661-000 148661-000 | 146661-020 148661-020 | 15/27 15/27 | 100 200 | 14.0 16.0 | 9.3 10.7 | 125 125 | 17.0 17.0 | 186601-00056 188601-00056 | 129052 129023 |
| 144363-000 146363-000 148363-000 | 144363-020 146363-020 148363-020 | 27 27 27 | 100 100 200 | 6.0 12.0 10.0 | 4.0 8.0 7.1 | 125 125 125 | 17.0 17.0 17.0 | 184303-00056 186303-00056 188303-00056 | 36361-3 129052 129023 |
| 146861-000 | 146861-020 | 27/35 | 100 | 12.0 | 8.0 | 150 | 17.0 | 186801-00056 | 129052 |
| 146961-000 | 146961 020 | 38 | 100 | 10 | 7.1 | 150 | 17.0 | 186901-00056 | * |
| 144161-002 144561-002 144261-002 146661-002 146363-002 | 144161-022 144561-022 144261-022 146661-022 146363-022 | 7.8 7.8/13.8 15 15/27 27 | 300 AMP DISC | 12 kA MOMENTARY CURRENT | | 95 95 125 125 150 | 10.5 10.5 15.0 17.0 17.0 | 120083 120083 120082 120087 120087 | |

* Solid cap cutout with arc-shortener 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 obtain HX cutout with loadbreak hooks change suffix as follows: "-000" or "-100" would become "010" and "020" would become "030." For example 144161 -000 with load break hooks would be 144161 -010, 144561 -100 would become 144561 -110 and 146161 - 020 would become 146161-030.

LINKBREAK HOOKS

To obtain HX cutout with linkbreak fuseholder change last digit of 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 crossarm hanger change 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

1. 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.
2. 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 7.
T-Bolt.



Figure 8.
Parallel Groove.

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 |

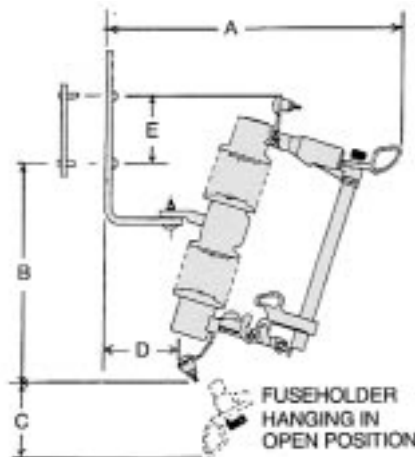


Figure 9.
Single Insulator.

