

WARNINGS AND APPLICATION INSTRUCTIONS FOR U-BOLT CLIPS

Efficiency ratings for wire rope end terminations are based upon the catalog breaking strength of wire rope. The efficiency rating of a properly prepared loop or thimble-eye termination for clip sizes 1/8" through 7/8" is 80%, and for sizes 1" through 3-1/2" is 90%.

The number of clips shown (see Table 1) is based upon using RRL or RLL wire rope, 6 x 19 or 6 x 37 Class, FC or IWRC; IPS or XIP. If Seale construction or similar large outer wire type construction in the 6 x 19 Class is to be used for sizes 1" and larger, add one additional clip. If a pulley (sheave) is used for turning back the wire rope, add one additional clip.

The number of clips shown also applies to rotation-resistant RRL wire rope, 8 x 19 Class, IPS, XIP, sizes 1-1/2" and smaller; and to rotation-resistant RRL wire rope, 19 x 7 Class, IPS, XIP, sizes 1-3/4 inch and smaller.

For other classes of wire rope not mentioned above, we recommend contacting Crosby Engineering at the address or telephone number on the back cover to ensure the desired efficiency rating.

For elevator, personnel hoist, and scaffold applications, refer to ANSI A17.1 and ANSI A10.4. These standards do not recommend U-Bolt style wire rope clip terminations. The style wire rope termination used for any application is the obligation of the user.

For OSHA (Construction) applications, see OSHA 1926.251.



Figure 1

1. Refer to Table 1 in following these instructions. Turn back specified amount of rope from thimble or loop. Apply first clip one base width from dead end of rope. Apply U-Bolt over dead end of wire rope—live end rests in saddle (Never saddle a dead horse!). Tighten nuts evenly, alternate from one nut to the other until reaching the recommended torque.



Figure 2

2. When two clips are required, apply the second clip as near the loop or thimble as possible. Tighten nuts evenly, alternating until reaching the recommended torque. When more than two clips are required, apply the second clip as near the loop or thimble as possible, turn nuts on second clip firmly, but do not tighten. Proceed to Step 3.

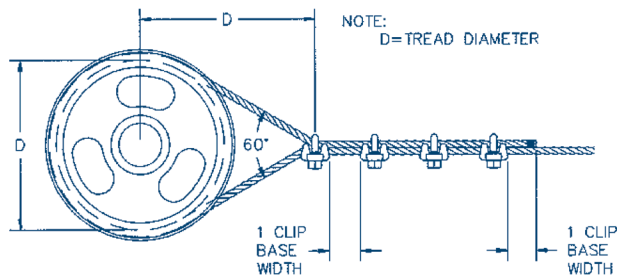


Figure 3

3. When three or more clips are required, space additional clips equally between first two—take up rope slack—tighten nuts on all clips, alternating from one nut to the other until reaching recommended torque.

WARNINGS AND APPLICATION INSTRUCTIONS FOR U-BOLT CLIPS

Figure 4



4. If a pulley (sheave) is used, in place of a thimble add one additional Fist Grip. Fist Grip spacing should be as shown.

5. WIRE ROPE SPLICING PROCEDURES:

The preferred method of splicing two wire ropes together is to use interlocking turnback eyes with thimbles, using the recommended number of clips on each eye (See Figure 5).

An alternate method is to use twice the number of clips as used for a turnback termination. The rope ends are placed parallel to each other, overlapping by twice the turnback amount shown in the application instructions. The minimum number of clips should be installed on each dead end (See Figure 6). Spacing, installation torque, and other instructions still apply.

6. IMPORTANT

Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and retighten nuts to recommended torque.

In accordance with good rigging and maintenance practices, the wire rope end termination should be inspected periodically for wear, abuse, and general adequacy.

TABLE 1				
CLIP SIZE (INCHES)	ROPE SIZE (INCHES)	MINIMUM NO. OF CLIPS	AMOUNT OF ROPE TO TURN BACK (INCHES)	*TORQUE (FT. LBS.)
1/8	1/8	2	3-1/4	4.5
3/16	3/16	2	3-3/4	7.5
1/4	1/4	2	4-3/4	15
5/16	5/16	2	5-1/4	30
3/8	3/8	2	6-1/2	45
7/16	7/16	2	7	65
1/2	1/2	3	11-1/2	65
9/16	9/16	3	12	95
5/8	5/8	3	12	95
3/4	3/4	4	18	130
7/8	7/8	4	19	225
1	1	5	26	225
1-1/8	1-1/8	6	34	225
1-1/4	1-1/4	7	44	360
1-3/8	1-3/8	7	44	360
1-1/2	1-1/2	8	54	360
1-5/8	1-5/8	8	58	430
1-3/4	1-3/4	8	61	590
2	2	8	71	750
2-1/4	2-1/4	8	73	750
2-1/2	2-1/2	9	84	750
2-3/4	2-3/4	10	100	750
3	3	10	106	1200
3-1/2	3-1/2	12	149	1200

If a pulley (sheave) is used for turning back the wire rope, add one additional clip. See figure 4.

If a greater number of clips are used than shown in the table, the amount of turnback should be increased proportionately.

*The tightening torque values shown are based upon the threads being clean, dry, and free of lubrication.



Figure 5

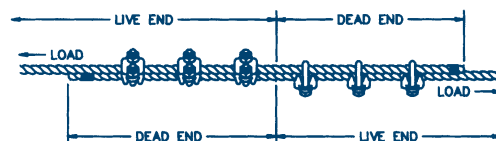


Figure 6

WARNING:

- Failure to read, understand, and follow these instructions may cause death or serious injury.
- Read and understand these instructions before using clips.
- Match the same size clip to the same size wire rope.
- Prepare wire rope end termination only as instructed.
- Do not use with plastic coated wire rope.
- Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and retighten nuts to recommended torque (See Table 1, above)

U-BOLT CLIPS

The Crosby Group, Inc.

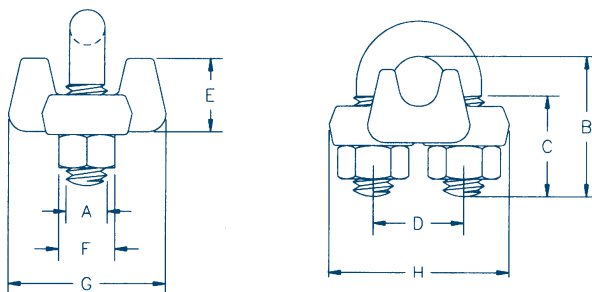
CROSBY® Clips



G-450

- Each base has a Product Identification Code (PIC) for material traceability, the name CROSBY or “CG,” and a size forged into it.
- Sizes 1/8” through 2-1/2” have forged bases.
- Entire Clip—Galvanized to resist corrosive and rusting action.
- All Clips are individually bagged or tagged with proper application instructions and warning information.
- Clip sizes up through 1-1/2” have rolled threads.

Crosby Clips, all sizes 1/4” and larger, meet the performance requirements of Federal Specification FF-C-450 TYPE 1 CLASS 1, except for those provisions required of the contractor.



Rope Size (in.)	CERTEX Cat. Ref. No.	Crosby Stock No. Galv.	Dimensions (in.)							
			A	B	C	D	E	F	G	H
*1/8	CX04-0001	1010015	.22	.72	.44	.47	.41	.38	.81	.94
*3/16	CX04-0002	1010033	.25	.97	.56	.59	.50	.44	.94	1.16
1/4	CX04-0003	1010051	.31	1.03	.50	.75	.66	.56	1.19	1.44
5/16	CX04-0004	1010079	.38	1.38	.75	.88	.72	.69	1.31	1.69
3/8	CX04-0005	1010097	.44	1.50	.75	1.00	.91	.75	1.63	1.94
7/16	CX04-0006	1010113	.50	1.88	1.00	1.19	1.03	.88	1.81	2.28
1/2	CX04-0007	1010131	.50	1.88	1.00	1.19	1.13	.88	1.91	2.28
9/16	CX04-0008	1010159	.56	2.25	1.25	1.31	1.22	.94	2.06	2.50
5/8	CX04-0009	1010177	.56	2.38	1.25	1.31	1.34	.94	2.06	2.50
3/4	CX04-0010	1010195	.62	2.75	1.44	1.50	1.41	1.06	2.25	2.84
7/8	CX04-0011	1010211	.75	3.12	1.62	1.75	1.59	1.25	2.44	3.16
1	CX04-0012	1010239	.75	3.50	1.81	1.88	1.78	1.25	2.63	3.47
1-1/8	CX04-0013	1010257	.75	3.88	2.00	2.00	1.91	1.25	2.81	3.59
1-1/4	CX04-0014	1010275	.88	4.25	2.13	2.31	2.19	1.44	3.13	4.13
1-3/8	CX04-0015	1010293	.88	4.63	2.31	2.38	2.31	1.44	3.13	4.19
1-1/2	CX04-0016	1010319	.88	4.94	2.38	2.59	2.44	1.44	3.41	4.44
1-5/8	CX04-0017	1010337	1.00	5.31	2.62	2.75	2.66	1.63	3.63	4.75
1-3/4	CX04-0018	1010355	1.13	5.75	2.75	3.06	2.94	1.81	3.81	5.28
2	CX04-0019	1010373	1.25	6.44	3.00	3.38	3.28	2.00	4.44	5.88
2-1/4	CX04-0020	1010391	1.25	7.13	3.19	3.88	3.19	2.00	4.50	6.38
2-1/2	CX04-0021	1010417	1.25	7.69	3.44	4.13	3.69	2.00	4.05	6.63
† 2-3/4	CX04-0022	1010435	1.25	8.31	3.56	4.38	4.88	2.00	5.00	6.88
3	CX04-0023	1010453	1.50	9.19	3.88	4.75	4.69	2.38	5.88	7.63
† 3-1/2	CX04-0024	1010426	1.50	10.75	4.50	5.50	6.00	2.38	6.19	8.38

*Electro-plated U-Bolt and Nuts
 † 2-3/4” and 3-1/2” base is made of cast steel

SEE APPLICATION AND WARNING INFORMATION
 In the beginning of the chapter

U-BOLT CLIPS

316 Stainless Steel Wire Rope Clips

- Available in sizes 1/8" through 5/8".
- Entire clip is made from 316 Stainless Steel to resist corrosive and rusting action.
- All components are Electro-Polished.
- All Clips are individually bagged or tagged with proper application instructions and warning information.



Rope Size (in.)	CERTEX Cat. Ref. No.	Dimensions (in.)							
		A	B	C	D	E	F	G	H
1/8	CX04-0025	.22	.72	.44	.47	.41	.38	.81	.94
3/16	CX04-0026	.25	.97	.56	.59	.50	.44	.94	1.16
1/4	CX04-0027	.31	1.03	.50	.75	.66	.56	1.19	1.44
3/8	CX04-0028	.44	1.50	.75	1.00	.91	.75	1.63	1.94
1/2	CX04-0029	.50	1.88	1.00	1.19	1.13	.88	1.91	2.28
5/8	CX04-0030	.56	2.38	1.25	1.31	1.34	.94	2.06	2.50



Putting Certainty Into Everything We Make.

CERTEX provides the rope slings, rope terminations and other tailor-made assemblies that allow our customers to tackle their lifting challenges with confidence. At CERTEX, every custom operation from cutting rope to applying hooks and shackles to making the most demanding sling, carries out the same assurance of safety.

Safety is built into our products at every stage of our fabricating process. A CERTEX-made product can be trusted because it starts with components that meet the highest possible standards of safety and reliability.

Using these quality components, the CERTEX expertise in lifting is applied in our own rigging shops: the result is customized lifting equipment that will perform in the most critical applications where lives and property depend on it.

With experienced people and machinery to produce the lifting equipment that our customers specify, CERTEX companies everywhere are committed to the complete reliability of every product that we make.



