

## Quick Term II

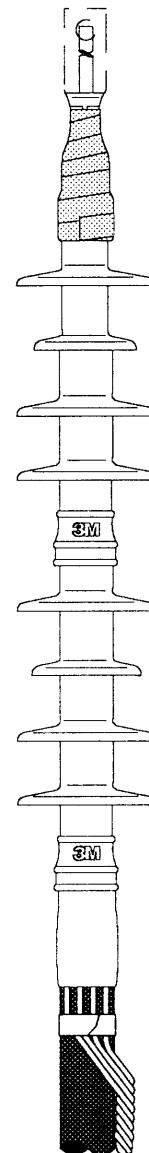
### Silicone Rubber Termination (with High-K Stress Relief)

IEEE Std. No. 48-1990

Class 1 Termination  
35 Class  
200 kV BIL

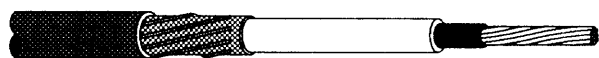
#### Kit Contents

- 1 Hi-K Silicone Rubber Termination
- 2 Scotch™ 70 Silicone Rubber Tape Strips  
(Gray with clear release liners)
- 2 Mastic Seal Strips  
(Black with white release liners, bagged)
- 1 Pack of Silicone Grease  
(Clear 5cc tube with green letters)
- 1 Instruction Sheet



Kit Selection Table

| Kit Number | Primary Insulation O.D. Range | Jacket O.D. Range            | Conductor Size Range (AWG & kcmil) |            |
|------------|-------------------------------|------------------------------|------------------------------------|------------|
|            |                               |                              | 25/28 kV                           | 35 kV      |
| 5646       | .84 – 1.38"<br>(21 – 35 mm)   | 1.19 – 1.72"<br>(30 – 44 mm) | 1/0 – 250                          | 1 – 3/0    |
| 5647       | 1.08 – 1.80"<br>(27 – 46 mm)  | 1.37 – 2.02"<br>(35 – 51 mm) | 250 – 500                          | 4/0 – 300  |
| 5648       | 1.31 – 2.10"<br>(33 – 53 mm)  | 1.62 – 2.55"<br>(41 – 65 mm) | 500 – 1250                         | 350 – 1000 |



Jacketed Concentric Neutral (JCN)

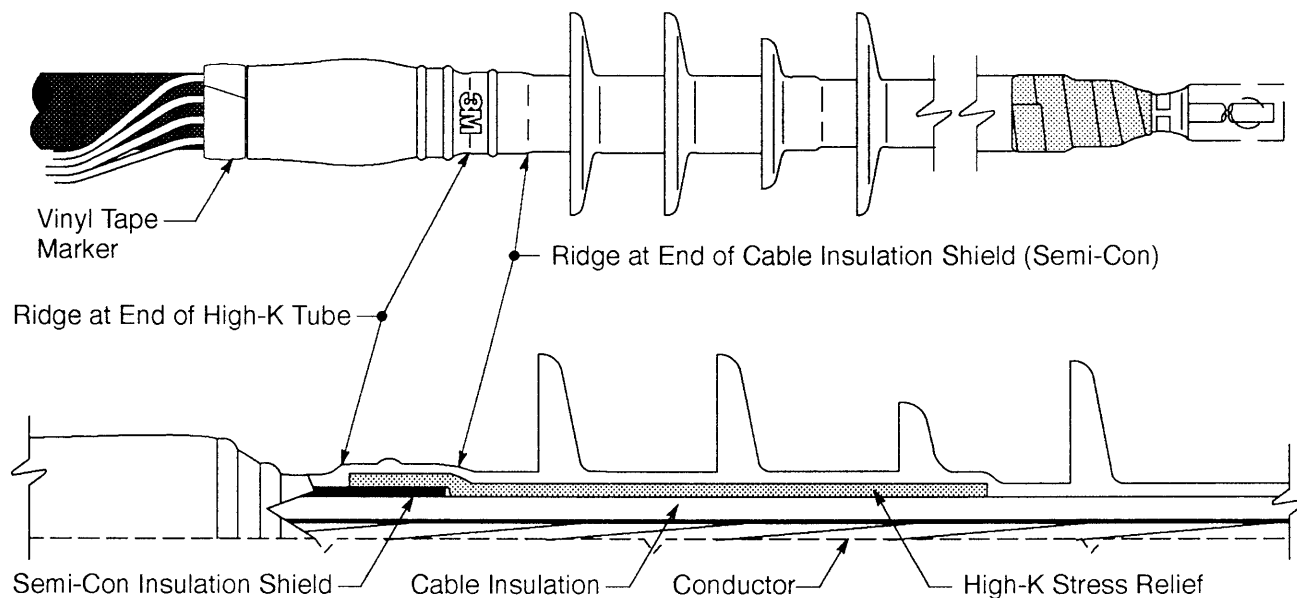
Quick Term II   
Silicone Rubber Terminations  
For  
Jacketed Concentric Neutral Cable (JCN)

