



Cold Shrink Silicone Rubber Termination QT-III

(With High-K Stress Relief)

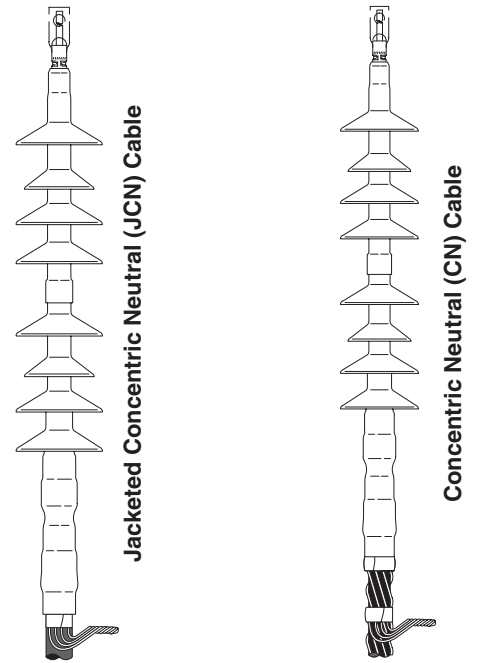
Instructions

IEEE Std. No. 48-1990

Class 1 Termination
35 kV Class
200 kV BIL

Kit Contents:

- 1 Hi-K, Tracking Resistant, Silicone Rubber Termination
- 2 Strips Sealing Mastic (black with white release liners, bagged)
- 1 Instruction Sheet



Kit Selection Chart

NOTE: Final Determination Factor is cable insulation diameter.

Kit Number	Primary Insulation O.D. Range	Jacket O.D. Range	Conductor Size Range (AWG & kcmil)		
			15 kV	25/28 kV	35 kV
7666-S-8	1.53" – 2.32" (38,9 – 58,9 mm)	1.84" – 2.80" (46,8 – 71,1 mm)	1250 – 2000 kcmil (625 – 1000 mm ²)	900 – 1750 kcmil (500 – 800 mm ²)	700 – 1500 AWG (400 – 725 mm ²)

Table 1

 Jacketed Concentric Neutral (JCN) <i>(pages 2 – 5)</i>	3M™ Silicone Rubber Outdoor Skirted Termination Kit QT-III for Jacketed Concentric Neutral (JCN) Cable and Concentric Neutral (CN) Cable 7666-S-8
 Concentric Neutral (CN) <i>(pages 6 – 9)</i>	
78-8119-6026-5	
⚠ 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.	
APP.: D. Reism NUMBER OF PAGES: 12 ISSUE DATE: 1/22/04	SCALE: Not to scale ISSUE: B

Instructions for Jacketed Concentric Neutral (JCN) Cable

A. Prepare Cable

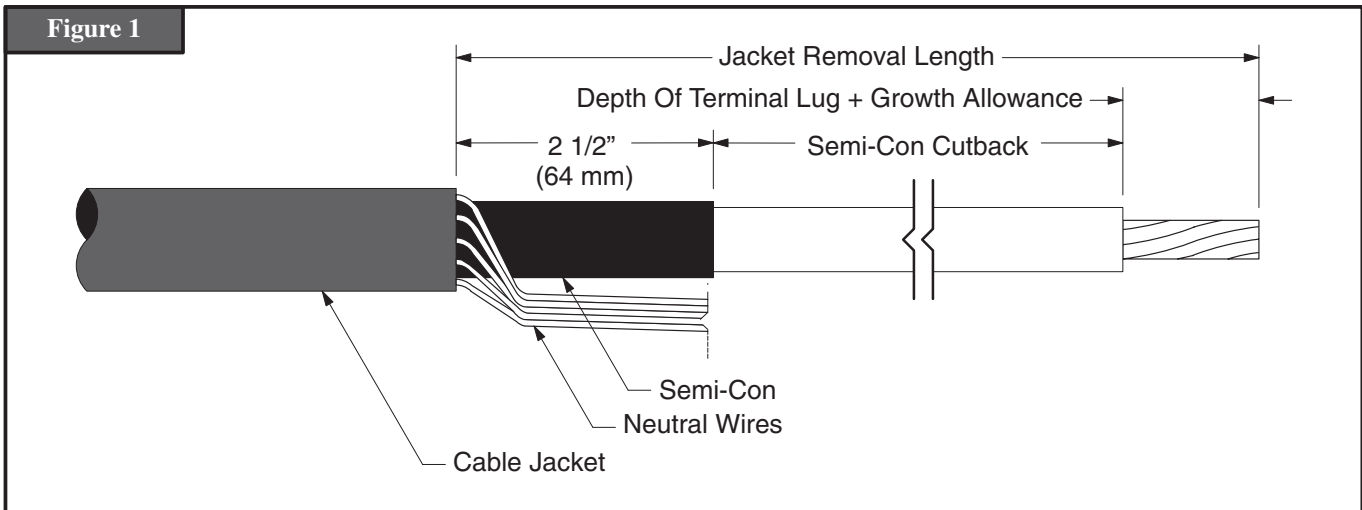
1. Check to be sure cable size fits within kit size range as shown in *Table 1* (cover page).
2. Train cable into position and cut to length required for installation. Allow sufficient neutral wire length for grounding connection.
3. Prepare cable using dimensions shown in (*Figure 1*) refer to (*Table 2*) for semi-con cutback dimension. **Be sure to allow for depth of terminal lug.**

Kit Number	Insulation O.D.	15 kV AWG / kcmil	25/28 kV AWG / kcmil	35 kV AWG / kcmil	Semi-Con Cutback
7666-S-8	1.53" – 1.85" (38,9 – 47,0 mm)	1250 (625 – 630 mm ²)	900 – 1000 (500 mm ²)	700 – 900 (400 mm ²)	13.5" (342,9 mm)
	1.65" – 2.32" (42,0 – 58,9 mm)	1500 – 2000 (630 – 1000 mm ²)	1250 – 1750 (625 – 800 mm ²)	1000 – 1500 (500 – 725 mm ²)	13.0" (330,2 mm)