WARNINGS AND APPLICATION INSTRUCTIONS FOR FIST GRIP® CLIPS

Efficiency ratings for wire rope end terminations are based upon the catalog breaking strength of wire rope. The efficiency rating of a properly prepared loop or thimble-eye termination for clip sizes 1/8" through 7/8" is 80%, and for sizes 1" through 3-1/2" is 90%.

The number of clips shown (see Table 1) is based upon using RRL or RLL wire rope, 6 x 19 or 6 x 37 Class, FC or IWRC; IPS or XIP. If Seale construction or similar large outer wire type construction in the 6 x 19 Class is to be used for sizes 1" and larger, add one additional clip. If a pulley (sheave) is used for turning back the wire rope, add one additional clip.

The number of clips shown also applies to rotation-resistant RRL wire rope, 8 x 19 Class, IPS, XIP, sizes 1-1/2" and smaller; and to rotation-resistant RRL wire rope, 19 x 7 Class, IPS, XIP, sizes 1-1/2" and smaller.

For other classes of wire rope not mentioned above, we recommend contacting Crosby Engineering at the address or telephone number on the back cover to ensure the desired efficiency rating.

The style of wire rope termination used for any application is the obligation of the user.

For OSHA (Construction) applications, see OSHA 1926.251.

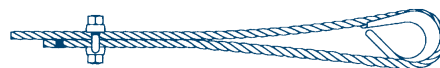


Figure 1

1. Refer to Table 1 in following these instructions. Turn back specified amount of rope from thimble or loop. Apply first clip one base width from dead end of rope. Tighten nuts evenly, alternating from one nut to the other until reaching the recommended torque.



Figure 2

2. When two clips are required, apply the second clip as near the loop or thimble as possible. Tighten nuts evenly, alternating until reaching the recommended torque. When more than two clips are required, apply the second clip as near the loop or thimble as possible, turn nuts on second clip firmly, but do not tighten. Proceed to Step 3.



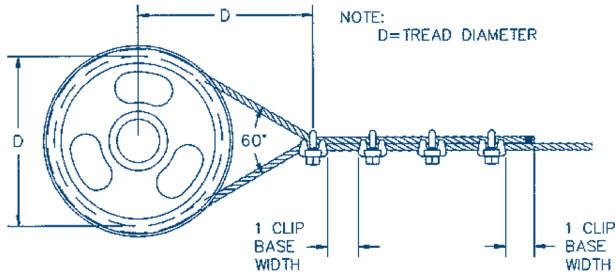
Figure 3

3. When three or more clips are required, space additional clips equally between first two—take up rope slack—tighten nuts on all clips, alternating from one nut to the other until reaching recommended torque.



WARNINGS AND APPLICATION INSTRUCTIONS FOR FIST GRIP® CLIPS

Figure 4



4. If a pulley (sheave) is used, in place of a thimble add one additional Fist Grip®. Fist Grip® spacing should be as shown.

5. WIRE ROPE SPLICING PROCEDURES:

The preferred method of splicing two wire ropes together is to use interlocking turnback eyes with thimbles, using the recommended number of clips on each eye (See Figure 5).

An alternate method is to use twice the number of clips as used for a turnback termination. The rope ends are placed parallel to each other, overlapping by twice the turnback amount shown in the application instructions. The minimum number of clips should be installed on each dead end (See Figure 6). Spacing, installation torque, and other instructions still apply.

6. IMPORTANT

Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and retighten nuts to recommended torque.

In accordance with good rigging and maintenance practices, the wire rope end termination should be inspected periodically for wear, abuse, and general adequacy.

Table 1				
Clip Size (Inches)	Rope Size (Inches)	Minimum No. of Clips	Amount of Rope to Turn Back in Inches	*Torque in Ft. Lbs.
3/16	3/16	2	4	30
1/4	1/4	2	4	30
5/16	5/16	2	5	30
3/8	3/8	2	5-1/4	45
7/16	7/16	2	6-1/2	65
1/2	1/2	3	11	65
9/16	9/16	3	12-3/4	130
5/8	5/8	3	13-1/2	130
3/4	3/4	3	16	225
7/8	7/8	4	26	225
1	1	5	37	225
1-1/8	1-1/8	5	41	360
1-1/4	1-1/4	6	55	360
1-3/8	1-3/8	6	62	500
1-1/2	1-1/2	7	78	500

If a pulley (sheave) is used for turning back the wire rope, add one additional clip. See figure 4.

If a greater number of clips are used than shown in the table, the amount of turnback should be increased proportionately.

*The tightening torque values shown are based upon the threads being clean, dry, and free of lubrication.



Figure 5

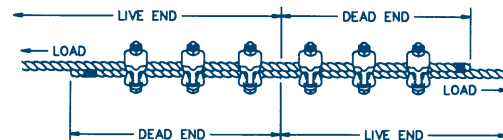


Figure 6

WARNING:

- Failure to read, understand, and follow these instructions may cause death or serious injury.
- Read and understand these instructions before using clips.
- Match the same size clip to the same size wire rope.
- Prepare wire rope end termination only as instructed.
- Do not use with plastic coated wire rope.
- Apply first load to test the assembly. This load should be of equal or greater weight than loads expected in use. Next, check and retighten nuts to recommended torque (See Table 1, above).

FIST GRIP® CLIPS

The Crosby Group, Inc.

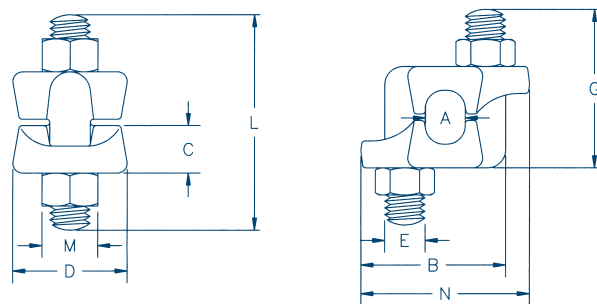
Fist Grip® Clips

- Bolts are an integral part of the saddle. Nuts can be installed in such a way as to enable the operator to swing the wrench in a full arc for fast installation.
- All sizes have forged steel saddles.
- Entire clip is Galvanized to resist corrosive and rusting action.
- All Clips are individually bagged or tagged with proper application instructions and warning information.
- Assembled with standard heavy hex nuts.

Fist Grip® wire clips meet or exceed the performance requirements of Federal Specification FF-C-450 Type III, Class 1, except for those provisions required of the contractor.



G-429

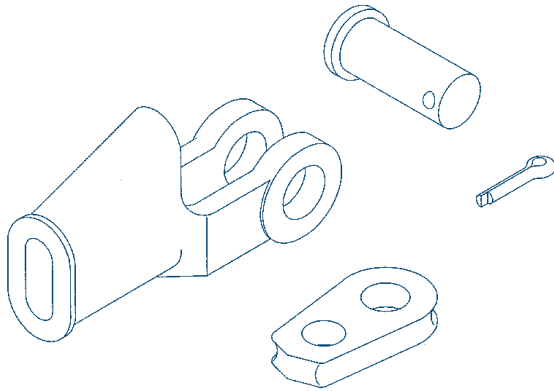


Rope Size (in.)	CERTEX Cat. Ref. No.	Crosby Stock No. Galv.	Dimensions (in.)								
			A	B	C	D	E	G	Approx L	M	N
3/16-1/4	CX04-0031	1010471	.25	1.25	.34	.94	.38	1.28	1.63	.69	1.47
5/16	CX04-0032	1010499	.31	1.34	.44	1.06	.38	1.47	1.94	.69	1.56
3/8	CX04-0033	1010514	.38	1.59	.50	1.06	.44	1.81	2.38	.75	1.88
7/16-1/2	CX04-0034	1010532	.50	1.88	.56	1.25	.50	2.19	2.75	.88	2.19
9/16-5/8	CX04-0035	1010550	.63	2.28	.69	1.50	.63	2.69	3.50	1.06	2.63
3/4	CX04-0036	1010578	.75	2.69	.88	1.81	.75	2.94	3.75	1.25	3.06
7/8	CX04-0037	1010596	.88	2.97	.97	2.13	.75	3.31	4.13	1.25	3.14
1	CX04-0038	1010612	1.00	3.06	1.19	2.25	.75	3.72	4.63	1.25	3.53
1 1/8	CX04-0039	1010630	1.13	3.44	1.28	2.38	.88	4.19	5.25	1.44	3.91
1 1/4	CX04-0040	1010658	1.25	3.56	1.34	2.50	.88	4.25	5.25	1.44	4.03
1-3/8-1-1/2	CX04-0041	1010676	1.50	4.13	1.56	3.00	1.00	5.56	7.00	1.63	4.66

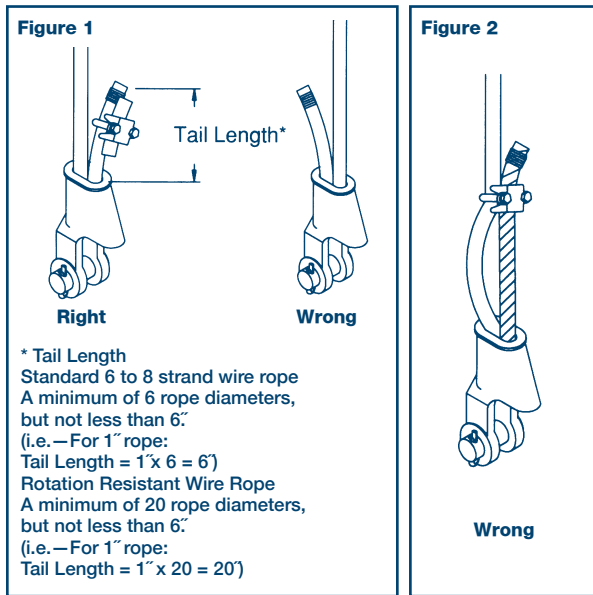
SEE APPLICATION AND WARNING INFORMATION on previous page

WARNINGS AND APPLICATION INSTRUCTIONS FOR WEDGE SOCKETS

The Crosby Group, Inc.



S-421
US-422



WARNING:

- Loads may slip or fall if the Wedge Socket is not properly installed.
- A falling load can seriously injure or kill.
- Read and understand these instructions before installing the Wedge Socket.
- Do not side load the Wedge Socket.
- Apply first load to fully seat the Wedge and Wire Rope in the socket. This load should be of equal or greater weight than loads expected in use.

Important Safety Information — Read and Follow

Inspection/Maintenance Safety

- Always inspect socket, wedge and pin before using.
- Do not use part showing cracks.
- Do not use modified or substitute parts.
- Repair minor nicks or gouges to socket or pin by lightly grinding until surfaces are smooth. Do not reduce original dimension more than 10%. Do not repair by welding.
- Inspect permanent assemblies annually, or more often in severe operating conditions.

Assembly Safety

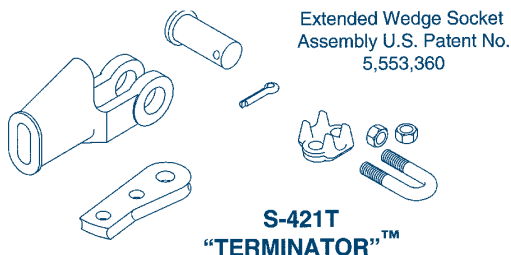
- Use only with standard 6 to 8 strand wire rope of designated size. For intermediate size rope, use next larger size socket. For example: When using 9/16" diameter wire rope use a 5/8" size Wedge Socket Assembly. Welding of the tail on standard wire rope is not recommended. The tail length of the dead end should be a minimum of 6 rope diameters but not less than 6."
- Align live end of rope, with center line of pin. (See Figure 1)
- Secure dead end section of rope. (See Figure 1)
- **DO NOT ATTACH DEAD END TO LIVE END.** (See Figure 2)
- Use a hammer to seat Wedge and Rope as deep into socket as possible before applying first load.
- **To use with Rotation Resistant wire rope** (special wire rope constructions with 8 or more outer strands) ensure that the dead end is welded, brazed or seized before inserting the wire rope into the wedge socket to prevent core slippage or loss of rope lay. The tail length of the dead end should be a minimum of 20 rope diameters but not less than 6" (See Figure 1).

