3MTM Motor Lead Splicing Kits 5300 Series

For 1000 Volts or Less Cables or 5/8 kV Shielded and Non-Shielded Cables

| Data Sheet | February 201 | | |
|-------------|--|--|--|
| Description | 3M [™] Motor Lead Splicing Kits 5300 Series are a series of kits designed for splicing motor lead cables to incoming feeder cables. These kits can accommodate the following splice configurations: | | |
| | Pigtails (stub) connections, 1000 Volts and less. Inline connections, 1000 Volts and less. Pigtail (stub) connections, 5/8 kV shielded and non-shielded feeders. Inline connections, 5/8 kV shielded and non-shielded feeders. In addition, splice kits 5300 – 5319 are CSA certified for motor lead applications up to 600 Volts. | | |
| | The splice's main component, the lug or splice cover, is made from EPDM rubber either as a slip-on or as a cold shrink insulator. A mastic is used for the moisture seal on the pigtail kits. The 5/8 kV kits, designed for shielded feeder cables, utilize a high dielectric constant stress control material or the feeder cable's electrical stress control. These kits are designed to be used with copper compression, one or two hole lugs. After being crimped onto the cables, the lugs are bolted together in an inline or pigtail configuration, then insulated and sealed with the 3M motor lead splicing kits. Each kit contains all the necessary materials (except lugs) needed to make three splices. The lugs must be purchased separately. 3M Scotchlok [™] Copper Lugs 30,000 Series, or other UL listed copper lugs, can be used. | | |
| Features | Fast and simple installation No torches or heat source required No special tools required to install splice Thick walls to resist puncture and abrasion damage High Dielectric constant stress control included with 5/8 kV kits for shielded feeder cables, for minimizing size and electrical stress Easy re-entry. | | |

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Kit Contents

Each kit contains sufficient quantities of the following materials to make three splices (lugs and vinyl tape are not included), see chart below.

| | | | Kit Number | | | | |
|--------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Kit Component | 5300 Thru 5301 | 5302 Thru 5394 | 5311 Thru 5314 | 5316 Thru 5319 | 5321 Thru 5324 | 5331 Thru 5333 |
| | Lug covers (pigtail) | | Х | | Х | Х | |
| | Locking Pins | | Х | | Х | | |
| | Splice Cover (inline) | | | Х | | | |
| | PST Cold Shrink Tubes | | | | | Х | Х |
| | Adapter Sleeves | | | Х | | | Х |
| | Scotch® Electrical Stress Control Tape 2220 | | | | | Х | Х |
| | Scotch® Linerless Rubber Tape 130C | | | | Х | Х | Х |
| | Mastic Sealing Strips | Х | Х | | Х | Х | |
| | Solvent Cleaning cloths | | | | Х | Х | Х |
| | Silicone Grease Lubricant | Х | Х | Х | Х | Х | Х |
| | Instruction Sheet | Х | Х | Х | Х | Х | Х |
| Applications | 3M[™] Motor Lead Splicing Kits 5300 Series can be used on cables with a rated operating temperature of 90°C and an emergency overload rating of 130°C. Splicing kits 5300 through 5314 are rated for 1000 Volts, and kits 5316 through 5334 are rated for 5/8 kV. To splice (insulate and seal) motor lead connections for: 1000 Volts and less cables sized 16 AWG to 500 kcmil 5/8 kV shielded and non-shielded feeder cables sized 8 AWG to 500 kcmil Polyethylene cable Cross linked polyethylene cable (XLP) Ethylene propylene rubber cable (EPR) Copper conductors | | | | | | |
| Typical Drepartica | Physical Properties (Test Method) | | Typical Va | | | | |
| Typical Properties | (ASTM D412 unless otherwise noted) | US units (metric) | | | | | |
| | Color | E | Black | | | | |
| | 300 Modulus | | 480 psi (3,3 MPa) | | | | |

*All values are averages and are not intended for specification purposes.

1400 psi (9,6 MPa)

150 ppi (26,3 KN/m)

Typical Value

US units (metric)

365 V/mil (14,3 MV/mil)

282 V/mil (11,1 MV/m)

750%

Ultimate Tensile Strength

Electrical Properties (Test Method)

7 days in H²O, 90°C (194°F)

Ultimate Elongation Die C Tear (ASTM D624C)

(ASTM D149)