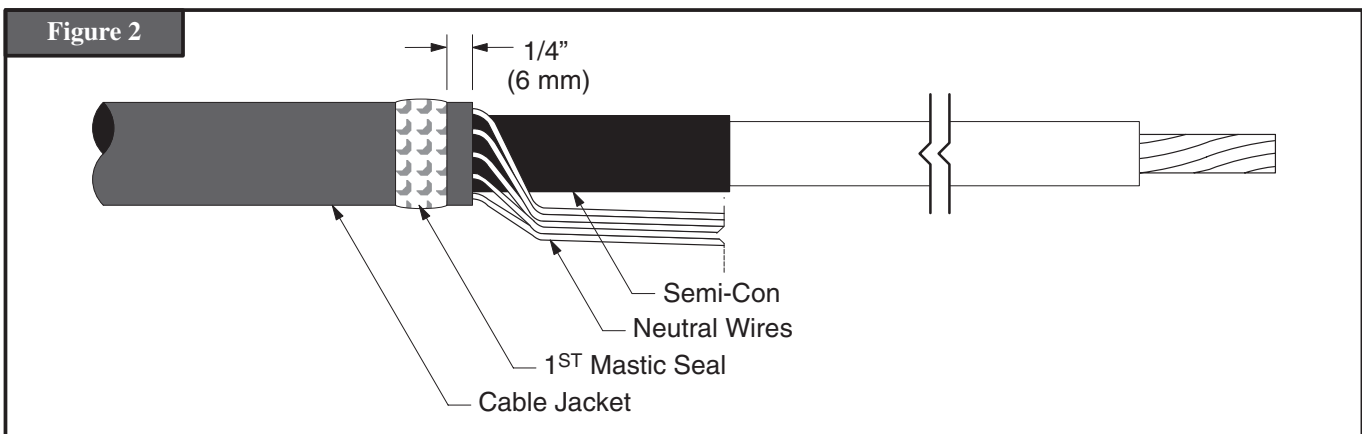
Table 2

NOTE: Provide additional exposed conductor distance to account for growth during crimping of ALUMINUM lugs or connectors as follows:

Aluminum Lug Growth Allowance	750 – 1000 1/2" (13 mm)	1250 – 2000 Field Determined
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4. Select one of two mastic strips from kit and remove white release liners. Using light tension apply a single wrap of mastic around the cable jacket 1/4" (6 mm) from cut edge (*Figure 2*). Cut off excess.

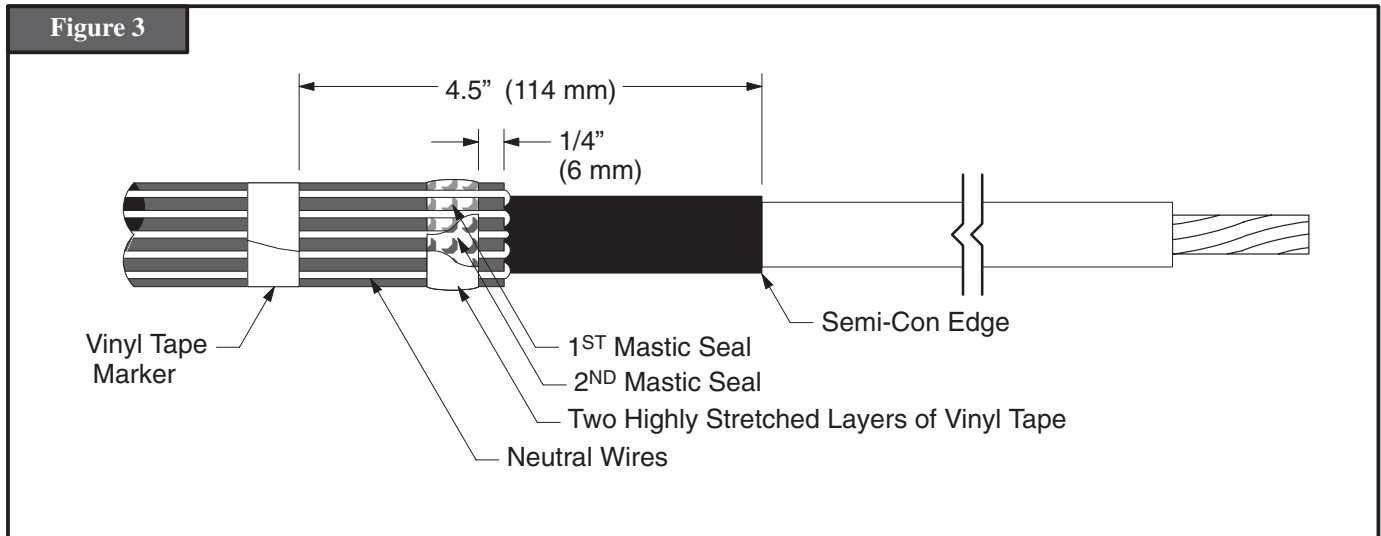


A. Prepare Cable (continued)

5. Bend neutral wires back over applied sealing mastic and secure to cable jacket 4.5" (114 mm), below cable semi-con edge using vinyl tape (*Figure 3*).

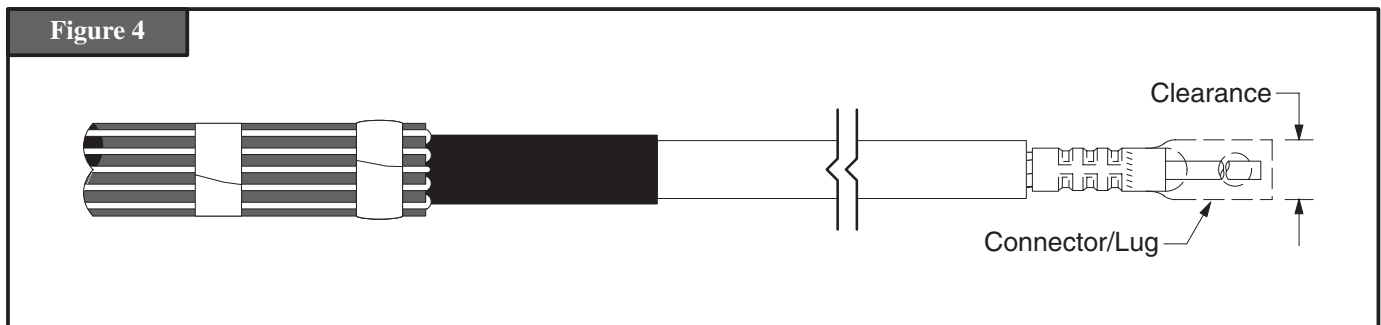
NOTE: Position vinyl tape with care, it also serves as a marker for positioning the termination.

