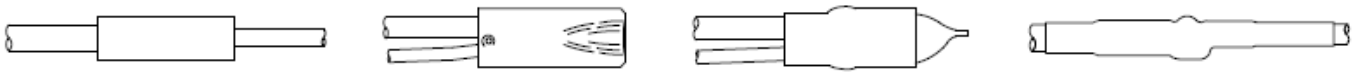
3M™ Motor Lead Splicing Kits 5300 Series

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



Data Sheet **February 2017**

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 Component	Kit Number					
	5300 Thru 5301	5302 Thru 5394	5311 Thru 5314	5316 Thru 5319	5321 Thru 5324	5331 Thru 5333
Lug covers (pigtail)	X	X		X	X	
Locking Pins		X		X		
Splice Cover (inline)			X			
PST Cold Shrink Tubes					X	X
Adapter Sleeves			X			X
Scotch® Electrical Stress Control Tape 2220					X	X
Scotch® Linerless Rubber Tape 130C				X	X	X
Mastic Sealing Strips	X	X		X	X	
Solvent Cleaning cloths				X	X	X
Silicone Grease Lubricant	X	X	X	X	X	X
Instruction Sheet	X	X	X	X	X	X

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 Properties

Physical Properties (Test Method) (ASTM D412 unless otherwise noted)	**Typical Value** US units (metric)
Color	Black
300 Modulus	480 psi (3,3 MPa)
Ultimate Tensile Strength	1400 psi (9,6 MPa)
Ultimate Elongation	750%
Die C Tear (ASTM D624C)	150 ppi (26,3 KN/m)

Electrical Properties (Test Method) (ASTM D149)	**Typical Value** US units (metric)
Dielectric Strength	
Original	365 V/mil (14,3 MV/mil)
7 days in H^2O, 90°C (194°F)	282 V/mil (11,1 MV/m)

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

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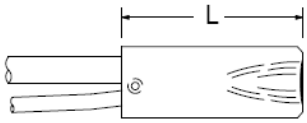
Splice Selection Table

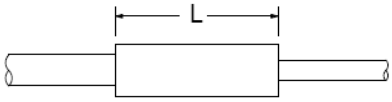
Type	Kit Number	Voltage Rating	Range Feeder Cable (AWG & kcmil)	Range Motor Lead (AWG & kcmil)	Max. bolt Length (inches)
Pigtail (1 hole lugs)	5300	1000 V	14 – 10	16 – 12	3/8
	5301	1000 V	10 – 4	12 – 4	1/2
	5302	1000 V	2 – 1/0	4 – 1/0	3/4
	5303	1000 V	1/0 – 250	2 – 250	1 1/4
	5304	1000 V	250 – 500	4/0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

Typical Dimensions



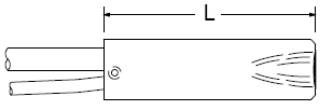
1000 V Pigtail (1 hole lug)

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.