5646      5647      5648

**78-8096-4407-9**

|                    |                     |
|--------------------|---------------------|
| NUMBER OF PAGES: 8 | SCALE: Not to scale |
| ISSUE DATE: 3/8/94 | ISSUE: A            |

## Correct Installation of Termination



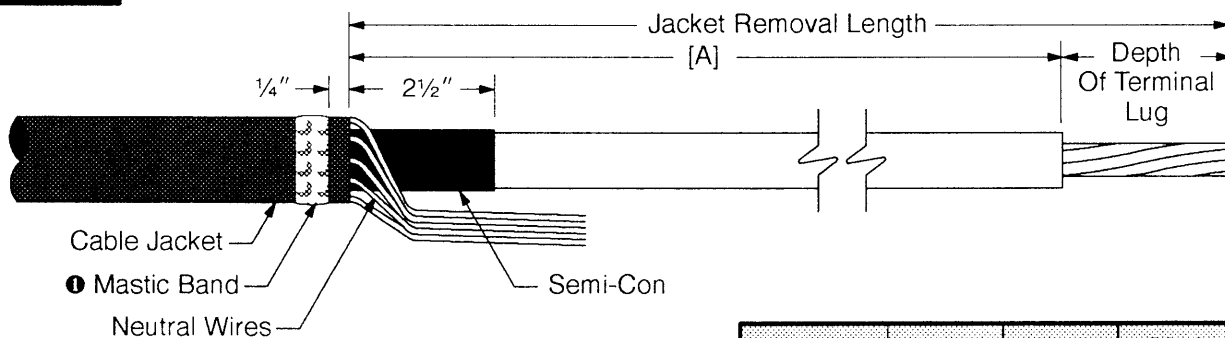
### A. Prepare Cable

1. Check to be sure cable size fits within kit range as shown in Kit Range table (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). **Be sure to allow for depth of terminal lug.**

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

| Barrel Depth ⊕ | 2/0 – 350<br>1/4" | 400 – 650<br>1/2" | 750 – 1000<br>3/4" | 1250 – 2000<br>Field Determined |
|----------------|-------------------|-------------------|--------------------|---------------------------------|
|----------------|-------------------|-------------------|--------------------|---------------------------------|

**Figure 1**



| Dimension [A] | 5646 | 5647 | 5648 |
|---------------|------|------|------|
|               | 16"  | 16"  | 16"  |

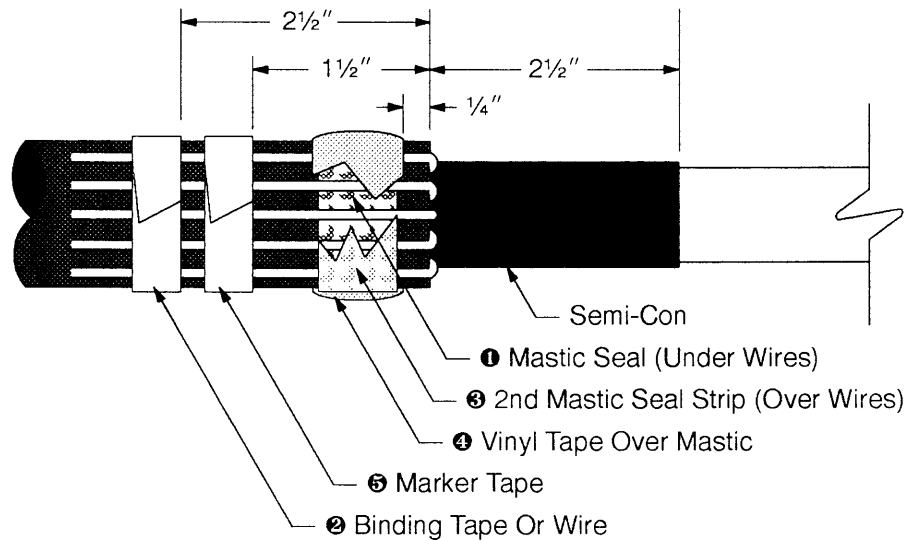
4. Select one of two mastic strips from kit and remove white release liners. Using light tension, wrap a band of mastic around the cable jacket 1/4" (6 mm) from cut edge ❶ (Figure 1). Cut off excess.
5. Bend neutral wires back over applied sealing mastic and secure to cable jacket 2 1/2" (64 mm) below cut edge using vinyl tape or binding wire ❷ (Figure 2).
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 ❸ (Figure 2). Cut off excess.
7. Compress neutral wires into mastic by over-wrapping seal strip with two highly stretched layers electrical grade vinyl tape ❹ (Figure 2).

