

25 kV Class Fused Loadbreak Elbow Connector with Interchangeable Fuse Capability



APPLICATION

The Chardon 25 kV Class Fused Loadbreak Elbow Connector combines a fully-shielded and insulated loadbreak elbow with full range current-limiting fuse protection. The Chardon Fused Loadbreak Elbow Connector provides a convenient and cost effective method to add fusing protection to underground distribution systems utilizing 200 A, 25 kV Class loadbreak bushings. Designed as a hot stick operable switching device, it is tested at the maximum fuse rating in accordance with the IEEE 386-2006 standard. The product is fully sealed and submersible.

Chardon Fused Loadbreak Elbow Connectors are molded using high quality peroxide-cured

EPDM rubber, manufactured in Chardon's facilities, under strict quality controls. Standard features include a copper probe adapter, bimetal connector, plated copper loadbreak probe and a stainless steel reinforced pulling-eye. The product is designed to accept a wide range of cable conductor and insulation sizes.

Chardon Fused Loadbreak Elbow Connectors are the ONLY fused elbow connectors on the market that can accept fuses manufactured by Cooper Power Systems (Eaton) and Hi-Tech (ABB). This is accomplished by ordering the appropriate lug kit. This feature allows the customer an option which is not available on competitive products.

PRODUCTION TESTS

Tests conducted in accordance with IEEE/ANSI Standard 386.

- Partial Discharge – 19 kV $\leq 5\text{pC}$
- AC 1 Minute Withstand – 40 kV
- Test Point Voltage Test

Tests conducted in accordance with Chardon manufacturing process requirements:

- Physical Inspection
- Periodic Dissection
- Periodic X-ray Analysis

VOLTAGE RATINGS

Voltage Class	25 kV
Max. Rating Phase to Phase	26.3 kV
Max. Rating Phase to Ground	15.2 kV
AC 1 Minute Withstand	40 kV
DC 15 Minute Withstand	78 kV
BIL and Full Wave Crest	125 kV
Partial Discharge	19 kV $\leq 5\text{pC}$

CURRENT RATINGS

Description	Test Parameters
Continuous	Fuse rating
Switching	10 operations at 200 amps rms at 26.3 kV
Fault Close	10,000 amps rms symmetrical at 26.3 kV for 0.17 s after 10 consecutive successful switching operations

