Overview

Special Lugs for Special Problems — Angled, Shaped and Trimmed the Way You Need Them

Thomas & Betts can solve your difficult wire bending and terminating problems in confined power distribution panels, switchgear and motor control enclosures.

We have the design and production capability to deliver exactly the type lug you need, shaped the way you need.

- Straight, 15°, 30°, 45°, 60° and 90° angle
- Stacking or non-stacking
- Narrow tongue or standard
- Tin, silver, lead, nickel

Thomas & Betts offers an extensive line of copper Blackburn® lugs featuring the Color-Keyed® system for #8 AWG through 1000 kcmil flex and code cables. The lug tongues are modified in several different configurations to meet your exact needs: 45° and 90° bend angles, narrow tongues to fit into circuit breakers, offset tongues to stack two cables and special stud hole drilling. These special configurations let you:

1. Run cable directly to the bus bar with no bending.
2. Terminate into very narrow spaces.
3. Utilize minimal bus bar space.

The specially designed lugs help you “clean up” your cabling in crowded enclosures.

The photographs show some examples of how and where the lugs can be used.

Customized Connectors for Copper Cables

- Standard and special tongue angles, stacking and non-stacking, bolt holes sizes and centers, protective platings.
- Specially modified one- and two-hole copper compression lugs, Series 54100, 54200, 54850BE and 54930BE for flex and code copper stranded cables. Material: High-conductivity wrought copper.
- Minimum order quantity: Standard package quantity by cable size. Consult factory for price and delivery. All customized lugs are made to order. A.R.O. Non-cancelable.

Thomas&Betts

United States
Tel: 901.252.8000
800.816.7809
Fax: 901.252.1354

Technical Services
Tel: 888.862.3289

www.tnb.com

Overview

Order Form

Catalog No. _____ ***Qty.*** _____

(For 54100, 54200, 54800 & 54900 Series Copper Lugs Only)

Design Controls and Requirements

All "MADE-UP" catalog numbers start with a standard or basic catalog number and are followed by the customer-required extra features: tongue shape, bolt hole size, distance between bolt holes, stacking, plating and inspection hole (peep hole). A code letter or a number has been assigned to each extra feature. See CODE TABLE.

Notes: *1) Lack of any of the extra features on the "MADE-UP" catalog number means that the standard Cat. No. features are prevalent.*

2) If either bolt hole size or distance between bolt holes needs to be changed from standard Cat. No., both code numbers will appear on the "MADE-UP" Cat. No. (See example below)

CAT. NO. 54212 UB 04 16 B SP

54212	UB	04	16	B	SP
2-hole 4/0 AWG copper lug basic CAT. NO.	90° tongue	¼" bolt hole	1" hole spacing	bottom stack	silver plating

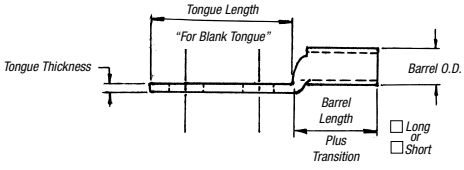
Code Table

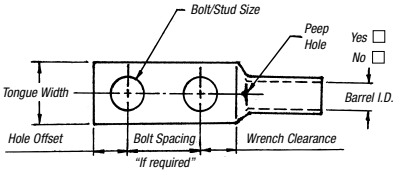
TONGUE SHAPE		BOLT HOLES			BOLT HOLE CENTERS		STACKING		FINISH (PLATING)		INSPECTION HOLE (LONG BARREL)		INSPECTION HOLE (SHORT BARREL)	
TYPE	CODE	SIZE	.020	CODE	DISTANCE .015	CODE	TYPE	CODE	TYPE 1	CODE	I.D.	CODE	I.D.	CODE
15°	UI	#8	.173	02	½"	08	Top	T**	Silver Plate	SP	Peep Hole	PH	Blind End	BE
30°	UT	#10	.204	03	⅝"	10	Bottom	B	Lead Plate	LP				
45°	UF	¼"	.281	04	¾"	12			Nickel Plate	NP				
60°	US	5⁄16"	.344	05	⅞"	14			Plain Finish	PF				
90°	UB	⅜"	.406	06	1"	16			No Marking	NM				
Blank	BT	½"	.531	08	1⅛"	18			Not QTP if					
(No Bolt Hole)		⅝"	.656	10	1¼"	20			suffix other					
		¾"	.812	12	1⅜"	22			than - PF or					
		⅞"	.937	14	1½"	24			standard					
		1"	1.062	16	1⅝"	26			tin plate					
					1¾"	28								
					1⅞"*	30								
					2"*	32								