## Prepare Cable (continued)

**NOTE: Do not extend vinyl tape wrapping more than ¼" (6 mm) beyond mastic strip.**

- Place a marker tape 1½" (38 mm) back from the jacket cut edge ⑤ (Figure 2).

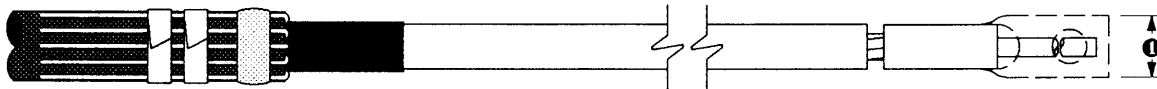
**Figure 2**



## B. Install Lug or Connector

- The termination assemblies are designed to fit over Scotchlok™ and 3M copper and aluminum lugs. If other lugs ① (Figure 3) 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.**

**Figure 3**



**NOTE: Refer to pages 6 and 7 for 3M lug/connector crimping information.**

- Position connector/lug and crimp according to manufacturers directions. Remove excess oxide inhibitor and sharp crimp flashings following crimping.

## C. Clean Cable Insulation and Lug Barrel Using Standard Practice

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

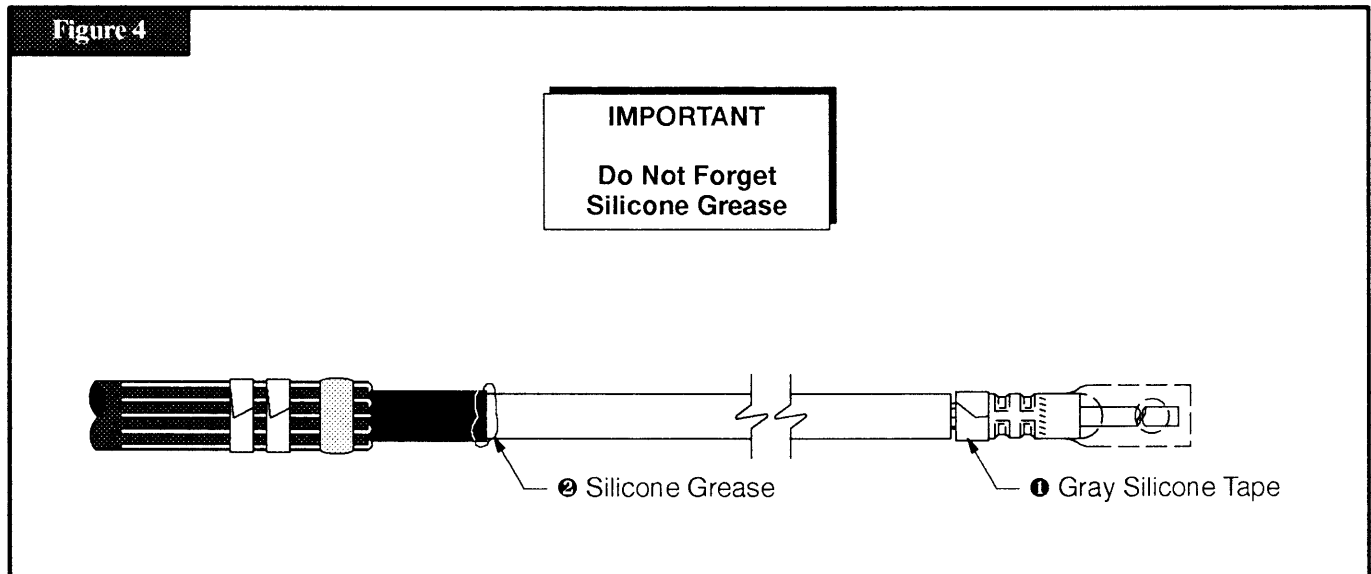
## D. Install Termination

1. **IMPORTANT:** If a 3M designed stem connector is not used. A track resistant moisture seal must be made between termination insulator and lug/connector using gray Scotch™ No. 70 Silicone Rubber Electrical Tape strip (contained in kit). After removing the two clear release liners, wrap a band of silicone tape around the base of the terminal lug ❶ (Figure 4).

