



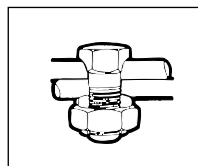
Blackburn® **Color-Keyed®**

Mechanical

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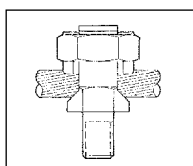
Thomas & Betts



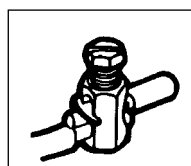
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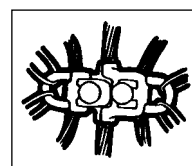
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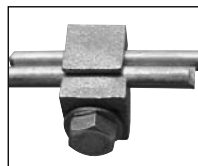
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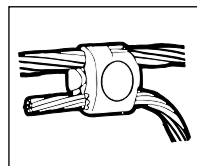
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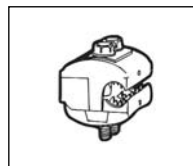
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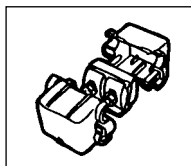
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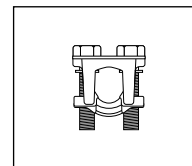
Type PAC, PAE, PC, K
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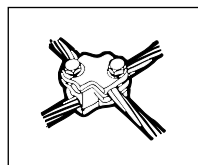
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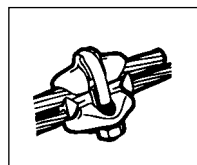
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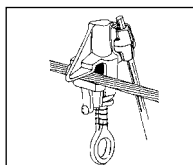
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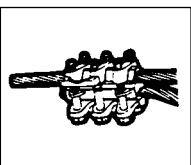
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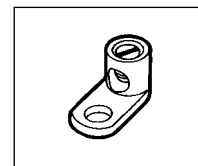
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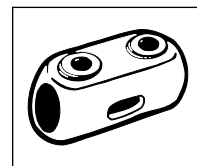
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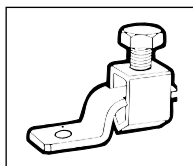
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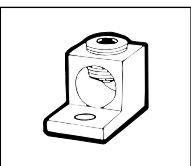
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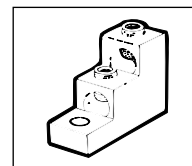
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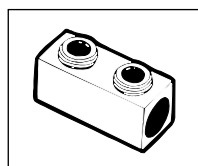
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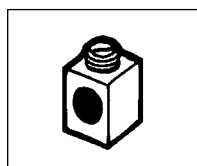
Type ADR
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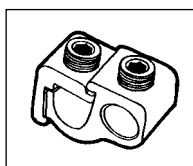
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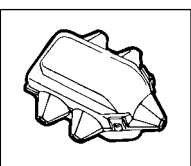
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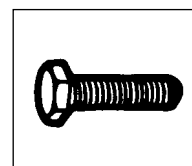
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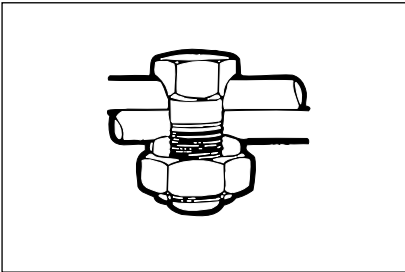
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Blackburn®

Split Bolt Connectors



- For copper to copper connections.
- Bolt and nut of high strength corrosion-resistant bronze alloy.
- Pressure bar is copper through 40H; copper alloy is used for 350 kcmil and above.
- Bolt and nut of hex design up to 350 kcmil.
- Tested and Listed to U.L. 486A requirements.

Type H – High Strength Split Bolt Connectors

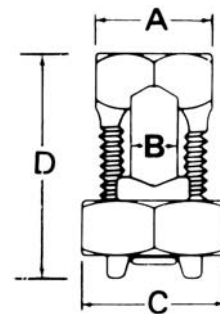
Cat. No.	Conductor Range (AWG or kcmil)		Dimensions (in.)			
	Range for Equal Main and Tap	Min. Tap with One Max. Main	A	B	C	D
9H	10 str.—12 sol.	14 sol.	$\frac{3}{8}$	.146	$\frac{1}{2}$	$\frac{25}{32}$
8H	8 str.—10 sol.	14 sol.	$\frac{3}{8}$	.146	$\frac{1}{2}$	$\frac{25}{32}$
8H3*	8 str.—12 sol.	16 str.	$\frac{3}{8}$	.146	$\frac{1}{2}$	$\frac{29}{32}$
6H	6 sol.—8 sol.	14 sol.	$\frac{15}{32}$	.170	$\frac{21}{32}$	$\frac{31}{32}$
6H3*	6 sol.—10 sol.	16 str.	$\frac{15}{32}$	.170	$\frac{21}{32}$	$1\frac{1}{8}$
4H	4 sol.—8 sol.	14 sol.	$\frac{17}{32}$	.235	$\frac{23}{32}$	$1\frac{1}{16}$
4H3*	4 sol.—8 sol.	16 str.	$\frac{17}{32}$	.235	$\frac{23}{32}$	$1\frac{9}{32}$
3H	3 sol.—8 sol.	16 str.	$\frac{17}{32}$	.235	$\frac{23}{32}$	$1\frac{1}{16}$
3H3*	4 str.—8 sol.	16 str.	$\frac{17}{32}$	.235	$\frac{23}{32}$	$1\frac{9}{32}$
2H	2 sol.—6 sol.	14 sol.	$\frac{19}{32}$	.271	$\frac{25}{32}$	$1\frac{1}{4}$
2H3*	2 sol.—6 sol.	14 sol.	$\frac{19}{32}$	.271	$\frac{25}{32}$	$1\frac{15}{32}$
1H	2 str.—6 sol.	14 sol.	$\frac{11}{16}$	.330	$\frac{7}{8}$	$1\frac{11}{32}$
1H3**	2 str.—6 sol.	14 sol.	$\frac{11}{16}$	.330	$\frac{7}{8}$	$1\frac{5}{8}$
10H	1/0 str.—4 sol.	14 sol.	$\frac{3}{4}$	.385	$\frac{15}{16}$	$1\frac{19}{32}$
20H	2/0 str.—2 sol.	14 sol.	$\frac{7}{8}$	.443	$1\frac{1}{16}$	$1\frac{13}{16}$
30H	4/0 str.—2 sol.	6 sol.	1	.580	$1\frac{5}{16}$	$2\frac{5}{32}$
40H	250 kcmil—1 str.	8 sol.	1	.580	$1\frac{5}{16}$	$2\frac{5}{32}$
350M	350 kcmil—250 kcmil	1/0 str.	$1\frac{5}{16}$	.717	$1\frac{21}{32}$	$2\frac{11}{16}$
500M	500 kcmil—400 kcmil	2/0 str.	$1\frac{1}{2}$	.842	$1\frac{7}{8}$	$3\frac{3}{32}$
750M	750 kcmil—600 kcmil	4/0 str.	$1\frac{5}{16}$	1.029	$2\frac{1}{4}$	$3\frac{21}{32}$
1000M	1000 kcmil—800 kcmil	4/0 str.	$2\frac{1}{4}$	1.185	$2\frac{17}{32}$	$4\frac{1}{32}$

* Will accommodate 3 wires of maximum size.

** Will accommodate 3 #2 str. wires.

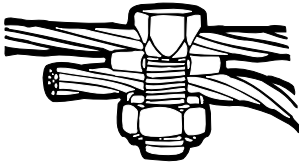
The H3 bolts are not U.L. Listed or CSA Certified.

U.L. recognizes solid and stranded conductor configurations for sizes #8 and smaller and stranded configurations only for sizes #6 and larger.



Blackburn®

Split Bolt Connectors



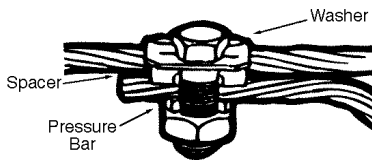
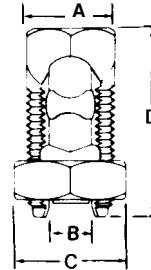
- For use on copper, aluminum and ACSR conductors.
- Most connectors are U.L. Listed and CSA Certified for copper conductor only.
- Bolt and pressure bar of copper alloy completely tin plated.
- Contoured spacer of electrolytic copper up through 4/0; bronze alloy 350 and above, all tin plated.
- Blackburn Contax recommended when used on aluminum conductor.

Blackburn®

Type HPS – Plated Split-Bolt Connectors with Spacer

Cat. No.	Conductor Range (AWG or kcmil)			Dimensions (in.)			
	Range for Equal Main and Tap	Range for Equal Main and Tap	Min. Tap with One Max. Main	A	B	C	D
	ACSR	Copper or Aluminum					
9HPS	—	10 str.—12 sol.	12 sol.	3/8	.146	1/2	29/32
8HPS	—	8 str.—12 sol.	12 sol.	3/8	.146	1/2	29/32
6HPS	8	6 sol.—12 sol.	12 sol.	15/32	.170	21/32	1 1/8
4HPS	6—8	4 sol.—12 sol.	12 sol.	17/32	.235	23/32	1 5/32
2HPS	4—8	2 sol.—8 sol.	8 sol.	19/32	.271	25/32	1 15/32
1HPS	2—8	1 str.—8 sol.	8 sol.	11/16	.330	7/8	1 5/8
10HPS	1—6	1/0 str.—6 sol.	6 sol.	3/4	.385	15/16	1 13/16
20HPS	1/0—6	2/0 str.—6 str.	6 sol.	7/8	.443	1 1/16	2 1/16
40HPS	4/0—4	4/0 str.—4 sol.	4 sol.	1	.580	1 5/16	2 15/32
350HPS	266.8—1/0	350 kcmil—1/0 str.	2 sol.	1 5/16	.717	2 1/32	2 11/16
500HPS*	397.5—1/0	500 kcmil—1/0 str.	1/0 str.	1 1/2	.842	1 7/8	3 1/32
750HPS*	666.6—4/0	750 kcmil—4/0 str.	2/0 str.	1 15/16	1.029	2 1/4	3 21/32
1000HPS*	900—477	1000 kcmil—500 kcmil	4/0 str.	2 1/4	1.185	2 17/32	4 1/32

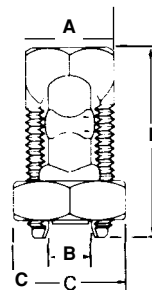
* Not CSA Certified. U.L. 486A



- For use on combinations of copper, aluminum and ACSR conductors.
- Bolt and pressure bar of high strength copper alloy completely tin plated; spacer and washer of electrolytic copper up through 4/0; bronze alloy 350 and above, all tin plated.
- Contoured spacer and bell mouth washer distributes pressure over large area of conductor.
- Large contoured spacer provides wide separation between copper and aluminum conductors.
- Blackburn Contax recommended when used with aluminum conductor.

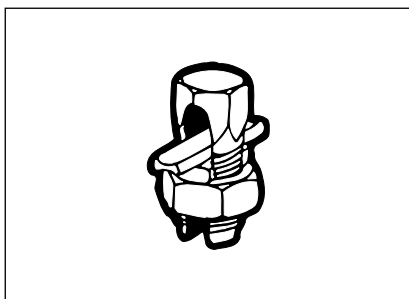
Type HPW – Plated Split-Bolt Connectors with Spacer and Washer

Cat.No.	Conductor Range (AWG or kcmil)			Dimensions (in.)			
	Range for Equal Main and Tap	Range for Equal Main and Tap	Min. Tap with One Max. Main	A	B	C	D
	ACSR	Copper or Aluminum					
6HPW	8	6 sol.—12 sol.	12 sol.	15/32	.170	21/32	1 1/8
4HPW	6—8	4 sol.—12 sol.	12 sol.	17/32	.235	23/32	1 5/32
2HPW	4—8	2 sol.—8 sol.	8 sol.	19/32	.271	25/32	1 15/32
1HPW	2—8	1 str.—8 sol.	8 sol.	11/16	.330	7/8	1 5/8
10HPW	1—6	1/0 str.—6 sol.	6 sol.	3/4	.385	15/16	1 13/16
20HPW	1/0—6	2/0 str.—6 sol.	6 sol.	7/8	.443	1 1/16	2 1/16
40HPW	4/0—4	4/0 str.—4 sol.	4 sol.	1	.580	1 5/16	2 15/32


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Blackburn®

Split Bolt Connectors

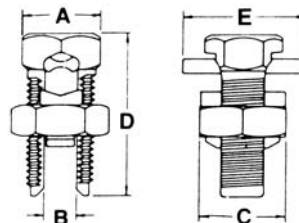


- Accommodates all aluminum and copper conductor combinations.
- 6 bolts cover the range from #10 to 4/0 AWG.
- Can be installed with standard wrenches.
- Corrosion resistant tin plated aluminum.
- Tested and listed to U.L. 486B, 90°C requirements.

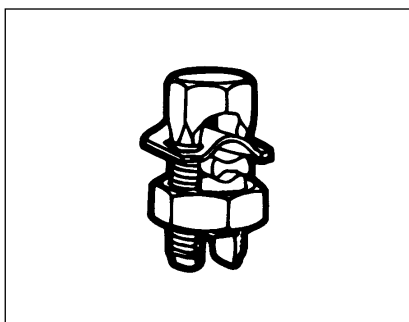
Type APS – Aluminum Dual-Rated Split Bolts

Cat. No.	Conductor Range Equal Main & Tap	Dimensions (in.)				
		A	B	C	D	E
APS06	6-10 str	$\frac{17}{32}$	.21	$\frac{23}{32}$	1.27	$1\frac{1}{4}$
APS04	4-10 str	$\frac{19}{32}$	.27	$\frac{25}{32}$	1.48	$1\frac{1}{4}$
APS02	2-8 str	$\frac{11}{16}$	.33	$\frac{7}{8}$	1.63	$1\frac{1}{4}$
APS11	1/0-4 str	$\frac{7}{8}$	.44	$1\frac{1}{8}$	2.07	$1\frac{1}{2}$
APS21	2/0-4 str	$\frac{7}{8}$	.44	$1\frac{1}{8}$	2.07	$1\frac{1}{2}$
APS41	4/0-2 str	$1\frac{1}{8}$	.54	$1\frac{1}{2}$	2.47	1.55
APS350*	350 kcmil-4 str	$1\frac{1}{16}$	.70	$1\frac{11}{16}$	3.36	$2\frac{1}{4}$
APS500*	500 kcmil-2 str	$1\frac{1}{16}$	.84	2	3.62	$2\frac{5}{8}$

* Square head design not CSA certified



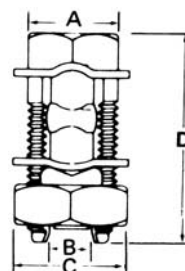
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- For all aluminum applications.
- Bolt, nut, pressure bar and contoured spacer of aluminum alloy.
- Large contoured spacer gives wide separation.
- Nut anodized to prevent thread galling.
- Blackburn Contax recommended when used on aluminum conductor.

Type AAW – Aluminum Split-Bolt Connectors with Spacer and Washers

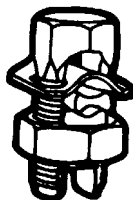
Cat. No.	Conductor Range (AWG)			Dimensions (in.)			
	Range for Equal Main and Tap	Range for Equal Main and Tap	Min. Tap with One Max. Main	A	B	C	D
	ACSR	Aluminum					
6AAW	6—8	4 sol.—8 sol.	10 sol.	$\frac{17}{32}$	.236	$\frac{23}{32}$	$1\frac{3}{32}$
4AAW	4—8	2 sol.—8 sol.	8 sol.	$\frac{19}{32}$	.272	$\frac{25}{32}$	$1\frac{15}{32}$
2AAW	2—8	1 str.—8 sol.	8 sol.	$\frac{11}{16}$	.330	$\frac{7}{8}$	$1\frac{1}{8}$
1AAW	1—4	1/0 str.—2 sol.	4 sol.	$\frac{7}{8}$	.443	$1\frac{1}{8}$	$2\frac{1}{16}$
10AAW	1/0—4	2/0 str.—2 sol.	4 sol.	$\frac{7}{8}$	.443	$1\frac{1}{8}$	$2\frac{1}{16}$
40AAW	4/0—4	4/0 str.—4 sol.	4 sol.	1	.580	$1\frac{1}{4}$	$2\frac{15}{32}$



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Split Bolt Connectors

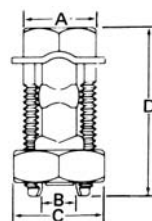


- Bolt, nut and washer of high-strength aluminum alloy; pressure bar and contoured spacer of electrolytic copper.
- Spacer is completely tin plated.
- Bolt and nut are anodized to prevent seizing of threads and reduce galvanic corrosion when in contact with copper conductor.
- Contoured spacer and bell mouth washer distributes pressure over large area of conductor.
- Blackburn Contax recommended with this Connector.

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Type CA – Aluminum Split-Bolt Connectors with Spacer and Washer

Cat. No.	Conductor Range (AWG)		Dimensions (in.)			
	Range for Equal Main and Tap	Min. Tap with One Max. Main	A	B	C	D
	Copper or Aluminum					
6CA	4 sol.—6 sol.	4 sol.—12 sol.	$\frac{17}{32}$	.236	$\frac{23}{32}$	$1\frac{9}{32}$
4CA	2 sol.—4 sol.	2 sol.—10 sol.	$\frac{19}{32}$	.272	$\frac{25}{32}$	$1\frac{15}{32}$
2CA	1 str.—4 sol.	1 str.—8 sol.	$\frac{11}{16}$	.330	$\frac{7}{8}$	$1\frac{1}{8}$
1CA	1/0 str.—2 sol.	1/0 str.—6 sol.	$\frac{7}{8}$	.443	$1\frac{1}{8}$	$2\frac{1}{16}$
10CA	2/0 str.—2 sol.	2/0 str.—6 sol.	$\frac{7}{8}$	.443	$1\frac{1}{8}$	$2\frac{1}{16}$
40CA	4/0 str.—2/0 sol.	4/0 str.—4 sol.	1	.580	$1\frac{1}{4}$	$2\frac{15}{32}$



Blackburn®

Service Post Connectors

Application

The Blackburn line of Service Post Connectors is designed for applications including steel structure, fence post or transformer grounding involving one or two cables. Service Posts can also be used to tap one or two cables from bus bar.

Construction and Ratings

Bolts used in the Service Post are machined from high conductivity bronze alloy while the nuts are cold-

formed from high strength, corrosion resistant copper alloy. Pressure bars are copper through 4/0 size, while copper alloy is used for 350 mcm size and above. Bolts and nuts are of the traditional Blackburn hex design for easy installation.

Service Post Connectors are available in sizes accommodating AWG copper conductor ranges of #12-500 kcmil stranded (4mm²-240mm²) and #12-#2 solid (4mm²-35mm²).

The line includes single conductor and double conductor connectors.

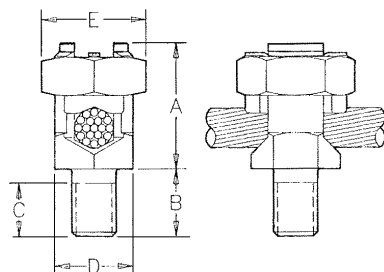
- For copper to copper connections.
- For grounding of steel structures, fence posts, transformers using one or two cables.
- For tapping one or two cables from bus bar.
- Hex design bolts are machined from high conductivity bronze alloy.
- Nuts and pressure bars are cold-formed from high-strength copper or copper alloy.
- U.L. 486A and U.L. 467 Listed.



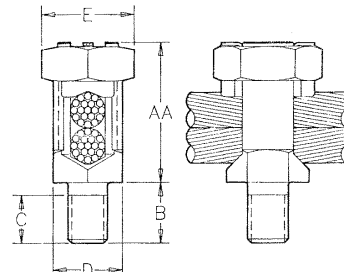
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Blackburn®

Single and Double Conductor Short Stud

Conductor Range AWG mm²				Maximum Diameter Range (in.)	Cat. No.		Stud Size	Dimensions (in.)					
Stranded		Solid						A	AA	B	C	D	E
max.	min.	max.	min.		SP-S	SP-D		A	AA	B	C	D	E
8	12	8	12	.146-.080	SP0DS	SP0SS	¼—20 x 1	1 ¹ / ₁₆	1 ³ / ₁₆	½	5 ⁵ / ₆₄	1 ⁵ / ₃₂	½
—	4mm²	10mm²	4mm²	.170-.102	SP1DS	SP1SS	¼—20 x 1	1 ³ / ₁₆	3 ¹ / ₃₂	½	5 ⁵ / ₆₄	1 ⁵ / ₃₂	2 ¹ / ₃₂
7	10	6	10										
10mm²	6mm²	10mm²	6mm²	.217-.102	SP2DS	SP2SS	⅝—18 x 1	1 ⁵ / ₁₆	1 ¹ / ₈	⅝	5 ³ / ₆₄	1 ⁷ / ₃₂	2 ³ / ₃₂
5	10	4	10										
16mm²	6mm²	16mm²	6mm²	.271-.102	SP3DS	SP3SS	¾—16 x 1 ¹ / ₈	½	1 ¹ / ₄	⅝	6 ¹ / ₆₄	⅝	2 ⁵ / ₃₂
3	10	2	10										
25mm²	6mm²	35mm²	6mm²	.332-.128	SP4DS	SP4SS	¾—16 x 1 ¹ / ₈	1 ¹ / ₁₆	1 ³ / ₈	⅝	6 ¹ / ₆₄	1 ¹ / ₁₆	7 ¹ / ₈
1	8	2	8										
35mm²	6mm²	35mm²	10mm²	.385-.258	SP5DS	SP5SS	½—13 x 1¼	1¼	1 ¹⁹ / ₃₂	¾	1 ⁵ / ₆₄	¾	1 ⁵ / ₁₆
1/0	2	2	—										
50mm²	35mm²	35mm²	—	.443-.258	SP6DS	SP6SS	½—13 x 1¼	1 ¹³ / ₃₂	1 ¹³ / ₁₆	¾	1 ⁵ / ₆₄	7 ¹ / ₈	1 ¹ / ₁₆
2/0	2	2	—										
70mm²	35mm²	35mm²	—	.570-.289	SP8DS	SP8SS	⅝—11 x 1½	1 ¹ / ₁₆	2 ¹ / ₁₆	1	1 ¹⁹ / ₆₄	1	1 ⁵ / ₁₆
4/0	1	—	—										
95mm²	35mm²	—	—	.715-.373	SP9DS	SP9SS	⅝—11 x 1½	2	2¾	1¼	1 ¹⁹ / ₆₄	1 ¹ / ₁₆	1 ¹¹ / ₁₆
350	1/0	—	—										
150mm²	70mm²	—	—	.840-.464	SP10DS	SP10SS	¾—10 x 1¾	2¼	3 ¹ / ₈	1¼	1 ³ / ₆₄	1½	1 ¹ / ₈
500	3/0	—	—										
240mm²	95mm²	—	—										



**Single Conductor
Short Stud**



**Double Conductors
Short Stud**

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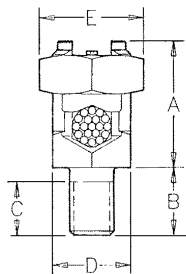
Blackburn®

Service Post Connectors

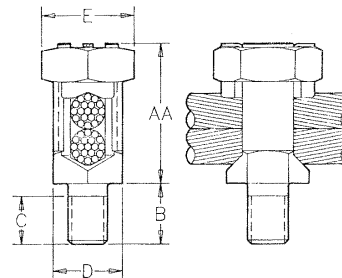


Single and Double Conductor Long Stud

Conductor Range AWG mm ²				Maximum Diameter Range (in.)	Cat No.		Stud Size	Dimensions (in.)					
Stranded		Solid						A	AA	B	C	D	E
max.	min.	max.	min.		SP-S	SP-D		A	AA	B	C	D	E
8	12	8	12	.146-.080	SP0SL	SP0DL	¼—20 x 1	1 ¹ / ₁₆	1 ³ / ₁₆	1	5 ⁵ / ₆₄	1 ⁵ / ₃₂	½
—	4mm ²	10mm ²	4mm ²										
7	10	6	10	.170-.102	SP1SL	SP1DL	¼—20 x 1	1 ³ / ₁₆	3 ¹ / ₃₂	1	5 ⁵ / ₆₄	1 ⁵ / ₃₂	2 ¹ / ₃₂
10mm ²	6mm ²	10mm ²	6mm ²										
5	10	4	10	.217-.102	SP2SL	SP2DL	5 ¹ / ₁₆ —18 x 1	1 ⁵ / ₁₆	1½	1	5 ³ / ₆₄	1 ⁷ / ₃₂	2 ³ / ₃₂
16mm ²	6mm ²	16mm ²	6mm ²										
3	10	2	10	.271-.102	SP3SL	SP3DL	¾—16 x 1½	1	1¼	1½	6 ¹ / ₆₄	5⁄8	2 ⁵ / ₃₂
25mm ²	6mm ²	35mm ²	6mm ²										
1	8	2	8	.332-.128	SP4SL	SP4DL	¾—16 x 1½	1 ¹ / ₁₆	1¾	1½	6 ¹ / ₆₄	1 ¹ / ₁₆	7⁄8
35mm ²	6mm ²	35mm ²	10mm ²										
1/0	2	2	—	.385-.258	SP5SL	SP5DL	½—13 x 1¼	1¼	1 ¹⁹ / ₃₂	1¼	1 ⁵ / ₆₄	¾	1 ⁵ / ₁₆
50mm ²	35mm ²	35mm ²	—										
2/0	2	2	—	.443-.258	SP6SL	SP6DL	½—13 x 1¼	1 ¹³ / ₃₂	1 ¹³ / ₁₆	1¼	1 ⁵ / ₆₄	7⁄8	1 ¹ / ₁₆
70mm ²	35mm ²	35mm ²	—										
4/0	1	—	—	.570-.289	SP8SL	SP8DL	5⁄8—11 x 1½	1 ¹ / ₁₆	2 ¹ / ₁₆	1½	1 ¹⁹ / ₆₄	1	1 ⁵ / ₁₆
95mm ²	35mm ²	—	—										
350	1/0	—	—	.715-.373	SP9SL	SP9DL	5⁄8—11 x 1½	2	2¾	1½	1 ¹⁹ / ₆₄	1 ⁵ / ₁₆	1 ¹¹ / ₁₆
150mm ²	70mm ²	—	—										
500	3/0	—	—	.840-.464	SP10SL	SP10DL	¾—10 x 1¼	2¼	3½	1½	1 ³¹ / ₆₄	1½	1½
240mm ²	95mm ²	—	—										



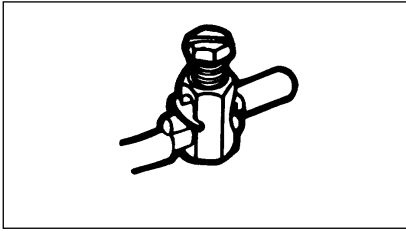
**Single Conductor
Short Stud**



**Double Conductors
Short Stud**

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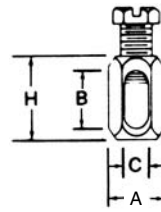
Mechanical Service Entrance Connectors



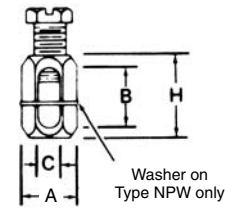
- Service entrance connectors with bodies and screws of high-strength copper alloy; NPW is tin plated.
- Type NPW has phosphor bronze washer, tin plated to protect conductor and distribute pressure.
- Type NPW can be used on ACSR conductor
- Slotted hex head screw.

Types N and NPW – Service Entrance Connectors

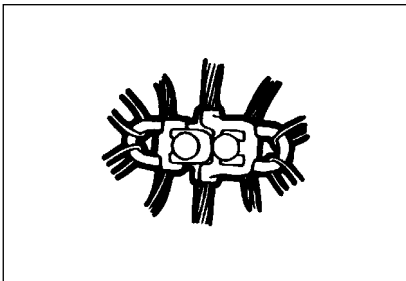
Cat. No.		Conductor Range (AWG)				Dimensions (in.)				Bolt Head
		ACSR		Copper		A	B	C	H	
		max.	min.	max.	min.					
10N	10NPW	—	—	10 str.	14 sol.	$\frac{3}{8}$	.337	.156	.562	$\frac{9}{32}$
6N	6NPW	8	8	6 str.	10 sol.	$\frac{7}{16}$	.415	.191	.656	$\frac{5}{16}$
4N	4NPW	6	8	4 str.	6 sol.	$\frac{1}{2}$	.515	.243	.775	$\frac{3}{8}$
—	2NPW	4	8	2 str.	6 sol.	$\frac{21}{32}$	.643	.304	.970	$\frac{1}{8}$



Type N



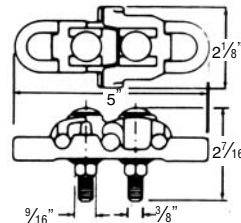
Type NPW



- A combination aerial cable neutral parallel groove connector and dead-ending clamp that accommodates up to four service drops.
- Used in situations where house is not adjacent to pole.
- Taps may be installed later independent of existing connections.
- Castings are of high strength aluminum alloy; hardware is galvanized steel; one piece construction.

Type MS – Neutral Span Clamp

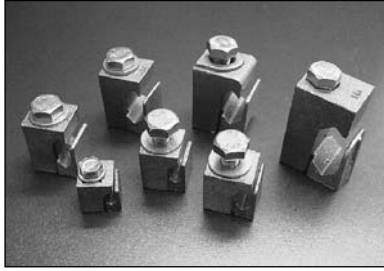
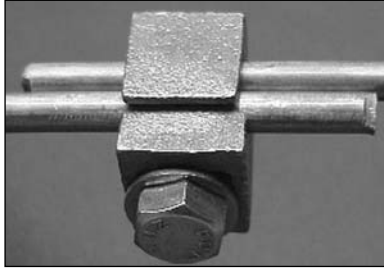
Cat. No.	Conductor Range			
	ACSR		AWG	
	Main	Tap	Main	Tap
MS4	4/0—4	1/0—6	4/0 str.—2 sol.	1/0 str.—6 sol.



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Parallel Groove Connectors



Blackburn®

Specification Information

- Bellcore Approved.
- Silicon Bronze material (CDA956000) for higher yield strength.
- Offer Stainless Steel hardware for large sizes.
- Superior Electrical Performance.
- ANSI Standards.

Focus Applications

- Distribution Loads.
- Service Bonding.
- Tap Connections.
- Ground Connections.
- Also has a grounding capability with a variety of Cable Tray, Channel and Strut applications.



ViceLock™

GET A GRIP! With our new bronze vise type connectors that come in numerous sizes and offer a wide variety of features which will save you time and money.

Blackburn® Bronze ViceLock Connectors

- Create a superior electrical connection.
- Eliminate the need for costly or heavy tools.
- Install fast and easy.
- Make a permanent connection.
- Easily installed with live line tools.

Advantages

- Vibration resistant.
- Easy to install without cross-threading.
- V-Grooves for easy conductor alignment.
- Increased bolt strength due to a full thread engagement design.
- The high pressure - torque ratio assures a low electrical resistance connection.
- Helps to reduce your inventory by accepting a wide range of conductors.

Cross Reference Information

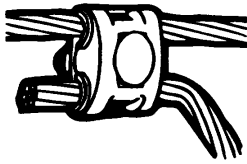
Blackburn Cat. No.	2 Conductors Wire Range*			Inner Ctn. Qty.	Master Ctn. Qty.	Competitor Cross Ref.	
	Max.	Min.	Decimal (in.)			FARGO	RELIABLE
VGC68	#6 SOL	#10 SOL	.162-.101	50	250	GC-5006	BVC-6
VGC68SH	#6 SOL	#10 SOL	.162-.101	50	250	GC-5006SH	—
VGC44	#4 STR.	#8 SOL	.232-.128	50	250	GC-5004	BVC-4
VGC23	#2 SOL	#6 SOL	.286 - .162	50	250	GC-5002	BVC-2
VGC12	#2 STR.	#5 SOL	.320-.181	50	250	GC-5002S	BVC-2S
VGC2010	1/0 STR.	#4 SOL	.390-.204	50	250	GC-5020	BVC-20
VGC3020	2/0 STR.	#3 SOL	.438-.229	25	125	GC-5020S	BVC-20S
VGC4040	4/0 STR.	#1 SOL	.552-.289	25	125	GC-5040	BVC-40

*Wire range indicates each connector's ability to accommodate two wires of the same size shown in the "MAX" or "MIN" columns.

