3M™ Motor Lead Pigtail Splice
5321, 5322, 5323 & 5324
for 5/8 kV Non-Shielded and Shielded Cables
(Ribbon or Wire and UniShield® Cables)

Instructions

Cable Size Range:
Feeder: #8 AWG – 500 kcmil
Motor Lead: #10 AWG – 500 kcmil
Copper Conductors

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

3 Lug Cover
3 Cold Shrink Tube
9 Mastic Sealing Strip(s)*
3 Roll Scotch® Stress Control Tape 2220
3 Bag Solvent Cleaning Cloths
3 Tube Silicone Grease
3 Rolls Scotch® Linerless Rubber Splicing Tape 130C
3 Instruction Sheets

Requires Vinyl Tape that is not in kit

*Quantity varies with kit number

Kit Selection Table

<table>
<thead>
<tr>
<th>Kit Number</th>
<th>Cable Size Range (AWG/kcmil)</th>
<th>Cable Insulation O.D. Range</th>
<th>Max Bolt Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feeder</td>
<td>Motor Lead</td>
<td></td>
</tr>
<tr>
<td>5321</td>
<td>8 – 4</td>
<td>10 – 4</td>
<td>0.30 – 0.51 in.</td>
</tr>
<tr>
<td>5322</td>
<td>2 – 1/0</td>
<td>4 – 1/0</td>
<td>0.43 – 0.65 in.</td>
</tr>
<tr>
<td>5323</td>
<td>1/0 – 250</td>
<td>2 – 250</td>
<td>0.53 – 0.88 in.</td>
</tr>
<tr>
<td>5324</td>
<td>250 – 500</td>
<td>4/0 – 500</td>
<td>0.75 – 1.12 in.</td>
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</tbody>
</table>

Table 1
Instructions for 5/8 kV Pigtail Non-Shielded Feeder Cables

1.0 Prepare Cable According to Standard Procedures

*NOTE: The Scotch® Stress Control Tape 2220 will not be used for non-shielded cable.*

1.1 Check to be sure cables fit within cable kit range as shown in *Table 1*.

1.2 Remove cable insulation for length recommended by terminal lug manufacturer; if no information is available, remove for depth of lug barrel.

2.0 Install Lugs

2.1 Install and crimp lugs per manufacturer’s direction. See back page if 3M™ Scotchlok™ Lugs are used.

2.2 Clean insulation for approximately 6” using solvent saturated cloths provided in kit.

2.3 FOR 8kV ONLY. Fill lug/insulation gaps with Scotch® Linerless Rubber Splicing Tape 130C (*Figure 1*).

![Figure 1](image1)

2.4 Bolt lugs together. See *Table 1* for maximum bolt length. See *Figure 2* for proper bolt/lug arrangement.

![Figure 2](image2)
2.5 FOR 8 kV ONLY. Cover the lugs and bolt with four half-lapped layers of Scotch® Linerless Rubber Splicing Tape 130C (Figure 3).

NOTE: FOR 8 kV ONLY: Lug cover will be printed with 5 kV rating, but mastic layer in Step B–5 (Figure 3) qualifies the part as 8 kV.

3.0 Install Lug Cover

3.1 Install Lug Cover.

NOTE: The lug cover must extend over the cable insulation by a minimum of 1”. For a one hole lug it will be greater than 1” (Figure 4).

3.2 Remove liner from Mastic Sealant Strips and apply around and between cables and at a position as close as possible to the end of the Lug Cover (Figure 5).

3.3 Overwrap Mastic Sealant and the end of the Lug Cover with one or two wraps of vinyl tape (Figure 5).
4.0 Install Cold Shrink Insulator

4.1 Install Cold Shrink by sliding it over the Lug Cover with the loose end tab at terminal lug end. Align the end of the Cold Shrink Tube approximately 2 beyond the Mastic Seal and Vinyl Seal Tape. Remove core by unwinding counter-clockwise (Figure 6).

*TIP: An occasional tug will aid in the removal of the core.*

5.0 Prepare Cable According to Standard Procedures

5.1 Check to be sure cables sizes fit within cable kit range as shown in *Table 1*.

**For Non-Shielded Motor Lead Cable**

5.2 Remove cable insulation for length recommended by terminal lug manufacturer; if no information is available, remove for depth of lug barrel.