6. Select second mastic strip from kit and remove white release liners. Apply a second mastic band over the neutral wires and previously applied mastic (*Figure 3*). Cut off excess.
7. Compress neutral wires into mastic by over-wrapping seal strips with two highly stretched layers of electrical grade vinyl tape (*Figure 3*). **Be sure to cover all exposed mastic.**



B. Install Lug or Connector

1. Check to insure termination assembly fits over the selected lug. If lug (*Figure 9*) will not fit through the termination core, clean the insulation (*per Step C*) and slide termination on cable before installing lug. **Do not remove core at this time.**



NOTE: Refer to pages 8 and 9 for lug/connector crimping information.

2. Position connector/lug and crimp according to manufacturer's directions. Remove excess oxide inhibitor and sharp crimp flashings following crimping.

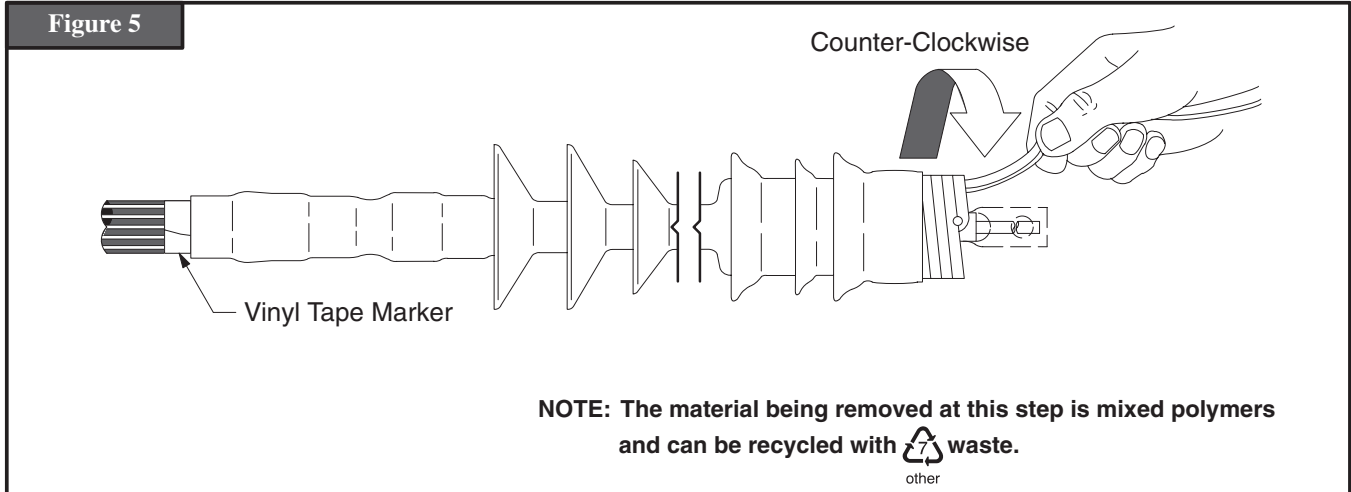
C. Clean Cable Insulation and Lug Barrel Using Standard Practice

1. Wipe the cable insulation with an approved solvent. **Do not allow solvent to touch semi-con insulation shield!**
2. If abrasive must be used:
 - a. Use on insulation only. **Do not use abrasive on semi-con insulation shield!**
 - b. Use only aluminum oxide abrasive; grit 120 or finer.
 - c. Be careful not to reduce the cable insulation diameter below that allowed by the kit.

