HOOKS & SWIVELS

With Product Warnings and Application Information

S-320N

Crosby "There is No Equal"

The Market Leader: Yesterday Today and Tomorrow

Hooks & Swivels

S-319N

DESIGN

The theoretical reserve capability of a hoist hook should be a minimum of 5 to 1 for carbon eye hooks, alloy eye hooks and carbon shank hooks and 4.5 to 1 for alloy shank hooks. Known as the DESIGN FACTOR, it is usually computed by dividing the catalog ultimate load by the working load limit. The ultimate load is the average load or force at which the product fails or no longer supports the load. The working load limit is the maximum mass or force which the product is authorized to support in general service. The design factor is generally expressed as a ratio such as 5 to 1. Also important to the design of hooks is the selection of proper steel.

THE COMPETITION

Ask: *What is the the design factor?*

Ask: *Is production lot performance tested?*

Crosby

Crosby hoist hooks meet the design factor requirements of 5 to 1 for all carbon hooks, 5 to 1 for all alloy eye and swivel hooks and 4.5 to 1 for alloy shank hooks. Crosby's QC 1400 program determines the mechanical properties of each manufacturing lot of hoist hooks. In addition to the heat treat process, Crosby hooks are designed with a cross section that, when overloaded, allows uniform deformation and straightening before ultimate failure.

QUENCHED AND TEMPERED

Quenching and tempering assures the uniformity of performance and maximizes the properties of the steel. This means that each hook meets its rated strength and other properties. This quenching and tempering process develops a tough material that reduces the risk of a brittle, catastrophic failure, thus improving impact and fatigue properties. As a result, if overloaded, the hook will deform before ultimate failure occurs, thus giving warning. The requirements of your job demand this reliability and consistency. Quench and Tempering insures that not only is the working load limit met, but that ductility, fatigue and impact properties are appropriate.

THE COMPETITION

Ask: *Are their hooks quenched and tempered?*

Ask: *Do their shackles have good fatigue life?*

Ask: *Do their shackles have a fatigue life that meets the new world standards?*

Some competitors normalize the hooks, and as a result, desired properties are not achieved. A few even provide hooks in an "as forged" condition, which can result in brittle failure.

Crosby

Crosby hoist hooks are quenched and tempered. This heat treatment process assures a hook that will deform prior to ultimate failure. Impact and fatigue properties are superior with quenched and tempered hooks. Crosby's Quenched and Tempered carbon and alloy hoist hooks are recommended for all critical applications, including overhead lifting.

"QT" QUENCHED & TEMPERED

FULL LINE AND IDENTIFICATION

The proper application of hoist hooks requires that the correct type, size, and working load capacity of hook be used. All hooks must be load rated (with either the working load or a cross reference code). In addition the traceability code, size, and manufacturer's name should be boldly marked on the product. Availability of a full line of eye, shank, and swivel hooks in carbon and alloy steel is essential when selecting the desired hook for the proper application.

THE COMPETITION

Ask: *Do they have a traceability system?*

Ask: *Does their traceablity system tie into a comprehensive material testing program?*

Ask: *Does their product offering cover the full range?*

Most competitors do not have the full line of hooks that Crosby produces. Most do not have a traceability system.

Crosby

Crosby forges "Crosby" or "CG," the Product Identification Code (P.I.C.), and working load limit (or working load cross reference code) into its full line. Crosby's traceability system and P.I.C. are an integral part of the QC 1400 program.

QUIC-CHECK®

APPLICATION INFORMATION

Detailed application information will assist you in the proper selection and use of hoist hooks. This information is most effective when provided in supporting brochures and engineering information. A formal application and warning system that attracts the attention of the user, clearly informs the user of the factors involved in the task, and informs the user of the proper application procedures is needed.

THE COMPETITION

Ask: *Do they provide hook application and warning information attached directly to the hook?*

Ask: *What training support is provided?*

Most competitors do not have a comparable product warnings system and application information for hoist hooks.

Crosby

The Crosby Product Warnings System provides detailed application and warning information for hoist hooks. In addition, a video on hook maintenance is also available. Field inspection criteria and repair instructions are also available.Training seminars conducted by Crosby provide training on the proper use of hoist hooks. Crosby training packets, supplied free to attendees of Crosby's seminars, provide training materials needed to explain the proper use of hoist hooks.

Remember: "When buying Crosby, you're buying more than product, you're buying Quality."

Crosby® VALUE ADDED

- **U.S. ratings:** When comparing to other hooks which are rated in short tons, the design factor of Crosby hooks (in short tons) is 5 to 1 for all carbon hooks, 5 to 1 for alloy eye and swivel hooks, 4.5 to 1 for alloy shank hooks and 4 to 1 for all bronze hooks.
- **Application information:** Application and warning information is available for Crosby hoist hooks. The Crosby Warning System is designed to attract the attention of the user, clearly inform the user of the factors involved in the task, and provide the user with proper application procedures. Each Crosby hoist hook is tagged with appropriate application and warning information, thus insuring that the information is available at the point of application.
- **Charpy impact properties:** Crosby's quenched and tempered hooks have enhanced impact properties for greater toughness at all temperatures. Crosby can provide typical Charpy impact properties on selected sizes upon special request at the time of order.
- **Fatigue properties:** Typical fatigue properties are available for selected sizes. In addition, these properties will be provided upon special request for other sizes.
- **Ductility properties:** Crosby's QC 1400 program provides results of actual test values for ductility of the material. These results are measured by reduction of area and elongation. This is done for each production lot and is traceable by the Product Identification Code (PIC).
- **Tensile strengths:** Crosby's QC 1400 program provides hardness, tensile, and yield strength for each production lot of hoist hooks. They are traceable by the Product Identification Code (PIC).
- **Material Analysis:** Crosby can provide certified material (mill) analysis for each production lot, traceable by the Product Identification Code (PIC). Crosby, through its own laboratory, verifies the analysis of each heat of steel. Crosby purchases only *special bar* forging quality steel with specific cleanliness requirements and guaranteed hardenability.
- **Field inspection:** Written instructions for visual, magnaflux, and dye penetrant inspection of hooks are available from Crosby. In addition, acceptance criteria and repair procedures for hooks are available.
- **Proof testing:** If requested at the time of order, hooks can be furnished proof tested with certification. All SHUR-LOC® hooks (clevis and eye styles) are 100% proof tested with certificates.
- **Mag Certification**: If requested at the time of order, hooks can be Mag inspected with certification.
- **World Class Certification:** Certification to World Class Standards can be furnished upon request at the time of order. Specific standards include American Bureau of Shipping, Lloyds Register of Shipping, Det Norske Veritas, American Petroleum Institute, RINA, Nuclear Regulatory Commission, and other worldwide standards.
- **Bronze Hooks:** Crosby provides bronze shank hooks for non-sparking applications.
- **QUIC-CHECK®**: Hoist hooks incorporate markings forged into the product which address two (2) QUIC-CHECK® features: *Deformation Indicators*: Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a QUIC-CHECK® measurement to determine if the throat opening has changed, thus indicating abuse or overload. *Angle Indicators*: Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.
- **McKissick Split-Nut Hook Retention System:** Shank hooks on crane blocks must be inspected in accordance with applicable ASME B30, CSA Z150 and other crane standards. These standards mandate the crane hook to be inspected for surface indications, damage and corrosion which could compromise the integrity of the crane block. Because of the type of environment in which these hooks are required to perform, the removal of corroded nuts from the threads can become a problem during inspections. The innovative patented McKissick Split-Nut Retention System is available on Crosby shank hoist hooks. With 4 easy steps, the hook can be disassembled, inspected and put back into service in a fraction of the time of a conventional threaded nut.

Scan this QR code with your smart device to view our Split-Nut Retention System video.

Crosby® Shank Hooks

S-319/S-319N
Trademark indicates QUIC-CHECK® product.
Hook Material Codes: A-Alloy Steel, B-Bronze High Strength, C-Carbon Steel.

- The most complete line of shank marked hoist hooks. Available 3/4 to 300 metric tons.
- Hook Identification code marked into each hook
- All Carbon and Alloy Hooks are quenched and tempered.
- Quenched and Tempered.
- Available in carbon steel, alloy steel, and bronze.
- Proper design, careful forging, and precision controlled quench and tempering give maximum strength without excessive weight and bulk.
- Every Crosby Shank Hook has a pre-drilled cam which can be equipped with a latch. Simply purchase the latch assemblies listed and shown on pages 121 - 123. Even years after purchase of the original hook, latch assemblies can be added.
- Type Approval Certification in accordance with ABS 2016 Steel Vessels and ABS Guide for Certification on Cranes available. Certificates available when requested at time of order and may include additional charges
- Patented McKissick Split-Nut retention system available, see page 379 for more information.

QUIC-CHECK®

SEE APPLICATION AND WARNING INFORMATION
Crosby On Pages 142 - 143
McKissick On Pages 144-145
Para Español: www.thecrosbygroup.com

S-319 / S-319N Crosby® Shank Hook

Working Load Limit (t)*			Hook ID Code	Shank Hooks Stock No.			Shank Length ‡	Weight Each (lb)	Rep. Latch Kits		
Carbon	Alloy	Bronze		Carbon S-319C S-319CN	Alloy S-319A S-319AN	Bronze S-319BN			S-4320 Stock No.	PL Stock No.	SS-4055 Stock No.
3/4	1	.5	†D	1028505	1028701	1028900	Std.	.50	1096325	-	-
1	1.5	.6	†F	1028514	1028710	1028909	Std.	.75	1096374	-	-
1-1/2	2	1	†G	1028523	1028723	1028918	Std.	1.00	1096421	-	-
2	3	1.4	†H	1028532	1028732	1028927	Std.	1.82	1096468	-	-
3	5	2	†I	1028541	1028741	1028936	Std.	3.69	1096515	1092000	-
5	7	3.5	†J	1028550	1028750	1028945	Std.	7.25	1096562	1092001	-
7-1/2	11	5	†K	1028563	1028765	1028954	Std.	13.4	1096609	1092002	-
10	15	6.5	†L	1028590	1028792	1028981	Std.	21.9	1096657	1092003	-
15	22	10	†N	1028599	1028801	1028990	Std.	38.4	1096704	1092004	-
20	30	-	O	1024386	1024803	-	Std.	72	-	1093716	1090161
20	30	-	O	1024402	1024821	-	Long	85	-	1093716	1090161
25	37	-	P	1024420	1024849	-	Std.	134	-	1093717	1090189
25	37	-	P	1024448	1024867	-	Long	172	-	1093717	1090189
30	45	-	S	1024466	1024885	-	Std.	182	-	1093718	1090189
30	45	-	S	1024484	1024901	-	Long	214	-	1093718	1090189
40	60	-	T	1024509	1024929	-	Std.	268	-	1093719	1090205
40	60	-	T	1024545	1024965	-	Long	312	-	1093719	1090205
50	75	-	U	1024563	1024983	-	Std.	390	-	1093720	-
50	75	-	U	1024581	1025009	-	Long	426	-	1093720	-
-	100	-	W	-	1025027	-	Std.	610	-	1093721	-
-	100	-	W	-	1025045	-	Long	675	-	1093721	-
-	150	-	X	-	1025063	-	Std.	735	-	1093721	-
-	200	-	Y	-	1025081	-	Std.	1020	-	1093723	-
-	300	-	Z	-	1025090	-	Std.	1390	-	1093724	-

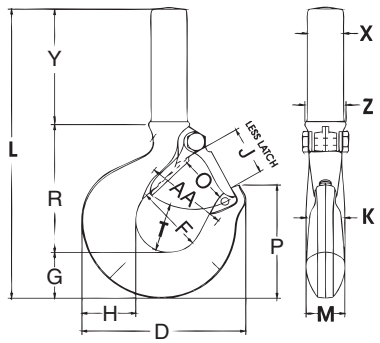
Maximum allowable Proof Load is 2 Times Working Load Limit. All carbon hooks designed with a 5/1 design factor All alloy hooks 1-22t designed with a 4.5/1 design factor. All alloy hooks 30t and larger designed with a 4/1 design factor. All bronze hooks designed with a 4/1 design factor. † New 319N style hook. ‡ See column "Y" on following page for actual length.

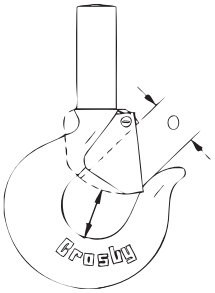
Crosby® Shank Hooks

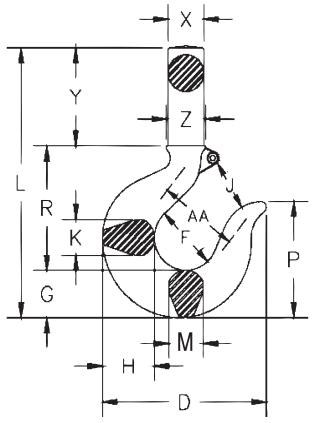
S-319/S-319N
Trademark indicates QUIC-CHECK® product.
Hook Material Codes: A-Alloy Steel, B-Bronze High Strength, C-Carbon Steel.

- Hoist hooks incorporate markings forged into the product which address two (2) QUIC-CHECK® features.
  - **Deformation Indicators** -- Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload. To check, use a measuring device (i.e. tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet this criteria, the hook should be inspected further for possible damage.
  - **Angle Indicators** -- Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.
- Chemical analysis and tensile tests performed on each PIC to verify chemistry and mechanical properties.

SEE APPLICATION AND WARNING INFORMATION
Crosby On Pages 142 - 143
McKissick On Pages 144-145
Para Español: www.thecrosbygroup.com







S-319 / S-319N Crosby® Shank Hook

Hook ID Code	Dimensions (in)																	
	D	F	G	H	J	K	L	M	O	O2 ††	P	R	T	T2 ††	X	Y	Z	AA**
D	2.86	1.25	.73	.81	.93	.63	5.14	.63	.93 †	-	1.96	2.35	.97	-	.59	2.06	.69	1.50
F	3.16	1.38	.84	.94	.97	.71	5.68	.71	.97 †	-	2.22	2.59	.97	-	.76	2.25	.78	2.00
G	3.59	1.50	1.00	1.16	1.06	.88	6.35	.88	1.06 †	-	2.44	2.76	1.03	-	.72	2.59	.88	2.00
H	4.00	1.62	1.14	1.31	1.19	.94	7.14	.94	1.16 †	-	2.78	3.16	1.16	-	.88	2.84	1.00	2.00
I	4.84	2.00	1.44	1.63	1.50	1.31	8.63	1.13	1.36 †	1.00	3.47	3.85	1.53	1.50	1.16	3.44	1.25	2.50
J	6.28	2.50	1.82	2.06	1.78	1.66	10.43	1.44	1.61 †	1.31	4.59	4.77	1.96	1.88	1.41	3.84	1.56	3.00
K	7.54	3.00	2.26	2.63	2.41	1.88	12.52	1.63	2.08 †	1.81	5.25	5.88	2.47	2.25	1.81	4.38	1.94	4.00
L	8.34	3.25	2.60	2.94	2.62	2.19	16.10	1.94	2.27 †	2.00	5.96	6.37	2.62	2.31	2.00	7.00	2.19	4.00
N	10.34	4.25	3.01	3.50	3.41	2.69	18.15	2.38	3.02 †	2.75	6.88	8.14	2.83	2.56	2.56	7.00	2.63	5.00
O	13.62	5.00	3.62	4.62	4.00	3.00	23.09	3.00	3.25	-	8.78	9.44	3.44	-	3.12	10.00	3.12	6.50
O	13.62	5.00	3.62	4.62	4.00	3.00	31.09	3.00	3.25	-	8.78	9.44	3.44	-	3.12	18.00	3.12	6.50
P	14.06	5.38	4.56	5.00	4.25	3.62	32.12	3.00	3.00	-	11.31	12.50	3.88	-	4.00	15.00	4.00	7.00
P	14.06	5.38	4.56	5.00	4.25	3.62	41.12	3.00	3.00	-	11.31	12.50	3.88	-	4.00	24.00	4.00	7.00
S	15.44	6.00	5.06	5.50	4.75	3.72	34.12	3.25	3.38	-	12.56	14.00	4.75	-	4.19	15.00	4.19	8.00
S	15.44	6.00	5.06	5.50	4.75	3.72	43.12	3.25	3.38	-	12.56	14.00	4.75	-	4.19	24.00	4.19	8.00
T	18.50	7.00	6.00	6.50	5.75	4.44	36.06	3.91	4.12	-	14.75	15.56	5.69	-	4.50	14.50	4.50	10.00
T	18.50	7.00	6.00	6.50	5.75	4.44	47.56	3.91	4.12	-	14.75	15.56	5.69	-	4.50	26.00	4.50	10.00
U	20.62	7.75	6.69	7.25	6.50	5.25	41.16	4.25	4.88	-	16.53	19.38	6.00	-	5.00	15.00	5.00	11.50
U	20.62	7.75	6.69	7.25	6.50	5.25	49.16	4.25	4.88	-	16.53	19.38	6.00	-	5.00	23.00	5.00	11.50
W	23.00	6.81	8.59	9.88	5.88	5.50	42.12	5.50	4.50	-	17.25	18.41	7.00	-	7.00	15.00	7.00	12.00
W	23.00	6.81	8.59	9.88	5.88	5.50	48.12	5.50	4.50	-	17.25	18.41	7.00	-	7.00	21.00	7.00	12.00
X	24.38	6.75	9.12	10.94	6.00	6.00	45.75	6.00	4.50	-	18.00	18.38	7.00	-	7.25	18.00	7.25	13.00
Y	26.69	7.50	9.75	11.81	6.60	7.00	50.50	7.00	5.00	-	19.75	20.50	8.00	-	8.00	20.00	8.00	13.00
Z	30.12	9.50	10.62	12.94	8.00	7.25	54.69	8.00	6.25	-	22.69	23.50	8.25	-	9.50	20.00	9.50	15.00

Rough as-forged dimension. Shank will not machine to this dimension. Please refer to page 143 for recommended shank diameter when machining. ** Deformation Indicator. † 3/4tC - 22tA dimensions shown are for S-4320 Latch Kits. Dimensions for "O" frame size and larger are for PL Latch Kits. †† Dimensions are for PL-N latch kits. For the purpose of calculating D/d ratio, utilize dimension M.

Crosby® Eye Hooks

L-320CN
EYE HOOK

L-320C
EYE HOOK

All Crosby L-320 Eye Hoist Hooks incorporate the following features:

- The most complete line of Eye hoist hooks.
- Available in carbon steel and alloy steel.
- Designed with a 5:1 Design Factor for (Carbon Steel); 4.5:1 Design Factor for 30t - 60t (Alloy Steel).
- Eye hooks are load rated.
- Proper design, careful forging and precision controlled quenched and tempering give maximum strength without excessive weight and bulk.
- Every Crosby Eye Hook is equipped with a latch. Even years after purchase of the original hook, latch assemblies can be added. (See pages 121 - 123)
- Chemical analysis and tensile tests performed on each PIC to verify chemistry and mechanical properties.
- Type Approval certification in accordance with ABS 2016 Steel Vessel and Guide for Certification of Lifting Appliances 2016 available. Certificates available when requested at time of order and may include additional charges.
- Meets ASME B30.10
- Hoist hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
- Deformation Indicators and Angle Indicators (see following page for detailed definition)

The following additional features have been incorporated in the new Crosby L-320N Eye Hoist Hooks. (Sizes 3/4 metric ton Carbon through 22 metric ton Alloy.)

- Metric Rated at 5:1 Design Factor for (Carbon Steel); 5:1 Design Factor for 1t - 22t (Alloy Steel).
- Can be proof tested to 2 times the Working Load Limit.
- Low profile hook tip
- New integrated latch (S-4320) meets the world-class standard for lifting.
  - Heavy duty stamped latch interlocks with the hook tip.
  - High cycle, long life spring.
  - When secured with proper cotter pin through the hole in the tip of hook, meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) for personnel hoisting.

Load Rated® Fatigue Rated® TA QUIC-CHECK® QT

SEE APPLICATION AND WARNING INFORMATION
On Pages 142-143
Para Español: www.thecrosbygroup.com

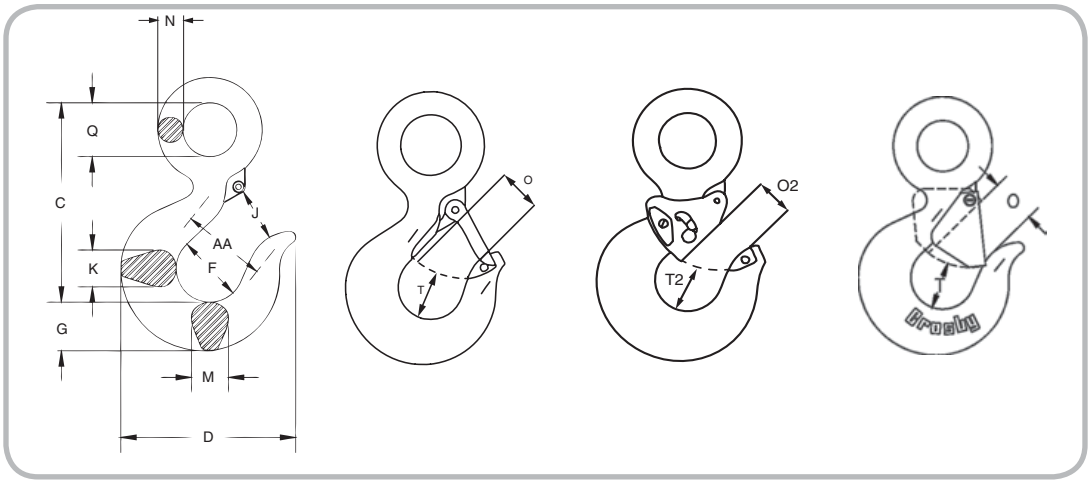
L-320N / L-320 EYE HOOKS

Working Load Limit (t)		Hook ID Code	Eye Hook Stock No.			Weight Each (lb)	Replacement Latch Kits		
Carbon	Alloy		Carbon L-320C L-320CN S.C.	Carbon GL-320CN Galv.	Alloy L-320A L-320AN S.C.		S-4320 Stock No.	PL Stock No.	SS-4055 Stock No.
3/4	1	†D	1022205	1022208	1022380	.61	1096325	-	-
1	1-1/2	†F	1022216	1022219	1022391	.89	1096374	-	-
1-1/2	2	†G	1022227	1022230	1022402	1.44	1096421	-	-
2	3	†H	1022238	1022241	1022413	2.07	1096468	-	-
3	5	†I	1022246	1022249	1022424	4.30	1096515	1092000	-
5	7	†J	1022260	1022262	1022435	8.30	1096562	1092001	-
7-1/2	11	†K	1022271	1022274	1022446	15.00	1096609	1092002	-
10	15	†L	1022282	1022285	1022457	20.77	1096657	1092003	-
15	22	†N	1022293	1022296	1022468	39.50	1096704	1092004	-
20	30	O	1022302	-	1022477	60.00	-	1093716	1090161
25	37	P	1023306	-	1023565	105.00	-	1093717	1090189
30	45	S	1023324	-	1023583	148.00	-	1093718	1090189
40	60	T	1023342	-	1023609	228.00	-	1093719	1090205

*Eye Hooks (3/4 TC - 22TA), Proof load is 2 times Working Load Limit. Eye Hooks (20 TC - 60TA). All carbon hooks-average straightening load (ultimate load) is 5 times Working Load Limit. Alloy eye hooks 1 ton through 22 ton-average straightening load (ultimate load) is 5 times Working Load Limit. Alloy eye hooks 30 tons through 60 tons-average straightening load (ultimate load) is 4.5 times Working Load Limit. † New 320N style hook.

L-320AN EYE HOOK

- Hoist hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features.
  - **Deformation Indicators** -- Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload. To check, use a measuring device (i.e. tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet this criteria, the hook should be inspected further for possible damage.
  - **Angle Indicators** -- Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.