5.3 Clean insulation for approximately 6" using solvent saturated cloth provided in kit.

**For Shielded Feeder Cable**

For Ribbon Shielded Cable see *Figures 7a, 8a and 9a.*

For Wire Shielded Cable see *Figures 7b, 8b and 9b.*

For UniShield® Cable see *Figures 7c, 8c and 9c.*

5.4 Prepare cable by removing jacket and shielding per dimensions as shown in *Figures 7 and 8*, depending on type of cable shielding.

*NOTE: If practice calls for grounding shield, do not cut shield wires. See grounding.*

5.5 Remove cable insulation for length recommended by terminal lug manufacturer; if no information is available, remove for depth of lug barrel. See *Figure 7a, 7b and 7c*, depending on type of cable shielding.
5.6 Clean cable insulation by using solvent saturated cloths. Do not allow solvent to touch cable semi-con. If abrasive must be used to remove imbedded semi-con from cable insulation, use a non-conductive, 120 grit aluminum oxide, such as in the Scotch® Cable Prep Kit CC–2 or 3M™ Abrasive Roll A–3.

6.0 Install Stress Relief

6.1 Apply two half-lapped layers of Scotch® Stress Control Tape 2220 for 1/4” onto the cable semi-con (1/2” onto UniShield® jacket) and extend two inches onto cable insulation (wrap tape silver side out). Figures 8a, 8b or 8c, depending on type of cable shielding.

**NOTE: Grounding**

If practice calls for an external ground, a 3M Ground Strap Assembly Kit (GS–1, GS–2 and GS–3) is available from your local distributor for use on ribbon shield cable. Follow procedure for these kits for grounding. For UniShield® and wire shield cable, a ground strap assembly kit is not necessary. Simply fold the wires back over jacket to connect to the system ground.
6.2 Wrap two half-lapped layers of vinyl tape over the Scotch® Stress Control Tape 2220 and one inch onto cable jacket. (1/2” beyond cut off, bent back shield wires for wire and UniShield® cables. Figures 9a, 9b or 9c, depending on type of cable shielding).
**7.0 Install Lugs**

7.1 Install and crimp lugs per manufacturer’s direction; see back page if 3M™ Scotchlok™ Lugs are used.

7.2 FOR 8kV ONLY. Fill lug/insulation gaps with Scotch® Linerless Rubber Splicing Tape 130C (*Figure 10*).

7.3 Bolt lugs together. See Table 1 on cover for maximum bolt length. See *Figure 11* for proper bolt/lug arrangement.
7.4 FOR 8 kV ONLY. Cover the lugs and bolt with four half-lapped layers of Scotch® Linerless Rubber Splicing Tape 130C (Figure 12).

![Scotch® Linerless Rubber Splicing Tape 130C](image)

Figure 12

8.0 Installation

8.1 Install Lug Cover (Figure 13).

*NOTE: The lug cover must extend over the cable insulation by a minimum of 1”. For a one hole lug, it will be greater than 1”.*

8.2 Remove liner from mastic sealing strips and apply around and between the cables at a position as close as possible to the end of the lug cover (Figure 14).

8.3 Overwrap mastic sealant and the end of the Lug Cover with one or two wraps of vinyl tape (Figure 14).

![Lug Cover](image)

Figure 13

![Lug Cover, Mastic Strips, Scotch® Super 33+™ Vinyl Electrical Tape](image)

Figure 14
9.0 Install Cold Shrink Insulator

9.1 Install Cold Shrink Insulator by sliding it over the Lug Cover with the loose core end tab at terminal end. Align the end of the Cold Shrink Insulator so it covers the vinyl tape on the feeder cable. Remove core by unwinding counter-clockwise (Figure 15).

**TIP:** An occasional tug will aid in the removal of the core.

**NOTE:** When starting to remove core, observe to make sure end of Cold Shrink remains lined up over the vinyl tape (Figure 15).
### Copper Lugs

<table>
<thead>
<tr>
<th>Cable Size</th>
<th>Stud Size</th>
<th>Burndy Corporation</th>
<th>Thomas &amp; Betts Corporation</th>
<th>Square D Co., Anderson Div.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MD6</td>
<td>MY29</td>
<td>Y34A</td>
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<tr>
<td>1</td>
<td>5/16</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>2/0</td>
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<td>2</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>4/0</td>
<td>1/2</td>
<td>2</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

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

**Anderson VC6–3 and VC6–FT require no die set.**
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