CUTOUTS (Standard, Linkbreak & Loadbreak) and CUTOUT-ARRESTER COMBINATIONS

Warranty - Material

Chance warrants all products sold by it to be merchantable (as such term is defined in the Uniform Commercial Code) and to be free from defects in material and workmanship. Buyer must notify the Company promptly of any claim under this warranty. The Buyer's exclusive remedy for breach of this warranty shall be the repair or replacement, F.O.B. factory, at the Company's option, of any product defective under the warranty which is returned to the Company within one year from the date of shipment. NO OTHER WARRANTY, WHETHER EXPRESS OR ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE IMPLIED, SHALL EXIST IN CONNECTION WITH THE COMPANY'S PRODUCTS OR ANY SALE OR USE THEREOF. The Company shall in no event be liable for any loss of profits or any consequential or special damages incurred by Buyer. The Company's warranty shall run only to the first Buyer of a product from the Company, from the Company's distributor, or from an original equipment manufacturer reselling the Company's product, and is non-assignable and non-transferable and shall be of no force and effect if asserted by any person other than such first Buyer. This warranty applies only to the use of the product as intended by Seller and does not cover any misapplication or misuse of said product.

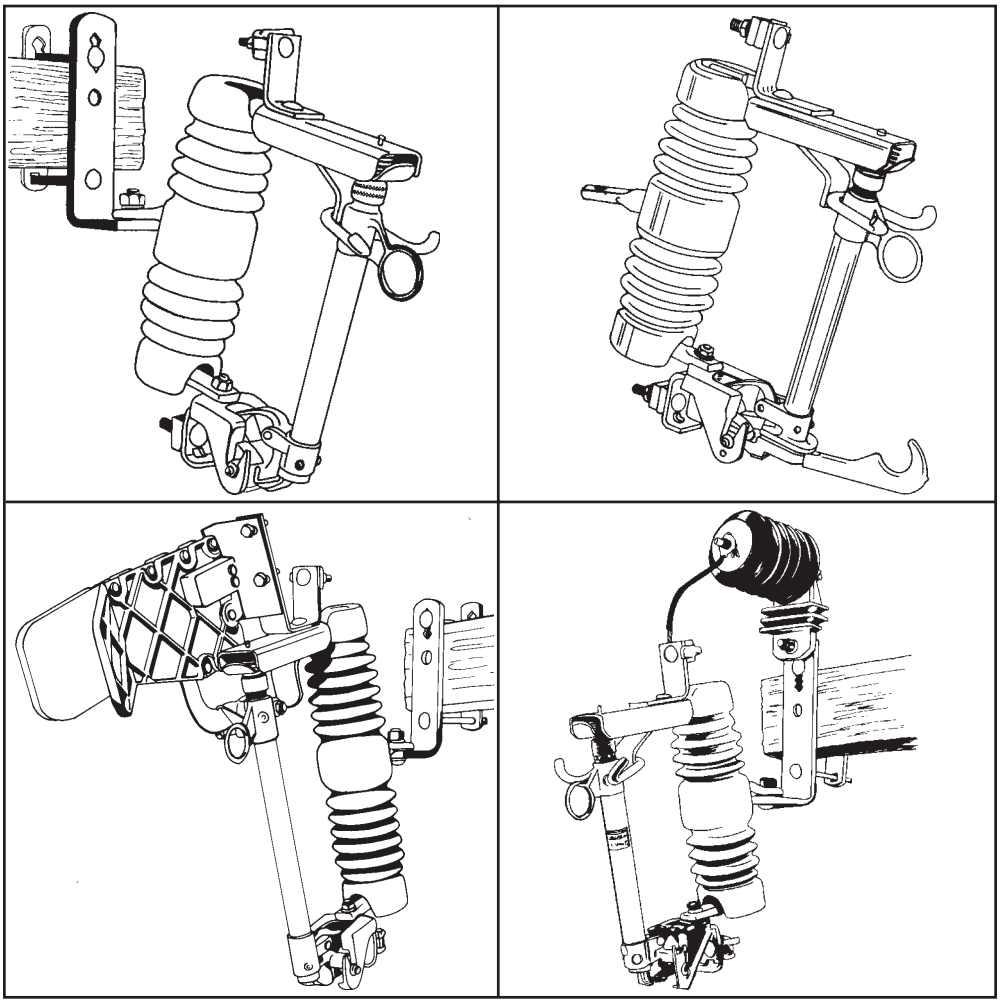
Warranty - Application