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Blackburn®

Parallel Groove Connectors



Type PAA – One and Two-Bolt Aluminum Parallel Groove Clamps

- For use on copper, aluminum and ACSR conductors.
- Order pre-filled with oxide inhibitor for use on copper to aluminum.
- Clamps are high-strength, heat treated cast aluminum alloy.

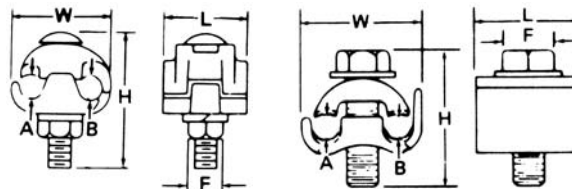
- Galvanized steel carriage bolt, nut and lockwasher are standard; for hex head bolts add suffix 3.
- PAA339 is extruded aluminum alloy, furnished with hex head bolt.

Cat. No.		Conductor Range				Conductor Diameter				Dimensions (in.)				Bolt Size
		Main		Tap		Main		Tap		F	H	L	W	
Standard	Prefilled	ACSR	AL/CU	ACSR	AL/CU	max.	min.	max.	min.					
	PAA29	2—6	2 str.—6 sol.	2—6	2 str.—6 sol.	.316	.162	.316	.162	⅝	1⅜	1⅜	1⅜	⅝
	PAA339	1/0—6	1/0 str.—6 sol.	1/0—6	1/0 str.—6 sol.	.398	.162	.398	.162	⅝	1⅜	1⅜	1⅜	⅝
PAA4	PAA49	1/0—6	1/0 str.—6 sol.	1/0—6	1/0 str.—6 sol.	.398	.162	.398	.162	⅝	2⅜	1⅜	1⅜	⅝
PAA5	PAA59	1/0—8	1/0 str.—8 sol.	1/0—8	1/0 str.—8 sol.	.398	.128	.398	.128	⅝	2⅜	1⅜	1⅜	⅝
PAA6	PAA69	1/0—8	2/0 str.—8 sol.	1/0—8	2/0 str.—8 sol.	.414	.128	.414	.128	⅝	2⅜	1⅜	1⅜	⅝
PAA10†	PAA109	336.4—1/0	400—1/0 str.	1/0—8	1/0 str.—8 sol.	.741	.368	.398	.128	⅝	2⅜	2	1⅜	⅝
PAA12	PAA129	1/0—6 AR	1/0—6 AR	4/0—2	4/0 str.—2 sol.	.563	.258	.563	.258	¾	2¼	2	2	½
PAA400*	PAA4009*	336.4—1/0	400—1/0 str.	336.4—1/0	400—1/0 str.	.741	.368	.741	.368	¾	3¼	3¼	2½	½
		1/0—6 AR	1/0—6 AR											

* PAA 400 and 4009 are two bolt clamps.

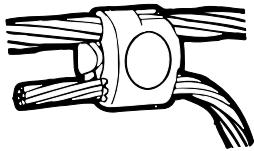
AR = Over armor rod

† RUS Listed.



Cast PAA

PAA339

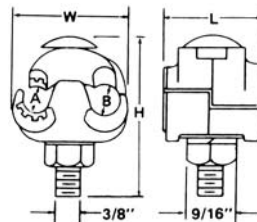


Type PAC – Aluminum Parallel Groove Clamps with Cast Copper Liner

- Aluminum body cast around pronged copper liner effectively seals out moisture.
- Corrosion resistant; copper conductor is in contact with copper aluminum conductor surrounded by aluminum; clamp provides wide physical separation of conductors reducing possibility of galvanic corrosion; aluminum bodies are pressure cast of corrosion resistant alloy; steel bolt and lockwasher are galvanized, and the nut is nickel plated.
- One piece construction; no loose parts to assemble during installation; copper inserts always face each other; carriage bolts furnished standard.
- For hex head bolt add suffix 3.

Cat. No.		Conductor Range			Conductor Diameter		Dimensions (in.)		
		Main		Tap	Main	Tap	H	W	L
Standard	Prefilled	ACSR	AL	Copper					
PAC345†	PAC3459	1/0—8	1/0 str.—8 sol.	1/0 str.—8 sol.	.398-.128	.373-.128	2⅜	1⅜	1¼
PAC7†	PAC79	336.4—1/0	400—2/0 str.	1/0 str.—8 sol.	.741-.398	.373-.128	2⅜	1⅜	1⅜
		1/0—6 AR	1/0—6 AR						

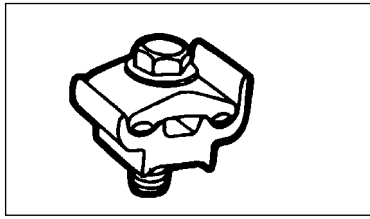
† RUS Listed.



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Blackburn®

Parallel Groove Connectors



Type PAE – Parallel Groove Clamps, Extruded Type

- Extruded parallel groove clamps for use on aluminum to aluminum or aluminum to copper connections with oxide inhibitor.
 - Tin plating (-P) or wax dip (-6) must be specified for without oxide inhibitor filled connectors.
 - Standard PAE clamp is supplied with contax (-9) and galvanized steel hardware.
 - All connectors can be installed with live line tools.
 - Options:
 - 7 Aluminum hardware
 - P Tin plating
 - 6 Wax dip for oxide protection
- Example: Cat. Number for PAE 2121 with Contax and aluminum hardware is PAE-2121-79.

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Cat. No.	Conductor Range		Conductor Diameter (in.)		Fig.	Dimensions (in.)						Galvanized Steel Bolt Thd. Size.	Aluminum Bolt Thd. Size
	Main	Tap	Main max. min.	Tap max. min.		H	W	L	F	B	A		
PAE-2121-9 [†]	2/0 ACSR—6 sol. 6 AR	2/0 ACSR—6 sol. 6 AR	.447 .162	.447 .162	1	2	1 1/8	1 1/8	3/16	3/8	—	3/8—16 UNC	3/8—16 UNC
PAE-4141-9 [†]	4/0 ACSR—2 sol. 4-6 AR	4/0 ACSR—2 sol. 4-6 AR	.563 .258	.563 .258	1	2	2	1 1/8	3/16	3/8	—	3/8—16 UNC	3/8—16 UNC
PAE-3921-9-2	397.5 ACSR—3/0 str. 2/0—6 AR	2/0 str.—6 sol. 6 AR	.743 .464	.414 .162	2	2 1/16	2 1/4	1 1/8	3/4	1 1/8	—	1/2—13 UNC	1/2—13 UNC
PAE-9941-9	1000 kcmil—397.5 ACSR 336.4—2/0 AR	4/0 ACSR—2 sol. 4-6 AR	1.152 .743	.563 .258	3	2 13/16	2 59/64	2 1/4	3/4	—	—	1/2—13 UNC	1/2—13 UNC
PAE-3931-9-2	397.5 ACSR—3/0 str. 2/0—6 AR	3/0 ACSR—2 str. 6 AR	.743 .464	.502 .292	4	2 1/16	2 5/16	3 3/8	3/4	—	1 3/4	1/2—13 UNC	1/2—13 UNC
PAE-3939-9-2	397.5 ACSR—3/0 str. 2/0—6 AR	397.5 ACSR—3/0 str. 2/0—6 AR	.743 .464	.743 .464	5	2 1/16	2 1/16	3 3/8	3/4	—	1 1/8	1/2—13 UNC	5/8—11 UNC
PAE-9921-9	1000 kcmil—397.5 ACSR 336.4—2/0 AR	2/0 str.—6 sol. 6 AR	1.152 .743	.414 .162	3	2 13/16	2 1/16	2 1/4	3/4	—	—	1/2—13 UNC	5/8—11 UNC
PAE-9939-9	1000 kcmil—397.5 ACSR 336.4—2/0 AR	397.5 ACSR—3/0 str. 2/0—6 AR	1.152 .743	.743 .464	4	2 1/16	3 3/64	3 1/2	3/4	—	1 1/2	1/2—13 UNC	5/8—11 UNC
PAE-9999-9	1000 kcmil—397.5 ACSR 336.4—2/0 AR	1000 kcmil—397.5 ACSR 336.4—2/0 AR	1.152 .743	1.152 .743	6	2 13/16	3 1/2	6	3/4	—	2	1/2—13 UNC	5/8—11 UNC

[†] RUS Listed.

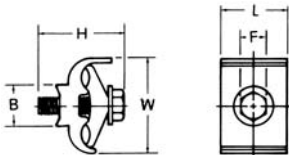


Fig. 1

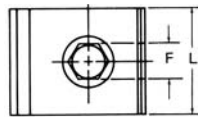


Fig. 2

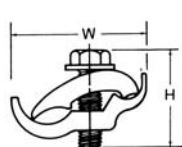


Fig. 3

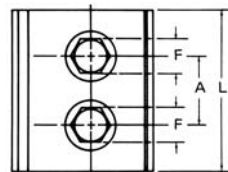


Fig. 4

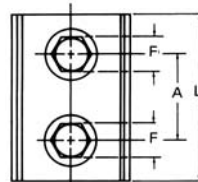


Fig. 5

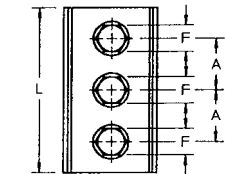
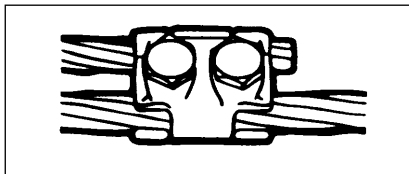


Fig. 6

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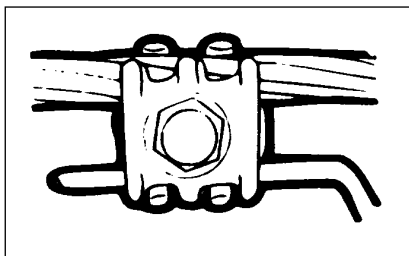
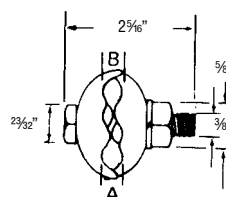
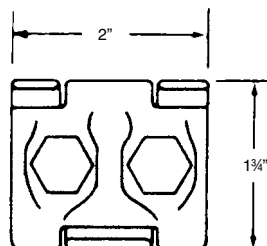
Parallel Groove Connectors



Type PC – Two-Bolt Parallel Groove Clamp

- A copper alloy parallel groove clamp; hex head bolts with square shank of silicon bronze, spring washers also of silicon bronze.
- Square shank bolts prevent turning while tightening.
- Contour of casting permits use of socket wrench if desired.
- Large contact area increases conductance.
- No special tools required.
- Not recommended for aluminum conductor

Cat. No.	Conductor Range AWG or kcmil				Conductor Diameter (in.)			
	Main		Tap		A		B	
	max.	min.	max.	min.	max.	min.	max.	min.
PC250	250 str.	4 sol.	250 str.	4 sol.	.575	.204	.575	.204



- Cast of high strength copper alloy.
- Furnished with silicon bronze hex washer head bolt.
- Parallel groove design; no need to remove bolt for installation.
- Only one size for all requirements from No. 8 solid copper to 1/0 ACSR or 2/0 copper.
- Available plated, unplated or with plating in one groove.

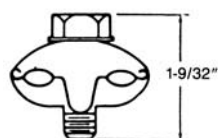
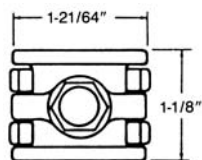
Type K – Jumper Clamps

Cat. No.	Plated Groove		Copper Groove	
	Max.	Min.	Max.	Min.
K1	1/0 ACSR 2 SCG amerductor 7/16 galv. strand	6 ACSR 12SCG amerductor 8 solid iron	2/0 str. copper 7/16 Copperweld* 2A Copperweld*	8 solid copper 9-12D Copperweld* etc.

Plated with plating removed from one groove. For use with aluminum, amerductor, or galvanized steel strand to copper or copper bonded steel wires.

Cat. No.	Either Groove	
	Max.	Min.
K2	1/0 ACSR 2 SCG amerductor 7/16 galvanized steel strand	6 ACSR 12 SCG amerductor 8 solid iron

Clamp plated. For use with amerductor, aluminum, or galvanized steel stranding.

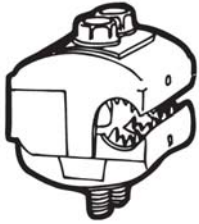


Cat. No.	Either Groove	
	Max.	Min.
K3	2/0 str. copper 7/16 copperweld* 2A copperweld*	8 solid copper 9 1/2 D copperweld* etc.

Clamp, not plated. For copper to copper connections.

* Trademark of Copperweld.

Thomas & Betts

Blackburn®**Insulated Conductor Connectors**

Blackburn®

- Performs as a splice or tap for non-tension applications up to 600 Volts depending on the size of the connector.
- Eliminates need for conductor insulation stripping.
- Self-insulated for hot line applications.
- No taping required after installation.
- For copper to copper, copper to aluminum and aluminum to aluminum applications.
- U.L. 486B Listed AL9CU (90°C rated).
- For use on insulated conductor only.
- Six connector line covers the range from #10-500 kcmil.

Type IPC – Talon™ Insulation Piercing Connectors

Cat. No.	AL or CU Conductor Range AWG/mm ²		No. Bolts	Fig	Dimensions (in.)		
	Main	Tap			W	H	L
IPC1102*	1/0—8 50—6	2—8 35—6	1	1	2 ⁵ / ₁₆	2	1 ¹⁷ / ₃₂
IPC4111	4/0—1/0 95—50	1/0—6 50—16	2	2	2 ¹ / ₂	3	1 ¹⁹ / ₃₂
IPC4141	4/0—1/0 95—50	4/0—1/0 95—50	2	2	2 ⁵ / ₈	3 ¹ / ₄	1 ²⁹ / ₃₂
IPC5041*	500—350 240—185	4/0—4 90—25	1	1	2	2 ¹ / ₂	2 ¹ / ₈
IPC3535	350—4/0 185—95	350—4/0 185—95	2	2	2 ¹ / ₁₆	2 ¹ / ₂	2 ¹ / ₈
IPC3541	350—4/0 185—95	4/0—10 95—6	1	1	2 ³ / ₄	3	2 ⁵ / ₈

* 600 Volt Rating (All others 300 Volt).

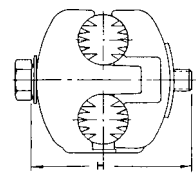
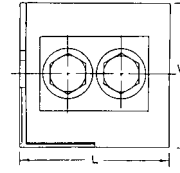
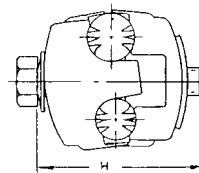
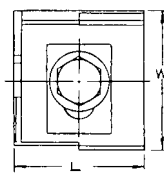
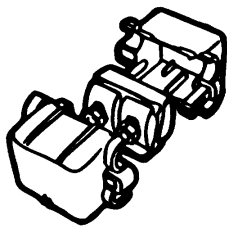


Fig. 1

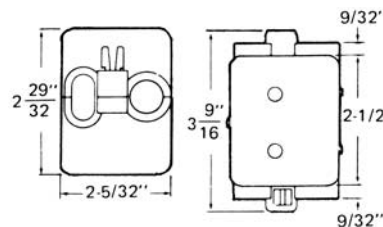
Fig. 2



- Takes up to 4 taps; taps may be added later without interrupting service or removing cover.
- Stainless steel hardware may be tightened with ⁹/₁₆" wrench or with hexagonal Allen wrench, provided with each standard package.
- Impact resistant cover and clamp clearly marked with easy to read cable ranges.
- Extended insulating shields make cable stripping easier.
- Prefilled with Blackburn Contax.

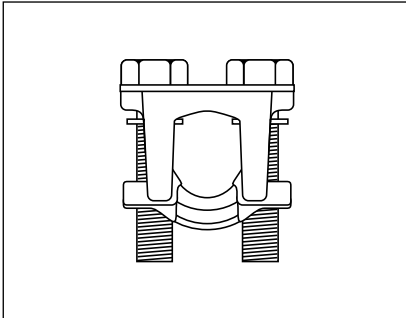
Type PT – Insulated Phase Line Connectors

Cat. No.	Number of Taps	Conductor Range			
		Main		Tap	
		AWG	ACSR	AWG	ACSR
PT49	4	4/0 str.—2 str.	2/0—2	1/0 str.—6 sol.	2-6

**Thomas & Betts**

Blackburn®

Two-Bolt Connectors

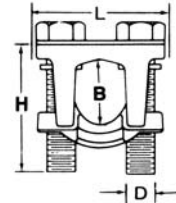


- Castings and bolts of high-strength copper alloy.
- Cap is removable; neoprene washers capture each bolt in bottom casting, aiding installation.
- U.L. 486A Listed for copper conductor only.

Type 2B – Two-Bolt Connector without Spacer

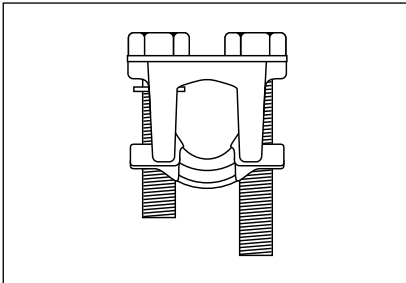
Cat. No.	Conductor Range (AWG or kcmil)				Conductor Diameter (B)		Bolt Head	Dimensions (in.)		
	Main		Tap		max.	min.		L	H	D
2B10	1/0 str.	2 str.	1/0 str.	10 sol.	.746	.394	1/2	1 1/16	1 1/4	5/16
2B20BB	2/0 str.	2 str.	2/0 str.	8 sol.	.838	.420	1/2	1 1/16	1 1/4	5/16
2B40	4/0 str.	1/0 str.	4/0 str.	6 sol.	1.056	.530	3/4	1 23/32	1 3/4	3/8
2B350	350 kcmil	4/0 str.	350 kcmil	4 sol.	1.362	.726	3/4	2 1/8	2	1/2
2B500	500 kcmil	350 kcmil	500 kcmil	4 sol.	1.626	.883	3/4	2 1/4	2 1/2	1/2
2B800	800 kcmil	600 kcmil	800 kcmil	2 sol.	2.062	1.149	3/4	2 1/2	2 1/2	1/2
2B1000	1000 kcmil	750 kcmil	1000 kcmil	2 sol.	2.304	1.255	15/16	2 31/32	2 3/4	5/8

U.L. 486A



F

Blackburn®

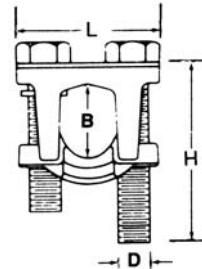


- Castings and bolts of high-strength copper alloy.
- One piece construction.
- Free bolt is held in place with neoprene washer during installation.
- One extra length bolt allows top casting to swing free over two conductors of maximum range.
- U.L. 486A Listed for copper conductor only.

Type 2BX – One-Piece Two-Bolt Connector without Spacer

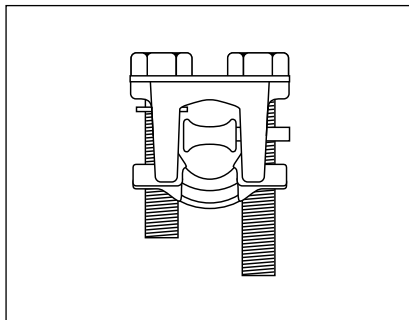
Cat. No.	Conductor Range (AWG or kcmil)				Conductor Diameter (B)		Bolt Head	Dimensions (in.)		
	Main		Tap		max.	min.		L	H	D
2B10X	1/0 str.	2 str.	1/0 str.	10 sol.	.746	.394	1/2	1 1/16	1 1/2	5/16
2B20X	2/0 str.	2 str.	2/0 str.	8 sol.	.838	.420	1/2	1 1/16	1 1/2	5/16
2B40X	4/0 str.	1/0 str.	4/0 str.	6 sol.	1.056	.530	3/4	1 23/32	1 7/8	3/8
2B350X	350 kcmil	4/0 str.	350 kcmil	4 sol.	1.362	.726	3/4	2 1/8	2 1/4	1/2
2B500X	500 kcmil	350 kcmil	500 kcmil	4 sol.	1.626	.883	3/4	2 1/4	2 1/2	1/2
2B800X	800 kcmil	600 kcmil	800 kcmil	2 sol.	2.062	1.149	3/4	2 1/2	2 3/4	1/2
2B1000X	1000 kcmil	750 kcmil	1000 kcmil	2 sol.	2.304	1.255	15/16	2 31/32	3 1/4	5/8

U.L. 486A


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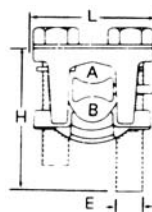
Two-Bolt Connectors



- U.L. 486A Listed for copper conductor only.
- For use on copper conductors only.
- Castings and bolts of high-strength copper alloy; spacer of ductile, high-conductivity copper alloy.
- One-piece construction; contoured spacer is ringed and swings easily over the conductor.

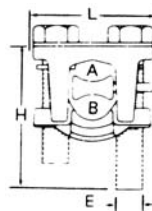
Type 2BW – One-Piece Two-Bolt Connector with Spacer

Cat. No.	Conductor Range (AWG or kcmil)				Conductor Diameter				Bolt Head	Dimensions			
	Main		Tap		A		B			L	H	E	
	max.	min.	max.	min.	max.	min.	max.	min.					
2B10W	1/0 str.	2 str.	1/0 str.	10 sol.	.373	.292	.373	.102	½	1⅞	1⅞	⅝	
2B20W	2/0 str.	2 str.	2/0 str.	8 sol.	.419	.292	.419	.128	½	1⅞	1⅞	⅝	
2B40W	4/0 str.	1/0 str.	4/0 str.	6 sol.	.528	.368	.528	.162	⅞	1⅜	2⅞	⅜	
2B350W	350 kcmil	4/0 str.	350 kcmil	4 sol.	.681	.522	.681	.204	¾	2⅞	2½	½	
2B500W	500 kcmil	350 kcmil	500 kcmil	4 sol.	.813	.679	.813	.204	¾	2¼	2¾	½	
2B800W	800 kcmil	600 kcmil	800 kcmil	2 sol.	1.031	.891	1.031	.258	¾	2½	3¼	½	
2B1000W	1000 kcmil	750 kcmil	1000 kcmil	2 sol.	1.152	.997	1.152	.258	⅞	2⅜	3¼	⅝	



Type 2BPW – One-Piece Two-Bolt Connector with Spacer

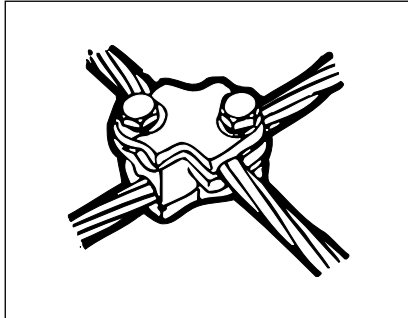
Cat. No.	Conductor Range (AWG or kcmil)				Conductor Dia.				Bolt Head	Dimensions		
	Main		Tap		A		B			L	H	E
	max.	min.	max.	min.	max.	min.	max.	min.				
2B10PW	1/0-2	1/0-6	1/0 str.-2 str.	1/0 str.-2sol.	0.398	0.292	0.398	0.102	1/2	1 ⁵ / ₁₆	1 ⁵ / ₈	1/16
2B20PW	2/0-2	2/0-6	2/0 str.-2 str.	1/0 str.-2sol.	0.447	0.292	0.447	0.128	1/2	1 ⁵ / ₁₆	1 ⁵ / ₈	5/16
2B40PW	4/0-1/0	4/0-6	4/0 str.-1/0 str.	4/0 str.-1/0sol.	0.563	0.368	0.563	0.162	3/16	1 ²⁹ / ₃₂	2 ¹ / ₈	3/8
2B350PW	350-4/0	350-4	350-4/0	350-4 sol.	0.680	0.522	0.680	0.204	3/4	2 ¹ / ₈	2 ¹ / ₂	1/2
2B500PW	397.5-336.4	397.5-4	500-350	500-4 sol.	0.813	0.679	0.813	0.204	3/4	2 ¹ / ₄	2 ³ / ₄	1/2
2B800PW	666.6-397.5	666.6-2	800-600	800-2 sol.	1.031	0.891	1.031	0.258	3/4	2 ¹ / ₂	3 ¹ / ₄	1/2
2B1000PW	900-666.6	900-2	1000-750	1000-2 sol.	1.162	0.997	1.162	0.258	15/16	2 ³¹ / ₃₂	3 ³ / ₄	5/8



- U.L. 486A Listed for copper conductor only.
- For use on copper, aluminum and ACSR conductors.

Blackburn®

Cross Tap Clamps/Dead End Clamps

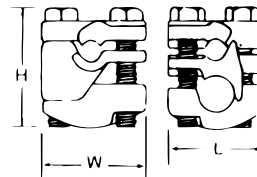


- A multi-purpose connector; castings of copper alloy; bolts of silicon bronze.
- Design allows for free wrench rotation which speeds installation.
- For tin-plated style add suffix P to Cat. Number—e.g. XT12P.

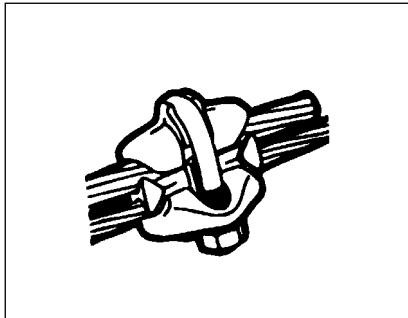
Type XT – Clamp for Tee Tap, Cross, Parallel and End-to-End Connectors

Cat. No.	Conductor Range (AWG or kcmil)				Conductor Diameter				Dim. (in.)			Bolt Size
	Main		Tap		A		B		L	H	W	
	max.	min.	max.	min.	max.	min.	max.	min.				
XT12	4/0 str.	1 str.	2 str.	6 sol.	.528	.328	.292	.162	1½	1⅜	1½	⅝
XT13	4/0 str.	1 str.	4/0 str.	1 str.	.528	.328	.528	.328	1⅞	2	1⅞	⅝
XT21	500 kcmil	250 kcmil	2 str.	6 sol.	.813	.574	.292	.162	2⅞	2⅞	1⅞	⅝
XT22	500 kcmil	250 kcmil	4/0 str.	1 str.	.813	.574	.528	.328	2⅞	2⅞	2⅞	⅝
XT23*	500 kcmil	250 kcmil	500 kcmil	250 kcmil	.813	.574	.813	.574	2⅞	2⅞	2⅞	⅝
XT33*	1000 kcmil	500 kcmil	500 kcmil	250 kcmil	1.152	.811	.813	.574	2¼	3	2⅞	⅝
XT34*	1000 kcmil	500 kcmil	1000 kcmil	500 kcmil	1.152	.811	1.152	.811	2⅞	3⅞	2⅞	⅞

* 4 bolt clamps



Type DLC – Single U Bolt Aluminum Fittings

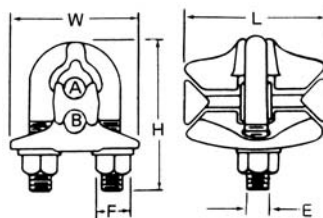


- Top and bottom pressure pads cast of high strength, heat treated, aluminum silicon alloy.
- Extra long separating spacer of highly conductive aluminum; spacer interlocks with U bolt—will not drop out.
- Spring action counteracts cold flow.

- No special tools required for installation.
- Suitable for deadend loop connections.
- Hardware of high-strength galvanized steel.
- For use on copper, aluminum and ACSR conductors.
- Order pre-filled with oxide inhibitor (suffix 9) for use on aluminum to copper.

Cat. No.	Conductor Range				Conductor Diameter				Dimensions (in.)				
	ACSR		AWG or kcmil		A		B		W	L	H	F	E
	Main	Tap	Main	Tap	max.	min.	max.	min.					
DLC2106†	2/0—6	2/0—6	2/0 str.—6 sol.	2/0 str.—6 sol.	.447	.162	.447	.162	1⅞	1½	3¼	⅞	⅝
DLC23†	4/0—1 2—6 AR	4/0—1/0	266.8—1/0 str.	266.8—1/0 str.	.563	.368	.609	.368	2⅞	2⅞	4	¾	½
DLC25	336.4—1/0 1/0—6 AR	336.4—1/0 1/0—6 AR	397.5—1/0 str.	397.5—1/0 str.	.684	.368	.743	.368	2⅞	3⅞	4	¾	½

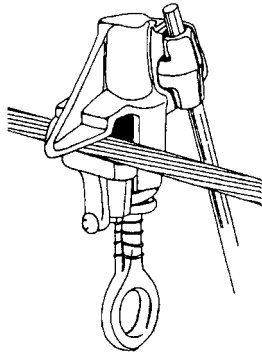
† RUS listed



Thomas & Betts

Blackburn®

Hot Line Clamps



Blackburn®

- Eye-bolt coated with high temperature grease, assuring easy turning in all weather conditions.
- Available prefilled with oxide-inhibiting Contax and individually packaged; add suffix 9 to Cat. Number.
- HLC2108 Series is for 2/0—8 main line conductor.
- HLC3974 Series is for 397.5 kcmil—6 main line conductor.

Type HLC – Hot Line Clamps (Protected Thread)

Cat. No.	For Wire Combination	Conductor Range			
		Main		Tap	
		ACSR	AWG or kcmil	ACSR	AWG
Bronze Body HLC2108 [†]	Copper to Copper	—	2/0—8	—	2/0
Plated Bronze Body HLC2108P	General Purpose	2/0—6	2/0—8	2/0—6	2/0—8
Plated Aluminum Body HLC2108AP9	General Purpose	2/0—6	2/0—8	2/0—6	2/0—8
Bronze Body HLC3974	Copper to Copper	—	400—6 sol.	—	4/0—6 sol.
Plated Bronze Body HLC3974P	General Purpose	—	400—6 sol.	3/0—6	4/0—6 sol.
Plated Aluminum Body HLC3974AP	General Purpose	397.5—6	400—6 sol.	3/0—6	4/0—6 sol.

[†] RUS Listed.

Type PGH – Center Bolt Parallel Groove Hot Tap Clamps

- Incorporates the superior design features of parallel groove clamps, time-proven for their reliable performance.
- Protected threads; wide temperature range lubricant prevents seizing.
- Tap wire positively secured to clamp during installation and removal by hex head bolt and pressure pad; main and tap clamped securely as clamp is tightened.
- Available prefilled with Contax, add suffix 9.
- Copper clamps are for use on copper conductors only.

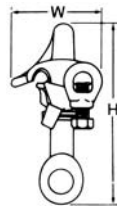


Fig. 1

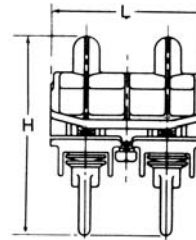


Fig. 2

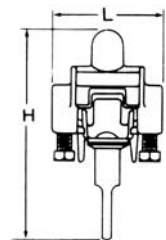


Fig. 3

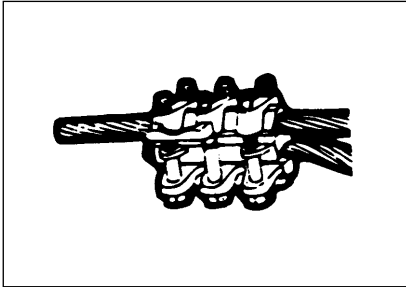
Cat. No.		Conductor Range				Conductor Diameter				Center Bolts			Dimensions (in.)		
		Main		Tap		Main		Tap							
Std.	Pre-filled	ACSR	AWG	ACSR	AWG	max.	min.	max.	min.	No.	Dia.	Fig.	W	H	L
Aluminum Clamps															
	PGH29	2/0—8	2/0 str.—8 sol.	1/0—8	1/0 str.—8 sol.	.447	.128	.398	.128	1	½	1	2⅝	5¾	2⅝
PGH4	PGH49	397.5—6 2/0—6 AR	450—4 sol.	3/0—6	4/0 str.—6 sol.	.781	.198	.528	.162	1	½	1	3⅜	6⅜	2⅞
		874—4/0 397.5¼—2 AR	1000—4/0 str.	266—6	300—6 sol.	1.152	.522	.657	.162	2	½	2	4	6¾	4¼
	PGH6129*	874—4/0 397.5¼—2 AR	1000—4/0 str.	266—6	300—6 sol.	1.152	.522	.657	.162	1	½	3	3⅝	6¾	3⅜
Copper Clamps															
PGH3	PGH39	—	2/0 str.—8 sol.	—	2/0 str.—8 sol.	.419	.419	.128	.128	1	⅞	1	2⅝	5¼	1¼

* PGH6129 has two hex head bolt and pressure pad tap conductor retainers.
AR—with Armor Rod.