**NOTE: (IMPORTANT)**

- a. If barrel diameter is equal to or greater than cable primary insulation, the tape band should not exceed 2 layers.
  - b. If barrel diameter is smaller than the cable primary insulation, use one full tape strip to form the tape band.
2. Cover the edge of the semi-con insulation shield with a liberal coating of Silicone Grease ❷ (Figure 4). On this product the Silicone Grease does not serve as a lubricant. It must be used to fill the step at the semi-con cutoff.

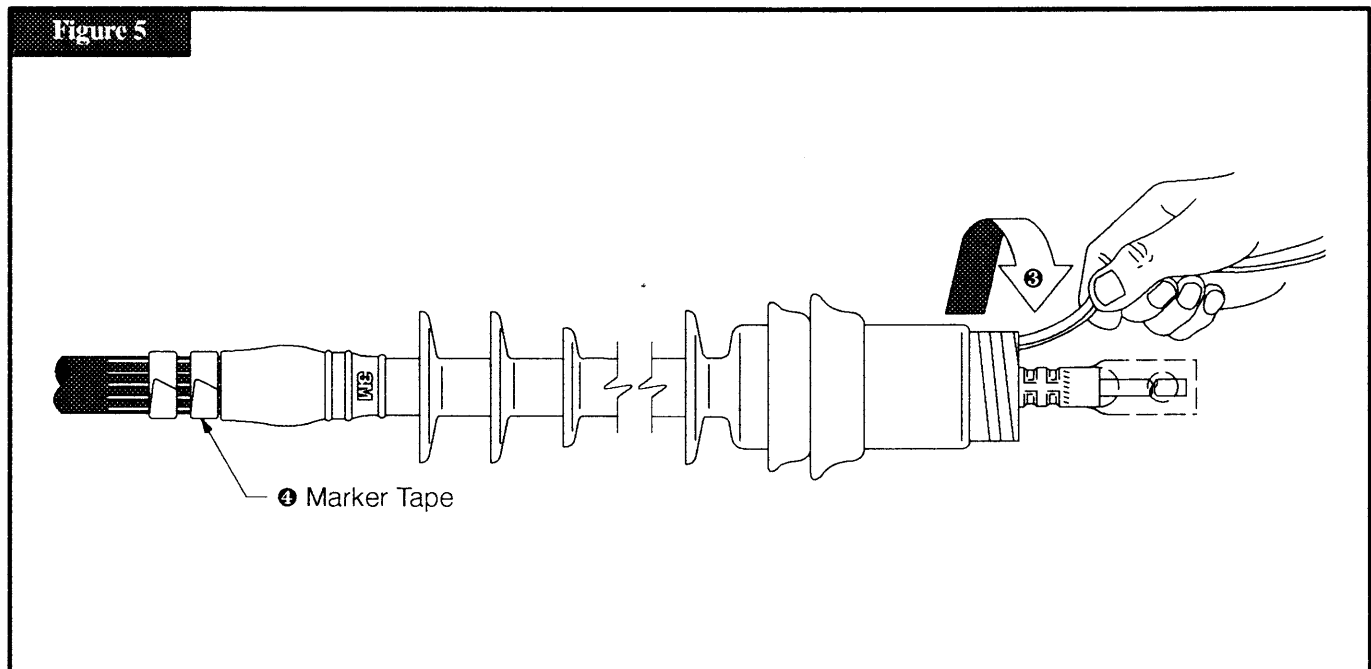
Figure 4



3. Slide the termination body onto the cable and remove core. Pull while unwinding, counter-clockwise, starting with the loose end ❸ (Figure 5). Make sure the termination body (not the core) is butted up to the edge of the marker tape ❹ (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 removing the core material.**