Original

Dielectric Strength

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| Splice Selection Table | Туре | Kit Number | Voltage Rating | Range Feeder Cable (AWG & kcmil) | Range Motor Lead (AWG & kcmil) | Max. bolt Length (inches) |
|---------------------------|---|---|--|--|--|-------------------------------------|
| | Pigtail (1 hole lugs) | 5300 5301 5302 5303 5304 600 V | 1000 V 1000 V 1000 V 1000 V 1000 V | 14 - 10 10 - 4 2 - 1/0 1/0 - 250 250 - 500 | 16 - 12 12 - 4 4 - 1/0 2 - 250 4/0 - 500 | 3/8 1/2 3/4 1 1/4 1 1/2 |
| | Inline | 5311 5312 5313 5314 600 V | 1000 V 1000 V 1000 V 1000 V | 10 - 4 2 - 1/0 1/0 - 250 250 - 500 | 12 - 4 4 - 1/0 2 - 250 4/0 - 500 | 1/2 3./4 1 1 1/4 |
| | Pigtail (2 hole lugs) | 5316 5317 5318 5319 600 V | 1000 V 1000 V 1000 V 1000 V | 8 - 4 2 - 1/0 1/0 - 250 250 - 500 | 10 - 4 4 - 1/0 2 - 250 4/0 - 500 | 1/2 3/4 1 1/4 1 1/2 |
| | Pigtail (Non- Shielded) | 5316 5317 5318 5319 | 5/8 kV 5/8 kV 5/8 kV 5/8 kV | 8 - 4 2 - 1/0 1/0 - 250 250 - 500 | 10 - 4 4 - 1/0 2 - 250 4/0 - 500 | 1/2 3/4 1 1/4 1 1/2 |
| | Pigtail (Shielded) | 5321 5322 5323 5324 | 5/8 kV 5/8 kV 5/8 kV 5/8 kV | 8 - 4 2 - 1/0 1/0 - 250 250 - 500 | 10 - 4 4 - 1/0 2 - 250 4/0 - 500 | 1/2 3/4 1 1/4 1 1/2 |
| | Inline (Shielded or Non-Shielded) | 5331 5332 5333 5334 | 5/8 kV 5/8 kV 5/8 kV 5/8 kV | 8 - 4 2 - 1/0 1/0 - 250 250 - 500 | 10 - 4 4 - 1/0 2 - 250 4/0 - 500 | 3/4 1 1 1/4 1 1/2 |

Typical Dimensions



1000 V Pigtail (1 hole lug)

| Kit Number | L Inches (mm) |
|------------|---------------|
| 5300 | 2.1 (53) |
| 5301 | 3.4 (86) |
| 5302 | 4.2 (107) |
| 5303 | 5.3 (135) |
| 5304 | 6.7 (170) |



1000 V Inline*

| Kit Number | L Inches (mm) |
|------------|---------------------|
| 5311 | 4 -5 (102 -127) |
| 5312 | 8 -9 (203 – 229) |
| 5313 | 9 – 10 (229 – 254) |
| 5314 | 12 – 13 (269 – 330) |



5/8 kV Pigtail (non-shielded) & 1000V Pigtail (2 hole lug)

| Kit Number | L Inches (mm) |
|------------|---------------|
| 5316 | 8.0 (203) |
| 5317 | 9.5 (241) |
| 5318 | 11.0 (1279) |
| 5319 | 13.0 (330) |

For inline splice kits: The longitudinal space required for assembly will be approximately 2L, to allow space for the splice while the connection is being made.

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Typical Dimensions,

Kit Number

5321

5322

5323

5324

continued



5/8 kV Pigtail (shielded)

L Inches (mm)

78 (178 - 203)

8-9 (203-229)

9 - 10 (229 - 254)

10.5 - 11.5 (267 - 292)



5/8 kV Inline (shielded or non-shielded)

| Kit Number | L Inches (mm) |
|------------|---------------------|
| 5331 | 10 – 11 (254 – 279) |
| 5332 | 12 – 13 (269 – 330) |
| 5333 | 15 - 16 (381 – 406) |
| 5334 | 17 – 18 (432 – 457) |

For inline splice kits: The longitudinal space required for assembly will be approximately 2L, to allow space for the splice while the connection is being made.

| Maintenance | Components with this kit are stable under normal storage conditions. Normal stock rotation practices are recommended. The mastic and cold shrink insulator are not impaired by freezing or heated storage up to the flow temperature of the mastic. 3M cold shrink removable core material is polypropylene and recyclable with other $\stackrel{(a)}{=}$ waste. |
|---|---|
| Shelf Life & Storage | As provided in the expanded state, the 3M [™] Motor Lead Splicing Kits 5300 Series have an on-shelf life of 3 years from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity). |
| Availability | Please contact your local distributor; available from 3M.com/electrical [Where to Buy] or call 1-800-245-3573. |
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Electrical Markets Division 6801 River Place Blvd. Austin, TX 78726-9000 800.245.3573 FAX: 800.245.0329 www.3M.com/electrical

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