Thomas & Betts

Blackburn®

Multi-Bolt Connectors

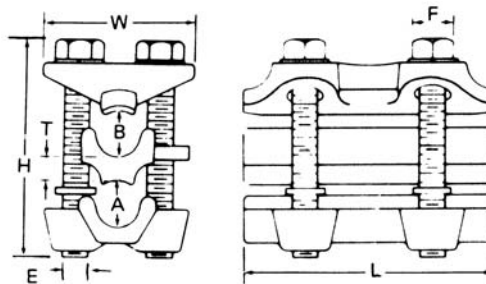


Types 4B, 6B – One Piece Multi-Bolt Connectors

- Cap and pressure plate of cast aluminum alloy; spacer of high conductivity aluminum.
- High strength aluminum alloy bolts and lock washers prevent seizing.
- One piece construction eliminates loose parts during installation.

- For use on copper, aluminum and ACSR conductors.
- Factory filled with Contax oxide inhibitor.

Cat. No.	Conductor Range				Conductor Diameter				Dimensions (in.)							No. of Bolts
	ACSR		AWG or kcmil		A		B									
	Main	Tap	Main	Tap	max.	min.	max.	min.	W	F	H	T	L	E		
4B29	4/0—4	4/0—4	250—2 str.	250—2 sol.	.575	.250	.575	.250	2 ⁵ / ₁₆	⁵ / ₈	3 ³ / ₁₆	^{1 1} / ₃₂	3 ³ / ₄	⁷ / ₁₆	4	
4B49	397.5—1/0	397.5—1/0	477—1/0 str.	477—1/0 str.	.795	.368	.795	.368	2 ³ / ₄	³ / ₄	4 ⁵ / ₁₆	¹³ / ₃₂	4 ³ / ₄	¹ / ₂	4	
6B89	795—300	795—300	800—350	800—336.4	1.108	.679	1.108	.679	3 ¹ / ₂	¹⁵ / ₁₆	5 ⁵ / ₆₄	⁷ / ₁₆	6 ³ / ₄	⁵ / ₈	6	



F

Blackburn®

Blackburn®

AMT Connectors


NEW

AMT Connectors



The high quality and built-in flexibility of the new Blackburn® AMT Connectors reduce the cost of field installations on splices, taps, and terminations. They're easy and quick to install, and provide superior insulation that lasts the life of the connection.

Features and Benefits:

- PVC insulation eliminates insulation failures and reduces outage costs.
- UV resistant material.
- Compact design provides space efficiencies.
- UL Listed.

Blackburn®

Cat. No.	Description	Fig.	UPC	Std. Ctn.
AMTD50066	Insulated Six Hole Both Sides For 500-#6 AWG	5	783786-25947	10
AMTD50065	Insulated Five Hole Both Sides For 500-#6 AWG	5	783786-25946	10
AMTD50064	Insulated Four Hole Both Sides For 500-#6 AWG	5	783786-25945	10
AMTD50063	Insulated Three Hole Both Sides For 500-#6 AWG	5	783786-25944	10
AMT500	Insulated Two Hole Same Side For 500-#6 AWG	2	783786-25925	25
AMTD350106	Insulated Six Hole Both Sides For 350-#10 AWG	5	783786-25943	10
AMTD350105	Insulated Five Hole Both Sides For 350-#10 AWG	5	783786-25942	10
AMTD350104	Insulated Four Hole Both Sides For 350-#10 AWG	5	783786-25941	25
AMTD350103	Insulated Three Hole Both Sides For 350-#10 AWG	5	783786-25940	25
AMTS350106	Insulated Six Hole Same Side For 350-#10 AWG	4	783786-25937	10
AMTS350105	Insulated Five Hole Same Side For 350-#10 AWG	4	783786-25936	10
AMTS350104	Insulated Four Hole Same Side For 350-#10 AWG	4	783786-25935	25
AMTS350103	Insulated Three Hole Same Side For 350-#10 AWG	4	783786-25934	25
AMT350	Insulated Two Hole Same Side For 350-#10 AWG	2	783786-25924	25
AMTS250108	Insulated Eight Hole Same Side For 250-#10 AWG	4	783786-25933	10
AMTD250106	Insulated Six Hole Both Sides For 250-#10 AWG	5	783786-25939	10
AMTD250105	Insulated Five Hole Both Sides For 250-#10 AWG	5	783786-25938	10
AMTD250104	Insulated Four Hole Both Sides For 250-#10 AWG	5	783786-25927	25
AMTD250103	Insulated Three Hole Both Sides For 250-#10 AWG	5	783786-25926	25
AMTT250	Insulated Two Hole Opposite Sides for 250-#10 AWG	3	783786-25923	25
AMT250	Insulated Two Hole Same Side for 250-#10 AWG	2	783786-25922	25
AMTS414	Insulated Four Hole Same Side for #4-#14 AWG	4	783786-25932	25
AMTTC4	Insulated Two Hole Opposite Sides for #4-#14 AWG	3	783786-25919	25
AMTC4	Insulated Two Hole Same Side for #4-#14 AWG	2	783786-25917	25
AMTT20	Insulated Two Hole Opposite Sides for 2/0-#14 AWG	3	783786-25921	25
AMT20	Insulated Two Hole Same Side for 2/0-#14 AWG	2	783786-25920	25
AMTSR500	Insulated Aluminum Splice 500-#10 AWG	1	783786-25931	25
AMTSR350	Insulated Aluminum Splice 350-#6 AWG	1	783786-25930	25
AMTSR250	Insulated Aluminum Splice 250-#6 AWG	1	783786-25929	25
AMTSR10	Insulated Aluminum Splice 1/0-#14 AWG	1	783786-25928	25

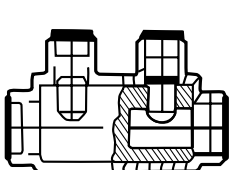


Fig. 1

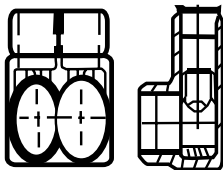


Fig. 2

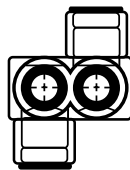


Fig. 3

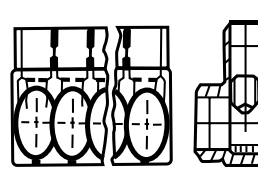


Fig. 4

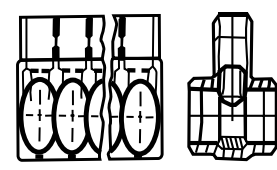
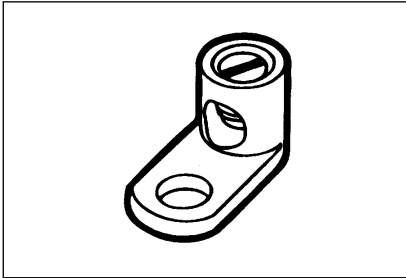


Fig. 5

Thomas & Betts

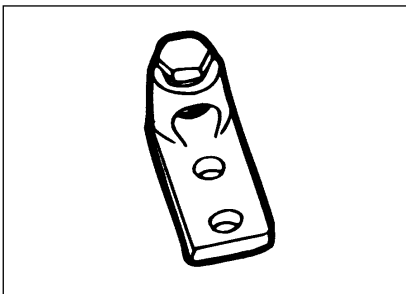
Blackburn®

Copper Mechanical Connectors



Copper Mechanical Connectors

- For copper conductors.
- Screws are plated steel.
- Compact design.
- Add suffix P to cat. number for tin plating.
- One-piece construction for strength and durability.
- Excellent for confined quarters.
- Cat. Nos. L400 and L650 are cast from high strength bronze alloy.
- Cat. Nos. L35, L70, L125 and L250 are cold forged from pure electrolytic copper with 99% conductivity.

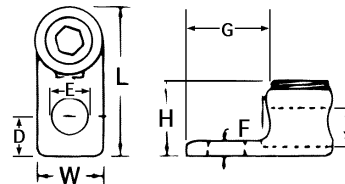


- Cast from high strength bronze alloy.
- For use where large contact area is required to provide a more secure mounting.

Type L – Single Conductor, One Hole Mount

Cat. No.		Conductor Range		Dimensions (in.)							
Socket	Hex	max.	min.	L	W	H	F	D	J	E	G
L35*	—	8 str.	14 sol.	$\frac{13}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{32}$	$\frac{13}{64}$	$\frac{11}{64}$	$\frac{13}{64}$	$\frac{1}{2}$
L70*	—	4 str.	14 sol.	$1\frac{1}{8}$	$\frac{17}{32}$	$\frac{35}{64}$	$\frac{3}{32}$	$\frac{9}{32}$	$\frac{9}{32}$	$\frac{9}{32}$	$\frac{21}{32}$
L125	L125H	1/0 str.	8 sol.	$1\frac{1}{2}$	$\frac{47}{64}$	$\frac{3}{4}$	$\frac{3}{32}$	$\frac{3}{8}$	$\frac{27}{64}$	$\frac{21}{64}$	$\frac{27}{32}$
L250	L250H	250 kcmil	6 str.	$1\frac{5}{16}$	$\frac{15}{16}$	$1\frac{1}{16}$	$\frac{1}{8}$	$\frac{29}{64}$	$\frac{5}{8}$	$\frac{13}{32}$	$1\frac{3}{32}$
L400BB	L400H	500 kcmil	4/0 str.	3	$1\frac{13}{32}$	$1\frac{13}{32}$	$\frac{9}{32}$	$\frac{5}{8}$	$\frac{7}{8}$	$\frac{9}{16}$	$1\frac{5}{8}$
L650	L650H	1000 kcmil	500 kcmil	4	2	$2\frac{3}{16}$	$\frac{17}{32}$	$\frac{3}{4}$	$1\frac{1}{4}$	$\frac{9}{16}$	2

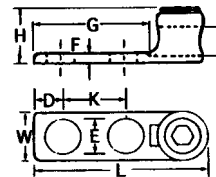
* Sizes L35 and L70 have screwdriver slot head screws only.
U.L. 486A



Type L – Single Conductor, Two Hole Mount

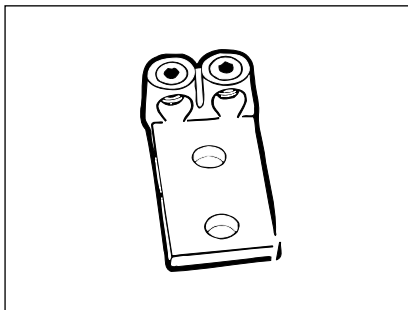
Cat. No.		Conductor Range		Dimensions (in.)								
Socket	Hex	max.	min.	L	W	H	F	D	K	E	G	J
L1252	L1252H	1/0 str.	4 str.	2 ¹³ / ₁₆	25 ³² / ₃₂	1 ³ / ₁₆	3 ¹⁶ / ₁₆	7 ¹⁶ / ₁₆	1	11 ³² / ₃₂	2	27 ⁶⁴ / ₆₄
L2502	L2502H	250 kcmil	1/0 str.	3	1 ¹ / ₁₆	1 ¹ / ₃₂	15 ⁶⁴ / ₆₄	7 ¹⁶ / ₁₆	1	1 ³ / ₃₂	1 ¹ / ₈	5 ⁸ / ₈
L4002	L4002H	500 kcmil	4/0 str.	3 ³ / ₈	1 ¹³ / ₃₂	1 ¹⁵ / ₃₂	5 ¹⁶ / ₁₆	7 ¹⁶ / ₁₆	1	1 ³ / ₃₂	1 ¹⁵ / ₁₆	57 ⁶⁴ / ₆₄
L6502	L6502H	1000 kcmil	500 kcmil	4 ¹⁵ / ₁₆	2	2	3 ⁸ / ₈	9 ¹⁶ / ₁₆	1 ¹ / ₂	9 ¹⁶ / ₁₆	2 ³ / ₄	1 ¹ / ₄

U.L. 486A



Blackburn®

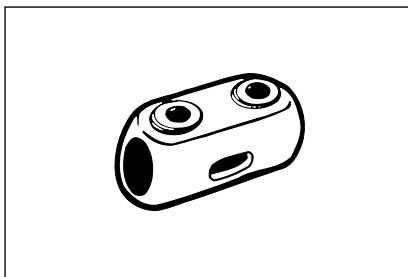
Copper Mechanical Connectors



- Conveniently terminates parallel conductors.

F

Blackburn®



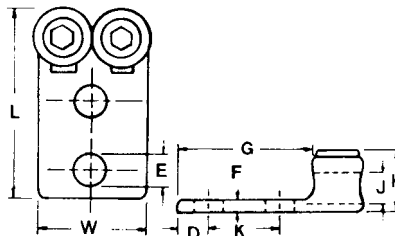
- Cast of high strength copper alloy.
- Plated steel socket head set screws.

Type TL – Two Conductor, Two Hole Mount

Cat. No.		Conductor Range		Dimensions (in.)									
Socket	Hex	max.	min.	L	W	H	F	D	K	E	G	J	
TL250	TL250H	250 kcmil	1/0 str.	4 ⁵ / ₁₆	1 ⁷ / ₈	⁹ / ₃₂	⁵ / ₈	1 ³ / ₄	⁹ / ₁₆	1 ¹ / ₁₆	3 ³ / ₁₆	⁵ / ₈	
TL400	TL400H	500 kcmil	4/0 str.	4 ³ / ₄	2 ³ / ₁₆	¹³ / ₃₂	1 ¹ / ₁₆	1 ³ / ₄	⁹ / ₁₆	1 ¹ / ₁₆	3	⁷ / ₈	
TL650	TL650H	1000 kcmil	500 kcmil	5 ⁵ / ₁₆	3 ³ / ₄	⁹ / ₁₆	⁵ / ₈	1 ³ / ₄	⁹ / ₁₆	2 ³ / ₁₆	3 ³ / ₈	1 ¹ / ₄	

Four hole NEMA tang on TL650.

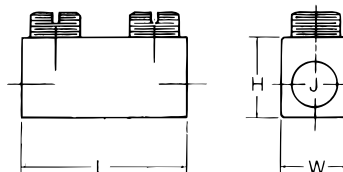
U.L. 486A



Type S – Copper End-to-End Splice Connector

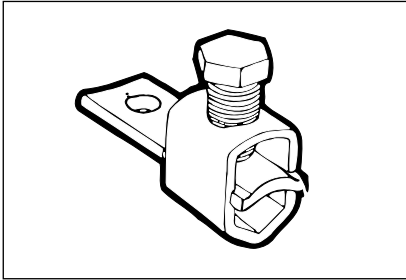
Cat. No.		Conductor Range		Dimensions (in.)					
max.	min.	L	W	H	J	I			
S100BB	1 str. 4 sol.	1 ¹¹ / ₁₆	⁵ / ₈	1 ¹¹ / ₁₆	³ / ₈	1 ⁵ / ₁₆			
S225BB*	4/0 str. 1 str.	2 ³ / ₁₆	²⁷ / ₃₂	³¹ / ₃₂	⁹ / ₁₆	1 ³ / ₁₆			
S400BB	500 kcmil 4/0 str.	2 ⁷ / ₈	1 ³ / ₁₆	1 ⁵ / ₁₆	⁷ / ₈	1 ⁵ / ₈			

* Not U.L. Listed.



Blackburn®

Copper Mechanical Connectors



- Uniquely designed pressure bar and notched v-bottom collar provide a vise-like grip between conductor and terminal.
- U.L. 486A tested for copper conductor.
- Made of electrolytic seamless copper.
- Screws are zinc plated steel.

Type STC – Copper Single Conductor, One Hole Mount (Straight Tang)

Cat. No.	Fig. No.	Conductor Range		Dimensions (in.)						
		max.	min.	L	W	H	F	E	D	
STC1014*	1	10 AWG	14 AWG	1	5/16	1/2	5/64	5/32	3/16	
STC0614	2	6 str.	14 AWG	1 1/64	3/8	1 1/16	5/64	13/64	7/32	
STC0414	2	4 str.	14 AWG	1 1/4	1/2	2 7/32	3/32	17/64	1/4	
STC0208	3	2 str.	8 str.	1 15/32	1/2	3 1/32	3/32	17/64	1/4	
STC1102	3	1/0 str.	2 str.	1 5/16	5/8	1 1/4	1/8	17/64	7/16	
STC3104	3	3/0 str.	4 str.	2 1/4	3/4	1 9/16	1/8	13/32	7/16	
STC4102	3	4/0 str.	2 str.	2 3/8	1	1 21/32	1/8	11/32	1/2	
STC3511	3	350 kcmil	1/0 str.	3 1/4	1	1 5/8	3/16	13/32	5/8	
STC5011	3	500 kcmil	1/0 str.	3 3/8	1 1/2	1 13/16	3/16	13/32	15/16	
STC9960	3	1000 kcmil	600 kcmil	5	2	2 5/8	1/4	17/32	1 1/8	

* Not CSA Listed.

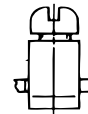
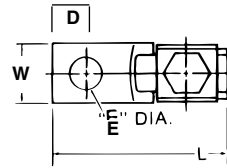


Fig. 1

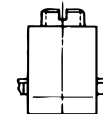


Fig. 2

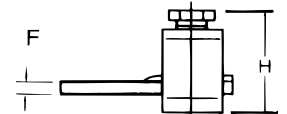


Fig. 3

Blackburn®



Type BTC – Copper Single Conductor, One Hole Mount (Offset Tang)

Cat. No.	Fig. No.	Conductor Range		Dimensions (in.)						
		max.	min.	L	W	H	F	E	D	
BTC1014*	1	10 AWG	14 AWG	1	5/16	43/64	5/64	5/32	3/16	
BTC0614	2	6 str.	14 AWG	1 3/32	3/8	25/32	5/64	13/64	7/32	
BTC0208	2	2 str.	8 str.	1 15/32	1/2	2 7/32	3/32	17/64	1/4	
BTC1102	3	1/0 str.	2 str.	1 25/32	5/8	1 13/32	1/8	17/64	7/16	
BTC3104	3	3/0 str.	4 str.	2 3/64	3/4	1 9/16	1/8	13/32	7/16	
BTC4102	3	4/0 str.	2 str.	2 7/16	1	1 61/64	1/8	11/32	1/2	
BTC3511	3	350 kcmil	1/0 str.	3 1/4	1	2 1/2	3/16	13/32	5/8	
BTC5011	3	500 kcmil	1/0 str.	4 1/4	1 1/2	2 21/32	3/16	13/32	15/16	
BTC9960	3	1000 kcmil	600 kcmil	4 3/4	2	3 1/16	1/4	17/32	1 1/8	

*Not CSA Listed.

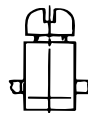
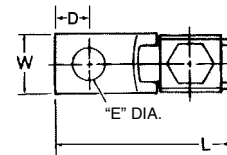


Fig. 1

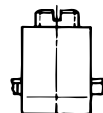


Fig. 2

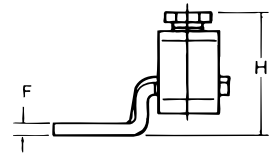


Fig. 3

Thomas & Betts

Blackburn®

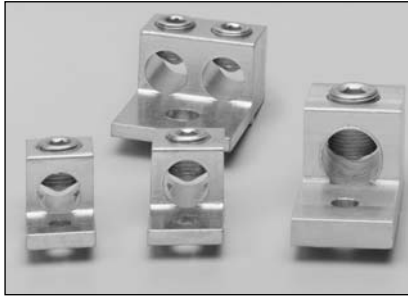
Anti-Rotational Connector


NEW

Anti-Rotational Connector

Thomas & Betts' new Anti-Rotational Connectors are designed with a rib on the bottom that keeps the connectors from turning, so there's no need to apply excessive torque and there's no danger of loosening connectors. The unique "no turn" rib provides a secure connection that eliminates conductor pinching that results from connector movement.

The new "no turn" design feature solves a unique problem for electricians and installers. Larger conductors tend to get damaged in over-torque conditions, and connectors are prone to loosen in applications where there is vibration such as motor loads. Inspectors and local standards boards are requiring electricians and installers to make provisions to eliminate these conditions, and Blackburn® Anti-Rotational Connectors are the solution.



Blackburn®

Cat. No.	Description	Std./Outer Net Each	Wt./100	UPC	Fig.
ADR21-AR	2/0-14AWG, ¼ Bolt Hole	25/250	3.48	78378661008	Fig.1
ADR30-AR	300MCM-6AWG, ⅞ Bolt Hole	25/250	10	78378661016	Fig.1
ADR35-AR	350MCM-6AWG, ⅞ Bolt Hole	12/120	15	78378661019	Fig.1
ADR60-AR	600MCM-2AWG, ½ Bolt Hole	6/60	37.5	78378661031	Fig.1
ADR35-21-AR	350MCM-6AWG, ⅞ Bolt Hole	6/60	29.7	78378614979	Fig.2
ADR60-21-AR	600MCM-2AWG, ½ Bolt Hole	4/40	75.1	78378614978	Fig.2



Fig. 1

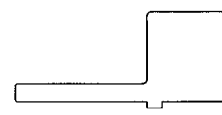
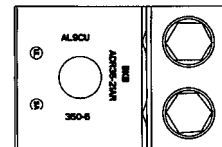
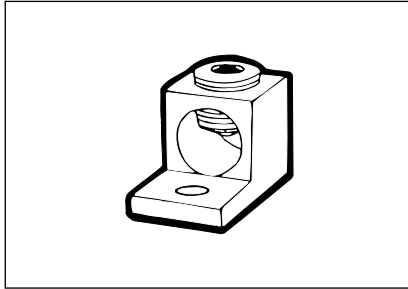


Fig. 2

Thomas & Betts

Blackburn®

Dual-Rated Mechanical Connectors

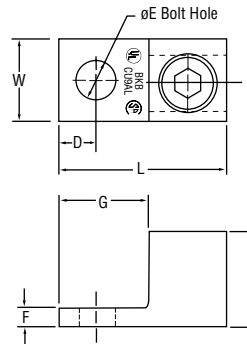


- For copper and aluminum conductors.
- Easy installation—no special tools required.
- Tin plated for low contact resistance.
- U.L. 486B tested, AL9CU Rated.
- All aluminum bodies.
- Slotted screw on lugs up through 2/0 str.; 5/16 socket screw on sizes 250 through 350 kcmil; 3/8 hex socket on sizes 500 kcmil and above.

Type ADR – ALCÜL™ Single Conductor, One-Hole Mount

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)						
	max.	min.	L	W	H	D	E	F	G
Slotted Screw									
ADR6	6 str.	14 AWG	1 3/64	1/2	3 1/64	1 5/64	1/4	5/64	4 3/64
ADR2	2 str.	14 AWG	1 5/32	1/2	9/16	1 9/64	1/4	7/64	1 1/16
ADR11	1/0 str.	14 AWG	1 15/32	5/8	2 5/32	7/16	1/4	3/16	2 7/32
ADR21	2/0 str.	14 AWG	1 15/32	5/8	2 5/32	7/16	1/4	3/16	2 7/32
Socket Screw									
ADR25	250 kcmil	6 str.	2	1	1 1/8	1 5/32	5/16	1/4	1
ADR30	300 kcmil	6 str.	2	1	1 1/8	1 5/32	5/16	1/4	1
ADR35	350 kcmil	6 str.	2 1/4	1 1/8	1 1/4	1 1/2	3/8	1/4	1 1/8
ADR50	500 kcmil	4 str.	2 13/16	1 1/2	1 9/16	3/4	3/8	3/16	1 19/32
ADR60	600 kcmil	2 str.	3 3/16	1 1/2	1 9/16	1 3/16	3/8	7/16	1 13/16
ADR6004*	600 kcmil (2) 250 kcmil	4 str. (2) 1/0 str.	2 13/16	1 3/8	1 13/16	5/8	3/8	5/16	1 1/2
ADR80	800 kcmil	300 kcmil	3 3/8	1 3/4	1 15/16	7/8	5/8	1/2	1 3/4
ADR99	1000 kcmil	500 kcmil	3 3/8	1 3/4	1 15/16	7/8	5/8	1/2	1 3/4

* Not U.L. or CSA Listed.



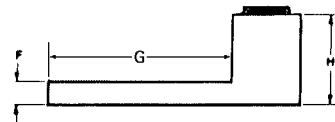
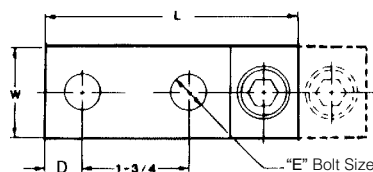
Type ADR – ALCÜL™ Single Conductor, Two-Hole Mount*

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)						
	max.	min.	L	W	H	D	E	F	G
ADR35-12*	350 kcmil	6 str.	4 1/4	1 1/4	1 3/8	5/8	1/2	3/16	3
ADR60-12D	600 kcmil	2 str.	5 5/16	1 1/2	1 1/2	5/8	1/2	3/8	3 1/16
ADR80-12D	800 kcmil	300 kcmil	6 3/16	1 3/4	1 7/8	5/8	1/2	3/16	3 1/16
ADR99-12D	1000 kcmil	500 kcmil	6 3/16	1 3/4	1 7/8	5/8	1/2	3/16	3 1/16

* NEMA spacing: 1 3/4" centers

U.L. Listed.

Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).



Thomas & Betts

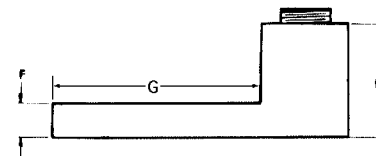
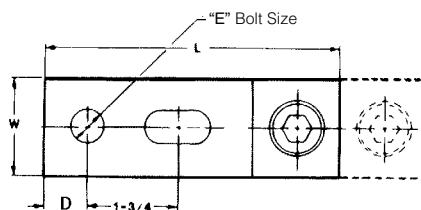
Blackburn®**Dual-Rated Mechanical Connectors**

Type ADR – ALCÜL™ Single Conductor, Switchgear Mount*

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)						
	max.	min.	L	W	H	D	E	F	G
ADR25-12S	250 kcmil	3/0 str.	3	1	1 ³ / ₁₆	1/2	3/8	1/4	2
ADR35-12S	350 kcmil	4 str.	4 ¹¹ / ₁₆	1 ¹ / ₄	1 ⁹ / ₁₆	23/32	1/2	7/16	3 ⁵ / ₁₆
ADR50-12S	500 kcmil	400 kcmil	4 ¹¹ / ₁₆	1 ¹ / ₄	1 ⁹ / ₁₆	23/32	1/2	7/16	3 ⁵ / ₁₆
ADR80-12DS	800 kcmil	300 kcmil	6 ³ / ₁₆	1 ⁵ / ₈	1 ⁷ / ₈	23/32	1/2	9/16	3 ⁷ / ₁₆
ADR99-12DS	1000 kcmil	350 kcmil	6 ³ / ₁₆	1 ⁵ / ₈	1 ⁷ / ₈	23/32	1/2	9/16	3 ⁷ / ₁₆

* NEMA Spacing: 1³/₄" centers except ADR25-12S: 1" centers.

Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).



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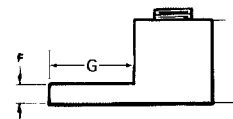
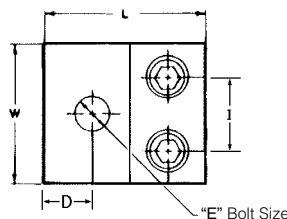
Type ADR – ALCÜL™ Two Conductor, One-Hole Mount

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)						
	max.	min.	L	W	H	D	E	F	G
ADR11-21	1/0 str.	14 AWG	1 ¹⁵ / ₃₂	1 ⁷ / ₃₂	25/32	7/16	1/4	3/16	27/32
ADR21-21*	2/0 str.	14 AWG	1 ¹⁵ / ₃₂	1 ¹ / ₄	25/32	27/64	1/4	3/16	27/32
ADR25-21	250 kcmil	6 str.	2 ⁹ / ₁₆	1 ⁴¹ / ₆₄	1 ³ / ₁₆	7/8	3/8	1/4	1 ⁹ / ₁₆
ADR35-21	350 kcmil	6 str.	2 ⁷ / ₈	1 ⁵⁹ / ₆₄	1 ¹ / ₄	7/8	1/2	1/4	1 ³ / ₄
ADR60-21	600 kcmil	2 str.	3 ³ / ₁₆	2 ¹³ / ₃₂	1 ⁹ / ₁₆	5/8	1/2	7/16	1 ¹³ / ₁₆
ADR80-21	800 kcmil	300 kcmil	3 ³ / ₈	3 ³ / ₁₆	1 ¹⁵ / ₁₆	7/8	5/8	1/2	1 ³ / ₄
ADR99-21	1000 kcmil	500 kcmil	3 ³ / ₈	3 ³ / ₁₆	1 ¹⁵ / ₁₆	7/8	5/8	1/2	1 ³ / ₄

* Not CSA Listed.

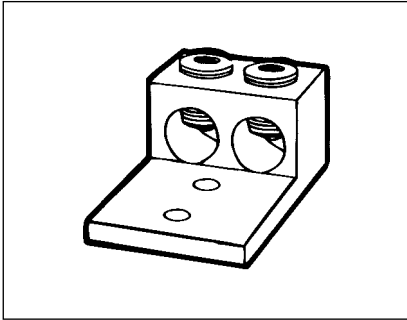
U.L. 486B

AL9CU


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Blackburn®

Dual-Rated Mechanical Connectors



Type ADR – ALCUL™ Two Conductor, Two-Hole Mount*

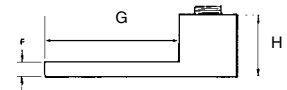
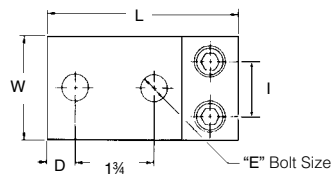
Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)							
	max.	min.	L	W	H	D	E	F	G	I
ADR35-22**	350 kcmil	6 str.	4¼	2 ¹⁹ / ₆₄	1⅝	⅝	½	⅝ ₁₆	3	1 ¹ / ₃₂
ADR60-22D	600 kcmil	2 str.	5⅝	2¾	1½	⅝	½	⅜	3⅛	1⅛
ADR80-22D	800 kcmil	300 kcmil	6⅞	3½	1⅞	⅝	½	⅞ ₁₆	3⅞ ₁₆	1⅞ ₁₆
ADR99-22D	1000 kcmil	500 kcmil	6⅞ ₁₆	3½	1⅞	⅝	½	⅞ ₁₆	3⅞ ₁₆	1⅞ ₁₆

* NEMA Spacing: 1 3/4" centers.

** U.L. Listed.

Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).