.25LFE200-121825-REV03

DETAILED COMPOSITION OF THE CHARDON 25KV LOADBREAK FUSE ELBOW

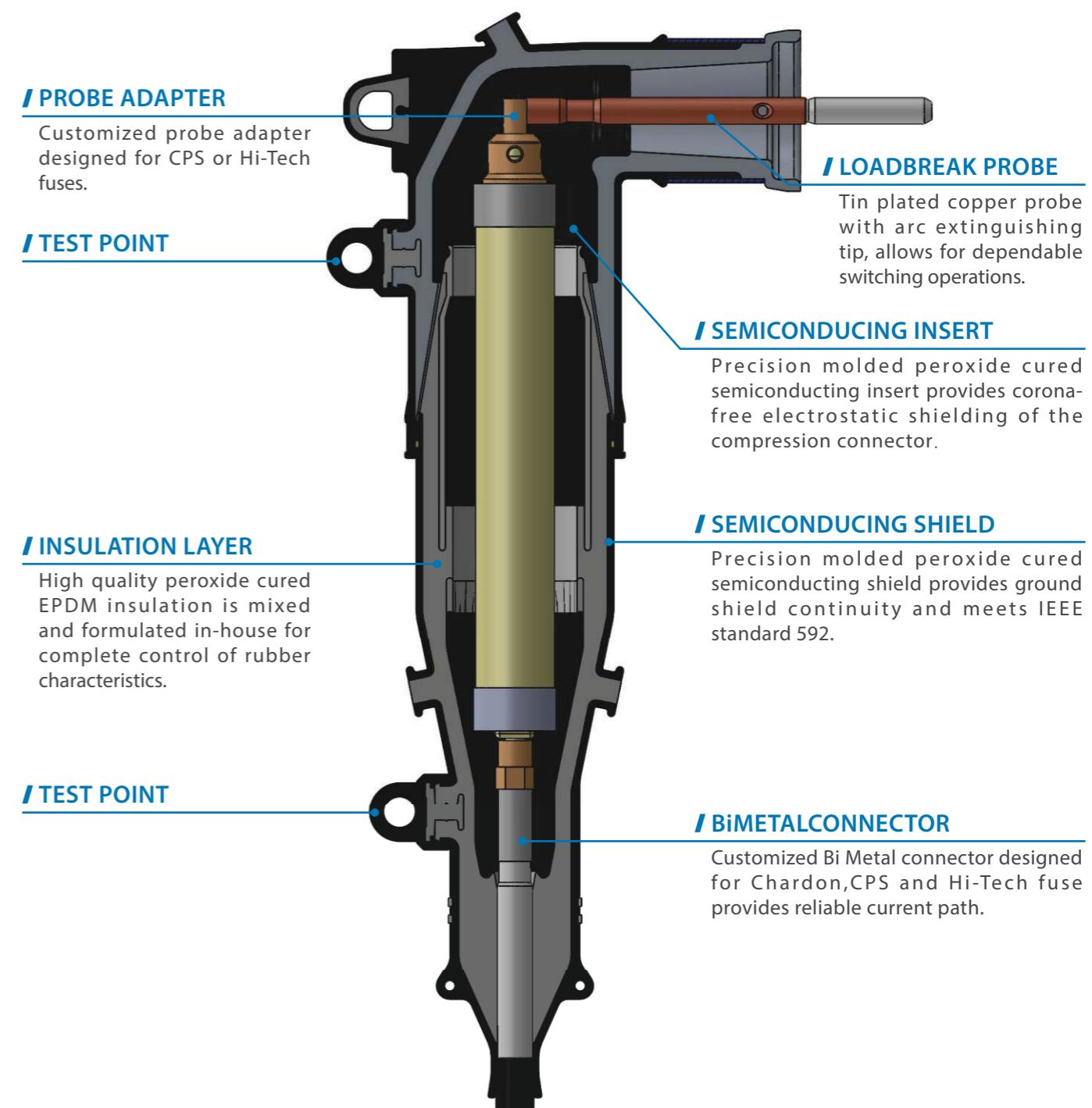


Fig 1: Detail Chardon Fuse Elbow Composition (CPS fuse installed)

