



SHACKLES

With Product Warning and Application Information



G-209

Crosby®

"There is No Equal"

The Market Leader: Yesterday Today and Tomorrow

G-2130

Shackles

DESIGN

The theoretical reserve capability of carbon shackles should be as a minimum 5 to 1, and alloy shackles a minimum of 5 to 1*. 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 shackles is the selection of proper steel to support fatigue, ductility and impact properties.

THE COMPETITION

Ask: *What is the Working Load Limit and design factor for shackles?*

Ask: *Is deformation upon overloading a critical consideration in their design?*

Ask: *Do they jeopardize other properties by having hardness high in order to increase working load or design factor?*

Crosby®

Crosby carbon shackles have the highest design factor (6 to 1) in the industry. All of Crosby's design factors are documented. Crosby purchases only special bar forging quality steel with cleanliness and guaranteed harden ability. All material chemistry is independently verified prior to manufacturing. The design of Crosby shackles assures that strength, ductility and fatigue properties are met.

Load Rated®

CLOSED DIE FORGED

The proper performance of premium shackles depends on good manufacturing techniques that include proper forging and accurate machining. Closed die forging of shackles assures clear lettering, superior grain flow, and consistent dimensional accuracy. A closed die forged bow allows for an increased cross section that, when coupled with quench and tempering, enhances strength and ductility. Closed die bow forgings combined with close tolerance pin holes assures good fatigue life. Close pin-to-hole tolerance has been proven to be critical for good fatigue life, particularly with screw pin shackles.

THE COMPETITION

Ask: *Are their shackles closed die forged with close tolerance pin holes?*

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

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

Many forge bows utilize an open die forging process which allows for inconsistent dimensional accuracy and increased pin hole clearance, thus jeopardizing the fatigue life of the shackle in actual use.

Crosby®

Each shackle is closed die forged. Closed die forging produces consistent dimensions. A closed die forged bow allows for an increased cross section that, when coupled with quench and tempering, enhances strength and ductility. Close tolerance holes and concentric pins with good surface finishes are provided by Crosby and are proven to provide improved fatigue life in actual use. Crosby shackles are fatigue rated as well as load rated. Close pin to hole tolerance has been proven to be critical for good fatigue life, particularly with screw pin shackles.

Fatigue Rated®

QUENCHED AND TEMPERED

Quench and tempering assures the uniformity of performance and maximizes the properties of the steel. This means that each shackle meets its rated strength and has required ductility, toughness, impact and fatigue properties. The requirements of your job demand this reliability and consistency. This quench and tempering process develops a tough material that reduces the risk of brittle, catastrophic failure. The shackle bow will deform if overloading occurs, giving warning before ultimate failure.

THE COMPETITION

Ask: *Are their bows and pins quenched and tempered?*

Ask: *If not, are they willing to accept the increased risk of inconsistency?*

Ask: *If not, why are they willing to accept inferior impact, toughness, and product deformation?*

Ask: *Why do many manufacturers not recommend non-heat-treated shackles for overhead lifting?*

Ask: *Why do some recommend Quench and Tempering for alloy but not carbon grades?*

Many normalize the shackle bows. As a result, desired properties are not achieved. A few even provide bows in an "as-forged" condition, resulting in the possibility of brittle failure.

Crosby®

All Crosby shackle bows and pins are quenched and tempered, which enhances their performance under cold temperatures and adverse field conditions. Crosby's Quenched and Tempered carbon shackles are recommended for all critical applications including overhead lifting. Alloy shackles are recommended when specific dimensional requirements dictate a size that requires higher working load limits. Crosby's Quenched and Tempered shackles provide the tensile strength, ductility, impact and fatigue properties that are essential if they are to perform time after time in adverse conditions. These properties assure that the inspection criteria set forth by ANSI will effectively monitor the ability of the shackles to continue in service.

"QT"
QUENCHED & TEMPERED

IDENTIFICATION AND APPLICATION INFORMATION

The proper application of shackles requires that the correct type and size of shackle be used. The shackle's working load limit, its size, a traceability code and the manufacturer's name should be clearly and boldly marked in the bow. Traceability of the material chemistry and properties is essential for total confidence in the product. Material chemistry should be independently verified prior to manufacturing.