U.L. 486B, AL9CU



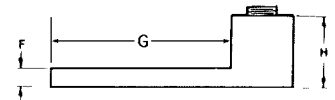
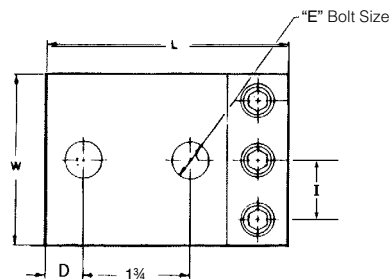
Type ADR – ALCUL™ Three Conductor, Two-Hole Mount**

Conductor Range										
(AL or CU)			Dimensions (in.)							
Cat. No.	max.	min.	L	W	H	D	E	F	G	I
ADR02-32	2 str.	14 AWG	2 ³ / ₁₆	1 ⁵ / ₈	⁵ / ₈	1 ¹ / ₃₂	⁵ / ₁₆	³ / ₁₆	1 ¹¹ / ₁₆	⁹ / ₁₆
ADR11-32	1/0 str.	14 AWG	2 ²⁹ / ₃₂	2	⁷ / ₈	1 ¹ / ₃₂	³ / ₈	¹ / ₄	2 ⁵ / ₃₂	⁴⁵ / ₆₄
ADR31-32*	3/0 str.	6 str.	4	2 ¹³ / ₁₆	1 ¹ / ₁₆	⁵ / ₈	¹ / ₂	⁵ / ₁₆	3	³ / ₃₂
ADR25-32*	250 kcmil	6 str.	4 ³ / ₁₆	2 ¹³ / ₁₆	1 ¹ / ₄	⁵ / ₈	¹ / ₂	¹ / ₄	3 ¹ / ₁₆	³ / ₃₂
ADR35-32*	350 kcmil	6 str.	4 ⁷ / ₁₆	3 ³ / ₁₆	1 ¹ / ₄	⁵ / ₈	¹ / ₂	¹ / ₄	3 ¹ / ₁₆	1 ¹ / ₃₂
ADR50-32*	500 kcmil	4 str.	4 ¹¹ / ₁₆	3 ³ / ₄	1 ⁹ / ₁₆	⁵ / ₈	¹ / ₂	⁷ / ₁₆	3 ¹ / ₁₆	1 ¹ / ₄
ADR60-32D	600 kcmil	2 str.	5 ⁵ / ₁₆	4 ³ / ₁₆	1 ¹ / ₂	⁵ / ₈	¹ / ₂	³ / ₈	3 ¹ / ₁₆	1 ¹ / ₁₆
ADR80-32*	800 kcmil	300 kcmil	6 ⁷ / ₁₆	4 ¹ / ₂	1 ⁷ / ₈	⁵ / ₈	¹ / ₂	⁹ / ₁₆	3 ¹ / ₁₆	1 ⁹ / ₁₆
ADR99-32*	1000 kcmil	500 kcmil	6 ³ / ₁₆	4 ³ / ₄	1 ⁷ / ₈	⁵ / ₈	¹ / ₂	⁹ / ₁₆	3 ¹ / ₁₆	1 ⁴¹ / ₆₄

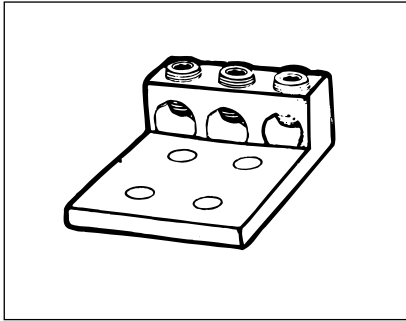
* U.L. Listed.

** NEMA Spacing: 1 3/4" centers except ADR02-32; 7/8" centers and ADR11-32; 1" centers. Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).

U.L. 486B, AL9CU



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Blackburn®**Dual-Rated Mechanical Connectors****Type ADR – ALCÜL™ Three Conductor, Four-Hole Mount****

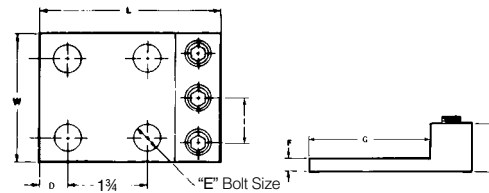
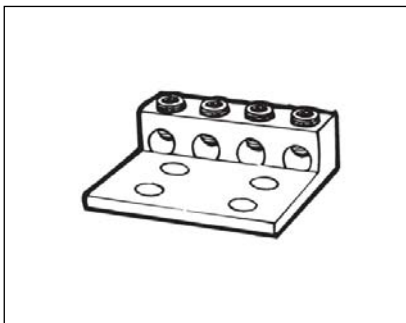
Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)							
	max.	min.	L	W	H	D	E	F	G	I
ADR02-34	2 str.	14 AWG	2 ⁵ / ₁₆	1 ⁵ / ₈	⁵ / ₈	1 ¹ / ₃₂	⁵ / ₁₆	³ / ₁₆	1 ¹ / ₁₆	⁹ / ₁₆
ADR11-34	1/0 str.	14 AWG	2 ²⁹ / ₃₂	2	⁷ / ₈	1 ¹ / ₃₂	³ / ₈	¹ / ₄	2 ⁵ / ₃₂	⁴⁵ / ₆₄
ADR31-34	3/0 str.	6 str.	4	2 ¹³ / ₁₆	1 ³ / ₁₆	⁵ / ₈	¹ / ₂	⁵ / ₁₆	3	³ / ₃₂
ADR25-34*	250 kcmil	6 str.	4 ³ / ₁₆	2 ¹³ / ₁₆	1 ¹ / ₄	⁵ / ₈	¹ / ₂	¹ / ₄	3 ¹ / ₁₆	³ / ₃₂
ADR35-34*	350 kcmil	6 str.	4 ³ / ₁₆	3 ³ / ₁₆	1 ¹ / ₄	⁵ / ₈	¹ / ₂	¹ / ₄	3 ¹ / ₁₆	1 ¹ / ₃₂
ADR50-34*	500 kcmil	4 str.	4 ¹¹ / ₁₆	3 ³ / ₄	1 ¹ / ₁₆	⁵ / ₈	¹ / ₂	⁷ / ₁₆	3 ³ / ₁₆	1 ¹ / ₄
ADR60-34D	600 kcmil	2 str.	5 ⁵ / ₁₆	4 ³ / ₁₆	1 ¹ / ₂	⁵ / ₈	¹ / ₂	³ / ₈	3 ¹ / ₁₆	1 ¹ / ₁₆
ADR80-34*	800 kcmil	300 kcmil	6 ³ / ₁₆	4 ¹ / ₂	1 ⁷ / ₈	⁵ / ₈	¹ / ₂	⁹ / ₁₆	3 ¹ / ₁₆	1 ⁷ / ₁₆
ADR99-34*	1000 kcmil	500 kcmil	6 ³ / ₁₆	4 ³ / ₄	1 ⁷ / ₈	⁵ / ₈	¹ / ₂	⁹ / ₁₆	3 ¹ / ₁₆	1 ¹ / ₆₄

* U.L. Listed.

** NEMA Spacing: 1³/₄" centers except ADR02-34; ⁷/₈" centers and ADR11-34; 1" centers.
Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).

U.L. 486B

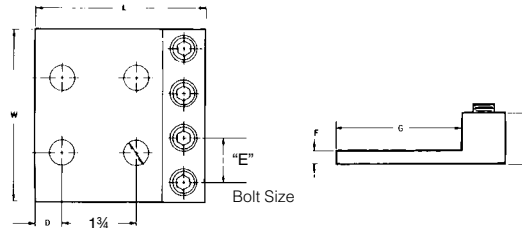
AL9CU

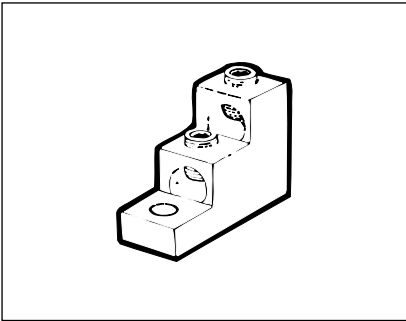
**Type ADR – ALCÜL™ Three Conductor, Four-Hole Mount***

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)							
	max.	min.	L	W	H	D	E	F	G	I
ADR25-44	250 kcmil	6 str.	4	4 ¹ ₁₆	1 ³ ₁₆	⁵ ₈	¹ ₂	⁵ ₁₆	3	1 ³ ₆₄
ADR35-44	350 kcmil	6 str.	4 ¹ ₄	4 ²³ ₃₂	1 ³ ₈	⁵ ₈	¹ ₂	⁵ ₁₆	3	1 ⁷ ₃₂
ADR60-44D	600 kcmil	2 str.	5 ⁵ ₁₆	5 ⁵ ₈	1 ¹ ₂	⁵ ₈	¹ ₂	³ ₈	3 ¹ ₁₆	1 ⁷ ₁₆
ADR80-44D	800 kcmil	350 kcmil	6 ³ ₁₆	7 ¹ ₈	1 ⁷ ₈	⁵ ₈	¹ ₂	⁹ ₁₆	3 ¹ ₁₆	1 ¹³ ₁₆

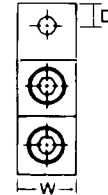
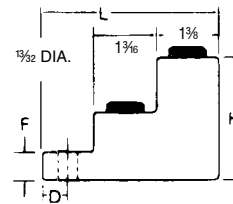
* NEMA Spacing: 1³/₄" centers.

Connectors accommodating conductors 600 kcmil and larger have double row of set screws (D suffix).

**Thomas & Betts**

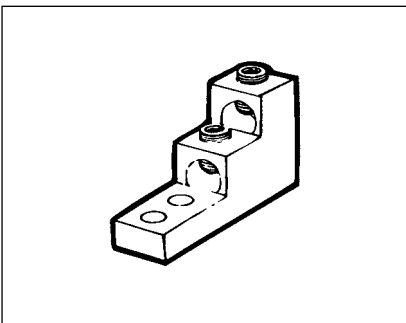
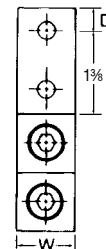
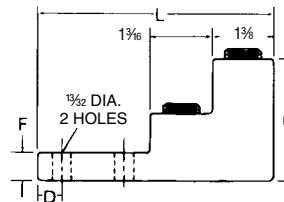
Blackburn®**Dual-Rated Mechanical Connectors****Type ASL – ALCÜL™ Two Conductor, One-Hole Mount**

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)					Mtg. Hole Dia.
	max.	min.	L	W	H	D	F	
ASL30-21	300 kcmil	6 str.	3	1⅞	2	1⅝ ₃₂	½	⅝ ₁₆

**F****Blackburn®****Type ASL – ALCÜL™ Two Conductor, Two-Hole Mount**

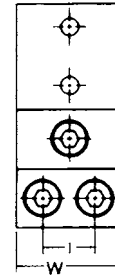
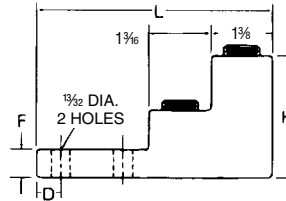
Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)					
	max.	min.	L	W	H	D	F	
ASL60-22	600 kcmil	2 str.	4 ²⁹ / ₃₂	1½	3	3/4	3/8	
ASL75-22	600 kcmil	3/0 str.	4 ²⁹ / ₃₂	1½	3	3/4	3/8	

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AL9CU

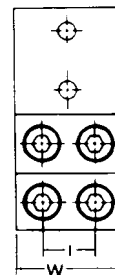
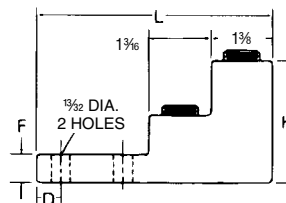
**Thomas & Betts**

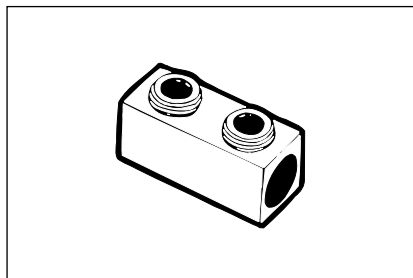
Blackburn®**Dual-Rated Mechanical Connectors****Type ASL – ALCÜL™ Three Conductor, Two-Hole Mount**

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)					
	max.	min.	L	W	H	F	D	I
ASL60-32	600 kcmil	2 str.	4 ²⁹ / ₃₂	2 ¹ / ₂	3	3 ¹ / ₄	3 ³ / ₈	1 ¹ / ₃₂
ASL75-32	750 kcmil	3/0 str.	4 ²⁹ / ₃₂	2 ²⁷ / ₂₁	3	3 ¹ / ₄	3 ³ / ₈	1 ⁵ / ₁₆

**Type ASL – ALCÜL™ Four Conductor, Two-Hole Mount**

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)					
	max.	min.	L	W	H	F	D	I
ASL60-42	600 kcmil	2 str.	4 ²⁹ / ₃₂	2 ¹ / ₂	3	3 ¹ / ₄	3 ³ / ₈	1 ¹ / ₃₂
ASL75-42	750 kcmil	3/0 str.	4 ²⁹ / ₃₂	2 ²⁷ / ₂₁	3	3 ¹ / ₄	3 ³ / ₈	1 ⁵ / ₁₆

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Blackburn®**Dual-Rated Mechanical Connectors**

Type ASR – ALCÜL™ Splicer Reducer with Solid Barrier Wire Stop

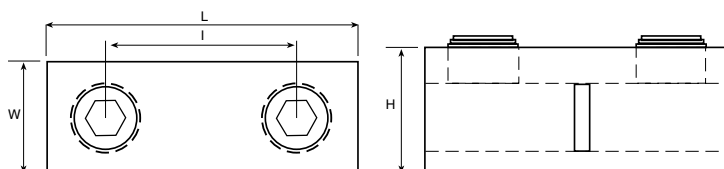
Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)			
	max.	min.	L	W	H	I
ASR0214*	2 str.	14 AWG	1¼	33/64	39/64	21/32
ASR1114*	1/0 str.	14 AWG	1½	39/64	23/32	51/64
ASR2506	250 kcmil	6 str.	2½	55/64	31/32	17/64
ASR3506	350 kcmil	6 str.	2¾	1½	1½	1¼
ASR7525**	750 kcmil	250 kcmil	6¼	1½	1¼	1½

* Slotted screws

** Two set screws per end. Not CSA Certified.

U.L. 486B

AL9CU

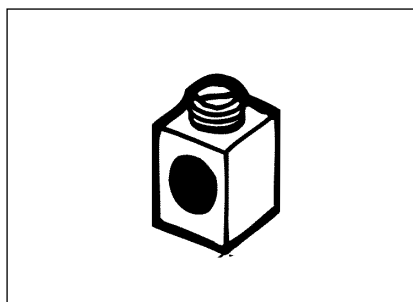
**F**

Blackburn®

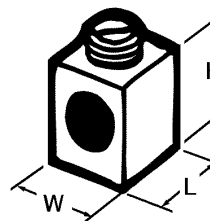


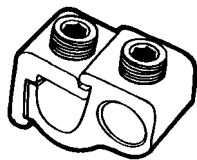
Type BX – ALCÜL™ Rectangular Connectors

Cat. No.	Conductor Range		Style & Size of Boss	Boss Hole Tapped	Dimensions (in.)		
	max.	min.			L	W	H
BX0214	2	14CU 12AL	Square .229 in.	10-32	15/32	15/32	9/16
BX1114	1/0	14CU 12AL	Square .229 in.	10-32	5/8	17/32	39/64



- Recognized component in accordance with U.L. 486B standard—90°C rating.
- Anti-rotational boss.

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Blackburn®**Dual-Rated Mechanical Connectors**

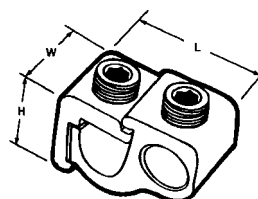
Blackburn®

Type GP – Aluminum Dual Rated Mechanical Connectors Parallel Tap Connectors

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)		
	Main	Tap	W	L	H
GP-2*	2—12 str.	4—14	$\frac{5}{8}$	$1\frac{3}{8}$	$\frac{7}{8}$
GP-0	1/0—2	1/0—14	$\frac{3}{4}$	$1\frac{3}{4}$	1
GP-250-0	250—1/0	1/0—14	$1\frac{1}{16}$	$2\frac{3}{32}$	$1\frac{5}{16}$
GP-250	250—1/0	250—6	$1\frac{1}{16}$	$2\frac{3}{32}$	$1\frac{5}{16}$
GP-350	350—4/0	350—6	$1\frac{1}{4}$	$2\frac{9}{16}$	$1\frac{7}{16}$
GP-500	500—350	500—2	$1\frac{3}{8}$	$3\frac{1}{8}$	$1\frac{3}{4}$
GP-750	750—500	500—2	$1\frac{1}{2}$	$3\frac{3}{8}$	2
GP-750-1	750—500	750—1/0	$3\frac{1}{4}$	$3\frac{1}{2}$	2

* Slotted screw, tap side.

To include insulating cover add suffix WC. No cover available for GP-750-1.

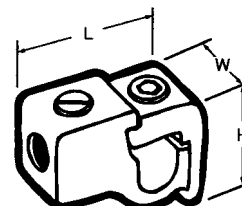


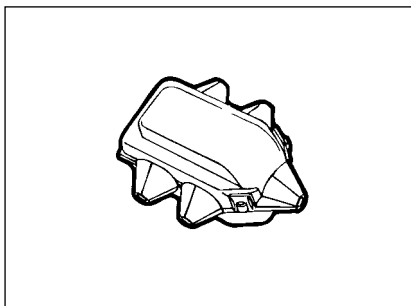
Type GT – Aluminum Dual Rated Mechanical Connectors Parallel Tap Connectors

Cat. No.	Conductor Range (AL or CU)		Dimensions (in.)		
	Main	Tap	W	L	H
GT-2*	2—12 str.	4—14	$\frac{5}{8}$	$1\frac{3}{8}$	$\frac{7}{8}$
GT-0	1/0—2	1/0—14	$\frac{3}{4}$	$1\frac{3}{4}$	1
GT-250-0	250—1/0	1/0—14	$1\frac{1}{16}$	$2\frac{3}{32}$	$1\frac{5}{16}$
GT-250	250—1/0	250—6	$1\frac{1}{16}$	$2\frac{3}{32}$	$1\frac{5}{16}$
GT-350	350—4/0	350—6	$1\frac{1}{4}$	$2\frac{9}{16}$	$1\frac{7}{16}$
GT-500	500—350	500—2	$1\frac{3}{8}$	$3\frac{1}{8}$	$1\frac{3}{4}$
GT-750	750—500	500—2	$1\frac{1}{2}$	$3\frac{3}{8}$	2

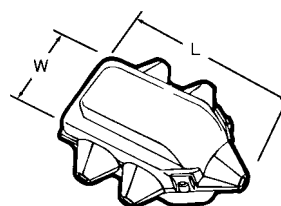
* Slotted screw, tap side.

To include insulating cover add suffix WC.

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Blackburn®**Dual-Rated Mechanical Connectors****Type TC – Insulating Covers for GP-GT**

Cat. No.	Colour	Dimensions (in.)			Use with Connector
		L	W	H	
TC-2	Yellow	2 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{1}{16}$	GP-2, GT-2
TC-10	Grey	2 $\frac{1}{2}$	2 $\frac{13}{32}$	1 $\frac{1}{4}$	GP-0, GT-0
TC-250	Red	3 $\frac{1}{8}$	2 $\frac{17}{32}$	1 $\frac{19}{32}$	GP-250, GT-250, GP-250-0, GT-250-0
TC-350BB	Yellow	3 $\frac{1}{2}$	2 $\frac{27}{32}$	1 $\frac{7}{8}$	GP-350, GT-350
TC-500	Blue	4 $\frac{1}{4}$	3 $\frac{1}{8}$	2 $\frac{1}{16}$	GP-500, GT-500
TC-750	Orange	4 $\frac{5}{8}$	3 $\frac{3}{8}$	2 $\frac{1}{2}$	GP-750, GT-750

**F****Blackburn®****Tightening Torque Values for Aluminum Dual Rated Socket Screw Connectors**

AWG or Circular Mil Size	Tightening Torque in in-lb		AWG or Circular Mil Size	Tightening Torque in in-lb	
	Screw Driver	Wrench		Screw Driver	Wrench
12	20	75	4/0	—	200
10	20	75	250	—	250
8	20	75	350	—	250
6	35	100	500	—	300
4	35	100	600	—	300
2	50	125	700	—	300
1	50	125	750	—	300
1/0	50	150	800	—	400
2/0	50	150	1000	—	400
3/0	—	200			

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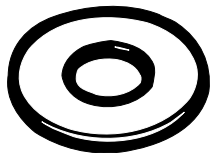
Miscellaneous Hardware



F

Blackburn®

- For tin-plated silicon bronze hardware, add suffix P to Cat. Number.
- Bolts 2" long or less have full thread; longer bolts have 2" of thread, except ¼"—20 bolts have ¼" min. thread.



Type BB – Silicon Bronze Hardware Hex Head Bolts

Length (in.)	Cat. No. Diameter and Threads per inch			
	¼"—20	⅝"—18	¾"—16	½"—13
1	25100BB	31100BB	37100BB	50100BB
1¼	—	31125BB	37125BB	50125BB
1½	—	31150BB	37150BB	50150BB
1¾	—	31175BB	37175BB	50175BB
2	—	31200BB	37200BB	50200BB
2¼	25225BB	31225BB	37225BB	50225BB
2½	—	31250BB	37250BB	50250BB
2¾	—	31275BB	37275BB	50275BB
3	—	31300BB	37300BB	50300BB
3¼	—	—	37325BB	50325BB
3½	—	—	37350BB	50350BB

Type HN – Bronze Hex Nuts

Cat. No.	Diameter and Threads per inch
14010HN	¼"—20
31010HN	⅝"—18
37010HN	¾"—16
50010HN	½"—13

Type SW – Bronze Split Lockwashers

Cat. No.	Bolt Size (in.)
14030SW	¼
31030SW	⅝ ₁₆
37030SW	¾ ₈
50030SW	½

Type FW – Bronze Flat Washers

Cat. No.	Bolt Sizes (in.)	O.D. (in.)	I.D. (in.)	Thickness (in.)
14040FW	¼	11 ₁₆	.260	.040
31040FW	⅝ ₁₆	7 ₈	.336	.064
37040FW	¾ ₈	1	.395	.064
50040FW	½	1¼	.562	.091

Type BW – Belleville Washers 302 Series Stainless Steel

Cat. No.	Bolt Size (in.)	O.D. (in.)	I.D. (in.)	Thickness (in.)	Height (in.)
50050BW	½	1⅛	17 ₃₂	.062	⅛

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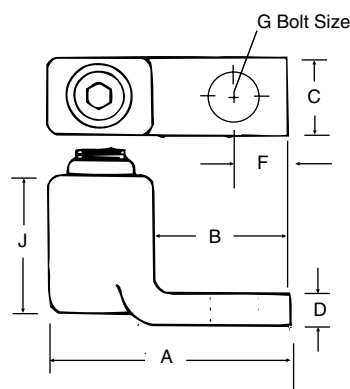
Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

Each standard one-hole lug fits many sizes of copper cable, thus only nine lug sizes are required to accommodate all cables from #14 to 1000 kcmil. Easily installed with a key wrench. Saddle and cable socket make direct, all around, low resistance contact with cable. Convenient peep hole permits easy inspection.

One-Bolt Hole

Cat. No.	Cable Size	Dimensions (in.)						
		G	A	B	C	D	J	F
31003†	14 to 8	1/2	1 1/8	9/16	1/2	1/8	17/32	9/32
31005†	8 to 4	1/2	1 1/8	5/8	1/2	1/8	17/32	9/32
31007	4 to 1	1/2	1 1/8	13/16	5/8	7/32	1	1 1/32
31009	1 to 2/0	3/8	1 15/16	1	13/16	1/4	1 3/16	7/16
31011	2/0 to 4/0	3/8	2 3/8	1 1/4	1	9/32	1 13/32	17/32
31013	4/0 to 300	1/2	2 3/4	1 1/2	1 3/16	5/16	1 17/32	5/8
31015	300 to 500	1/2	3 1/16	1 11/16	1 3/8	1 1/32	1 13/16	3/4
31017	500 to 750	1/2	3 25/32	2 3/16	1 5/8	1 3/32	2 1/8	1
31019	750 to 1000	5/8	4 5/16	2 15/32	1 7/8	1 5/32	2 11/32	1 1/16

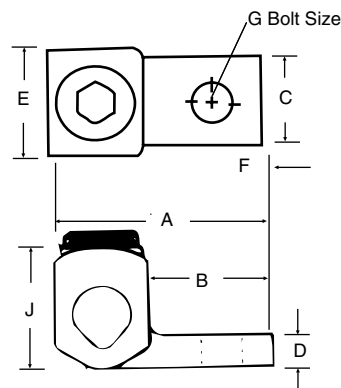
† With Filister Head Screw. All others, hex socket screws.

**One-Bolt Hole Flag Type**

Cat. No.	Cable Size	Dimensions (in.)							
		G	A	B	C	D	J	F	E
31005-AL†	8 to 4	1/4	1 1/8	5/8	1/2	1/8	17/32	9/32	1/2

† With Filister Head Screw

Bolt holes and spacings listed are standard, but lugs with blank tongues can be furnished. For torque requirements see page C71.

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Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)****One-Bolt Hole 90° Upright**

Cat. No.	Cable Size	Dimensions (in.)						
		G	A	B	C	D	J	F
31005-UAL†	8 to 4	¼	1½	5⁄8	½	⅛	½	9⁄32
31007-UAL	4 to 1	¼	1 ²¹ / ₃₂	13⁄16	5⁄8	7⁄32	13⁄16	11⁄32
31009-UAL	1 to 2/0	3⁄8	2 ¹ / ₃₂	1	13⁄16	¼	15⁄16	7⁄16
31011-UAL	2/0 to 4/0	3⁄8	2½	1¼	1	9⁄32	1⅛	17⁄32

† With Filister Head Screw. All others, hex head screws.

Bolt holes and spacings listed are standard, but lugs with blank tongues can be furnished.

**Two-Bolt Hole**

Cat. No.	Cable Size	Dimensions (in.)							
		G	A	B	C	D	J	F	H
32003†	14 to 8	¼	1 ¹¹ / ₁₆	1¼	½	⅛	15⁄32	9⁄32	5⁄8
32005†	8 to 4	¼	1¾	1¼	½	⅛	17⁄32	9⁄32	5⁄8
32007	4 to 1	¼	2¼	1 ⁷ / ₁₆	5⁄8	7⁄32	7⁄8	9⁄32	3⁄4
32009	1 to 2/0	3⁄8	2 ⁷ / ₈	1 ¹⁵ / ₁₆	13⁄16	¼	13⁄32	7⁄16	1
32011	2/0 to 4/0	3⁄8	3¼	2	1	9⁄32	15⁄16	7⁄16	1
32013	4/0 to 300	3⁄8	3¾	2½	1¾	5⁄16	1¾	7⁄16	1
32015	300 to 500	3⁄8	3½	2½	1¾	11⁄32	1 ²⁷ / ₃₂	7⁄16	1
32017	500 to 750	½	4 ¹ / ₃₂	3	1¾	13⁄32	2½	9⁄16	1½
32019	750 to 1000	½	4 ²⁷ / ₃₂	3	1⅞	15⁄32	2 ¹¹ / ₃₂	9⁄16	1½

† With Filister Head Screw. All others, hex head screws.

For torque requirements see page C71.

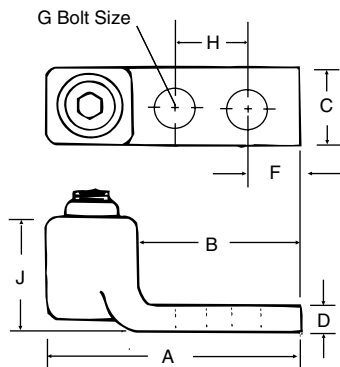
**Two-Bolt Hole NEMA Drilled**

Cat. No.	Cable Size	Dimensions (in.)							
		G	A	B	C	D	J	F	H
32207	4 to 1	3⁄8	2 ¹³ / ₁₆	2	¾	7⁄32	7⁄8	7⁄16	1
32209	1 to 2/0	½	3 ¹⁵ / ₁₆	3	1	¼	1¼	9⁄16	1¾
32211	2/0 to 4/0	½	4½	3	1	9⁄32	1 ⁹ / ₃₂	9⁄16	1¾
32213	4/0 to 300	½	4¾	3	1 ¹ / ₁₆	5⁄16	1 ¹⁵ / ₃₂	9⁄16	1¾
32215	300 to 500	½	4 ⁷ / ₈	3½	1¾	11⁄32	1 ¹³ / ₁₆	9⁄16	1¾
32217	500 to 750	½	5 ³ / ₃₂	3½	1¾	13⁄32	2½	9⁄16	1¾
32219	750 to 1000	½	5¼	3½	3	15⁄32	2½	9⁄16	1¾

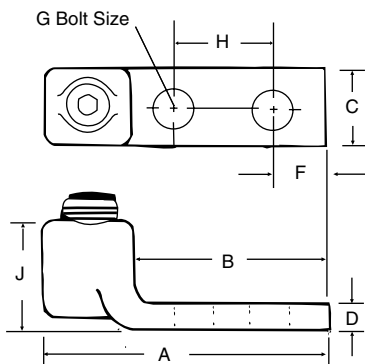
For torque requirements see page C71.

Blackburn®

The outstanding LOCKTITE® lug features of easy installation, high conductivity and wide cable range are available in this lug with a long tongue adapted for two bolts.



These two-hole lugs are furnished with bolt holes and spacings to fit equipment supplied with NEMA type connector mounting pads.



Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

Double and triple barrel LOCKTITE® lugs have same features as single barrel: screw tightening, serrated saddle, built-in lock washer.

Double Barrel/Triple Barrel NEMA Drilled 600V Applications

Cat. No.	Cable Size	Fig.	Dimensions (in.)								
			G	A	B	C	D	E	F	H	J
32003BD [†]	14 to 8	A	¼	2⅜ ₁₆	1¾	⅝	⅛	1⅛ ₁₆	⅑ ₃₂	⅝	1⅝ ₃₂
32005BD [†]	8 to 4	A	¼	2½	2	1	⅛	1	⅑ ₃₂	⅝	1⅞ ₃₂
32007BD	4 to 1	A	⅜	2⅜ ₁₆	2	1¼	⅞ ₃₂	1¼	⅞ ₁₆	1	2⅑ ₃₂
32009BD	1 to 2/0	A	½	4⅞ ₁₆	3½	1½	¼	1⅞ ₁₆	⅝	1¾	1⅜ ₃₂
32011BD	2/0 to 4/0	A	½	4⅝	3½	1¾	⅑ ₃₂	1¾	⅝	1¾	1⅝ ₁₆
32013BD	4/0 to 300	A	½	4¾	3½	2	⅝ ₁₆	2⅛	⅝	1¾	1⅞ ₁₆
32015BD	300 to 500	A	½	5⅜	3⅝ ₁₆	2½	1⅓ ₃₂	2½	⅝	1¾	1⅞ ₁₆
32017BD	500 to 700	B	½	5⅞ ₃₂	4	4	⅞ ₃₂	2⅝ ₁₆	⅝	1¾	2⅛
32019BD	750 to 1000	B	½	5⅞ ₃₂	4	4	⅞ ₃₂	3¼	⅝	1¾	2⅞ ₃₂
32011TB	2/0 to 4/0	C	½	4⅝	3⅝	2½	⅑ ₃₂	2¾	⅝	1¾	1⅝ ₁₆
32013TB	4/0 to 300	C	½	4¾	3½	3	⅝ ₁₆	3¼	⅝	1¾	1⅞ ₃₂
32015TB	300 to 500	D	½	5⅜	4	4	1⅓ ₃₂	3¾	⅝	1¾	1⅞ ₁₆
32017TB	500 to 750	D	½	5⅞ ₃₂	4	4	⅞ ₃₂	4⅜	⅝	1¾	2⅛
32019TB	750 to 1000	D	½	5⅞ ₃₂	4	4	⅞ ₃₂	4⅝ ₁₆	⅝	1¾	2⅞ ₃₂

† With Filister Head Screw
For torque requirements see page C71.