Hooks & Swivels

Load Rated® Fatigue Rated® "TA" QUIC-CHECK® "QT"

SEE APPLICATION AND WARNING INFORMATION
On Pages 144 - 145
Para Español: www.thecrosbygroup.com

L-320N / L-320 EYE HOOKS

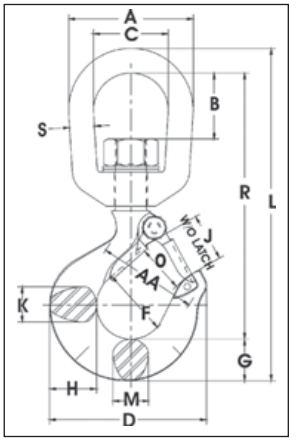
Hook ID Code*	Dimensions (in)													
	C	D	F	G	J	K	M	N	O †	O2 ††	Q	T †	T2 ††	AA**
D	3.34	2.83	1.25	.73	.90	.63	.63	.36	.89	-	.75	.87	-	1.50
F	3.81	3.11	1.38	.84	.93	.71	.71	.42	.91	-	.91	.98	-	2.00
G	4.14	3.53	1.50	1.00	1.00	.88	.88	.55	1.00	-	1.13	1.03	-	2.00
H	4.69	3.97	1.63	1.13	1.13	.94	.94	.58	1.09	-	1.25	1.16	-	2.00
I	5.77	4.81	2.00	1.44	1.47	1.31	1.31	.72	1.36	1.00	1.56	1.53	1.50	2.50
J	7.37	6.27	2.50	1.81	1.75	1.66	1.66	.90	1.61	1.31	2.00	1.96	1.88	3.00
K	9.07	7.45	3.00	2.25	2.29	1.88	1.63	1.11	2.08	1.81	2.44	2.47	2.25	4.00
L	10.08	8.30	3.25	2.59	2.50	2.19	1.94	1.27	2.27	2.00	2.84	2.62	2.31	4.00
N	12.53	10.30	4.25	3.00	3.30	2.69	2.38	1.56	3.02	2.75	3.50	2.83	2.56	5.00
O	14.06	13.62	5.00	3.62	4.00	3.00	3.00	1.75	3.25	-	3.50	3.44	-	6.50
P	18.19	14.06	5.38	4.56	4.25	3.75	3.19	2.00	3.00	-	4.50	3.88	-	7.00
S	20.12	15.44	6.00	5.06	4.75	4.50	3.25	2.18	3.38	-	4.94	4.75	-	8.00
T	23.72	18.50	7.00	6.00	5.75	5.50	3.91	2.53	4.12	-	5.69	5.69	-	10.00

*Eye Hooks (3/4 TC-22TA), Proof load is 2 times Working Load Limit. Eye Hooks (20 TC-60TA). All carbon hooks - average straightening load (ultimate load) is 5 times Working Load Limit. Alloy eye hooks 1t through 22t - average straightening load (ultimate load) is 5 times Working Load Limit. Alloy eye hooks 30t through 60t - average straightening load (ultimate load) is 4.5 times Working Load Limit.
** Deformation Indicators.† 3/4tC - 22tA dimensions shown are for S-4320 Latch Kits. Dimensions for "O" frame size and larger are for PL Latch Kits.
†† Dimensions are for PL-N latch kits.

Crosby® Swivel Hooks

L-322CN / L-322AN
(L-322AN Shown)

- Forged - Quenched and Tempered.
- Swivel hooks are load rated.
- Proper design, careful forging, and precision controlled quench and tempering gives maximum strength without excessive weight and bulk.
- Low profile hook tip designed to utilize Crosby S-4320 or PL-N atch kit. Simply purchase the latch assemblies listed and shown on pages 121 - 122. Even years after purchase of the original hook, latch assemblies can be added.
- Hoist hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - **Deformation Indicators** -- Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a QUIC-CHECK® measurement to determine if the throat opening has changed, thus indicating abuse or overload.
  - **Angle Indicators** — Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.
- Type Approval certification in accordance with ABS 2016 Steel Vessel Rules and ABS Guide for Certification of Lifting Appliances 2016 available. Certificates available when requested at time of order and may include additional charges.



Load Rated · Fatigue Rated · TA · QUIC-CHECK · GT

SEE APPLICATION AND WARNING INFORMATION
On Pages 144 - 145
Para Español: www.thecrosbygroup.com

Suitable for infrequent, non-continuous rotation under load. Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).

L-322CN & L-322AN Swivel Hooks

Working Load Limit (t)*		Hook ID Code*	L-322CN Stock No.	L-322AN Stock No.	Weight Each (kg)	Dimensions (mm)															Rep. Latch Stock No.
Carbon	Alloy					A	B	C	D	F	G	H	J	K	L	M	O †	R	S	AA**	
.75	1.25	D	1048603	1048807	.34	51.0	20.8	31.8	72.5	31.8	18.5	20.6	23.6	16.0	144	16.0	23.6	116	9.65	38.1	1096325
1	1.60	F	1048612	1048816	.57	63.5	33.3	38.1	80.0	35.1	21.3	23.9	24.6	18.0	170	18.0	24.6	136	12.7	50.8	1096374
1.6	2.50	G	1048621	1048825	1.02	76.0	38.1	44.5	91.0	38.1	25.4	29.5	26.9	22.4	197	22.4	26.9	155	16.0	50.8	1096421
2	3.20	H	1048630	1048834	1.04	76.0	38.1	44.5	102	41.1	28.7	33.3	30.2	23.9	210	23.9	29.5	165	16.0	50.8	1096468
3.2	5.4	I	1048639	1048840	2.25	89.0	41.7	50.8	123	51.0	36.6	41.4	38.1	33.3	246	28.7	35.8	191	19.1	63.5	1096515
5	8.0	J	1048648	1048859	4.67	116	58.0	63.5	160	63.5	46.0	52.5	45.2	42.2	317	36.6	42.9	245	25.4	76.2	1096562
7.5	11.5	K	1048657	1048868	8.80	127	62.0	70.0	192	76.0	57.0	67.0	51.0	47.8	375	41.4	56.5	289	28.7	101	1096609
10	16	L	1048666	1048880	10.5	143	63.0	79.0	212	82.5	66.0	74.5	66.5	55.5	417	49.3	61.0	311	31.8	101	1096657
15	22	N	1048675	1048889	21.3	180	95.5	104	263	108	76.0	89.0	86.5	68.5	542	60.5	81.0	424	38.1	127	1096704
-	31.5	O	-	1048898	32.0	180	95.5	104	346	127	93.0	118	102	72.5	590	76.2	82.6	459	38.1	165	1090161

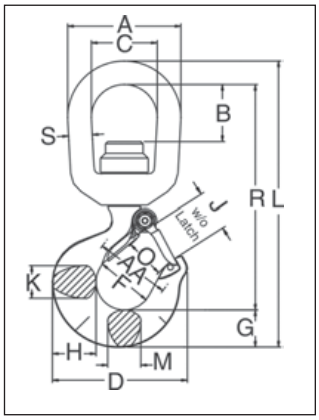
* Carbon swivel hooks .75tC-15tC: proof load is 2 times working load limit. Designed with a 5 to 1 safety factor. Alloy swivel hooks 1tA - 30tA : proof load is 2.5 times working load limit. Designed with a 4 to 1 safety factor. Alloy swivel hook 30tA: proof load is 2 times working load limit. Designed with a 4 to 1 design factor. ** Deformation Indicators † Dimensions for hooks 3/4t carbon thru 22t alloy are for S-4320 latch kits. Dimensions for hooks 30t alloy are for 4055 latch kit.

Crosby® Swivel Hooks

L-3322B
Swivel Hooks
with Bearing

New anti-friction bearing design allows hook to rotate freely under load.

- Capacities ranging from 2 through 15 metric tonnes.
- Forged - Quenched and Tempered.
- Proper design, careful forging, and precision controlled quench and tempering gives maximum strength without excessive weight and bulk.
- Low profile hook tip designed to utilize Crosby S-4320 or PL-N atch kit. Simply purchase the latch assemblies listed and shown on pages 121 - 123. Even years after purchase of the original hook, latch assemblies can be added.
- L-3322 hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - **Deformation Indicators** — Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a QUIC-CHECK® measurement to determine if the throat opening has changed, thus indicating abuse or overload
  - **Angle Indicators** — Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.



QUIC-CHECK®

SEE APPLICATION AND WARNING INFORMATION
On Pages 144 - 145
Para Español: www.thecrosbygroup.com

For other swivel hooks designed to rotate under load, see pages 117, 119, 120, 127, 128, 136-139. Use in corrosive environment requires shank and nuts inspection in accordance with ASME B30.10-1.10.4 (b)(5)(c).

L-3322B Swivel Hooks with Bearing

Working Load Limit (t)*	Hook ID Code*	L-3322B Stock No.†	Weight Each (lb)	Dimensions (in)															Rep. Latch Stock No.
				A	B	C	D	F	G	H	J	K	L	M	O	R	S	AA**	
2	G	1028609	2.5	3.00	1.50	1.75	3.59	1.50	1.00	1.16	1.06	.88	7.64	.88	1.00	6.01	.63	2.00	1096421
3	H	1028618	3.8	3.50	1.56	2.00	4.00	1.62	1.13	1.31	1.19	.94	8.60	.94	1.09	6.72	.75	2.00	1096468
5	I	1028627	7.0	4.00	1.56	2.25	4.84	2.00	1.44	1.63	1.50	1.31	10.32	1.13	1.36	8.00	.88	2.50	1096515
7	J	1028636	14.0	5.00	1.94	2.75	6.27	2.50	1.81	2.06	1.78	1.66	12.84	1.44	1.61	9.90	1.13	3.00	1096562
11	K	1028645	22.3	5.62	2.05	3.12	7.54	3.00	2.25	2.63	2.41	1.88	15.24	1.63	2.08	11.74	1.25	4.00	1096609
15	L	1028654	36.0	7.12	3.62	4.10	8.33	3.25	2.59	2.94	2.62	2.19	18.64	1.94	2.27	14.41	1.50	4.00	1096657

* Maximum allowable proof load is 2.5 times working load limit. Designed with a 4.5 to 1 design factor. ** Deformation Indicators. † Supplied with latch attached.

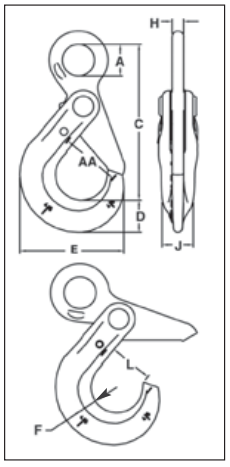
Crosby® SHUR-LOC® Hooks

S-1316
EYE HOOK

All SHUR-LOC® hooks have the following features:

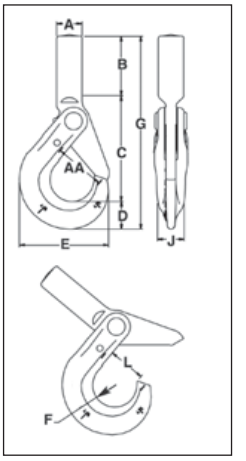
- Forged Alloy Steel - Quenched and Tempered.
- Recessed trigger design is flush with the hook bod , protecting the trigger from potential damage.
  - Easy to operate with enlarged thumb access.
- Positive Lock Latch is Self-Locking when hook is loaded.
- The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Contact Engineered solutions for additional threading or Split Nut options to 1-800-777-1555.

S-1318A
SHANK HOOK



Eye Style incorporates these added features:

- Individually Proof Tested to 2-1/2 times the Chain Working Load Limit with certification
- S-1316 meets the performance requirements of EN1677-3.
- 25% stronger than Grade 80.
- Suitable for use with Grade 100 and Grade 80 chain.
- Designed with “Engineered Flat” to connect to S-1325 chain coupler.



SEE APPLICATION AND WARNING INFORMATION
On Pages 272 - 273
Para Español: www.thecrosbygroup.com

Crosby 8/10™ “QT” CE Fatigue Rated

S-1316 Eye Hook • SHUR-LOC® Hook Series with Positive Locking Latch

Chain Size (in)	Chain Size (mm)	Frame code	Grade 100 Alloy Chain Working Load Limit (lb)* 4:1	Working Load Limit (lb) 5:1	S-1316 Stock No.	Weight Each (lb)	Dimensions (in) A	C	D	E	F	H	J	L	AA**
-	6	D	3200	2560	1022896	.85	.78	3.95	.79	2.60	.67	.31	.63	1.14	1.50
1/4-5/16	7-8	G	5700	4560	1022914	1.80	1.08	5.31	1.10	3.50	.87	.39	.81	1.48	2.00
3/8	10	H	8800	7040	1022923	3.40	1.30	6.57	1.17	4.39	1.10	.51	.94	1.83	2.50
1/2	13	I	15000	12000	1022932	6.00	1.65	8.23	1.67	5.45	1.26	.67	1.16	2.22	3.00
5/8	16	J	22600	18000	1022941	15.1	2.20	10.06	2.04	6.56	1.50	.87	1.50	2.65	3.50
3/4	18-20	-	35300	28240	1022942	19.0	2.60	10.77	2.22	7.76	2.01	.87	2.03	3.52	5.00
7/8	22	-	42700	34160	1022943	28.0	2.87	12.49	2.45	8.75	2.27	.98	2.20	3.83	6.00
1	26	-	59700	47760	1022944	49.5	3.15	14.60	3.21	9.87	2.46	1.26	2.68	4.09	6.50

* Ultimate Load is 4 times the Working Load Limit based on Grade 100 chain. ** Deformation Indicators.

S-1318A SHUR-LOC® Shank Hook

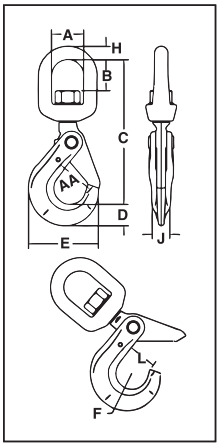
Chain Size (in)	Chain Size (mm)	S-1318A Stock No.	Frame code	Grade 100 Alloy Chain Working Load Limit (lb)	Dimensions (in) A†	B	C	D	E	F	G	J	L	AA**	Weight Each (lb)
-	6	1098200	D	3200	.79	2.16	3.31	.79	2.60	.67	6.26	.63	1.16	1.50	1.00
1/4-5/16	7-8	1098209	G	5700	1.00	2.40	4.16	1.10	3.51	.87	7.66	.81	1.48	2.00	1.99
3/8	10	1098218	H	8800	1.14	2.95	5.14	1.17	4.39	1.10	9.26	.94	1.83	2.50	3.56
1/2	13	1098227	I	15000	1.34	3.35	6.31	1.67	5.49	1.26	11.33	1.16	2.22	3.00	7.00

* Ultimate Load is 4 times the Working Load Limit based on Grade 100 chain. ** Deformation Indicators. † Dimension before machining (as forged).

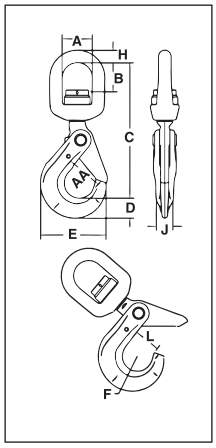
Crosby® SHUR-LOC® Hooks

S-1326
SWIVEL HOOK

- Forged Alloy Steel - Quenched and Tempered.
- Individually Proof Tested at 2-1/2 times the Chain Working Load Limit with certification
- Recessed trigger design is flush with the hook bod , protecting the trigger from potential damage.
  - Easy to operate with enlarged thumb access.
- Positive Lock Latch is Self-Locking when hook is loaded.
- Rated for both Wire Rope and use with Grade 80/100 Chain or G-411 Standard Th
- G-414 Heavy Thimble or G-411 Standard Thimble should be used with wire rope slings.
- Trigger Repair Kit available (S-4316). Consists of spring, roll pin and trigger.
- S-13326 Swivel Hook utilizes anti-friction bearing design which allows hook to rotate freely under load.
- Fatigue rated.
- The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- "Look for the Platinum Color – Crosby Grade 100 Alloy Products."



S-13326
SWIVEL HOOK
with BEARING



SEE APPLICATION AND WARNING INFORMATION
On Pages 272 - 273
Para Español: www.thecrosbygroup.com

Crosby 8/10™ "QT" CE Fatigue Rated

Use in corrosive environment requires shank and nut inspection in accordance with ASME B 30.10-1.10.4 (b)(5)(c) 2019. The S-1326 hook is a positioning device and is not intended to rotate under load. For swivel hook designed to rotate under load, use the S-13326.

S-1326 SHUR-LOC® Swivel Hooks • Suitable for infrequent, non-continuous rotation under load.

Chain Size (in)	Chain Size (mm)	Frame code	Grade 100 Alloy Chain Working Load Limit (lb) 4:1*	Working Load Limit (lb) 5:1*	S-1326 Stock No.	Weight Each (lb)	Dimensions (in) A	B	C	D	E	F	H	J	L	AA**
-	6	D	3200	2560	1004304	1.26	1.50	1.32	6.13	.79	2.60	.67	.50	.63	1.13	1.50
1/4 - 5/16	7-8	G	5700	4560	1004313	2.62	1.75	1.59	7.60	1.10	3.50	.87	.63	.81	1.38	2.00
3/8	10	H	8800	7040	1004322	4.70	2.00	1.73	8.83	1.17	4.39	1.10	.75	.94	1.75	2.50
1/2	13	I	15000	12000	1004331	8.64	2.50	2.38	11.20	1.67	5.45	1.26	1.00	1.16	2.11	3.00
5/8	16	-	22600	18000	1004340	17.00	2.75	2.70	12.90	2.05	6.56	1.50	1.13	1.50	2.49	3.50
3/4	18 - 20	-	35300	28240	1004349	24.00	2.83	2.52	14.10	2.22	7.76	2.01	1.10	2.03	3.52	5.00
7/8	22	-	42700	34160	1004358	29.00	3.44	3.19	16.40	2.45	8.75	2.26	1.30	2.20	3.83	6.00

*Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators.

S-13326 SHUR-LOC® Swivel Hooks with Bearing • Suitable for frequent rotation under load.

Chain Size (in)	Chain Size (mm)	Frame code	Grade 100 Alloy Chain Working Load Limit (lb) 4:1*	Working Load Limit (lb) 5:1*	S-13326 Stock No.	Weight Each (lb)	Dimensions (in) A	B	C	D	E	F	H	J	L	AA**
-	6	D	3200	2560	1004404	1.50	1.50	1.14	6.17	.79	2.60	.67	.50	.63	1.13	1.50
1/4 - 5/16	7-8	G	5700	4560	1004413	3.10	1.75	1.52	7.54	1.10	3.50	.87	.63	.81	1.44	2.00
3/8	10	H	8800	7040	1004422	5.26	2.00	1.61	8.88	1.16	4.35	1.10	.75	.94	1.83	2.50
1/2	13	I	15000	12000	1004431	11.22	2.50	2.03	11.11	1.66	5.45	1.26	1.00	1.16	2.19	3.00
5/8	16	-	22600	18000	1004440	17.32	2.75	2.25	12.90	2.05	6.56	1.50	1.13	1.50	2.61	3.50

* Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators.

Crosby® Grade 100 SHUR-LOC® Handle Hooks

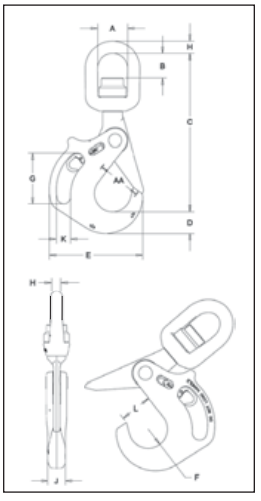
S-13326AH
SHUR-LOC® Handle
Swivel Hook with Bearing

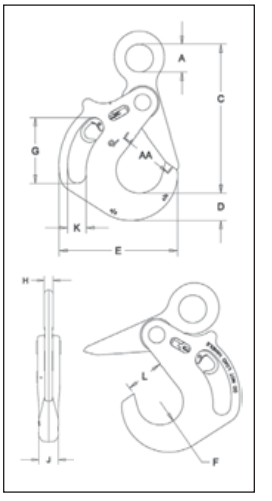
- The SHUR-LOC® Handle Hook allows the user to get a confident grip on a load with ease and comfort.
- Designed with a handle opening big enough to comfortably fit a gloved hand.
- The replaceable pull-trigger allows the user to easily open the SHUR-LOC's positive self-locking latch.
  - Ergonomically designed for easy use and precise control.
  - Secondary side trigger is recessed to avoid inadvertent release.

All SHUR-LOC® hooks have the following features:

- Forged Alloy Steel - Quenched and Tempered.
- Positive Lock Latch is Self-Locking when hook is loaded.
- Individually Proof Tested at 2-1/2 times the Chain Working Load Limit with certification
- Rated for both Wire Rope and use with Grade 80/100 Chain.
- G-414 Heavy Thimble or G-411 Standard Thimble should be used with wire rope slings.
- S-13326 Swivel Hook utilizes anti-friction bearing design which allows hook to rotate freely under load.
- Fatigue rated.
- "Look for the Platinum Color – Crosby Grade 100 Alloy Products."
- The SHUR-LOC® hook, if properly installed and locked, can be used for personnel lifting applications and meets the intent of OSHA Rule1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).
- Each SHUR-LOC® handle hook has a serial number.

S-1316AH
SHUR-LOC®
Handle Eye Hook





SEE APPLICATION AND WARNING INFORMATION
On Pages 272 - 273
Para Español: www.thecrosbygroup.com

Crosby 8/10™ "QT" QUIC-CHECK® CE Fatigue Rated

S-13326AH SHUR-LOC® Handle Swivel Hooks with Bearings

Chain Size		Grade 100 Alloy Chain Working Load Limit (lb) 4:1*	Working Load Limit (lb) 5:1*	Frame Code	Stock No.	Weight Each (lb)	Dimensions (in)											
(in)	(mm)						A	B	C	D	E	F	G	H	J	K	L	AA**
5/8	16	22,600	18,080	JA	1005014	26	2.75	2.25	10.69	1.97	8.54	1.67	4.69	1.13	1.73	1.32	2.80	4.00
3/4	18/20	35,300	28,240	KA	1005023	37	3.12	2.04	15.49	2.60	10.03	1.99	4.72	1.25	2.05	1.26	3.31	5.00
7/8	22	42,700	34,160	LA	1005041	57	4.09	3.65	18.98	2.72	11.48	2.24	5.35	1.63	2.44	1.57	3.66	6.00
1	26	59,700	47,760	NA	1005050	84	5.00	4.02	21.55	3.11	12.77	2.52	6.46	1.63	2.76	1.57	4.09	6.50

*Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators.

S-1316AH SHUR-LOC® Handle Eye Hook

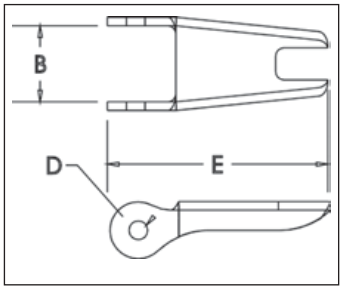
Chain Size		Grade 100 Alloy Chain Working Load Limit (lb) 4:1*	Working Load Limit (lb) 5:1*	Frame Code	Stock No.	Weight Each (lb)	Dimensions (in)											
(in)	(mm)						A	B	C	D	E	F	G	H	J	K	L	AA**
5/8	16	22,600	18,080	JA	1023579	18	2.01	10.69	1.97	8.54	1.67	4.69	0.79	1.73	2.80	4.00	2.80	4.00
3/4	18/20	35,300	28,240	KA	1023599	28	2.76	12.03	2.60	10.03	1.99	4.72	0.87	2.05	3.31	5.00	3.31	5.00
7/8	22	42,700	34,160	LA	1023607	39	3.15	13.46	2.72	11.48	2.24	5.35	3.58	2.44	3.66	6.00	3.66	6.00
1	26	59,700	47,760	NA	1023625	60	3.54	15.55	3.11	12.77	2.52	6.46	1.18	2.76	4.09	6.50	4.09	6.50

*Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators.

Crosby® Hook Latch Kits

S-4320
LATCH KITS

- Heavy duty stamped latch interlocks with the hook tip.
- High cycle, long life spring.
- Can be made into a "Positive Locking" Hook when proper cotter pin is utilized.
- Latch kits shipped unassembled and individually packaged with instructions.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) (when secured with the bolt, nut and pin) for lifting personnel.



