

3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

Data Sheet

November 2014

CAUTION

Working around energized high-voltage systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling high-voltage electrical equipment. De-energize and ground all electrical systems before installing product.

Product Description

3M™ Single Conductor Accessory Breakout Kits (BOK's) are designed to allow the use of 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows) on three-core (3/C) conductor cables (Three-Conductor Type "G" (Ground Wire), Copper Tape Shield, Armored Cables and Tray Cable without Armor).

The BOK's provide the ability to use the appropriately sized single conductor (1/C) 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows) on three-conductor (3/C) conductor cables.

There are six BOK's available to cover a wide range of insulation O.D.'s and conductor sizes. See **3M™ Breakout Kit (BOK) Selection Table** section for the appropriate 3M™ Termination Breakout Kits (BOKs).

The kits are designed to be used in conjunction with the following 3M™ Cable Accessory kits;

- 3M™ Terminations
- 3M™ T-Bodies
- 3M™ Push-On Elbows

SPECIAL NOTE

This Data Sheet does not cover all information relating to 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boot 8560 Series and 3M™ Rejacketing Sleeve RJS Series Assemblies. For more in-depth information about these products, please see the following Data Sheets for these two products;

- Breakout Boots
 - 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series
 - Data Sheet part number 78-8124-4242-0
- Rejacketing Sleeve RJS Series Assemblies
 - 3M™ 3/C (Three-Conductor) Phase Rejacketing System RJS Series Sleeve Assemblies
 - Data Sheet part number 78-8111-0894-9

3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

Kit Contents Each Breakout Kit (BOK) contains the following appropriately sized components and accessories for specified insulation O.D.'s and conductor ranges. See **3M™ Breakout Kit (BOK) Selection Table** section for specified insulation O.D.'s and conductor ranges and the appropriate Breakout Kits.

- 1 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boot 8560 Series (includes 2 Strips Scotch® Mastic Strip 2230)
- 3 3M™ 3/C (Three-Conductor) Phase Rejacketing Sleeve RJS Series Assemblies (Silicone Rubber) – 4' length each (Continuous length assemblies are easily trimmed to length to meet field determined installation requirements.)
- 1 Constant Force Spring (Large) - **Used For Armored Cable Only**
- 1 Long Tail Tinned Copper Ground Braid with Solder Block - **Used For Armored Cable Only**
- 3 Strips Scotch® Mastic Strip 2230 (black with white release liners, bagged)
- 1 Roll Scotch® Super 33+™ Vinyl Electrical Tape - 3/4" x 20'
- 1 Roll, Scotch® Electrical Shielding Tape 24 - **Used For Armored Cable Only**
- 1 Instruction Sheet

Breakout Kit (BOK) Selection Table

Breakout Kit Part Number	Cable Insulation O.D. Range, Inches (mm)	Cable O.D. Max Inches (mm)	Conductor Size Range (AWG & kcmil)									
			5 kV 100%	5 kV 133%	8 kV 100%	8 kV 133%	15 kV 100%	15 kV 133%	25/28 kV 100%	25/28 kV 133%	35 kV 100%	35 kV 133%
3C-BOK-1	0.33–0.50 (8,4–12,7)	1.94 (49,3)	8–2	6–4	6–4	6–4	—	—	—	—	—	—
3C-BOK-2	0.50–0.70 (12,7–17,8)	2.67 (67,8)	1–3/0	2–2/0	2–2/0	2–2/0	2–1	—	—	—	—	—
3C-BOK-3	0.70–0.92 (17,8–23,4)	3.10 (78,7)	4/0–350	3/0–350	3/0–350	3/0–350	1/0–4/0	2–3/0	1–1/0	—	—	—
3C-BOK-4	0.92–1.18 (23,4–30,0)	4.32 (109,7)	400–500	400–500	400–500	400–500	250–350	4/0–350	2/0–250	1–4/0	—	—
3C-BOK-5	1.18–1.52 (30,0–38,6)	4.70 (119,4)	700–1000	700–1000	700–1000	700–1000	500–750	500–750	350–500	250–500	4/0–500	1/0–350
3C-BOK-6	1.53–1.81 (38,8–46,0)	5.52 (140,2)	—	—	—	—	1000	1000	750	500–750	500–750	350–750

3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

Features

- **Breakout Boots**
 - One-piece versatile design allows quick installation and accommodates a wide range of cable sizes
 - Cold shrink delivery system allows easy installation: Simply place break-out boot over prepared cable and unwind core to shrink into place (no force required)
 - Silicone Rubber construction
 - No torches or heat required
 - Excellent resistance to ozone and ultra-violet radiation
 - Good solvent resistance: Compatible with industry-approved cable cleaners
 - Excellent thermal stability
 - High dry and wet insulation resistance
 - Highly flexible; accommodates power cable supplier bend radius recommendations
 - Seals tight: Retains resiliency and pressure even after prolonged years of aging and exposure
 - **Phase Rejacketing Sleeve RJS Series Assemblies**
 - Versatile: installs quickly and accommodates a wide range of cable sizes
 - Silicone Rubber insulators incorporating an inner expandable polyester braid designed to reduce sliding friction and deliver the insulator onto the cable.
 - Simple hand application: no need for special installation tools
 - No torches or heat required
 - Excellent resistance to ozone and ultra-violet radiation
 - Good solvent resistance: compatible with industry approved cable cleaners
 - Excellent thermal stability
 - High dry and wet insulation resistance
 - Excellent shelf life
 - Easy to adjust sleeve length: adapts to variable equipment connection and mounting requirements
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3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