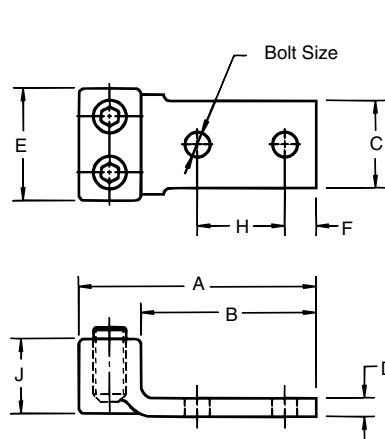


Fig. A

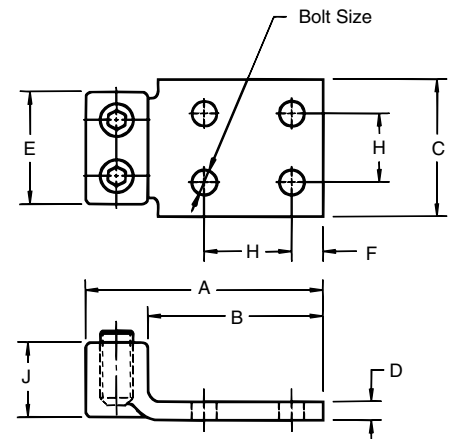


Fig. B

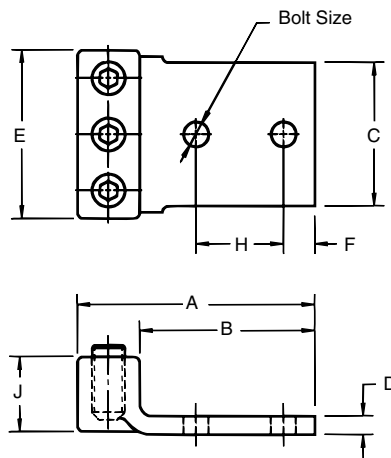


Fig. C

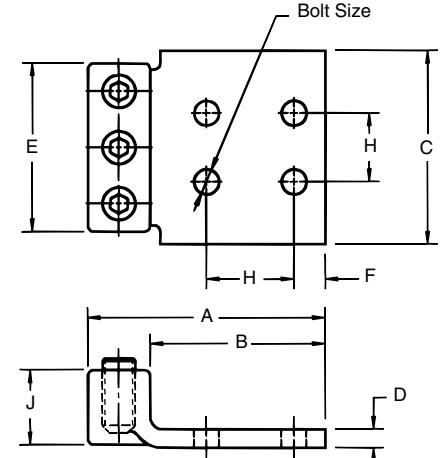


Fig. D

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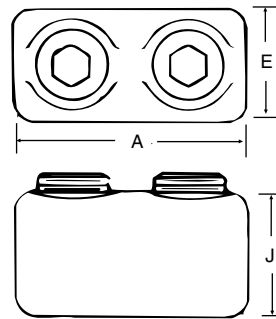
Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

Two-way connectors join two cables end to end. Cables are held by saddle, tightened by screws. Lock washers are built in.

Two-Way Connectors

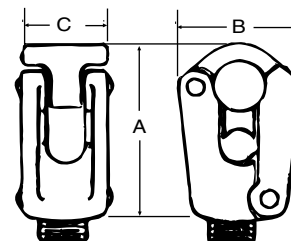
Cat. No.	Cable Size	Dimensions (in.)		
		A	E	J
32503†	14 sol. to 8 sol.	1 $\frac{1}{8}$	$\frac{3}{8}$	1 $\frac{5}{32}$
32505†	8 sol. to 4 str.	1 $\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{7}{32}$
32507	4 sol. to 1 str.	1 $\frac{5}{8}$	$\frac{5}{8}$	2 $\frac{7}{32}$
32509	1 sol. to 2/0	1 $\frac{7}{8}$	$\frac{3}{4}$	1 $\frac{1}{2}$
32511	2/0 to 4/0	2 $\frac{1}{16}$	1 $\frac{5}{16}$	1 $\frac{1}{4}$
32513	4/0 to 300	2 $\frac{3}{16}$	1 $\frac{1}{8}$	1 $\frac{1}{2}$
32515	300 to 500	2 $\frac{3}{4}$	1 $\frac{1}{4}$	1 $\frac{25}{32}$
32517	500 to 750	3 $\frac{1}{8}$	1 $\frac{1}{2}$	2 $\frac{1}{16}$
32519	750 to 1000	3 $\frac{3}{8}$	1 $\frac{11}{16}$	2 $\frac{9}{32}$

† With Filister Head Screw
For torque requirements see page C71.

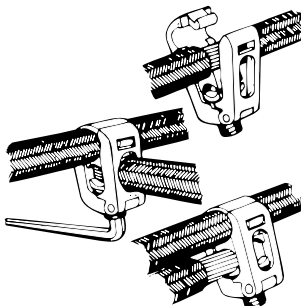
**Tee-Parallel Taps**

Cat. No.	Cable Size		Dimensions (in.)		
	Main	Branch	A	B	C
35011	300 to 500	2 to 3/0	2 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{1}{4}$
35013		4/0 to 500	3 $\frac{1}{16}$	1 $\frac{7}{8}$	1 $\frac{5}{8}$
35015		2 to 3/0	2 $\frac{13}{16}$	1 $\frac{15}{16}$	1 $\frac{1}{4}$
35017	500 to 750	4/0 to 500	3 $\frac{3}{8}$	2 $\frac{1}{16}$	1 $\frac{5}{8}$
35019		500 to 750	4	2 $\frac{1}{16}$	2 $\frac{1}{16}$

For torque requirements see page C71.



These taps are designed for one-man installation. Tap hangs on main while the branch is being inserted and the screw tightened.

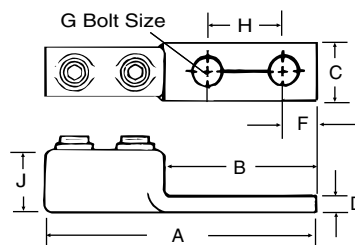
**Thomas & Betts**

Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

For stranded, solid, flexible and other types of cables, each lug takes a range of wire sizes. Bolt holes and spacings listed are standard, but lugs with blank tongues will be furnished, if specified, without extra charge.

Tandem Type Two-Bolt Hole NEMA Drilled

Cat. No.	Cable Size	Dimensions (in.)							
		G	A	B	C	D	J	F	H
32007TL	4 to 1	3/8	3 9/16	2	3/4	7/32	29/32	7/16	1
32009TL	1 to 2/0	1/2	4 15/16	3	1	1/4	13/32	9/16	1 3/4
32011TL	2/0 to 4/0	1/2	5 5/8	3	1	9/32	1 1/16	9/16	1 3/4
32013TL	4/0 to 300	1/2	5 5/8	3	1 3/16	5/16	1 9/16	9/16	1 3/4
32015TL	300 to 500	1/2	6 1 1/2	3 1/2	1 3/8	1 1/32	—	5/8	1 3/4
32017TL	500 to 750	1/2	6 2 3/32	3 1/2	1 3/4	1 3/32	2 1/8	5/8	1 3/4

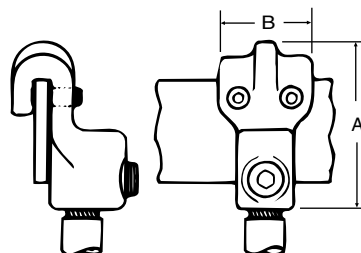


For easy installation in hard-to-reach places, these bar taps eliminate the necessity of drilling holes in the ground bus. They can be placed quickly at any location, and the only installing tool is a key wrench. A standard LOCKTITE® lug grip securely holds the tapping cable.

Ground Bus Taps – for 1/4" Copper Bus Bar

Cat. No.	Wire Size (in.)	Dimensions (in.)		Bus Thickness
		A	B	
31207	8 to 4	2 1/4	1 3/4	1/4
31208	4 to 1	2 5/16	1 3/4	1/4
31209	1 to 2/0	2 3/4	1 3/4	1/4
31210	2/0 to 4/0	2 3/4	1 3/4	1/4
31211	4/0 to 300	2 7/8	1 3/4	1/4
31212	300 to 500	3	1 3/4	1/4

For torque requirements see page C71.

**Thomas & Betts**

Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

* Hex head screws will be furnished if specified. To order, add prefix H to catalog number. On all except 14-10 and 10-8 code sizes.

Pigtail Connectors

Cat. No.	Cable Size	Fig.	Dimensions (in.)	
			A	J
31305	10 to 8	A	1/2	17/32
31307	8 to 6	B	3/4	27/32
31309	6 to 4	B	7/8	1 1/32
31311	4 to 2	B	1 1/16	1 1/4
31313	1 to 2/0	B	1 3/16	1 1/2
31315	2/0 to 4/0	B	1 5/16	1 25/32

For torque requirements see page C71.

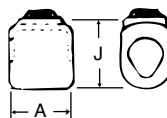


Fig. A



Fig. B

Blackburn®

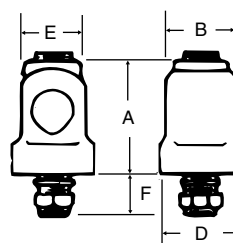


Each connector will accommodate a wide range of conductor sizes. Installation is simple and the convenient pigtail is easy to tape.

* Hex head screws will be furnished if specified. To order, add prefix H to catalog number. On all except 14-10 and 10-8 code sizes.

Stud Connectors

Cat. No.	Cable Size	Dimensions (in.)						Stud Size (in.)
		G	A	B	D	E	F	
31007-T	4 to 1	3/8 - 16	1 1/8	25/32	7/8	5/8	3/4	3/8 - 16
31009-T	1 to 2/0	3/8 - 16	1 5/8	7/8	1	3/4	3/4	3/8 - 16
31011-T	2/0 to 4/0	1/2 - 13	1 1/8	1 1/16	1 3/16	7/8	1	1/2 - 13
31013-T	4/0 to 300	1/2 - 13	1 7/8	1 3/16	1 3/8	1 1/16	1	1/2 - 13
31015-T	300 to 500	1/2 - 13	2 5/8	1 5/16	1 1/2	1 1/4	1	1/2 - 13

**Thomas & Betts**

Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

Standard tapping is shown in diagrams. Other tapping can be furnished for specific requirements.

* Hex head screws will be furnished if specified. To order, add prefix H to catalog number. On all except 14-8 and 8-4 code sizes.

Stud Connectors – (continued)

Female – Type FL

Cat. No.	Cable Size	Fig.	Dimensions (in.)			Stud Size (in.)
			G	A	B	
31261†	14 to 8	A	3/8 – 16	1 3/32	5/8	3/8 – 16
31262†	8 to 4	A	3/8 – 16	1 1/16	5/8	3/8 – 16
31263	4 to 1	B	3/8 – 16	1 5/32	3/4	3/8 – 16
31265	4 to 1	B	1/2 – 13	1 5/32	3/4	1/2 – 13
31267	2/0 to 4/0	B	1/2 – 13	2 3/16	13/16	1/2 – 13

† With Filister Head Screw

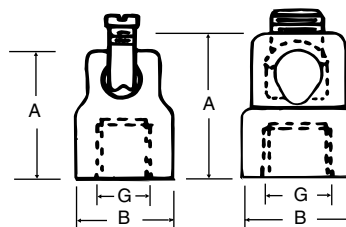


Fig. A

Fig. B

T&B Recommended Tightening Torque

Size of Conductor Ranges	Screw Wrench Torque in.-lbs.	Driver Torque in.-lbs.
14 to 8	—	20
8 to 4	—	35
4 to 1	125	—
1 to 2/0	150	—
2/0 to 4/0	200	—
4/0 to 300	250	—
300 to 500	300	—
500 to 750	300	—
750 to 1000	400	—

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Color-Keyed®**LOCKTITE® Connectors – Code Copper Conductor (for 600V)**

LUG-IT® connectors are designed to grip the cable firmly between the strong body and the serrated copper tongue. Double laps at the top give greater thread strength and lock the screw when it is tight. The copper tongue makes a low resistance terminal.

LUG-IT® Lugs – One Hole, Offset Tongue

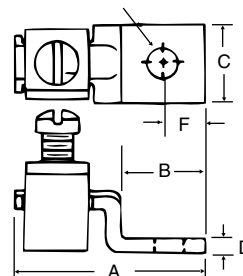
Cat. No.	Cable Size	Dimensions (in.)					
		G	A	B	C	D	F
35301	14 to 6	#10	1 ³ / ₁₆	1/2	3/8	.064	7/32
35401	8 to 2	1/4	1 ⁷ / ₁₆	5/8	1/2	.081	1/4
*35501†	4 to 2/0	1/4	1 ¹³ / ₁₆	1 ⁹ / ₁₆	3/4	.101	3/8
*35601†	1/0 to 4/0	3/8	2 ¹⁷ / ₃₂	1 ¹³ / ₃₂	1	.128	1/2

* Aluminum body

† Hex head bolt

Add suffix **G** to above Cat. No's for lug connector with green screw for grounding identification.

For torque requirements, see page C71.

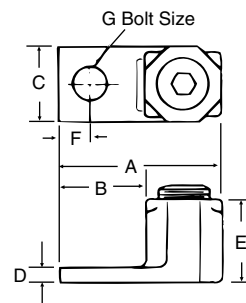
**Cone Screw Lugs**

Cat. No.	Wire Range	Dimensions (in.)							Torque (in.-lbs.)
		G	A	B	C	D	E	F	
71003	14-8	#10	1 ³ / ₁₆	7/16	3/8	3/32	3/8	3/16	20 *
71005	14-4	1/4	1 ¹⁵ / ₃₂	5/8	9/16	1/8	1 ¹⁹ / ₃₂	9/32	35 *
71010	4-2/0	3/8	1 ²¹ / ₃₂	2 ⁷ / ₃₂	2 ³ / ₃₂	3/16	2 ⁵ / ₃₂	3/8	150
71014	2-4/0	3/8	1 ⁷ / ₈	2 ⁹ / ₃₂	1 ⁵ / ₁₆	3/16	3 ¹ / ₃₂	3/8	200
71015	1-250	3/8	2 ¹ / ₃₂	2 ⁹ / ₃₂	1	7/32	1	3/8	250
71020	2/0-500	1/2	2 ³ / ₄	1 ¹ / ₄	1 ¹¹ / ₃₂	9/32	1 ¹⁵ / ₃₂	9/16	300

Add suffix **G** to lug Cat. No. 71003, 71005, 71010, and 71014 for lug with green screw for grounding identification.

U.L. File No. E-9609

*Indicates screwdriver torque; all others indicate torque wrench.

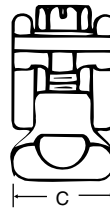
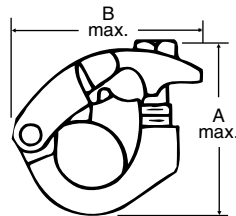
**Thomas & Betts**

Color-Keyed®**Tap Connectors for Code Copper Conductor**

HINJON® Junior taps are the most economical, easiest to install, approved connector for large to small branch taps. Jaws with all-around-grip automatically adjust to size of main and branch. Fast, simple installation is accomplished with screw driver or pliers and fitting is easily taped.

HINJON® Junior Tee-Parallel Taps

Cat. No.	Cable Size		Dimensions (in.)		
	Main	Branch	A	B	C
35107	8 to 4	14 to 8	1 $\frac{1}{16}$	$\frac{7}{8}$	$\frac{5}{8}$
35109	4 to 1/0	14 to 4	1 $\frac{1}{4}$	1	1 $\frac{1}{16}$
35111	1/0 to 4/0	14 to 4	1 $\frac{3}{4}$	1 $\frac{3}{8}$	2 $\frac{7}{32}$
35112		8 to 1	1 $\frac{5}{8}$	1 $\frac{1}{16}$	2 $\frac{7}{32}$
35115	300 to 500	14 to 4	1 $\frac{7}{8}$	1 $\frac{13}{16}$	1

**T&B Recommended Tightening Torque**

Size of Conductor Ranges	Wrench Torque in.-lbs.	Screwdriver Torque in.-lbs.
14 to 8	—	20
14 to 4	—	35
4 to 2/0	150	—
2 to 4/0	200	—
1 to 250	250	—
2/0 to 500	300	—

F**Blackburn®**

Color-Keyed[®]



Blackburn[®]

Thomas & Betts



Color-Keyed[®] ***Blackburn[®]*** **Grounding**

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Grounding Connectors	F86
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Ground Clamps	F103-F105
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Flexible Braid Selection Guide	F117
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F***Thomas & Betts***

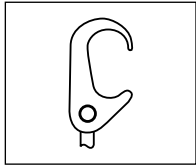
Color-Keyed®**Grounding Connectors and Accessories — Product Overview**

Figure 6
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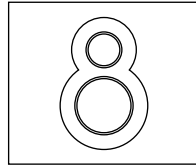


Figure 8
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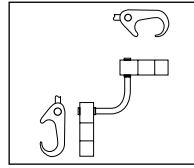


Figure 6-6
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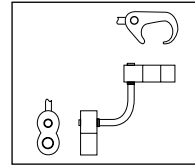
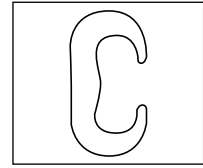
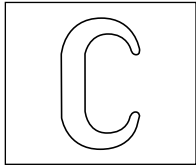


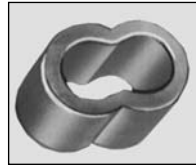
Figure 6-8
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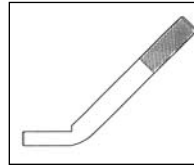
C-Taps
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C-Crimp
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Type GR
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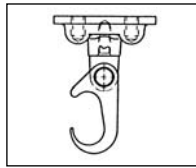
Grounding Studs
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I-Beam
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Two Way Connector
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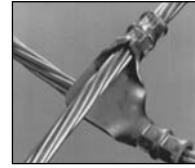
Grounding Plate
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Ground Bus
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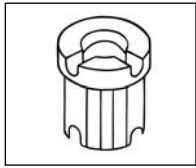
Snap Tap
Connector
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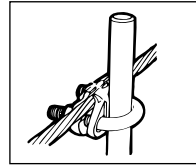
Type GRD, GG
Ground Grid
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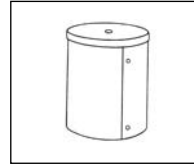
Type GG, GGH,
JAB, G
Ground Rod Clamps
Pages F101-F102



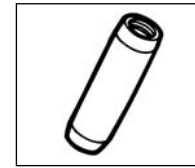
Type DGC
Drive-on Ground
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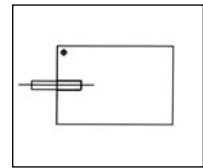
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U-Bolt Ground Clamps
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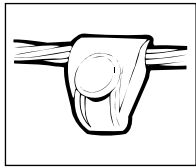
Ground Electrode
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Page F105



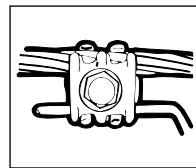
Sectional Ground
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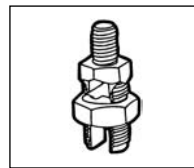
Ground Plate
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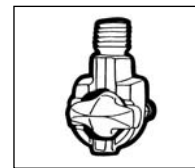
Type GTC
Tower Ground Clamps
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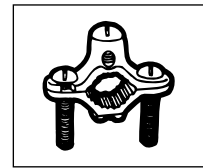
Parallel Connectors
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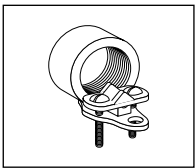
Type SP
Service Post
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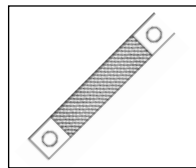
Type TTC
Transformer Tank
Grounding Connector
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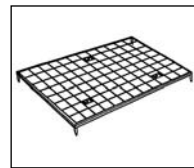
Cast Bronze
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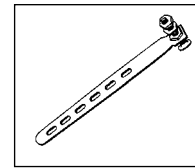
Type CH
Conduit Hubs
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Type FB
Flexible Braid
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Metallic Gradient
Control Mat
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Type FJ
Flexible Ground
Clamp
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Thomas & Betts

Color-Keyed®

E-Z Ground™ Grounding Connectors

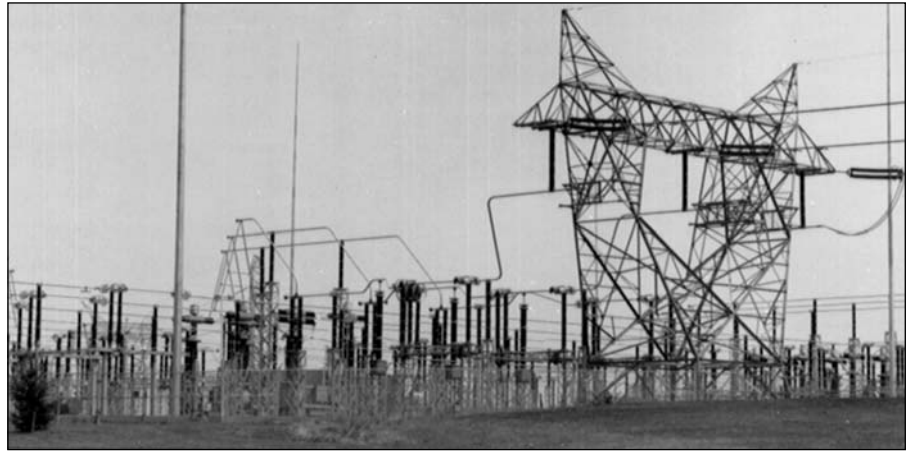


This installation method results in a long lasting low installed cost connection. You can install it and forget it.

Before compression, typical cable connector cross section of cable and connector consists of about 75% metal and 25% air. After Thomas & Betts method compression, the cross section shows 100% metal with virtually no air spaces.

Thomas & Betts introduces a method of compression to replace exothermic welding and its associated disadvantages. This compression method is designed to provide quick, reliable connections for grid grounding at significantly lower installed costs since compression connectors install in less time, in any weather, and are unaffected by moisture, reducing downtime. In addition, our compression connectors for grid grounding require no special training for installation. They are made of high conductivity wrought and cast copper, and are used for connecting and tapping cross grid, loop lines, and ground rods for direct burial or concrete embedded ground grid systems. The Thomas & Betts compression system uses standard electrical connector installation tools.

Compression Method Grounding Connectors Save 50-75% In Time and Labor Costs



- Eliminates exothermic welding.
- Reduces labor and labor costs.
- Minimize possibility of poor connections.

- Mechanical, tensile and electromagnetic force (EMF) criteria.
- Install in any weather – cut downtime.
- Enhance safety.
- Easy to install – no special training.

Meets all applicable specifications

Thomas & Betts grid and ground rod connectors satisfy the requirements of NEC 250-50 for connecting to the Grounding Electrode System. They also meet the requirements of U.L. Std. 467, U.L. Std. 486 CSA Std. C22.2 No. 41 and CSA Std. C22.2 No. 65 being acceptable as grounding and bonding equipment suitable for direct burial. Thomas & Betts grid and ground rod connectors also satisfy the recommended practice for the selection of grounding connector joints described in IEEE 837 standard for qualifying permanent connections used in substation grounding.

The connectors conform to the following IEEE Standard 837 requirements:

- 350°C current cycling
- Freeze-thaw test
- Accelerated aging – Nitric acid/salt spray.

Reliable installations through compression connections

The Thomas & Betts method, utilizing compression tools with matching dies, forms the connector and conductor into a solid, homogeneous mass to provide an optimum electrical bond between connector and conductor. The dies are designed to produce a circumferential, hex-shaped compression rather than a simple indent. The circumferential compression creates a large area of high pressure contact between cable and connector which, in turn, assures high conductivity, low resistance, and high pullout values exceeding all industry requirements.

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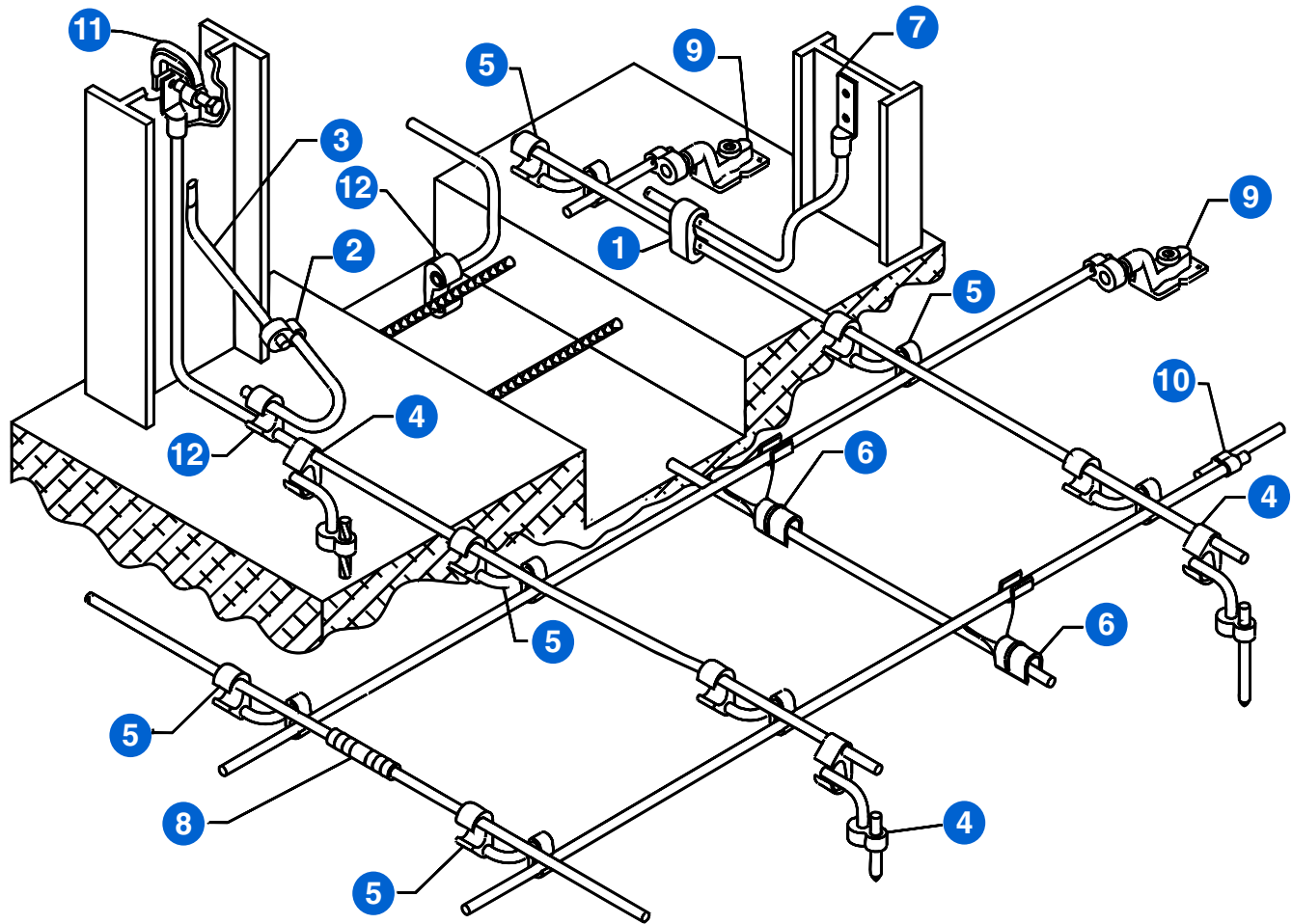
Blackburn®

Thomas & Betts

Color-Keyed[®]

Grounding Connectors

F
Blackburn[®]



Thomas & Betts offers its complete line of grid-ground compression connectors. Our EZ Ground™ connectors are designed for direct burial and offer a safe, efficient alternative to exothermic welding products. Grid ground installations do not require explosive charges, and can be installed in various climate conditions. These range taking products will reduce the number of connectors and dies needed for your installation. Thomas & Betts E-Z Ground products meet all applicable standards (IEEE837, UL467, CSA 22.2). Connectors are pre-filled with oxide inhibitors and sealed.

- | | | |
|-----------------------------------|--------------------------|-----------------------|
| 1 C-Taps | 5 Figure 6-6 Connectors | 9 Grounding Plate |
| 2 Figure 8 | 6 GG Connectors | 10 Pigtail Connectors |
| 3 Steel Grounding Stud TBG Series | 7 Lug | 11 I Beam Clamp |
| 4 Figure 6-8 Connectors | 8 Splice/2-Way/Connector | 12 Figure 6 Connector |

Thomas & Betts

Color-Keyed®

EZ Ground™ Compression Connectors

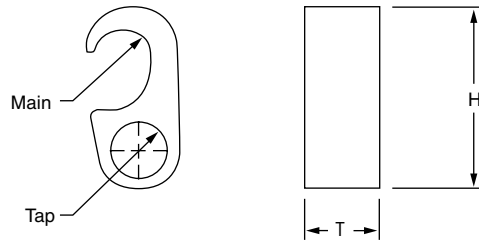


Figure 6 Compression Ground Tap Connector

Cat. No.	Application		Cable to Rebar Application		Dimensions (In.)		Dies for TBM 14M, 13100A or TBM15I
	Main	Tap	A Ground Rod	B Cable Range	T	H	
54855	1/0 STR. - .250 kcmil or 1/2" - 5/8" ROD	#4 SOL. - #2 STR.	#3 Rebar 3/8 thru 1/2 #4 Rebar	#4 SOL. - #2 STR.	3/4"	1 15/16"	15G86R
54860	1/0 STR. - .250 kcmil or 1/2" - 5/8" ROD	1/0 STR. - 2/0 STR.	#3 Rebar 3/8 thru 1/2 #4 Rebar	1/0 STR. - 2/0 STR.	3/4"	2 3/16"	15G86R
54865-CK	1/0 STR. - .250 kcmil or 1/2" - 5/8" ROD	3/0 STR. - 250 kcmil	#3 Rebar 3/8 thru 1/2 #4 Rebar	3/0 STR. - .250 kcmil	3/4"	2 3/16"	15G86R
54875	#6 SOL. - #2 STR.	#6 SOL. - #2 STR.	—	—	3/4"	2 3/16"	15501A
54885	250 kcmil - 500 kcmil or 5/8" - 3/4" ROD	#4 SOL. - #2 STR.	#5 Rebar 5/8 thru 3/4 #6 Rebar	—	3/4"	1 15/16"	15G126R
54890	250 kcmil - 500 kcmil or 5/8" - 3/4" ROD	1/0 STR. - 2/0 STR.	#5 Rebar 5/8 thru 3/4 #6 Rebar	1/0 STR. - 2/0 STR.	3/4"	2 1/8"	15G126R
54895	250 kcmil - 500 kcmil or 5/8" - 3/4" ROD	3/0 STR. - 250 kcmil	#5 Rebar 5/8 thru 3/4 #6 Rebar	3/0 STR. - 250 kcmil	3/4"	2 3/16"	15G126R
54900	250 kcmil - 500 kcmil or 5/8" - 3/4" ROD	350 kcmil - 500 kcmil	#5 REBAR 5/8 thru 3/4 #6 Rebar	350 kcmil - 500 kcmil	1 3/8"	2 7/16"	15G121R

* Tin plated version available of galvanized ground rods. Add suffix -TP

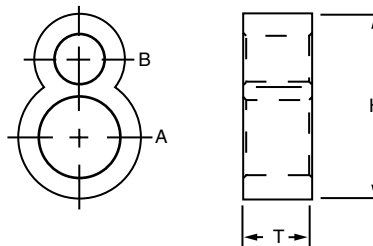


Figure 8 Compression Ground Rod Tap Connector

Cat. No.	A Ground Rod	B Cable Range	Dimensions (In.)		Dies for TBM14M 13100A or TBM15I
			T	H	
GR12-202	1/2"	2 AWG-2/0 AWG	7/8"	1 15/16"	15G121R
GR58-202	5/8"	2 AWG-2/0 AWG	7/8"	1 31/32"	15G121R
GR34-202	3/4"	2 AWG-2/0 AWG	7/8"	2 3/16"	15G121R
GR1-202	1"	2 AWG-2/0 AWG	7/8"	2 9/16"	15G121R
GR12-40250	1/2"	3/0 AWG-250 kcmil	7/8"	1 15/16"	15G121R
GR58-40250	5/8"	3/0 AWG-250 kcmil	7/8"	2 1/8"	15G121R
GR34-40250	3/4"	3/0 AWG-250 kcmil	7/8"	2 3/16"	15G121R
GR1-40250	1"	3/0 AWG-250 kcmil	7/8"	2 7/16"	15G121R
GR58-300500	5/8"	300-500 kcmil	7/8"	2 1/8"	15G121R
GR34-300500	3/4"	300-500 kcmil	7/8"	2 7/16"	15G121R
GR1-300500	1"	300-500 kcmil	7/8"	2 11/16"	15G121R

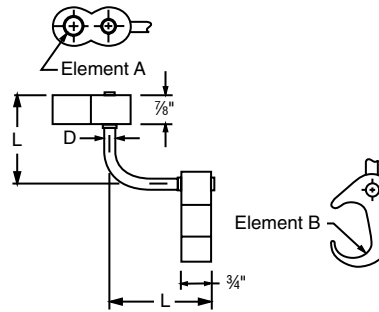
Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

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EZ Ground™ Compression Connectors

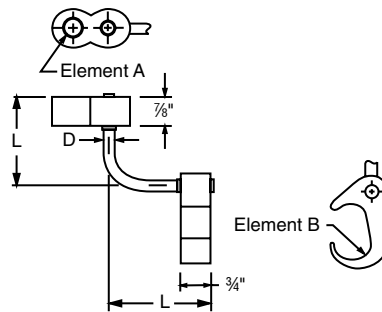


MEETS
IEEE
837 REQUIREMENTS

Figure 6 to 8 Compression Ground Rod to Grid Connectors

Cat. No.	A Ground Rod	B Cable Range	Dimensions (In.)		Dies for TBM14M, 13100A or TBM15I	
			D	L	Element A	Element B
54855LR12*	1/2"	2 AWG-250 kcmil	5/16"	2 1/2"	15G86R	15G121R
54885LR12*	1/2"	250 kcmil-500 kcmil	5/16"	2 1/2"	15G126R	15G121R
54865LR58*	5/8"	2 AWG-250 kcmil	5/16"	2 1/2"	15G86R	15G121R
54895LR58*	5/8"	250 kcmil-500 kcmil	5/16"	2 1/2"	15G126R	15G121R
54875LR34*	3/4"	2 AWG-250 kcmil	1/2"	2 5/8"	15G86R	15G121R
54900LR34*	3/4"	250 kcmil-500 kcmil	1/2"	2 5/8"	15G126R	15G121R
54910LR100	1"	2 AWG-250 kcmil	1/2"	2 5/8"	15G86R	15G121R
54920LR100	1"	250 kcmil-500 kcmil	1/2"	2 5/8"	15G126R	15G121R

*Tin plated version available of galvanized ground rods. Add suffix -TP.



