

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series



Data Sheet

June 2012

## Description

3M™ Scotchlok™ Copper Compression Lugs are one-piece, seamless copper and are designed to cover a wide range of conductor sizes. They are available in one-hole, standard-barrel and one-hole and two-hole long-barrel versions:

- 30000 Series are one-hole, standard-barrel length lugs and are designed to cover conductor sizes from 6 AWG through 4/0 AWG.
- The 31000 Series consists of:
  - one-hole, long-barrel length lugs designed to cover conductor sizes from 2/0 AWG through 600 kcmil (MCM) and,
  - two-hole, long-barrel length lugs designed to cover conductor sizes from 2/0 AWG through 1000 kcmil (MCM)

They are designed to terminate copper conductors. Each lug is electro-tin plated to resist electrolytic corrosion. The lugs are installed using standard industry tooling. Chamfered ends ensure simplicity and ease of conductor insertion.

## Agency Approvals and Self Certifications

UL Listed, UL Standard 486A-486B, File No. E23438

CSA Certified, File No. 015503

## Features

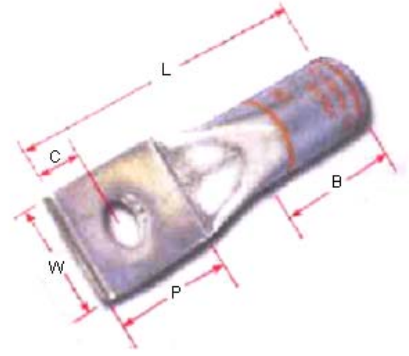
- Simple installation using readily available tools
- Manufactured using tin-plated copper
- Color coded printing for easy lug identification

## Applications

- One-Hole, Standard-Barrel: To terminate copper conductors from 6 AWG through 4/0 AWG
- One-Hole, Long-Barrel: To terminate copper conductors from 2/0 AWG through 600 kcmil (MCM)
- Two-Hole, Long-Barrel: To terminate copper conductors from 2/0 AWG through 1000 kcmil (MCM)
- For low and medium voltage up to 35 kV
- For indoor and outdoor use