Figure 5

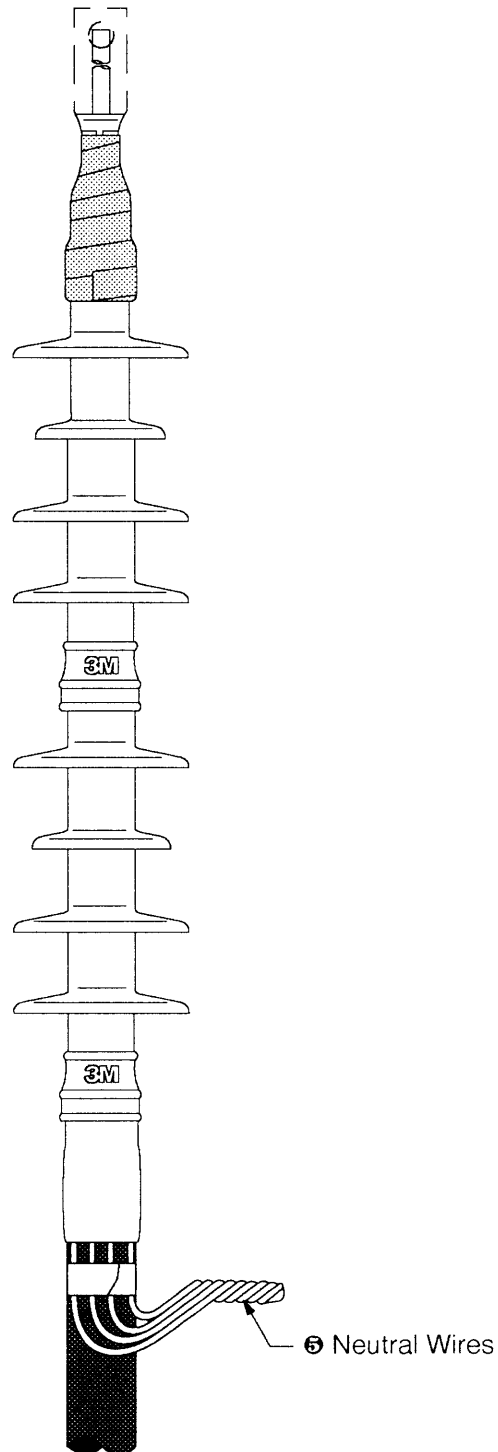


4. With termination installed, complete the lug area moisture seal using the remaining gray Scotch™ No. 70 Silicone Rubber Electrical Tape. Overlap the termination insulator by approximately 1" and extend the tape wrapping over a non-crimped region of the lug/connector barrel.

## Install Termination (continued)

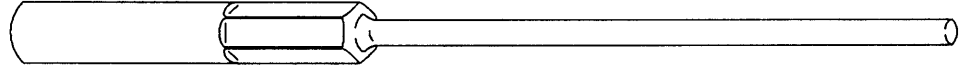
5. Collect concentric neutral wires together ⑤ (*Figure 6*) and connect to system ground according to standard practice.
6. Remove previously installed marker tape ④ (*Figure 5*).

Figure 6



# Tooling Index

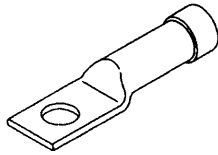
## Crimping Information for 3M Stem Connectors Copper/Aluminum



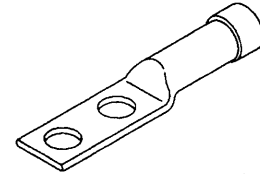
| CRIMPING TABLE FOR 3M STEM TYPE CONNECTOR |                            |                            |            |                  |                 |                    |
|---|----------------------------|----------------------------|------------|------------------|-----------------|--------------------|
| Conductor Size                            | 3M Connector No.           | Recommended Crimping Tools |            |                  |                 |                    |
|   |                            | Manufacturer               | Mech. Tool | Die (No. Crimps) | Hydraulic Tool  | Die (No. Crimps)   |
| #2 Sol.<br>#1, #2<br>1/0                  | SC0002<br>SC0001<br>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                   | —          | —                | VC 6            | Universal(2)       |
| 2/0<br>3/0<br>4/0                         | SC0020<br>SC0030<br>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                   | —          | —                | VC 6            | Universal(2)       |