THE COMPETITION

Ask: *Do they have an active traceability system used in manufacturing?*

Ask: *Is the material chemistry independently verified?*

Ask: *What training support is provided?*

Crosby®

Crosby forges "Crosby" or "CG", the Working Load Limit, and the Product Identification Code (PIC) into each bow and "Crosby" or "CG", and the Product Identification Code (PIC) into each pin of its full line of screw pin, round pin, and bolt type anchor and chain shackles. Seminars conducted by Crosby provide training on the proper use of shackles. Crosby training packets, supplied free to attendees of Crosby seminars, provide training materials needed to explain the proper use of shackles.

QUIC-CHECK®

* G-2160 Wide Body Shackles are metric rated at 5 to 1. G-2140 Shackles, 200 ton and above, are rated at 4 to 1 in short tons.

Crosby® VALUE ADDED

- **Charpy impact properties:** Crosby's Quenched and Tempered shackles have enhanced impact properties for greater toughness at all temperatures. If requested at the time of order, Crosby can provide Charpy impact properties.
- **Fatigue properties:** Fatigue properties are available for 1/3 to 55 metric ton shackles. These Crosby shackles are fatigue rated to 20,000 cycles at 1-1/2 times the Working Load Limit.
- **Ductility properties:** Typical ductility properties are available for all sizes upon special request.
- **Hardness levels and material tensile strengths:** Typical values are available for all sizes of shackles, and actual values can be furnished if requested at the time of order.
- **Proof Testing:** If requested at the time of order, shackles can be proof tested with certificates.
- **Mag Certification:** If requested at the time of order, shackles can be Mag inspected with certificates.
- **Certification:** Certification to world class standards is available upon special request at the time of order; American Bureau of Shipping, Lloyds Register of Shipping, Det Norske Veritas, American Petroleum Institute, RINA, Nuclear Regulatory Commission, and several other worldwide standards.
- **Applications:** **Round Pin Shackles** can be used in tie down, towing, suspension or lifting applications where the load is strictly applied in-line. **Screw Pin Shackles** can be used in any application where a round pin shackle is used. In addition, screw pin shackles can be used for applications involving side-loading circumstances. Reduced working load limits are required for side-loading applications. **Bolt-Type Shackles** can be used in any application where round pin or screw pin shackles are used. In addition, they are recommended for permanent or long-term installations and where the load may slide on the shackle pin causing the pin to rotate.
- **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 shackles are available from Crosby. In addition, acceptance criteria and repair procedures for shackles are available.
- **QUIC-CHECK®:** Shackles incorporate two marking indicators forged into the shackle bow at 45° angles from vertical. These are utilized to quickly check the approximate angle of a two-legged hitch or check the angle of a single leg hitch. If the load is off vertical or side loaded a reduction in the working load limit of the shackle is required.

G-209

Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 2, except for those provisions required of the contractor.



G-213

Round pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 1, except for those provisions required of the contractor.



G-2130

Bolt-type anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 3, except for those provisions required of the contractor.



G-210

Screw pin chain shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 2, except for those provisions required of the contractor.



G-215

Round pin chain shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 1, except for those provisions required of the contractor.



G-2150

Bolt-type chain shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 3, except for those provisions required of the contractor.



**G-213/S-213**

G-213 Round pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 1, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 1/2 through 35 metric tons.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip galvanized or Self Colored.
- Fatigue rated.
- Shackles 25t and larger are **RFID EQUIPPED**.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules (31 ft-lbs.) at -20 degrees C (-4 degrees F).
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

**G-215/S-215**

G-215 Round pin chain shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 1, except for those provisions required of the contractor. For additional information, see page 476.