Chance does not warrant the accuracy of and results from product or system performance recommendations resulting from any engineering analysis or study. This applies regardless of whether a charge is made for the recommendation, or if it is provided free of charge.

Responsibility for selection of the proper product or application rests solely with the purchaser. In the event of errors or inaccuracies determined to be caused by Chance, its liability will be limited to the re-performance of any such analysis or study.

CAUTION: The equipment covered in this catalog section should be installed, used, and serviced only by competent personnel familiar with and following good work and safety practices. This equipment is for use by such personnel and is not intended as a substitute for adequate training and experience in safe procedures for this type of equipment.

This catalog information and any related instruction sheets do not cover all details or situations in equipment use nor do they provide for every possible contingency to be encountered in relation to installation, operation or maintenance. Should additional information and details be desired, or if specific situations arise that are not covered adequately for the user's purpose the specifics should be referred to the A.B. Chance Company.

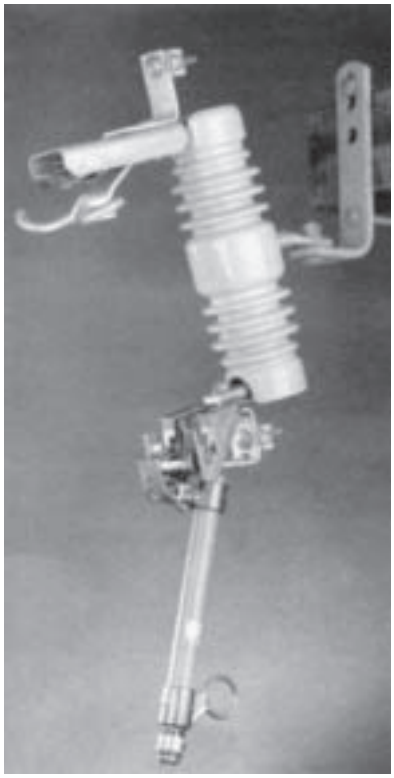


ISO 9001-1994
Cert. No. 001136

A. B. Chance Co.
Centralia, MO USA

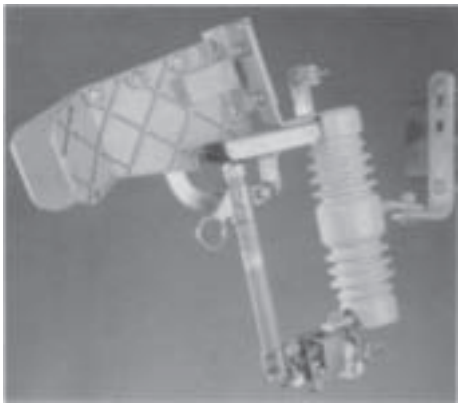
NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