Operating Safety

- Apply first load to fully seat the Wedge and Wire Rope in the socket. This load should be of equal or greater weight than loads expected in use.
- Efficiency rating of the Wedge Socket termination is based upon the catalog breaking strength of Wire Rope. The efficiency of a properly assembled Wedge Socket is 80%.
- During use, do not strike the dead end section with any other elements of the rigging (Called two-blocking).

WARNINGS AND APPLICATION INSTRUCTIONS FOR WEDGE SOCKETS

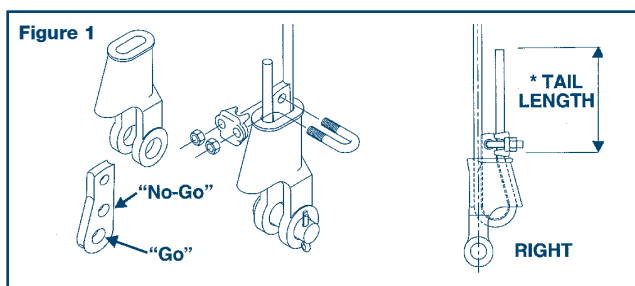
The Crosby Group, Inc.



NOTE: Existing Crosby S-421 Wedge Sockets can be retrofitted with the New Terminator Wedge.

New QUIC-CHECK™ “Go” and “No-Go” features cast into wedge. The proper size wire rope is determined when the following criteria are met:

1. The wire rope shall pass thru the “Go” hole in the wedge.
2. The wire rope shall NOT pass thru the “No-Go” hole in the wedge.



*Tail Length	
Standard 6 to 8 strand wire rope	Rotation Resistant Wire Rope
A minimum of 6 rope diameters, but not less than 6"	A minimum of 20 rope diameters, but not less than 6"

Rope Size	3/8	1/2	5/8	3/4	7/8	1	1-1/8
Clip Size	3/8	1/2	5/8	3/4	7/8	1	1-1/8
*Torque (Ft./Lbs.)	45	65	95	130	225	225	225

*The tightening torque values shown are based upon the threads being clean, dry and free of lubrication.

Important Safety Information — Read and Follow

Inspection/Maintenance Safety

- Always inspect socket, wedge and pin before using.
- Do not use part showing cracks.
- Do not use modified or substitute parts.
- Repair minor nicks or gouges to socket or pin by lightly grinding until surfaces are smooth. Do not reduce original dimension more than 10%. Do not repair by welding.
- Inspect permanent assemblies annually, or more often in severe operating conditions.

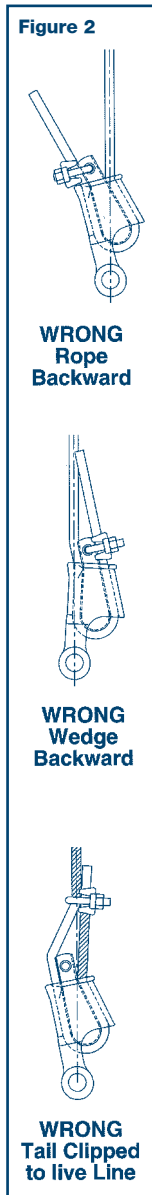
Assembly Safety

- Use only with standard 6 to 8 strand wire rope of designated size. For intermediate size rope, use next larger size socket. For example: When using 9/16" diameter wire rope use a 5/8" size Wedge Socket Assembly. Welding of the tail on standard wire rope is not recommended. The tail length of the dead end should be a minimum of 6 rope diameters but not less than 6." (See Figure 1)
- **To use with Rotation Resistant wire rope** (special wire rope constructions with 8 or more outer strands) ensure that the dead end is welded, brazed or seized before inserting the wire rope into the wedge socket to prevent core slippage or loss of rope lay. The tail length of the dead end should be a minimum of 20 rope diameters, but not less than 6." (See Figure 1)
- Properly match socket, wedge and clip (See Table 1) to wire rope size.
- Align live end of rope, with center line of pin. (See Figure 1)
- Secure dead end section of rope. (See Figure 1)
- Tighten nuts on clip to recommended torque. (Table 1)
- Do not attach dead end to live end or install wedge backwards. (See Figure 2)
- **Use a hammer to seat Wedge and Rope as deep into socket as possible before applying first load.**

Operating Safety

- Apply first load to fully seat the Wedge and Wire Rope in the socket. This load should be of equal or greater weight than loads expected in use.
- Efficiency rating of the Wedge Socket termination is based upon the catalog breaking strength of Wire Rope. The efficiency of a properly assembled Wedge Socket is 80%.
- During use, do not strike the dead end section with any other elements of the rigging (Called two-blocking).

SEE APPLICATION AND WARNING INFORMATION
on previous page

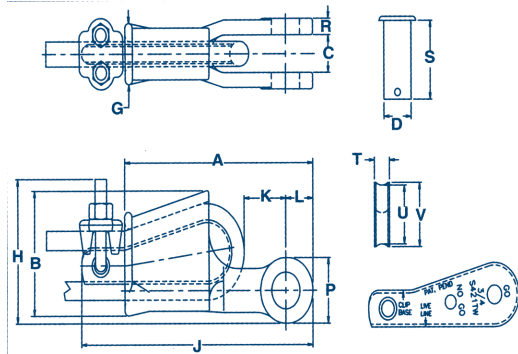


WEDGE SOCKETS

The Crosby Group, Inc.

THE TERMINATOR™

Crosby's "New & Improved" Wedge Socket



S-421T

U.S. patent 5,553,360 and foreign equivalents

- Basket is cast steel.
- Individually magnetic particle inspected.
- Pin diameter and jaw opening allows wedge and socket to be used in conjunction with open swage and spelter sockets.
- Secures the tail or "dead end" of the wire rope to the wedge, thus eliminates loss or "Punch out" of the wedge.
- Eliminates the need for an extra piece of rope, and is easily installed.
- The **TERMINATOR™** wedge eliminates the potential breaking off of the tail due to fatigue.
- The tail, which is secured by the base of the clip and the wedge, is left undeformed and available for reuse.
- Incorporates Crosby's patented **QUIC-CHECK™** "Go" and "No-Go" feature cast into the wedge. The proper size rope is determined when the following criteria are met:
 1. The wire rope should pass through the "Go" hole in the wedge.
 2. The wire rope should NOT pass through the "No-Go" hole in the wedge.
- Utilizes standard Crosby Red-U-Bolt® wire rope clip.
- Generates a minimum efficiency of 80% based on the catalog breaking strength of wire rope.
- Standard S-421 wedge sockets can be retrofitted with the new style **TERMINATOR™** wedge.

Wire Rope Dia. ‡ (In.)	CERTEX Cat. Ref. No.	Crosby Stock No. Complete Assembly*	S-421T Weight Each (lbs.)††	CERTEX Cat. Ref. No.	Crosby Stock No. Wedge Only	S-421T Weight Each* (lbs.)	Dimensions (In.)														
							A	B	C	D	G	H	J†	K†	L	P	R	S	T	U	V
3/8	CX04-0042	1035000	3.18	CX04-0050	1035555	.50	5.63	2.77	.81	.81	1.38	3.12	7.38	1.60	.88	1.56	.44	2.13	.44	1.25	1.38
1/2	CX04-0043	1035009	6.15	CX04-0051	1035564	1.05	6.81	3.55	1.00	1.00	1.62	3.85	8.75	1.21	1.06	1.94	.50	2.44	.53	1.75	1.88
5/8	CX04-0044	1035018	9.70	CX04-0052	1035573	1.79	8.16	4.36	1.25	1.19	2.12	4.58	10.34	1.64	1.22	2.25	.56	3.13	.69	2.00	2.19
3/4	CX04-0045	1035027	14.50	CX04-0053	1035582	2.60	9.78	4.81	1.50	1.38	2.44	5.37	12.03	2.17	1.40	2.62	.66	3.63	.78	2.34	2.56
7/8	CX04-0046	1035036	21.50	CX04-0054	1035591	4.02	11.16	4.65	1.75	1.63	2.69	6.28	14.00	2.22	1.66	3.12	.75	4.19	.88	2.69	2.94
1	CX04-0047	1035045	30.75	CX04-0055	1035600	5.37	12.75	5.08	2.00	2.00	2.56	7.02	15.86	2.71	2.00	3.75	.88	4.63	1.03	2.88	3.28
1-1/8	CX04-0048	1035054	45.30	CX04-0056	1035609	7.84	14.38	5.51	2.25	2.25	3.31	7.76	17.70	2.50	2.25	4.25	1.00	5.38	1.19	3.13	3.56
**1-1/4	CX04-0049	1040448	57.50	CX04-0057	1040607	6.81	16.00	7.94	2.50	2.50	3.56	N/A	N/A	3.39	2.50	4.75	1.12	5.81	1.31	3.38	3.81

* Terminator Assembly includes Socket, Wedge, Pin, and Wire Rope Clip.

** 1-1/4" not available in **TERMINATOR™** style.

† Nominal.

†† Weight of socket, wedge, and pin.

Wedge socket meets the performance requirements of Federal Specification RR-S-550D Type C, except those provisions required of the contractor.

‡ For intermediate wire rope sizes use next larger size socket.

WARNING:

- Loads may slip or fall if the Wedge Socket is not properly installed.
- A falling load can seriously injure or kill.
- Read and understand these instructions before installing the Wedge Socket.
- Do not side load the Wedge Socket.
- Apply first load to fully seat the Wedge and Wire Rope in the socket. This load should be of equal or greater weight than loads expected in use.

The Crosby S-423T Super TERMINATOR is the first wedge socket designed to take advantage of the performance properties associated with high performance, high strength, compacted strand, rotation resistant wire rope.

The Crosby Super TERMINATOR offers several advantages over traditional methods of wedge socket terminations:

- The innovative design will significantly increase the termination efficiency over existing wedge sockets available today.
- Terminations on most ropes have a minimum efficiency rating of 80% of the rope's catalog breaking strength.
- Design eliminates the difficulty of properly seating the wedge with high performance, high strength, compacted strand, rotation resistant wire rope into a wedge socket termination.
- Proper application of the Super TERMINATOR eliminates the "first load" requirement of conventional wedge socket terminations.
- US Patent 8,375,527 B1.

Additional Features:

- Wire rope sizes available: 5/8" -1 1/4", 14mm- 32mm
- Available as a complete assembly, or as a wedge kit that can be retrofitted onto existing Crosby S-421T TERMINATOR wedge sockets.
- Wedge accessories provided with a zinc finish.
- Meets or exceeds all ASME B30.26 requirements including: identification, ductility, design factor, proof load, and temperature requirements. Importantly, they meet other critical performance criteria not addressed by ASME B30.26 including: fatigue life, impact properties and material traceability.
- Available with bolt, nut and cotter (S-423TB)

The Super TERMINATOR by Crosby. The first wedge socket termination designed specifically for high performance wire rope.



Scan this QR code with your smart device to view our Super Terminator video.

Crosby[®] www.thecrosbygroup.com



WEDGE SOCKETS

S-423T Super TERMINATOR®



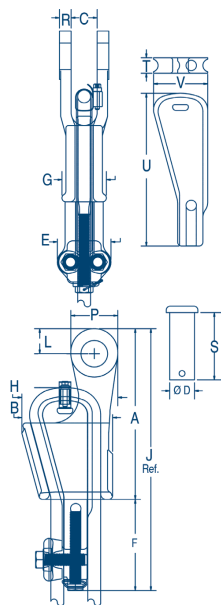
Wedge sockets meet the performance requirements of Federal Specification RR-S-550E, Type C, except those provisions required of the contractor. Meets the performance requirements of EN13411-6:2003. For additional information, see page 444 of Crosby Catalog.