Load Rated Fatigue Rated



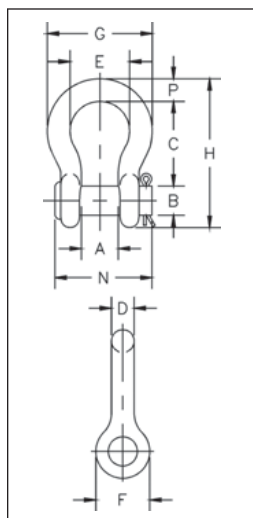
QUIC-CHECK®



MAXTOUGH®

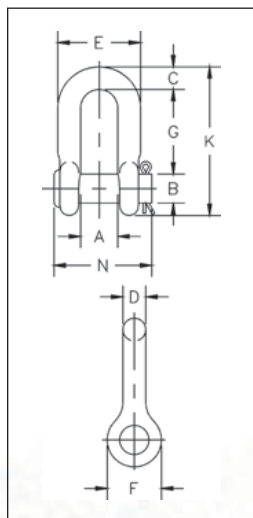
**SEE APPLICATION INFORMATION**

On Page 92 of the General Catalog
Para Español: www.thecrosbygroup.com

G-213 / S-213 Round Pin Anchor Shackles

Nominal Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
		G-213	S-213		A	B	C	D	E	F	G	H	N	P	C	A
1/4	1/2	1018017	1018026	.13	.47	.31	1.13	.25	.78	.61	1.28	1.84	1.34	.25	.06	.06
5/16	3/4	1018035	1018044	.18	.53	.38	1.22	.31	.84	.75	1.47	2.09	1.59	.31	.06	.06
3/8	1	1018053	1018062	.29	.66	.44	1.44	.38	1.03	.91	1.78	2.49	1.86	.38	.13	.06
7/16	1-1/2	1018071	1018080	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	2.13	.44	.13	.06
1/2	2	1018099	1018106	.71	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	2.38	.50	.13	.06
5/8	3-1/4	1018115	1018124	1.50	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	2.91	.69	.13	.06
3/4	4-3/4	1018133	1018142	2.32	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	3.44	.81	.25	.06
7/8	6-1/2	1018151	1018160	3.49	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	3.81	.97	.25	.06
1	8-1/2	1018179	1018188	5.00	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	4.53	1.06	.25	.06
1-1/8	9-1/2	1018197	1018204	6.97	1.81	1.25	4.25	1.13	2.91	2.69	5.16	7.47	5.13	1.25	.25	.06
1-1/4	12	1018213	1018222	9.75	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	5.50	1.38	.25	.06
1-3/8	13-1/2	1018231	1018240	13.25	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	6.13	1.50	.25	.13
1-1/2	17	1018259	1018268	17.25	2.38	1.63	5.75	1.54	3.88	3.63	6.88	10.00	6.50	1.62	.25	.13
1-3/4	25	1018277	1018286	29.46	2.88	2.00	7.00	1.84	5.00	4.19	8.86	12.34	7.75	2.25	.25	.13
2	35	1018295	1018302	45.75	3.25	2.25	7.75	2.08	5.75	4.81	9.97	13.68	8.75	2.40	.25	.13

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

G-215 / S-215 Round Pin Chain Shackles

Nominal Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
		G-215	S-215		A	B	C	D	E	F	G	K	N	G	A	
1/4	1/2	1018810	1018829	.10	.47	.31	.25	.25	.97	.62	.91	1.59	1.34	.06	.06	
5/16	3/4	1018838	1018847	.18	.53	.38	.31	.31	1.15	.75	1.07	1.91	1.63	.06	.06	
3/8	1	1018856	1018865	.25	.66	.44	.38	.38	1.42	.92	1.28	2.31	1.86	.13	.06	
7/16	1-1/2	1018874	1018883	.40	.75	.50	.44	.44	1.63	1.06	1.48	2.67	2.13	.13	.06	
1/2	2	1018892	1018909	.50	.81	.63	.50	.50	1.81	1.18	1.66	3.03	2.38	.13	.06	
5/8	3-1/4	1018918	1018927	1.21	1.06	.75	.63	.63	2.32	1.50	2.04	3.76	2.91	.13	.06	
3/4	4-3/4	1018936	1018945	2.00	1.25	.88	.81	.75	2.75	1.81	2.40	4.53	3.44	.25	.06	
7/8	6-1/2	1018954	1018963	3.28	1.44	1.00	.97	.88	3.20	2.10	2.86	5.33	3.81	.25	.06	
1	8-1/2	1018972	1018981	4.75	1.69	1.13	1.00	1.00	3.69	2.38	3.24	5.94	4.53	.25	.06	
1-1/8	9-1/2	1018990	1019007	6.30	1.81	1.25	1.25	1.13	4.07	2.68	3.61	6.78	5.13	.25	.06	
1-1/4	12	1019016	1019025	9.00	2.03	1.38	1.38	1.25	4.53	3.00	3.97	7.50	5.50	.25	.13	
1-3/8	13-1/2	1019034	1019043	12.00	2.25	1.50	1.50	1.38	5.01	3.31	4.43	8.28	6.13	.25	.13	
1-1/2	17	1019052	1019061	16.15	2.38	1.63	1.62	1.50	5.38	3.62	4.87	9.05	6.50	.25	.13	
1-3/4	25	1019070	1019089	29.96	2.88	2.00	2.12	1.75	6.38	4.19	5.82	10.97	7.75	.25	.13	
2	35	1019098	1019105	43.25	3.25	2.25	2.36	2.10	7.25	5.00	6.82	12.74	8.75	.25	.13	