Type C Cutouts

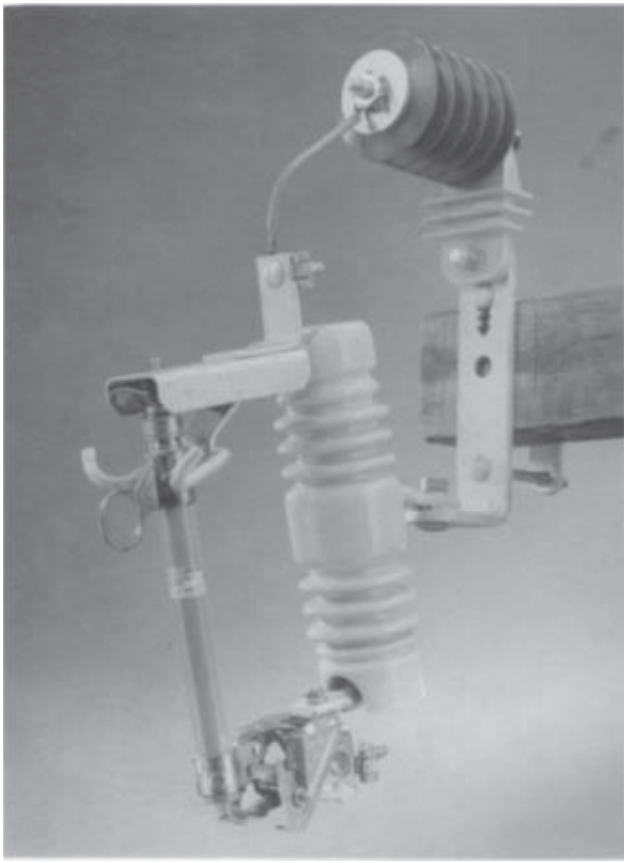


STANDARD cutout, pages 3-7

LINKBREAK cutout, pages 8-10



LOADBREAK cutout with Arc-Chute interrupter, pages 11-13



CUTOUT-ARRESTER Combinations, page 14

Application

The primary purpose of any cutout is to provide protection to the lines of your system and the various apparatus on those lines such as transformers and capacitor banks. Chance Type C cutouts provide reliable protection from low-level overloads that just melt the fuse link, intermediate faults, and very high faults, through maximum interrupt capacity.

In addition, Type C cutouts can also be used as a sectionalizing device. With the use of a portable loadbreak tool, Type C cutouts can function much like an overhead disconnect switch. There are 300 amp disconnect blade Type C cutouts available.

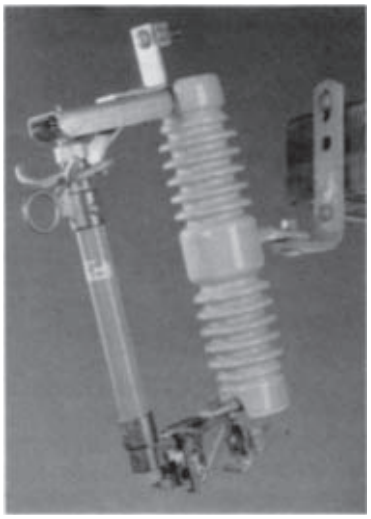
Ratings/Specifications

STANDARD Type C cutouts have maximum design voltage ratings to simplify the confusing ratings of cutouts. There are **no restrictions** on application to grounded wye, ungrounded wye, or delta systems having maximum operating voltages (line-to-line) equal to or less than the cutout maximum design voltage rating. (See the LINKBREAK and LOADBREAK cutouts for their specifications.) Interruption tests have been performed at full system line-to-line voltage. In each voltage class, there are continuous current ratings of 100 amps, 200 amps and 300 amps. See the table on page 6 for other specifications.

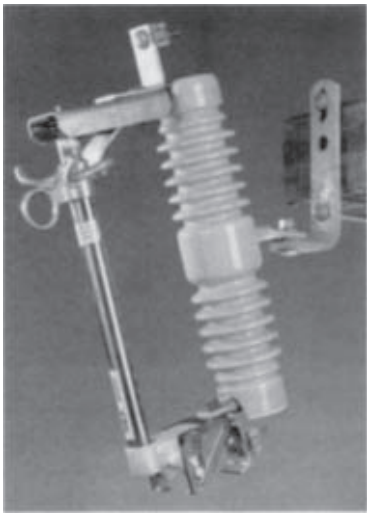
U.S. Patent 4,546,341; 6,392,526 and other Patents Pending

Type C STANDARD Cutout

100 Amp
Single Vent



200 Amp
Single Vent



300 Amp
Disconnect

Chance Type C fuseholders are also mutually interchangeable with the S & C Electric Company's Type XS cutout.