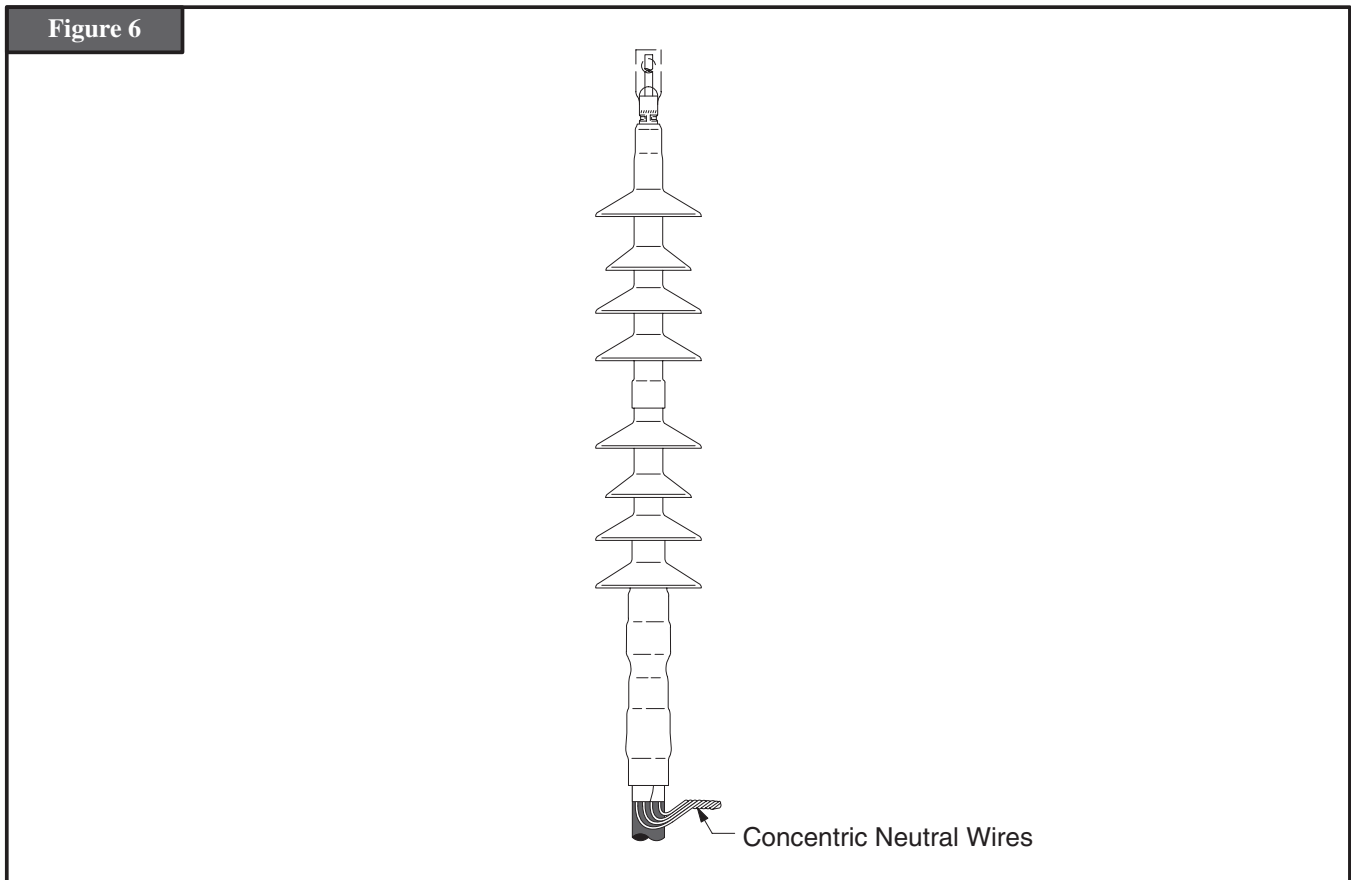
D. Install Termination

1. Slide the termination body onto the cable and remove core. Pull while unwinding counter-clockwise starting with the loose end (*Figure 5*). Make sure the termination body (not the core) is butted up to the edge of the vinyl tape marker previously applied (*Figure 5*).

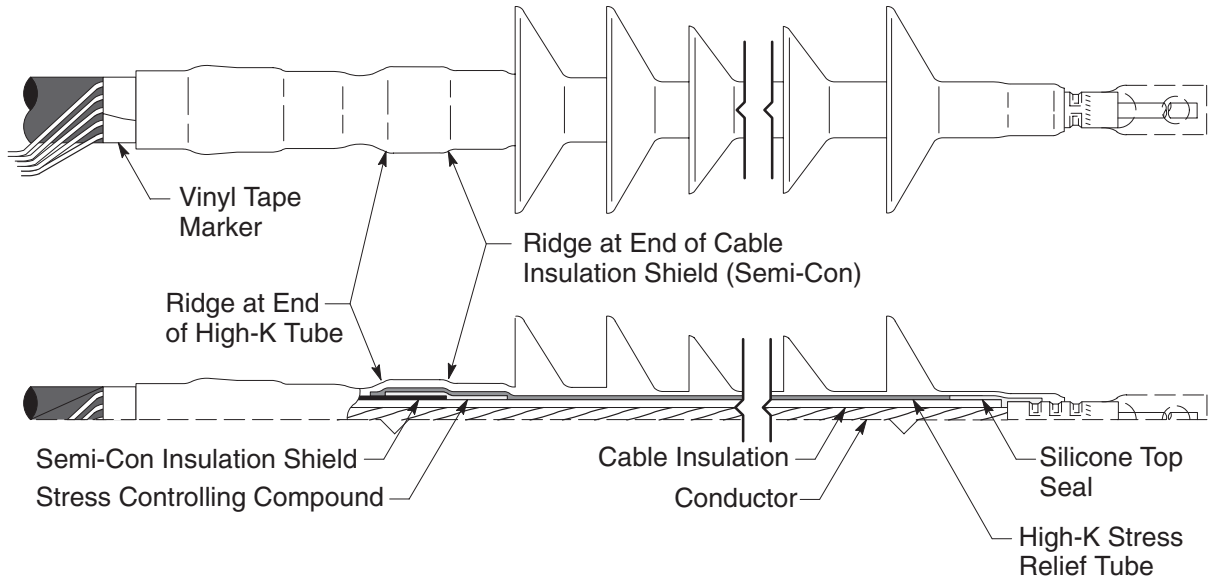
NOTE: Once the termination insulator has made contact over the mastic seal area, there is no need to continue supporting the assembly. Do not push or pull on the termination assembly while unwinding the core.



2. When using a short barrel lug or connector on smaller size cable it may be necessary to trim any excess termination insulator from the lug or connector.
3. Collect all concentric neutral wires together (*Figure 6*) and connect to system ground according to standard practice.



Correct Installation of Termination on Jacketed Concentric Neutral (JCN) Cable



Instructions for Concentric Neutral (CN) Cable

A. Prepare Cable

1. Check to be sure cable size fits within kit size range as shown in *Table 1 (cover page)*.
2. Train cable into position and cut to length required for installation. Allow sufficient neutral wire length for grounding connection.
3. Prepare cable using dimensions shown in (*Figure 1*) refer to (*Table 3*) for semi-con cutback dimension. **Be sure to allow for depth of terminal lug.**

Kit Number	Insulation O.D.	15 kV AWG / kcmil	25/28 kV AWG / kcmil	35 kV AWG / kcmil	Semi-Con Cutback
7666-S-8	1.53" – 1.85" (38,9 – 47,0 mm)	1250 (625 – 630 mm ²)	900 – 1000 (500 mm ²)	700 – 900 (400 mm ²)	13.5" (342,9 mm)
	1.65" – 2.32" (42,0 – 58,9 mm)	1500 – 2000 (630 – 1000 mm ²)	1250 – 1750 (625 – 800 mm ²)	1000 – 1500 (500 – 725 mm ²)	13.0" (330,2 mm)

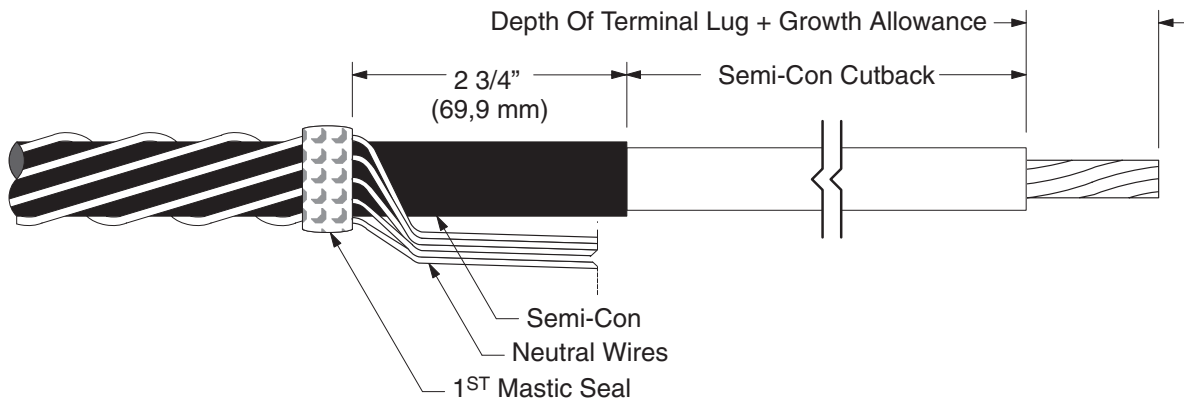
Table 3

NOTE: Provide additional exposed conductor distance to account for growth during crimping of ALUMINUM lugs or connectors as follows:

Aluminum Lug Growth Allowance	750 – 1000 1/2" (13 mm)	1250 – 2000 Field Determined
-------------------------------	----------------------------	---------------------------------

4. Secure neutral wires to cable with several highly stretched layers of electrical grade vinyl tape around the cable and neutral wires 2 3/4" (69,9 mm) from cut edge of cable semi-con (*Figure 7*).
5. Select one of two mastic strips from kit and remove white release liners. Using light tension, wrap a band of mastic around the cable and neutral wires 2 3/4" (69,9 mm) from cut edge of cable semi-con, directly on top of vinyl tape (*Figure 7*). Cut off excess.