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

Crosby® Screw Pin Shackles



G-209/S-209

G-209 Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 2, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 1/3 thru 55 metric tons, grade 6.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit and grade "6" permanently shown on every shackle.
- Hot Dip galvanized or self colored.
- Fatigue rated.
- Shackles 25t and larger are RFID EQUIPPED.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Proof testing and certification available when requested at the time of order, charges will apply.
- Approved for use at -40 degrees C (-40 degrees F) to 204 degrees C (400 degrees F).
- 3.25t through 25t G209 anchor shackles are type approved to DNV Certification Notes 2.7-1 - Offshore Containers. These shackles are statistical proof and impact tested to 42 joules (31 ft-lbs.) min. avg. at -20 degrees C (-4 degrees F). The tests are conducted by Crosby and 3.1 test certification is available upon request.
- All other 209 and all 210 shackles can meet charpy requirements of 42 joules (31 ft-lbs) avg. at -20 degrees C (-4 degrees F) upon special request.
- Meets or exceeds all requirements of ASME B30.26.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- Crosby 3.25t through 25t G209 anchor shackles are type approved to DNV Certification Notes 2.7-1 - Offshore Containers. These Crosby shackles are statistical proof and impact tested. The tests are conducted by Crosby and 3.1 test certification is available upon request.
- Look for the Red Pin®... the mark of genuine Crosby quality.



G-210/S-210

G-210 Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 2, except for those provisions required of the contractor. For additional information, see page 452.

Load Rated

Fatigue Rated



QUIC-CHECK®



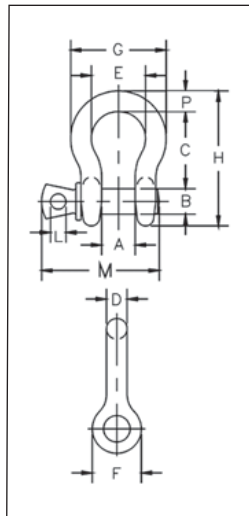
MAXTOUGH®



SEE APPLICATION INFORMATION

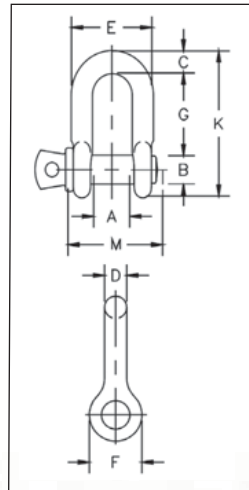
On Page 92 of the General Catalog
Para Español: www.thecrosbygroup.com