Quality Construction

Efficient Current Transfer

The Chance Type C cutout has an all copper current path. All contacts are silver-plated. Terminals are tin-plated bronze for use with copper or aluminum conductors.

Loadbreak Hooks

Galvanized steel hooks are standard on all Type C cutouts, except the arc chute version, for use with a portable loadbreak tool. These sturdy hooks are mounted on the top support and serve to guide the fuseholder into the latch socket when closing at an off-center angle.

Top Contact

The top contact is attached to the galvanized-steel hood by a stainless rivet to provide a smooth self-aligning action during closing even in severely corrosive environments. The top contact provides a socket-type cavity for latching the fuseholder and prevents any possible "over-travel" of the fuseholder. The top contact is made of a highly conductive copper strip with silver-plated embossments to resist corrosion. The contacts are held under constant pressure designed to maintain firm contact with the fuseholder contact surface until fault interruption is accomplished.

Hinge

The hinge on the Type C cutout employs large pivot areas for the fuseholder's trunnion and is cast of a copper alloy chosen for its strength and corrosion resistance. The hinge contacts are highly conductive copper alloy stampings and are plated to assure low resistance current transfer from the trunnion casting. The parallel current paths are backed up by high strength cantilever springs and are riveted to the hinge castings. Fuseholder can be dropped into place and easily lifted up and out. No tricky maneuvering.

Insulators

The insulators used on Type C cutouts are a sky-glaze gray. The metal to metal leakage distance on the 15 kV cutout insulator is 8.7 inches (220 mm), 12.6 inches (320 mm) on the 27 kV (125 kV BIL), 17.3 inches (440 mm) on the 27 kV (150 kV BIL), 26 inches (660 mm) on the 36 kV (170 kV BIL), and 28.4 inches (720 mm) on the 36 kV (170 kV BIL) .

Fuseholders

The solid cap on the single vent fuseholder is a copper alloy, silver-plated to provide efficient current transfer. An integral ring is provided in the top tube casting for opening and closing the fuseholder with conventional disconnect tools from the ground, from a bucket truck or from the pole.

The **toggle type trunnion casting** is a selective **silver-plated bronze** for efficient current transfer to the lower hinge contacts. A cam shaped projection on each side of the trunnion casting provides high pressure parallel current paths to the lower contacts. These projections, or pivot pins, are cast full round for smooth rotational operation in the hinge. The link ejector assists in arc interruption during low fault current or excessive overload conditions. A groove in the center of the link ejector allows the fuse link's pigtail to go directly from the fuse tube to the attachment nut. A curved ejector minimizes bending stresses in the pigtail to prevent broken strands. A stainless steel torsion spring on the link ejector helps to rapidly eject the link from the bore of the fuseholder during interruption. The 200 amp link ejector has a wider groove area and increased spring force to accommodate the larger links.

The **link ejector** is pinned to the trunnion casting with a stainless steel pin to provide resistance to corrosive elements and provide smooth pivotal action. An interlocking feature between the link ejector and tube casting prevents excessive tension on the fuse link during closure, thereby preventing link breakage.

The **link ejector** employs a hammer effect to enhance toggle action of the trunnion during low fault and overload interruptions, hence dropout action is enhanced. The link ejector provides sufficient surface area to facilitate re-fusing by linemen wearing gloves.

Type C STANDARD Cutout

PRODUCT FEATURES

Interchangeability

The Chance Company was the first to design a cutout that could interchange fuseholders and mounting assemblies with those of another manufacture. Standard Type C fuseholders and mounting assemblies are mutually interchangeable with the S&C Electric Company's Type XS cutout (within the same voltage class).

Fusetube

The ½-inch inside diameter of the Type C cutout's 100 ampere fusetube increases internal pressure giving superior and reliable expulsion action. During frequently encountered intermediate fault ranges this diameter also permits higher TRV (transient recovery voltage) values to be tolerated. This small bore design eliminates any concern related to high impedance phase-to-phase faults on ungrounded wye and delta systems.