- The 423T wedge socket terminations have a minimum efficiency rating on most high performance, high strength, compacted strand, rotation resistant wire ropes of 80% based on the catalog breaking strength of the various ropes.**
- Design eliminates the difficulty of properly seating the wedge with high performance wire rope into a wedge socket termination.
- Proper application of the Super TERMINATOR™ eliminates the “first load” requirement of conventional wedge socket terminations.
- S-423TW Wedge Kit can be retrofitted onto existing Crosby S-421T TERMINATOR® wedge sockets.
- Wedge and accessories provided with a zinc finish.
- Meets the performance requirements of EN13411-6:2003.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these sockets meet other critical performance requirements

including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.

- Basket is cast steel and individually magnetic particle inspected.
- Pin diameter and jaw opening allows wedge and socket to be used in conjunction with closed swage and spelter sockets.
- Secures the tail or “dead end” of the wire rope to the wedge, thus eliminates loss or “punch out” of the wedge.
- Eliminates the need for an extra piece of rope, and is easily installed.
- The TERMINATOR® wedge eliminates the potential breaking off of the tail due to fatigue.
- The tail, which is secured by the base of the clip and the tension device, is left undeformed and available for reuse.
- Available with Bolt, Nut, and Cotter Pin.
- US Patent 8,375,527 B1.

** NOTICE: Due to the unique construction of various ropes, Crosby cannot make a broad general statement that all current and future design of ropes, when properly assembled with the Super TERMINATOR®, will achieve a minimum 80% termination efficiency. Contact wire rope manufacturer or Crosby engineering (918-834-4611) to determine efficiency rating for a specific rope.



S-423T Wedge Sockets

Assembly includes Socket, Wedge, Pin, Wire Rope Clip, Tensioner, Bolts and Secondary Retention Wire.

Wire Rope Dia.		S-423T Assembly with Round Pin and Cotter Pin				S-423TB Assembly with Bolt, Nut and Cotter Pin				S-423TW** Wedge Kit			
(in.)	(mm)	S-423T Stock No.	API 2C S-423T Stock No.	S-423T Weight Each		S-423TB Stock No.	API 2C S-423TB Stock No.	S-423TB Weight Each		S-423TW Stock No.	S423TW Weight Each		
				(lbs.)	(kg)			(lbs.)	(kg)		(lbs.)	(kg)	
5/8	14-16	1035123	1035128	12.7	5.8	1035218	1035223	13.1	5.9	1034018	5.2	2.4	
3/4	18-19	1035132	1035137	19.4	8.8	1035227	1035232	19.1	8.7	1034027	7.2	3.3	
7/8	20-22	1035141	1035146	28.8	13.1	1035236	1035241	27.8	12.6	1034036	10.3	4.7	
1	24-26	1035150	1035155	39.2	17.8	1035245	1035250	37.3	16.9	1034045	11.9	5.4	
1-1/8	28	1035169	1035174	57.1	25.9	1035254	1035259	57.9	25.9	1034054	19.9	9.0	
1-1/4	30-32	1035178	1035183	88.6	40.2	1035272	1035277	88.1	39.9	1034063	33.8	15.3	

** Kit contains Wedge, Wire Rope Clip and Bolts, Tensioner, Tensioner Bolt and Secondary Retention Wire.

Wire Rope Dia.		S-423T Stock No.	Dimensions (mm)															
(mm)	(in.)		A	B	C	D	E	F	G	H	J*	L	P	R	S	T	U	V
14-16	5/8	1035123	210	114	31.8	30.2	76.2	103	54.1	117	313	31.0	57.2	14.2	82.6	19.1	175	66.0
18-19	3/4	1035132	251	132	38.1	35.1	82.6	122	62.0	136	373	35.6	66.5	16.8	92.2	22.4	194	76.7
20-22	7/8	1035141	286	149	44.5	41.4	96.8	146	68.3	156	431	42.4	79.5	19.1	109	25.4	241	88.1
24-26	1	1035150	325	167	50.8	50.8	96.8	146	74.7	179	471	51.1	95.3	22.4	119	28.7	264	97.0
28	1-1/8	1035169	365	176	57.2	57.2	102	174	85.9	198	539	57.4	108	25.4	138	31.8	300	107
30-32	1-1/4	1035178	415	219	66.5	63.5	114	197	90.7	238	612	59.4	114	26.9	168	35.1	352	148

* Nominal

NOTE: For intermediate wire rope sizes, use next larger size socket.

The S-423T Super TERMINATOR® wedge is designed to be assembled only into the Crosby S-421T TERMINATOR® socket body. **IMPORTANT:** The S-423TW for sizes 14mm through 28mm will fit respective size standard Crosby S-421T basket. The 30-32mm S-423TW will only fit the Crosby S-421T 30-32mm basket marked with " TERMINATOR®".



Scan this QR code with your smart device to view our Super Terminator video.

SPELTER SOCKETS

General Guidelines

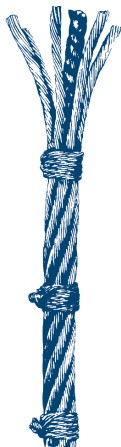


Figure 8



Figure 9

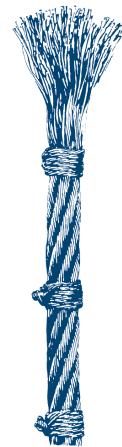


Figure 10

Zinc-Poured Spelter Socketing

1. Measure the Rope Ends to be Socketed

The rope end should be of sufficient length so that the ends of the unlaidd wires (from the strands) will be at the top of the socket basket. (Fig. 8)

2. Apply Serving at Base of Socket

Apply a tight wire serving band, at the point where the socket base will be, for a length of two rope diameters. (Figs. 9 & 10)

3. Broom Out Strand Wires

Unlay and Straighten the individual rope strands and spread them evenly so that they form an included angle of approximately 60 degrees. Unlay the wires of each individual strand for the full length of the rope end—being careful not to disturb or change the lay of the wires and strands under the serving band. Unlay the wires of the independent wire rope core (IWRC) in the same manner. A fiber core should be cut out and removed as close to the serving band as possible. (Fig. 9)

4. Clean the Broomed-Out Ends

A suggested cleaning solvent for this step is SC-5 Methyl Chloroform or equivalent solvent. These are known under the names Chlorothane VG, 1-1-1 Trichlorethane, Perchloroethane, and Perchloroethylene.

CAUTION: Breathing the vapor of this solvent is harmful; it should only be used in a well-ventilated area. Be sure to follow the solvent manufacturer's instructions, and carefully observe all instructions printed on the label.

Swish the broomed-out rope end in the solvent, then brush vigorously to remove all grease and dirt—making certain that the wires are clean to the very bottom of the broom up the serving band (Fig. 11). Additionally, a solution of muriatic acid may also be used. If acid is used, the broomed-out ends should be rinsed in a solution of bicarbonate of soda so as to neutralize any acid that may re-main on the rope. Care should be exercised to prevent acid from entering the core; this is particularly important if the rope has a fiber core. Where it is feasible, the best and preferred cleaning method for rope ends prior to socketing is ultrasonic cleaning. After this cleaning step, place the broomed-out end pointing downward, allowing it to remain until all solvent has evaporated and the wires are dry.

Solvent should never be permitted to remain on the rope or on the serving band since it will run down the wires when the rope is turned upright.

SPELTER SOCKETS



Figure 11



Figure 12



Figure 13

5. Dip the Broomed-Out Rope Ends in Flux

Prepare a hot solution of zinc-ammonium chloride flux comparable to Zaclon K. Use a concentration of 1 lb. of zinc-ammonium chloride to 1 gallon of water; maintain the solution at a temperature of 180 degrees to 200 degrees F. Swish the broomed-out end in the flux solution, then point the rope end downward until such time as the wires have dried thoroughly (Fig. 12).

6. Close Rope Ends and Place Socket

Use clean seizing wire to compress the broomed-end into a tight bundle which will permit the socket to be slipped easily over the wires (Fig. 13). Before placing the socket on the rope, make certain the socket is clean and no moisture is present inside the bowl of the socket. Heating the socket will dispel any residual moisture and will also prevent the zinc from freezing or cooling prematurely.

A word of caution: Never heat a socket after it is placed on the rope. To do so may cause damage to the rope.

After the socket is on the rope, the wires should be distributed evenly in the socket basket so the zinc can surround each wire. Use extreme care in aligning the socket with the rope's centerline, and in making certain there is a minimum vertical length of rope extending from the socket equal to about 30 rope diameters. This vertical length is necessary for rope balance. Premature wire breaks at the socket can occur if the rope is not balanced at pouring.

Seal the socket base with fire clay or putty but make certain the material does not penetrate into the socket base. Should this occur, it could prevent the

zinc from penetrating the full length of the socket basket thereby creating a void that would collect moisture after the socket is placed in service (Fig. 14).

7. Pour the Zinc

The zinc used should meet ASTM Specification designation B6-49 Grade (1) Prime Western or better, and Federal Specification QQ-Z-351-a Amendment 1, interim Amendment 2. Pour the zinc at a temperature of 950 degrees to 1000 degrees F (Fig. 15). A word of caution: Overheating of the zinc may affect its bonding properties. The zinc temperature may be measured with a portable pyrometer or a Tempilstik. Remove all dross from the top of the zinc pool before pouring. Pour the zinc in one continuous stream until it reaches the top of the basket and all wire ends are covered; there should be no "capping" of the socket.

8. Remove Servicing

After the zinc and socket have cooled remove the servicing band from the socket base and check to make certain that the zinc has penetrated to the socket base (Fig. 16).

9. Lubricate the Rope

Apply wire rope lubricant to the rope at the base of the socket and on any rope section where the original lubricant may have been removed.

SPELTER SOCKETS

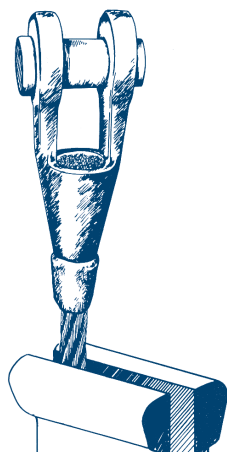


Figure 14

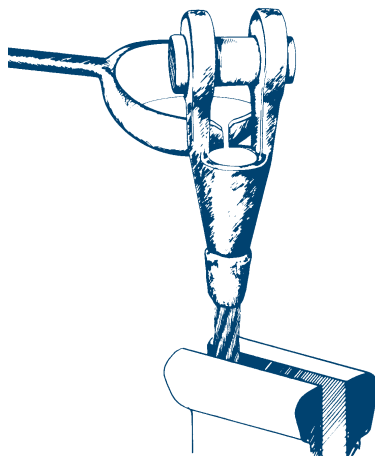


Figure 15

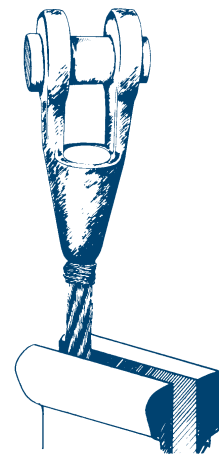


Figure 16

Thermo-Set Resin Socketing

Before proceeding with a thermo-set resin socketing procedure, check the resin manufacturer's instructions carefully. Each resin system has specific procedures and steps which must be followed in the order specified for the system to give the desired results. Since any thermo-set resin system depends upon chemical reaction, the procedure becomes critically important. Give particular attention to selecting sockets designed for resin socketing. The following steps give a general outline to follow for resin socketing, they should not be used as a substitute for detailed instructions supplied by the resin manufacturer.

1. Measure the Rope Ends to be Socketed

The rope end should be of sufficient length so the ends of the unlayed wires (from the strands) will be at the top of the socket basket. (Fig. 8)

2. Apply Serving at Base of Socket

Apply a tight wire serving band, at the point where the socket base will be, for a length of two rope diameters. (Figs. 9 & 10)

3. Broom Out Strand Wires

Unlay and straighten the individual rope strands and spread them evenly so that they form an included angle of approximately 60 degrees. Unlay the wires of each individual strand for the full length of the rope end—being careful not to disturb or change the lay of the wires and strands under the serving band. Unlay the wires of the independent wire rope core (IWRC) in the same manner. A fiber core should be cut out and removed as close to the serving band as possible. (Fig. 9)

4. Clean the Broomed-Out Ends

A suggested cleaning solvent for this step is SC-5 Methyl Chloroform or equivalent solvent. It is also known under the names Chlorothane VG, 1-1-1 Trichlorethane, Perchlorothane, and Perchloroethylene.

