

3M

Loadbreak Elbows

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3M™ 200 Amp Industrial Loadbreak Elbow is a fully shielded and insulated plug-in separable connector for connecting 5 to 25 kV underground cable to transformers, switchgear and junctions equipped with loadbreak bushings. The elbow and the bushing insert comprise the essential components of all loadbreak connections. The 3M Loadbreak Elbows 5810 and 5811 series kits are designed for use on Tape Shield, Wire Shield, UniShield® and Jacketed Concentric Neutral types of cables. The jacket seal for each of these cable types is accomplished by use of a specially designed cold shrink tube. This tube seals from the bottom of the elbow to the cable jacket. Also included in the kit are all the ground assemblies necessary to ground both the cable and the elbow.

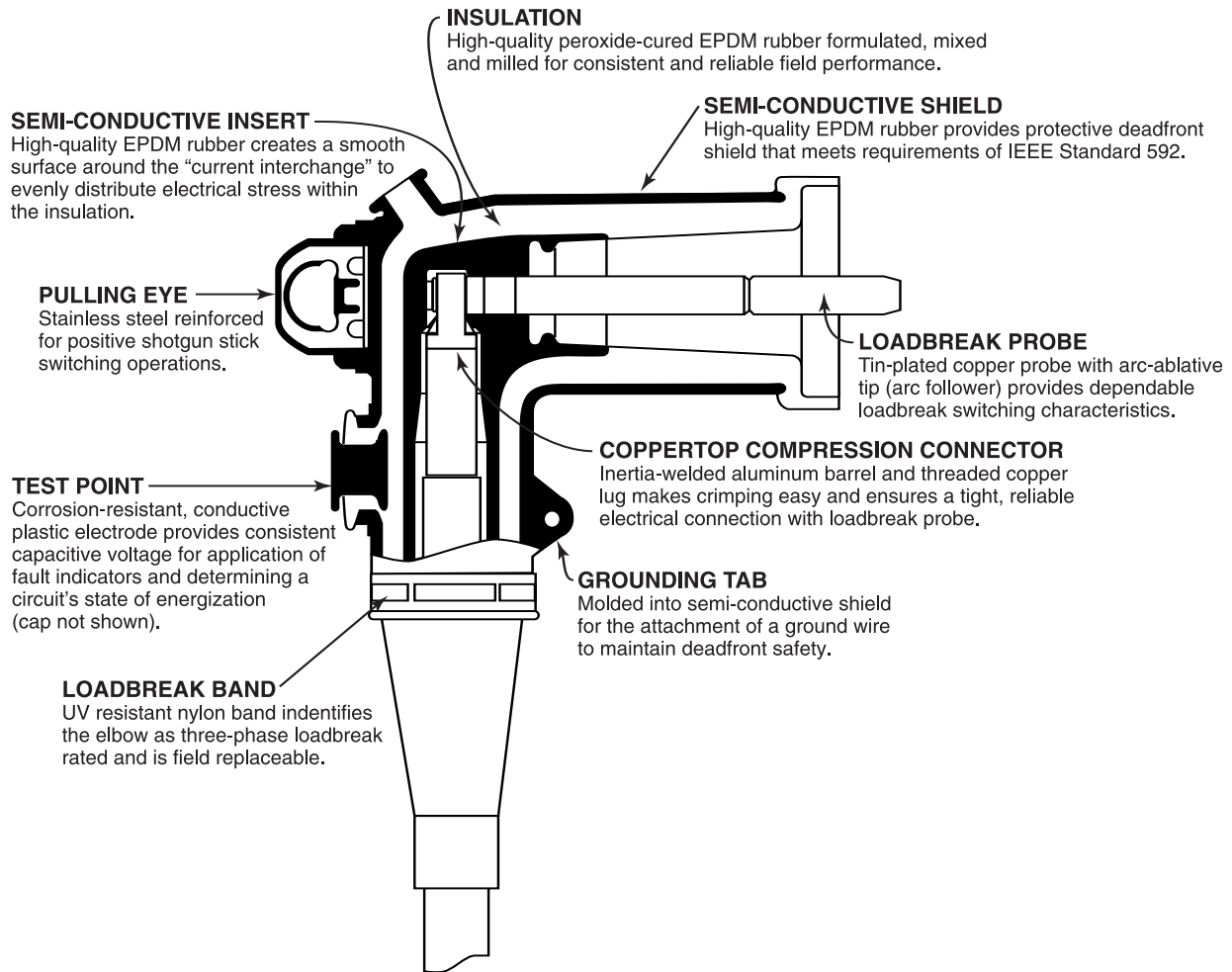
The loadbreak elbows are molded using high quality peroxide-cured EPDM insulation. Standard features include a coppertop connector, tin plated copper loadbreak probe with an ablative arc-follower tip, stainless steel reinforced pulling-eye and a capacitive test point.