The inside liner is constructed of a synthetic arc-quenching material. The tube is made of fiberglass which permits the smaller bore and provides a higher burst strength. It is protected from the weather and environment by a special ultra-violet resistant coating.

Also, the Chance fusetube operates with fuselinks from all major suppliers.

Brackets

C cutouts come packed one per carton including a NEMA Heavy Duty "B" bracket with captive 1½" bolt for crossarm mounting.

Type X brackets, also for crossarm mounting, provides 2⅝" additional clearance between the crossarm and the cutout.

"D" brackets are used to mount cutouts and/or arresters directly to the pole. Three brackets may be used for three-phase application. Type D brackets provide a clean, quick mounting without crossarm or special pole bands.

All the above brackets are galvanized steel for long lasting service. Cutouts can be ordered without any brackets.

Higher Interrupt Capacities

By using a copper arc shortening rod inside the top of the fusetube, higher interrupt ratings are obtainable. An arc shortening rod is attached to the cap of some fusetubes and lowers the fuse link within the fusetube. This permits a much shorter arc, resulting in less arc energy, and higher interrupting capacities.

For 200 A tubes, it allows for full voltage rating.

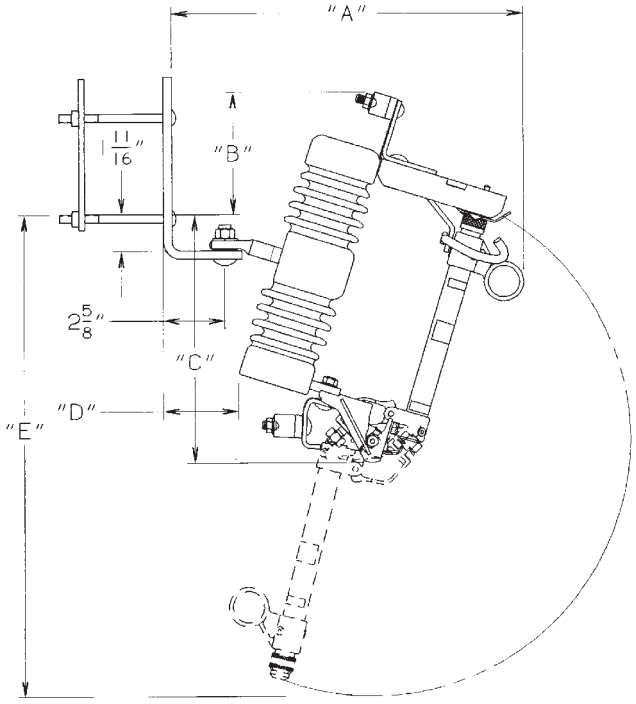
It is necessary to use fuse links with removable buttonheads when arc shortening rods are employed.

170 kV BIL

A 170 kV BIL Type C cutout is available for use in areas where the 28.4-inch minimum leakage distance to ground is required. See ordering data, page 6.

Extra Corrosion Protection (150 and 170 kV BIL only)

Type C cutouts are available with components of stainless steel inserts, hood and bolts, and copper alloy loadbreak hooks to offer greater corrosion resistance for environmental areas where corrosion can become a major factor. To order a stainless steel/copper alloy cutout add the suffix "S" to the end of the catalog number with the rating specifications desired. In additon, an optional spring assist may be provided to further enhance the toggle and drop out action in highly corrosive applications.



STANDARD Type C Cutout with NEMA Type B Bracket Dimensions

kV BIL	A	B	C	D	E
110	16"	5½"	10¾"	3½"	21½"
	406 mm	137 mm	273 mm	89 mm	559 mm
125	16⅜"	7⅛"	12½"	3⅛"	26¾"
	416 mm	181 mm	318 mm	79 mm	679 mm
150	16⅜"	7⅛"	12½"	3⅛"	26¾"
	416 mm	181 mm	318 mm	79 mm	679 mm
170	17¼"	8½"	15"	1¾"	32½"
	438 mm	216 mm	381 mm	44 mm	826 mm

Terminals

Tin-plated bronze parallel groove type terminals are standard on Type C cutouts. They can accommodate aluminum or copper conductor sizes ranging from No. 6 (13.3 mm^2) solid copper through 4/0 (160.6 mm^2) ACSR or 250 (167.5 mm^2) kcmil stranded copper. The parallel groove design is perfect for handling two different sizes of conductor as is the case when arresters are being used. Eyebolts are also available. See ordering data, page 10A-7.