## Lug and Crimping Information for Scotchlok™ Copper/Aluminum Lugs

40016 thru 40079  
One hole



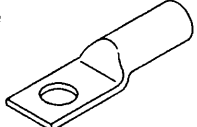


40132 thru 40178  
Two hole



| Cable Size<br>AWG/<br>kcmil | Stud Size<br>(in.) | Scotchlok™ Lug Number | CRIMPING TOOL-DIE SETS (NO. OF CRIMPS) |          |          |                   |         |                            |          |         |         |                            |        |                   |                    |
|-----------------------------|--------------------|-----------------------|--|----------|----------|-------------------|---------|----------------------------|----------|---------|---------|----------------------------|--------|-------------------|--------------------|
|                             |                    |                       | Burndy Corporation                     |          |          |                   |         | Thomas & Betts Corporation |          |         |         | Square D Co. Anderson Div. |        | ITT Blackburn Co. | Kearney Nat'l Div. |
|                             |                    |                       | MD5                                    | MY29     | Y34A     | Y35, 39, 45*, 46* | Y1000** | TBM 5                      | TBM 8    | TBM 12  | TBM 15  | VC6-3**<br>VC6-FT**        | VC8C** | OD58              | TYPE 0             |
| 6                           | 5/16               | 40016                 | W161(1)                                | 6 AWG(1) | A6CAB(1) | U6CABT(1)         | (1)     | Grey(1)                    | Grey(1)  | —       | 29(1)   | (1)                        | —      | BY19(3)           | J(3)               |
| 4                           | 5/16               | 40020                 | W162(3)                                | 4 AWG(1) | A4CAB(1) | U4CABT(1)         | (1)     | Green(2)                   | Green(2) | —       | 37(1)   | (1)                        | —      | BY53(3)           | P(3)               |
| 2                           | 3/8<br>1/2         | 40024                 | W163(3)                                | 2 AWG(1) | A2CAB(1) | U2CABT(1)         | (1)     | Pink(2)                    | Pink(2)  | —       | 42H(2)  | (1)                        | —      | BY23(3)           | 1/2(3)             |
|                             |                    | 40025                 | W163(3)                                | 2 AWG(1) | A2CAB(1) | U2CABT(1)         | (1)     | Pink(2)                    | Pink(2)  | —       | 42H(2)  | (1)                        | —      | BY23(3)           | 1/2(3)             |
| 1                           | 3/8<br>1/2         | 40028                 | W163(3)                                | 1 AWG(1) | A1CAR(1) | U1CART(1)         | (1)     | Gold(2)                    | Gold(2)  | —       | 45(1)   | (1)                        | —      | BY23(3)           | 1/2(3)             |
|                             |                    | 40029                 | W163(3)                                | 1 AWG(1) | A1CAR(1) | U1CART(1)         | (1)     | Gold(2)                    | Gold(2)  | —       | 45(1)   | (1)                        | —      | BY23(3)           | 1/2(3)             |
| 1/0                         | 3/8<br>1/2<br>3/8  | 40032                 | W241(3)                                | 1/0(1)   | A25AR(1) | U25ART(1)         | (1)     | Tan(2)                     | Tan(2)   | —       | 50(1)   | (1)                        | —      | BY25(3)           | 5/8-1(3)           |
|                             |                    | 40033                 | W241(3)                                | 1/0(1)   | A25AR(1) | U25ART(1)         | (1)     | Tan(2)                     | Tan(2)   | —       | 50(1)   | (1)                        | —      | BY25(3)           | 5/8-1(3)           |
|                             |                    | 40132                 | W241(3)                                | 1/0(1)   | A25AR(1) | U25ART(1)         | (1)     | Tan(2)                     | Tan(2)   | —       | 50(1)   | (1)                        | —      | BY25(3)           | 5/8-1(3)           |
| 2/0                         | 1/2<br>1/2         | 40037                 | BG(4)                                  | 2/0(1)   | A26AR(2) | U26ART(2)         | (1)     | Olive(2)                   | Olive(2) | —       | 54H(2)  | (2)                        | —      | BY31C(3)          | 5/8-1(3)           |
|                             |                    | 40137                 | BG(4)                                  | 2/0(1)   | A26AR(2) | U26ART(2)         | (1)     | Olive(2)                   | Olive(2) | —       | 54H(2)  | (2)                        | —      | BY31C(3)          | 5/8-1(3)           |
| 3/0                         | 1/2<br>1/2         | 40041                 | W166(4)                                | 3/0(1)   | A27AR(2) | U27ART(2)         | (1)     | Ruby(2)                    | Ruby(2)  | —       | 60(2)   | (2)                        | —      | —                 | 737(3)             |
|                             |                    | 40141                 | W166(4)                                | 3/0(1)   | A27AR(2) | U27ART(2)         | (1)     | Ruby(2)                    | Ruby(2)  | —       | 60(2)   | (2)                        | —      | —                 | 737(3)             |
| 4/0                         | 1/2<br>5/8<br>1/2  | 40045                 | W660(4)                                | 4/0(2)   | A28AR(2) | U28ART(2)         | (1)     | —                          | White(4) | —       | 66(4)   | (2)                        | —      | BY35C(4)          | 840(4)             |