The coppertop compression connector is a standard item to transition from the cable to the loadbreak probe. An aluminum crimp barrel is inertia-welded to a copper lug. The aluminum barrel makes the connector easy to crimp on both aluminum and copper conductors and the copper lug ensures a reliable, tight, cool operating connection with the loadbreak probe. Meets requirements of ANSI/IEEE Standard 386.



3M™ 200 Amp 5-15 kV Industrial Loadbreak Elbow

Features and Detailed Description



3M Loadbreak Elbow Kit 5810 and 5811 Series Contents:

- Elbow Body
- Coppertop Compression Connector*
- Loadbreak Probe
- Probe Installation Tool
- Silicone Lubricant
- Cold Shrink Jacketing Tube
- Mastic Strips
- Ground Braid Assembly
- Constant Force Spring
- CC-3 Cable Cleaning Pads
- Installation Instructions

The 3M Loadbreak 5810-CA and 5810-CB series kits contain the following additional materials:

- Cable Adapter
- Silicone Lubricant
- Supplemental Installation Instructions

*Elbow kit also available without connector.

Connector Table

Connector Number	Conductor Size (AWG/kcmil)	
	Stranded	Compact/Solid
LBC-4	4	—
LBC-3	3	2
LBC-2	2	1
LBC-1	1	1/0
LBC-1/0	1/0	2/0
LBC-2/0	2/0	3/0
LBC-3/0	3/0	4/0
LBC-4/0	4/0	250
LBC-250	250	—

3M™ Loadbreak Elbow Kit Selection Table for 5, 8 and 15 kV Class

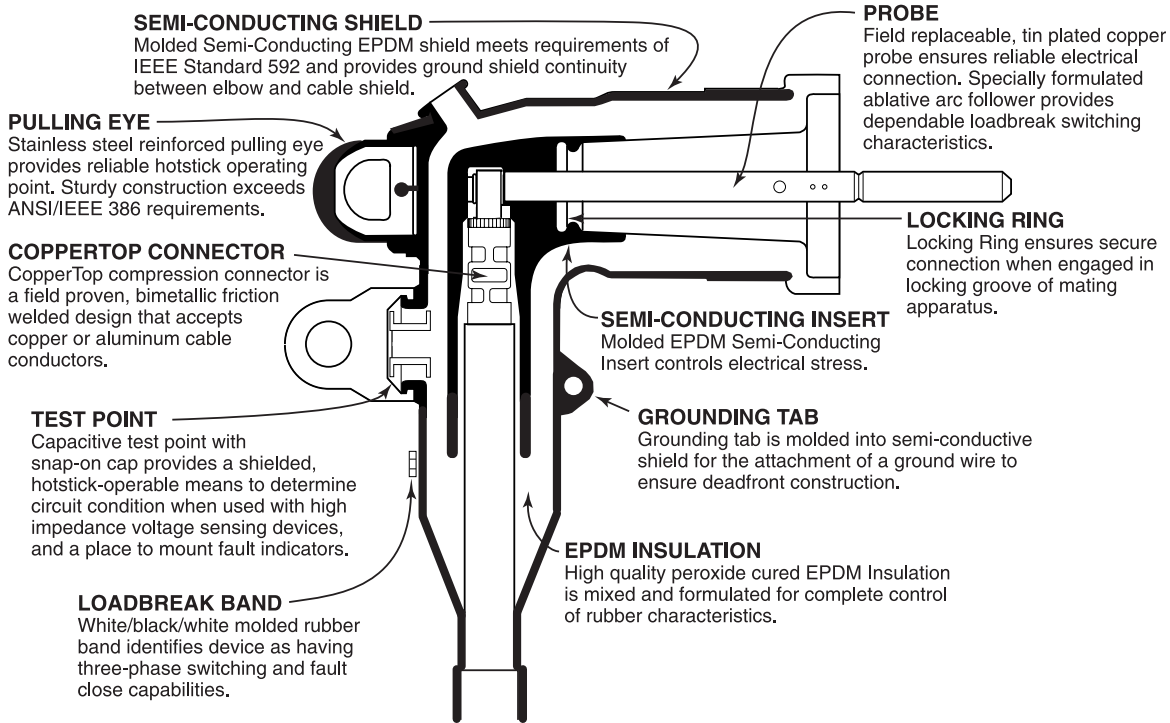
NOTE: Final Kit selection based on cable insulation diameter.