** These bolt centers not available for bolt holes larger than 13⁄16".*

*** Not required for 45° & 90° top stacking.*

Cable	Code ❑ Weld ❑	
❑ #8	❑ #6	❑ #4
❑ #2	❑ #1	❑ 1/0
❑ 2/0	❑ 3/0	❑ 4/0
❑ 250 kcmil & up (Code Only)		

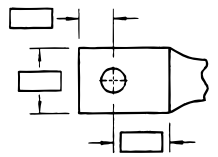




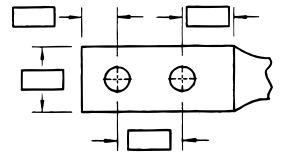
Tongue Specifications— See Chart "A" For Dimensions

Stud Sizes

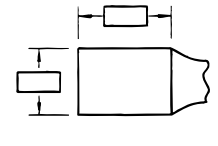
- ❑ #8
- ❑ #10
- ❑ ¼"
- ❑ 5⁄16"
- ❑ ⅜"
- ❑ ½"
- ❑ ⅝"
- ❑ ¾"
- ❑ ⅞"
- ❑ 1"



❑ *Single Hole*



❑ *Double Hole*



❑ *Blank*

Chart A

NOMINAL BOLT HOLE SIZE .015		HOLE OFFSET .030	WRENCH CLEARANCE MIN.	TONGUE WIDTH CABLE SIZE									
				#8 CODE #8 WELD	#6 CODE #6 WELD	#4 CODE	#2 CODE #4 WELD	#1 CODE #2 WELD	1/0 CODE #1 WELD	2/0 CODE 1/0 WELD	3/0 CODE 2/0 WELD	4/0 CODE 3/0 WELD	250 CODE
#8	.173	.200	.240	.406	.437	.562	.593	.672	.750	.825	.937	1.030	1.125
#10	.204	.218	.250	.406	.437	.562	.593	.672	.750	.825	.937	1.030	1.125
¼	.281	.250	.312	.469	.500	.562	.593	.672	.750	.825	.937	1.030	1.125
5⁄16	.344	.375	.406	.562	.562	.562	.675	.672	.750	.825	.937	1.030	1.125
⅜	.406	.375	.440	.578	.578	.594	.675	.672	.750	.825	.937	1.030	1.125
½	.531	.500	.562	—	—	—	.750	.750	.750	.825	.937	1.030	1.125
⅝	.656	.625	.875	—	—	—	—	—	—	—	.937	1.030	1.125
¾	.812	.750	.770	—	—	—	—	—	—	—	—	—	—
⅞*	.937	.875	.890	—	—	—	—	—	—	—	—	—	—
1*	1.062	.937	1.000	—	—	—	—	—	—	—	—	—	—

** These bolt holes available in one-hole lug only.*

Chart B

CABLE SIZE	TONGUE THICKNESS	STRAIGHT LUG BARREL LENGTH PLUS TRANSITION		BARREL		DIM "X" STACKED LUGS			DIM "Y"		DIM "H"	
		SHORT	LONG	O.D.	I.D.	STRAIGHT	45°	90°	SHORT	LONG	SHORT	LONG
#8	.080	.635	.935	.260	.180	.158	.478	.394	.595	.808	.779	1.079
#6	.081	.675	.975	.296	.215	.134	.544	.432	.587	.799	.767	1.067
#4	.099	.685	.985	.365	.266	.175	.622	.502	.637	.849	.838	1.138
#2	.108	.815	1.115	.410	.302	.216	.649	.535	.711	.923	.958	1.258
#1	.106	.825	1.275	.467	.361	.212	.731	.592	.710	1.028	.956	1.406
1/0	.125	.975	1.325	.520	.396	.250	.789	.646	.794	1.042	1.075	1.425
2/0	.125	.965	1.315	.571	.446	.250	.859	.696	.829	1.077	1.125	1.475
3/0	.125	1.085	1.435	.632	.507	.250	.946	.757	.900	1.148	1.225	1.575
4/0	.137	1.255	1.705	.701	.564	.274	1.031	.826	1.015	1.333	1.387	1.837
250	.137	1.375	1.925	.766	.629	.274	1.123	.891	1.085	1.474	1.487	2.037
300	.153	1.900	2.675	.850	.660	.459	1.226	.975	1.180	1.726	1.924	2.679
350	.177	2.090	2.896	.926	.720	.531	1.333	1.103	1.267	1.830	2.096	2.896
400	.173	2.460	2.980	.960	.757	.519	1.370	1.085	1.551	1.913	2.484	2.984
500	.218	2.670	3.610	1.100	.852	.654	1.514	1.225	1.629	2.266	2.669	3.619
600	.244	2.900	3.490	1.200	.926	.732	1.630	1.325	1.762	2.147	2.897	3.497
700	.228	2.784	—	1.255	.997	.684	1.662	1.375	1.780	—	3.011	—
750	.270	3.050	3.925	1.330	1.030	.810	1.745	1.455	1.827	2.434	3.050	3.925
800	.266	3.213	—	1.375	1.079	.800	1.728	1.625	1.952	2.787	3.213	4.554
900	.313	3.450	4.550	1.500	1.145	.940	1.900	1.650	2.065	—	1.387	—
1,000	.297	3.356	4.500	1.550	1.203	.890	2.070	1.675	2.031	2.787	1.487	4.506