CAUTION: Breathing the vapor of this solvent is harmful; it should only be used in a well-ventilated area. Be sure to follow the solvent manufacturer's instructions, and carefully observe all instructions printed on the label.

Swish the broomed-out rope end in the solvent, then brush vigorously to remove all grease and dirt—making certain that the wires are clean to the very bottom of the broom up to the serving band (Fig. 11). The use of acid to etch the wires before resin socketing is unnecessary and not recommended. Also, the use of flux on the wires before pouring resin should be avoided since this adversely affects resin bonding to the steel wires. Where it is feasible, the best and preferred cleaning method for rope ends prior to socketing is ultrasonic cleaning. After this cleaning step, place the broomed-out end pointing downward allowing it to remain until all solvent has evaporated and the wires are dry.

Solvent should never be permitted to remain on the rope or on the serving band since it will run down the wires when the rope is turned upright.

SPELTER SOCKETS

5. Close Rope Ends and Place Socket

Place rope in a vertical position with the broom end up. Close and compact the broom to permit insertion of the broomed end into the base of the socketing. Slip the socket on, removing any temporary banding or seizing as required. Make certain the broomed wires are uniformly spaced in the basket, with the wire ends slightly below the top edge of the basket, and the axis of the rope and the fitting are aligned. Seal the annular space between the base of the socket and the rope to prevent leakage of the resin from the basket. In addition to normal sealing materials, non-hardening butyl rubber-base sealant or latex glazing compounds are satisfactory for this purpose. Make sure the sealant does not enter the base of the socket so the resin will be able to fill the complete depth of the socket basket.

6. Pouring the Resin

Mix and pour the resin in strict accordance with the resin manufacturer's instructions.

7. Lubrication After Socket Attachment

After the resin has cured, re-lubricate the wire rope at the base of the socket to replace any lubricant that may have been removed during the cleaning operation.

8. Acceptable Resin Types

Properties of commercially available resins vary considerably. It is next to impossible to establish general rules to cover all available resins. It is extremely important to refer to the individual resin manufacturer's instructions before using any one type. If the resin manufacturer has no data as to how his resin system performs with wire rope socketing, tests should be conducted before the system is used for field applications.

When properly formulated, most thermoset resins are acceptable for socketing. These formulations, when mixed, form a pourable material which will harden at ambient temperature, or upon the application of moderate heat. No open flame or molten metal hazards exist with resin socketing since heat-curing when necessary, requires a relatively low temperature (250-300 degrees F) obtainable by electric resistance heating. Since resin socketing is so much simpler than zinc socketing, care must be taken not to become lax in following the recommended procedures.

Tests have demonstrated that satisfactory wire rope socketing performance can be obtained with resins having characteristics and properties as follows:

The resin shall be a liquid thermoset material that will harden after being mixed with the correct proportion of catalyst or curing agent. (Hardener)



SPELTER SOCKETS

A. Properties of Liquid (Uncured) Material

Resin and catalyst are normally supplied in two separate containers. After thoroughly mixing the two components together, the liquid can be poured into the socket basket. For ease of handling, liquid resins and catalysts should have the following properties:

1. Viscosity of the resin-catalyst mixture should be 30-40,000 CPS at 75 degrees F immediately after mixing. The viscosity will increase at lower ambient temperature and the resin may require warming prior to mixing with the catalyst if ambient temperatures are too low.
2. Flash Point
Both resin and catalyst should have a minimum flash point of 100 degrees F.
3. Shelf Life
Unmixed resin and catalyst should have a maximum shelf life specified by the resin manufacturer.
4. Pot Life and Cure Time
After mixing, the resin-catalyst blend should be pourable for approximately eight minutes and should harden within 30 minutes. Heating the blend in the socket should be permissible to obtain the cure.

B. Properties of the Cured Resin

1. Socket Performance
The resin shall exhibit sufficient bonding to the solvent-washed wires in a wire rope end socket to develop the breaking strength of all types, constructions and grades of wire rope. No slippage of individual wires is permissible when testing resin

socketed rope assemblies in tension. After testing, however, some "seating" of the resin cone may be apparent and is acceptable.

The resin/wire bond within the cone or basket must be capable of withstanding tensile-shock loading encountered in normal field usage.

2. Compressive Strength
The minimum allowable compressive strength for fully cured resin is 12000 psi.
3. Shrinkage
Maximum allowable shrinkage is 2%. To control shrinkage, an inert filler may be used in the resin provided that the viscosity requirements are met. This filler material should always be formulated into the resin system by the resin manufacturer, not field mixed by the user.
4. Hardness
The desired hardness of the cured resin system is in the range of Barcol 40-55.

C. Performance of Resin Socketed Assemblies

Resin socketed assemblies may be moved after the resin has hardened. If the resin manufacturer's directions are followed, resin sockets should develop the breaking strength of the rope, and have the capability to withstand shock loading to a degree sufficient to break the rope, without the resin cone cracking or breaking.

One final note: resin technology is changing almost daily. Characteristics of these products vary significantly and each must be handled differently. The resin manufacturer should supply specific data as to fitness of their system for wire rope socketing.

CERTEX
Lifting Products and Services

SPELTER SOCKETS

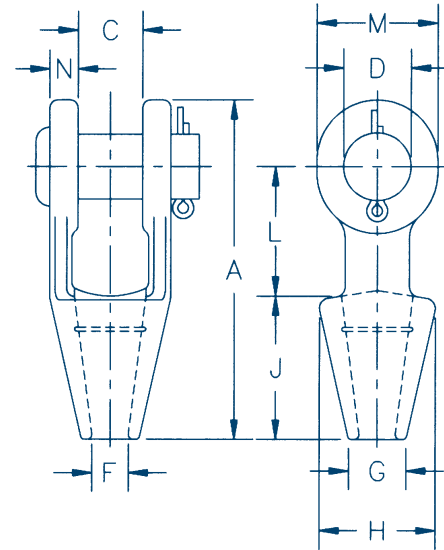
The Crosby Group, Inc.

Grooved Open Spelter Sockets



G-416

- Forged Steel Sockets thru 1-1/2", cast alloy steel 1-5/8" thru 4"
- Spelter socket terminations have an efficiency rating of 100%, based on the catalog strength of wire rope. Ratings are based on recommended use with 6 x 7, 6 x 19, or 6 x 37, IPS or EIP, EEIP, RRL, FC, or IWRC wire rope.



Open Grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type A, except for those provisions required of the contractor.

NOTE: Above drawing illustrates one groove used on sockets 1/4" thru 3/4". Sizes 7/8" thru 1-1/2" use 2 grooves. Sizes 1-5/8" and larger use 3 grooves.

Rope Dia. (in.)	Structural Strand Dia. (in.)	CERTEX Cat. Ref. No.	Crosby Stock No. G-416 Galv.	CERTEX Cat. Ref. No.	Crosby Stock No. S-416 S.C.	Weight Each (lbs.)	Dimensions (in.)									
							A	C	D	F	G	H	J	L	M	N
1/4	—	CX04-0058	1039619	CX04-0078	1039628	1.10	4.56	.75	.69	.38	.69	1.56	2.25	1.56	1.31	.31
5/16—3/8	—	CX04-0059	1039637	CX04-0079	1039646	1.30	4.84	.81	.81	.50	.81	1.69	2.25	1.75	1.50	.44
7/16—1/2	—	CX04-0060	1039655	CX04-0080	1039664	2.25	5.56	1.00	1.00	.56	.94	1.88	2.50	2.00	1.88	.50
9/16—5/8	1/2	CX04-0061	1039673	CX04-0081	1039682	3.60	6.75	1.25	1.19	.69	1.13	2.25	3.00	2.50	2.25	.56
3/4	9/16—5/8	CX04-0062	1039691	CX04-0082	1039708	5.83	7.94	1.50	1.38	.81	1.25	2.62	3.50	3.00	2.62	.62
7/8	11/16—3/4	CX04-0063	1039717	CX04-0083	1039726	9.65	9.25	1.75	1.63	.94	1.50	3.25	4.00	3.50	3.13	.80
1	13/16—7/8	CX04-0064	1039735	CX04-0084	1039744	15.50	10.56	2.00	2.00	1.13	1.75	3.75	4.50	4.00	3.75	.88
1-1/8	15/16—1	CX04-0065	1039753	CX04-0085	1039762	21.50	11.81	2.25	2.25	1.25	2.00	4.12	5.00	4.62	4.12	1.00
1-1/4—1-3/8	1-1/16—1-1/8	CX04-0066	1039771	CX04-0086	1039780	31.00	13.19	2.50	2.50	1.50	2.25	4.75	5.50	5.00	4.75	1.13
1-1/2	1-13/16—1-1/4	CX04-0067	1039799	CX04-0087	1039806	47.25	15.12	3.00	2.75	1.63	2.75	5.25	6.00	6.00	5.38	1.19
1-5/8	1-5/16—1-3/8	CX04-0068	1039815	CX04-0088	1039824	55.00	16.25	3.00	3.00	1.75	3.00	5.50	6.50	6.50	5.75	1.31
1-3/4—1-7/8	1-7/16—1-5/8	CX04-0069	1039833	CX04-0089	1039842	82.00	18.25	3.50	3.50	2.00	3.13	6.38	7.50	7.00	6.50	1.56
2—2-1/8	1-11/16—1-3/4	CX04-0070	1039851	CX04-0090	1039860	129.00	21.50	4.00	3.75	2.25	3.75	7.38	8.50	9.00	7.00	1.81
2-1/4—2-3/8	1-13/16—1-7/8	CX04-0071	1039879	CX04-0091	1039888	167.00	23.50	4.50	4.25	2.50	4.00	8.25	9.00	10.00	7.75	2.13
2-1/2—2-5/8	1-15/16—2-1/8	CX04-0072	1041633	CX04-0092	1041642	252.00	25.50	5.00	4.75	2.88	4.50	9.25	9.75	10.75	8.50	2.38
2-3/4—2-7/8	2-3/16—2-7/16	CX04-0073	1041651	CX04-0093	1041660	315.00	27.25	5.25	5.00	3.12	4.88	10.50	11.00	11.00	9.00	2.88
3—3-1/8	2-1/2—2-5/8	CX04-0074	1041679	CX04-0094	1041688	380.00	29.00	5.75	5.25	3.38	5.25	11.12	12.00	11.25	9.50	3.00
3-1/4—3-3/8	2-3/4—2-7/8	CX04-0075	1041697	CX04-0095	1041704	434.00	30.88	6.25	5.50	3.62	5.75	11.88	13.00	11.75	10.00	3.12
3-1/2—3-5/8	3—3-1/8	CX04-0076	1041713	CX04-0096	1041722	563.00	33.25	6.75	6.00	3.88	6.50	12.38	14.00	12.50	10.75	3.25
3-3/4—4	—	CX04-0077	1041731	CX04-0097	1041740	783.00	36.25	7.50	7.00	4.25	7.25	13.62	15.00	13.50	12.50	3.50

SPELTER SOCKETS

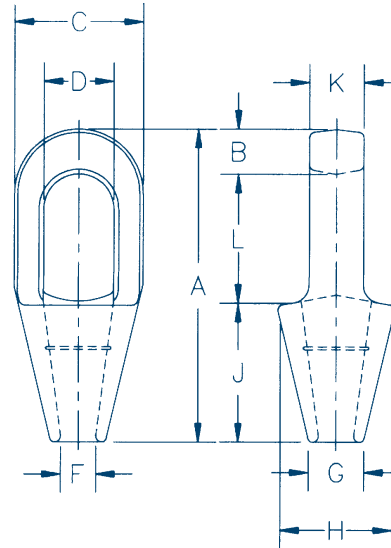
The Crosby Group, Inc.