DETAILED COMPOSITION OF THE CHARDON 25KV LOADBREAK FUSE ELBOW

ORDERING INFORMATION

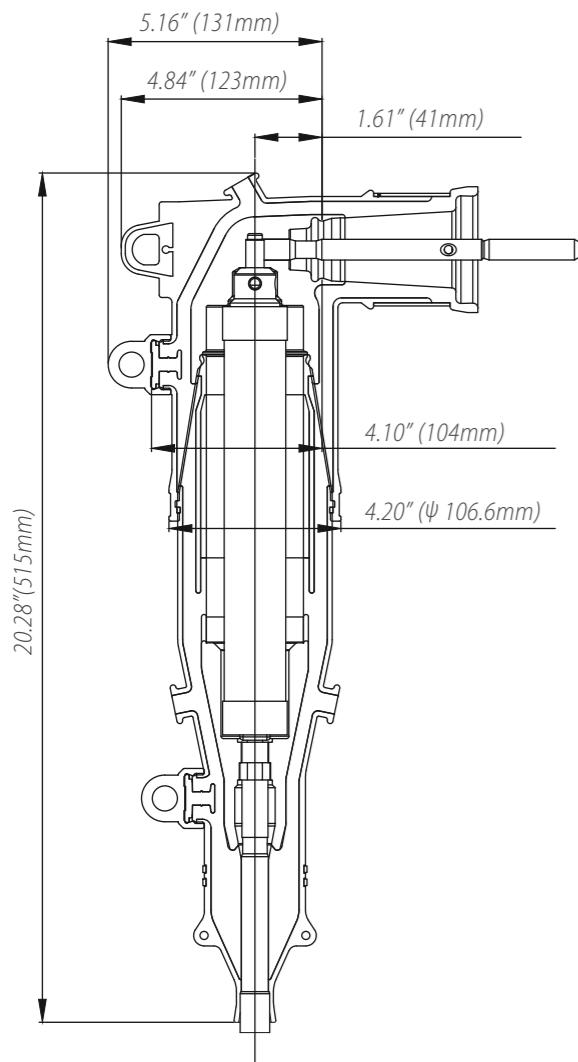


Fig 2: Dimension Info When CPS Fuse or Chardon Fuse Installed.

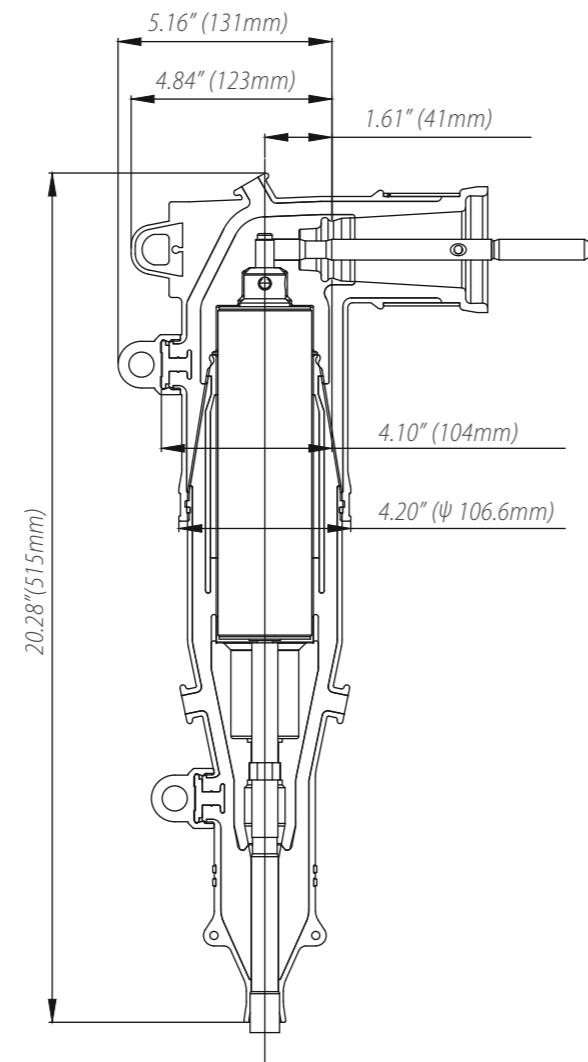


Fig 3: Dimension Info When Hi-Tech Fuse Installed.

Chardon Loadbreak Fuse Elbow kits are packaged in a heavy duty plastic bag.

Each elbow kit includes the following:

- Fused Elbow, Cable Housing
- Fused Elbow, Elbow Housing
- Compression Lug Kit
- Probe

- Hex Wrench
- Silicone Grease
- Towel
- Installation Instruction Sheet

Note:

Current-limiting fuses sold separately. See "Chardon Fuses" below for fuse recommendations, electrical ratings and catalog numbers.

To order a Chardon 25 kV Fuse Elbow Kit, follow the steps below:

25-LFE200T

"X"

"Y"

"Z"

"X" = Enter Cable Range Code (A, B, C or D)

"Y" = If a Hi-Tech Fuse will be used in the Fused Elbow, Enter "HE".
If a Cooper Fuse will be used in the Fused Elbow, enter "CP".
If a Chardon Fuse will be used in the Fused Elbow, enter "CH".