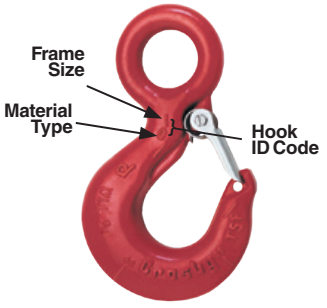
IMPORTANT: The new S-4320 Latch Kit will not fit the old style 319, 320 and 322 hooks.

SEE APPLICATION AND WARNING INFORMATION
On Page 141
Para Español: www.thecrosbygroup.com

S-4320 Replacement Latch Kit for 319N, 320N, 322N, 339N, 1327 and 1339 Hooks

Hook Size (t)			Hook ID Code	S-4320 Stock No.	Weight Each (lb)	Dimensions (in)		
Carbon	Alloy	Bronze				B	D	E
3/4	1	.5	D	1096325	.03	.50	.15	1.44
1	1-1/2	.6	F	1096374	.04	.54	.17	1.56
1-1/2	2	1	G	1096421	.04	.63	.17	1.66
2	3	1.4	H	1096468	.06	.66	.17	1.91
3	5	2	I	1096515	.10	.83	.20	2.31
5	7	3.5	J	1096562	.15	1.04	.20	2.88
7-1/2	11	5	K	1096609	.28	1.25	.27	3.56
10	15	6.5	L	1096657	.33	1.35	.27	3.81
15	22	10	N	1096704	.84	1.66	.39	5.18

Example of Hook ID Placement Location



IMPORTANT: Instructions for Assembling S-4320 Latch on Crosby 320N Hooks

Step 1

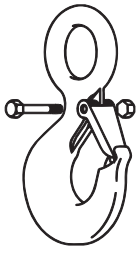
1. Place hook at approximately a 45 degree angle with the cam up.

Step 2

2. Position coils of spring over cam with legs of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.

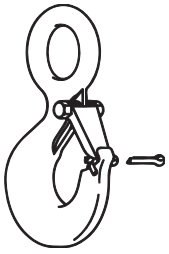
Step 3

3. Position latch to side of hook points. Slide latch onto spring legs between lockplate and latch body until latch is partially over hook cam. Then depress latch and spring until latch clears point of hook.



Steps 4, 5, & 6

4. Line up holes in latch with hook cam.
5. Insert bolt through latch, spring, and cam.
6. Tighten self-locking nut on one end of bolt.



Step 7
(For Personnel Lifting)

7. With latch in closed position and rigging resting in bowl of hook, insert cotter pin through hook tip and secure by bending prongs.

Crosby® Hook Latch Kits

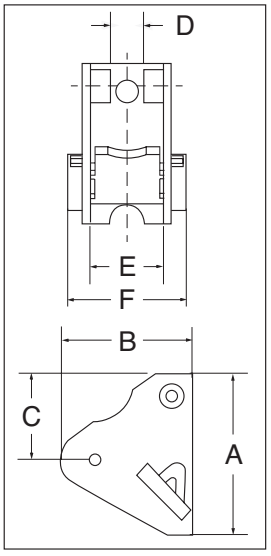
PL
LATCH KITS

LATCH ORDERING INSTRUCTIONS

1. Specify PL, PL-N or PL-O latch kit stock number from charts below.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

The PL latch will not work on 319N, 320N or 322N hooks. The PL-N/O latches, in the sizes available, will work on both the old and new style hooks.

SEE APPLICATION AND WARNING INFORMATION
On Pages 151
Para Español: www.thecrosbygroup.com



- Hot dip galvanized.
- Heavy duty latch with easy operating features.
- Flapper lever indicates locked or unlocked position.
- Assembly instructions included with each latch.
- For additional dimensional data on eye, shank or swivel hooks refer to pages 114 through 122 in this section.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) (when secured with the bolt, nut and pin) for lifting personnel.

PL LATCH KITS

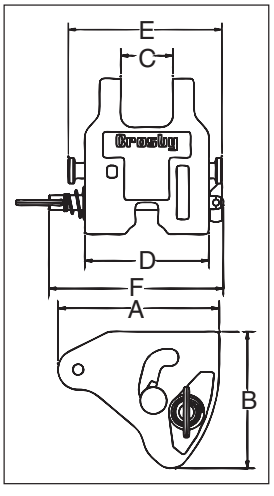
Hook Size (t)		Hook ID Code	PL Latch Kit Stock No.	Weight Each (lb)	Dimensions (in)					
Carbon	Alloy				A	B	C	D	E	F
3	4-1/2	I	1093711	.54	2.57	2.34	1.94	.56	1.13	2.00
5	7	J	1093712	.66	3.00	2.34	2.00	.63	1.38	2.22
7-1/2	11	K	1093713	1.00	3.63	2.77	2.38	.63	1.63	2.38
10	15	L	1093714	1.25	4.00	3.22	2.69	.63	1.88	3.38
15	22	N	1093715	2.96	5.31	4.00	2.91	.84	2.38	3.44
20	30	O	1093716	4.05	6.00	4.44	3.19	1.06	2.88	4.25
25	37	P	1093717	8.63	7.00	6.63	4.06	2.24	4.50	6.12
30	45	S	1093718	10.00	6.75	7.00	4.03	2.24	4.75	6.38
40	60	T	1093719	14.30	8.00	7.66	4.38	3.46	5.50	7.25
50	75	U	1093720	27.00	9.88	8.19	5.13	3.38	6.50	8.88
-	100-150	W - X	1093721	33.25	10.88	11.06	6.38	3.38	7.50	10.00
-	200	Y	1093723	45.00	11.88	11.19	6.38	3.38	8.75	11.25
-	300	Z	1093724	55.00	12.50	12.19	8.00	3.38	9.75	13.00

PL-N/O
LATCH KITS

LATCH ORDERING INSTRUCTIONS

1. Specify PL, PL-N or PL-O latch kit stock number from charts below.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

SEE APPLICATION AND WARNING INFORMATION
On Pages 152
Para Español: www.thecrosbygroup.com



- Heavy duty latch with easy operating features.
- PL-N designed for Crosby 319N & 320N style hooks, PL-O designed for Crosby 319 & 320 old style hooks.
- Flapper lever indicates locked or unlocked position.
- Assembly instructions included with each latch.
- For additional dimensional data on eye, shank or swivel hooks refer to pages 114 through 122 in this section.
- Meets the intent of OSHA Rule 1926.1431(g) and 1926.1501(g) (when secured with the supplied toggle pin) for lifting personnel

PL-N/O LATCH KITS

Hook Size (t)		Hook ID Code	PL-N Latch Kit	PL-O Stock No.	Weight Each (lb)	Dimensions (in)					
Carbon	Alloy					A	B	C	D	E	F
3	4.5 / 5 *	I	1092000	1091900	.8	2.40	2.01	.83	2.13	2.71	3.44
5	7	J	1092001	1091901	1.3	2.94	2.50	1.00	2.52	3.19	3.83
7-1/2	11	K	1092002	1091902	2.0	3.63	3.02	1.19	2.75	3.44	4.38
10	15	L	1092003	1091903	2.8	4.00	3.39	1.34	3.19	4.00	4.50
15	22	N	1092004	1091904	4.9	5.19	4.32	1.61	3.86	4.81	5.13

*"N" style hooks are rated at 5 tonnes.

Crosby® Hook Latch Kits

SS-4055
LATCH KITS

LATCH ORDERING INSTRUCTIONS

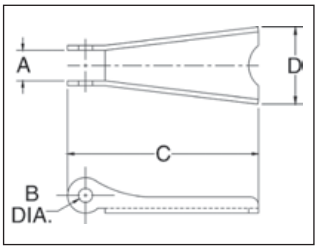
1. Specify latch kit stock number.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

These latches will not work on new "N" style hooks.

- Stainless steel construction with cadmium plated steel nuts.
- Shipped packaged and unassembled.
- Instructions included for easy field assembl .

SEE APPLICATION AND WARNING INFORMATION
On Pages 150
Para Español: www.thecrosbygroup.com

SS-4055 LATCH KITS



Hook Size (t)			Hook ID Code	SS-4055 Stock No.	Weight Each (lb)	Dimensions (in)			
Carbon	Alloy	Bronze				A	B	C	D
3/4	1	.5	D	1090027	.02	.38	.16	1.44	.59
1	1-1/2	.6	F	1090045	.02	.38	.16	1.60	.59
1-1/2 - 2	2 - 3	1.0 - 1.4	G / H	1090063	.03	.47	.19	1.84	.82
3	4-1/2	2.0	I	1090081	.06	.56	.17	2.41	1.00
5	7	3.5	J	1090107	.11	.58	.20	2.97	1.21
7-1/2 - 10	11 - 15	5.0 - 6.5	K / L	1090125	.17	.59	.27	3.66	1.50
15	22	10.0	N	1090143	.39	.83	.39	4.94	1.90
20	30	--	O	1090161	.63	.94	.52	5.88	2.56
25 - 30	37 - 45	--	P / S	1090189	1.12	2.19	.39	6.50	3.84
40	60	--	T	1090205	1.77	3.31	.52	7.88	4.12

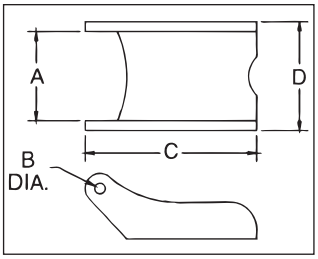
S-4088
ALLOY HOOK
LATCH KITS

LATCH ORDERING INSTRUCTIONS

1. Specify latch kit stock number.
2. Specify capacity of hook to which latch will be assembled.
3. Specify hook material (carbon or alloy).

- To be used on A-327 and A-339 Grade 8 Sling Hooks.
- Latch Kits shipped unassembled and individually packaged with instructions.

S-4088 LATCH KITS



Hook Chain (in)	S-4088 Stock No.	Weight Each (lb)	Dimensions (in)			
			A	B	C	D
9/32 (1/4)	1090250	.06	.78	.16	2.03	.94
3/8	1090251	.14	1.03	.19	2.69	1.25
1/2	1090252	.15	1.03	.19	3.00	1.25
5/8	1090253	.15	1.03	.19	3.25	1.25
3/4	1090254	.15	1.53	.26	4.13	1.88
7/8	1090255	.15	1.53	.26	4.66	2.00

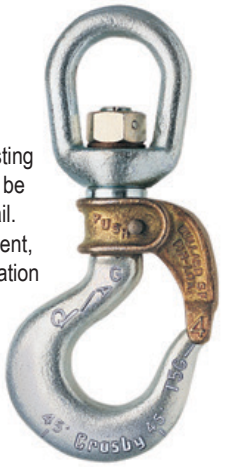
Crosby®/ Bullard® Golden Gate® Hooks

HOOK CONNECTORS

The 5 connector styles shown below make it possible for Crosby to furnish a Golden Gate Hook to fit almost any make or model of hoisting equipment including American Engineering Lo-Hed, ARO, Coffing, Electro Lift, Ingersoll-Rand, & H, Robbins and Myers, Shepard Niles, CM, Shaw-Box, Wright, Yale & Towne.

CLOSED SWIVEL BAIL

For use where hoisting line or shackle can be inserted into the bail. Suitable for infrequent, non continuous rotation under load.
Hook sizes:
1 through 14.

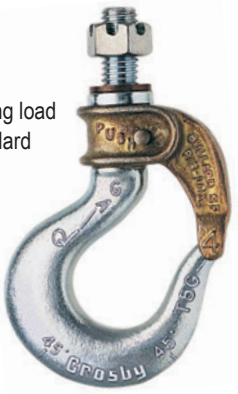


Style C — with self-closing gate.
Style A — with manual-closing gate.

SHANK-TYPE HOOK

(Standard Length)

For use on existing load blocks, with standard shank length.
Hook sizes:
2 through 14.

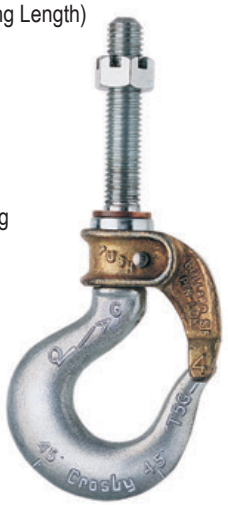


Style D — with self-closing gate.
Style B — with manual-closing gate.

SHANK-TYPE HOOK

(Long Length)

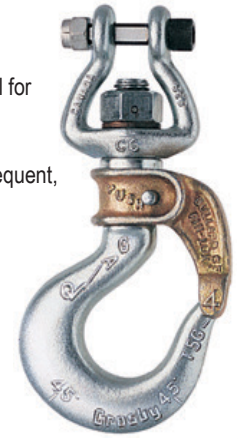
For use on existing load blocks requiring extra shank length.
Hook sizes:
4 through 17.



Style K — with self-closing gate.
Style I — with manual-closing gate.

UNIVERSAL TYPE

Open swivel bail for attachment to link chain. Suitable for infrequent, non continuous rotation under load.
Hook sizes:
3, 4 and 5.



Style E — with self-closing gate.
Style G — with manual-closing gate.

LINK CHAIN NEST

With ball-bearing swivel; attaches to chain by an alloy pin. Suitable for frequent rotation under load.
Hook sizes:
4, 5 and 7.

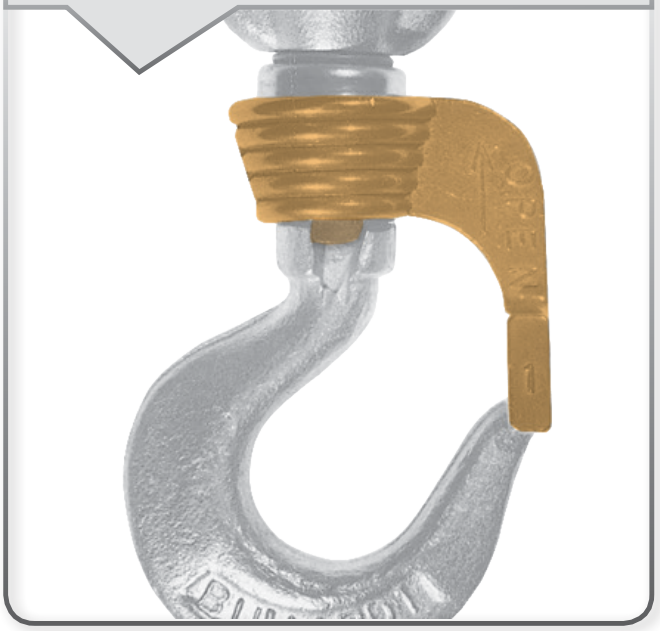
Style O — with self-closing gate.
Style P — with manual-closing gate.

Letter designations shown beneath each illustration above indicate BOTH connector style and gate type. Each connector is available with either a self-closing or manual-closing gate. (e.g.: A size 4 hook with a closed swivel bail connector and self-closing gate is 4-C; with manual-closing gate, it is 4-A.)

GATE TYPES

Brass alloy Golden Gates® are engineered for quality, easy handling and dependability. The heavy duty, corrosion resistant locking mechanism will stay locked until an operator releases it; yet, can easily be shut with one hand. Cost effective, these gates reduce down time, providing the alternative to conventional latches.

LIF-LOK® GATE - SIZE 1



To lock: Close the gate; the built-in spring locks the gate against the hook tip.

To Unlock: Lift the gate upward on the hook shank and swing open.

ROLLOX® GATE - SIZE 5 through 9

To Lock: Close the gate; a stainless steel pin is mounted in a horizontal bore which passes through the gate and engages a notch milled in the hook shank.

To Unlock: Move the lever downward a quarter-turn or until it stops, the gate can now swing open 160 ° (approx.)

PIN-LOK® GATE - SIZE 2 through 4

To Lock: Close the gate; a stainless steel pin is carried in a horizontal bore and engages a milled slot in the hook shank.

To Unlock: Simply depress the stainless steel pin which causes the pin to disengage from the milled slot.

TIP-LOK® GATE - SIZE 10 through 17

To Lock: Press the arm down until the lock trips; two arms of the gate now enclose the tip of the hook.

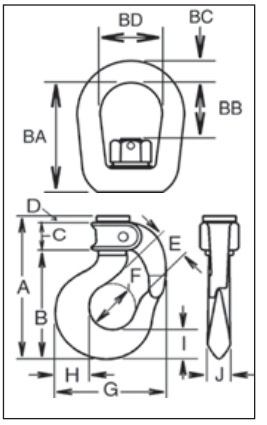
To Unlock: Manually depressing the locking trigger automatically raises the movable arm, allowing the gate to be rotated open.

Crosby® / Bullard® Golden Gate® Hooks

Closed Swivel Bail

- For use where hoisting line or shackle can be inserted into the bail.
  - **BL-D** - with self-closing gate.
  - **BL-B** - with manual-closing gate.
- Suitable for infrequent, non-continuous rotation under load.
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).
- Crosby®/Bullard® Hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - Angle Indicators and Deformation Indicators (see the Bullard® **QUIC-CHECK®** table at bottom of page 129 for detailed definition)

SEE APPLICATION AND WARNING INFORMATION
On Pages 146 - 147
Para Español: www.thecrosbygroup.com



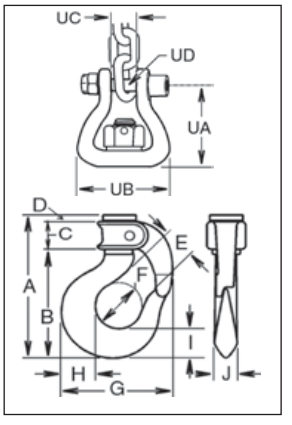
Closed Swivel Bail

Hook Size	BL-C Stock No.	BL-A Stock No.	Gate Type	Working Load Limit (T)*	Weight Each (lb)	Dimensions (in)													
						A	B	C	D	E	F	G	H	I	J	BA	BB	BC	BD
1	1050210	1050001	LIF-LOK	.50	0.8	3.23	2.31	.63	.26	.69	.88	2.25	.69	.63	.44	1.75	.63	.31	1.00
2	1050221	1050012	PIN-LOK	1.00	1.3	4.12	3.00	.93	.16	.97	1.25	2.88	.81	.75	.56	1.86	.95	.38	1.25
3	1050232	1050023	PIN-LOK	1.40	1.9	4.50	3.31	.94	.22	1.06	1.38	3.19	.94	.84	.63	2.44	1.31	.50	1.50
4	1050243	1050034	PIN-LOK	1.70	2.2	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	2.66	1.35	.50	1.50
5	1050254	1050045	ROLLOX	2.30	3.8	5.63	4.12	1.23	.25	1.25	1.64	4.09	1.31	1.12	.84	2.91	1.60	.63	1.75
6	1050265	1050056	ROLLOX	4.00	4.6	6.23	4.70	1.25	.25	1.39	1.64	4.56	1.57	1.34	.97	3.10	1.41	.63	1.75
7	1050276	1050067	ROLLOX	4.20	6.9	6.61	5.21	1.12	.25	1.50	2.00	4.94	1.63	1.44	1.13	3.48	1.67	.75	2.00
8	1050287	1050078	ROLLOX	5.50	9.6	7.17	5.80	1.06	.28	1.75	2.25	5.84	2.00	1.65	1.23	4.06	2.00	.88	2.25
9	1050298	1050089	ROLLOX	7.20	13.5	7.85	6.45	1.06	.31	1.88	2.50	6.50	2.06	1.81	1.38	4.65	2.21	1.03	2.50
11	1050309	1050100	TIP-LOK	9.20	20.5	9.62	8.00	1.25	.31	2.25	3.00	7.56	2.63	2.25	1.62	4.87	2.18	1.13	2.75
12	1050320	1050111	TIP-LOK	12.30	27.0	10.53	8.84	1.25	.38	2.50	3.25	8.69	2.94	2.59	1.94	5.13	2.25	1.25	3.13
14	1050342	1050133	TIP-LOK	18.50	55.0	12.60	10.75	1.41	.38	3.38	4.25	11.00	3.50	2.97	2.38	8.00	4.25	1.63	4.10

*Ultimate Load is 4 times the Working Load Limit.

Open Swivel Bail

- Open Swivel Bail for attachment to link chain.
  - **BL-E** - with Self-Closing Gate
  - **BL-G** - with Manual-Closing Gate
- Suitable for infrequent, non-continuous rotation under load.
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).
- Crosby®/Bullard® Hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - Angle Indicators and Deformation Indicators (see the Bullard® **QUIC-CHECK®** table at bottom of page 129 for detailed definition)



Open Swivel Bail

Hook Size	BL-E Stock No.	BL-G Stock No.	Gate Type	Working Load Limit (T)*	Weight Each (lb)	Dimensions (in)													
						A	B	C	D	E	F	G	H	I	J	UA	UB	UC	UD
3	1051607	1051706	PIN-LOK	1.40	1.8	4.50	3.31	.94	.22	1.06	1.38	3.19	.94	.84	.63	2.08	2.31	.52	.38
4	1051618	1051717	PIN-LOK	1.70	2.1	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	2.14	2.31	.52	.38
5	1051629	1051728	ROLLOX	2.30	3.2	5.63	4.12	1.23	.25	1.25	1.64	4.09	1.31	1.12	.84	2.56	2.63	.62	.44

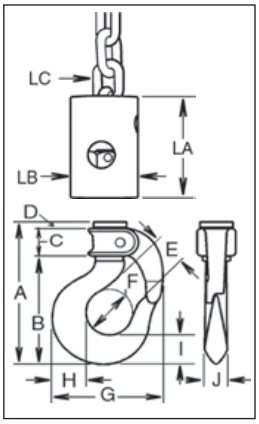
*Ultimate Load is 4 times the Working Load Limit.

Crosby® / Bullard® Golden Gate® Hooks

Link Chain Nest

- With ball bearing swivel; attaches to chain by an alloy pin.
  - **BL-O -** with Self-Closing Gate
  - **BL-P -** with Manual Closing Gate
- Suitable for frequent rotation under load.
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).
- Crosby®/Bullard® Hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - Angle Indicators and Deformation Indicators (see the Bullard® **QUIC-CHECK®** table at bottom of page 129 for detailed definition)

SEE APPLICATION AND WARNING INFORMATION
On Pages 146 - 147
Para Español: www.thecrosbygroup.com



Link Chain Nest

Hook Size	BL-O Stock No.	BL-P Stock No.	Gate Type	Working Load Limit (T)*	Weight Each (lb)	Dimensions (in)												
						A	B	C	D	E	F	G	H	I	J	LA	LB	LC
4:1/4-9/32	1051409	1051508	PIN-LOK	1.70	2.5	4.88	3.63	1.00	.22	1.06	1.50	3.63	1.16	1.00	.75	2.65	1.75	1/4-9/32
5:5/16-3/8	1051442	1051541	ROLLOX	2.30	4.5	5.53	4.12	1.23	.25	1.25	1.64	4.10	1.31	1.12	.84	3.00	2.25	5/16-3/8
7:3/8-7/16	1051464	1051563	ROLLOX	4.20	11.0	6.61	5.21	1.12	.25	1.50	2.00	4.94	1.63	1.44	1.13	4.38	3.00	3/8-7/16
7:1/2-9/16	1051486	1051585	ROLLOX	4.20	11.0	6.61	5.21	1.12	.25	1.50	2.00	4.94	1.63	1.44	1.13	4.38	3.00	1/2-9/16

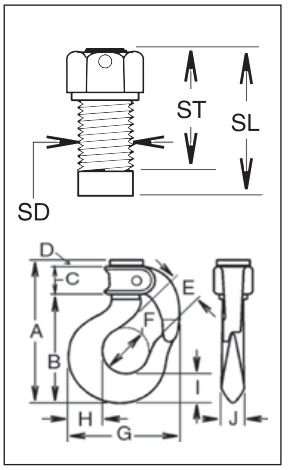
*Ultimate Load is 4 times the Working Load Limit.