Grooved Closed Spelter Sockets



G-417

- Forged Steel Sockets thru 1-1/2," cast alloy steel 1-5/8" thru 4."
- Spelter socket terminations have an efficiency rating of 100%, based on the catalog strength of wire rope. Ratings are based on the recommended use with 6 x 7, 6 x 19 or 6 x 37, IPS or EIP, EEIP, RRL, FC or IWRC wire rope.



NOTE: Above drawing illustrates one groove used on sockets 1/4" thru 3/4." Sizes 7/8" thru 1-1/2" use 2 grooves. Sizes 1-5/8" and larger use 3 grooves.

Closed grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type B, except for those provisions required of the contractor.

Rope Dia. (in.)	Structural Strand Dia. (in.)	CERTEX Cat. Ref. No.	Crosby Stock No. G-417 Galv.	CERTEX Cat. Ref. No.	Crosby Stock No. S-417 S.C.	Weight Each (lbs.)	Dimensions (in.)									
							A	B	C	D	F	G	H	J	K	L
1/4	—	CX04-0098	1039897	CX04-0118	1039904	.50	4.50	.50	1.50	.88	.38	.69	1.56	2.25	.50	1.75
5/16—3/8	—	CX04-0099	1039913	CX04-0119	1039922	.75	4.88	.62	1.69	.97	.50	.81	1.69	2.25	.69	2.00
7/16—1/2	—	CX04-0100	1039931	CX04-0120	1039940	1.50	5.44	.69	2.00	1.16	.56	.94	1.88	2.50	.88	2.25
9/16—5/8	1/2	CX04-0101	1039959	CX04-0121	1039968	2.50	6.31	.81	2.63	1.41	.69	1.12	2.38	3.00	1.00	2.50
3/4	9/16—5/8	CX04-0102	1039977	CX04-0122	1039986	4.25	7.56	1.06	3.00	1.66	.81	1.25	2.75	3.56	1.25	3.00
7/8	11/16—3/4	CX04-0103	1039995	CX04-0123	1040000	7.25	8.75	1.25	3.63	1.88	.94	1.50	3.25	4.00	1.50	3.50
1	13/16—7/8	CX04-0104	1040019	CX04-0124	1040028	10.50	9.88	1.38	4.13	2.30	1.13	1.75	3.75	4.44	1.75	4.00
1-1/8	15/16—1	CX04-0105	1040037	CX04-0125	1040046	14.25	11.00	1.50	4.50	2.56	1.25	2.00	4.13	5.00	2.00	4.50
1-1/4—1-3/8	1-1/16—1-1/8	CX04-0106	1040055	CX04-0126	1040064	19.75	12.12	1.63	5.30	2.81	1.50	2.25	4.75	5.50	2.25	5.00
1-1/2	1-3/16—1-1/4	CX04-0107	1040073	CX04-0127	1040082	29.20	13.94	1.94	5.33	3.19	1.63	2.75	5.25	6.00	2.50	6.00
1-5/8	1-5/16—1-3/8	CX04-0108	1040091	CX04-0128	1040108	36.00	15.13	2.13	5.75	3.25	1.75	3.00	5.50	6.50	2.75	6.50
1-3/4—1-7/8	1-7/16—1-5/8	CX04-0109	1040117	CX04-0129	1040126	57.25	17.25	2.19	6.75	3.75	2.00	3.13	6.38	7.50	3.00	7.56
2—2-1/8	1-11/16—1-3/4	CX04-0110	1040135	CX04-0130	1040144	79.00	19.50	2.44	7.63	4.38	2.25	3.75	7.38	8.50	3.25	8.56
2-1/4—2-3/8	1-13/16—1-7/8	CX04-0111	1040153	CX04-0131	1040162	105.00	21.13	2.63	8.50	5.00	2.50	4.00	8.25	9.00	3.63	9.50
2-1/2—2-5/8	1-15/16—2-1/8	CX04-0112	1041759	CX04-0132	1041768	140.00	23.50	3.12	9.50	5.50	2.88	4.50	9.25	9.75	4.00	10.62
2-3/4—2-7/8	2-3/16—2-7/16	CX04-0113	1041777	CX04-0133	1041786	220.00	25.38	3.12	10.75	6.25	3.12	4.88	10.19	11.00	4.88	11.25
3—3-1/8	2-1/2—2-5/8	CX04-0114	1041795	CX04-0134	1041802	276.00	27.00	3.25	11.50	6.75	3.38	5.25	11.50	12.00	5.25	11.75
3-1/4—3-3/8	2-3/4—2-7/8	CX04-0115	1041811	CX04-0135	1041820	313.00	29.25	4.00	12.25	7.25	3.62	5.75	12.25	13.00	5.75	12.25
3-1/2—3-5/8	3—3-1/8	CX04-0116	1041839	CX04-0136	1041848	400.00	31.00	4.00	13.00	7.75	3.88	6.50	13.00	14.00	6.25	13.00
3-3/4—4	—	CX04-0117	1041857	CX04-0137	1041866	542.00	33.25	4.25	14.25	8.50	4.25	7.25	14.25	15.00	7.00	14.00

WARNINGS AND APPLICATION INSTRUCTIONS FOR WIRELOCK®

The Crosby Group, Inc.

The following simplified, step-by-step instructions should be used only as a guide for experienced users. For full information, consult our document **WIRELOCK® TECHNICAL DATA MANUAL, WIRE ROPE USER MANUAL by AISI and WIRE ROPE MANUFACTURERS CATALOGS.**

STEP 1 – SOCKET SELECTION

1. WIRELOCK® is recommended for use with Crosby 416 - 417 Spelter Sockets.
2. For use with sockets other than Crosby 416 - 417 consult the socket manufacturer or Crosby Engineering.
3. Sockets used with WIRELOCK® shall comply with Federal or International (CEN, ISO) Standards.
4. WIRELOCK®, as with all socketing media, depends upon the wedging action of the cone within the socket basket to develop full efficiency. A rough finish inside the socket may increase the load at which seating will occur. Seating is required to develop the wedging action.

STEP 2 – SEIZING

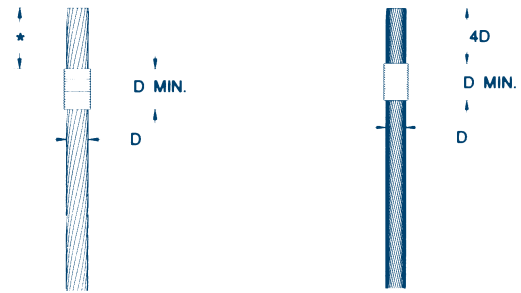
Seize the wire rope or strand as shown using soft annealed iron wire.

STEP 3 – BROOMING

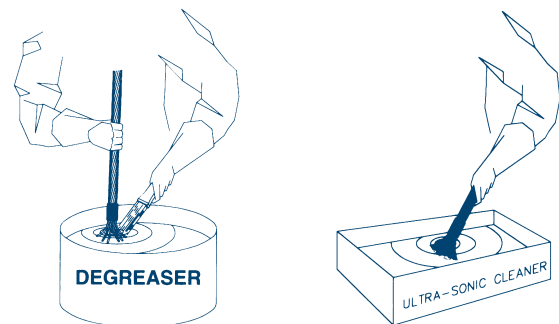
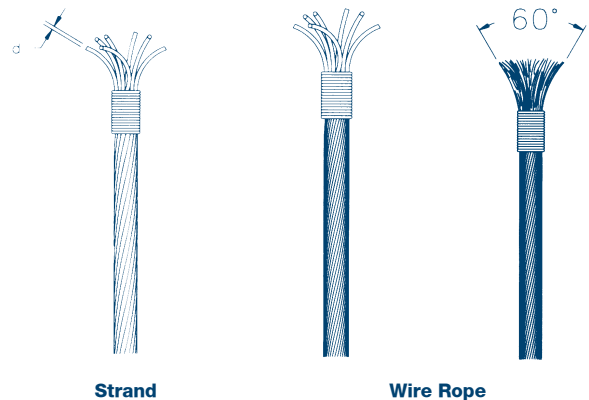
1. Unlay the strands of the wire rope and IWRC as far as the seizing.
2. Cut out any fiber core.
3. Unlay the individual wires from each strand, including the IWRC, completely, down to the seizing.
4. Remove any plastic material from broomed area.

STEP 4 – CLEANING

1. The method of cleaning will depend on the lubricant and/ or coating on the wire.
2. The methods and materials used for cleaning should comply with the current EPA regulations.
3. Consult the Wire Rope Technical Board, your Wire Rope supplier or the Wire Rope Manufacturer for recommended materials and methods.
4. The currently recommended Trichlorethane does not comply with the "Clean Air Act of 1990, Section 611, Ozone Depletion Substances."



★ = 5D or 50d (d= Diameter of the largest wire) WHICHEVER IS GREATER.



WARNING:

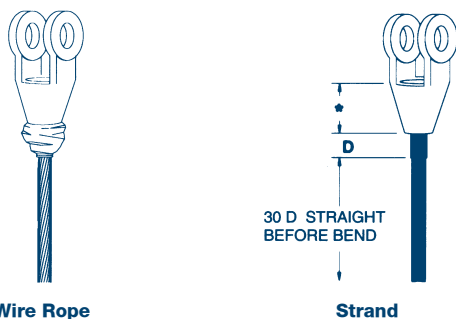
- Incorrect use of WIRELOCK® can result in an unsafe termination which may lead to serious injury, death, or property damage.
- Do not use WIRELOCK® with stainless steel rope in salt water environment applications.
- Use only soft annealed iron wire for seizing.
- Do not use any other wire (copper, brass, stainless, etc.) for seizing.
- Never use an assembly until the WIRELOCK® has gelled and cured.
- Remove any non-metallic coating from the broomed area.*
- Sockets with large grooves need to have those grooves filled before use with WIRELOCK®.
- Read, understand, and follow these instructions and those on product containers before using WIRELOCK®.

WARNINGS AND APPLICATION INSTRUCTIONS FOR WIRELOCK®

The Crosby Group, Inc.

STEP 5 – POSITIONING OF SOCKET

1. Position socket over the broom until the wires are LEVEL with the top of the socket basket or to a minimum embedded length as shown.
2. Clamp rope and socket vertically ensuring alignment of their axes.
3. **CAUTION: DO NOT USE OVERSIZED SOCKETS FOR WIRE ROPE.**



* = 5D or 50d (d= Diameter of the largest wire) WHICHEVER IS GREATER.

STEP 6 – SEAL SOCKET

Seal the base of the socket with putty or plasticine to prevent leakage of the WIRELOCK®.



STEP 7 – WIRELOCK® KITS

1. WIRELOCK® kits are pre-measured and consist of two (2) containers – one (1) with resin and one (1) with granular compound.
2. Use the complete kit – **NEVER MIX LESS THAN THE TOTAL CONTENTS OF BOTH CONTAINERS.**
3. Each kit has a shelf life clearly marked on each container and this must be observed. **NEVER USE OUT OF DATE KITS.**

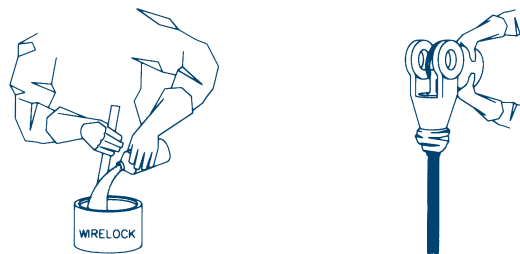
WARNING:

- WIRELOCK® resin, in liquid state, is flammable.
- Chemicals used in this product can give off toxic fumes and can burn eyes and skin.
- Never use out-of-date material.
- Use only in well-ventilated work areas.
- Never breathe fumes directly or for extended time.
- Always wear safety glasses to protect eyes.
- Always wear gloves to protect hands.
- Avoid direct contact with skin anywhere.