"Z" = Enter Conductor Code (See Conductor Code Table Below)

Range Code	Inches	Millimeters
A	0.610 - 0.823	15.50 - 20.90
B	0.720 - 0.985	18.29 - 25.02
C	0.920 - 1.185	23.37 - 30.10
D	1.040 - 1.305	26.42 - 33.15

Conductor Code Table

CONDUCTOR CODE	Concentric or Compressed		Compactor Solid		Inner Diameter ØA (mm)
	AWG or kcmil	mm ²	AWG or kcmil	mm ²	
01	#6	-	#4	-	5.13
02	#4	-	#3	25	6.55
03	#3	25	#2	35	7.32
04	#2	35	#1	-	8.13
05	#1	-	1/0	50	9.09
06	1/0	50	2/0	70	10.20
07	2/0	70	3/0	-	11.35
08	3/0	-	4/0	95	13.33
09	4/0	95	250	120	14.00
10	250	120	300	-	15.21

Example :

To order a Chardon 25 kV Loadbreak Fused Elbow with a cable insulation diameter of 0.850", using a Hi-tech fuse, and a 3/0 compression connector, order the following number : 15-LFE200T-B-HE08 .



ORDERING INFORMATION

CHARDON FUSES

Replacement Parts

Compression Lug Kit	Part Number
Hi-Tech Fuse Compression Lug	LFEK-HTH + Conductor Code
Cooper Fuse Compression Lug	LFE-CPS + Conductor Code
Chardon Fuse Compression Lug	LFE-CH + Conductor Code

Note:
Elastimold, Hi-Tech, Easton and Cooper, these brand names are property of their respective owners. All company, product and service names used in this catalog/instruction sheet, are for identification purposes only. Use of these names, logos, and brands does not imply endorsement.

CHARDON FUSES



Table 1: Electrical Characteristics of the Elbow Fuses and Catalog Numbers

Voltage Class System(kV)	Nominal Fuse Voltage Rating(kV)	Nominal Fuse Current Rating(A)	Fuse Catalog Number	Minimum Melt I^2t (A ² s)	Maximum Total I^2t (A ² s)	Peak Arc Voltage (kV)	Maximum Continuous Current (A)		
							25°C	40°C	65°C
25	15.5	6	CHFEF155006	1410	4040	40	7.7	7.3	6.8
		8	CHFEF155008	1565	4360	40	8.3	7.9	8.5
		10	CHFEF155010	1760	4750	40	12.9	12.3	11.5
		12	CHFEF155012	1850	5350	40	15.7	15.2	14.6
		18	CHFEF155018	1950	8750	38	23.2	22.3	21.3
		20	CHFEF155020	2120	9090	38	23.3	22.5	21.4

Table 2: Recommended Fuse Current Ratings for Transformer

Nominal Fuse Rated Voltage	15.5kV							
	1-Phase Voltage Rating (kV) - Phase to Ground							
	1-Phase Transformer kVA		12&12.47		13.2		13.8	
	A	B	A	B	A	B	A	B
10			6			6		
15			6			6		6
25			6			6		8
37.5	6	8	6	8	6	6		6
50		8	10	8	10	8	10	10
75	12	12	10	12	10	12	10	12
100	12	18	12	18	12	12	12	12
167	20		20		20		20	

3-Phase Transformer kVA	3-Phase Voltage Rating (kV)-Phase to Phase			
	20.8		22.9 to 24.9	
	A	B	A	B
75			6	6
100	6		6	6
112.5	6		8	6
150	8		10	8
225		10	12	10
300	12		18	12
500	20		20	18
				20

Note:

- (1) Fuses selection is based on the continuous current rating of the fuses at 40°C. Fuses in listed Column A allow between 1.4 and 2 times the rated current of the transformer; those listed in Column B, allow 2 to 3 times the rated current of the transformer.
- (2) Recommended fuses meet inrush criteria of 12 times transformer gulf load current for 0.1 second and 25 times full load current for 0.01second.
- (3) Fuses meet cold load pick up criteria of 6 times transformer full load current for 1 second and 3 times full load current of 10 seconds.



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