Note: *Stacking lugs are available for one bolt only.*
Consult Factory: Straight: 700 kcmil & up.
45°: 400 kcmil & up
90°: 500 kcmil & up

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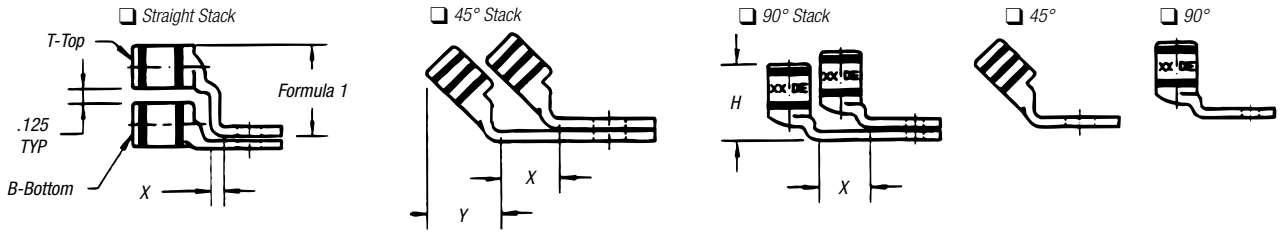
Overview



Formula 1 = (.125 + 2 (OD) + .037 – Tongue Thickness)

Chart C

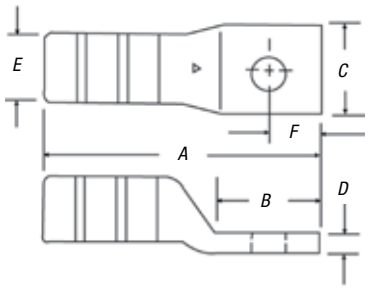
	TONGUE WIDTH .030 CODE CABLE SIZE										
BOLT HOLE SIZE	**300 KCMIL 4/0 WELD**	**350 KCMIL**	**400 KCMIL**	**500 KCMIL 400 WELD**	**600 KCMIL 500 WELD**	**1325/24**	**700 KCMIL**	**750 KCMIL**	**800 KCMIL**	**900 KCMIL**	**1000 KCMIL**
#8	—	—	—	—	—	—	—	—	—	—	—
#10	—	—	—	—	—	—	—	—	—	—	—
¼	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
5⁄16	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
⅜	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
½	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
⅝	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
¾	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
⅞*	—	—	—	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
1*	—	—	—	—	1.745	1.805	1.840	1.935	2.010	2.180	2.265

** These bolt holes available in one-hole lug only.*

Connectors for Aluminum/Copper Code Conductor

Perform equally well on both aluminum and copper conductors.

One-Hole Lugs



- For 90° C, 600V to 35kV applications
- Easily matched to the correct Blackburn® installing die featuring the Color-Keyed® system for positive compressions
- Hardened steel dies compress connector around cable, changing round strands to polygonal shapes and cold flowing strands and connector into a solid, homogenous mass
- Long compression areas ensure complete contact
- Multiple compressions prevent creep of aluminum conductors
- Filled with high-temperature oxide-inhibitor compound
- Electro-tin plating prevents electrolytic corrosion of copper to ensure lowest contact resistance