G-209 / S-209 Screw Pin Anchor Shackles



Nominal Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)														Tolerance + / -	
		G-209	S-209		A	B	C	D	E	F	G	H	L	M	P	C	A			
3/16	1/3	1018357	—	.06	.38	.25	.88	.19	.60	.56	.98	1.47	.16	1.14	.19	.06	.06			
1/4	1/2	1018375	1018384	.10	.47	.31	1.13	.25	.78	.61	1.28	1.84	.19	1.43	.25	.06	.06			
5/16	3/4	1018393	1018400	.18	.53	.38	1.22	.31	.84	.75	1.47	2.09	.22	1.71	.31	.06	.06			
3/8	1	1018419	1018428	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.02	.38	.13	.06			
7/16	1-1/2	1018437	1018446	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	.31	2.37	.44	.13	.06			
1/2	2	1018455	1018464	.72	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06			
5/8	3-1/4	1018473	1018482	1.37	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06			
3/4	4-3/4	1018491	1018507	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06			
7/8	6-1/2	1018516	1018525	3.62	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	.50	4.50	.97	.25	.06			
1	8-1/2	1018534	1018543	5.03	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	.56	5.13	1.06	.25	.06			
1-1/8	9-1/2	1018552	1018561	7.41	1.81	1.25	4.25	1.16	2.91	2.69	5.16	7.47	.63	5.71	1.25	.25	.06			
1-1/4	12	1018570	1018589	9.50	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	.69	6.25	1.38	.25	.06			
1-3/8	13-1/2	1018598	1018605	13.53	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	.75	6.83	1.50	.25	.13			
1-1/2	17	1018614	1018623	17.20	2.38	1.63	5.75	1.54	3.88	3.63	6.88	10.00	.81	7.33	1.62	.25	.13			
1-3/4	25	1018632	1018641	27.78	2.88	2.00	7.00	1.84	5.00	4.19	8.86	12.34	1.00	9.06	2.25	.25	.13			
2	35	1018650	1018669	45.00	3.25	2.25	7.75	2.08	5.75	4.81	9.97	13.68	1.22	10.35	2.40	.25	.13			
2-1/2	55	1018678	1018687	85.75	4.13	2.75	10.50	2.71	7.25	5.69	12.87	17.84	1.38	13.00	3.13	.25	.25			

G-210 / S-210 Screw Pin Chain Shackles



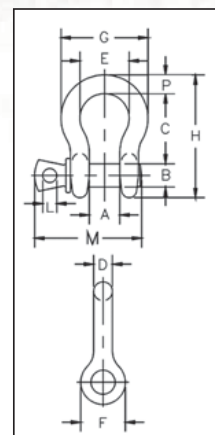
Nominal Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)												Tolerance +/-	
		G-210	S-210		A	B	C	D	E	F	G	K	L	M	G	A		
1/4	1/2	1019150	1019169	.11	.47	.31	.25	.25	.97	.62	.97	1.59	.19	1.43	.06	.06		
5/16	3/4	1019178	1019187	.17	.53	.38	.31	.31	1.15	.75	1.07	1.91	.22	1.71	.06	.06		
3/8	1	1019196	1019203	.28	.66	.44	.38	.38	1.42	.92	1.28	2.31	.25	2.02	.13	.06		
7/16	1-1/2	1019212	1019221	.43	.75	.50	.44	.44	1.63	1.06	1.48	2.67	.31	2.37	.13	.06		
1/2	2	1019230	1019249	.59	.81	.63	.50	.50	1.81	1.18	1.66	3.03	.38	2.69	.13	.06		
5/8	3-1/4	1019258	1019267	1.25	1.06	.75	.63	.63	2.32	1.50	2.04	3.76	.44	3.34	.13	.06		
3/4	4-3/4	1019276	1019285	2.63	1.25	.88	.81	.75	2.75	1.81	2.40	4.53	.50	3.97	.25	.06		
7/8	6-1/2	1019294	1019301	3.16	1.44	1.00	.97	.88	3.20	2.10	2.86	5.33	.50	4.50	.25	.06		
1	8-1/2	1019310	1019329	4.75	1.69	1.13	1.00	1.00	3.69	2.38	3.24	5.94	.56	5.13	.25	.06		
1-1/8	9-1/2	1019338	1019347	6.75	1.81	1.25	1.25	1.13	4.07	2.69	3.61	6.78	.63	5.71	.25	.06		
1-1/4	12	1019356	1019365	9.06	2.03	1.38	1.38	1.25	4.53	3.00	3.97	7.50	.69	6.25	.25	.13		
1-3/8	13-1/2	1019374	1019383	11.63	2.25	1.50	1.50	1.38	5.01	3.31	4.43	8.28	.75	6.53	.25	.13		
1-1/2	17	1019392	1019409	15.95	2.38	1.63	1.62	1.50	5.38	3.62	4.87	9.05	.81	7.33	.25	.13		
1-3/4	25	1019418	1019427	26.75	2.88	2.00	2.12	1.75	6.38	4.19	5.78	10.97	1.00	9.06	.25	.13		
2	35	1019436	1019445	42.31	3.25	2.25	2.36	2.10	7.25	5.00	6.77	12.74	1.13	10.35	.25	.13		
2-1/2	55	1019454	1019463	71.75	4.12	2.75	2.63	2.63	9.38	5.68	8.07	14.85	1.38	13.00	.25	.25		