Crosby® / Bullard® Golden Gate® Hooks

Standard Length
SHANK HOOKS

- For use on existing load blocks, with standard shank length.
- No.'s 2 through 12 style hooks are threaded approximately 80% of shank length.
  - **BL-D** - with self-closing gate.
  - **BL-B** - with manual-closing gate.
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).
- Crosby®/Bullard® Hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - Angle Indicators and Deformation Indicators (see the Bullard® **QUIC-CHECK®** table at bottom of page 129 for detailed definition)

SEE APPLICATION AND WARNING INFORMATION
On Pages 146 - 147
Para Español: www.thecrosbygroup.com



Standard Length Shank Hooks

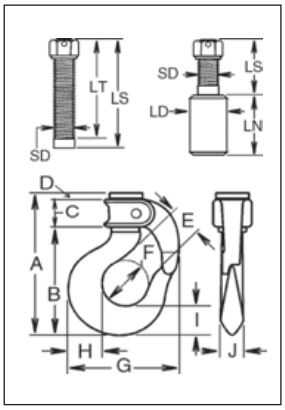
Hook Size	BL-D Stock No.	BL-B Stock No.	Gate Type	Working Load Limit (T)*	Weight Each (lb)	Dimensions (in)												
						A	B	C	D	E	F	G	H	I	J	SD	SL	ST
2	1050606	1050408	PIN-LOK	1.00	1.1	4.12	3.00	.93	.16	.97	1.25	2.88	.81	.75	.56	.50	.91	.59
3	1050617	1050419	PIN-LOK	1.40	1.3	4.50	3.31	.94	.22	1.06	1.38	3.19	.94	.84	.63	.56	1.25	.75
4	1050628	1050430	PIN-LOK	1.70	1.7	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	.63	1.31	1.19
5	1050639	1050441	ROLLOX	2.30	2.5	5.63	4.12	1.23	.25	1.25	1.64	4.09	1.31	1.12	.84	.75	1.31	1.00
6	1050650	1050452	ROLLOX	4.00	3.5	6.23	4.70	1.25	.25	1.39	1.64	4.56	1.57	1.34	.97	.88	1.69	1.16
7	1050661	1050463	ROLLOX	4.20	5.2	6.61	5.21	1.12	.25	1.50	2.00	4.94	1.63	1.44	1.13	1.00	1.81	1.38
8	1050672	1050474	ROLLOX	5.50	7.1	7.17	5.80	1.06	.28	1.75	2.25	5.84	2.00	1.65	1.23	1.13	2.06	1.50
9	1050683	1050485	ROLLOX	7.20	9.5	7.85	6.45	1.06	.31	1.88	2.50	6.50	2.06	1.81	1.38	1.25	2.44	1.81
11	1050694	1050496	TIP-LOK	9.20	15.6	9.62	8.00	1.25	.31	2.25	3.00	7.56	2.63	2.25	1.62	1.50	2.69	1.88
12	1050705	1050507	TIP-LOK	12.30	21.0	10.53	8.84	1.25	.38	2.50	3.25	8.69	2.94	2.59	1.94	1.63	2.88	2.13
13	1050716	1050518	TIP-LOK	15.00	30.0	11.23	9.54	1.25	.38	3.00	3.75	9.63	3.28	2.75	1.94	1.75	3.50	2.20
14	1050727	1050529	TIP-LOK	18.50	40.0	12.60	10.75	1.41	.38	3.38	4.25	11.00	3.50	2.97	2.38	2.00	3.75	2.38

*Ultimate Load is 4 times the Working Load Limit. If a drawing is not available, complete a Crosby/Bullard HOOK DATA FORM. Hook No.'s 2 through 12 style hooks are threaded approximately 80% of the shank length.

Crosby® / Bullard® Golden Gate® Hooks

Long Length
SHANK HOOKS

- For use on existing load blocks requiring extra shank length.
- No.'s 4 through 9 style hooks are threaded approximately 80% of shank length.
  - BL-K - with Self-Closing Gate
  - BL-I - with Manual Closing Gate
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).
- Crosby®/Bullard® Hooks incorporate two types of strategically placed markings forged into the product which address two (2) **QUIC-CHECK®** features:
  - Angle Indicators and Deformation Indicators (see the Bullard® **QUIC-CHECK®** table at bottom of this page for detailed definition)



Hooks & Swivels

Long Length Shank Hooks

Hook Size	BL-K Stock No.	BL-I Stock No.	Gate Type	Working Load Limit (T)*	Weight Each (lb)	Dimensions (in)													
						A	B	C	D	E	F	G	H	I	J	SD	LN	LS	LT
4 :1/2	1051002	1050804	PIN-LOK	1.60	1.9	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	.50	.44	3.19	3.19
4 :9/16	1051013	1050815	PIN-LOK	1.70	1.9	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	.56	.48	3.19	3.19
4 :5/8	1051024	1050826	PIN-LOK	1.70	1.9	4.88	3.63	1.00	.22	1.13	1.50	3.63	1.16	1.00	.75	.63	.55	3.31	3.19
5	1051035	1050837	ROLLOX	2.30	3.0	5.63	4.12	1.23	.25	1.25	1.64	4.09	1.31	1.12	.84	.75	.63	3.56	3.25
6	1051046	1050848	ROLLOX	4.00	3.8	6.23	4.70	1.25	.25	1.39	1.64	4.56	1.57	1.34	.97	.88	.75	4.06	3.54
7	1051057	1050859	ROLLOX	4.20	5.9	6.61	5.21	1.12	.25	1.50	2.00	4.94	1.63	1.44	1.13	1.00	.88	4.56	4.12
8	1051068	1050870	ROLLOX	5.50	7.8	7.17	5.80	1.06	.28	1.75	2.25	5.84	2.00	1.65	1.23	1.12	.94	5.06	4.50
9	1051079	1050881	ROLLOX	7.20	10.8	7.85	6.45	1.06	.31	1.88	2.50	6.50	2.06	1.81	1.38	1.25	1.06	5.56	4.94
12 ‡	1051101	1050903	TIP-LOK	12.30	28.0	10.53	8.84	1.25	.38	2.50	3.25	8.69	2.94	2.59	1.94	1.63	1.56	5.38	4.63
13 ‡	1051112	1050914	TIP-LOK	15.00	35.0	11.23	9.54	1.25	.38	3.00	3.75	9.63	3.28	2.75	1.94	1.75	1.50	7.37	5.75
14 ‡	1051123	1050925	TIP-LOK	18.50	45.0	12.60	10.75	1.41	.38	3.38	4.25	11.00	3.50	2.97	2.38	2.00	2.00	5.38	4.00
16	1051134	1050936	TIP-LOK	33.00	103.0	15.29	13.10	1.50	.63	4.00	5.00	13.62	4.63	3.63	3.00	2.75	2.75	16.00	7.00
17	1051156	1050958	TIP-LOK	66.00	370.0	24.20	20.57	2.63	.94	5.75	7.00	18.50	6.50	6.00	4.44	4.00	3.94	22.75	14.00

*Ultimate Load is 4 times the Working Load Limit. If a drawing is not available, complete a Crosby/Bullard HOOK DATA FORM. Hook No.'s 4 through 9 are threaded approximately 80% of the shank length. ‡ Hook will have the shank extended by use of a Coupling Nut.Customer is required to complete and approve side 2 of a Crosby/Bullard HOOK DATA FORM.

Crosby® / Bullard Golden Gate Hooks Service Parts

Hook Size	Gate Type	BL-GA Gate Assemblies		BL-RK Gate Repair Kit Stock No.
		Manual Close Stock No.	Self Close Stock No.	
2	PIN-LOK	1100298	1100309	1100100
3	PIN-LOK	1100320	1100331	1100100
4	PIN-LOK	1100342	1100353	1100100
5	ROLLOX	1100364	1100375	1100111
6	ROLLOX	1100386	1100397	1100111
7	ROLLOX	1100408	1100419	1100122
8	ROLLOX	1100430	1100441	1100122
9	ROLLOX	1100452	1100463	1100122
10	TIP-LOK	1100474	1100485	1100133
11	TIP-LOK	1100496	1100507	1100144
12	TIP-LOK	1100518	1100529	1100155
13	TIP-LOK	1100540	1100551	1100166
14	TIP-LOK	1100562	1100573	1100177
15	TIP-LOK	1100584	1100595	1100188
16	TIP-LOK	1100606	1100617	1100199
17	TIP-LOK	1100639	1100628	1100210

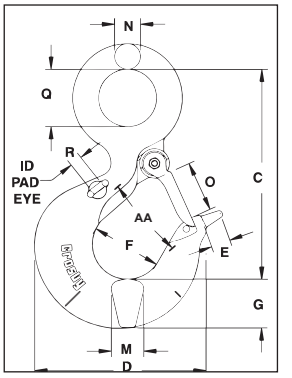
Bullard® QUIC-CHECK® Deformation Indicator Table

Hook Size	Hook ID Code	AA (in)
1	1	1.50
2	D	1.50
3	F	1.50
4	G	2.00
5	H	2.00
6	6	2.50
7	I	2.50
8	8	3.00
9	J	4.00
11	K	4.00
12	L	4.50
13	13	5.00
14	N	5.00
16	O	6.50
17	T	10.00

Crosby® ROV Eye Hooks

L-320R
ROV EYE HOOK

- Hook identification code stamped on each hook
- Quenched and Tempered.
- QUIC-CHECK® deformation and angle indicators forged on the hook.
- Fluorescent yellow finish for high "subsea" visibilit .
- Tip extension allows for easy handling.
- Sizes 3.2t through 31.5t utilize new integrated latch (S-4320) that meets the world-class standard for lifting.
  - Heavy duty stamped latch interlocks with the hook tip.
  - High cycle, long life spring.
- Pad eyes are provided on either side of hook as cable guides. The cable is passed through a hole drilled in the latch that assists in allowing the "remotely operated" cable to open latch.
- Crosby supplies latches with drilled holes for sizes 5.4t through 31.5t. Other sizes can be fitted by your local Authorized Crosby Dealer. Cables are not provided by Crosby.



Fatigue Rated® Load Rated® CE QUIC-CHECK®

SEE APPLICATION AND WARNING INFORMATION
On Pages 153 - 154
Para Español: www.thecrosbygroup.com

L-320R ROV Hooks

Working Load Limit (t)*	Hook ID Code	L-320R Stock No.	Weight Each (lb)	Dimensions (in)											Replacement Latch Stock No.
				C	D	E	F	G	M	N	O	Q	R	AA**	
†3.2	HA	1298427	2.0	4.69	3.97	.39	1.63	1.13	.94	.58	1.09	1.25	.25	2.00	1096468
†5.4	IA	1298497	4.0	5.77	4.81	.39	2.00	1.44	1.31	.72	1.36	1.56	.25	2.50	1096515
†8	JA	1298567	8.2	7.37	6.27	.79	2.50	1.81	1.66	.90	1.61	2.00	.38	3.00	1096562
†11.5	KA	1298637	15	9.07	7.45	1.18	3.00	2.25	1.63	1.11	2.08	2.44	.38	4.00	1096611
†16	LA	1298707	21	10.08	8.30	1.18	3.25	2.59	1.94	1.27	2.27	2.84	.38	4.00	1096657
†22	NA	1298777	38	12.53	10.30	1.77	4.25	3.00	2.38	1.56	3.02	3.50	.75	5.00	1096704
†31.5	OA	1298847	60	14.07	13.63	-	5.00	3.62	3.00	1.75	3.67	3.50	.75	6.50	1090161
37	PA	1298857	107	18.19	14.06	-	5.38	4.56	3.19	2.00	3.75	4.50	.75	7.00	1090189
45	SA	1298867	137	20.12	15.45	-	6.00	5.06	3.24	2.18	4.25	4.94	.75	8.00	1090189
60	TA	1298877	224	23.72	18.50	-	7.00	6.00	3.91	2.53	5.12	5.69	.75	10.00	1090205

*Minimum Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators. † Utilizes Crosby S320N style hook. Maximum proof load is 2 times the Working Load Limit.

ROV PRODUCTS

Developed in conjunction with major North Sea subsea operators.

For efficient load handling and attachment for Remote Operating Vehicles in subsea and other hard-to-reach applications.

Pad eyes are placed on either side of hook as cable guides which allows the "remotely operated" cable to open latch.

Available on pages: 90, 91.

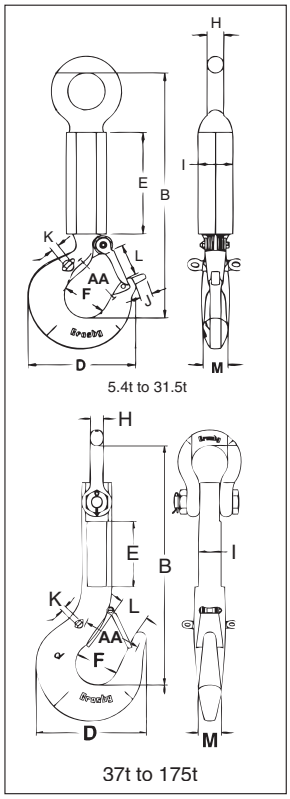
G-2110 & G-2100
Release & Retrieve ROV Shackle with Non - Thread & QUIC Thread Bolt with Handle, pages 90 and 91.

Crosby® ROV Eye Shank Hooks

- Hook identification code stamped on each hook
- Quenched and Tempered.
- QUIC-CHECK® angle indicators forged into the top eye; and deformation and angle indicators forged on the hook.
- Fluorescent yellow finish for high “subsea” visibilit .
- Tip extension allows for easy handling.
- Sizes 5.4t through 31.5t utilize new integrated latch (S-4320) that meets the world-class standard for lifting.
  - Heavy duty stamped latch interlocks with the hook tip.
  - High cycle, long life spring.
- Pad eyes are provided on either side of hook as cable guides. The cable is passed through a hole drilled in the latch that assists in allowing the “remotely operated” cable to open latch.
- Crosby supplies latches with drilled holes for sizes 5.4t through 31.5t. Other sizes can be fitted by your local Authorized Crosby Dealer. Cables are not provided by Crosby.

L-562A
ROV EYE
SHANK HOOK

SEE APPLICATION AND WARNING INFORMATION
On Pages 153 - 154
Para Español: www.thecrosbygroup.com



Fatigue Rated® Load Rated® CE “QT” QUIC-CHECK®

L-562A ROV Eye Shank Hooks

Working Load Limit (t)	Hook ID Code	L-562A Stock No.	Weight Each (lb)	Dimensions (in)											Replacement Latch Stock No.
				I	E	B	D	J	F	M	H	L	K	AA**	
†5.4	IA	1297722	21	2.56	9.84	16.57	4.84	.39	2.00	1.13	.88	1.36	.25	2.50	1096515
†11.5	KA	1297792	33	2.56	9.84	20.39	7.54	1.18	3.00	1.63	1.25	2.08	.38	4.00	1096611
†16	LA	1297806	42	2.56	9.84	21.65	8.34	1.18	3.25	1.94	1.38	2.27	.38	4.00	1096657
†22	NA	1297862	68	3.35	9.84	23.94	10.34	1.77	4.25	2.38	1.59	3.02	.75	5.00	1096704
31.5	OA	1298042	97	3.35	9.84	26.00	13.62	-	5.00	3.00	1.89	3.62	.75	6.50	1090161
‡37	PA	1298049	97	3.15	9.25	32.58	14.06	-	5.38	3.00	1.84	3.75	.75	7.00	1090189
‡45	SA	1298057	198	3.15	9.25	34.07	15.44	-	6.00	3.25	1.84	4.25	.75	8.00	1090189
‡60	TA	1298087	289	3.54	8.46	37.06	18.50	-	7.00	3.91	2.08	5.12	.75	10.00	1090205
‡100	WA	1298103	668	5.51	11.81	46.67	23.00	-	6.81	5.50	2.71	4.88	.75	12.00	1090241
‡150	XA	1298117	871	5.91	9.06	48.53	24.38	-	6.75	6.00	3.62	5.38	.75	13.00	1090241
**175	YA	1298130	1135	6.69	10.04	52.24	26.69	-	7.50	7.00	4.00	-	.75	13.00	143062

*Minimum Ultimate Load is 4 times the Working Load Limit. ** Deformation Indicators. † Utilizes Crosby S319N style hook. Maximum proof load is 2 times the Working Load Limit. ‡ Utilizes Crosby G-2140 shackle as eye.

Did You Know...

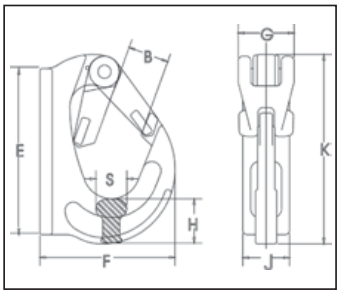
there are three indicators built into almost every Crosby hook?

- ***Deformation Indicator:*** *for abuse and overload.*
- ***Angle Indicators:*** *insure the maximum include angle which is allowed between two (2) sling legs.*
- ***Two Letters Code:*** *One letter represents the size and weight of the hook. The other letter tells you what material the hook is made of.*

Crosby® Forged Hooks

BH-313
WELD-ON
HOOK

- Wide range of sizes available: 1-10 metric ton capacity.
- Forged Alloy Steel.
- Designed for attachment to mobile lifting equipment to provide a pick point for easy sling attachment.
- Large weld pad.
- Heavy duty latch interlocks with the hook tip. Replacement latches available.
- Detailed installation and application instructions included with each hook.



SEE APPLICATION AND WARNING INFORMATION
On Pages 148 - 149
Para Español: www.thecrosbygroup.com

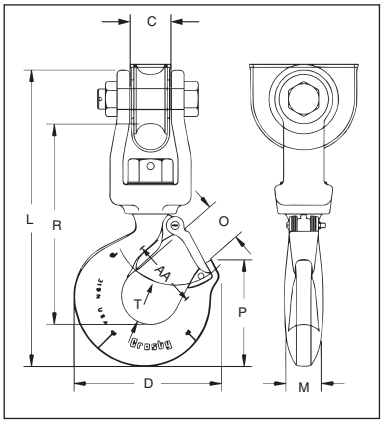
BH-313 Weld-On Hooks

Working Load Limit (t)*	BH-313 Stock No.	Weight Each (lb)	Dimensions (in)								Replacement Latch Stock No.
			B	E	F	G	H	J	K	S	
1	1029105	1.15	.91	3.82	2.80	1.42	1.06	1.02	4.21	.71	1092104
2	1029114	1.85	.91	3.23	3.58	1.42	.98	1.34	4.53	.83	1092104
3	1029123	2.60	1.14	4.61	4.13	1.42	1.22	1.42	5.16	.94	1092104
4	1029132	4.19	1.34	5.16	4.49	1.81	1.42	1.69	5.79	1.14	1092105
5	1029141	5.62	1.34	6.34	5.24	1.85	1.77	1.73	6.81	1.14	1092105
8	1029150	7.28	1.38	6.54	5.31	1.85	2.05	2.05	7.01	1.54	1092105
10	1029169	11.02	1.93	8.07	6.61	1.85	2.24	2.13	8.74	1.54	1092106

* Ultimate Load is 5 times the Working Load Limit.

S-3319
UTILITY SWIVEL
HOOK

- Capacities of 1.63, 2.50 and 4.50 metric tons
- Synthetic Rope sizes: 9/16"- 1-1/16"
- Hook is forged Alloy Steel - Quenched and Tempered.
- Can be proof tested to 2 times the Working Load Limit.
- Designed for utility applications using synthetic rope.
- Design of hook provides needed overhaul weight.
- Utilizes spool & shield designed to:
  - Protect rope
  - Keep rope positioned correctly on spool.
  - Provide wider rope bearing surface resulting in an increased area for load distribution and reduces rope abrasion.
- Low profile hook tip designed to utilize Crosby integrated latch (S-4320), that meets the world-class standard for lifting.



Suitable for infrequent, non-continuous rotation under load. Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c)2009.

SEE APPLICATION AND WARNING INFORMATION
On Pages 142 - 143
Para Español: www.thecrosbygroup.com

S-3319 Utility Swivel Hook

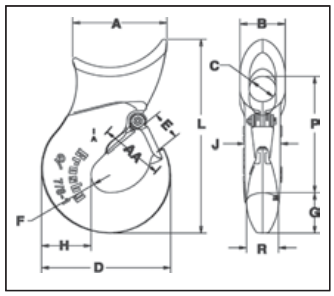
Working Load Limit (t)*	S-3319 Stock No.	Weight Each (lb)	Hook ID Code	Synthetic Rope Size (in)	Dimensions (in)									Replacement Latch Kit Stock No.
					C	D	L	M	O	P	R	T	AA**	
1.63	1002054	4.2	H	9/16 - 5/8	1.09	3.99	8.75	.94	1.16	2.78	5.94	1.16	2.00	1096468
2.50	1002063	8.0	I	3/4 - 13/16	1.31	4.84	10.56	1.13	1.41	3.47	7.06	1.53	2.50	1096515
4.50	1002072	15.0	J	7/8 - 1-1/16	1.78	6.29	12.75	1.44	1.78	4.59	8.69	1.94	3.00	1096562

*Ultimate Load is 5 times the Working Load Limit. ** Deformation Indicators.

Crosby® Forged Hooks

A-350L
SLIDING CHOKER HOOK

- New style incorporates throat opening equal to or larger than old style hooks.
- Each product has a Product Identification Code (PIC) for material traceabilit , along with a Working Load Limit, and the name Crosby or "CG" forged into it.
- All hooks incorporate Crosby's patented QUIC-CHECK® marks to help in determining if throat opening dimension has changed.
- Each hook is equipped with a Crosby S-4320 heavy duty stamped latch with the high cycle, long life spring.
- Forged Alloy Steel -- Quenched and Tempered.



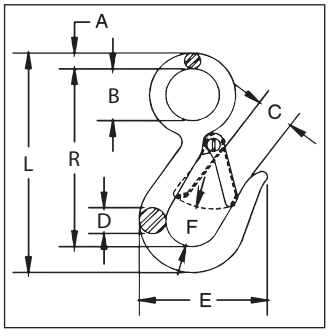
A-350L Sliding Choker Hook

Single Part Rope Size (in)	Eight Part Rope Size (in)	A-350L Stock No.	Working Load Limit (lb)	Weight Each (lb.)	Dimensions (in)												Hook Frame Code	Replacement Latch Kit Stock No.
					A	B	C	D	E	F	G	H	L	P	R	AA**		
3/8	-	1011802	2500	1.0	2.06	1.13	.63	2.41	.63	.38	.84	.91	4.28	2.59	.63	1.50	D	1096325
1/2	1/8	1011811	3800	1.4	2.25	1.31	.75	2.97	.78	.50	.97	1.06	4.97	3.09	.75	1.50	F	1096374
† 5/8	-	1011820	5800	3.0	3.06	1.63	.75	3.56	.94	.56	1.13	1.31	6.38	3.88	1.00	2.00	G	1096421
† 5/8	3/16	1011839	5800	2.7	3.06	1.63	1.00	3.56	.94	.56	1.13	1.31	6.38	4.00	1.13	2.00	G	1096421
† 3/4	-	1011848	8200	4.4	3.38	2.13	1.00	4.25	1.16	.63	1.44	1.63	7.66	4.58	1.13	2.50	H	1096468
† 3/4	1/4	1011857	8200	3.8	3.38	2.13	1.44	4.25	1.16	.63	1.44	1.63	7.66	4.78	1.13	2.50	H	1096468
†† 7/8-1	-	1028177	15000	9.70	4.41	2.12	1.25	6.06	1.41	.88	2.00	2.33	9.55	5.72	1.50	3.00	I	1096515

** Deformation Indicators. † Determine EYE diameter "C", before ordering. †† 7/8-1" is Cast Steel.

G-3315
SNAP HOOK

- Forged Carbon Steel -- Quenched and Tempered.
- Pressed steel latches and stainless steel springs, bolts and nuts.
- For replacement latch kit, order Stock No. 9900299.
- Hook Body -- Galvanized.



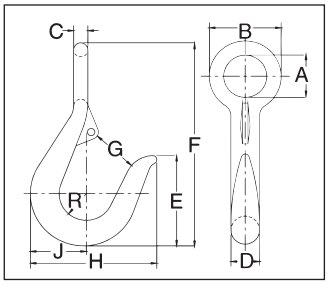
G-3315 Snap Hook

Hook Size (in)	G-3315 Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Dimensions (in)							
				A	B	C	D	E	F	L	R
7/16	1023056	750	.23	.25	.75	.75	.44	2.25	.75	3.94	3.25
9/16	1023074	1000	.48	.34	1.12	.81	.56	2.69	.88	4.75	3.84

*Ultimate Load is 4 times the Working Load Limit.

1210 Round
REVERSE
EYE HOOK

- Forged Carbon Steel -- Galvanized.