Figure 7

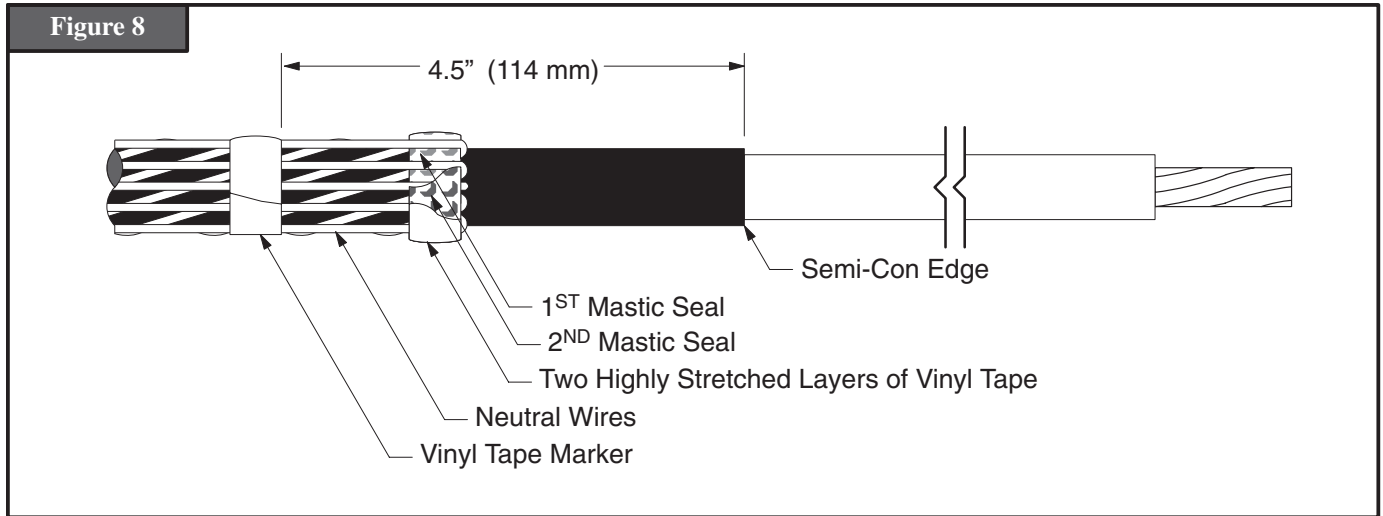


A. Prepare Cable (continued)

6. Bend neutral wires back over applied sealing mastic and secure to cable 4.5" (114 mm), below cable semi-con edge using vinyl tape (*Figure 8*).

NOTE: Position vinyl tape with care, it also serves as a marker for positioning the termination.

7. Select second mastic strip from kit and remove white release liners. Apply a second mastic band over the neutral wires and previously applied mastic (*Figure 8*). Cut off excess.
8. Compress neutral wires into mastic by over-wrapping seal strips with two highly stretched layers of electrical grade vinyl tape (*Figure 8*). **Be sure to cover all exposed mastic.**



B. Install Lug or Connector

1. Check to insure termination assembly fits over the selected lug. If lug (*Figure 9*) will not fit through the termination core, clean the insulation (*per Step C*) and slide termination on cable before installing lug. **Do not remove core at this time.**



NOTE: Refer to pages 8 and 9 for lug/connector crimping information.

2. Position connector/lug and crimp according to manufacturer's directions. Remove excess oxide inhibitor and sharp crimp flashings following crimping.

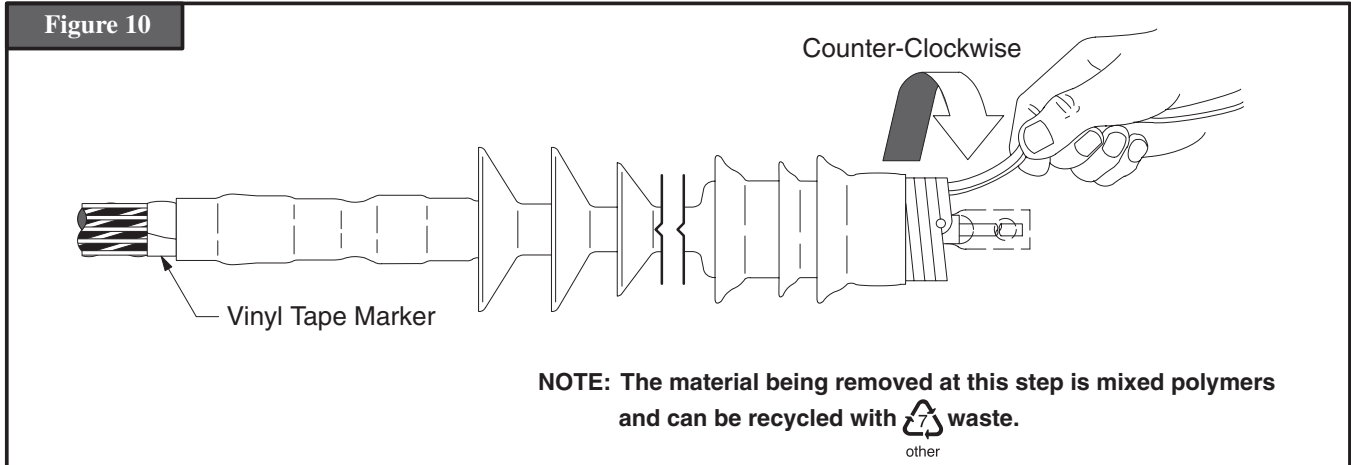
C. Clean Cable Insulation and Lug Barrel Using Standard Practice

1. Wipe the cable insulation with an approved solvent. **Do not allow solvent to touch semi-con insulation shield!**
2. If abrasive must be used:
 - a. Use on insulation only. **Do not use abrasive on semi-con insulation shield!**
 - b. Use only aluminum oxide abrasive; grit 120 or finer.
 - c. Be careful not to reduce the cable insulation diameter below that allowed by the kit.