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

## One-Hole, Standard-Barrel Lug Dimensions and Selection Guide [Dimensions in Inches and (Millimeters)]

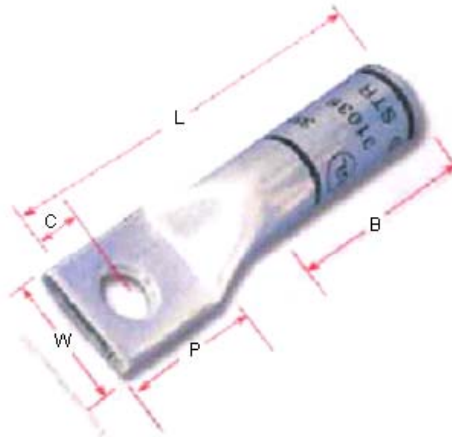


**NOTE: All listed lugs in this table are UL Listed and CSA Certified**

3M™ Scotchlok™ Lug Number	Lug Size AWG	Stud Size	Color Code	I.D., +/- .010"	O.D., +/- .010"	L, Length, +/- .10"	B, Barrel Length, +/- .060"	P, Pad Length, +/- .060"	W, Pad Width, +/- .060"	C, Center of Hole-to-End of Pad, +/- .030"
30014	6 AWG	#10 (5)	Blue	.196 (5,0)	.290 (7,37)	1.78 (45,2)	.86 (21,8)	.75 (19,1)	.435 (11,0)	.375 (9,53)
30015	6 AWG	1/4 (6)	Blue	.196 (5,0)	.290 (7,37)	1.78 (45,2)	.86 (21,8)	.75 (19,1)	.435 (11,0)	.375 (9,53)
30016	6 AWG	5/16 (8)	Blue	.196 (5,0)	.290 (7,37)	1.78 (45,2)	.86 (21,8)	.75 (19,1)	.50 (12,7)	.375 (9,53)
30018	4 AWG	#10 (5)	Gray	.247 (6,3)	.340 (8,64)	1.94 (49,3)	.75 (19,1)	.89 (22,6)	.485 (12,3)	.375 (9,53)
30019	4 AWG	1/4 (6)	Gray	.247 (6,3)	.340 (8,64)	1.94 (49,3)	.75 (19,1)	.89 (22,6)	.485 (12,3)	.375 (9,53)
30021	4 AWG	3/8 (10)	Gray	.247 (6,3)	.340 (8,64)	1.94 (49,3)	.75 (19,1)	.89 (22,6)	.59 (15,1)	.375 (9,53)
30022	2 AWG	1/4 (6)	Brown	.307 (7,8)	.416 (10,57)	1.97 (50,0)	.81 (20,7)	.89 (22,6)	.63 (15,9)	.375 (9,53)
30023	2 AWG	5/16 (8)	Brown	.307 (7,8)	.416 (10,57)	1.97 (50,0)	.81 (20,7)	.89 (22,6)	.63 (15,9)	.375 (9,53)
30024	2 AWG	3/8 (10)	Brown	.307 (7,8)	.416 (10,57)	1.97 (50,0)	.81 (20,7)	.89 (22,6)	.63 (15,9)	.375 (9,53)
30027	1 AWG	5/16 (8)	Green	.358 (9,1)	.462 (11,7)	1.97 (50,0)	.81 (20,7)	.75 (19,1)	.69 (17,5)	.375 (9,53)
30028	1 AWG	3/8 (10)	Green	.358 (9,1)	.462 (11,7)	1.97 (50,0)	.81 (20,7)	.75 (19,1)	.69 (17,5)	.375 (9,53)
30031	1/0 AWG	5/16 (8)	Pink	.394 (10,0)	.512 (13,0)	2.16 (54,9)	.81 (20,7)	.89 (22,6)	.75 (19,1)	.375 (9,53)
30032	1/0 AWG	3/8 (10)	Pink	.394 (10,0)	.512 (13,0)	2.16 (54,9)	.81 (20,7)	.89 (22,6)	.75 (19,1)	.375 (9,53)
30036	2/0 AWG	3/8 (10)	Black	.439 (11,2)	.560 (14,2)	2.37 (60,2)	.87 (22,2)	1.11 (28,2)	.81 (20,7)	.375 (9,53)
30041	3/0 AWG	1/2 (12)	Orange	.490 (12,4)	.617 (15,7)	2.63 (66,8)	.94 (23,8)	1.11 (28,2)	.91 (23,0)	.531 (13,5)
30045	4/0 AWG	1/2 (12)	Purple	.548 (13,9)	.687 (17,4)	2.60 (65,9)	.97 (24,6)	1.11 (28,2)	1.00 (25,4)	.531 (13,5)

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

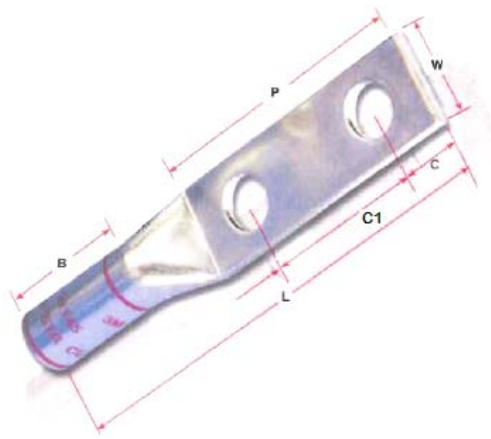
## One Hole, Long-Barrel Lug Dimensions and Selection Guide [Dimensions in Inches and (Millimeters)]