STEP 8 – MIXING AND POURING

1. Mix and pour WIRELOCK® within the temperature range of 48 degrees to 110 degrees F. Booster kits are available for reduced temperatures.
2. Pour all the resin into a container containing all the granular compound and mix thoroughly for two (2) minutes with a flat paddle.
3. Immediately after mixing, slowly pour the mixture down one side of the socket until the socket basket is full.

STEP 9 – CURING



1. WIRELOCK® will gel in approximately 15 minutes, in a temperature range 65 degrees F. to 75 degrees F.
2. The socket must remain in the vertical position for an additional ten (10) minutes after gel is complete.
3. The socket will be ready for service 60 minutes after gelling.
4. Never heat sockets to accelerate gel or curing.



STEP 10 – RE-LUBRICATION

Re-lubricate wire rope as required.

STEP 11 – PROOF LOADING

Whenever possible, the assembly should be proof loaded. All slings with poured sockets, in accordance with ASME B30.9, shall be Proof Loaded.

RESIN FOR SPELTER SOCKETS

The Crosby Group, Inc.



**WIRELOCK® W416-7
Socket Compound**

- 100% termination efficiency.
- Temperature operating range is -65° F to +240° F.
- Ideal for on site applications.
- No hazardous molten metal.
- Improved fatigue life.
- Pouring temperature without booster pack is 48° F to 110° F.
- One booster pack if pouring temperature is 35° F to 48° F.
- Two booster packs if pouring temperature is 27° F to 35° F.
- Refer to WIRELOCK® Technical Manual for more information.

Note: For use on 416 & 417 spelter sockets only.

Guide to amount of WIRELOCK® Required

Wire Rope Size (in.)	WIRELOCK® Required (cc)	Wire Rope Size (in.)	WIRELOCK® Required (cc)
1/4	9	1-3/4	700
5/16	17	1-7/8	700
3/8	17	2	1265
7/16	35	2-1/8	1265
1/2	35	2-1/4	1410
9/16	52	2-3/8	1410
5/8	52	2-1/2	1830
3/4	86	2-5/8	1830
7/8	125	2-3/4	2250
1	160	3	3160
1-1/8	210	3-1/4	3795
1-1/4	350	3-1/2	4920
1-3/8	350	3-3/4	5980
1-1/2	420	4	7730
1-5/8	495	—	—

Approvals

- Lloyds Register of Shipping
- Det Norske Veritas (DNV)
- United States Coast Guard
- Registro Italiano Navale
- Gemanischer Lloyd

NATO Numbers

- 100cc 8030-21-902-1823
- 250cc 8030-21-902-1824
- 500cc 8030-21-902-1825
- 1000cc 8030-21-902-1826

Witnessed and tested by American Bureau of Shipping (ABS)

Approximate U.S. Measurements

- 250cc's Kit 1 Cup
- 500cc's Kit 1 Pint
- 1000cc's Kit 1 Quart



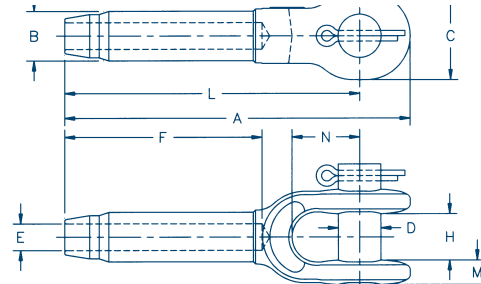
W416-7 Kits					Booster Pack
Kit Size	Kits Per Case	CERTEX Cat. Ref. No.	Crosby Stock No.	Weight Each (lbs.)	Stock No.
100 cc	20	CX04-0138	1039602	.62	1039603
250 cc	12	CX04-0139	1039604	1.25	1039605
500 cc	12	CX04-0140	1039606	2.54	1039607
1000 cc	12	CX04-0141	1039608	4.59	1039609
2000 cc	6	CX04-0142	1039610	9.00	1039611

SEE APPLICATION AND WARNING INFORMATION

SWAGE SOCKETS

The Crosby Group, Inc.

S-501 Open Swage Socket



Swage sockets incorporate a reduced machined area of the shank which is equivalent to the proper after Swage dimension. Before swaging, this provides for an obvious visual difference in the shank diameter. After swaging, a uniform shank diameter is created allowing for a QUIC-CHECK™ and permanent visual inspection opportunity.

Designed to quickly determine whether the socket has been through the swaging operation and assist in field inspections, it does not eliminate the need to perform standard production inspections which include gauging for the proper after swage dimensions or proof loading.

U.S. Patent 5,152,630 and foreign equivalents.

- Forged from special bar quality carbon steel, suitable for cold forming.
- Hardness controlled by spheroidize annealing.
- Swage Socket terminations have an efficiency rating of 100% based on the catalog strength of wire rope.
- Stamp for identification after swaging without concern for fractures (as per directions in National Swaging Brochure).

NOTE: S-501 Swage Sockets are recommended for use with 6 x 19 or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope. In accordance with ANSI B30.9, all slings terminated with swage sockets shall be proof loaded.*

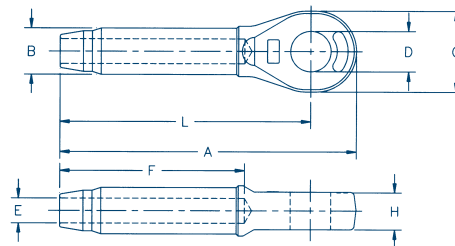
S-501 Open Socket Specifications														
CERTEX Cat. Ref. No.	Crosby Stock No.	Rope Size (in.)	Weight Each (lbs.)	Before Swage Dimensions										Max. After Swage Dim. (in.)
				A	B	C	D	E	F	H	L	M	N	
CX04-0143	1039021	1/4	.52	4.81	.50	1.38	.69	.27	2.13	.69	4.00	.38	1.50	.46
CX04-0144	1039049	5/16	1.12	6.25	.77	1.62	.81	.34	3.19	.81	5.31	.47	1.75	.71
CX04-0145	1039067	3/8	1.30	6.25	.77	1.62	.81	.41	3.19	.81	5.31	.47	1.75	.71
CX04-0146	1039085	7/16	2.08	7.81	.98	2.00	1.00	.48	4.25	1.00	6.69	.56	2.00	.91
CX04-0147	1039101	1/2	2.08	7.81	.98	2.00	1.00	.55	4.25	1.00	6.69	.56	2.00	.9
CX04-0148	1039129	9/16	4.67	9.50	1.25	2.38	1.19	.61	5.31	1.25	8.13	.66	2.25	1.16
CX04-0149	1039147	5/8	4.51	9.50	1.25	2.38	1.19	.67	5.31	1.25	8.13	.66	2.25	1.16
CX04-0150	1039165	3/4	7.97	11.56	1.55	2.75	1.38	.80	6.38	1.50	10.00	.68	2.75	1.42
CX04-0151	1039183	7/8	11.52	13.41	1.70	3.13	1.62	.94	7.44	1.75	11.63	.75	3.25	1.55
CX04-0152	1039209	1	17.80	15.47	1.98	3.69	2.00	1.06	8.50	2.00	13.38	.88	3.75	1.80
CX04-0153	1039227	1-1/8	25.25	17.31	2.25	4.06	2.25	1.19	9.56	2.25	15.00	1.00	4.25	2.05
CX04-0154	1039245	1-1/4	35.56	19.06	2.53	4.50	2.50	1.33	10.63	2.50	16.50	1.13	4.75	2.30
CX04-0155	1039263	1-3/8	43.75	20.94	2.80	5.00	2.50	1.45	11.69	2.50	18.13	1.13	5.25	2.56
CX04-0156	1039281	1-1/2	58.50	22.88	3.08	5.50	2.75	1.58	12.75	3.00	19.75	1.19	5.75	2.81
CX04-0157	1039307	1-3/4	88.75	26.63	3.39	6.69	3.50	1.86	14.88	3.50	23.00	1.56	6.75	3.06
CX04-0158	1039767	2	146.25	31.44	3.94	8.00	3.75	2.11	17.00	4.00	26.88	1.56	8.00	3.56

* Maximum Proof Load shall not exceed 40% of XXIP rope catalog breaking strength.

SWAGE SOCKETS

The Crosby Group, Inc.

S-502 Closed Swage Socket



Swage sockets incorporate a reduced machined area of the shank which is equivalent to the proper after Swage dimension. Before swaging, this provides for an obvious visual difference in the shank diameter. After swaging, a uniform shank diameter is created allowing for a QUIC-CHECK™ and permanent visual inspection opportunity.

Designed to quickly determine whether the socket has been through the swaging operation and assist in field inspections, it does not eliminate the need to perform standard production inspections which include gauging for the proper after swage dimensions or proof loading.

U.S. Patent 5,152,630 and foreign equivalents.

- Forged from special bar quality carbon steel, suitable for cold forming.
- Hardness controlled by spheroidize annealing.
- Swage Socket terminations have an efficiency rating of 100% based on the catalog strength of wire rope.
- Stamp for identification after swaging without concern for fractures (as per directions in National Swaging Brochure).

NOTE: S-502 Swage Sockets are recommended for use with 6 x 19 or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope.

In accordance with ANSI B30.9, all slings terminated with swage sockets shall be proof loaded.*

S-502 Closed Socket Specifications												
CERTEX Cat. Ref. No.	Crosby Stock No.	Rope Size (in.)	Weight Each (lbs.)	Before Swage Dimensions								Max. After Swage Dim. (in.)
				A	B	C	D	E	F	H	L	
CX04-0184	1039325	1/4	.33	4.31	.50	1.38	.75	.27	2.12	.50	3.50	.46
CX04-0185	1039343	5/16	.75	5.44	.77	1.62	.88	.34	3.19	.67	4.50	.71
CX04-0186	1039361	3/8	.72	5.44	.77	1.62	.88	.41	3.19	.67	4.50	.71
CX04-0187	1039389	7/16	1.42	6.91	.98	2.00	1.06	.48	4.25	.86	5.75	.91
CX04-0188	1039405	1/2	1.42	6.91	.98	2.00	1.06	.55	4.25	.86	5.75	.9
CX04-0189	1039423	9/16	2.92	8.66	1.25	2.38	1.25	.61	5.31	1.13	7.25	1.16
CX04-0190	1039441	5/8	2.85	8.66	1.25	2.38	1.25	.67	5.31	1.13	7.25	1.16
CX04-0191	1039469	3/4	5.00	10.28	1.55	2.88	1.44	.80	6.38	1.31	8.63	1.42
CX04-0192	1039487	7/8	6.80	11.94	1.70	3.12	1.69	.94	7.44	1.50	10.13	1.55
CX04-0193	1039502	1	10.40	13.56	1.98	3.63	2.06	1.06	8.50	1.75	11.50	1.80
CX04-0194	1039520	1-1/8	14.82	15.03	2.25	4.00	2.31	1.19	9.56	2.00	12.75	2.05
CX04-0195	1039548	1-1/4	21.57	16.94	2.53	4.50	2.56	1.33	10.63	2.25	14.38	2.30
CX04-0196	1039566	1-3/8	28.54	18.63	2.80	5.00	2.56	1.45	11.69	2.25	15.75	2.56
CX04-0197	1039584	1-1/2	38.06	20.12	3.08	5.50	2.81	1.58	12.75	2.50	17.00	2.81
CX04-0198	1039600	1-3/4	51.00	23.56	3.39	6.25	3.56	1.86	14.88	3.00	20.00	3.06
CX04-0199	1039589	2	89.25	27.62	3.94	7.25	3.81	2.11	17.00	3.25	23.00	3.56

* Maximum Proof Load shall not exceed 40% of XXIP rope catalog breaking strength.

FIELD INSTALLABLE TERMINATIONS

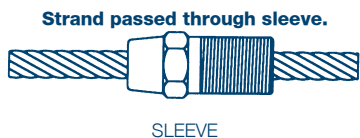
Esmet, Inc.