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Figure 6 to 6 Compression Ground Grid Connectors

Cat. No.	Element A	Element B	Element B to Ground Rod	Element B to Rebar	Dimensions (In.)			Die Selection for TBM14M, 13100A or TBM15I	
	Cable to Cable				D	T	T-T	A	B
54855L	#6SOL-#2STR	#6SOL-#2STR	—	—	7/8"	3/4"	3/4"	15501A	15501A
54865L	#1STR-250 kcmil	#6SOL-#2STR	1/2"-5/8"	3/8-1/2" #3-#4 Rebar	7/8"	3/4"	3/4"	15G86R	15501A
54875L	#2STR-250 kcmil	#2STR-250 kcmil	1/2"-5/8"	3/8-1/2" #3-#4 Rebar	7/8"	3/4"	3/4"	15G86R	15G86R
54885L	250 kcmil-500 kcmil	#6SOL-#2STR	5/8"-1/2"	5/8-3/4" #5-#6 Rebar	7/8"	3/4"	3/4"	15G126R	15501A
54895L	250 kcmil-500 kcmil	#2STR-250 kcmil	5/8"-1/2"	5/8-3/4" #5-#6 Rebar	7/8"	3/4"	3/4"	15G126R	15G86R
54900L	250 kcmil-500 kcmil	250 kcmil-500 kcmil	5/8"-1/2"	5/8-3/4" #5-#6 Rebar	7/8"	1 1/8"	1 1/8"	15G121R15	G121R

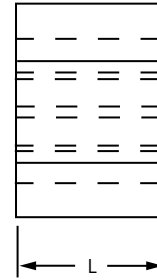
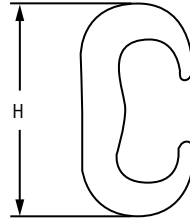
Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

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EZ Ground™ Compression Connectors



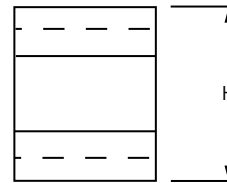
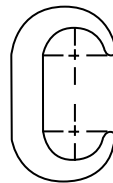
C-Taps

Cat. No.	Main	Tap	H (in.)	L (in.)	Dies for TBM14M, 13100A or TBM15I *	Crimps
CTP22	#6 SOL. - #2 STR.	#6 SOL. - #2 STR.**	1.16	.75	HBKC	1
CTP202	#1 STR. - 2/0 STR.	#6 SOL. - #2 STR.**	1.41	.75	15501A	1
CTP2020	#1 STR. - 2/0 STR.	#1 STR. - 2/0 STR.	1.54	.75	15501A	1
CTP25020	3/0 STR. - 250 kcmil	#6 SOL. - 2/0 AWG**	1.97	.75	15G86R	1
CTP250250	3/0 STR. - 250 kcmil	3/0 STR. - 250 kcmil	2.06	.88	15G86R	1
CTP50020	300-500 kcmil	#6 SOL. - 2/0 AWG**	2.42	.88	15G121R	2
CTP500250	300-500 kcmil	3/0 STR. - 250 kcmil	2.67	.88	15G121R	2
CTP500500	300-500 kcmil	300 - 500 kcmil	2.91	1.10	15G121R	3

Material: High Conductivity Copper.

*Cat. No. 15500 adapter required if using TBM15I and 155XX series dies.

**#6 AWG branch must be doubled.



Copper C-Crimps^{††} Wire Combinations

Connector No.	Run	Tap	Die Index	Installing Die TBM14M, 13100A, TBM15I	Dimensions (in.)	
					L	H
BC48	6 SOL. - 4 STR.	8 SOL.-8 STR.	BG OR 5/8	B58CR	4 1/64	4 7/64
BC46-BB	6 SOL. - 4 STR.	6 SOL.-6 STR.	BG OR 5/8	B58CR	4 1/64	3/4
BC44	6 SOL. - 4 STR.	4 SOL.-4 STR.	BG OR 5/8	B58CR	4 1/64	5 1/64
BC24	2 SOL. - 2 STR.	8 SOL.-4 STR.	C	HBKC	3/4	6 3/64
BC22	2 SOL. - 2 STR.	2 SOL.-2 STR.	C	HBKC	3/4	1 3/64
BC202	1/0 SOL. - 2/0 STR.	8 SOL.-2 STR.	E or O	HO	1 5/16	1 9/16
BC2020-BB	1/0 SOL. - 2/0 STR.	1/0 STR.-2/0 STR.	E or O	HO	1 5/16	1 11/32
BC402	3/0 STR. - 4/0 STR.	6 SOL.-2 STR.	F or D3	HD	1 1/16	1 5/8
BC4020	3/0 STR. - 4/0 STR.	1/0 SOL.-2/0 STR.	F or D3	HD	1 1/16	1 5/8
BC4040	3/0 STR. - 4/0 STR.	3/0 SOL.-4/0 STR.	F or D3	HD	1 1/16	1 5/8

†† Does not meet IEEE837

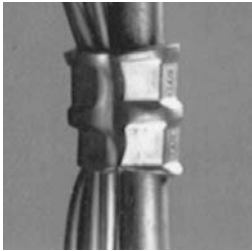
Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

Thomas & Betts

Color-Keyed[®]

EZ Ground™ Compression Connectors



MEETS
IEEE
837 REQUIREMENTS

Pigtail Connectors

When connecting cable to ground rod for direct burial or in concrete, the connector shall be wrought copper with min. conductivity of 99% I.A.C.S., such as Thomas & Betts series GR12-306. Hex compression with die code embossing shall be used.

- Figure-8 connectors
- Hex compression intimately bonds cable directly to ground rod.
- Conforms to IEEE std. 837
- U.L. 467

Cat. No.	Cable Range	Ground Rod	Die Code for TBM14M, 13100A or TBM15I
GR12-306	One Cable: 3/0 to 6 AWG	1/2"	87H
	Two Cables: 2 to 6 AWG		
GR58-406	One Cable: 4/0 to 6 AWG	5/8"	87H
	Two Cables: 2 to 6 AWG		
GR34-4010	One Cable: 4/0 to 1/0 AWG	3/4"	99H

Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

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EZ Ground™ Compression Connectors

Structural Grounding Stud(s) – TYPE TBGS

These ground studs may be welded to steel structures with minimal construction welding equipment and connected to grounding conductors with the appropriate Thomas & Betts grounding connectors. The knurled portion of the stud will ensure excellent mechanical pull-out and electrical continuity for the integrity of the grounding circuit.

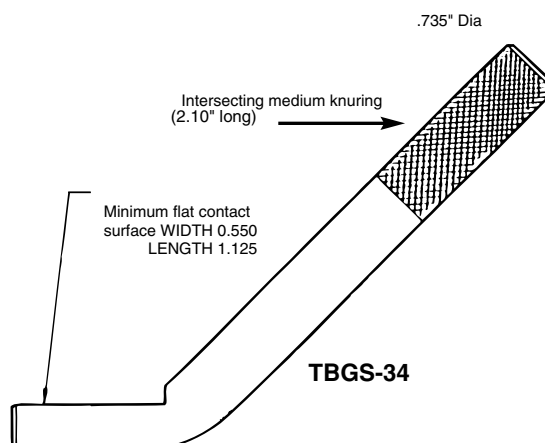
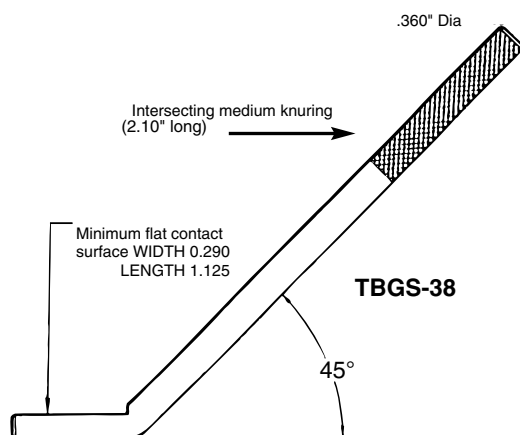
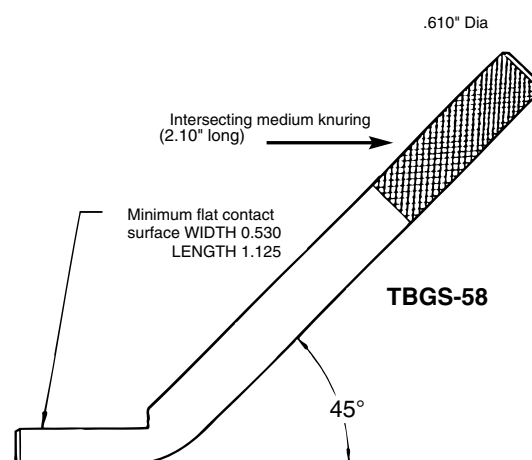
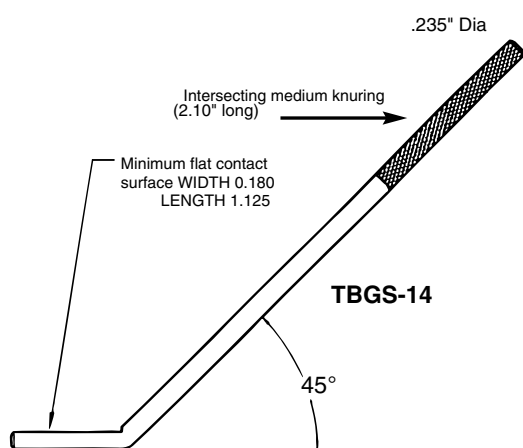
Specifications:

These studs are made of high strength steel and coated with corrosion resistant copper cyanide.

Cat. No.	Rod Size
TBGS-14	1/4"
TBGS-38	3/8"
TBGS-58	5/8"
TBGS-34	3/4"

F

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MEETS
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I Beam Ground Clamp

I-beam ground clamp for connecting ground cable to I-beam, or any 1" max. structural steel member without welding or drilling. Breakaway bolt head shears at predetermined torque to assure tight connection. Heavy duty compression lug provides excellent current carrying capabilities.

Surface of steel must be cleaned in accordance with the installation instruction sheet provided with the product.

Connector Material: High conductivity cast copper bright dip.

Clamp Material: Drop forged high grade steel, zinc plated.



Cat. No.	Wire Range	TBM15I Installing Tool, Die Code
IBG2-10	2 thru 1/0 AWG	71
BG20-40	2/0 thru 4/0 AWG	87

Hydraulic tooling with hex crimp dies.

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Satisfies requirements of NEC250-81 and 250-91 for connecting to the grounding electrode system.

Material – Cast Copper
Finish – Electro-Tin Plated

Cast Copper Two Way Connector Applications – Heavy Duty

Cable Cat. No.	Die Size	Die Code
53504	8AWG	29
53505	6AWG	29
53506	4AWG	29
53507	2AWG	45
53508	1AWG	45
53509	1/0AWG	45
53510	2/0AWG	66
53511	3/0AWG	66
53512	4/0AWG	66
53513	250 kcmil	76
53515	350 kcmil	99
53518	500 kcmil	99
53523	750 kcmil	112

Use hydraulic tools with hex dies.



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Ground Plates

Cat. No.	Figure	Cable Range	H	Dies
GP2250-2	1	2-250 kcmil	3 $\frac{5}{8}$ "	15G86R
GP2250-4	2	2-250 kcmil	4 $\frac{7}{32}$ "	15G126R
GP250500-2	1	250-500 kcmil	3 $\frac{5}{8}$ "	15G86R
GP250500-4	2	250-500 kcmil	4 $\frac{7}{32}$ "	15G126R

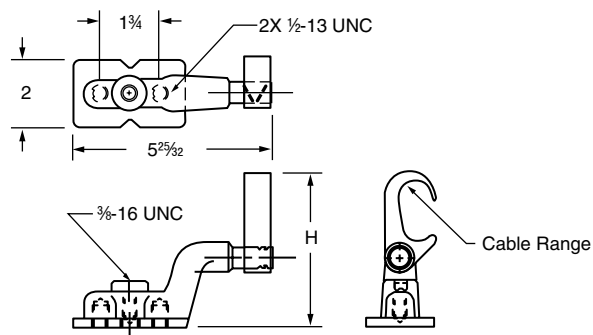


Figure 1

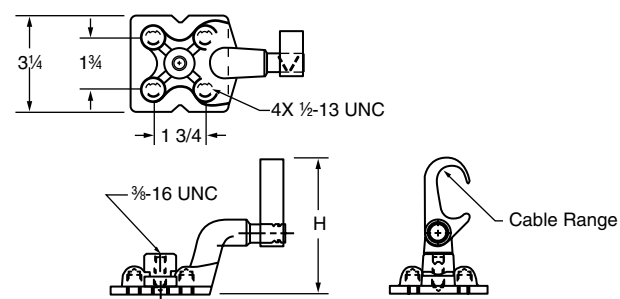
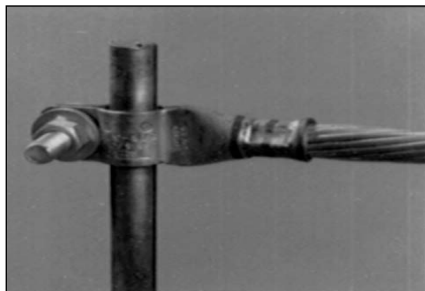


Figure 2

F

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Color-Keyed®**Cast Copper Connectors for Grounding****Ground Clamp**

Cat. No.	Wire Size	Ground Rod Diameter (in.)	Rebar # (in.)	Bolt Size (in.)	Die Code
CC2C-45R	#2-#3 AWG	1/2 or 5/8	4/8	1/4	33-Brown
CC1C-45R	#1 AWG	1/2 or 5/8	4/8	1/4	37-Green
CC10C-56R	1/0 AWG	5/8 or 3/4	5/8	3/8	42-Pink
CC20C-56R	2/0 AWG	5/8 or 3/4	5/8	3/8	45-Black
CC40C-56R	4/0 AWG	5/8 or 3/4	5/8	3/8	54-Purple

U.L. 467 – Approved for direct burial.

Crimps to cable, clamps to ground rod and rebar. Provides a permanent, reliable connection. Uses standard Color-Keyed® hand and hydraulic tools. Color-coded for easy installation die selection.

Material: High conductivity wrought copper. Furnish with stainless steel hardware, 1/4" washers, bolts and nuts.

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Cat. No.	Wire Range	Bolt Hole	Die Code No.*	Unit Quan.	Std. Pkg.	Wt. per 100	Hex Die		Inches				
							Cat. No.	Die Code No.	L1	L2	D	C	H
53055FL	1/0-2/0 AWG	3/8"	66	2	10	75	*15534	66	4 3/32	3 21/32	9/32	1 3/8	1
53065FL	4/0-250 kcmil	3/8"	87H	2	10	112	**15506	87H	4 1/2	4 3/32	5/16	1 3/8	1

* TM14M, 13100A, TBM15I with hex crimp dies.

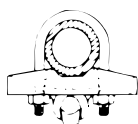
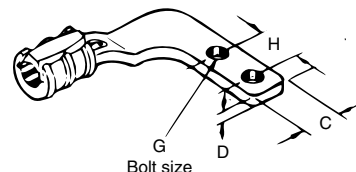
**TBM15I with hex crimp dies only.



For terminating or connecting continuous runs of copper cable to flat surfaces, i.e., cable trays, structures, and busbar.

The captivated "Keeper Bar" design extends the cable range, and helps hold cable prior to crimping, thereby facilitating installation. Saddles are marked with conductor size and die code. Conductor can be assembled to saddle with standard dies and hydraulic tools.

Material: High conductivity cast copper



FG2040R2 Series
Connectors
(for round posts)

These connectors bond copper conductors to steel or aluminum fence post or top rail of round fence posts. They provide a quick, dependable installation at low installed cost, and use no incendiary materials.

Material: U bolt – steel

Body – cast copper alloy

Grid to Fence Grounding Clamps

Cat. No.	Ground Cable Range	Die Code	Steel & Alum. Line Post Range
FG2040R2	2/0-3/0-4/0	76	2"
FG2040R25	2/0-3/0-4/0	76	2 1/2"
FG2040R3	2/0-3/0-4/0	76	3"
FG210R2	2-1-1/0	66	2"
FG210R25	2-1-1/0	66	2 1/2"
FG210F3	2-1-1/0	66	3"

Install with hydraulic tooling with hex crimp dies.

Tooling: Pg. E78-E102

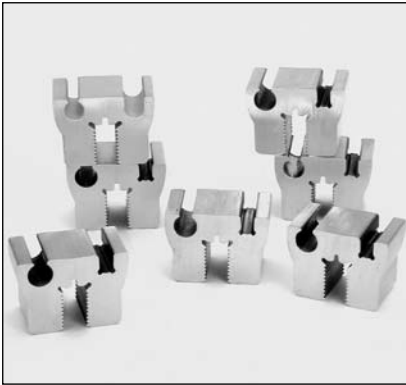
Die Selector Chart: Pg. E107-E111

Thomas & Betts

Blackburn®

EZ Ground™ Compression Connectors

NEW



Features and Benefits

- Fast and easy installation
- Superior low-resistance, high-conductivity connections
- Uses conventional compression tools
- Produces a permanent connection with any combination of copper from #6 to #2 solid or stranded copper conductor, to a 1/4" copper bus bar
- UL and CSA certified

The unique patent pending design of Thomas & Betts new EZ-Ground Bus Bar Connector cuts your installation time in half, with results that are superior to conventional connectors.

Installation can be completed in less than two minutes with one easy crimp! The connector attaches directly to the bus, saving the labor-intensive process of drilling and tapping. The unique jaw interface of the EZ-Ground Bus Bar Connector grips the copper bus, resulting in a low-resistance, high-conductivity connection.

The EZ-Ground Bus Bar Connector can be used in OEM applications or

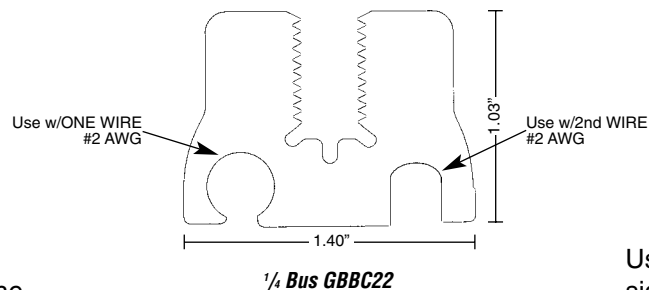
telecom applications — cellular, PCS and others. It provides a continuous ground to the copper bus bar making it ideal for hut and tower applications. The design allows for installation in virtually any position horizontal or vertical, and it is suitable for inside and outside plant use.

Installation can be completed using any T&B compression tool that accepts U-shaped die sets and is rated 12 ton or higher. Made from pure wrought copper and pre-filled with oxide inhibitor, the EZ-Ground Bus Bar Connector has proven performance and quality.



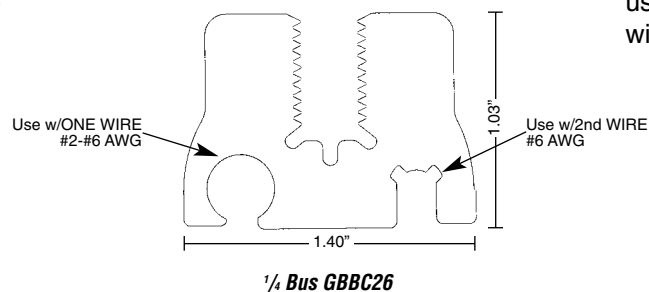
Bus Bar Connector

Cat. No.	Bus Bar (in)	Conductor Range	Standard Ctn.	UPC Code
GBBC22	1/4	#2 AWG-#2AWG	1	783786-26587
GBBC26	1/4	#6 AWG-#2AWG	1	783786-28500

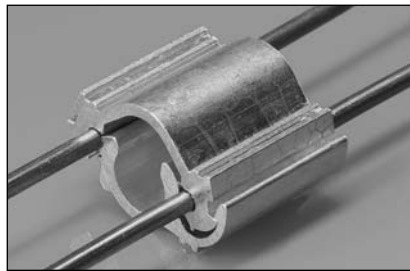
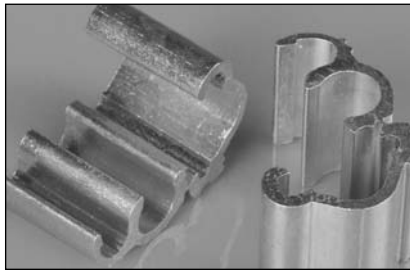


Use this side of the connector when using only one wire.

Use this side of the connector only when using two wires.



Thomas & Betts

Blackburn®**EZ Ground™ Compression Connectors****SnapTap™ Connector**

Designed for bonding and grounding applications using copper, steel strand and ground rod, this unique connector can be easily installed using channel locks or pliers. It is a “snap” to assemble—no special tools are required. Made from high-strength aluminum alloy with tin plating, the connector has excellent electrical and mechanical characteristics. An electrically superior pressure fit connection is achieved in seconds without expensive tooling. The connector is also easy to disassemble

requiring only a flat-head screwdriver to release the connected body.

The one-piece design keeps parts together minimizing loss of components prior to assembly. Simply separate the pieces and snap them in place for the installation. There is an audible “snap” indicating the connection is complete and that you have a proper installation.

Tested according to UL467, these connectors exceed performance requirements.

Cat. No.	Connector Description		Packaging		Standard Order Quantity
	Main	Branch	Inner Pack	Outer Pack	
JP62	No. 2 AWG Sol Copper	No. 6 AWG Sol Copper	20	200	200
JP66	No. 6 AWG Sol Copper	No. 6 AWG Sol Copper	20	200	200
JP146	1/4" Steel Strand	No. 6 AWG Sol Copper	20	200	200
JP5166	5/16" Steel Strand	No. 6 AWG Sol Copper	20	200	200
JP386	3/8" Steel Strand	No. 6 AWG Sol Copper	20	200	200
JP126	1/2" Steel Strand	No. 6 AWG Sol Copper	20	200	200
JP126G	1/2" Ground Rod	No. 6 AWG Sol Copper	20	200	200
JP2614	1/4" Steel Strand	Two-No. 6 AWG Sol Copper	20	200	200
JP26516	5/16" Steel Strand	Two-No. 6 AWG Sol Copper	20	200	200
JP2638	3/8" Steel Strand	Two-No. 6 AWG Sol Copper	20	200	200
JP2612G*	1/2" Ground Rod	Two-No. 6 AWG Sol Copper	20	200	200

Note: All Toolless Connectors are UL listed. Only items with (*) are CSA listed.

General Usage Instructions**Separate**

No special tools required. Use ordinary parallel jaw pliers to separate the connector into two parts. Hold one side of connector with pliers and bend opposite side back and forth until parts separate. (see fig. 1)

Caution: Be careful not to pinch fingers or thumb when separating parts. Keep fingers out of bend path when bending part against plier jaws.

Installation

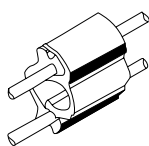
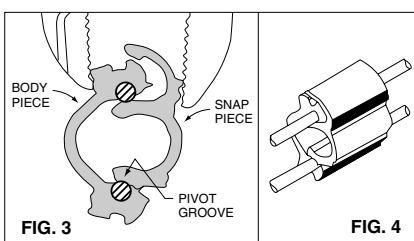
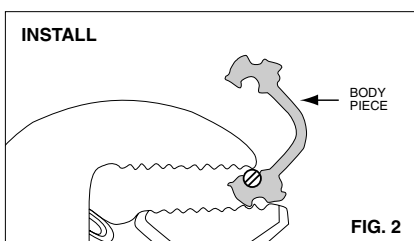
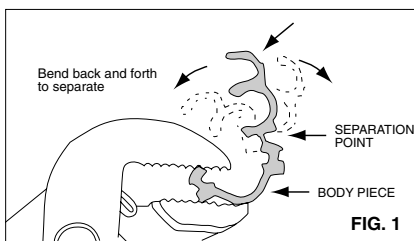
1. Strip the insulation from each conductor. Be careful not to nick the conductor. Clean the conductor

ends with a wire brush or emery cloth if necessary.

- Place each conductor into the grooves in BODY piece. Press conductors with pliers to align and seat into grooves. (see fig. 2)
- Hold the conductors and BODY piece until it stops. Use parallel jaw pliers and grip the SNAP and BODY pieces as shown. (see fig. 3). Apply pressure until connector “snaps” into place. Visually inspect snap to verify full insertion. The connection is now complete. (see fig. 4)

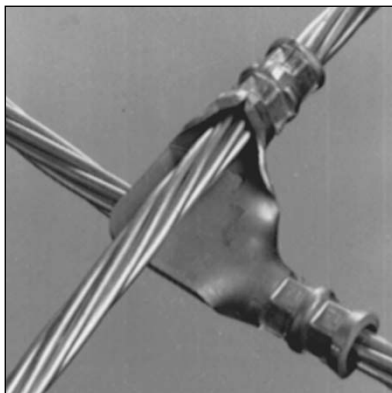
Removal

The connector can be disassembled using a flat-head screwdriver to pry the SNAP piece from BODY piece.



Color-Keyed®

EZ Ground™ Compression Connectors



Cable to Cable or Rod

High conductivity wrought copper, one piece construction for cable to cable, cable to rod, "T" and "X" connections. Suitable for direct burial or in concrete.

- One piece construction.
- Connects cable to cable and cable to rod, "T" and "X" connections.
- Suitable for direct burial or in concrete.
- Replaces exothermic welds.
- Conforms to IEEE standard 837.
- U.L. 467.

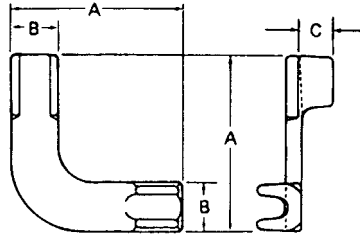
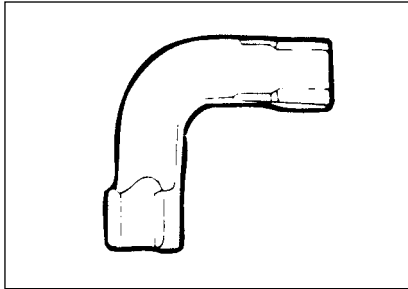
Cat. No.	Cable to Cable Range				Ground Rod	Rod to Cable		
	Main	Die Code	Branch	Die Code		Die Code	Cable	Die Code
GG21-21	#2 or #1	45	#2 or #1	45	—	—	—	—
GG10-10	1/0	54	1/0	54	—	—	—	—
GG2030-21	2/0 or 3/0	60	#2	45	—	—	—	—
GG2030-10	2/0 or 3/0	60	1/0	54	—	—	—	—
GG2030-2030	2/0 or 3/0	60	#1	50	—	—	—	—
GG40250-21	4/0 or 250	71	#2	45	1/2"	71	#2 or #1	45
			#1	50	5/8"	80H	#2 or #1	50
GG40250-10	4/0 or 250	71	1/0	54	1/2"	71	1/0	65
					5/8"	80H		
GG40250-2030	4/0 or 250	71	2/0 or 3/0	60	1/2"	71	2/0 or 3/0	60
					5/8"	80H	2/0 or 3/0	60
GG40250-40250	4/0 or 250	71	4/0 or 250	71	1/2"	71	4/0 or 250	71
					5/8"	80H	4/0 or 250	71
GG500-40250	500 kcmil	87	4/0 or 250	71	5/8"	80H	500	87
					3/4"	87H	500	87
GG500-500	500 kcmil	87	500	87	3/4"	87	500	87
GG500-350	500 kcmil	87H	350	80H	5/8"	87H	350	80H
					3/4"			
GG500-2030	500 kcmil	87H	2/0 or 3/0	60	5/8"	87H	2/0 or 3/0	60
					3/4"			
GG350-350	350 kcmil	80H	350	80H	—	—	—	—

Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

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Blackburn®

Color-Keyed®**EZ Ground™ Compression Connectors****Type GRD — Cable to Cable Connector**

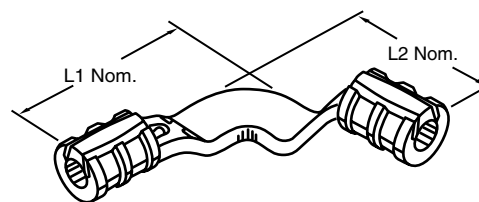
- For Copper cable to cable ground grid connections
- Cast of high conductivity bronze alloy
- Suitable for direct burial



Cat. No.	Conductor Size								Installation Information				Dimensions (in.)		
	Main				Tap				Ground Rod	Hyd. Tool	Die	No. Crimps	A	B	C
	max.	min.	max. (mm²)	min. (mm²)	max.	min.	max. (mm²)	min. (mm²)							
GRD2	1	2	42.4	33.6	1	2	42.4	33.6	—	JB12HA	B09CH	1	2 1/2	1 1/16	1 1/16
GRD20	2/0	1/0	67.4	53	2/0	1/0	67.4	53	—	JB12HA	B10CH	1	3	1 3/16	7/8
GRD420	250 kcmil	4/0	126.6	107	2/0	1/0	67.4	53	5/8	JB12HA	B12CH	2	3 5/8	1 1/16	1 3/16
GRD40	250 kcmil	4/0	126.6	107	250 kcmil	4/0	126.6	107	5/8	JB12HA	B12CH	2	3 5/8	1 1/16	1 3/16

Color-Keyed®

EZ Ground™ Compression Connectors



Grounding Grid Connectors Heavy Duty Cast Copper^{††}

Cat. No.	Rod to Cable Range		Cable to Cable Range		Rod to Cable Installing Die Code for TBM14M, 13100A or TBM15I		Overall Dimension (in.)	
	Rod Size (in.)	Cable Range	Main	Branch	Rod Barrel	Cable Barrel	L1	L2
53055	—	—	1/0-2/0 AWG	1/0-2/0 AWG	—	66	3 ⁷ / ₈	3 ⁷ / ₈
53059†	1/2-5/8	2-1 AWG	4/0-250 kcmil	2-1 AWG	87H	54H	4 ⁵ / ₃₂	4 ⁹ / ₁₆
53060†	1/2-5/8	1/0-2/0 AWG	4/0-250 kcmil	1/0-2/0 AWG	87H	87H	4 ⁷ / ₁₆	4 ⁵ / ₁₆
53065†	1/2-5/8	4/0-250 kcmil	4/0-250 kcmil	4/0-250 kcmil	87H	87H	4 ⁷ / ₁₆	4 ⁵ / ₁₆
53069†	3/4	1/0-2/0 AWG	300-350 kcmil	1/0-2/0 AWG	106H	66	4 ¹⁹ / ₃₂	4 ¹⁹ / ₃₂
53071†	3/4	4/0-250 kcmil	300-350 kcmil	4/0-250 kcmil	106H	106H	5 ¹ / ₄	4 ²⁵ / ₃₂
53073†	1	1/0-2/0 AWG	500 kcmil	1/0-2/0 AWG	125H	66	4 ¹³ / ₁₆	4 ⁷ / ₈
53075†	1	4/0-250 kcmil	500 kcmil	4/0-250 kcmil	125H	87H	6 ⁹ / ₁₆	5
53080†	1	500 kcmil	500 kcmil	500 kcmil	125H	125H	5 ⁹ / ₁₆	5 ⁹ / ₁₆

Cat. No. 15500 adapter as required for all 15,500 Series dies, not for 15600 Series.