|                             |                    | 40046                 | W660(4)                                | 4/0(2)   | A28AR(2) | U28ART(2)         | (1)     | —                          | White(4) | —       | 66(4)   | (2)                        | —      | BY35C(4)          | 840(4)             |
|                             |                    | 40145                 | W660(4)                                | 4/0(2)   | A28AR(2) | U28ART(2)         | (1)     | —                          | White(4) | —       | 66(4)   | (2)                        | —      | BY35C(4)          | 840(4)             |
| 250                         | 1/2<br>5/8<br>1/2  | 40049                 | W249(3)                                | —        | A29AR(2) | U29ART(2)         | (1)     | —                          | —        | 71H(4)  | 71H(2)  | (3)                        | —      | —                 | —                  |
|                             |                    | 40050                 | W249(3)                                | —        | A29AR(2) | U29ART(2)         | (1)     | —                          | —        | 71H(4)  | 71H(2)  | (3)                        | —      | —                 | —                  |
|                             |                    | 40149                 | W249(3)                                | —        | A29AR(2) | U29ART(2)         | (1)     | —                          | —        | 71H(4)  | 71H(2)  | (3)                        | —      | —                 | —                  |
| 300                         | 1/2<br>1/2         | 40053                 | —                                      | —        | A30AR(2) | U30ART(2)         | (1)     | —                          | —        | 76H(4)  | 76(2)   | (3)                        | —      | —                 | —                  |
|                             |                    | 40153                 | —                                      | —        | A30AR(2) | U30ART(2)         | (1)     | —                          | —        | 76H(4)  | 76(2)   | (3)                        | —      | —                 | —                  |
| 350                         | 1/2<br>5/8<br>1/2  | 40056                 | —                                      | —        | —        | U31ART(2)         | (1)     | —                          | —        | 87H(4)  | 87H(3)  | (3)                        | —      | —                 | —                  |
|                             |                    | 40057                 | —                                      | —        | —        | U31ART(2)         | (1)     | —                          | —        | 87H(4)  | 87H(3)  | (3)                        | —      | —                 | —                  |
|                             |                    | 40156                 | —                                      | —        | —        | U31ART(2)         | (1)     | —                          | —        | 87H(4)  | 87H(3)  | (3)                        | —      | —                 | —                  |
| 400                         | 1/2                | 40160                 | —                                      | —        | —        | U32ART(4)         | (1)     | —                          | —        | 94H(4)  | 94H(4)  | —                          | (2)    | —                 |                    |
| 500                         | 5/8<br>1/2         | 40067                 | —                                      | —        | —        | U34ART(4)         | (1)     | —                          | —        | 106H(4) | 106H(3) | —                          | (2)    | —                 | —                  |
|                             |                    | 40166                 | —                                      | —        | —        | U34ART(4)         | (1)     | —                          | —        | 106H(4) | 106H(3) | —                          | (2)    | —                 | —                  |
| 600                         | 1/2                | 40170                 | —                                      | —        | —        | U36ART(4)         | (1)     | —                          | —        | —       | 115H(3) | —                          | (3)    | —                 |                    |
| 750                         | 5/8<br>1/2         | 40073                 | —                                      | —        | —        | U39ART(4)         | (1)     | —                          | —        | —       | 125H(5) | —                          | (3)    | —                 | —                  |
|                             |                    | 40172                 | —                                      | —        | —        | U39ART(4)         | (1)     | —                          | —        | —       | 125H(5) | —                          | (3)    | —                 | —                  |
| 1000                        | 5/8<br>1/2         | 40079                 | —                                      | —        | —        | S44ART(4)         | (1)     | —                          | —        | —       | 140H(4) | —                          | (3)    | —                 | —                  |
|                             |                    | 40178                 | —                                      | —        | —        | S44ART(4)         | (1)     | —                          | —        | —       | 140H(4) | —                          | (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 Burndy Y1000 require no die set.