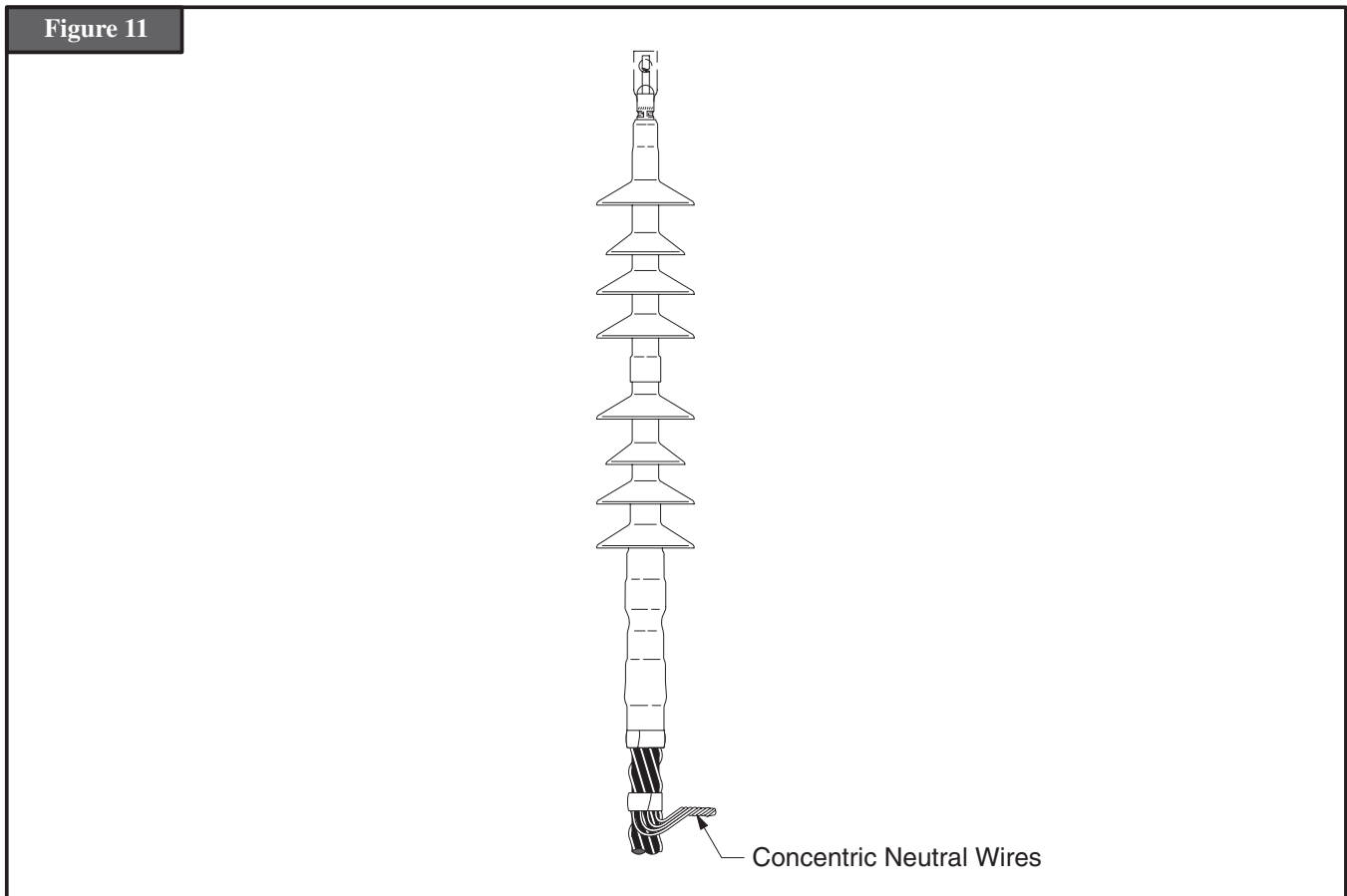
D. Install Termination

1. Slide the termination body onto the cable and remove core. Pull while unwinding, counter-clockwise, starting with the loose end (*Figure 10*). Make sure the termination body (not the core) is butted up to the edge of the vinyl tape marker previously applied (*Figure 10*).

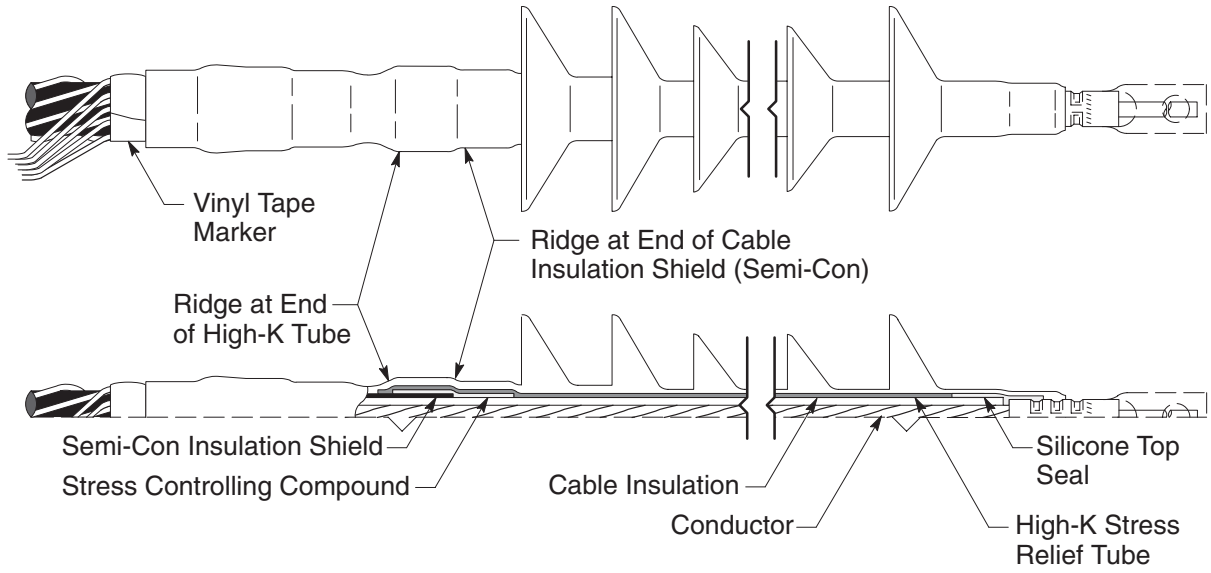
NOTE: Once the termination insulator has made contact over the mastic seal area, there is no need to continue supporting the assembly. Do not push or pull on the termination assembly while unwinding the core.