- Applications**
- **3M™ Single Conductor Accessory Breakout Kits (BOK's)**
 - The Breakout Kits (BOK's) provide the ability to use the appropriately sized single conductor 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows) on three conductor cables.
 - The BOK's are designed for 5, 8, 15, 25/28 and 35 kV classes.
 - The BOK's will accommodate both skirted and tubular terminations, T-Bodies and Push-On Elbows.
 - The BOK's, in combination with the appropriately sized single conductor 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows), provide the components required to terminate three-core (3/C) conductor cables (Three-Conductor Type "G" (Ground Wire), Copper Tape Shield, Armored Cables and Tray Cable without Armor).
 - **3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series**
 - The 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series are used to protect the phase breakout area of three conductor medium voltage power cable from moisture and contamination penetration after the jacket has been removed in preparation for terminating.
 - They can accommodate cable sizes ranging from No. 8 AWG (8 mm²) @ 3.3 kV to 750 kcmil (325 mm²) @ 35 kV.
 - Six sizes are available to cover cable metallic shield diameters ranging from 0.48" (12,2 mm) to 2.17" (55,1 mm) and cable jackets ranging from 1.30" (33,0 mm) to 5.52" (140,2 mm).
 - **3M™ Rejacketing Sleeve RJS Series Assemblies**
 - 3M™ Rejacketing Sleeve RJS Series Assemblies are used to protect shielded phase legs (cores) of 3/C medium voltage (35 kV and less) power cables after the jacket has been removed in preparation for using 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows).
 - Accommodate cable sizes ranging from 8 AWG (8 mm²) @ 3.3 kV to 500 kcmil (240 mm²) @ 35kV.
 - Six sizes are available to cover cable metallic shield diameters ranging from 0.43" (10,9 mm) to 1.91" (48,5 mm).
 - Installation designs incorporating 3M™ 3/C (Three-Conductor) Phase Rejacketing System RJS Series Sleeve Assemblies can be field tested using normal cable testing procedures (reference: ANSI/IEEE Standard 400 "Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems". Refer to most recent version).
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3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

Product Specifications	<p>3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series in the 3M™ Termination Breakout Kit's (BOK's) are one component of a 3/C cable termination and, as such, must conform to all internationally recognized termination performance standards; specifically to VDE 0278, Cenelec HD 629.1 S1, and the Class I designation of IEEE Standard 48.</p> <p>Cable Breakout Boots shall be made of track-resistant silicone rubber, dark gray in color and shall be supplied in the form of a one-piece assembly for hand application. Installation shall require no flame, heat source or specialized tools.</p> <p>3M™ Rejacketing Sleeve RJS Series Assemblies, in the 3M™ Breakout Kit's (BOK's), can be used on cables with a continuous operating temperature of 221°F (105°C) and an emergency overload temperature of 284°F (140°C). When used in combination with 3M™ Cold Shrink Terminations, 3M™ T-Bodies and 3M™ Push-On Elbows, 3M™ Rejacketing Sleeve RJS Series Assemblies meet, or exceed, the current rating of the cable on which they have been applied.</p> <p>Each phase (core) Rejacketing insulator shall be made of track resistant silicone rubber, dark gray in color and shall install by hand as a one-piece, continuous length assembly. Application shall require no flame, heat source or specialized tools. Rejacketing insulators must be length adjustable to conform to all field determined equipment installation requirements.</p>
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Engineering/ Architectural Specifications	<p>3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series: Seal and protect the cable phase (core) breakout area of all 3/C, 3.3 kV through 35 kV Class cable in accordance with the instructions provided in 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series Product Kits and/or the Termination Breakout Kit (BOK's) Instructions.</p> <p>3M™ Rejacketing Sleeve RJS Series Assemblies: Insulate and protect shielded phase (core) legs for all 3/C, 3.3 kV through 35 kV Class cable in accordance with the instructions provided in 3M™ Rejacketing Sleeve RJS Series Assembly product kits and/or the Breakout Kit (BOK's) Instructions.</p>
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3M™ Single Conductor Accessory Breakout Kits (BOK's) for use with 3M™ Cable Accessories (Terminations, T-Bodies and Push-On Elbows)

Shelf-Life & Storage **3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series:** As provided, in the expanded state, the 3M™ Cold Shrink Silicone Rubber 3/C Cable Breakout Boots 8560 Series have a 3-year shelf life from the date of manufacture.

3M™ Rejacketing Sleeve RJS Series Assemblies: While 3M™ Rejacketing Sleeve RJS Series Assemblies are not expected to deteriorate during extended storage periods, a 5 year shelf life limit is suggested. Maximum recommended storage temperature is 120°F (49°C). The assemblies are not affected by freezing. Standard stock rotation practice is recommended.

Availability Please contact your local distributor; available from 3M.com/electrical {Where to Buy (Find A Distributor)} or call 1-800-245-3573.

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Note: The core material being removed from the Termination and other Cold Shrink items are mixed polymers and can be recycled with  waste.

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