Material: High-Conductivity Wrought Aluminum

Finish: Electro-Tin Plate

CAT. NO.	CABLE SIZE AL/CU	BOLT SIZE (IN.)	DIMENSIONS A	B	C	D	E	F	COLOR CODE	DIE CODE
60096		#10	1.09	.56	.41	.06	.270	.22		
60097	#10 AWG	¼	1.31	.72	.43	.07	.270	.34	21	RED
60099		⅜	1.53	.93	.58	.06	.270	.44		
60101		#10	1.22	.56	.41	.09	.280	.22		
60102	#8 AWG	¼	1.38	.71	.44	.09	.280	.34	24	BLUE
60103		5/16	1.56	.91	.60	.06	.280	.44		
60104-TB		⅜	1.60	.93	.60	.06	.280	.44		
60106		#10	1.52	.59	.47	.13	.350	.22		
60107	#6 AWG	¼	1.67	.75	.47	.13	.350	.34	29	GRAY
60108		5/16	1.83	.91	.63	.09	.350	.44		
60109		⅜	1.86	.93	.63	.09	.350	.44		
60112		¼	1.81	.75	.64	.19	.460	.34		
60113	#4 AWG	5/16	2.00	.91	.64	.19	.460	.44	37	GREEN
60114		⅜	2.03	.93	.64	.19	.460	.44		
60116		¼	1.91	.75	.72	.19	.510	.34		
60117	#2 AWG	5/16	2.06	.91	.72	.19	.510	.44	42	PINK
60118		⅜	2.09	.93	.72	.19	.510	.44		
60120		½	2.25	1.41	.88	.13	.510	.69		
60122		¼	2.30	.81	.75	.19	.560	.34		
60123	#1 AWG	5/16	2.39	.91	.75	.19	.560	.44	45	GOLD
60124		⅜	2.42	.93	.75	.19	.560	.44		
60126		½	2.89	1.41	.88	.16	.560	.69		
60128		¼	2.36	.81	.88	.19	.620	.34		
60129	1/0	5/16	2.51	.97	.88	.19	.620	.44	50	TAN
60130		⅜	2.51	.97	.88	.19	.620	.44		
60132		½	2.95	1.41	.94	.19	.620	.69		
60134		¼	2.48	.87	.97	.22	.700	.34		
60135	2/0	5/16	2.64	1.03	.97	.22	.700	.44	54	OLIVE
60136		⅜	2.64	1.03	.97	.22	.700	.44		
60138		½	3.10	1.41	1.03	.22	.700	.69		
60140		¼	2.58	.87	1.06	.22	.770	.34		
60141	3/0	5/16	2.83	1.09	1.06	.22	.770	.44	60	RUBY
60142		⅜	2.83	1.09	1.06	.22	.770	.44		
60144		½	3.15	1.41	1.06	.22	.770	.69		
60147		5/16	3.53	.88	1.21	.25	.857	.38		
60148	4/0	⅜	3.58	.93	1.21	.25	.857	.38	66	WHITE
60150		½	3.90	1.25	1.21	.25	.857	.50		
60151		⅝	4.65	2.00	1.21	.25	.857	.75		
60154		⅜	3.73	.93	1.29	.27	.917	.38		
60156	250 kcmil	½	4.05	1.25	1.29	.27	.917	.50	71	RED
60157		⅝	4.80	2.00	1.29	.27	.917	.75		
60159		5/16	3.75	.88	1.39	.28	.990	.38		
60160	300 kcmil	⅜	3.80	.93	1.39	.28	.990	.38	76	BLUE
60162		½	4.13	1.25	1.39	.28	.990	.50		
60165	350 kcmil	½	4.83	1.25	1.53	.33	1.090	.50	87	BROWN
60166		⅝	5.58	2.00	1.53	.33	1.090	.75		
60168	400 kcmil	½	4.95	1.25	1.65	.38	1.180	.50	94	GREEN
60171	500 kcmil	½	4.95	1.25	1.79	.38	1.280	.50	99	PINK
60172		⅝	5.70	2.00	1.79	.38	1.280	.75		
60174	600 kcmil	⅝	5.83	2.00	1.92	.37	1.360	.75	106	BLACK
60176	700 kcmil	⅝	5.95	2.00	2.04	.38	1.440	.75	112	PURPLE
60178	750 kcmil	⅝	6.03	2.00	2.13	.40	1.500	.75	115	YELLOW
60184	1000 kcmil	⅝	6.78	2.00	2.50	.50	1.770	.75	140	N/A

Tooling: ***pp. F-80–F-100***

Die Selector Chart: ***pp. F-101–F-104***