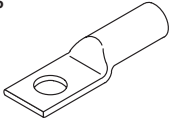
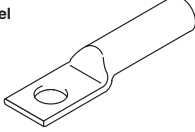
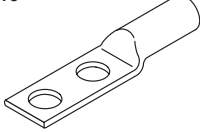
2. When using a short barrel lug or connector on smaller size cable it may be necessary to trim any excess termination insulator from the lug or connector.
3. Collect all concentric neutral wires together (*Figure 11*) and connect to system ground according to standard practice.



Correct Installation of Termination on Concentric Neutral (CN) Cable



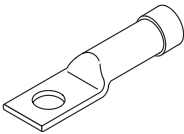
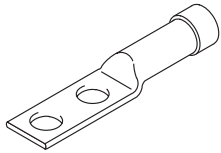
Tooling Index

Lug and Crimping Information for 3M™ Scotchlok™ Copper Lugs										
30014 thru 30045 One hole 			31036 thru 31068 One hole — long barrel 				31145 thru 31178 Two hole 			
Cable Size AWG/ kcmil	Stud Size (in.)	Scotchlok™ Copper Lug Number	CRIMPING TOOL-DIE SETS (NUMBER OF CRIMPS)							
			Burdny Corporation				Thomas & Betts Corporation			Square D Co. An- derson Div.
			MD6	MY29	Y34A	Y35, Y39, Y45*, Y46*	TBM 5	TBM 8	TBM 15	VC6-3, VC6-FT**
6	10 1/4 5/16	30014 30015 30016	—	6AWG(1)	—	U5CRT(1)	Blue(1)	Blue(1)	—	Universal(1)
4	10 1/4 3/8	30018 30019 30021	W161(1)	4AWG(1)	A4CR(1)	U4CRT(1)	Grey(1)	Grey(1)	—	Universal(1)
2	1/4 5/16 3/8	30022 30023 30024	W162(2)	2AWG(1)	A2CR(1)	U2CRT(2)	Brown(1)	Brown(1)	33(1)	Universal(2)
1	5/16 3/8	30027 30028	—	1AWG(1)	A1CR(1)	U1CRT(2)	Green(1)	Green(1)	37(1)	Universal(2)
1/0	5/16 3/8	30031 30032	W163(2)	1/0(1)	A25R(1)	U25RT(1)	Pink(2)	Pink(2)	42H(2)	Universal(1)
2/0	3/8 3/8	30036 31036	W241(2) W241(3)	2/0(1) 2/0(2)	A26R(1) A26R(2)	U26RT(2) U26RT(3)	Black(2) Black(3)	Black(2) Black(3)	45(1) 45(2)	Universal(1) Universal(2)
3/0	1/2 1/2	30041 31041	W243(2) W243(3)	3/0(1) 3/0(2)	A27R(1) A27R(2)	U27RT(2) U27RT(3)	Orange(2) Orange(3)	Orange(2) Orange(3)	50(1) 50(2)	Universal(2) Universal(3)
4/0	1/2 1/2 1/2	30045 31045 31145	BG(3) BG(4) BG(4)	4/0(1) 4/0(2) 4/0(2)	A28R(2)	U28RT(2) U28RT(3) U28RT(3)	Purple(2) Purple(3) Purple(3)	Purple(2) Purple(3) Purple(3)	54H(2) 54H(3) 54H(3)	Universal(2) Universal(3) Universal(3)
250	1/2 1/2	31049 31149	W166(4)	250(2)	A29R(2)	U29RT(3)	Yellow(2)	Yellow(2)	62(2)	Universal(2)
300	1/2 1/2	31053 31153	—	—	A30R(2)	U30RT(3)	—	White(3)	66(3)	Universal(3)
350	1/2 1/2	31056 31156	—	—	A31R(2)	U31RT(3)	—	Red(4)	71H(4)	—
400	1/2 1/2	31060 31160	—	—	A32R(2)	U32RT(3)	—	Blue(4)	76H(4)	—
500	1/2 5/8 1/2	31066 31067 31166	—	—	A34R(2)	U34RT(3)	—	Brown(4)	87H(4)	—
600	1/2 1/2	31068 31168	—	—	—	U36RT(3)	—	Green(4)	94H(4)	—
750	1/2	31172	—	—	—	Y39, Y45, Y46 U39RT(5)	—	—	106H(4)	—
1000	1/2	31178	—	—	—	Y45: S44RT(6) Y46: P44RT(6)	—	—	125H(4)	—

* Y45 and Y46 accept all Y35 dies ("U" series). For Y45 use PT6515 adapter. For Y46 use PUADP adapter.

** Anderson VC6-3, VC6-FT, VC8C and Burdny Y1000 require no die set.

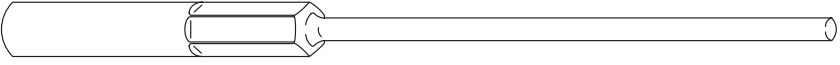
Tooling Index

Lug and Crimping Information for 3M™ Scotchluk™ Copper/Aluminum Lugs															
40016 thru 40079 One hole						40132 thru 40178 Two hole									
															