3M™ Scotchlok™ Lug Number	Conductor Size AWG or kcmil (MCM)	Stud Size	Color Code	I.D., +/- .010"	O.D., +/- .010"	L, Length, +/- .10"	B, Barrel Length, +/- .060"	P, Pad Length, +/- .060"	W, Pad Width, +/- .060"	C, Center of Hole-to-End of Pad, +/- .030"	Agency Approvals
31036	2/0 AWG	3/8 (10)	Black	.439 (11,2)	.560 (14,2)	2.84 (72,2)	1.44 (36,5)	.89 (22,6)	.810 (20,6)	.375 (9,53)	UL, CSA
31041	3/0 AWG	1/2 (12)	Orange	.490 (12,4)	.617 (15,7)	3.13 (79,5)	1.44 (36,5)	1.11 (28,2)	.910 (23,1)	.531 (13,5)	UL, CSA
31045	4/0 AWG	1/2 (12)	Purple	.548 (13,9)	.687 (17,4)	3.32 (84,4)	1.56 (39,7)	1.11 (28,2)	1.00 (25,4)	.531 (13,5)	UL, CSA
31049	250 kcmil	1/2 (12)	Yellow	.595 (15,1)	.750 (19,1)	3.38 (85,9)	1.50 (38,0)	1.11 (28,2)	1.11 (28,2)	.531 (13,5)	UL, CSA
31053	300 kcmil	1/2 (12)	White	.650 (16,5)	.813 (20,6)	3.78 (96,0)	1.94 (49,2)	1.11 (28,2)	1.22 (31,3)	.531 (13,5)	UL, CSA
31056	350 kcmil	1/2 (12)	Red	.700 (17,8)	.875 (22,2)	3.84 (97,5)	1.94 (49,2)	1.11 (28,2)	1.27 (32,3)	.531 (13,5)	UL, CSA
31060	400 kcmil	1/2 (12)	Blue	.762 (19,3)	.950 (24,1)	4.16 (105,7)	2.00 (50,8)	1.34 (34,2)	1.41 (35,8)	.66 (16,8)	UL
31066	500 kcmil	1/2 (12)	Brown	.836 (21,3)	1.059 (26,9)	4.50 (114,3)	2.19 (55,6)	1.34 (34,2)	1.53 (38,9)	.66 (16,8)	UL, CSA
31067	500 kcmil	5/8 (16)	Brown	.836 (21,3)	1.059 (26,9)	4.50 (114,3)	2.19 (55,6)	1.34 (34,2)	1.53 (38,9)	.66 (16,8)	UL, CSA
31068	600 kcmil	1/2 (12)	Green	.923 (23,4)	1.188 (30,2)	5.12 (130,0)	2.60 (66,0)	1.75 (44,5)	1.69 (42,9)	.88 (22,4)	UL

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

## Two Hole, Long-Barrel Lug Dimensions and Selection Guide [Dimensions in Inches and (Millimeters)]



3M™ Scotchlok™ Lug Number	Conductor Size AWG or kcmil (MCM)	Stud Size	Color Code	I.D., +/- .010"	O.D., +/- .010"	L, Length, +/- .100"	B, Barrel Length, +/- .100"	P, Pad Length, +/- .060"	W, Pad Width, +/- .060"	C, Center of Hole-to-End of Pad, +/- .030"	C1, Hole-to-Hole, Center -to-Center, +/- .015"	Agency Approvals
31145	4/0 AWG	1/2 (12)	Purple	.548 (13,9)	.687 (17,4)	5.16 (131,1)	1.56 (39,6)	3.00 (76,2)	1.00 (25,4)	.63 (16,0)	1.75 (44,5)	UL, CSA
31149	250 kcmil	1/2 (12)	Yellow	.595 (15,1)	.750 (19,1)	5.31 (134,9)	1.56 (39,6)	3.00 (76,2)	1.13 (28,7)	.63 (16,0)	1.75 (44,5)	UL, CSA
31153	300 kcmil	1/2 (12)	White	.650 (16,5)	.813 (20,7)	5.75 (146,1)	1.94 (49,2)	3.00 (76,2)	1.22 (31,0)	.63 (16,0)	1.75 (44,5)	UL, CSA
31156	350 kcmil	1/2 (12)	Red	.700 (17,8)	.875 (22,2)	5.75 (146,1)	1.94 (49,2)	3.00 (76,2)	1.31 (33,3)	.63 (16,0)	1.75 (44,5)	UL, CSA
31160	400 kcmil	1/2 (12)	Blue	.762 (19,4)	.950 (24,1)	6.00 (152,4)	2.12 (53,8)	3.00 (76,2)	1.41 (35,8)	.63 (16,0)	1.75 (44,5)	UL
31166	500 kcmil	1/2 (12)	Brown	.836 (21,2)	1.059 (26,9)	6.16 (156,5)	2.19 (55,6)	3.00 (76,2)	1.53 (38,9)	.63 (16,0)	1.75 (44,5)	UL, CSA
31168	600 kcmil	1/2 (12)	Green	.923 (23,4)	1.188 (30,2)	6.72 (170,6)	2.62 (66,5)	3.00 (76,2)	1.69 (42,9)	.63 (16,0)	1.75 (44,5)	UL
31172	750 kcmil	1/2 (12)	Black	1.031 (26,2)	1.299 (33,0)	7.00 (177,8)	2.81 (71,4)	3.00 (76,2)	1.72 (43,7)	.63 (16,0)	1.75 (44,5)	UL, CSA
31178	1000 kcmil	1/2 (12)	White	1.173 (29,8)	1.500 (38,1)	7.28 (184,9)	2.94 (74,6)	3.00 (76,2)	1.72 (43,7)	.63 (16,0)	1.75 (44,5)	UL, CSA

### Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series, when crimped with approved die sets, can be used on cables with an operating temperature of 221°F (105°C) and an emergency overload rating of 284°F (140°C). The lugs pass the requirements of UL486A (Underwriters Laboratories standard for safety) and are CSA Certified (as indicated in the above tables). The current rating of these lugs meets or exceeds the current rating of the conductor size for which it is intended.

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

**Tool/Installation Information** Lugs shall be crimped with one of the approved die sets according to the engineering information supplied with the lugs. (Also see Crimping Tool-Die Sets tables below). If different crimping tools and die sets are used, consult the tool and die manufacturer.

## Crimping Tool Recommendations

One-Hole, Standard-Barrel Lug Crimping Tool – Die Sets (Minimum # of Crimps)

3M™ Scotchlok™ Lug Number	Conductor Size AWG or kcmil (MCM)	Burdny Corporation				Thomas & Betts Corporation			Square D Co. Anderson Div.
		MD6	MY29	Y34A	Y35, Y39, Y45*, Y46*	TBM5	TBM 8	TBM15	VC6-3, VC6-FT**
30014	6 AWG	-----	6 AWG (1)	-----	U5CRT (1)	Blue (1)	Blue (1)	--- ---	Universal (1)
30015	6 AWG	-----	6 AWG (1)	-----	U5CRT (1)	Blue (1)	Blue (1)	--- ---	Universal (1)
30016	6 AWG	-----	6 AWG (1)	-----	U5CRT (1)	Blue (1)	Blue (1)	--- ---	Universal (1)
30018	4 AWG	W161 (1)	4 AWG (1)	A4CR (1)	U4CRT (1)	Gray (1)	Gray (1)	-----	Universal (1)
30019	4 AWG	W161 (1)	4 AWG (1)	A4CR (1)	U4CRT (1)	Gray (1)	Gray (1)	-----	Universal (1)
30021	4 AWG	W161 (1)	4 AWG (1)	A4CR (1)	U4CRT (1)	Gray (1)	Gray (1)	-----	Universal (1)
30022	2 AWG	W162 (2)	2 AWG (1)	A2CR (1)	U2CRT (2)	Brown (1)	Brown (1)	33 (1)	Universal (2)
30023	2 AWG	W162 (2)	2 AWG (1)	A2CR (1)	U2CRT (2)	Brown (1)	Brown (1)	33 (1)	Universal (2)
30024	2 AWG	W162 (2)	2 AWG (1)	A2CR (1)	U2CRT (2)	Brown (1)	Brown (1)	33 (1)	Universal (2)
30027	1 AWG	-----	1 AWG (1)	A1CR (1)	U1CRT (2)	Green (1)	Green (1)	37 (1)	Universal (2)
30028	1 AWG	-----	1 AWG (1)	A1CR (1)	U1CRT (2)	Green (1)	Green (1)	37 (1)	Universal (2)
30031	1/0 AWG	W163 (2)	1/0 (1)	A25R (1)	U25RT (1)	Pink (2)	Pink (2)	42H (2)	Universal (1)
30032	1/0 AWG	W163 (2)	1/0 (1)	A25R (1)	U25RT (1)	Pink (2)	Pink (2)	42H (2)	Universal (1)
30036	2/0 AWG	W241 (2)	2/0 (1)	A26R (1)	U26RT (2)	Black (2)	Black (2)	45 (1)	Universal (1)
30041	3/0 AWG	W243 (2)	3/0 (1)	A27R (1)	U27RT (2)	Orange (2)	Orange (2)	50 (1)	Universal (2)
30045	4/0 AWG	BG (3)	4/0 (1)	A28R (2)	U28RT (2)	Purple (2)	Purple (2)	54H (2)	Universal (2)

\* 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.