1210 Round Reverse Eye Hook

Size (in)	1210 Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Latch Stock No.	Dimensions (in)									
					A	B	C	D	E	F	G	H	J	R
1/2	919019	300	.4	1090027	.81	1.38	.28	.50	1.62	4.00	.75	2.25	.97	.47
5/8	919037	400	.6	1090027	.94	1.56	.31	.62	2.00	4.50	.94	2.75	1.22	.59
3/4	919055	700	1.1	1090045	1.12	1.88	.38	.75	2.25	5.25	1.06	3.00	1.44	.69
7/8	919073	1200	1.6	1096468	1.19	2.06	.44	.88	3.00	6.50	1.25	3.38	1.63	.75
1 - 1-1/8	919091	1800	2.0	1090081	1.50	2.75	.62	1.12	3.50	8.00	1.50	4.38	2.00	.94
1-1/4 - 1-3/8	919135	2700	5.5	1090081	1.88	3.50	.81	1.38	4.00	9.12	1.62	5.00	2.38	1.06

*Ultimate Load is 4 times the Working Load Limit.

Crosby® Forged Hooks

S-377
BARREL HOOKS

- Forged Carbon Steel - Quenched and Tempered.
- Meets the performance requirements of Federal Specification RR-C-271G, Type V, Class 6, except for those provisions required of the contractor.

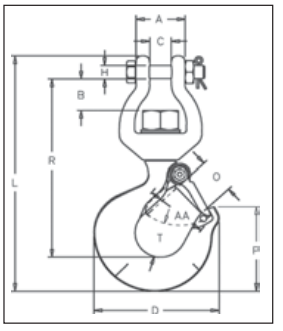
S-377 Barrel Hooks

Working Load Limit Per Pair (Tons)*	S-377 Stock No. Per Pair	Weight Each Per Pair (lb)	Dimensions (in)			
			I.D. of Eye	O.D. of Eye	Overall Length	Width of Lip
1	1028248	3.56	1.56	2.81	5.00	2.88

*Ultimate Load is 4 times the Working Load Limit.

S-3316
REPLACEMENT HOOK

- Easily attaches to any chain and electric hoist with welded link load chain, roller chain or wire rope with suitable end fitting
- Swivel jaw is forged.
- Suitable for infrequent, non-continuous rotation under load.
- Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).



Load Rated®

SEE APPLICATION AND WARNING INFORMATION
On Pages 142 - 143
Para Español: www.thecrosbygroup.com

S-3316 Replacement Hook

Working Load Limit (Tons)*	Frame Code	S-3316 Stock No.	Weight Each (lb)	Dimensions (in)										Replacement Latch Kit Stock No.
				A	B	C	D	H	L	O	P	R	T	
1/2	F	1023029	1.25	1.31	.76	.56	3.19	.38	6.12	.97	2.25	4.59	.81	1096374
1	H	1023047	2.61	1.56	1.00	.69	4.09	.44	7.69	1.12	2.84	5.81	1.19	1096468

*Ultimate Load is 5 times the Working Load Limit.

A-378
SORTING HOOK

- Forged Alloy Steel - Quenched and Tempered.
- Deep straight throat permits efficient handling of flat plates or larg cylindrical shapes.

A-378
SORTING HOOK

A-378 Sorting Hook

Working Load Limit at tip of Hook (Tons)*	Working Load Limit at bottom of Hook (Tons)*	A-378 Stock No	Style	Weight Each (lb)	Dimensions (in)			
					I.D. of Eye	Overall Length	Opening at top of Hook	Radius at bottom of Hook
2	7-1/2	1028024	No Handle	6.42	1.38	9.69	2.81	.625
2	7-1/2	1028033	With Handle	6.42	1.38	9.69	2.81	.625

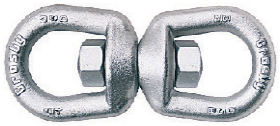
*Ultimate Load is 4 times the Working Load Limit.

Forged Swivels

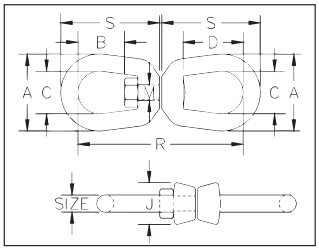
- Hot dip Galvanized
- Quenched & Tempered
- Crosby products meet or exceed all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, Crosby products meet other critical performance requirements, including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.

402 and 403 swivels are positioning devices and are not intended to rotate under load. For load swivels see pages 136-140. Use in corrosive environment requires shank and nut inspection in accordance with ASME B30.10-1.10.4(b)(5)(c).

1/4" - 1 1/4" size



1 1/2" size

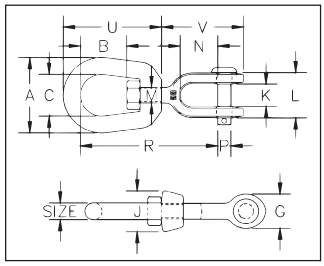


G-402 Regular Swivels

Meets the performance requirements of Federal Specification RR- -271G, Type VII, Class 2, except for those provisions required of the contractor. For more information, see page 452.

Size (in)	G-402 Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Dimensions (in)							
				A	B	C	D	J	M	R	S
1/4	1016019	850	.21	1.25	.69	.75	1.06	.69	.31	2.94	1.69
5/16	1016037	1250	.39	1.63	.81	1.00	1.25	.81	.38	3.56	2.06
3/8	1016055	2250	.71	2.00	.94	1.25	1.50	1.00	.50	4.31	2.50
1/2	1016073	3600	1.32	2.50	1.31	1.50	2.00	1.31	.63	5.44	3.19
5/8	1016091	5200	2.49	3.00	1.56	1.75	2.38	1.50	.75	6.56	3.88
3/4	1016117	7200	4.02	3.50	1.75	2.00	2.63	1.88	.88	7.19	4.31
7/8	1016135	10000	6.25	4.00	2.06	2.25	3.06	2.13	1.00	8.38	5.00
1	1016153	12500	8.95	4.50	2.31	2.50	3.50	2.38	1.13	9.63	5.75
1-1/4	1016199	18000	16.37	5.63	2.69	3.13	3.69	3.00	1.50	11.44	6.75
1-1/2+	1016215	45200	45.79	7.09	3.88	4.09	3.88	3.75	2.25	16.69	9.91

*Ultimate Load is 5 times the Working Load Limit. + Manufactured with two 1 1/2" bails connected by a stud with a nut on each side.



G-403 Jaw End Swivels

Meets the performance requirements of Federal Specification RR- -271G, Type VII, Class 3, except for those provisions required of the contractor. For more information, see page 452.

Size (in)	G-403 Stock No.	Working Load Limit (lb)*	Weight Each (lb)	Dimensions (in)												
				A	B	C	G	J	K	L	M	N	P	R	U	V
1/4	1016395	850	.21	1.25	.69	.75	.69	.69	.47	1.03	.31	.88	.25	2.63	1.69	1.69
5/16	1016411	1250	.34	1.63	.81	1.00	.81	.81	.50	1.13	.38	.88	.31	2.94	2.06	1.81
3/8	1016439	2250	.66	2.00	.94	1.25	1.00	1.00	.63	1.41	.50	1.06	.38	3.63	2.50	2.25
1/2	1016457	3600	1.34	2.50	1.31	1.50	1.31	1.31	.75	1.75	.63	1.31	.50	4.50	3.19	2.88
5/8	1016475	5200	2.48	3.00	1.56	1.75	1.63	1.50	.94	2.06	.75	1.50	.63	5.31	3.88	3.44
3/4	1016493	7200	3.88	3.50	1.75	2.00	1.88	1.88	1.13	2.53	.88	1.75	.75	6.06	4.31	4.00
7/8	1016518	10000	5.87	4.00	2.06	2.25	2.13	2.13	1.34	2.79	1.00	2.06	.88	7.00	5.00	4.53
1	1016536	12500	9.84	4.50	2.31	2.50	2.63	2.38	1.75	3.72	1.13	2.81	1.13	8.56	5.75	5.94
1-1/4	1016572	18000	15.75	5.69	2.69	3.13	3.13	3.00	2.06	4.31	1.63	2.81	1.38	9.75	7.06	6.38
1-1/2	1016590	45200	54.75	7.00	3.88	4.00	5.63	4.00	2.88	6.00	2.25	4.44	2.25	14.25	10.00	10.84

*Ultimate Load is 5 times the Working Load Limit.

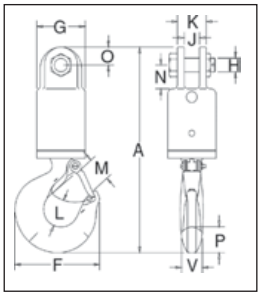
Crosby® Swivels

Equipped with Tapered Roller Thrust Bearing

- Suitable for frequent rotation under load.
- All swivels individually proof tested with labeled documentation.
- All hooks furnished with latches assembled.
- All jaws complete with bolts, nuts and cotter pins.
- Pressure lube fitting provided.
- **NOT TO BE USED ON DEMOLITION (WRECKING) BALLS.**
- Other types and capacities up to 1250t, available to meet your requirements.
- **IMPORTANT - Crosby Swivels should only be used with the recommended wire rope. Contact the wire rope manufacturer for the proper wire rope to be used with Crosby Swivels.**

Load Rated® QUIC-CHECK® CE

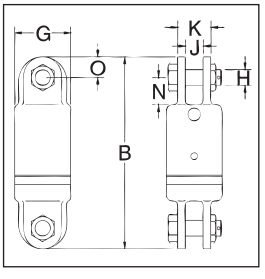
S-1 Jaw & Hook



Swivel No.	S-1 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)											
					A	F	G	H	J	K	L	M	N	O	P	V
3-S-1	297011	3	1/2	9.81	11.44	4.84	2.75	.75	.88	1.62	1.53	1.41	1.31	1.00	1.44	1.12
5-S-1	297217	5	5/8	15.51	13.34	6.28	3.00	.88	1.00	2.25	1.94	1.69	1.62	1.12	1.81	1.44
8-S-1	297413	8-1/2	3/4	29.42	16.45	7.54	4.00	1.00	1.56	2.81	2.46	2.22	2.12	1.38	2.25	1.62
10-S-1	297618	10	7/8	46.75	19.75	8.34	4.50	1.50	1.75	3.38	2.59	2.41	3.50	1.75	2.59	1.94
15-S-1	297814	15	1	73.75	22.24	10.34	5.00	1.50	1.75	3.38	2.81	3.19	3.50	1.75	3.00	2.38
25-S-1	298118	25	-	140.00	26.78	13.62	6.00	2.00	2.00	4.62	3.44	3.62	3.69	2.38	3.66	3.00
35-S-1	298216	35	-	220.00	29.94	14.06	6.50	2.00	2.00	4.62	3.88	3.75	3.69	2.38	4.56	3.19
45-S-1	298314	45	-	251.00	35.06	15.44	7.00	2.25	2.50	5.00	4.75	4.25	4.00	3.00	5.06	3.25

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

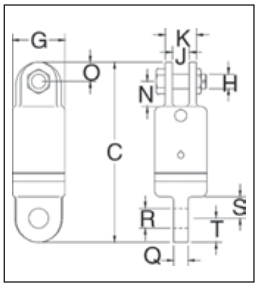
S-2 Jaw & Jaw



Swivel No.	S-2 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)						
					B	G	H	J	K	N	O
3-S-2	297020	3	1/2	9.63	9.28	2.75	.75	.88	1.62	1.31	1.00
5-S-2	297226	5	5/8	13.69	10.31	3.00	.88	1.00	2.25	1.62	1.12
8-S-2	297422	8-1/2	3/4	26.16	12.62	4.00	1.00	1.56	2.81	2.12	1.38
10-S-2	297627	10	7/8	45.75	16.75	4.50	1.50	1.75	3.38	3.50	1.75
15-S-2	297823	15	1	62.75	17.12	5.00	1.50	1.75	3.38	3.50	1.75
25-S-2	298127	25	-	140.00	20.75	6.00	2.00	2.00	4.62	3.69	2.38
35-S-2	298225	35	-	155.00	20.75	6.50	2.00	2.00	4.62	3.69	2.38
45-S-2	298323	45	-	235.00	25.25	7.00	2.25	2.50	5.00	4.00	3.00

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

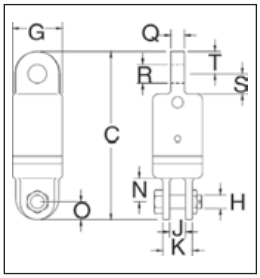
S-3 Jaw & Eye



Swivel No.	S-3 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)										
					C	G	H	J	K	N	O	Q	R	S	T
3-S-3	297039	3	1/2	9.12	9.34	2.75	.75	.88	1.62	1.31	1.00	.75	1.03	1.12	1.25
5-S-3	297235	5	5/8	13.50	10.06	3.00	.88	1.00	2.25	1.62	1.12	1.00	1.28	1.25	1.25
8-S-3	297431	8-1/2	3/4	24.90	12.25	4.00	1.00	1.56	2.81	2.12	1.38	1.25	1.41	1.62	1.50
10-S-3	297636	10	7/8	43.50	16.12	4.50	1.50	1.75	3.38	3.50	1.75	1.69	1.69	2.75	1.88
15-S-3	297832	15	1	61.00	16.75	5.00	1.50	1.75	3.38	3.50	1.75	1.94	2.03	2.75	2.12
25-S-3	298136	25	-	135.00	21.50	6.00	2.00	2.00	4.62	3.69	2.38	2.25	2.31	3.88	2.38
35-S-3	298234	35	-	150.00	21.50	6.50	2.00	2.00	4.62	3.69	2.38	2.25	2.31	3.88	2.38
45-S-3	298332	45	-	225.00	25.88	7.00	2.25	2.50	5.00	4.00	3.00	2.50	2.53	4.00	3.00

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

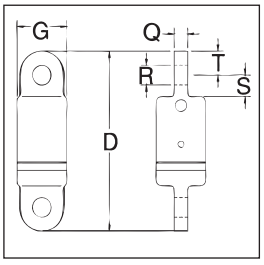
S-4 Eye & Jaw



Swivel No.	S-4 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)										
					C	G	H	J	K	N	O	Q	R	S	T
3-S-4	297048	3	1/2	9.00	9.34	2.75	.75	.88	1.62	1.31	1.00	.75	1.03	1.12	1.25
5-S-4	297244	5	5/8	12.33	10.06	3.00	.88	1.00	2.25	1.62	1.12	1.00	1.28	1.25	1.25
8-S-4	297440	8-1/2	3/4	29.00	12.25	4.00	1.00	1.56	2.81	2.12	1.38	1.25	1.41	1.62	1.50
10-S-4	297645	10	7/8	44.00	16.12	4.50	1.50	1.75	3.38	3.50	1.75	1.69	1.69	2.75	1.88
15-S-4	297841	15	1	61.00	16.75	5.00	1.50	1.75	3.38	3.50	1.75	1.94	2.03	2.75	2.12
25-S-4	298145	25	-	135.00	21.50	6.00	2.00	2.00	4.62	3.69	2.38	2.25	2.31	3.88	2.38
35-S-4	298243	35	-	150.00	21.50	6.50	2.00	2.00	4.62	3.69	2.38	2.25	2.31	3.88	2.38
45-S-4	298341	45	-	225.00	25.88	7.00	2.25	2.50	5.00	4.00	3.00	2.50	2.53	4.00	3.00

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

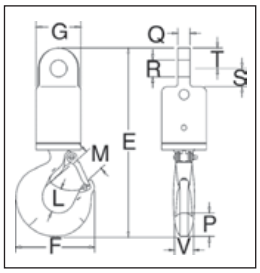
S-5 Eye & Eye



Swivel No.	S-5 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)					
					D	G	Q	R	S	T
3-S-5	297057	3	1/2	8.50	9.41	2.75	.75	1.03	1.12	1.25
5-S-5	297253	5	5/8	11.30	9.81	3.00	1.00	1.28	1.25	1.25
8-S-5	297459	8-1/2	3/4	29.25	11.88	4.00	1.25	1.41	1.62	1.50
10-S-5	297654	10	7/8	42.00	15.50	4.50	1.69	1.69	2.75	1.88
15-S-5	297850	15	1	49.00	16.38	5.00	1.94	2.03	2.75	2.12
25-S-5	298154	25	-	130.00	22.25	6.00	2.25	2.31	3.88	2.38
35-S-5	298252	35	-	145.00	22.25	6.50	2.25	2.31	3.88	2.38
45-S-5	298350	45	-	215.00	26.50	7.00	2.50	2.53	4.00	3.00

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

S-6 Eye & Hook



Swivel No.	S-6 Stock No.	Working Load Limit (t)*	Wire Rope Size (in)	Weight Each (lb)	Dimensions (in)										
					E	F	G	L	M	P	Q	R	S	T	V
3-S-6	297066	3	1/2	9.32	11.50	4.84	2.75	1.53	1.41	1.44	.75	1.03	1.12	1.25	1.12
5-S-6	297262	5	5/8	14.24	13.09	6.28	3.00	1.94	1.69	1.81	1.00	1.28	1.25	1.25	1.44
8-S-6	297468	8-1/2	3/4	32.00	16.07	7.54	4.00	2.46	2.22	2.25	1.25	1.41	1.62	1.50	1.62
10-S-6	297663	10	7/8	45.50	19.12	8.34	4.50	2.59	2.41	2.59	1.69	1.69	2.75	1.88	1.94
15-S-6	297869	15	1	63.00	21.24	10.34	5.00	2.81	3.19	3.00	1.94	2.03	2.75	2.12	2.38
25-S-6	298163	25	-	135.00	27.53	13.62	6.00	3.44	3.62	3.66	2.25	2.31	3.88	2.38	3.00
35-S-6	298261	35	-	215.00	30.69	14.06	6.50	3.88	3.75	4.56	2.25	2.31	3.88	2.38	3.19
45-S-6	298369	45	-	270.00	35.69	15.44	7.00	4.75	4.25	5.06	2.50	2.53	4.00	3.00	3.25

*Individually Proof Tested to 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit.

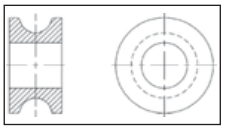
NOTE: For swivels larger than 45 metric tons, or designed to meet the requirements of demanding applications such as subsea applications, please contact the Crosby Engineered Solutions. For additional information concerning custom design products, contact:
In U.S.A. - Crosby's Engineered Solutions at 1-800-777-1555, Fax (918) 834-5035.
In Europe - N.V. Crosby Europe at +32 15 75 71 25.

Crosby® Angular Contact Bearing Swivels

Angular Contact Bearing Swivels

- Wide range of product available.
  - Capacity: 0.45 through 35 tons
  - Wire Rope Sizes: 1/8" through 1-1/2"
- Individually Proof Tested to 2 times the Working Load Limit with certification
- Design Factor of 5 to 1.
- Entire swivel is Zinc plated to resist corrosion.
- Angular contact bearings maximize efficienc , reliability and service life of swivel and extend the life of the wire rope.
- Designed for high rotation speed: Lower torque required to initiate rotation.
- Hook models utilize genuine Crosby hooks which are forged alloy steel, Quenched and Tempered and contain patented QUIC-CHECK® markings.
- Each swivel 8.5 tons and larger, is furnished with a pressure lubrication fitting
- For swivels larger than those listed, contact Engineered Solutions at 1-800-777-1555.

Wire Rope Size (in)	AS-20 Stock No.
1/2	1038200
5/8	1038209
3/4	1038218
7/8 - 1	1038227
1-1/8 - 1-1/4	1038236
1-1/2	1038245

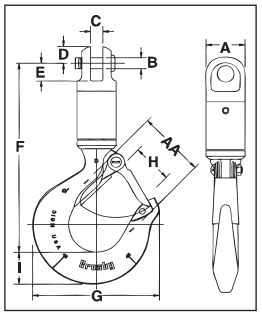


AS-20 Thimble Insert

- When terminating with wire rope clips, we recommend the use of the Thimble Insert. The result will be extended wire rope life.
- Allows standard swivel to be used in application requiring a thimble fitting.
- For use with our Bullet Style (AS-7) and Jaw Style (AS-1, AS-2, AS-3 & AS-4) swivels.
- Machined from carbon steel. Zinc plated.

Load Rated® QUIC-CHECK® CE

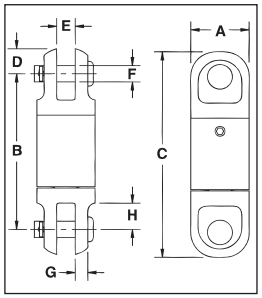
AS-1 Jaw & Hook



AS-1 JAW & HOOK				Dimensions (in)									Deformation Indicator AA	Replacement Latch Kit Stock No.
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-1 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G	H	I		
.45	1/8	1016001	.7	.88	.25	.25	.38	.41	4.32	2.86	.93	.73	1.50	1096325
.75	1/4	1016010	1.5	1.31	.38	.31	.44	.56	5.44	3.16	.97	.84	1.50	1096374
1.5	3/8	1016025	2.3	1.63	.50	.53	.69	.78	6.35	4.00	1.16	1.14	1.50	1096374
3.0	1/2	1016026	6.5	2.00	.75	.75	.94	1.19	8.69	4.84	1.41	1.44	2.50	1096374
5.0	5/8	1016040	12.9	2.50	.88	1.00	1.13	1.53	10.71	6.28	1.69	1.82	3.00	1096562
8.5	3/4	1016045	26.4	3.00	1.19	1.56	1.34	2.09	13.65	8.34	2.41	2.60	4.00	1096657
10	7/8	1016056	53.0	4.00	1.50	1.75	1.75	3.50	17.95	10.34	3.19	3.00	5.00	1096704
15	1	1016064	53.0	4.00	1.50	1.75	1.75	3.50	17.95	10.34	3.19	3.00	5.00	1096704
25	1-1/4	1016075	97.0	5.00	2.00	2.00	2.38	3.69	20.88	13.62	3.25	3.62	6.50	1090161
35	1-1/2	1016082	140.0	5.00	2.00	2.00	2.38	3.69	24.00	14.06	3.00	4.56	7.00	1090189

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

AS-2 Jaw & Jaw



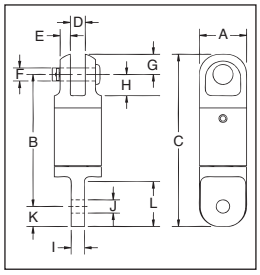
AS-2 JAW & JAW				Dimensions (in)							
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-2 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G	H
.45	1/8	1016103	.4	.88	2.38	3.13	.38	.25	.25	.19	.41
.75	1/4	1016114	.9	1.31	3.56	4.44	.44	.31	.38	.22	.56
1.5	3/8	1016122	2.0	1.63	4.06	5.44	.69	.50	.50	.28	.78
3.0	1/2	1016131	4.9	2.00	6.25	8.13	.94	.75	.75	.38	1.19
5.0	5/8	1016139	9.6	2.50	7.75	10.63	1.13	1.00	.88	.53	1.53
8.5	3/4	1016148	15.8	3.00	9.63	12.31	1.34	1.56	1.19	.56	2.09
10	7/8	1016157	40.0	4.00	14.00	17.50	1.75	1.75	1.50	.81	3.50
15	1	1016166	40.0	4.00	14.00	17.50	1.75	1.75	1.50	.81	3.50
25	1-1/4	1016175	78.0	5.00	15.94	20.69	2.38	2.00	2.00	1.13	3.69
35	1-1/2	1016184	78.0	5.00	15.94	20.69	2.38	2.00	2.00	1.13	3.69

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

NOTE: For swivels larger than 35 tons, or designed to meet the requirements of demanding applications such as subsea applications, please contact the Crosby Engineered Solutions. For additional information concerning custom design products, contact:
In U.S.A. - Crosby's Engineered Solutions at 1-800-777-1555, Fax (918) 834-5035.
In Europe - N.V. Crosby Europe at +32 15 75 71 25.