Kit No.	Insulation Diameter Range Inches (mm)	5 kV (AWG/kcmil)				8 kV (AWG/kcmil)				15 kV (AWG/kcmil)			
		100% (90 mils)		133% (115 mils)		100% (115 mils)		133% (140 mils)		100% (175 mils)		133% (220 mils)	
		Stranded	Compact /Solid	Stranded	Compact /Solid	Stranded	Compact /Solid	Stranded	Compact /Solid	Stranded	Compact /Solid	Stranded	Compact /Solid
5810-CA**	0.495 - 0.585 (12.6 - 14.9)	2 - 1*	1 - 1/0*	2	1	2	1*						
5810-CA-2		2	1	2*	1	2	1*						
5810-CA-1		1*	1/0*										
5810-CB**	0.575 - 0.685 (14.6 - 17.4)	1/0 - 2/0	2/0	1 - 1/0	1/0	1 - 1/0	1/0	2	1	4			
5810-CB-4										4			
5810-CB-2								2	1				
5810-CB-1				1	1/0	1	1/0						
5810-CB-1/0		1/0	2/0	1/0		1/0							
5810-CB-2/0		2/0											
5810-A**		0.630 - 0.820 (16.0 - 20.8)	3/0 - 4/0	3/0 - 250	2/0 - 3/0	2/0 - 4/0	2/0 - 3/0	2/0 - 4/0	1 - 2/0	1/0 - 3/0	2 - 1	2 - 1/0	
5810-A-3											2		2
5810-A-2										2	1		
5810-A-1								1	1/0	1	1/0		
5810-A-1/0					2/0		2/0	1/0	2/0				
5810-A-2/0			3/0	2/0	3/0	2/0	3/0	2/0	3/0				
5810-A-3/0			3/0	4/0	3/0	4/0	3/0	4/0					
5810-A-4/0			4/0	250									
5810-B**	0.700 - 0.910 (17.8 - 23.1)	250		4/0 - 250	250	4/0 - 250	250	3/0 - 4/0	4/0 - 250	1/0 - 2/0	2/0 - 3/0	2 - 1/0	1 - 2/0
5810-B-2												2	1
5810-B-1												1	1/0
5810-B-1/0										1/0	2/0	1/0	2/0
5810-B-2/0										2/0	3/0		
5810-B-3/0									3/0	4/0			
5810-B-4/0				4/0	250	4/0	250	4/0	250				
5810-B-250			250		250		250						
5810-C**	0.850 - 1.100 (21.6 - 27.9)							250		3/0 - 250	4/0 - 250	2/0* - 4/0	3/0 - 250
5810-C-2/0												2/0	3/0
5810-C-3/0										3/0	4/0	3/0	4/0
5810-C-4/0										4/0	250	4/0	250
5810-C-250									250		250		
5810-D**	1.040 - 1.250 (26.4 - 31.8)											250	
5810-D-250												250	

Notes: *Check actual cable insulation diameter to verify correct kit selection.
 **Kit without compression connector.

3M™ 200 Amp 25 kV Industrial Loadbreak Elbow

Features and Detailed Description



3M Loadbreak Elbow Kit Selection Table for 25 kV Class

NOTE: Final Kit selection based on cable insulation diameter.