# Tooling Index

| Lug and Crimping Information for Scotchlok™ Copper Lugs                           |                    |                                    |   |                            |                    |                                  |   |                                     |                            |  |
|---|--------------------|------------------------------------|---|----------------------------|--------------------|----------------------------------|---|-------------------------------------|----------------------------|--|
| 30014 thru 30045<br>One hole  |                    |                                    | 31036 thru 31068<br>One hole —<br>long barrel                                     |                            |                    |                                  | 31145 thru 31178<br>Two hole  |                                     |                            |  |
|  |                    |                                    |  |                            |                    |                                  |  |                                     |                            |  |
| Cable Size<br>AWG/<br>kcmil   | Stud Size<br>(in.) | Scotchlok™<br>Copper Lug<br>Number | CRIMPING TOOL-DIE SETS (NO. OF CRIMPS)  |                            |                    |                                  |   |                                     |                            |  |
|   |                    |                                    | Bundy Corporation   |                            |                    |                                  | Thomas & Betts Corporation  |                                     |                            | Square D Co.<br>Anderson Div.                |
|   |                    |                                    | MD6   | MY28                       | Y34A               | Y35, Y39, Y45*,<br>Y46*          | TBM 5   | TBM 8                               | TBM 15                     | YCB-3,<br>VC6-FT™                            |
| 6   | 10<br>1/4<br>5/16  | 30014<br>30015<br>30016            | —   | 6 AWG(1)                   | —                  | U5CRT(1)                         | Blue(1)   | Blue(1)                             | —                          | Universal(1)                                 |
| 4   | 10<br>1/4<br>3/8   | 30018<br>30019<br>30021            | W161(1)   | 4 AWG(1)                   | A4CR(1)            | U4CRT(1)                         | Grey(1)   | Grey(1)                             | —                          | Universal(1)                                 |
| 2   | 1/4<br>5/16<br>3/8 | 30022<br>30023<br>30024            | W162(2)   | 2 AWG(1)                   | A2CR(1)            | U2CRT(2)                         | Brown(1)  | Brown(1)                            | 33(1)                      | Universal(2)                                 |
| 1   | 5/16<br>3/8        | 30027<br>30028                     | —   | 1 AWG(1)                   | A1CR(1)            | U1CRT(2)                         | Green(1)  | Green(1)                            | 37(1)                      | Universal(2)                                 |
| 1/0   | 5/16<br>3/8        | 30031<br>30032                     | W163(2)   | 1/0(1)                     | A25R(1)            | U25RT(1)                         | Pink(2)   | Pink(2)                             | 42H(2)                     | Universal(1)                                 |
| 2/0   | 3/8<br>3/8         | 30036<br>31036                     | W241(2)<br>W241(3)  | 2/0(1)<br>2/0(2)           | A26R(1)<br>A26R(2) | U26RT(2)<br>U26RT(3)             | Black(2)<br>Black(3)  | Black(2)<br>Black(3)                | 45(1)<br>45(2)             | Universal(1)<br>Universal(2)                 |
| 3/0   | 1/2<br>1/2         | 30041<br>31041                     | W243(2)<br>W243(3)  | 3/0(1)<br>3/0(2)           | A27R(1)<br>A27R(2) | U27RT(2)<br>U27RT(3)             | Orange(2)<br>Orange(3)  | Orange(2)<br>Orange(3)              | 50(1)<br>50(2)             | Universal(2)<br>Universal(3)                 |
| 4/0   | 1/2<br>1/2<br>1/2  | 30045<br>31045<br>31145            | BG(3)<br>BG(4)<br>BG(4)   | 4/0(1)<br>4/0(2)<br>4/0(2) | A28R(2)            | U28RT(2)<br>U28RT(3)<br>U28RT(3) | Purple(2)<br>Purple(3)<br>Purple(3)   | Purple(2)<br>Purple(3)<br>Purple(3) | 54H(2)<br>54H(3)<br>54H(3) | Universal(2)<br>Universal(3)<br>Universal(3) |
| 250   | 1/2<br>1/2         | 31049<br>31149                     | W166(4)   | 250(2)                     | A29R(2)            | U29RT(3)                         | Yellow(2)   | Yellow(2)                           | 62(2)                      | Universal(2)                                 |
| 300   | 1/2<br>1/2         | 31053<br>31153                     | —   | —                          | A30R(2)            | U30RT(3)                         | —   | White(3)                            | 66(3)                      | Universal(3)                                 |
| 350   | 1/2<br>1/2         | 31056<br>31156                     | —   | —                          | A31R(2)            | U31RT(3)                         | —   | Red(4)                              | 71H(4)                     | —  |
| 400   | 1/2<br>1/2         | 31060<br>31160                     | —   | —                          | A32R(2)            | U32RT(3)                         | —   | Blue(4)                             | 76H(4)                     | —  |
| 500   | 1/2<br>5/8<br>1/2  | 31066<br>31067<br>31166            | —   | —                          | A34R(2)            | U34RT(3)                         | —   | Brown(4)                            | 87H(4)                     | —  |
| 600   | 1/2<br>1/2         | 31068<br>31168                     | —   | —                          | —                  | U36RT(3)                         | —   | Green(4)                            | 94H(4)                     | —  |
| 750   | 1/2                | 31172                              | —   | —                          | —                  | Y39, Y45, Y46:<br>U39RT(5)       | —   | —                                   | 106H(4)                    | —  |
| 1000  | 1/2                | 31178                              | —   | —                          | —                  | Y45: S44RT(6)<br>Y46: P44RT(6)   | —   | —                                   | 125H(4)                    | —  |

## NOTES:

We value your experience and opinions. Please enter any ideas or recommendations, associated with this product and submit to your local 3M representative

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