Crosby® Angular Contact Bearing Swivels

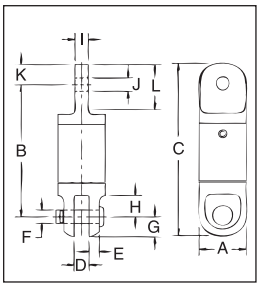
AS-3 Jaw & Eye



AS-3 JAW & EYE				Dimensions (in)											
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-3 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G	H	I	J	K	L
.45	1/8	1016205	.3	.88	2.50	3.25	.25	.19	.25	.38	.41	.25	.25	.38	.84
.75	1/4	1016216	.9	1.31	3.69	4.56	.31	.22	.38	.44	.56	.31	.38	.44	.88
1.5	3/8	1016224	1.9	1.63	4.19	5.44	.50	.28	.50	.69	.78	.50	.66	.63	1.38
3.0	1/2	1016232	4.6	2.00	6.19	8.13	.75	.38	.75	.94	1.19	.75	.91	1.00	2.00
5.0	5/8	1016243	9.1	2.50	7.88	10.19	1.00	.53	.88	1.13	1.50	1.00	1.25	1.19	2.63
8.5	3/4	1016250	15.6	3.00	9.50	12.25	1.56	.56	1.25	1.34	2.09	1.25	1.41	1.50	3.13
10	7/8	1016259	39.0	4.00	13.75	17.31	1.75	.81	1.50	1.75	3.50	1.72	1.63	1.81	4.69
15	1	1016268	40.0	4.00	13.44	17.31	1.75	.81	1.50	1.75	3.50	2.00	2.00	2.13	4.69
25	1-1/4	1016277	78.0	5.00	16.00	20.75	2.00	1.13	2.00	2.38	3.69	2.25	2.31	2.38	5.25
35	1-1/2	1016286	78.0	5.00	16.00	20.75	2.00	1.13	2.00	2.38	3.69	2.25	2.31	2.38	5.2

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

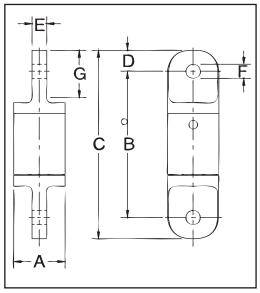
AS-4 Eye & Jaw



AS-4 EYE & JAW				Dimensions (in)											
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-4 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G	H	I	J	K	L
.45	1/8	1016306	.3	.88	2.50	3.25	.25	.19	.25	.38	.41	.25	.25	.38	.81
.75	1/4	1016314	.9	1.31	3.63	4.56	.31	.22	.38	.44	.56	.31	.38	.44	.88
1.5	3/8	1016325	1.9	1.63	4.19	5.50	.50	.28	.50	.69	.78	.50	.66	.63	1.34
3.0	1/2	1016332	4.6	2.00	6.19	8.13	.75	.38	.75	.94	1.19	.75	.91	1.00	2.00
5.0	5/8	1016343	9.1	2.50	7.88	10.19	1.00	.53	.88	1.13	1.44	1.00	1.25	1.19	2.63
8.5	3/4	1016352	15.7	3.00	9.44	12.25	1.56	.56	1.19	1.34	2.09	1.25	1.41	1.50	3.13
10	7/8	1016361	39.0	4.00	14.13	17.75	1.75	.81	1.50	1.75	3.50	1.72	1.66	1.81	4.69
15	1	1016370	40.0	4.00	13.81	17.75	1.75	.81	1.50	1.75	3.50	2.00	2.03	2.13	4.69
25	1-1/4	1016375	75.0	5.00	15.94	20.75	2.00	1.13	2.00	2.38	3.69	2.25	2.31	2.38	5.25
35	1-1/2	1016379	75.0	5.00	15.94	20.75	2.00	1.13	2.00	2.38	3.69	2.25	2.31	2.38	5.25

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

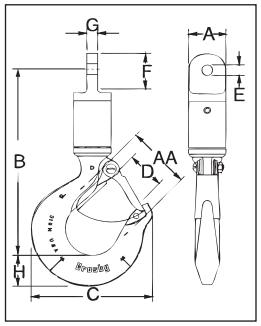
AS-5 Eye & Eye



AS-5 EYE & EYE				Dimensions (in)						
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-5 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G
.45	1/8	1016409	.3	.88	2.63	3.38	.38	.25	.25	.81
.75	1/4	1016418	.9	1.31	3.75	4.63	.44	.31	.38	.88
1.5	3/8	1016427	1.8	1.63	4.31	5.56	.63	.50	.66	1.34
3.0	1/2	1016436	4.3	2.00	6.13	8.13	1.00	.75	.91	2.00
5.0	5/8	1016445	8.6	2.50	7.75	10.63	1.19	1.00	1.25	2.63
8.5	3/4	1016454	15.4	3.00	9.31	12.31	1.50	1.25	1.41	3.13
10	7/8	1016463	37.0	4.00	13.88	17.50	1.81	1.72	1.63	4.69
15	1	1016472	39.0	4.00	13.25	17.50	2.13	2.00	2.13	4.69
25	1-1/4	1016481	72.0	5.00	16.00	20.75	2.38	2.25	2.31	5.25
35	1-1/2	1016490	72.0	5.00	16.00	20.75	2.38	2.25	2.31	5.25

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

AS-6 Eye & Hook



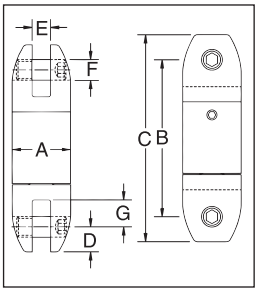
AS-6 EYE & HOOK				Dimensions (in)								Deformation Indicator AA	Replacement Latch Kit Stock No.
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-6 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G	H		
.45	1/8	1016502	.7	.88	4.38	2.86	.93	.25	.81	.25	.73	1.50	1096325
.75	1/4	1016513	1.5	1.31	5.56	3.16	.97	.38	.88	.31	.84	1.50	1096374
1.5	3/8	1016520	2.9	1.63	6.22	4.00	1.16	.66	1.34	.50	1.14	1.50	1096374
3.0	1/2	1016529	6.2	2.00	8.63	4.84	1.41	.91	2.00	.75	1.44	2.50	1096374
5.0	5/8	1016538	12.4	2.50	10.77	6.28	1.69	1.25	2.63	1.00	1.82	3.00	1096562
8.5	3/4	1016547	23.5	3.00	13.52	8.34	2.41	1.40	3.13	1.25	2.60	4.00	1096657
10	7/8	1016556	52.0	4.00	18.08	10.34	3.19	1.66	4.69	1.72	3.00	5.00	1096704
15	1	1016565	53.0	4.00	17.64	10.34	3.19	2.03	4.69	2.00	3.00	5.00	1096704
25	1-1/4	1016574	94.0	5.00	20.88	13.62	3.25	2.34	5.25	2.25	3.62	6.50	1090161
35	1-1/2	1016583	138.0	5.00	24.00	14.06	3.00	2.34	5.25	2.25	4.56	7.00	1090189

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

NOTE: For swivels larger than 35 tons, or designed to meet the requirements of demanding applications such as subsea applications, please contact the Crosby Engineered Solutions. For additional information concerning custom design products, contact:
In U.S.A. - Crosby's Engineered Solutions at 1-800-777-1555, Fax (918) 834-5035.
In Europe - N.V. Crosby Europe at +32 15 75 71 25.

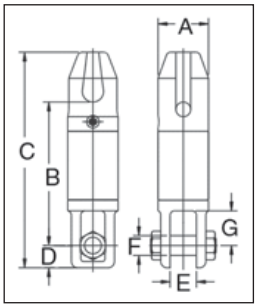
Crosby® Angular Contact Bearing Swivels

AS-7 Bullet Style Jaw & Jaw



AS-7 BULLET STYLE JAW & JAW				Dimensions (in)						
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-7 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G
.45	1/8	1016604	.4	.88	2.38	3.13	.38	.25	.31	.40
.75	1/4	1016611	1.1	1.31	3.56	4.44	.44	.31	.38	.56
1.5	3/8	1016622	1.8	1.63	4.06	5.19	.56	.50	.44	.81
3.0	1/2	1016631	3.8	2.00	5.44	7.06	.81	.75	.63	.94
5.0	5/8	1016640	8.0	2.50	7.75	10.06	1.13	1.00	.88	1.56
8.5	3/4	1016649	14.5	3.00	9.88	12.38	1.25	1.31	1.00	2.13
10	7/8	1016652	40.0	4.00	13.13	16.75	1.75	1.75	1.50	3.25
15	1	1016658	40.0	4.00	13.13	16.75	1.75	1.75	1.50	3.25
25	1-1/4	1016662	84.0	5.00	15.94	20.75	2.38	2.00	2.00	3.69
35	1-1/2	1016667	84.0	5.00	15.94	20.75	2.38	2.00	2.00	3.69

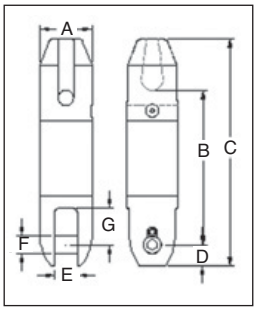
*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.



AS-11 Thimble & Jaw

AS-11 THIMBLE & JAW				Dimensions (in)						
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-11 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G
8.5	3/4	1017020	18.0	3.00	8.66	13.00	1.34	1.56	1.19	2.09
15	1	1017029	42.0	4.00	11.66	17.53	1.75	1.78	1.50	3.50

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

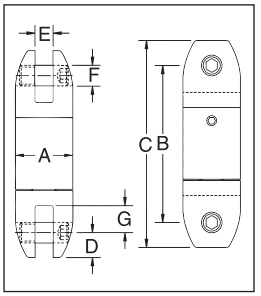


AS-14 Thimble & Bullet

AS-14 THIMBLE & BULLET				Dimensions (in)						
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-14 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G
8.5	3/4	1017255	20.0	3.00	9.00	13.25	1.25	1.31	1.00	2.13
15	1	1017258	40.0	4.00	11.50	17.38	1.75	1.75	1.50	3.25
25	1-1/4	1017261	81.0	5.00	14.31	21.19	2.38	2.00	2.00	3.69

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

AS-17 Bullet Style Jaw & Jaw Slurry Swivel



The Crosby AS-17 Slurry Swivel is a zinc plated Bullet Type Swivel (AS-7), designed with two rubber lip style seals about the shaft. The threaded cap is sealed with a silicone sealant and secured with a set screw. The swivels are provided with an Alemite grease fitting for easy lubrication

AS-17 BULLET JAW & SLURRY SWIVEL				Dimensions (in)						
Working Load Limit (Tons)*	Wire Rope Size (in)	AS-17 Stock No.	Weight Each (lb)	A	B	C	D	E	F	G
8.5	3/4	8013342	14.5	3.00	10.13	12.63	1.25	1.31	1.00	2.13
15	1	8013343	40.0	4.00	13.50	17.00	1.75	1.75	1.50	3.25
25	1-1/4	8013376	84.0	5.00	16.16	20.92	2.38	2.00	2.00	3.69
35	1-1/2	8013344	84.0	5.00	16.16	20.92	2.38	2.00	2.00	3.69
45	-	2016585	150.0	6.00	20.25	26.25	3.00	2.53	2.25	2.75

*Ultimate Load is 5 times the Working Load Limit. Individually Proof Tested to 2 times the Working Load Limit.

For swivels larger than 35 tons, or for swivels designed to meet the requirements of demanding applications (i.e., subsea applications), please contact the Crosby Special Engineered Products Department. **For additional information concerning custom design products, contact:**
U.S.A., Crosby's Special Engineered Products Group at 1-800-777-1555, Fax (918) 834-5035
Europe, N.V. Europe at +32 15 75 71 25.

S-4320 HOOK LATCH KIT

WARNINGS & APPLICATION INSTRUCTIONS

(For Crosby 319N, 320N, and 322N, S-1327, and A-1339 Hooks)

Important Safety Information - Read & Follow

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load (See Figures 1 & 2).
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch (See Figures 3 & 4).
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.
- When using latch for personnel lifting, select proper cotter pin (See Figure 5). See Step 7 below for proper installation instructions.
  - Never reuse a bent cotter pin.
  - Never use a cotter pin with a smaller diameter or different length than recommended in Figure 5.
  - Never use a nail, a welding rod, wire, etc., in place of recommended cotter pin.
  - Always ensure cotter pin is bent so as not to interfere with sling operation.
  - Periodically inspect cotter pin for corrosion and general adequacy.

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for Personnel Hoisting by Crane or Derricks. A Crosby S-319N, S-320N, S-322N, S-1327, and A-1339 Hook with an S-4320 latch attached (when secured with cotter pin) may be used for lifting personnel.**
- **An S-4320 Latch is only to be used with a Crosby S-319N, S-320N, S-322N, S-1327, and A-1339 Hook.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

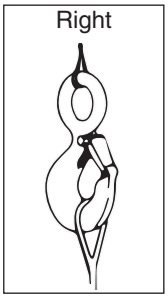


Figure 1

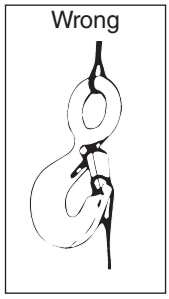


Figure 2

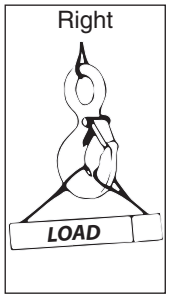


Figure 3

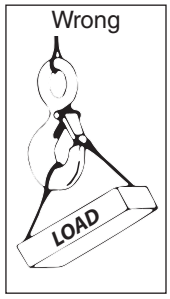


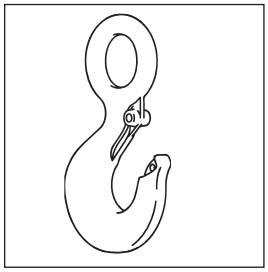
Figure 4

Figure 5

Hook Identification Code	Recommended Cotter Pin Dimensions (in)	
	Diameter	Length
D	1/8	3/4
F	1/8	3/4
G	1/8	1
H	3/16	1-1/4
I	1/4	1-1/2
J	5/16	2
K	5/16	2
L	3/8	3
N	3/8	3

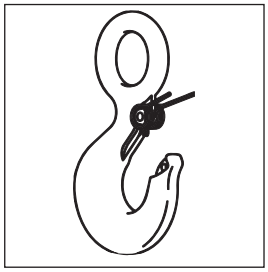
† The current SS-4055 latch kit and the PL latch will not fit new 319N, 320N, or 322N hooks. They will continue to be offered in both styles to service existing hooks. Important – The new S4320 latch kit will not fit the old 319, 320, or 322 hooks.

IMPORTANT – Instructions for Assembling S-4320 Latch on Crosby 320N Hooks



Step 1

1. Place hook at approximately a 45 degree angle with the cam up.

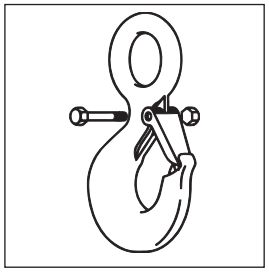


Step 2

2. Position coils of spring over cam with legs of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.

Step 3

3. Position latch to side of hook points. Slide latch onto spring legs between lockplate and latch body until latch is partially over hook cam. Then depress latch and spring until latch clears point of hook.

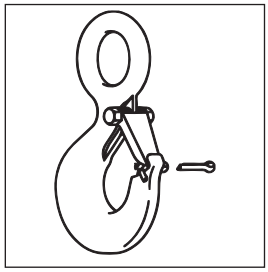


Steps 4, 5, & 6

4. Line up holes in latch with hook cam.

5. Insert bolt through latch, spring, and cam.

6. Tighten self-locking nut on one end of bolt.



Step 7 – For Personnel Lifting

7. With latch in closed position and rigging resting in bowl of hook, insert cotter pin through hook tip and secure by bending prongs.

Crosby® HOIST HOOKS

WARNINGS & APPLICATION INSTRUCTIONS

S-3319 Series Positioning Only | S-319 Series | S-3316 Series | L-320N Series | L-322 Series Positioning Only | L-3322B

⚠WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for personnel hoisting by cranes and derricks, and OSHA Directive CPL 2-1.36 - Interim Inspection Procedures During Communication Tower Construction Activities. A Crosby 319, L-320 or L-322 hook with a PL latch attached and secured with a bolt, nut and cotter pin (or toggle pin) may be used for lifting personnel. A Crosby 319N, L-320N or L-322N hook with an S-4320 latch attached and secured with cotter pin or bolt, nut and pin; or a PL-N latch attached and secured with toggle pin may be used for lifting personnel. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.**
- **See OSHA Directive CPL 2-1.36 - Crosby does not recommend the placement of lanyards directly into the positive locking Crosby hook when hoisting personnel. Crosby requires that all suspension systems (vertical lifelines / lanyard) shall be gathered at the positive locked load hook by use of a master link, or a bolt-type shackle secured with cotter pin.**
- **Threads may corrode and/or strip and drop the load.**
- **Remove securement nut to inspect or to replace L-322, S-3316, and S-3319 bearing washers (2).**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Never apply more force than the hook's assigned Working Load Limit (WLL) rating.**
- **Read and understand these instructions before using hook.**

QUIC-CHECK® Hoist hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features:

1. **Deformation Indicators –** Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload. **To check**, use a measuring device (i.e., tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet criteria, the hook should be inspected further for possible damage.

QUIC-CHECK®

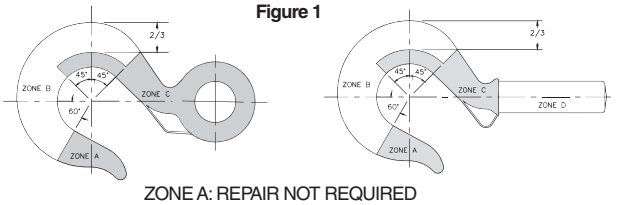
2. **Angle Indicators** – Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

A visual periodic inspection for cracks, nicks, wear, gouges and deformation as part of a comprehensive documented inspection program, should be conducted by trained personnel in compliance with the schedule in ASME B30.10.

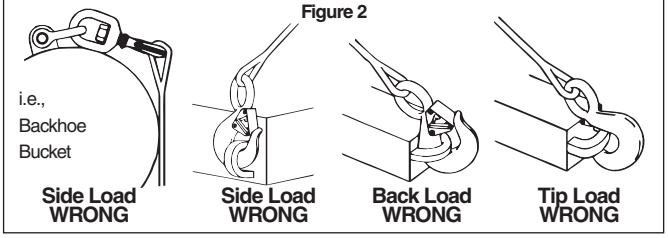
- For hooks used in frequent load cycles or pulsating loads, the hook and threads should be periodically inspected by Magnetic Particle or Dye Penetrant. (Note: Some disassembly may be required.)
- Never use a hook whose throat opening has been increased, or whose tip has been bent more than 10 degrees out of plane from the hook body, or is in any other way distorted or bent. Note: A latch will not work properly on a hook with a bent or worn tip.
- Never use a hook that is worn beyond the limits shown in Figure 1.
- Remove from service any hook with a crack, nick, or gouge. Hooks with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the hook, provided that the reduced dimension is within the limits shown in Figure 1. Contact Crosby Engineering to evaluate any crack.
- Never repair, alter, rework, or reshape a hook by welding, heating, burning, or bending.
- Never side load, back load, or tip load a hook.(Side loading, back loading and tip loading are conditions that damage and reduce the capacity of the hook). (See Figure 2.)
- Eye hooks, shank hooks and swivel hooks are designed to be used with wire rope or chain. Efficiency of assembly may be reduced when used with synthetic material.
- Do not swivel the L-322, S-3316, or S-3319 swivel hooks while supporting a load. These hooks are distinguishable by hex nuts and flat washers.
- The L-3322 swivel hook is designed to rotate under load. The L-3322 is distinguishable from the L-322 by use of a round nut designed to shield bearing.
- The frequency of bearing lubrication on the L-3322 depends upon frequency and period of product use as well as environmental conditions, which are contingent upon the user's good judgment.
- The use of a latch may be mandatory by regulations or safety codes; e.g., OSHA, MSHA, ANSI/ASME B30, Insurance, etc. (Note: When using latches, see instructions in "Understanding The Crosby Group Warnings" for further information.)
- Always make sure the hook supports the load. (See Figure 3). The latch must never support the load (See Figure 4).
- When multileg slings are placed in the base (bowl/saddle) of the hook, the maximum included angle between sling legs shall be 90 deg. The maximum sling leg angle with respect to the hook centerline for any rigging arrangement shall be 45 degrees. A collector ring, such as a link or shackle, should be used to maintain in-line load when more than two legs are placed in a hook or for angles greater than 45 degrees with respect to hook centerline. When more than two legs are placed in the hook bunching of the legs shall be avoided.
- See ASME B30.10 "Hooks" for additional information.

Figure 1



ZONE A: REPAIR NOT REQUIRED
ZONE B: 10% OF ORIGINAL DIMENSION
ZONE C: 5% OF ORIGINAL DIMENSION
ZONE: D: SEE MINIMUM THREAD SIZE CHART

Figure 2



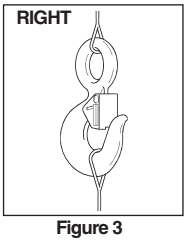


Figure 3

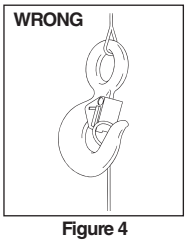


Figure 4

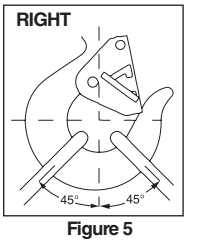
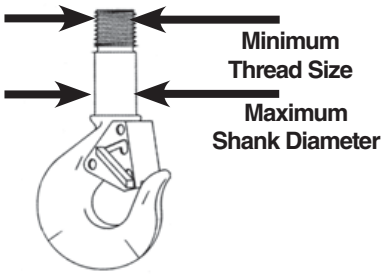


Figure 5

READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE USING HOOKS
IMPORTANT – BASIC MACHINING AND THREAD INFORMATION

- Wrong thread and/or shank size can cause stripping and loss of load.
- The maximum diameter is the largest diameter, after cleanup, that could be expected after allowing for straightness, pits, etc.
- All threads must be Class 2 or better.
- The minimum thread length engaged in the nut should not be less than one (1) thread diameter. Install a properly sized retention device to secure the nut to the hook shank after the nut is properly adjusted at assembly. Nut retention devices such as set screws or roll pins are suitable for applications using anti-friction thrust bearings or bronze thrust washers. If the hook is intended for other applications that introduce a higher torque into the nut, a more substantial retaining device may be required.
- Hook shanks are not intended to be swaged on wire rope or rod. See S319SWG for hook designed for swaging.
- Hook shanks are not intended to be drilled (length of shank) and internally threaded.
- Crosby can not assume responsibility for, (A) the quality of machining, (B) the type of application, or (C) the means of attachment to the power source or load.
- Consult the Crosby Hook Identification & Working Load Limit Chart (See below) for the minimum thread size for assigned Working Load Limits (WLL).†
- Remove from service any Hook which has threads corroded more than 20% of the nut engaged length.