Kit No.	Insulation Diameter Range Inches (mm)	25 kV (AWG/kcmil)			
		100% (260 mils)		133% (320 mils)	
		Stranded	Compact /Solid	Stranded	Compact /Solid
5811-B*	0.700 - 0.910 (17.8 - 23.1)	2	2-1		
5811-B-3			2		
5811-B-2		2	1		
5811-C*	0.850 - 1.100 (21.6 - 27.9)	1 - 3/0	1/0 - 4/0	2 - 1/0	2 - 1/0
5811-C-3					2
5811-C-2				2	1
5811-C-1		1	1/0	1	1/0
5811-C-1/0		1/0	2/0	1/0	
5811-C-2/0		2/0	3/0		
5811-C-3/0		3/0	4/0		
5811-D*	1.040 - 1.250 (26.4 - 31.8)	4/0 - 250	250	2/0 - 4/0	2/0 - 4/0
5811-D-1/0					2/0
5811-D-2/0				2/0	3/0
5811-D-3/0				3/0	4/0
5811-D-4/0		4/0	250	4/0	
5811-D-250		250			

*Kit without compression connector.

3M™ 200 Amp Industrial Loadbreak Elbow Accessories

3M™ Industrial Insulated Protective Cap

200 Amp
15 and 25 kV Class
5810-PC-15, 5811-PC-25



3M Industrial Insulated Protective Cap is an accessory device designed to electrically insulate (dead-front) and mechanically seal loadbreak bushing interfaces. When mated to a loadbreak bushing interface with the drain wire attached to ground, the Industrial Insulated

Protective Cap provides a fully shielded, insulating cover for energized bushings. The cap can be used for permanent or temporary installation on bushings, junctions or feed-thru devices that meet the requirements of ANSI/IEEE Standard 386.

No special tools are required for installation. A shotgun stick tool is used to place the protective cap on an exposed bushing interface. Refer to Installation Instructions for details.

Kit contents:

- Industrial Insulated Protective Cap
- Silicone Lubricant
- Installation Instruction Sheet

Loadbreak Protective Cap

Description	Kit Number
Protective Cap – 15 kV	5810-PC-15
Protective Cap – 25 kV	5811-PC-25

3M™ Industrial Loadbreak Bushing Insert

200 Amp
15 and 25 kV Class
5810-BI-15, 5811-BI-25



3M Industrial Loadbreak Bushing Inserts thread into a universal bushing well to provide the same function as an integral loadbreak bushing. Using bushing inserts makes field installation and replacement

possible and efficient. Bushing inserts and elbow connectors comprise the essential components of all loadbreak connections. No special tools are necessary for installation.

Kit contents:

- Industrial Loadbreak Bushing Insert
- Shipping Cap (not for energized operation)
- Silicone Lubricant
- Installation Instruction Sheet

Loadbreak Bushing Insert Kit

Description	Kit Number
Loadbreak Bushing Insert – 15kV	5810-BI-15
Loadbreak Bushing Insert – 25 kV	5811-BI-25

3M™ LBP-15 Probe Replacement Kit

For use with 3M™ Industrial Loadbreak Elbow 5810 Series
200 Amp
15 kV Class

Loadbreak Probe Replacement Kit

Description	Kit Number
Probe Replacement Kit – 15kV	LBP-15
Probe Replacement Kit – 25kV	LBP-25

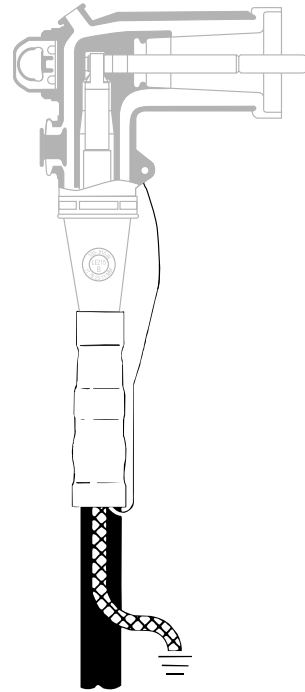
Cable Accessory Oil Stops 5110-OS Series 15-25/28 kV

3M™ Cold Shrink Kits 5110-OS Series are designed for use on PILC (Paper Insulated Lead Covered) cable with 200 Amp elbows and 600 Amp modular splice (separable connector) components that meet the requirements of IEEE Standard 386. There are four kits in the series that seal the oil inside the PILC cable, provide an accessory ground lead and environmentally seal the accessory end and cable jacket. These kits can be used on PILC cables sized 4 AWG to 1000 kcmil rated 15 kV and 2 AWG to 800 kcmil rated 25/28 kV.