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

## One-Hole, Long-Barrel Lug Crimping Tool – Die Sets (Minimum # of Crimps)

3M™ Scotchlok™ Lug Number	Conductor Size AWG or kcmil (MCM)	Burndy Corporation				Thomas & Betts Corporation			Square D Co. Anderson Div.
		MD6	MY29	Y34A	Y35, Y39, Y45*, Y46*	TBM5	TBM 8	TBM15	VC6-3, VC6-FT**
31036	2/0 AWG	W241 (3)	2/0 (2)	A26R (2)	U26RT (3)	Black (3)	Black (3)	45 (2)	Universal (2)
31041	3/0 AWG	W243 (3)	3/0 (2)	A27R (2)	U27RT (3)	Orange (3)	Orange (3)	50 (2)	Universal (3)
31045	4/0 AWG	BG (4)	4/0 (2)	A28R (2)	U28RT (3)	Purple (3)	Purple (3)	54H (3)	Universal (3)
31049	250 kcmil	W166 (4)	250 (2)	A29R (2)	U29RT (3)	Yellow (2)	Yellow (2)	62 (2)	Universal (2)
31053	300 kcmil	-----	-----	A30R (2)	U30RT (3)	-----	White (3)	66 (3)	Universal (3)
31056	350 kcmil	-----	-----	A31R (2)	U31RT (3)	-----	Red (4)	71H (4)	-----
31060	400 kcmil	-----	-----	A32R (2)	U32RT (3)	-----	Blue (4)	76H (4)	-----
31066	500 kcmil	-----	-----	A34R (2)	U34RT (3)	-----	Brown (4)	87H (4)	-----
31067	500 kcmil	-----	-----	A34R (2)	U34RT (3)	-----	Brown (4)	87H (4)	-----
31068	600 kcmil	-----	-----	-----	U36RT (3)	-----	Green (4)	94H (4)	-----

\* 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.

## Two-Hole, Long-Barrel Lug Crimping Tool – Die Sets ( Minimum # of Crimps)

3M™ Scotchlok™ Lug Number	Conductor Size AWG or kcmil (MCM)	Burndy Corporation				Thomas & Betts Corporation			Square D Co. Anderson Div.
		MD6	MY29	Y34A	Y35, Y39, Y45*, Y46*	TBM5	TBM 8	TBM15	VC6-3, VC6-FT**
31145	4/0 AWG	BG (4)	4/0 (2)	A28R (2)	U28RT (3)	Purple (3)	Purple (3)	54H (3)	Universal (3)
31149	250 kcmil	W166 (4)	250 (2)	A29R (2)	U29RT (3)	Yellow (2)	Yellow (2)	62 (2)	Universal (2)
31153	300 kcmil	-----	-----	A30R (2)	U30RT (3)	-----	White (3)	66 (3)	Universal (3)
31156	350 kcmil	-----	-----	A31R (2)	U31RT (3)	-----	Red (4)	71H (4)	-----
31160	400 kcmil	-----	-----	A32R (2)	U32RT (3)	-----	Blue (4)	76H (4)	-----
31166	500 kcmil	-----	-----	A34R (2)	U34RT (3)	-----	Brown (4)	87H (4)	-----
31168	600 kcmil	-----	-----	-----	U36RT (3)	-----	Green (4)	94H (4)	-----
31172	750 kcmil	-----	-----	-----	Y39, Y45, Y46: U39RT (5)	-----	-----	106H (4)	-----
31178	1000 kcmil	-----	-----	-----	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 and VC6-FT require no die set

# 3M™ Scotchlok™ Copper Compression Lugs, 30000 and 31000 Series

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<b>Storage</b>	Components of the lugs are not impaired by freezing or overheating due to ambient temperatures found in typical storage or shipping. Normal stock rotation procedures are recommended.
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<b>Availability</b>	Please contact your local distributor; available from <a href="http://3M.com/electrical">3M.com/electrical</a> [Where to Buy] or call 1.800.245.3573.
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<b>Important Notice</b>	All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product, which are not contained in 3M's current publications, or any contrary statements contained on your purchase order, shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.
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