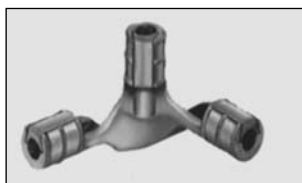
† Ground rods 4/0-250 wire barrels suitable for 1/2" smf 5/8" rod

500 kcmil wire barrels suitable for 1" rods

300-500 kcmil wire barrels suitable for 5/8" rods

Hydraulic tools only

†† Does not meet IEEE837



For connecting perpendicular runs of stranded copper cable to ground rod.

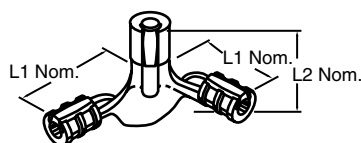
Material: Heavy duty cast copper

Two Cables to Ground Rod^{††}

Cat. No.	Cable Size		Ground Rod Dia.	TBM15I Die for Cable Code	Overall Dim. (in.)		TBM15I Die for Ground Rod Code
	Main	Tap			L1	L2	
53065-58GR	250 or 4/0	250 or 4/0	5/8" & 1/2"	87H	4 ¹⁵ / ₁₆	3 ¹ / ₄	87H
53065-34GR	250 or 4/0	250 or 4/0	3/4	87H	4 ¹⁵ / ₁₆	3 ³ / ₄	106H

Installs with Hydraulic Tools with hex crimp dies.

†† Does not meet IEEE837



Copperweld* Conductors & Rebar – for Use with Cast Copper Connectors

Cable Size	Reinforcing Rod Size	Copper Weld Conductor Size
2, 1 AWG	—	3 #8 or 3 #6
1/0, 2/0 AWG	#3	3/8 (7 #8) or 7/16 (7 #7)
4/0, 250 kcmil	#4	7/16 (19 #9) or (7 #5)
300-350	#5	2 ¹ / ₃₂ (19 #8) or 5/8 (7 #4)
500 kcmil	#6	13/16 (19 #6)

* Reg. Trademark Copperweld Corporation

U.L. Listed for use with cast copper connectors.

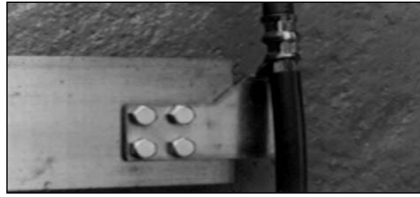
Tooling: Pg. E78-E102

Die Selector Chart: Pg. E107-E111

Thomas & Betts

Color-Keyed[®]**Cast Copper Connectors for Grounding****Riser Cable Flag Connector
600V Applications****Material:** High Conductivity Wrought Copper**Finish:** Plain

Riser cable flag connectors provide a low cost method of connecting directly to bus bar, eliminating an interface connection. All bolt holes are $\frac{3}{8}$ " on 1" centers.



Riser cable flag connectors provides a low cost method of connecting directly to bus bar, eliminating an interface connection. All bolt holes are $\frac{3}{8}$ " on 1" centers.

Material: High Conductivity Wrought CopperBlackburn[®]

T&B Cat. No.	Fig. No.	Cable Size	Color Key	Die Code	No. Of Crimps	Material THK. (in.)	Dimensions (in.)		
							A	B	C
GFL2-1	1	#2-#1 150/24 175/24	PINK	42	1	$\frac{3}{32}$	$3\frac{5}{8}$	4	$2\frac{5}{16}$
GFL10-20	1	1/0	BLACK	45	1	$\frac{3}{32}$	$3\frac{5}{8}$	4	$2\frac{5}{16}$
		2/0 AWG	ORANGE	50					
		225/24	BLACK	45					
		275/24	BLACK	45					
GFL40-250	1	4/0-250 kcmil 325/24 450/24 550/24	RED	71	2	$\frac{5}{32}$	$4\frac{1}{4}$	$4\frac{1}{4}$	$2\frac{7}{16}$
GFL350	1	350 kcmil 650/24 775/24	N/A	80	2	$\frac{5}{32}$	$4\frac{1}{4}$	$4\frac{1}{2}$	$2\frac{3}{8}$
GFL500¹	1	500 kcmil 925/24	BROWN	94	2	$\frac{5}{32}$	$5\frac{1}{4}$	$4\frac{7}{8}$	$2\frac{3}{8}$
GFL750^{1,2}	2	750 kcmil 1100/24 1325/24 1600/24	BLACK	106	4	$\frac{5}{32}$	$8\frac{5}{8}$	$4\frac{3}{4}$	$2\frac{5}{8}$

NOTES:

1. TBM15I only.
2. Both "U" barrels must be crimped to a single, continuous out length of conductor. It is not to be used as a splice.

Installing tools: T&B Cat. No. TBM15I, TBM15BSCR, 13100A, TBM14M, and TBM14BSCR hydraulic tools only.

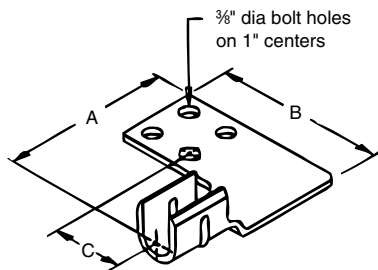


Figure 1

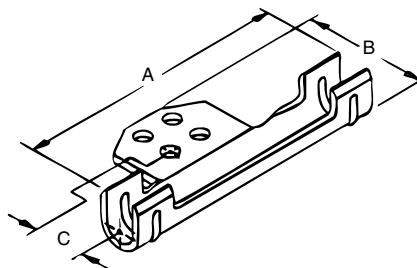
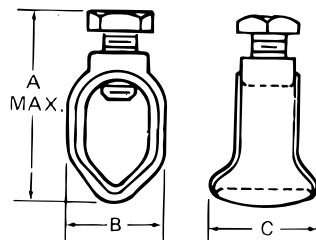


Figure 2

Tooling: Pg. E78-E102
Die Selector Chart: Pg. E107-E111

Thomas & Betts

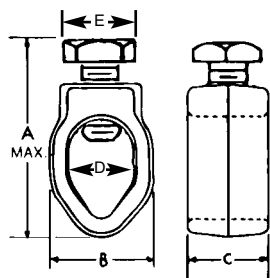
Blackburn®**Ground Rod Clamps and Ground Rod Accessories****JABH**

- Cast of high strength corrosion resistant copper alloy
- Both hex head and socket set screws available
- Long bearing surface of clamp on ground wire secures ground connection
- U.L. Listed for direct burial

Type JAB – Ground Rod Clamps

Cat. No.		Nominal Rod Dia.		Wire Range				Dimensions (in.)					
Socket Set Screw	Hex Head Bolt	(in.)	(mm)	max.	min.	max. (mm²)	min. (mm²)	A (max.) Socket	A (max.) Hex Bolt	Screw Thread Size UNC-2A	B	C	D
JAB12*	JAB12H	½	12.7	2 str.	10 sol.	33.6	5.2	1 19/32	2 3/32	7/16-14	2 7/32	7/8	1 9/32
JAB58	JAB58H	5/8	15.8	1/0 str.	8 sol.	53.4	8.3	1 27/32	2 19/64	7/16-14	2 9/32	1	1 1/16
JAB34	JAB34H	¾	19.0	3/0 str.	8 sol.	53.4	8.3	2	2 11/32	7/16-14	1 1/16	1	5 1/64
—	JAB34C	¾ + 5/8	15.8	3/0 str.	8 sol.	95.0	8.3	—	2 11/32	7/16-14	1 1/8	1 1/32	1 3/16
to 19.0													
JAB1	JAB1H	1	25.0	4/0 str.	8 sol.	107.1	8.3	2 ¼	3	7/16-14	1 11/32	1 1/16	1

* Not CSA listed

Add suffix **P** to Cat. No. for tin plated clamp.

- A dependable ground connection offered at a substantial saving
- Cast of high strength corrosion-resistant copper alloy
- Hex head bolts
- Simplified compact design will make a lasting, trouble-free connection
- U.L. Listed for direct burial

Type G — Budget Line Ground Clamps

Cat. No.		Nominal Rod Dia.		Wire Range				Dimensions (in.)					
		(in.)	(mm.)	max.	min.	max. (mm²)	min. (mm²)	A (max.) Bolt	Screw Thread Size UNC-2A	B	C	D	E
G3*		5/8	9.5	4 str.	10 sol.	21.1	5.2	1 3/8	5/16-18	1 1/16	1/2	2 7/64	3/8
G4		1/2	12.7	2 str.	10 sol.	33.6	5.2	—	3/8-16	2 1/32	3/8	3 7/64	1/2
G5†		5/8	15.8	2 str.	10 sol.	33.6	5.2	—	3/8-16	2 9/32	3/8	4 5/64	1/2
G6		¾	19.0	2 str.	10 sol.	33.6	5.2	—	3/8-16	1 1/16	3/8	1 3/16	1/2

* Not U.L. Listed

† RUS Listed

Add suffix **P** to Cat. No. for tin plated clamp.**Thomas & Betts**

Blackburn®**Ground Rod Clamps and Ground Rod Accessories**

Blackburn®

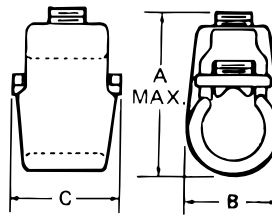
- Cast of high strength corrosion-resistant copper alloy; two types of screws available; type GG has a socket set screw; type GGH has a hex head bolt
- Floating pressure bar distributes pressure evenly over a large area of the ground wire
- Axial groove keeps wire and rod in perfect alignment

Types GG and GGH — Heavy Duty Ground Rod Clamps

Cat. No.*		Nominal Rod Dia.		Wire Range				Dimensions (in.)				
								A (max.)	A (max.)	Screw Thread	B	C
Socket Set Screw	Hex Head Bolt	(in.)	(mm)	max.	min.	max. (mm²)	min. (mm²)	Socket Screw	Hex Bolt	Size UNC-2A		
GG12	GG12H	½	12.7	2 str.	8 sol.	33.6	8.3	1 13/64	1 13/16	7/16-14	27/32	1 15/16
GG58	GG58H	5/8	15.8	2 str.	8 sol.	53.6	8.3	1 51/64	2 1/32	7/16-14	61/64	1 15/16
—	GG34H	¾	19.0	4/0 str.	8 sol.	120.6	8.3	—	3	1/2-14	1 3/8	1 1/4

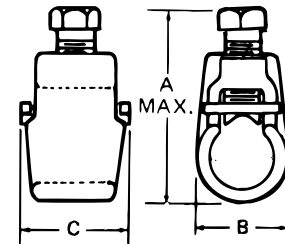
* Add suffix **P** to catalogue number for tin plated clamp.
GG34H has no pressure bar or axial groove.

Socket Size
= .219

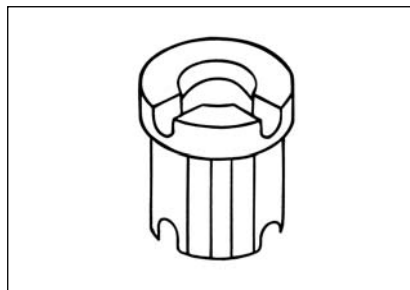


Type GG

Width Across
Flats = 1/2"



Type GGH



- Drive-on design provides easy tool free installation, high reliability compression fit connection, and room for one or two ground leads
- High strength copper alloy provides increased tensile strength and long term corrosion resistance for direct burial applications
- U.L. 486A and U.L. 467 Listed
- RUS Listed

Type DGC — Drive-On Ground Clamps

Cat. No.	Ground Rod Size	Ground Wire Size
DGC58-44 [‡]	5/8 (.555-.565)	1 or 2-#4 sol.
DGC58-66 [‡]	5/8 (.555-.565)	1 or 2-#6 sol.
DGC58-46	5/8 (.555-.565)	1-#4 sol. 1-#6 sol.

[‡] RUS Listed

**Thomas & Betts**

Blackburn®

Ground Clamps



Waterpipe Ground Clamps

Cat. No.	Ground Wire Size	Water Pipe Size
2-TB	#6, #4, #2	½", ¾", 1" or rebar 4-10
3-TB	#6, #4, #2	1¼", 1½" or 2"
4	#6, #4, #2	2½", 3" or 3½"
5-TB	#6, #4, #2	4", 4½" or 5"
6	#6, #4, #2	6"

Malleable iron. #6 — #2 AWG ground wire.



Waterpipe Ground Clamps

Cat. No.	Ground Wire Size	Water Pipe Size
3902	#4-4/0 AWG	½" — 1"
3903	#4-4/0 AWG	1¼" — 2"
3904	#4-4/0 AWG	2½" — 3½"
3905-TB	#4-4/0 AWG	4" — 5"
3906-TB	#4-4/0 AWG	6"
3907	#4-4/0 AWG	8"
3908	#4-4/0 AWG	10"
3909-TB	#4-4/0 AWG	12"
3902BU*	#4-4/0 AWG	½" to 1"
3903BU*	#4-4/0 AWG	1¼" to 2"
3904BU*	#4-4/0 AWG	2½" to 3½"
3905BU*	#4-4/0 AWG	4" to 5"
3906BU*	#4-4/0 AWG	6"
3907BU*	#4-4/0 AWG	8"
3908BU*	#4-4/0 AWG	10"
3909BU*	#4-4/0 AWG	12"

*UL Listed for Direct Burial



F

Blackburn®

Color-Keyed[®]

Ground Clamps



High conductivity wrought copper construction. Compresses #8 AWG through 4/0 AWG cable and clamps onto pedestal posts up to 1" diameter square and 1 1/4" round. Can be used as an "X" or "T" configuration cable to post.

Material: High Conductivity Copper

Blackburn[®]

Signal Reference Grid Connector

Installing Tools and Die Codes
TBM14M and TBM15I

Cat. No.	Conductor Range	Die Cat. No.	Die Code	Color Code
SRG8-4	#8	15527	29	Grey
	#6 to #4	15528	33	Brown
SRG2-1	#2 & #1	15508	42	Pink
SRG10-20	1/0 & 2/0	15530	50	Orange
SRG30-40	3/0 & 4/0	15511	54	Purple



Signal Reference Grid Clamp

Cat. No.	Description	Wire Range
3900	3/4" Square to 1" Round	#8-#4
3900BP (Bulk Pack)	3/4" Square to 1" Round	#8-#4

U.L. File No. E-3060

Approved for grounding and bonding per U.L. 467.



Secures signal reference grid wire to raised-floor support posts.

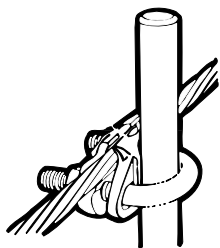
- Range-taking design: accepts #8 to #4 AWG grid wire; fits 1" round and 3/4" square trade size support posts.
- Lay-in feature means no kinks or bends.
- Quick, easy installation.
- Only one screw to tighten.
- Allows grid wire to make direct, low resistance contact with support posts.

Material: Stamped steel, zinc plating.

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Ground Clamps

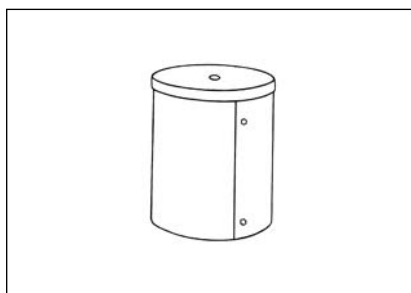
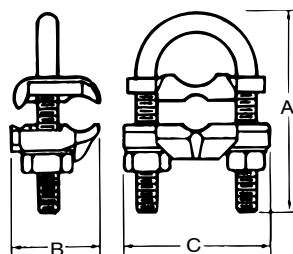


- U.L. 467 Listed for direct burial.
- For connecting copper or copper clad steel grounding conductor to ground rod or pipe.
- Excellent for connecting multiple electrodes with a single cable as in substation grounding.
- All components are cast or forged from copper alloy.
- Specially designed spacer provides proper alignment between cable and electrode and affords more positive contact area.

U-Bolt Ground Clamps

Cat. No.	Conductor Range (cu)		Nominal Rod Size (in.)		IPS Pipe Size (in.)		Dimensions (in.)		
	max.	min.	max.	min.	max.	min.	A	B	C
GUV584	4	8	3/4"	5/8"	3/8"	—	2 13/16	1 1/16	2 1/4
GUV5821	2/0	4	3/4"	5/8"	3/8"	—	2 13/16	1 1/16	2 1/4
GUV5825	250	2/0	3/4"	5/8"	3/8"	—	2 13/16	1 1/16	2 1/4
GUV784	4	8	1"	7/8"	3/4"	1/2"	2 3/4	1 1/16	2 5/8
GUV7821	2/0	4	1"	7/8"	3/4"	1/2"	2 3/4	1 1/16	2 5/8
GUV7825	250	2/0	1"	7/8"	3/4"	1/2"	2 3/4	1 1/16	2 5/8
GUV1184	4	8	1 1/4"	1 1/8"	1"	—	3 5/16	1 1/16	2 3/4
GUV11821	2/0	4	1 1/4"	1 1/8"	1"	—	3 5/16	1 1/16	2 3/4
GUV1384	4	8	1 1/2"	1 3/8"	1 1/4"	—	3 7/16	1 9/16	2 5/8
GUV13821	2/0	4	1 1/2"	1 3/8"	1 1/4"	—	3 7/16	1 1/16	2 5/8
GUV13825	250	2/0	1 1/2"	1 3/8"	1 1/4"	—	3 7/16	1 1/16	2 5/8
GUV1584	4	8	1 7/8"	1 5/8"	1 1/2"	—	3 5/16	1 9/16	3 3/16
GUV15821	2/0	4	1 7/8"	1 5/8"	1 1/2"	—	3 5/16	1 1/16	3 3/16
GUV15825	250	2/0	1 7/8"	1 5/8"	1 1/2"	—	3 5/16	1 1/16	3 3/16
GUV204	4	8	2 3/8"	2"	2"	—	4 7/16	1 1/16	3 1/16
GUV2021	2/0	4	2 3/8"	2"	2"	—	4 7/16	1 1/16	3 1/16
GUV2025	250	2/0	2 3/8"	2"	2"	—	4 7/16	1 1/16	3 1/16
GUV21221	2/0	4	2 7/8"	2 1/2"	2 1/2"	—	4 5/16	1 1/16	4 3/16
GUV21225	250	2/0	2 7/8"	2 1/2"	2 1/2"	—	4 5/16	1 9/16	4 3/16
GUV3021	2/0	4	3 1/2"	3"	3"	—	5 9/16	1 1/16	4 9/16
GUV3025	250	2/0	3 1/2"	3"	3"	—	5 9/16	1 1/16	4 9/16
GUV31221	2/0	4	4"	3 1/2"	3 1/2"	—	6 1/16	1 1/16	5 1/2
GUV4021	2/0	4	4 1/2"	4"	4"	—	6 3/16	1 1/16	5 1/16
GUV4025	250	2/0	4 1/2"	4"	4"	—	6 3/16	1 1/16	5 1/16

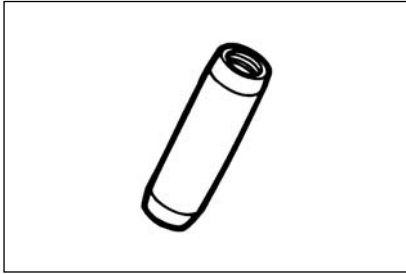
* For tin plating add suffix P to Cat. No. Contact factory for price and availability.
U.L. does not list tin plated bronze grounding devices.



Ground Electrode Boxes

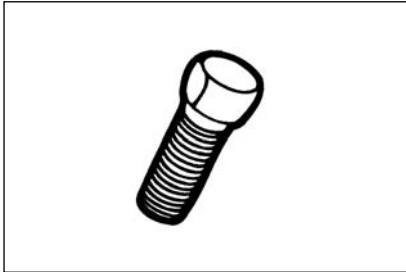
Cat. No.	Description	Wt/ 100		Standard package
		lb.	kgs.	
51628	Pregalvanized steel	1180	536.3	5
51629	Hot dip galvanized	1200	545.4	5

14 gauge steel. 10 inches diameter, 12 inches depth.

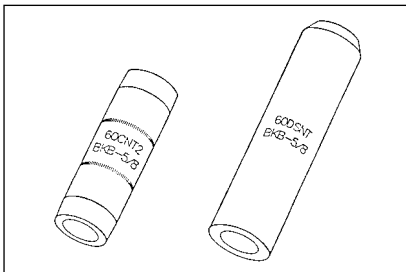
Blackburn®**Ground Rod Clamps and Ground Rod Accessories**

- Threaded couplings are of high strength, corrosion-resistant alloy; streamlined design reduces driving friction; couplings are tapped so that they may be used on all standard threaded sectional rods

Blackburn®



- Driving Studs of high strength steel may be used with all standard threaded couplings

**Threadless Coupling**

- For joining non-threaded, sectional, copper bonded, steel ground rods
- Coupling is manufactured of a high strength, corrosion resistant, copper alloy

Threadless Driving Cap

- Prevents "mushrooming" of ground rod while driving to insure proper fit of coupling
- Driving cap is manufactured of high strength, hardened steel

Type C — Sectional Ground Rod Couplings

Cat. No.	Size (Nominal Diameter)	Thread Size
50C	1/2"	1/2"-13 UNS
50LC*†	1/2" L	9/16"-12 UNS
60C*‡	5/8"	5/8"-11 UNS
70C*	3/4"	3/4"-10 UNS
80C*	1"	1"-8 UNS

*U.L. Listed 467 (425H).

† CSA lists rods 1/2" and larger, 10' and longer.

‡ RUS Listed.

**Type DS — Driving Studs**

Cat. No.	Size (Nominal Diameter)	Thread Size
50DS	1/2"	1/2"-13 UNS
50LDS*†	1/2" L	9/16"-12 UNS
60DS*‡	5/8"	5/8"-11 UNS
70DS*	3/4"	3/4"-10 UNS
80DS*	1"	1"-8 UNS

*U.L. Listed 467 (425H).

† CSA lists rods 1/2" and larger, 10' and longer.

‡ REA Listed.

Threadless Couplings and Driving Cap

Cat. No.	Description	Dimensions (in.)	
		Length	Diameter
50LCNT*	1/2" L Threadless Coupling	3.0	.78
60CNT2*	5/8" Threadless Coupling	2.5	.69
70CNT*	3/4" Threadless Coupling	3.0	.97
60DSNT	5/8" Threadless Driving Cap	4.0	.88

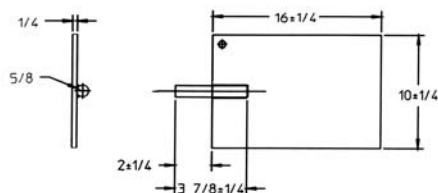
*U.L. Listed.

See the new ground rod driver in the Installation Tools section, pg. E100.

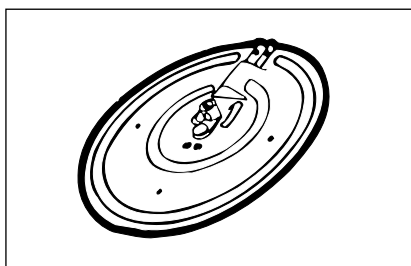
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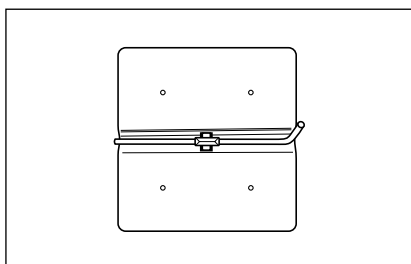
Ground Plates



- 1/4" thick, hot-dipped galvanized
- Can be as efficient as two ground rods (2-10' x 3/4")
- Must be buried at least 600mm (24") below finish grade level according to CEC Rule 10-702



- More efficient than butt wrapping poles
- Made of electrolytic sheet copper
- Built-in high pressure connector for ground lead, or supplied with #6 AWG copper pigtail pre-attached
- Plates are grooved for trapping moisture



- Installed on butt end of utility poles to provide an economical, low resistance neutral ground.
- Installed cost considerably less than butt-wrapped poles. Plate portion fabricated of .025" pure copper.
- PBGW connector is eye-bolt type, cast of corrosion resistant aluminum bronze alloy, with silicon bronze nut and lock washer. Riveted all copper terminal lug is an integral part of the PBH, and provides the means of connection to the grounding conductor.

Galvanized Ground Plates

Cat. No.	Description	Conductor Range
1016TB	Galvanized ground plates	8 sol. to 1/0 str.
1016BTB	Galvanized ground plates with JAB58H connector	8 sol. to 1/0 str.

† RUS Listed.

Type GP – Copper Pole Bottom Ground Plates for Multigrounded Neutral Construction

Cat. No.	Pigtail Wire Range		min. (mm²)	max. (mm²)	Diameter of Plate	
	min.	max.			(in.)	(mm)
GP100				7½		191
GP110	8	2 sol.	6.3	25.6	10	254
GP114				14		356
GP1003	#6 AWG solid CU Pigtail with 18" conductor		—	—	7½	191
GP1008	#6 AWG solid CU Pigtail with 18" conductor		—	—	7½	191
GP1108	#6 AWG solid CU Pigtail with 18" conductor		—	—	10	254

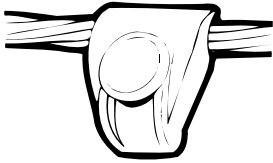
Type PB — Copper Pole Ground Plates

Cat. No.	Wire Range		Finished Size	Surface Area sq. in.
	max.	min.		
PBGW	2/0 str.	10 sol.	7 x 7½	56
PBH†	4 str.	14 sol.	7 x 7½	56

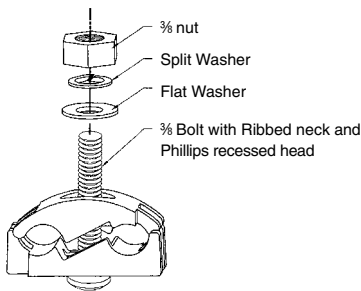
† RUS Listed.

F

Blackburn®

Blackburn®**Mechanical Grounding Connectors**

- Bolt has square shank to prevent turning and allow clamp to be tightened with one wrench
- GTC 23 and 24 are two-piece clamps for connecting ground lead cable to flat metal surface; ideal for grounding substations on tower footings
- Castings are of high strength, corrosion resistant copper alloy
- GTC 13 and 14 are economical one-piece clamps which perform the same function as two-piece clamps except the under pad support is omitted and conductor is connected directly to tower
- Add suffix L to Cat. No. for 1/2" channel thickness

Blackburn®


For use with aluminum or copper conductors. In aluminum or galvanized steel cable tray. Ribbed neck on the bolt prevents rotation during tightening if .440 dia. hole is used

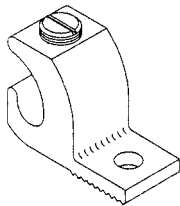


Figure 1

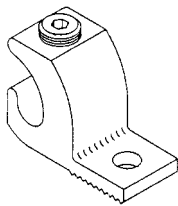
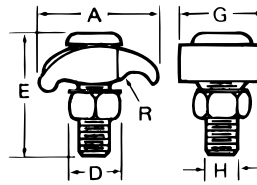


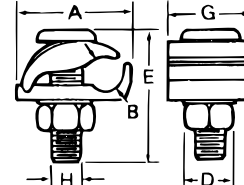
Figure 2

Type GTC – Tower Ground Clamps

Cat. No.	Conductor Range				Channel Thickness	Dimension (in.)							
	max.	min.	max. (mm ²)	min. (mm ²)		A	B	D	E	G	H	R	
GTC13	2/0 str.	4 sol.	67.4	21.1	1/4	1 15/32	—	9/16	1 21/32	1 9/32	3/8	7/32	
GTC14	250 kcmil	2/0 str.	126.6	67.4	1/4	1 15/16	—	3/4	1 15/16	1 13/32	1/2	5/16	
GTC23	2/0 str.	4 sol.	67.4	21.1	1/4	1 41/64	7/16	9/16	1 21/32	1 3/32	3/8	—	
GTC24	250 kcmil	2/0 str.	126.6	21.1	1/4	1 61/64	5/8	3/4	1 15/16	1 3/8	1/2	—	



Type GTC 13 and 14



Type GTC 23 and 24

CTG250 Wide Range Tower Ground Clamp

Cat. No.	Wide Range (2 sides)	Height	Width	Depth	Nut (Flats)
CTG250	#2 sol. (.258 Dia.) 250 kcmil (.575 Dia.)	1.95	2.00	1.13	.560

Tin plate body
Galvanized hardware

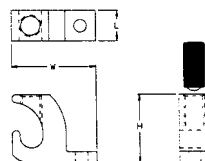
**Lay-in Lug Connector**

These grounding connectors are manufactured with high strength 6061-T6 aluminum alloy to insure both maximum strength and conductivity. Dual rated for both copper and alu-

minum conductor. The open-faced design allows the installer to quickly lay-in the grounding conductor as a jumper to multiple conduits with no break in the ground conductor.

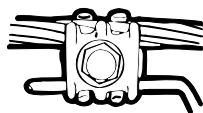
Cat. No.	Fig. No.	Cond. Range AWG		Stud Size	Dimensions					
		in.	(mm ²)		H (mm)	W (mm)	L (mm)			
LL414	1	4-14	16-1.5	.22	5.59	.78 19.81	.38 9.65	1.07 27.18		
LL1014	1	1/0-14	50-1.5	.27	6.86	1.17 29.72	.60 15.24	1.50 38.10		
LL306	2	3/0-6	70-16	.33	8.38	1.56 39.62	.80 20.32	2.00 50.80		
LL2506	2	250-6	120-16	.33	8.38	1.79 45.47	.80 20.32	2.20 55.88		

90°C Rating (486B Listed)


Thomas & Betts

Blackburn®

Mechanical Grounding Connectors



- For all combinations of aluminum, copper and Steel conductors
- Cast of high strength bronze alloy
- Furnished with silicon bronze bolt and lockwasher—lockwasher minimized loosening of installed clamp
- Parallel groove design; no need to remove bolt for installation
- Only one size for all requirements from No. 8 solid copper to 1/0 ACSR or 2/0 copper

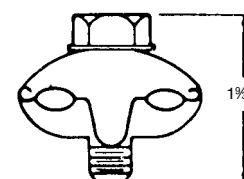
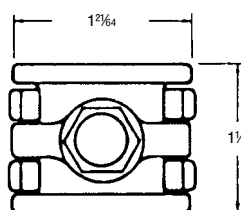
Bronze Jumper Clamps

Cat. No.	Max. Plated Groove	Min. Plated Groove	Max. Unplated Groove	Min. Unplated Groove
K1	1/0 ACSR 2 SCG amerductor 7/16 galv. strand	6 ACSR 12 SCG amerductor 8 solid iron	2/0 str. copper 7/16 Copperweld* 2A Copperweld* Copperweld* etc.	8 solid copper 9 1/2 D

* Trademark of Copperweld Steel Co.