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

**G-209A**

Screw pin anchor shackles meet the performance requirements of Federal Specification RR-C-271F Type IVA, Grade B, Class 2, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 2 thru 21 metric tons. Meets performance requirements of Grade 8 shackles.
- Forged Alloy Steel – Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Hot Dip Galvanized.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification. Charges for proof testing and certification available when requested at the time of order.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.

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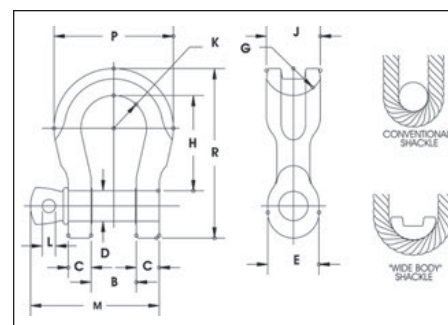
G-209A Alloy Screw Pin Shackles

Nominal Size (in.)	Working Load Limit (t)*	G-209A Stock No.	Weight Each (lbs.)	Dimensions (in.)											Tolerance +/-	
				A	B	C	D	E	F	G	H	L	M	P	C	A
3/8	2	1017450	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.03	.38	.13	.06
7/16	2-2/3	1017472	.38	.75	.50	1.69	.44	1.16	1.06	2.03	2.91	.31	2.38	.44	.13	.06
1/2	3-1/3	1017494	.63	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06
5/8	5	1017516	1.38	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06
3/4	7	1017538	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06
7/8	9-1/2	1017560	3.61	1.44	1.00	3.31	.88	2.28	2.09	4.03	5.83	.50	4.50	.97	.25	.06
1	12-1/2	1017582	5.32	1.69	1.13	3.75	1.00	2.69	2.38	4.69	6.56	.56	5.07	1.06	.25	.06
1-1/8	15	1017604	7.25	1.81	1.25	4.25	1.16	2.91	2.69	5.16	7.47	.63	5.59	1.25	.25	.06
1-1/4	18	1017626	9.88	2.03	1.38	4.69	1.29	3.25	3.00	5.75	8.25	.69	6.16	1.38	.25	.06
1-3/8	21	1017648	13.25	2.25	1.50	5.25	1.42	3.63	3.31	6.38	9.16	.75	6.84	1.50	.25	.13

* Maximum Proof Load is 2 times the Working Load Limit. Minimum Ultimate Strength is 4.5 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

**G-2169****S-2169**

- Capacities of 7, 12.5 and 18 metric tons.
- Quenched and Tempered for maximum strength.
- Forged Alloy Steel.
- Available in galvanized and self colored finish.
- Individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

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G-2169 / S-2169 Alloy Screw Pin “Wide Body” Shackles

Working Load Limit (t)*	G-2169 Stock No.	S-2169 Stock No.	Weight Each (lbs.)	Dimensions (in.)											
				B +/- .25	C	D +/- .02	E	G	H	J	K	L	M	P	R
7	1021655	1021664	3.5	1.25	.69	.88	1.82	1.25	3.56	1.60	1.25	.50	3.97	4.10	5.87
12.5	1021673	1021682	8.8	1.69	.92	1.13	2.38	1.37	4.63	2.13	1.63	.56	5.13	5.51	7.63
18	1021691	1021699	13	2.03	1.16	1.38	2.69	1.50	5.81	2.50	2.00	.69	6.25	6.76	9.38