Compare Chance® quality and technical expertise
Type C STANDARD Cutout

All Type C Cutouts meet or exceed ANSI/NEMA specifications.

Manufacturing and/or use under U. S. Patent No. 4,546,341 and 6,392,526.

COPPER ARC-SHORTENING ROD (ON SOME RATINGS)

TIN-PLATED BRONZE TERMINALS FOR USE WITH COPPER OR ALUMINUM CONDUCTOR

TWO-PLACE LOCKING TO PREVENT SIDE MOVEMENT OF HOOD, CONTACTS OR HOOKS

COPPER CURRENT PATH

GALVANIZED-STEEL CHANNEL

BIRD-PROOFED ONE-PIECE SOLID-PORCELAIN INSULATOR

STAINLESS STEEL BACKUP SPRING TO MAINTAIN CONTACT PRESSURE

SILVER-TO-SILVER CONTACTS

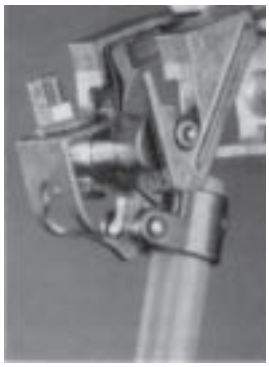
GALVANIZED STEEL HOOKS FOR LOADBREAK TOOL

CAST BRONZE TOP TUBE CASTING AND PULL RING

HIGH-STRENGTH FIBERGLASS FUSETUBE COATED WITH ULTRA-VIOLET INHIBITOR

HOT STICK HOLE IN TRUNNION CASTING

LARGE NUT TO FASTEN FUSELINK WITHOUT BREAKING STRANDS



CAST BRONZE LOWER TUBE CASTING

COPPER CURRENT PATH

STAINLESS-STEEL SPRING ENSURES PROPER TOGGLE ACTION OF FUSELINK EJECTOR (CAST-BRONZE ON ALL 200 AND LINKBREAK FUSEHOLDERS; STAINLESS-STEEL ON ALL 100A)

SILVER-TO-SILVER CONTACTS WITH STAINLESS STEEL BACKUP SPRINGS

MECHANICAL ASSIST:

FUSEHOLDER IS AVAILABLE WITH A TORSIONAL SPRING ON TRUNNION TO AID DROP OUT OPERATION IN CORROSIVE ENVIRONMENTS.

FUSEHOLDER TOGGLE LATCH LIMITS TENSION OF FUSELINK

CAST BRONZE HINGE FOR CORROSION RESISTANCE

Type C STANDARD Cutout

Specifications and Ordering Information

All Type C Cutouts meet or exceed ANSI/NEMA specifications.

See page 10A-17 for Catalog Number System.

15 kV (110 kV BIL) — RUS Listed

*Catalog Number	Maximum Design Voltage	Nominal System Voltage	Continuous Current (Amps)	Interrupt Capacity (Asym Amps)	Leakage to Ground Metal to Metal		Weight (lb./kg.)	Replacement Fusetube Cap	Arc Shortening Rod
C710-112PB	15 kV	Thru 14.4 kV	100	10,000	8.7"	220 mm	17.4 / 7.98	P700-1535P	No
C710-114PB	15 kV	Thru 14.4 kV	100	16,000	8.7"	220 mm	17.6 / 7.98	E700-1767P	Yes‡
C710-143PB	15 kV	Thru 14.4 kV	200	12,000	8.7"	220 mm	18.2 / 8.26	E700-2146P	Yes‡
C710-133PB	15 kV	Thru 14.4 kV	300	12,000**	8.7"	220 mm	17.7 / 8.03	P700-1535P	N/A