General Information

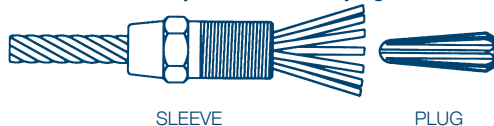
Electroline fittings are the first real advance in connecting practices since the development of wire rope. These fittings are remarkably compact assemblies of three basic units:

1. The sleeve, which slips over the end of the rope.
2. The plug, (see inset photo) which is inserted to separate and hold the rope strands in the sleeve.
3. The covering socket.

The combination of these three units literally locks the rope into a strong, solid assembly.



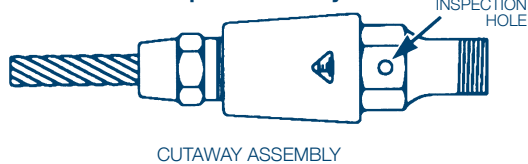
Wire rope passed through sleeve and strands fanned out for inspection of fluted plug.



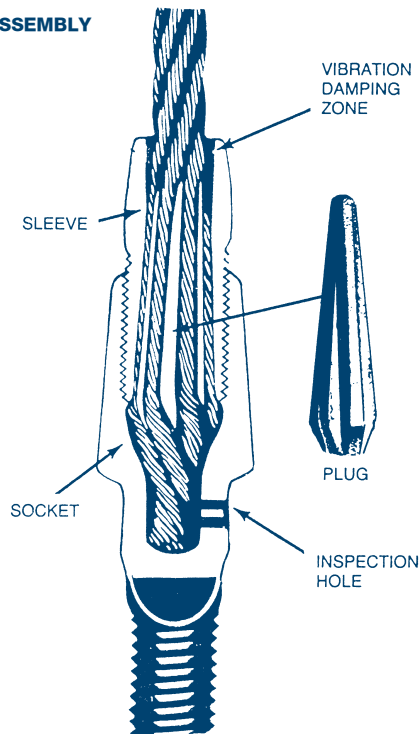
Plug driven in and strands closed to apply socket.



Socket applied showing twisted strands and completed assembly.



TYPICAL ASSEMBLY



Working Loads

Electroline terminations, when properly assembled, will hold the “normal” or “rated” breaking strength of the IPS wire rope. They are certified by the “Underwriters Laboratory, Inc.” (Safety Appliance No. 799) to hold no less than 85% of the rated breaking strength of the rope. Fittings are designed for linear loads only.

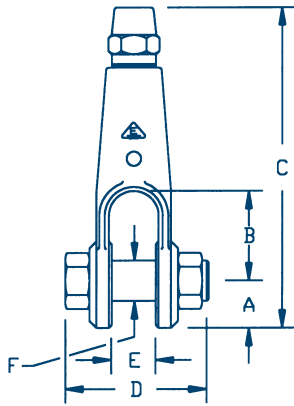
Electroline terminations are NOT marked with a safe working load (SWL) as the termination is a component of an assembly which includes the wire rope. Due to the many different types of ropes with which our termination may be used, the safe working load is dependent upon the type of rope and the usage.

Electroline terminations are designed to have a breaking strength greater than 6x19 IPS IWRC wire rope of the corresponding size. Our safety factor is 1.3 for the machined fittings and 2.0 for the forged types. However, the rope is the weakest component of the assembly, and these safety factors cannot be used to determine the SWL of the assembly.

FIELD INSTALLABLE TERMINATIONS

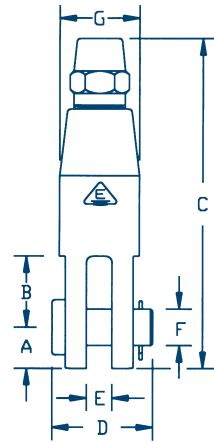
Clevis Assemblies

Forged Series: Clevis Socket Assembly



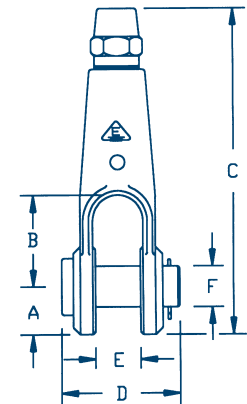
Rope Size	Self-Colored Steel		Galvanized Steel		Dimensions (Inches)					
	CERTEX Cat. Ref. No.	Esmet Cat. No.	CERTEX Cat. Ref. No.	Esmet Cat. No.	A	B	C	D	E	F
1/4	CX04-4080	GD- 125 -N	CX04-4092	GD-125-X	11/16	1-1/4	4-1/2	1-23/32	17/32	1/2
5/16	CX04-4081	GD- 131 -N	CX04-4093	GD- 131 -X	3/16	1-1/2	5-3/8	2-1/32	11/16	9/16
3/8	CX04-4082	GD- 137 -N	CX04-4094	GD-137 -X	3/16	1-1/2	5-1/2	2-5/32	11/16	5/8
7/16	CX04-4083	GD- 143 -N	CX04-4095	GD- 143 -X	1-1/16	2	7-3/16	2-29/32	1	3/4
1/2	CX04-4084	GD- 150 -N	CX04-4096	GD- 150 -X	1-1/16	2	7-3/16	2-31/32	1	7/8
9/16	CX04-4085	GD- 156 -N	CX04-4097	GD- 156-X	1-1/4	2-1/2	8-5/8	3-7/16	1-1/4	1
5/8	CX04-4086	GD- 162 -N	CX04-4098	GD- 162 -X	1-1/4	2-1/2	8-5/8	3-7/16	1-1/4	1
3/4	CX04-4087	GD- 175 -N	CX04-4099	GD- 175 -X	1-7/16	3	10-3/16	4	1-1/2	1-1/8
7/8	CX04-4088	GD- 187 -N	CX04-4100	GD- 187 -X	1-5/8	2-5/8	11	4-3/8	1-9/16	1-1/4
1	CX04-4089	GD- 199 -N	CX04-4101	GD- 199 -X	1-15/16	2-7/8	12-11/16	4-7/8	1-7/8	1-3/4
1-1/8	CX04-4090	GD- 1112 -N	CX04-4102	GD- 1112 -X	2-3/16	3-5/16	16-1/4	5-1/2	1-15/16	1-3/4
1-1/4	CX04-4091	GD-1125 -N	CX04-4103	GD- 1125 -X	2-3/16	3-5/16	17	5-5/8	1-15/16	1-13/16

Machined Series: Clevis Socket Assembly



Rope Size	Self-Colored Steel		Cad. Plated Steel		Stainless Steel		Bronze		Dimensions (inches)						
	CERTEX Cat. Ref. No.	Esmet Cat. No.	CERTEX Cat. Ref. No.	Esmet Cat. No.	CERTEX Cat. Ref. No.	Esmet Cat. No.	CERTEX Cat. Ref. No.	Esmet Cat. No.	A	B	C	D	E	F	G
1/16	CX04-0504	ID-106-N	CX04-0521	ID-106-V	CX04-0538	IS-106	CX04-0555	IZ-106	17/64	3/8	2-1/16	43/64	3/16	3/16	1/2
3/32	CX04-0505	ID-109-N	CX04-0522	ID-109-V	CX04-0539	IS-109	CX04-0556	IZ-109	5/16	1/2	2-7/16	13/16	1/4	1/4	5/8
1/8	CX04-0506	ID-112-N	CX04-0523	ID-112-V	CX04-0540	IS-112	CX04-0557	IZ-112	5/16	1/2	2-7/16	13/16	1/4	1/4	5/8
5/32	CX04-0507	ID-115-N	CX04-0524	ID-115-V	CX04-0541	IS-115	CX04-0558	IZ-115	3/8	5/8	2-31/32	63/64	5/16	5/16	3/4
3/16	CX04-0508	ID-118-N	CX04-0525	ID-118-V	CX04-0542	IS-118	CX04-0559	IZ-118	3/8	5/8	2-31/32	63/64	5/16	5/16	3/4
7/32	CX04-0509	ID-121-N	CX04-0526	ID-121-V	CX04-0543	IS-121	CX04-0560	IZ-121	15/32	3/4	3-23/32	1-9/64	3/8	3/8	15/16
1/4	CX04-0510	ID-125-N	CX04-0527	ID-125-V	CX04-0544	IS-125	CX04-0561	IZ-125	15/32	3/4	3-23/32	1-9/64	3/8	3/8	15/16
9/32	CX04-0511	ID-128-N	CX04-0528	ID-128-V	CX04-0545	IS-128	CX04-0562	IZ-128	17/32	7/8	4-1/4	1-19/64	3/8	7/16	1-1/16
5/16	CX04-0512	ID-131-N	CX04-0529	ID-131-V	CX04-0546	IS-131	CX04-0563	IZ-131	17/32	7/8	4-1/4	1-19/64	3/8	7/16	1-1/16
3/8	CX04-0513	ID-137-N	CX04-0530	ID-137-V	CX04-0547	IS-137	CX04-0564	IZ-137	5/8	1	4-27/32	1-31/64	7/16	1/2	1-3/16
7/16	CX04-0514	ID-143-N	CX04-0531	ID-143-V	CX04-0548	IS-143	CX04-0565	IZ-143	23/32	1-1/4	5-5/8	1-11/16	7/16	5/8	1-3/8
1/2	CX04-0515	ID-150-N	CX04-0532	ID-150-V	CX04-0549	IS-150	CX04-0566	IZ-150	51/64	1-3/8	6-11/32	1-59/64	1/2	11/16	1-9/16
9/16	CX04-0516	ID-156-N	CX04-0533	ID-156-V	CX04-0550	IS-156	CX04-0567	IZ-156	1-3/64	1-17/32	7-19/32	2-5/32	11/16	15/16	2
5/8	CX04-0517	ID-162-N	CX04-0534	ID-162-V	CX04-0551	IS-162	CX04-0568	IZ-162	1-3/64	1-17/32	7-19/32	2-5/32	11/16	15/16	2
3/4	CX04-0518	ID-175-N	CX04-0535	ID-175-V	CX04-0552	IS-175	CX04-0569	IZ-175	1-15/64	1-27/32	8-29/32	2-7/16	3/4	1-1/8	2-5/8
7/8	CX04-0519	ID-187-N	CX04-0536	ID-187-V	CX04-0553	IS-187	CX04-0570	IZ-187	1-7/16	1-7/8	10-3/16	2-47/64	13/16	1-1/4	2-5/8
1	CX04-0520	ID-199-N	CX04-0537	ID-199-V	CX04-0554	IS-199	CX04-0571	IZ-199	1-3/4	2-1/4	12	3-7/64	15/16	1-1/2	3

Extra Strength Series: Clevis Socket with Pin and Cotter Pin



Rope Size	Self-Colored Steel		Galvanized Steel		Dimensions (inches)					
	CERTEX Cat. Ref. No.	Esmet Cat. No.	CERTEX Cat. Ref. No.	Esmet Cat. No.	A	B	C	D	E	F
7/16	CX04-0572	PD-143-N	CX04-0579	PD-143-X	1-1/16	2	7-3/16	2-19/32	1	1
1/2	CX04-0573	PD-150-N	CX04-0580	PD-150-X	1-1/16	2	7-3/16	2-19/32	1	1
9/16	CX04-0574	PD-156-N	CX04-0581	PD-156-X	1-1/4	2-1/2	8-5/8	3-11/64	1-1/4	1-3/16
5/8	CX04-0575	PD-162-N	CX04-0582	PD-162-X	1-1/4	2-1/2	8-5/8	3-11/64	1-1/4	1-3/16
3/4	CX04-0576	PD-175-N	CX04-0583	PD-175-X	1-7/16	3	10-3/16	3-11/16	1-1/2	1-3/8
7/8	CX04-0577	PD-187-N	CX04-0584	PD-187-X	1-15/16	2-7/8	12-5/8	4-7/8	1-7/8	1-1/2
1	CX04-0578	PD-199-N	CX04-0585	PD-199-X	2-3/16	3-5/16	15-1/2	5-5/8	1-7/8	1-13/16

NOTE: Extra Strength Fittings rated at 100% RBS of Extra-Improved Plow Steel Wire Rope. Larger sizes available.