Cable Size AWG/ kcmil	Stud Size (in.)	Scotchlok™ Lug Number	CRIMPING TOOL-DIE SETS (NUMBER OF CRIMPS)												
			Burdny Corporation					Thomas & Betts Corporation				Square D Co. Ander- son Div.		ITT Black- burn Co.	Kearny Nat'l Div.
			MD6	MY29	Y34A	Y35, Y39, Y45*, Y46*	Y1000*	TBM 5	TBM 8	TBM 12	TBM 15	VC6-3** VC6-FT**	VC8C**	OD58	TYPE O
6	5/16	40016	W161(1)	6AWG(1)	A6CAB(1)	U6CABT(1)	(1)	Grey(1)	Grey(1)	—	29(1)	(1)	—	BY19(3)	J(3)
4	5/16	40020	W162(3)	4AWG(1)	A4CAB(1)	U4CABT(1)	(1)	Green(2)	Green(2)	—	37(1)	(1)	—	BY53(3)	P(3)
2	3/8 1/2	40024 40025	W163(3) W163(3)	2AWG(1) 2AWG(1)	A2CAB(1) A2CAB(1)	U2CABT(1) U2CABT(1)	(1) (1)	Pink(2) Pink(2)	Pink(2) Pink(2)	—	42H(2) 42H(2)	(1) (1)	—	BY23(3) BY23(3)	1/2(3) 1/2(3)
1	3/8 1/2	40028 40029	W163(3) W163(3)	1AWG(1) 1AWG(1)	A1CAR(1) A1CAR(1)	U1CART(1) U1CART(1)	(1) (1)	Gold(2) Gold(2)	Gold(2) Gold(2)	—	45(1) 45(1)	(1) (1)	—	BY23(3) BY23(3)	1/2(3) 1/2(3)
1/0	3/8 1/2 3/8	40032 40033 40132	W241(3) W241(3) W241(3)	1/0(1) 1/0(1) 1/0(1)	A25AR(1) A25AR(1) A25AR(1)	U25ART(1) U25ART(1) U25ART(1)	(1) (1) (1)	Tan(2) Tan(2) Tan(2)	Tan(2) Tan(2) Tan(2)	—	50(1) 50(1) 50(1)	(1) (1) (1)	—	BY25(3) BY25(3) BY25(3)	5/8-1(3) 5/8-1(3) 5/8-1(3)
2/0	1/2 1/2	40037 40137	BG(4) BG(4)	2/0(1) 2/0(1)	A26AR(2) A26AR(2)	U26ART(2) U26ART(2)	(1) (1)	Olive(2) Olive(2)	Olive(2) Olive(2)	—	54H(2) 54H(2)	(2) (2)	—	BY31C(3) BY31C(3)	5/8-1(3) 5/8-1(3)
3/0	1/2 1/2	40041 40141	W166(4) W166(4)	3/0(1) 3/0(1)	A27AR(2) A27AR(2)	U27ART(2) U27ART(2)	(1) (1)	Ruby(2) Ruby(2)	Ruby(2) Ruby(2)	—	60(2) 60(2)	(2) (2)	—	—	737(3) 737(3)
4/0	1/2 5/8 1/2	40045 40046 40145	W660(4) W660(4) W660(4)	4/0 (2) 4/0 (2) 4/0 (2)	A28AR(2) A28AR(2) A28AR(2)	U28ART(2) U28ART(2) U28ART(2)	(1) (1) (1)	—	White(4) White(4) White(4)	—	66(4) 66(4) 66(4)	(2) (2) (2)	—	BY35C(4) BY35C(4) BY35C(4)	840(4) 840(4) 840(4)
250	1/2 5/8 1/2	40049 40050 40149	W249(3) W249(3) W249(3)	—	A29AR(2) A29AR(2) A29AR(2)	U29ART(2) U29ART(2) U29ART(2)	(1) (1) (1)	—	—	71H(4) 71H(4) 71H(4)	71H(2) 71H(2) 71H(2)	(3) (3) (3)	—	—	—
300	1/2 1/2	40053 40153	—	—	A30AR(2) A30AR(2)	U30ART(2) U30ART(2)	(1) (1)	—	—	76H(4) 76H(4)	76H(2) 76H(2)	(3) (3)	—	—	—
350	1/2 5/8 1/2	40056 40057 40156	—	—	—	U31ART(2) U31ART(2) U31ART(2)	(1) (1) (1)	—	—	87H(4) 87H(4) 87H(4)	87H(3) 87H(3) 87H(3)	(3) (3) (3)	—	—	—
400	1/2	40160	—	—	—	U32ART(4)	(1)	—	—	94H(4)	94H(4)	—	(2)	—	—
500	5/8 1/2	40067 40166	—	—	—	U34ART(4) U34ART(4)	(1) (1)	—	—	106H(4) 106H(4)	106H(3) 106H(3)	—	(2) (2)	—	—
600	1/2	40170	—	—	—	U36ART(4)	(1)	—	—	—	115H(3)	—	(3)	—	—
750	5/8 1/2	40073 40172	—	—	—	U39ART(4) U39ART(4)	(1) (1)	—	—	—	125H(5) 125H(5)	—	(3) (3)	—	—
1000	5/8 1/2	40079 40178	—	—	—	S44ART(4) S44ART(4)	(1) (1)	—	—	—	140H(4) 140H(4)	—	(3) (3)	—	—

* Y45 and Y46 accept all Y35 dies ("U" series). For Y45 use PT6515 adapter. For Y46 use PUADP adapter.

** Anderson VC6-3, VC6-FT, VC8C and Burdny Y1000 require no die set.

Tooling Index

Crimping Information for 3M™ Stem Connectors Copper/Aluminum						
CRIMPING TABLE FOR 3M STEM TYPE CONNECTOR						
Conductor Size	3M Connector Number	Recommended Crimping Tools				
		Manufacturer	Mech. Tool	Die (No. Crimps)	Hydraulic	Die (No. Crimps)
2 Solid 1, 2 1/0	SC0002 SC0001 SC0010	Burndy	MD6	BG(4), W243(4)	Y35, Y39, Y45**	U25ART(2), U243(2)
		Kearny	0-51, 0-52	5/8-1 (4)	12, 20, 40, Ton	5/8-1(4)
		T & B	TBM 8	Olive(2)	TBM 15	50(2)*
		Anderson	—	—	VC6	Universal(2)
2/0 3/0 4/0	SC0020 SC0030 SC0040	Burndy	MD6	W669(0) 840(5)*	Y35, Y39, Y45**	U28ART(2)
		Kearny	0-51, 0-52	840(5)*	WH-1, WH-2	840(2)
		T & B	TBM 8	White(4)	TBM 15	66(3)
		Anderson	-	—	VC6	Universal(2)

* Y45 and Y46 accept all Y35 dies (“U” series). For Y45 use PT6515 adapter. For Y46 use PUADP adapter.

** Anderson VC6-3, VC6-FT, VC8C and Burndy Y1000 require no die set.

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