CROSBY HOOK IDENTIFICATION & WORKING LOAD LIMIT CHART†

Hook Identification			Working Load Limit (t)					Frame Size	Maximum Shank Diameter after Machining (mm)	Minimum Thread Size	
319C 319CN L-320C L-320CN L-322C L-322CN	319AN L-320A L-320AN L-322A L-322AN 3319 L-3322B	319BN	319C 319CN L-320C L-320CN L-322C L-322CN	319A 319AN L-320A L-320AN L-322A L-322AN L-3322B	319BN	S-3319	S-3316			319C 319CN (Carbon)	319A 319AN (Alloy)
DC	DA	DB	.75	1	.5	—	—	D	13.5	M12 x 1.25	M12 x 1.25
FC	FA	FB	1	1.5	.6	—	.45	F	15.7	M16 x 2	M16 x 2
GC	GA	GB	1.5	2	1	—	—	G	16.8	M16 x 2	M16 x 2
HC	HA	HB	2	3	1.4	1.63	.91	H	20.6	M18 x 1.5	M18 x 1.5
IC	IA	IB	3	*4.5 / 5	2.0	2.5	—	I	26.2	M22 x 2.5	M22 x 2.5
JC	JA	JB	5	7	3.5	4.5	—	J	32.3	M27 x 2	M27 x 2
KC	KA	KB	7.5	11	5.0	—	—	K	38.6	M30 x 1.5	M30 x 1.5
LC	LA	LB	10	15	6.5	—	—	L	44.5	M40 x 1.5	M40 x 1.5
NC	NA	NB	15	22	10	—	—	N	50.8	M50 x 1.5	M50 x 1.5
OC	OA	—	20	30	—	—	—	O	63.5	M56 x 2	M56 x 2
PC	PA	—	25	37	—	—	—	P	88.9	M70 x 1.5	M70 x 1.5
SC	SA	—	30	45	—	—	—	S	88.9	M75 x 1.5	M75 x 1.5
TC	TA	—	40	60	—	—	—	T	101.6	M85 x 2	M90 x 2
UC	UA	—	50	75	—	—	—	U	114.3	M95 x 2	M100 x 2
—	WA	—	—	100	—	—	—	W	155.4	—	M120 x 2
—	XA	—	—	150	—	—	—	X	162.1	—	M140 x 2
—	YA	—	—	200	—	—	—	Y	177.8	—	M160 x 2
—	ZA	—	—	300	—	—	—	Z	218.9	—	M190 x 2

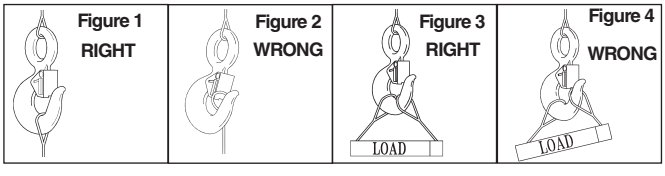
* 319AN, L-320AN, L-3322 and L-322AN are rated at 5 tons.

† Working Load Limit - The maximum mass or force which the product is authorized to support in general service when the pull is applied in-line, unless noted otherwise, with respect to the centerline of the product. This term is used interchangeably with the following terms: 1. WLL, 2. Rated Load Value, 3. SWL, 4. Safe Working Load, 5. Resultant Safe Working Load.

Warning and Application Instructions For Crosby® Hook Latch Kit

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load (See Figures 1 & 2).
- When placing two (2) sling legs in hooks, make sure the angle between the legs is less the 90° and if the hook or load is tilted, nothing bears against the bottom of this latch (See Figures 3 & 4).
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.



⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for personnel hoisting for cranes and derricks. Only a Crosby or McKissick hook with a PL Latch attached and secured with bolt, nut and cotter (or Crosby Toggle Pin) or a Crosby hook with a S-4320 Latch attached and secured with a cotter pin, or a Crosby SHUR-LOC® hook in the locked position may be used for any personnel hoisting. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

McKissick® HOIST HOOKS

WARNINGS & APPLICATION INSTRUCTIONS


L-320N Series


S-319 Series


L-322 Series Positioning Only


L-3322B Series

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for personnel hoisting by cranes and derricks, and OSHA Directive CPL 2-1.36 - Interim Inspection Procedures During Communication Tower Construction Activities. A Crosby 319, L-320 or L-322 hook with a PL latch attached and secured with a bolt, nut and cotter pin (or toggle pin) may be used for lifting personnel. A Crosby 319N, L-320N or L-322N hook with an S-4320 latch attached and secured with cotter pin or bolt, nut and pin; or a PL-N latch attached and secured with toggle pin may be used for lifting personnel. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.**
- **See OSHA Directive CPL 2-1.36 - Crosby does not recommend the placement of lanyards directly into the positive locking Crosby hook when hoisting personnel. Crosby requires that all suspension systems (vertical lifelines / lanyard) shall be gathered at the positive locked load hook by use of a master link, or a bolt-type shackle secured with cotter pin.**
- **Threads or Split-Nut may corrode and/or strip and drop the load.**
- **Remove securement nut to inspect or to replace S-322 and S-3319 bearing washers (2).**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Never apply more force than the hook's assigned Working Load Limit (WLL) rating.**
- **Read and understand these instructions before using hook.**

QUIC-CHECK® Hoist hooks incorporate markings forged into the product which address two (2) QUIC-CHECK® features:
Deformation Indicators - Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload.

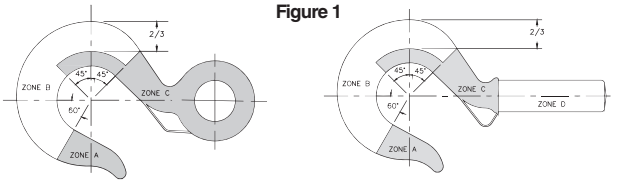
QUIC-CHECK®

To check, use a measuring device (i.e., tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet criteria, the hook should be inspected further for possible damage.
Angle Indicators - Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

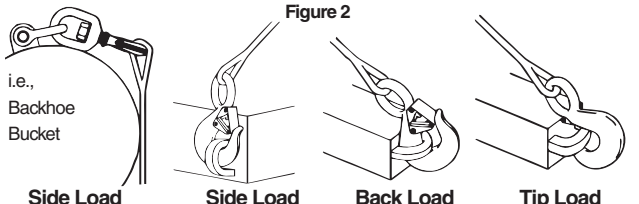
- A visual periodic inspection for cracks, nicks, wear, gouges and deformation as part of a comprehensive documented inspection program, should be conducted by trained personnel in compliance with the schedule in ASME B30.10.
- For hooks used in frequent load cycles or pulsating loads, the hook and threads should be periodically inspected by Magnetic Particle or Dye Penetrant. (Note: Some disassembly may be required.)
- Never use a hook whose throat opening has been increased, or whose tip has been bent more than 10 degrees out of plane from the hook body, or is in any other way distorted or bent. **Note: A latch will not work properly on a hook with a bent or worn tip.**
- Never use a hook that is worn beyond the limits shown in Figure 1.
- Remove from service any hook with a crack, nick, or gouge. Hooks with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the hook, provided that the reduced dimension is within the limits shown in Figure 1. Contact Crosby Engineering to evaluate any crack.
- Remove from service any hook which has threads corroded more than 20% of the nut engagement length.
- Never repair, alter, rework, or reshape a hook by welding, heating, burning, or bending.
- Never side load, back load, or tip load a hook.(Side loading, back loading and tip loading are conditions that damage and reduce the capacity of the hook). (See Figure 2.)
- Eye hooks, shank hooks and swivel hooks are designed to be used with wire rope or chain. Efficiency of assembly may be reduced when used with synthetic material.
- Do not swivel the L-322 or S-3319 swivel hooks while supporting a load. These hooks are distinguishable by hex nuts and flat washers.
- The L-3322 swivel hook is designed to rotate under load. The L-3322 is distinguishable from the L-322 by use of a round nut designed to shield bearing.
- The frequency of bearing lubrication on the L-3322 depends upon frequency and period of product use as well as environmental conditions, which are contingent upon the user's good judgment.
- The use of a latch may be mandatory by regulations or safety codes; e.g., OSHA, MSHA, ASME B30, Insurance, etc.. (Note: When using latches, see instructions in "Understanding: The Crosby Group Warnings" for further information.)
- Always make sure the hook supports the load (See Figure 3). The latch must never support the load (See Figure 4).
- When multileg slings are placed in the base (bowl/saddle) of the hook, the maximum included angle between sling legs shall be 90 deg. The maximum sling leg angle with respect to the hook centerline for any rigging arrangement shall be 45 degrees. A collector ring, such as a link or shackle, should be used to maintain in-line load when more than two legs are placed in a hook or for angles greater than 45 degrees with respect to hook centerline. When more than two legs are placed in the hook bunching of the legs shall be avoided.
- Reference Crosby's Hoist Hook Warning and Application Information for basic machining and minimum thread size.
- See ASME B30.10 "Hooks" for additional information.

Figure 1



ZONE A: REPAIR NOT REQUIRED
ZONE B: 10% OF ORIGINAL DIMENSION
ZONE C: 5% OF ORIGINAL DIMENSION
ZONE: D: SEE MINIMUM THREAD SIZE CHART

Figure 2



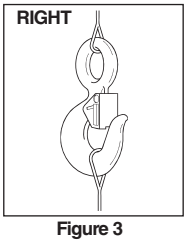


Figure 3

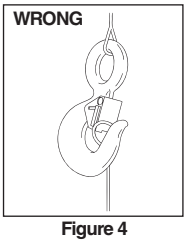


Figure 4

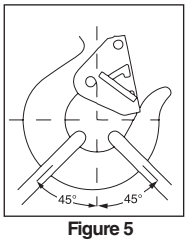


Figure 5

Removal of Split-Nut assembly (Reference Figure A):

- Remove vinyl cover.
- Remove spring retaining ring.
- Slide steel keeper ring off split nuts **⚠(CAUTION: Removal of keeper ring will allow split nut halves to fall from hook shank).**
- Remove split nut halves.

Inspection of split nut assembly and hook shank interface area (Reference Figure B):

- Inspect hook shank and split nut for signs of deformation on and adjacent to the load bearing surfaces.
- Inspect outside corner of hook shank load bearing surface to verify the corner is sharp.
- Verify retaining ring groove will allow proper seating of the retaining ring.
- Inspect retaining ring for corrosion or deformation. Remove from service any retaining ring that has excessive corrosion or is deformed.
- Use fine grit emery or crocus cloth to remove any corrosion from machined hook shank and split nut assembly.
- Follow inspection recommendations listed in this document under IMPORTANT SAFETY INFORMATION.
- If corrosion is present on the nut / shank interface area and deterioration or degradation of the metal components is evident, further inspection is required.
  - The use of a feeler gauge is required to properly measure the maximum allowable gap width between the split nut inside diameters and shank outside diameters.
  - With one split nut half seated against the hook shank, push the nut to one side and measure the maximum gaps as shown in Figure B. The hook should be measured in four places, 90-degrees apart.
  - Repeat above inspection procedure with other half of split nut.
  - Remove from service any hook and split nut assembly that exhibits a gap greater than 0.030".

Installation of split nut assembly (Reference Figure A):

- Coat hook shank and inside of split nut with an anti-seize compound or heavy grease.
- Install split nut halves onto shank. The flanged bottom of the split nut should be closest to the hook shoulder.
- Slide steel keeper ring over split nut halves. Verify the split nut halves properly seat against the load bearing surface of the hook shank and the steel keeper ring seats against the flange of the split nut.
- Install retaining ring onto split nut halves. Verify the retaining ring seats properly in the retaining ring groove on the outside diameter of the split nut assembly.
- Install vinyl cover over split nut and hook shank assembly.
- Verify all fasteners are correctly installed.
- Always use Genuine Crosby replacement parts.

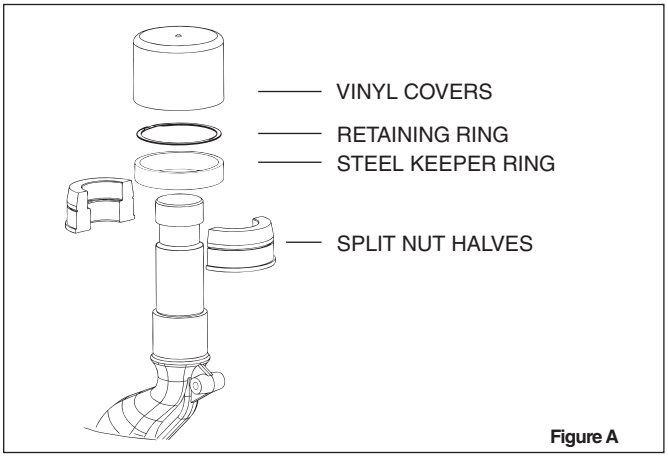


Figure A

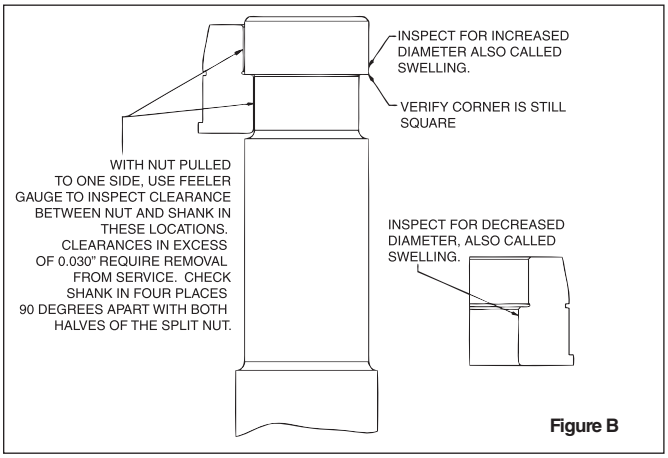
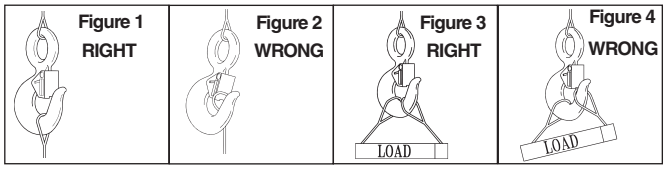


Figure B

Warning and Application Instructions For McKISSICK® Hook Latch Kit

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load. (See Figures 1 & 2)
- When placing two (2) sling legs in hooks, make sure the angle between the legs is less the 90° and if the hook or load is tilted, nothing bears against the bottom of this latch. (See Figures 3 & 4)
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.



⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for personnel hoisting for cranes and derricks. Only a Crosby or McKissick hook with a PL Latch attached and secured with bolt, nut and cotter (or Crosby Toggle Pin) or a Crosby hook with a S-4320 Latch attached and secured with a cotter pin, or a Crosby SHUR-LOC® hook in the locked position may be used for any personnel hoisting. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Do not use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

Crosby® / BULLARD® GOLDEN GATE® HOOKS

WARNINGS & APPLICATION INSTRUCTIONS

QUIC-CHECK® Hoist Hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features: **Deformation Indicators** – Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload.

To check, use a measuring device (i.e., tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet criteria, the hook should be inspected further for possible damage.

Angle Indicators – Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- A visual periodic inspection for cracks, nicks, wear, gouges and deformation as part of a comprehensive documented inspection program, should be conducted by trained personnel in compliance with the schedule in ANSI B 30.10.
- For hooks used in frequent load cycles or pulsating loads, the hook and threads should be periodically inspected by Magnetic Particle or Dye Penetrant. (Note: Some disassembly may be required.)
- See WARNING box and Figure 6 for special instructions for securing the nut to the shank at assembly.
- Never use a hook whose throat opening has been increased, or whose tip has been bent more than 10 degrees out of plane from the hook body, or is in any other way distorted or bent. **Note: A gate will not work properly on a hook with a bent or worn tip.**
- Manual - closing gates must be completely closed for the lock to work.
- Never use a hook that is worn beyond the limits shown in Figure 1.
- Remove from service any hook with a crack, nick, or gouge. Hooks with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the hook, provided that the reduced dimension is within the limits shown in Figure 1. Contact Crosby Engineering to evaluate any crack.
- Never repair, alter, rework, or reshape a hook by welding, heating, burning, or bending.
- Never side load, back load, or tip load a hook. Side loading, back loading and tip loading are conditions that damage and reduce the capacity of the hook (See Figure 2).
- Eye hooks, shank hooks and swivel hooks are designed to be used with wire rope or chain. Efficiency of assembly may be reduced when used with synthetic material.

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Before using, inspect the hook and gate daily to ensure it is in proper operating condition.**
- **Failure to properly insert the pin could result in the load falling.**
- **All Golden Gate® Hooks with threaded shanks require a pin to secure the nut to the shank. This pin prevents the nut from backing off or unscrewing from the threads and causing the load to drop.**
- **If the pin and nut are removed from the shank to replace any hook components, the pin and nut must be installed before use.**

  NOTE: 1. If a solid pin was used, the old pin "must"be discarded and a new pin inserted to secure the nut to the shank.

  2. If a spring pin (coil type) was used, it may be reused provided that the spring pin and / or the drill hole was not damaged.
- **The gate is not a load-bearing device. Do not allow the sling or other loads to bear against the gate.**
- **Threads may corrode and / or strip and drop the load.**
- **Hands, fingers and body should be kept away from the hook and load whenever possible.**
- **Never apply more force than the hook's assigned Working Load Limit (WLL) rating.**
- **Read and understand these instructions before using.**

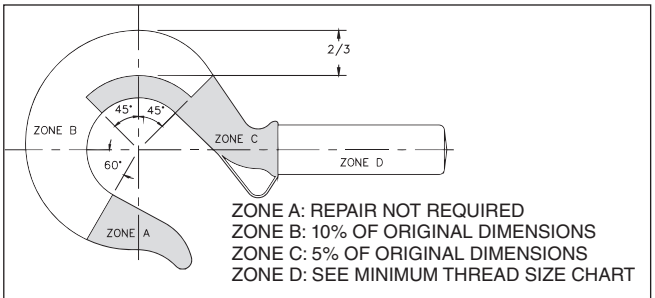


Figure 1

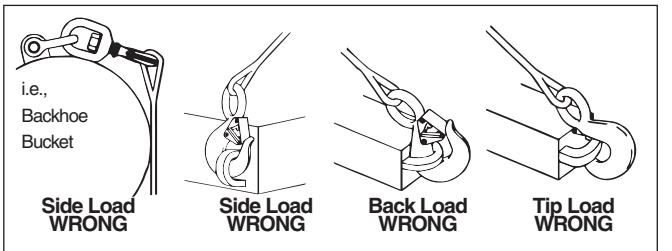
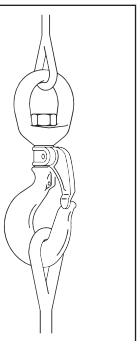
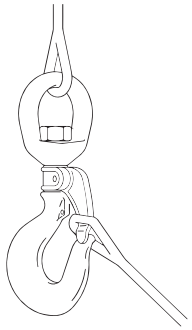


Figure 2

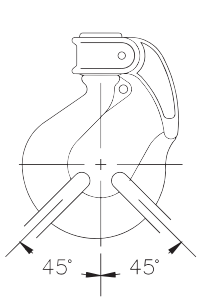
- The use of a latch may be mandatory by regulations or safety codes: e.g., OSHA, MSHA, ASME B30, Insurance etc.
- Always make sure the hook supports the load (See Figure 3). The gate must never support the load (See Figure 4).
- When multileg slings are placed in the base (bowl/saddle) of the hook, the maximum included angle between sling legs shall be 90 deg. The maximum sling leg angle with respect to the hook centerline for any rigging arrangement shall be 45 degrees. A collector ring, such as a link or shackle, should be used to maintain in-line load when more than two legs are placed in a hook or for angles greater than 45 degrees with respect to hook centerline. When more than two legs are placed in the hook bunching of the legs shall be avoided.
- See ASME B30.10 "Hooks" for additional information.
- If any of the following conditions exist, remove hook from service immediately and repair with genuine Crosby / Bullard Golden Gate® hook parts or replace the hook.
  - The gate does not lock in the closed position.
  - The gate is worn, deformed, inoperative, or fails to bridge the hook throat opening.
  - Load pins or bolts in the chain connectors are worn or bent.
- When hook is used to support a hoist, the weight of the hoist must be deducted from the assigned hook Working Load Limit.
- The rated capacity of chain connector hook assemblies must equal or exceed the capacity of the hoist.



RIGHT
Figure 3



WRONG
Figure 4



RIGHT
Figure 5

Important – Basic Machining and Thread Information – Read and Follow

- Wrong thread and/or shank size can cause stripping and loss of load.
- The maximum diameter is the largest diameter that will fit into the gate.
- All threads must be Class 2 or better.
- The minimum thread length engaged in the nut should not be less than one (1) thread diameter.
- All nuts must be secured to the shank by cross drilling the nut and threaded shank and inserting the appropriate coil type spring pin (See WARNING box and Figure 6 for special instructions).
- Coil type spring pin must be as long as the distance across the nut flats or diameter (See Figure 6).
- Consult the Crosby / Bullard Golden Gate® Hook Identification and Working Load Limit Chart (See below) for the coil type spring pin diameter.
- Remove any hook from service that requires a larger coil type spring than that shown in the chart below.
- Hook shanks are not intended to be swaged on wire rope or rod.
- Hook shanks are not intended to be drilled and internally threaded.
- Crosby cannot assume responsibility for:
  (A) the quality of machining,
  (B) the type of application, or
  (C) the means of attachment to the power source or load.

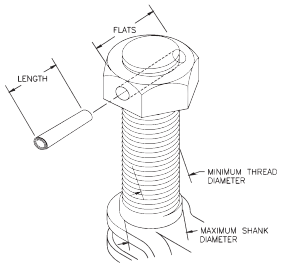


Figure 6

- Consult the Crosby/Bullard Golden Gate® Hook Identification & Working Load Limit Chart (below) for the minimum thread size for assigned Working Load Limits (WLL). +
- Remove from service any hook which has threads corroded more than 20% of the nut engaged length.

Crosby® / Bullard Golden Gate® Hook Identification and Working Load Limit Chart

Hook / Gate Size	Working Load Limit ** + (Tons)	Maximum Shank Diameter (in)	Minimum Thread Size	Spring* Pin Size (in)	Drilled Hole Size (in)	Hook / Gate Size	Working Load Limit (Tons)	Maximum Shank Diameter (in)	Minimum Thread Size	Spring* Pin Size (in)	Drilled Hole Size (in)
1	.5	—	—	—	—	11	9.2	1.497	1-1/2 - 6 UNC	5/16	.308 / .319
2	1.0	.498	1/2 - 13 UNC	1/8	.124 / .129	12	12.3	1.622	1-5/8 - 5-1/2 UNC	5/16	.308 / .319
3	1.4	.559	9/16 - 12 UNC	1/8	.124 / .129	13	15.0	1.747	1-3/4 - 5 UNC	3/8	.370 / .383
4	1.7	.623	5/8 - 11 UNC	1/8	.124 / .129	14	18.5	1.997	2 - 4-1/2 UNC	3/8	.370 / .383
5	2.3	.747	3/4 - 10 UNC	5/32	.155 / .160	16	24.7	2.747	2-3/4 - 4 UNC	1/2	.493 / .510
6	4.0	.872	7/8 - 9 UNC	3/16	.185 / .192	16-A	33.0	2.747	2-3/4 - 4 UNC	1/2	.493 / .510
7	4.2	.997	1 - 8 UNC	3/16	.185 / .192	17	49.5	3.996	4 - 4 UNC	3/4	.743 / .760
8	5.5	1.122	1-1/8 - 7 UNC	1/4	.247 / .256	17-A	66.0	3.996	4 - 4 UNC	3/4	.743 / .760
9	7.2	1.247	1-1/4 - 7 UNC	1/4	.247 / .256	—	—	—	—	—	—

* Heavy Duty Coil Type Spring Pin.

** Minimum ultimate strength is 4 times the Working Load Limit.

+ Working Load Limit - The maximum mass or force which the product is authorized to support in general service when the pull is applied in-line, unless noted otherwise with respect to centerline of the product. This term is used interchangeably with the following terms: 1. WLL, 2. Rated Load Value, 3. SWL, 4. Safe Working Load, 5. Resultant Safe Working Load. Ultimate Load is 4 times the Working Load.

Crosby® WELD-ON HOOKS

WARNINGS & APPLICATION INSTRUCTIONS

BH-313

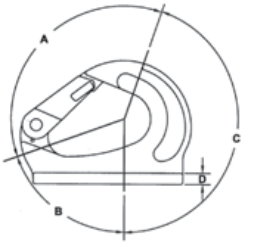
IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- Weld-On hooks are to only be welded to a structure, equipment or machinery in an area (load point) approved by the original equipment manufacturer. (Some manufacturers may not approve the modification of their product.)
- For hydraulic excavator lift capacity rating, refer to SAE standard J1097.
- A visual periodic inspection for cracks, nicks, wear, gouges and deformation as part of a comprehensive documented inspection program, should be conducted by trained personnel.
- A visual periodic inspection of the weld should be performed. Check the weld visually, or use a suitable NDE method if required.
- As excavator buckets are not specifically designed for constant use with excavator hooks, we recommend regular and very thorough inspection of the excavator bucket welding area to ensure no distortion has been made to the work area.
- Never use a hook whose throat opening has been increased, or whose tip has been bent more than 10 degrees out of plane from the hook body, or is in any other way distorted or bent.