Kit contents:

Each kit contains sufficient quantities of the following materials to seal and ground one cable end.

- Cold Shrink Oil Stop Tube
- Cold Shrink Jacket Tube
- White Restricting Tape
- Scotch® Rubber Tape 130C
- Scotch® Semi-Conducting Tape 13
- Ground Lead with Accessory Bleed Wire
- Mastic Seal Strips
- Instruction for 200 Amp Accessory
- Instruction for 600 Amp Accessory



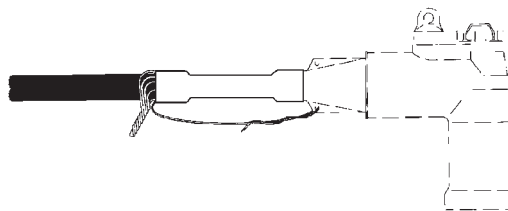
5110-OS Series Selection

Kit Number	UPC (054007-)	Minimum Insulation Diameter* in. (mm)	Maximum Lead Diameter in. (mm)	Conductor Size Range	
				15 kV	25/28 kV
5110-OS	43404	0.58 (14,7)	1.10 (27,9)	4 - 3/0 AWG	—
5111-OS	43405	0.72 (18,3)	1.30 (33,0)	4/0 AWG - 300 kcmil	2 - 1/0 AWG
5112-OS	43406	0.92 (23,4)	1.60 (40,6)	350 - 600 kcmil	2/0 AWG - 300 kcmil
5113-OS	43407	1.10 (27,9)	2 (50,8)	750 - 1000 kcmil	350 - 800 kcmil

*Over paper.

3M™ Cold Shrink Cable Accessory Sealing Kits 8450 Series

The 3M Cold Shrink Cable Accessory Sealing Kits 8450 Series are designed to seal the jacket end of power cables where elbows or other cable accessories are installed. Both the sealing tube and mastic are compatible with commonly used power cable jacketing and semiconductive materials.



Specifications and Ordering Information for 3M Cold Shrink Cable Accessory Sealing Kits 8450 Series

Product Number	8452	8452L	8453	8454
Cable Type	Jacketed Concentric Neutral Cable (JCN) See above for cable type illustration.			
Cable Size/Volt Class:				
Cable Size for 15 kV Class	2 - 4/0 AWG (35 - 100 mm ²)	2 - 4/0 AWG (35 - 100 mm ²)	2/0 AWG - 1000 kcmil (70 - 500 mm ²)	750 - 1500 kcmil (380 - 725 mm ²)
Cable Size for 25 kV Class	2 - 2/0 AWG (35 - 50 mm ²)	2 - 2/0 AWG (35 - 50 mm ²)	1/0 AWG - 750 kcmil (60 - 380 mm ²)	600 - 1250 kcmil (325 - 625 mm ²)
Cable Size for 35 kV Class	1/0 AWG (60 mm ²)	1/0 AWG (60 mm ²)	1/0 AWG - 500 kcmil (60 - 250 mm ²)	350 - 1000 kcmil (180 - 500 mm ²)
Minimum Seal Diameter	0.95" (24 mm)	0.95" (24 mm)	1.28" (33 mm)	1.60" (41 mm)
Maximum Installed Diameter	1.94" (49 mm)	1.94" (49 mm)	2.67" (68 mm)	3.50" (89 mm)
Kit Components:				
Cold Shrink Sealing Tube	1	1 (1/2" longer)	1	1
Mastic Sealing Strips 6" (152,4 mm)	3 strips	3 strips	4 strips	6 strips
Instructions	1	1	1	1
Ordering Information				
UPC (054007-)	08336	44312	09676	49938
Inner Unit Pack	1/bag	1/bag	1/bag	1/bag
Case Qty.	10 kits	10 kits	10 kits	10 kits

Note: These kits are not required with the 3M 5810 and 5811 series 200 Amp Industrial Loadbreak Elbow Kits (the 5810 and the 5811 Kits contain grounding and sealing components).