Plated with plating removed from one groove.

For use with alumum, amerductor, or galvanized steel strand to copper or copper bonded steel wires.



Service Post Connectors

Application

The Blackburn line of Service Post Connectors are designed for applications including steel structure, fence post or transformer grounding involving one or two cables. Service Posts can also be used to tap one or two cables from bus bar.

Construction & Ratings

Bolts used in the Service Post are machined from high conductivity bronze alloy while the nuts are cold-formed from high strength, corrosion resistant copper alloy. Pressure bars are copper through 4/0 size, while copper alloy is used for 350 kcmil size and above. Bolts and nuts are of the traditional Blackburn hex design for easy installation.

Service Post Connectors are available in sizes accommodating AWG copper conductor ranges of #12 - 500 kcmil stranded (4 mm² - 240 mm²) and #12-#2 solid (4 mm² - 35 mm²). Both short and long stud versions are available.

The line includes single conductor and double conductor connectors.



- For copper to copper connections
- For grounding of steel structures, fence posts or transformers using one or two cables
- For tapping one or two cables from bus bar
- Hex design bolts are machined from high conductivity bronze alloy
- Nuts and pressure bars are cold-formed from high-strength copper or copper alloy
- UL 486A and UL 467 Listed

Type DS — Service Post Connectors, Short Stud

Cat. No.		Conductors Stranded		AWG mm ² Solid		Maximum Diameter Range (in.)	Stud Size
		Double Conductor	Single Conductor	max.	min.		
SP0DS	SP0SS	8	12	8	12	.146-.080	1/4-20 x 1/2
		6mm ²	4mm ²	10mm ²	4mm ²		
SP1DS	SP1SS	7	10	6	10	.170-.102	1/4-20 x 1/2
		10mm ²	6mm ²	10mm ²	6mm ²		
SP2DS	SP2SS	5	10	4	10	.217-.102	5/16-18 x 5/8
		16mm ²	6mm ²	16mm ²	6mm ²		
SP3DS	SP3SS	3	10	2	10	.271-.102	3/8-16 x 5/8
		25mm ²	6mm ²	35mm ²	6mm ²		
SP4DS	SP4SS	1	8	2	8	.332-.128	3/8-16 x 5/8
		35mm ²	6mm ²	35mm ²	10mm ²		
SP5DS	SP5SS	1/0	2	2	—	.385-.259	1/2-13 x 3/4
		50mm ²	35mm ²	35mm ²	—		
SP6DS	SP6SS	2/0	2	2	—	.443-.258	1/2-13 x 3/4
		70mm ²	35mm ²	35mm ²	—		
SP8DS	SP8SS	4/0	1	—	—	.570-.289	5/8-11 x 1
		95mm ²	35mm ²	—	—		
SP9DS	SP9SS	350	1/0	—	—	.715-.373	5/8-11 x 1
		150mm ²	70mm ²	—	—		
SP10DS	SP10SS	500	3/0	—	—	.840-.464	3/4-10 x 1 1/4
		240mm ²	95mm ²	—	—		

Thomas & Betts



Blackburn®**Mechanical Grounding Connectors**

- For copper to copper connections
- For grounding of steel structures, fence posts, transformers using one or two cables
- For tapping one or two cables from bus bar
- Hex design bolts are machined from high conductivity bronze alloy
- Nuts and pressure bars are cold-formed from high-strength copper or copper alloy
- U.L. 486A and U.L. 467 Listed
- Pressure bars are copper through 4/0 size; copper alloy is used for 350 kcmil size and above
- Available in sizes accommodating AWG copper conductor ranges of #12–500 kcmil stranded (4mm²–240mm²) and #12–#2 solid (4mm²–35mm²)
- Line includes single conductor and double conductor connectors

Type SP — Service Post Connectors, Long Stud

Cat. No.		Conductors		AWG mm ²		Maximum Diameter Range (in.)	Stud Size
Double Conductor	Single Conductor	max.	min.	max.	min.		
SP0DL	SP0SL	8 6mm ²	12 4mm ²	8 10mm ²	12 4mm ²	.146–.080	¼–20 x 1
SP1DL	SP1SL	7 10mm ²	10 6mm ²	6 10mm ²	10 6mm ²	.170–.102	¼–20 x 1
SP2DL	SP2SL	5 16mm ²	10 6mm ²	4 16mm ²	10 6mm ²	.217–.102	⅝–18 x 1
SP3DL	SP3SL	3 25mm ²	10 6mm ²	2 35mm ²	10 6mm ²	.271–.102	⅝–16 x 1½
SP4DL	SP4SL	1 35mm ²	8 6mm ²	2 35mm ²	8 10mm ²	.332–.128	⅝–16 x 1½
SP5DL	SP5SL	1/0 50mm ²	2 35mm ²	2 35mm ²	—	.385–.259	½–13 x 1¼
SP6DL	SP6SL	2/0 70mm ²	2 35mm ²	2 35mm ²	—	.443–.258	½–13 x 1¼
SP8DL	SP8SL	4/0 95mm ²	1 35mm ²	—	—	.570–.289	⅝–11 x 1½
SP9DL	SP9SL	350 150mm ²	1/0 70mm ²	—	—	.715–.373	⅝–11 x 1½
SP10DL	SP10SL	500 240mm ²	3/0 95mm ²	—	—	.840–.464	¾–10 x 1¾



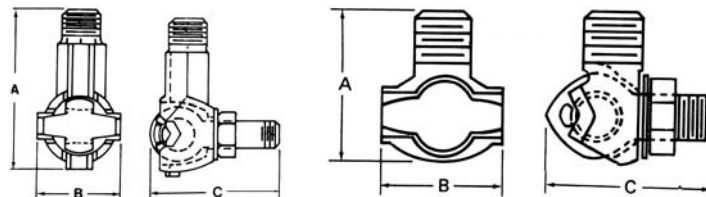
- Transformer Grounding Connectors are cast of high conductivity bronze; ½"–13 stud fits all standard EEI-NEMA distribution transformers
- Eye bolt on TTC2 rotates to accommodate cable in either vertical or horizontal direction
- One size connector to handle full range of grounding conductors from #8 through 2/0 str.
- No special tools required

Type TTC — Transformer Tank Ground Connectors

Cat. No.	Conductor Range				Stud Thread Size UNC-2A	Dimensions (in.)		
	max.	min.	max. (mm ²)	min. (mm ²)		A	B	C
TTC2	2/0 str.	8 sol.	67.4	8.3	½"–13	1⅝	1⅝	1⅝
TTC3	1 str.	10 sol.	42.4	5.2	½"–13	1⅝	1⅝	1⅝
TTC4*	1 str.	10 sol.	42.4	5.2	½"–13	1¼	7/8	1⅝
TTC2P†	2/0 str.	8 sol.	67.4	8.3	½"–13	1⅝	1⅝	1⅝
TTC3P*	1 str.	10 sol.	42.4	5.2	½"–13	1⅝	1⅝	1⅝
TTC4P*	1 str.	10 sol.	42.4	5.2	½"–13	1¼	7/8	1⅝

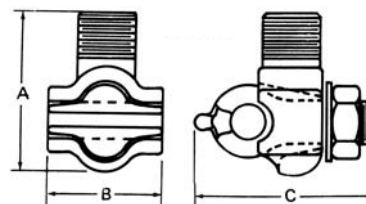
† RUS Listed.

* Tin Plated.



TTC2

TTC4

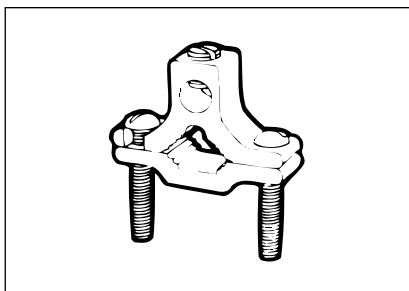


TTC3

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Blackburn®

Mechanical Grounding Connectors

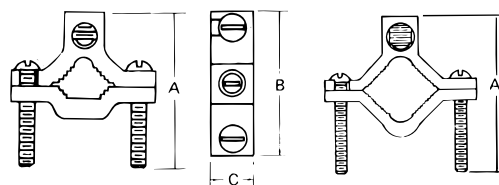


- For connecting grounding conductor to either steel or copper pipe, rod or tubing
- Tin plated for corrosion resistance
- For use with copper or aluminum conductor

Aluminum Water Pipe Clamp

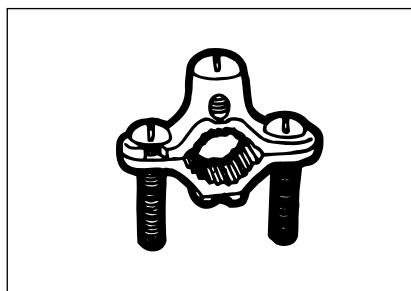
Cat. No.	Water Pipe Size	Conductor Range		Dimensions (in.)			Steel Clamp Screw	Aluminum Wire Screw
		max.	min.	A	B	C		
AJ	½-1	1/0 str.	#14 sol.	2½	2¼	⅝	¼-20	⅞-20 slot
AJ-2	1½-2	250 kcmil	#6	3⅞	3¾	⅞	⅝-18	1⅞-20 socket
AJ-2124	2½-4	250 kcmil	#6	5⅞	6⅞	⅞	⅝-16	1⅞-20 socket

U.L. listed for both copper and aluminum conductors to steel pipe and copper water tubing



Type AJ

Type AJ2

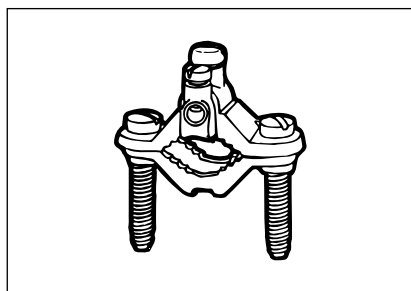
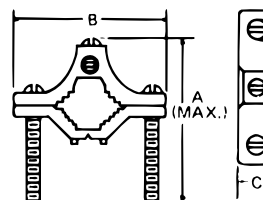


- Similar to above but lighter in construction

Budget Price Cast Bronze Clamp

Cat. No.	Water Pipe Size	Conductor Range		Dimensions (in.)		
		max.	min.	A	B	C
JJR	½ to 1	#4 str.	#10 sol.	2⅞/32	2⅞/32	1⅞/32

Add suffix **C** to Cat. No. to specify plating.



- Budget price clamps
- Made of die cast zinc alloy with zinc plated screws
- Model BJA for use with armored cable

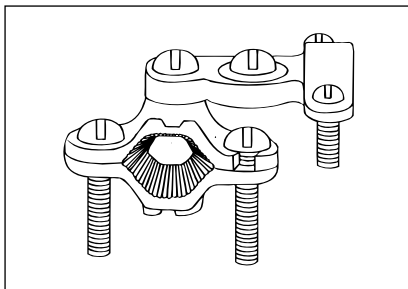
Die Cast Clamps

Cat. No.	Water Pipe Size	Conductor Range	
		max.	min.
BJ-1	½"-1"	#2 str.	#10 sol.
BJA*	½"-1"	#6 AWG	#8 AWG

* Not U.L. Listed

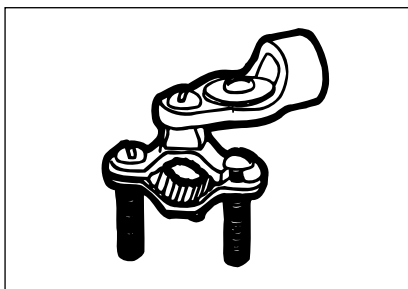
Blackburn®

Mechanical Grounding Connectors



- For connecting armored cable to water pipe
- Clamping portion similar to standard "J" clamp
- Special pressure bar grips armor or outer cable insulation to lessen chances of grounding conductor being pulled out
- Zinc plated screws

Blackburn®

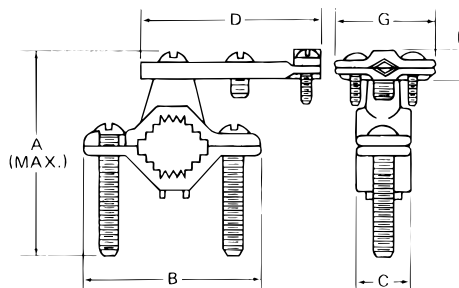


- For grounding rigid conduit systems
- Continuity from rigid conduit system to ground provided by cast bronze threaded conduit hub
- Hub swings 360° for easy alignment
- Heavy brass washer provides protection for clamped grounding conductor
- Zinc plated screws
- Cast bronze pipe clamping portion identical to that used in "JA" clamp

Cast Bronze Clamps

Cat. No.	Water Pipe Size	Conductor Range		Dimensions (in.)						
		max.	min.	A	B	C	D	E	G	
JA	½ to 1	#6 sol.	#10 sol.	2¾	2 11/32	25/32	2 9/32	1 5/32	1 3/8	
JA-2	1¼ to 2	#6 sol.	#10 sol.	3¾	3 ½	1 3/16	2 9/32	1 5/32	1 3/8	
JA-2124	2½ to 4	#6 sol.	#10 sol.	6	6 5/16	1	2 9/32	1 5/32	1 3/8	

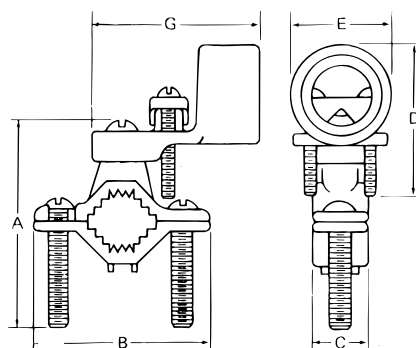
Add suffix **C** to Cat. No. to specify plating.



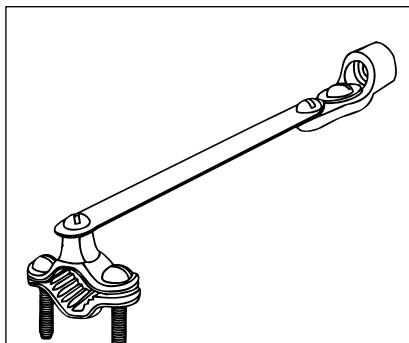
Cast Bronze Clamps for Conduit

Cat. No.	Conduit Size	Water Pipe Size	Conductor Range		Dimensions (in.)						
			max.	min.	A	B	C	D	E	G	
JP-12	½	½ to 1	#6 sol.	#10 sol.	2¾	2 11/32	23/32	1 1/4	1	2 1/2	
JP-212	½	1¼ to 2	#6 sol.	#10 sol.	3¾	3 ½	1 3/16	1 1/4	1	2 1/2	
JP-212412	½	2½ to 4	#6 sol.	#10 sol.	6	6 5/16	1	1 1/4	1	2 1/2	
JP-34	¾	½ to 1	#2/0 str.	#10 sol.	2¾	2 11/32	23/32	2 5/16	1 1/4	2 3/8	
JP-234	¾	1¼ to 2	#2/0 str.	#10 sol.	3¾	3 ½	1 3/16	2 5/16	1 1/4	2 3/8	
JP-212434	¾	2½ to 4	#2/0 str.	#10 sol.	6	6 5/16	1	2 5/16	1 1/4	2 3/8	
JP-1	1	½ to 1	#3/0 str.	#10 sol.	2¾	2 11/32	23/32	2 5/16	1 1/2	2 3/8	
JP-21	1	1¼ to 2	#3/0 str.	#10 sol.	3¾	3 ½	1 3/16	2 5/16	1 1/2	2 3/8	
JP-21241	1	2½ to 4	#3/0 str.	#10 sol.	6	6 5/16	1	2 5/16	1 1/2	2 3/8	

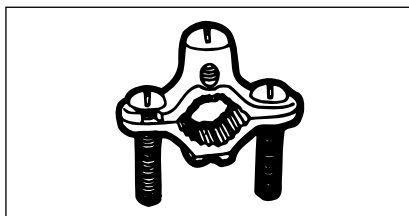
Add suffix **C** to Cat. No. to specify plating.



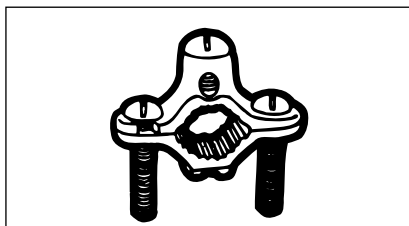
Thomas & Betts

Blackburn®**Mechanical Grounding Connectors**

- For grounding rigid conduit systems
- Same features as "JP" clamp plus ease of alignment afforded by flexible copper strap
- Strap helps protect conduit system from water system vibrations
- Zinc plated screws



- U.L. 467 Listed for direct burial
- High strength, high conductivity copper alloy (over 80% copper)
- To connect copper ground wire to water pipe, copper tubing, or ground rods



- For connecting grounding conductor to water pipe or copper tube
- Cast of high strength, highly conductive copper alloy
- Screws plated for corrosion resistance
- UL listed

Cast Bronze Clamps with Copper Strap

Cat. No.	Conduit Size	Water Pipe Size	Conductor Range	
			max.	min.
JPS-12	1/2"	1/2"-1"	6 sol.	10 sol.
JPS-34	3/4"	1/2"-1"	2/0 str.	10 sol.
JPS-1	1"	1/2"-1"	3/0 str.	10 sol.

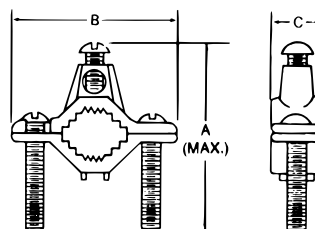
Add suffix **C** to Cat. No. to specify plating.

Cast Bronze Ground Clamps

Cat. No.	Water Pipe Size	Conductor Range
JD	1/2"-1"	#2 str.-#10 str.
J2D	1 1/4"-2"	#2 str.-#10 str.

Type J – Cast Bronze Ground Clamps

Cat. No.	Water Pipe Size	Conductor Range		Dimensions (in.)		
		max.	min.	A (max.)	B	C
J	1/2 to 1	2 str.	10 sol.	2 3/4	2 11/32	23/32
J2BB	1 1/4 to 2	2 str.	10 sol.	3 3/4	3 1/2	13/16
J2124	2 1/2 to 4	4 str.	10 sol.	6	6 5/16	1
J6	4 1/4 to 6	4 str.	10 sol.	7 1/4	8 1/8	1

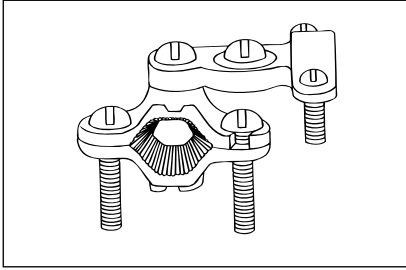
**Thomas & Betts****F**

Blackburn®

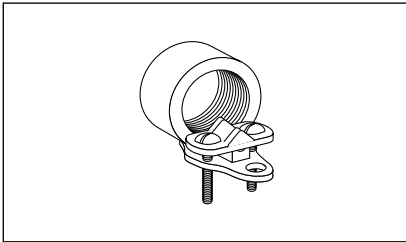


Blackburn®

Mechanical Grounding Connectors



- Pipe clamping portion identical to "JA" clamp
- Pressure bar type conduit hub adjusts to fit 1/2" or 3/4" EMT or 1/2" rigid conduit
- Hub swings 360° for ease of alignment
- Brass washer provides positive contact with grounding conductor
- Zinc plated screws



- Rugged cast bronze threaded hub
- Provides positive connection between rigid conduit and water system in conjunction with "J" clamp

Type JPT – Cast Bronze Clamps for Conduit

Cat. No.	Conduit Size	Water Pipe Size	Conductor Range	
			max.	min.
JPT		1/2" to 1"		
JPT2	1/2" or 3/4" EMT 1/2" Rigid	1 1/4" to 2"	6 sol.	10 sol.
JPT4		2 1/2" to 4"		

Conduit Hubs

Cat. No.	Ground Wire Size AWG	Conduit Size
3930	#8 to #2	1/2" Conduit
3940	#8 to #2	3/4" Conduit
3950	#8 to #3/0	1" Conduit
3951	#8 to #4/0	1 1/4" Conduit
3960	#8 to #4	Armored Wire

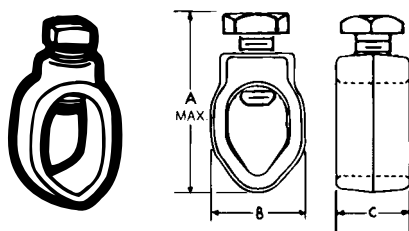
Material: Malleable iron

Type CH – Bronze Conduit Hubs

Cat. No.	Conduit Size (in.)	Conductor Range	
		max.	min.
CH12	1/2	6 sol.	10 sol.
CH34	3/4	2/0 str.	10 sol.
CH1	1	3/0 str.	10 sol.

Blackburn®

Grounding Conduit Hubs



Type G

- A dependable ground connection offered at a substantial saving; cast of high strength corrosion-resistant copper alloy.
- Hex head bolts.
- Simplified compact design will make a lasting, trouble-free connection.



3840

3849



3826



3844

For armored and unarmored wire



Swivel cable tray clamps for aluminum and steel trays with regular or reinforced flanges.

- Serrations and biting teeth on clamping saddle provides a high quality bond between conduit and clamp.
- 1/2" to 6" sizes that can be clamped to any position in a 90° arc.
- Hardened steel screws bite into tray and provide positive bond.
- Malleable iron hub and steel u-bolt accepts conduit from any angle.

Blackburn Budget Line Ground Clamps

Cat. No.	Nominal Rod Dia.		Wire Range				Dimensions (in.)				
	(in.)	(mm)	max.	min.	(mm²)	max. (mm²)	min. Bolt	A (max.) UNC-2A	Thread Size B	C	D
G3*	3/8	9.5	4 str	10 sol	21.1	5.2	1%	3/16-18	1 1/16	1/2	2 3/4
G4	1/2	12.7	2 str	10 sol	33.6	5.2	—	3/8-16	2 1/32	3/4	3 3/4
G5#	3/4	15.8	2 str	10 sol	33.6	5.2	—	3/8-16	2 3/32	3/4	4 3/4
G6	1	19.0	2 str	10 sol	33.6	5.2	—	3/8-16	1 1/16	3/4	13 1/16

* Not U.L. Listed

REA ListedAdd

Add suffix **P** to Cat. No. for tin plated clamp. Request pricing.



F

Blackburn®

Ground Clamp

Cat. No.	Material	Water Pipe, Copper Tubing Size	Grd. Rod Size
3826†	M.I.	1/2", 3/4"	1/2"-1"
3846†	Bronze	1/2", 3/4"	1/2"-1"
3849•	Brass	1/2"-1" O.D.	
3840*	M.I.	1/2", 3/4" or 1"	

† For unarmored copper wire #6, #4.

- For copper and aluminum conductors; for 14 thru 2 cu. unarmored copper wire—corrosive and outdoor use. U.L. approved for direct burial.

* #8 thru #4 AWG. Not CSA Certified



Ground Clamps for K&L Grade Copper Tubing Only

Cat. No.	Ground Wire Range	Water Pipe & Ground Rod Size/Desc.
3844*	#8-#4	1/2"-1"
3888†	#8-#4	1/2"-1" also rebar 4-10

* With Steel Screws

** With Bronze Screws, Not CSA Certified—or U.L.

† U.L. approved for direct burial. Silicon Bronze Screws.



Swivel Tray Clamp

Cat. No.	Conduit Size
6209	1/2"-3/4"
6211	1"-1 1/4"
6214	1 1/2"-2"
6216	2 1/2"-3"
6218	3 1/2"-4"

Thomas & Betts

Blackburn®

Flexible Braid



Blackburn®

Flexible Braids – Type FB

Flexible Braids				Dimensions			
Cat. No.†	Circular Mils	Bolt Hole	No. of Braids in Ferrule	Thickness	C	D	E
					Width	Ferrule Length	Distance Ctr. to Ctr.
FB12-1*	24000	¼	1	0.140	0.625	0.750	N/A
FBC12-1*	48000	⅜	1	0.148	1.000	1.300	N/A
FBD12-1*	76800	⅞	1	0.200	1.000	1.300	N/A
FBD12*	76800	⅞	1	0.200	1.000	2.500	1.25
FB2D12-1*	153600	⅞	2	0.250	1.250	1.500	N/A
FB2D12*	153600	⅞	2	0.250	1.250	2.500	1.25
FB3D12-1*	230400	⅞	3	0.350	1.250	1.500	N/A
FB3D12*	230400	⅞	3	0.350	1.250	2.500	1.25
FBXD12-1*	105600	⅞	1	0.250	1.250	1.500	N/A
FBXD12*	105600	⅞	1	0.250	1.250	2.500	1.25
FB2XD12-1*	211200	⅞	2	0.350	1.250	1.500	N/A
FB2XD12*	211200	⅞	2	0.350	1.250	2.500	1.25
FB3XD12-1*	316800	⅞	3	0.400	1.250	1.500	N/A
FB3XD12*	316800	⅞	3	0.400	1.250	2.500	1.25
FBE12-1*	168000	⅞	1	0.500	1.250	2.500	N/A
FBE12*	168000	⅞	1	0.250	1.250	3.500	1.75
FB2E12-1*	336000	⅞	1	0.500	1.250	2.500	N/A
FB2E12*	336000	⅞	2	0.500	1.250	3.500	1.75
FB3E12	504000	⅞	3	0.750	1.250	3.500	1.75
FB4E12	672000	⅞	4	1.000	1.250	3.500	1.75
FBF12	230400	⅞	1	0.300	1.500	3.500	1.75
FB2F12	460800	⅞	2	0.450	1.500	3.500	1.75
FB3F12	691200	⅞	3	0.600	1.625	3.500	1.75
FB4F12	921600	⅞	4	0.750	1.625	3.500	1.75
FBG12	307200	⅞	1	0.380	1.500	3.500	1.75
FB2G12	614400	⅞	2	0.630	1.625	3.500	1.75
FB3G12	921600	⅞	3	0.850	1.625	3.500	1.75
FB4G12	1228800	⅞	4	1.000	1.880	3.500	1.75

* Certified C22.2 No. 41 Grounding & Bonding Equipment. Listed UL467 and UL486A Grounding & Bonding Equipment.

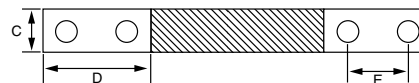
† Catalog number shown in 12" lengths. Standard lengths offered in 6, 12, 18, 24, 30, and 36 inches (end to end).

Change the 12 in the above catalog numbers to the desired length. (-1) indicates 1 bolt hole per ferrule.

See amperage tables on page F117 as a reference for grounding and bonding, or continuous current applications.

FB4 series is not listed/certified.

For custom flexible braids, contact Customer Service.



- Tin-plated copper braids and ferrules for high conductivity and corrosion resistance.
- Flexible copper braids for use in substation and grounding applications.
- Flexible braids allow for linear expansion, equipment vibration, and offset connections.

Flexible Braid in a Roll – 10 foot minimum

Cat. No.	Circular Mils.	Thickness (in.)	Width (in.)
FBRL	24000	0.140	0.625
FBCRL	48000	0.148	1.000
FBDRL	76800	0.200	1.000
FBXDR	105600	0.250	1.250

Ferrules or lugs not included.

Thomas & Betts

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Flexible Braid Selection Guide



Minimum Size Flexible Braid for Continuous Current Applications

Cat. No.	Circular Mils	Amperage Capacity	Cat. No.	Circular Mils	Amperage Capacity
FBB12-1	24000	95	FBE12-1	16800	340
FBC12-1	48000	145	FBE12	16800	340
FBD12-1	76800	190	FB2E12-1	336000	530
FBD12	76800	190	FB2E12	336000	530
FB2D12-1	153600	330	FB3E12	504000	700
FB2D12	153600	630	FB4E12	672000	805
FB3D12-1	230400	470	FBF12	230400	360
FB312	230400	470	FB2F12	460800	600
FBXD12-1	105600	235	FB3F12	691200	820
FBXD12	105600	235	FB4F12	921600	1000
FB2XD12-1	211200	400	FBG12	307200	415
FB2XD12	211200	400	FB2G12	614400	700
FB3XD12-1	316800	600	FB3G12	921600	960
FB3XD12	316800	600	FB4G12	1228800	1200

Grounding and Bonding Applications

Minimum Size Conductors for Bonding Raceways and Equipment

Rating or Setting of Overcurrent Device in Circuit Ahead of Equipment, Conduit, Etc. Not Exceeding—Amperes	Copper Wire Circular Mils
200	26 240 (6 AWG)
300	41 740 (4 AWG)
400	52 620 (3 AWG)
500	66 360 (2 AWG)
600	83 690 (1 AWG)
800	105 600 (1/0)
1 000	133 100 (2/0)
1 200	167 800 (3/0)
1 600	211 600 (4/0)
2 000	250 000
2 500	350 000
3 000	400 000
4 000	500 000
5 000	700 000
6 000	800 000

Based on table 16 C.E.C.

Minimum Size of Bare Copper Grounding Conductor

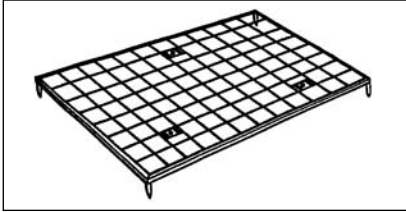
Maximum Available Short Circuit Current Amperes	Maximum Fault Duration with Exothermic Weld, Compression or Bolted Joint 0.5 Seconds Circular Mils	1.0 Second Circular Mils
5 000	26 240	41 740
10 000	52 620	83 690
15 000	83 690	105 600
20 000	105 600	167 800
25 000	133 100	211 600
35 000	211 600	250 000
40 000	211 600	300 000
50 000	250 000	350 000
60 000	300 000	500 000
70 000	350 000	600 000
80 000	400 000	600 000
90 000	500 000	700 000
100 000	500 000	700 000

Based on table 51 C.E.C.

Size calculated in accordance with IEEE No. 80.

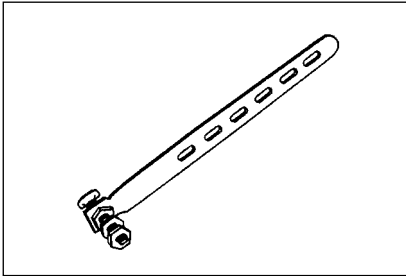
Blackburn®

Grounding Accessories



- To reduce risk and prevent build up of dangerous potential differences between high voltage equipment or structures and the user standing on the ground surface.
CEC Rule 36-308

Blackburn®



Type FJ

- For connecting to steel pipe or copper water tube
- Accommodates $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1", 1 $\frac{1}{4}$ " pipe sizes and $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1, 1 $\frac{1}{4}$ " copper water tube sizes
- Accommodates copper ground wire #18 through #12
- Specially designed "T" bolt
- 22 gauge soft copper strap with unique locking slots
- Hex head nuts may be tightened with standard wrench or special telephone company hex head driver

Metallic Gradient Control Mat

Cat. No.	Description	Wt/100		Standard package
		lb	kg	
64663	Mat with connectors	3000	1363	1
64660	Mat without connectors	2900	1318	1

4 ft. x 6 ft. hot dip galvanized mat is made from 6"x6" welded mesh, $\frac{1}{4}$ " diameter. Silicone bronze connector, bolt, nut and lockwasher.

Type FJ Flexible Ground Clamp

Cat. No.	Copper Ground Wire Size		Pipe Size (in.)		Copper Tube Size (in.)	
	max.	min.	max.	min.	max.	min.
FJ	12	18	1 $\frac{1}{4}$	$\frac{3}{8}$	1 $\frac{1}{4}$	$\frac{1}{2}$