  Note: A latch will not work properly on a hook with a bent or worn tip.
- Never use a hook that is worn beyond the limits shown in Figure 1.
- Remove from service any hook with a crack, nick, or gouge. Hooks with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the hook, provided that the reduced dimension is within the limits shown in Figure 1. Contact Crosby Engineering to evaluate any crack.
- Never repair, alter, rework, or reshape a hook by welding, heating, burning, or bending.
- Always make sure the hook supports the load. The load is to be applied within the range shown in Figure 2. The latch must never support the load (See Figure 3).
- Never side load (See Figure 4), or tip load (See Figure 5) a hook.
- The use of a latch may be mandatory by regulations or safety codes; e.g., OSHA, MSHA, ANSI/ASME B30, Insurance, etc. (Note: When using latches, see instructions in “Understanding: The Crosby Group Warnings” for further information).
- Ensure latch functions properly. Use only genuine Crosby replacement parts.
- Never attach more than one sling directly in hook. For collecting two or more slings to the hook, use proper hardware.
- See ASME B30.10 “Hooks” for additional information.

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Never apply more force than the hook’s assigned Working Load Limit (WLL) rating.**
- **Do not use Crosby weld-on hook for personnel hoisting. See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B).**
- **Read and understand these instructions before welding on, or using hook.**



ZONE A: REPAIR NOT REQUIRED (LATCH EXCLUDED)
ZONE B: 10% OF ORIGINAL DIMENSION
ZONE C: 5% OF ORIGINAL DIMENSION
ZONE D: ONLY AREA ALLOWED TO BE WELDED

Figure 1

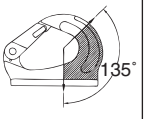
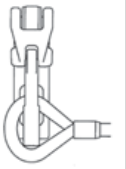


Figure 2

WRONG Figure 3



WRONG Figure 4

WRONG Figure 5

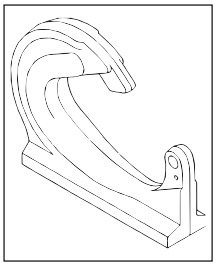
- The strength of the weld-on hook depends upon the method of attachment. Extreme care must be used in choice of support as well as during the attachment process.
- The support structure that the hook is attached to must be of suitable size, composition and quality to support the anticipated loads of all operating positions. The required support structure material thickness for a given application is dependent on variables such as unsupported length and material strength, and should be determined by a qualified individual. Minimum plate thickness required to support the welds are shown in Table 1.

TABLE 1

Working Load Limit (t)	Minimum Plate Thickness (in)	Minimum Fillet Size All Around (in)	Minimum Plate Thickness (mm)	Minimum Fillet Size All Around (mm)
1	3/16	3/16	5	5
2	1/4	1/4	6	6
3	5/16	5/16	8	8
4	5/16	5/16	8	8
5	3/8	3/8	10	10
8	1/2	1/2	13	13
10	1/2	1/2	13	13

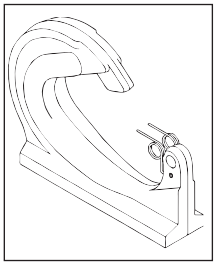
- Position the hook to ensure that the load is applied in the plane of the hook, and the load is supported by the hook in all operating positions. Ensure that the hook does not interfere with the operation of other mechanisms or cause pinch points.
- Ensure that the maximum gap between hook base and support does not exceed 1/8". Modify the support structure if required to reduce gap.
- When welding hook to carbon or low alloy steels (less than .40% carbon), the following welding recommendations are to be followed. For welding hook to other grades of steel, a qualified weld procedure must be developed. Crosby hook material is AISI 8622 modified.
- Welding is to be performed by a qualified welder using qualified procedure in accordance with American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) requirements.
- Welding electrode to be in accordance with AWS A5.4 E-312-16. Observe the electrode manufacturer's recommendations.
- Welding preheat range outlined below.
  - – Minimum preheat temperature: 212° F (100° C)
  - – Maximum temperature: 716° F (380° C)
- Before welding, the surface to be welded on, including the hook and support structure, must be clean and free from rust, grease and paint.
- Fillet weld leg size should be of minimum shown in Table 1, page 148. Weld profiles to be in accordance with AWS. Weld size is measured by length of leg.
- Welding should be carried out completely around base in a minimum of two passes to ensure adequate root penetration at the base of the hook.
- Do not rapidly cool the weld.
- After welding, a visual inspection of the weld should be performed prior to painting.
- No cracks, pitting, inclusions, notches or undercuts are allowed. if doubt exists, use a suitable NDE method, such as Magnetic Particle or Liquid Penetrant to verify.
- If repair is required on weld, grind out defect and re-weld using original qualified procedure.
- After welding, the assembly should be proof tested before putting into service.

Important – Instructions for Assembling S-4313 Latch on BH-313 Weld-On Hook



Step 1

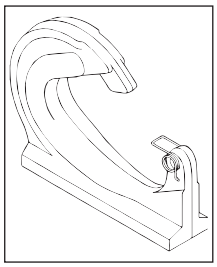
1. Place hook flat on work surface as shown.



Step 2

Hook sizes 1 to 3 tons

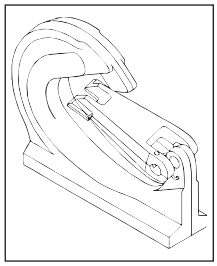
2. Position coils of spring over hook cam, with legs of spring pointing towards hook tip and coil of spring positioned down as shown.



Step 2A

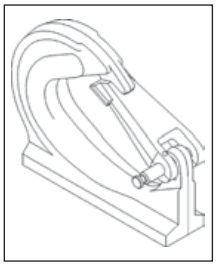
Hook sizes 4 to 10 tons

2A. Spread legs of spring and place into drilled hole. Position coils of spring over hook cam, with end of spring pointing toward hook tip as shown.



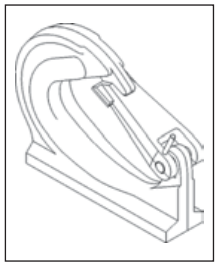
Step 3

3. Position latch over spring, aligning latch ears and spring coil. On pin hole side of latch, insert non-grooved end of latch pin through hole in latch and through spring until contact is made with hook body (a small punch may be required for proper alignment).



Step 4

4. Align holes in latch with holes in cam of hook. Continue pushing the pin through hook, spring and latch.

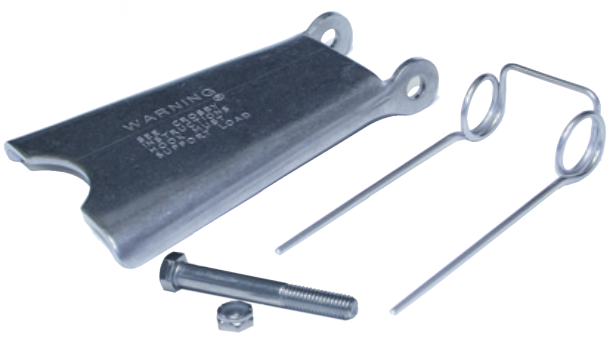


Step 5

5. Insert roll-pin into latch, driving it in with a hammer, while ensuring that latch pin groove is in alignment.

Crosby® HOOK LATCH KIT

WARNINGS & APPLICATION INSTRUCTIONS



SS-4055

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1962.1501(g)(4)(iv)(B) A hook and this style latch must not be used for lifting personnel.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Read and understand these instructions before using hook and latch.**

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load (See Figures 1 & 2).
- When placing two (2) sling legs in hook, make sure the angle between legs is small enough and the legs are not tilted so that nothing bears against the bottom of the latch (See Figures 3 & 4).
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.

RIGHT

Figure 1

WRONG

Figure 2

RIGHT

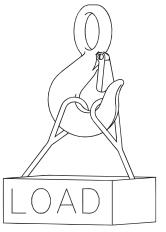


Figure 3

WRONG

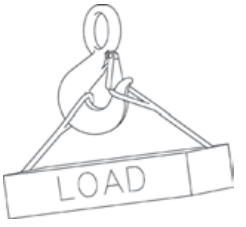
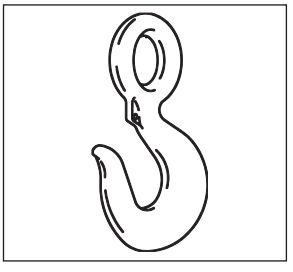


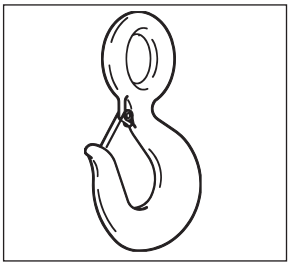
Figure 4

IMPORTANT – Instructions for Assembling Model SS-4055 Latch on Crosby Hooks



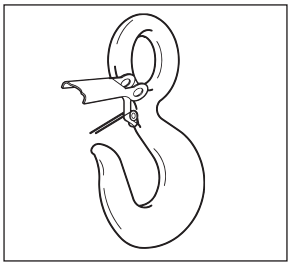
Step 1

1. Place hook at approximately a 45 degree angle with the cam up.



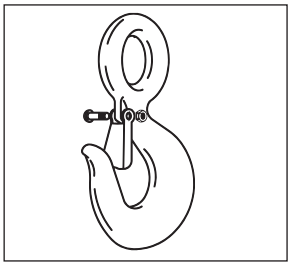
Step 2

2. Position coils of spring over cam with tines of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.



Step 3

3. Position latch over tines of spring with ears partially over hook cam. Swing latch to one side of hook, point and depress latch and spring until latch clears point of hook.



Steps 4, 5, & 6

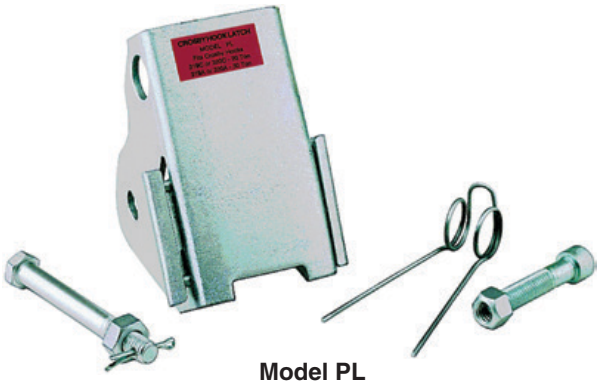
4. Line up holes in latch with hook cam.

5. Insert bolt through latch, spring, and cam.

6. Tighten self-locking nut on one end of bolt.

Crosby® MODEL PL HOOK LATCH KIT

WARNINGS & APPLICATION INSTRUCTIONS



Model PL

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for Personnel Hoisting by Cranes or Derricks. A Crosby or McKissick Hook with a positive Locked PL or S-4320 Latch may be used to Lift Personnel.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

(Pat. USA & Canada)

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load (See Figures 1 & 2).
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch (See Figures 3 & 4).
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.

Figure 1

Figure 2

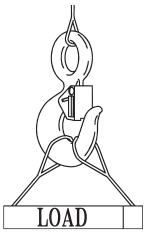


Figure 3

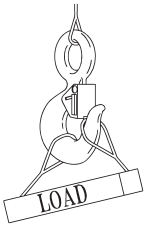
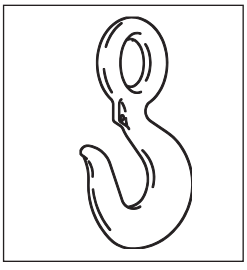


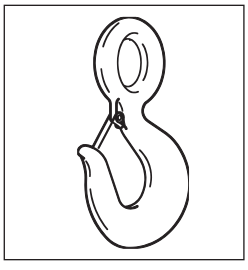
Figure 4

IMPORTANT - Instructions for Assembling Model PL Latch on Crosby or McKissick Hooks



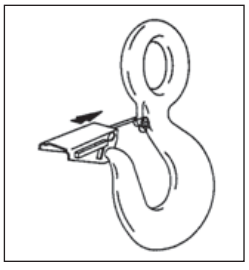
Step 1

1. Place hook at approximately a 45 degree angle with the cam up.



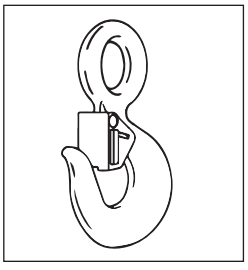
Step 2

2. Position coils of spring over cam with legs of spring pointing toward point of hook and loop of spring positioned down and lying against the hook.



Step 3

3. Position latch to side of hook points. Slide latch onto spring legs between lockplate and latch body until latch is partially over hook cam. Then depress latch and spring until latch clears point of hook.

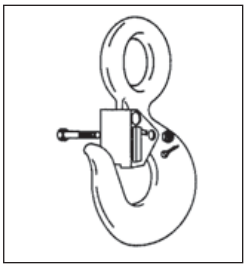


Steps 4, 5, & 6

4. Line up holes in latch with hook cam.

5. Insert bolt through latch, spring, and cam.

6. Tighten self-locking nut on one end of bolt.

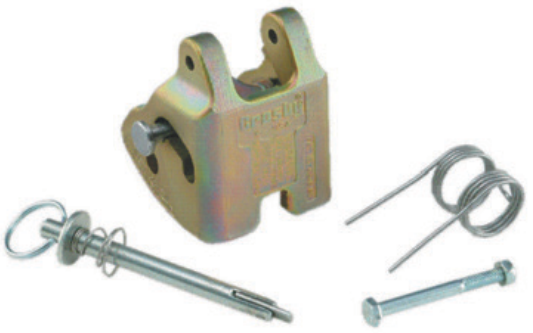


Step 7 — For Personnel Lifting

7. With latch in closed position and rigging resting in bowl of hook, insert bolt through latch and secure with nut and cotter pin. When bolt, nut and cotter pin are not being used, store them in a designated place upon the personnel platform.

Crosby® MODEL PL-N/O HOOK LATCH KIT

WARNINGS & APPLICATION INSTRUCTIONS



Model PL-N/O

⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.1431(g)(1)(i)(A) and 1926.1501(g)(4)(iv)(B) for Personnel Hoisting by Crane or Derricks. A Crosby or McKissick Hook with a Positive Locked PL-N/O or S-4320 Latch may be used to lift personnel.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **DO NOT use this latch in applications requiring non-sparking.**
- **Read and understand these instructions before using hook and latch.**

IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load (See Figures 1 & 2).
- When placing two (2) sling legs in hook, make sure the angle between the legs is less than 90° and if the hook or load is tilted, nothing bears against the bottom of this latch (See Figures 3 & 4).
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.

RIGHT

Figure 1

WRONG

Figure 2

RIGHT

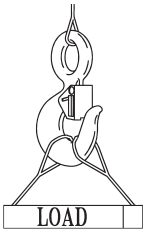


Figure 3

WRONG

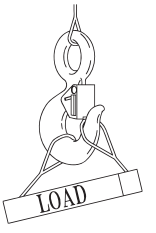
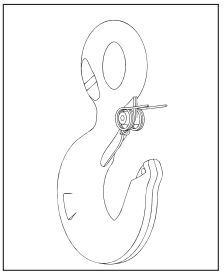


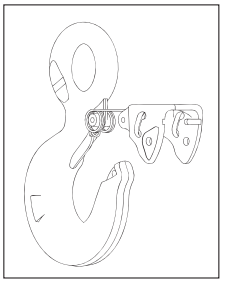
Figure 4

IMPORTANT - Instructions for Assembling Model PL-N/O Latch on Crosby or McKissick Hooks



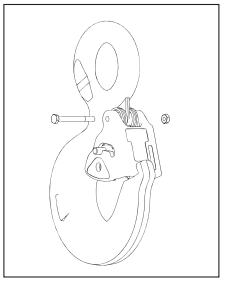
Step 1

1. Place hook in upright position. Position coils of spring over cam with legs of spring pointing toward tip of hook, and loop of spring positioned down and lying against the hook.



Step 2

2. Slip the latch over the spring until the two spring legs are positioned into the grooves located on the inside of the latch housing (legs of spring should fit between the gate and the housing).



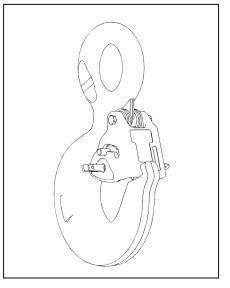
Step 3 4, 5, & 6

3. Slide latch housing up the spring legs until latch clears hook tip.

4. Resting latch on interlocking hook tip, line up holes in latch with hook cam.

5. Insert bolt through latch spring & cam.

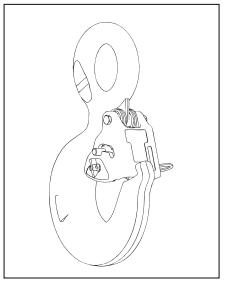
6. Tighten self-locking nut on one end of bolt.



Step 7, 8 - For Personnel Lifting

7. Rigging should be resting in bowl of hook, with latch in closed position and gate locked.

8. Insert toggle lock pin through hole and depress spring until toggle clears hole on other side of latch.



Step 9 - For Personnel Lifting

9. Rotate toggle 90 degrees to secure pin (ensure toggle is in closed position as shown).

Crosby® ROV HOOKS

WARNINGS & APPLICATION INSTRUCTIONS

QUIC-CHECK® Hoist hooks incorporate markings forged into the product which address two (2) **QUIC-CHECK®** features:

QUIC-CHECK®

Deformation Indicators – Two strategically placed marks, one just below the shank or eye and the other on the hook tip, which allows for a **QUIC-CHECK®** measurement to determine if the throat opening has changed, thus indicating abuse or overload.

To check, use a measuring device (i.e., tape measure) to measure the distance between the marks. The marks should align to either an inch or half-inch increment on the measuring device. If the measurement does not meet criteria, the hook should be inspected further for possible damage.

Angle Indicators – Indicates the maximum included angle which is allowed between two (2) sling legs in the hook. These indicators also provide the opportunity to approximate other included angles between two sling legs.

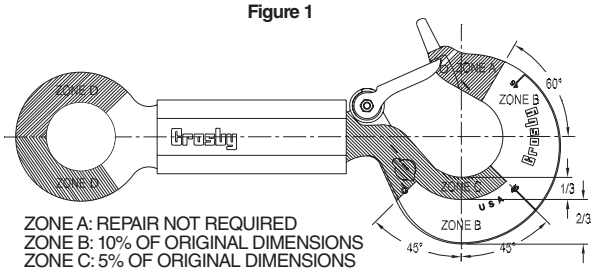
IMPORTANT SAFETY INFORMATION - READ & FOLLOW

- A visual periodic inspection for cracks, nicks, wear, gouges and deformation as part of a comprehensive documented inspection program, should be conducted by trained personnel in compliance with the schedule in ASME B30.10 and/or regulations governing your industry or jurisdiction.
- For ROV hooks used in frequent load cycles or pulsating loads, the ROV hook components (hoist hook, eye bolt and hexagon body) and their threads should be periodically inspected by Magnetic Particle or Dye Penetrant (Disassembly will be required).
- Disassemble the eye bolt and shank hook from hexagon body (sizes up to and including 31.5t WLL). This requires removing the 2 spiral pins and unscrewing the eye bolt and hoist hook.
- Always use new spiral pins when re-assembling the ROV Hook.
- After reassembly, Crosby recommends a proof test equal to 2 times the ROV hook's stated WLL.
- Never use a hoist hook whose throat opening has been increased, or whose tip has been bent more than 10 degrees out of plane from the hook body, or is in any other way distorted or bent. Note: A latch will not work properly on a hook with a bent or worn tip.
- Never use a hoist hook that is worn beyond the limits shown in Figure 1.
- Remove from service any hoist hook with a crack, nick or gouge. Hoist hooks with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the hook, provided that the reduced dimension is within the limits shown in Figure 1. Contact Crosby Engineering to evaluate any cracks.
- Never repair, alter, rework, or reshape an ROV hook by welding, heating, burning, or bending.
- Remove from service a hoist hook or eye bolt which has threads corroded more than 20% of the hexagon body engagement length.
- Never side load, back load, or tip load the hoist hook, eye bolt or hexagon body. (Side loading, back loading and tip loading are conditions that damage and reduce the capacity of the ROV hook). (See Figure 2.)
- The use of a latch may be mandatory by regulations or safety codes. Follow the regulations governing your industry or jurisdiction.

⚠ WARNING

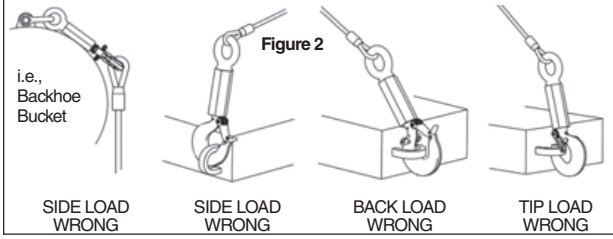
- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Read and understand these instructions before using hook and latch.**

Figure 1



ZONE A: REPAIR NOT REQUIRED
ZONE B: 10% OF ORIGINAL DIMENSIONS
ZONE C: 5% OF ORIGINAL DIMENSIONS
ZONE D: 5% OF ORIGINAL DIMENSIONS

Figure 2



- Always make sure the hook supports the load. (See Figure 3 on page 156). The latch must never support the load (See Figure 4 on page 156).
- When multileg slings are placed in the base (bowl/saddle) of the hook, the maximum included angle between sling legs shall be 90 deg. The maximum sling leg angle with respect to the hook centerline for any rigging arrangement shall be 45 degrees. A collector ring, such as a link or shackle, should be used to maintain in-line load when more than two legs are placed in a hook or for angles greater than 45 degrees with respect to hook centerline. When more than two legs are placed in the hook bunching of the legs shall be avoided.
- See ASME B30.10 "Hooks" for additional information.
- Remove from service any eye bolt with a crack, nick or gouge. Eye bolt with a nick or gouge shall be repaired by grinding lengthwise, following the contour of the eye bolt, provided that the reduced dimension is no greater than 5% of original dimension. Contact Crosby Engineering to evaluate any cracks.

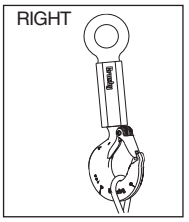


Figure 3

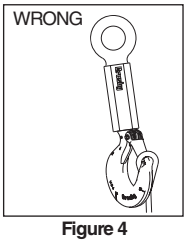


Figure 4

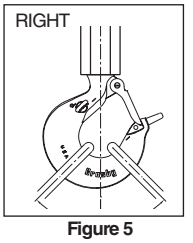


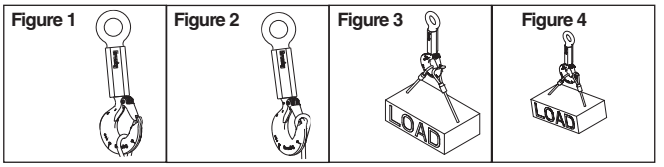
Figure 5

- Never use an eye bolt if eye or shank is bent or elongated.
- Remove from service the hexagon body if internal threads are corroded beyond 20% of the eye bolt or hoist hook shank's threaded engagement lengths.
- Hexagon body with nicks or gouges may be repaired by grinding lengthwise.
- Inspect the spiral pin holes on the hoist hook, hexagon body and eye bolt. At assembly, the spiral pin must engage with a press fit.

Warning and Application Instructions for Crosby® Hook Latch

Important Safety Information – Read & Follow

- Always inspect hook and latch before using.
- Never use a latch that is distorted or bent.
- Always make sure spring will force the latch against the tip of the hook.
- Always make sure hook supports the load. The latch must never support the load. (See Figures 1 & 2)
- When placing two (2) sling legs in hooks, make sure the angle between the legs is less the 90° and if the hook or load is tilted, nothing bears against the bottom of this latch. (See Figures 3 & 4)
- Latches are intended to retain loose sling or devices under slack conditions.
- Latches are not intended to be an anti-fouling device.



⚠ WARNING

- **Loads may disengage from hook if proper procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **See OSHA Rule 1926.550 (g)(4)(iv)(B) for personnel hoisting for cranes and derricks. Only a Crosby or McKissick hook with a PL Latch attached and secured with bolt, nut and cotter (or Crosby Toggle Pin) or a Crosby hook with a S-4320 Latch attached and secured with a cotter pin, or a Crosby SHUR-LOC® hook in the locked position may be used for any personnel hoisting. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.**
- **Hook must always support the load. The load must never be supported by the latch.**
- **Read and understand these instructions before using hook and latch.**