27 kV (125 kV BIL) — RUS Listed

C710-211PB	27 kV	Thru 24.9 kV	100	8,000	12.6"	320 mm	20.9 / 9.07	P700-1535P	No
C710-213PB	27 kV	Thru 24.9 kV	100	12,000	12.6"	320 mm	20.2 / 9.16	E700-1768P	Yes‡
C710-242PB	27 kV	Thru 24.9 kV	200	10,000	12.6"	320 mm	20.9 / 9.48	E700-2479P	Yes‡
C710-233PB	27 kV	Thru 24.9 kV	300	12,000**	12.6"	320 mm	20.4 / 9.25	P700-1535P	N/A

27 kV (150 kV BIL) — RUS Listed

C710-311PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	100	8,000	17.3"	440 mm	25.8 / 11.70	P700-1535P	No
C710-313PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	100	12,000	17.3"	440 mm	26.0 / 11.79	E700-1768P	Yes‡
C710-342PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	200	10,000	17.3"	440 mm	26.6 / 12.07	E700-2479P	Yes‡
C710-333PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	300	12,000**	17.3"	440 mm	26.2 / 11.88	P700-1535P	N/A

36 kV (170 kV BIL) — RUS Listed

C710-613PB	36 kV	Thru 34.5 kV	100	11,200	26"	660 mm	28.6 / 12.97	E700-1743P	Yes‡
C710-643PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	200	12,000	26"	660 mm	29 / 13.15	E700-2117P	Yes‡
C710-633PB	36 kV	Thru 34.5 kV	300	12,000**	26"	660 mm	28.6 / 12.97	P700-1535P	N/A

NOTE: 26" fuse links are recommended.

36 kV (170 kV BIL) — RUS Listed

C710-713PB	36 kV	Thru 34.5 kV	100	11,200	28.4"	720 mm	33.9 / 12.97	E700-1743P	Yes‡
C710-743PB	27 kV	No Restrictions thru 24.9 kV; †26.4 thru 34.5 kV	200	12,000	28.4"	720 mm	34.3 / 15.55	E700-2117P	Yes‡
C710-733PB	36 kV	Thru 34.5 kV	300	12,000**	28.4"	720 mm	33.9 / 15.37	P700-1535P	N/A

NOTE: 26" fuse links are recommended.

***Suffix:** **P** = Parallel-groove clamps [No. 6 solid through 4/0 ACSR (13.3mm^2 - 160.6mm^2) or 250 kcmil stranded (167.5mm^2)]
B = NEMA Heavy Duty "B" bracket with 1½" captive bolt

Terminal variations:
P = Parallel-groove clamps [No. 6 solid through 4/0 ACSR (13.3mm^2 - 160.6mm^2) or 250 kcmil stranded (167.5mm^2)]
E = Small eyebolt [No. 8 solid through 2/0 stranded (7.7 - 90mm^2)]
Change "P" to "E;" e.g., C710-112EB
L = Large eyebolt [No. 6 solid through 4/0 stranded (13.3 - 160.6mm^2) or 250 kcmil stranded (167.5mm^2)]
Change "P" to "L;" e.g., C710-112LB

Bracket variations:
B = NEMA Heavy Duty "B" bracket with 1½" captive bolt
X = Extended bracket (horizontal section 2⅝" longer than NEMA Type B bracket)
Change "B" to "X;" e.g., C710-112PX
D = Pole mounting bracket *Change "B" to "D;" e.g., C710-112PD*
(Blank) = Without crossarm bracket *Drop "B" from Catalog No.; e.g., C710-112P*

**Momentary rating — Solid blade

†For application on single-phase to neutral or three-phase solidly-grounded wye-connected circuits where recovery voltage does not exceed the maximum-design voltage of the device.

‡Must use removable buttonhead fuse links.