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

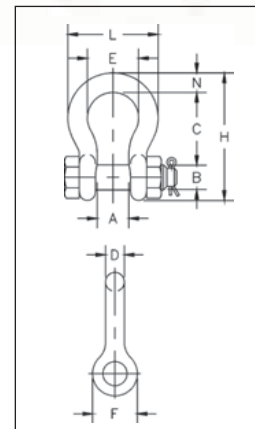
Crosby® Bolt Type Shackles



G-2130 / S-2130

Bolt Type Anchor shackles with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 3, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 1/3 thru 150 metric tons, grade 6.
- Working Load Limit and grade "6" permanently shown on every shackle.
- Forged – Quenched and Tempered, with alloy bolts.
- Hot Dip galvanized or self colored. (85, 120, and 150 metric ton shackles are all hot dip galvanized bows and the bolts are Dimetcoated® and painted red)
- Fatigue rated (1/3t - 55t).
- Shackles 25t and larger are **RFID EQUIPPED**.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- Meets or exceeds all requirements of ASME B30.26.
- Shackles 85 metric tons and larger are individually proof tested to 2.0 times the working load limit.
- Type Approval and certification in accordance with ABS 2011 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- 3.1 Certification as standard available for charpy and statistical proof test from 3.25t up to 25 tons to DNV2.7-1 and EN13889.
- Crosby 3.25t through 25t G2130OC anchor shackles are type approved to DNV Certification Notes 2.7-1- Offshore Containers. These Crosby shackles are statistical proof and impact tested to 42 joules (31 ft-lbs.) min. avg. at -20 degree C (-4 degree F). The tests are conducted by Crosby and 3.1 test certification is available upon request. Refer to page 88 for Crosby COLD TUFF® shackles that meet the additional requirements of DNV rules for certification of lifting applications - Loose Gear.
- All other 2130 shackles can meet charpy requirements of 42 joules (31 ft-lbs) avg at -20 degree C (-4 degree F) when requested at time of order.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



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G-2130 / S-2130 Bolt Type Anchor Shackles

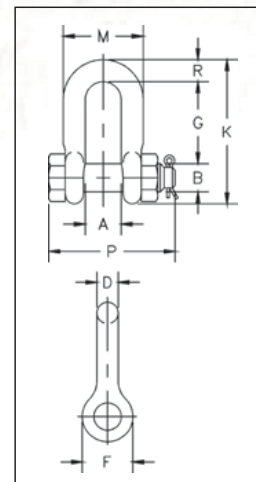
Nominal Size (in.)	Working Load Limit (t)*	Stock No.			Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
		G-2130	S-2130	G-2130OC		A	B	C	D	E	F	H	L	N	C	A	
3/16	1/3 ±	1019464	—	—	.06	.38	.25	.88	.19	.60	.56	1.47	.98	.19	.06	.06	
1/4	1/2	1019466	—	—	.11	.47	.31	1.13	.25	.78	.61	1.84	1.28	.25	.06	.06	
5/16	3/4	1019468	—	—	.22	.53	.38	1.22	.31	.84	.75	2.09	1.47	.31	.06	.06	
3/8	1	1019470	—	—	.33	.66	.44	1.44	.38	1.03	.91	2.49	1.78	.38	.13	.06	
7/16	1-1/2	1019471	—	—	.49	.75	.50	1.69	.44	1.16	1.06	2.91	2.03	.44	.13	.06	
1/2	2	1019472	1019481	—	.79	.81	.64	1.88	.50	1.31	1.19	3.28	2.31	.50	.13	.06	
5/8	3-1/4	1019490	1019506	1262013	1.68	1.06	.77	2.38	.63	1.69	1.50	4.19	2.94	.69	.13	.06	
3/4	4-3/4	1019515	1019524	1262022	2.72	1.25	.89	2.81	.75	2.00	1.81	4.97	3.50	.81	.25	.06	
7/8	6-1/2	1019533	1019542	1262031	3.95	1.44	1.02	3.31	.88	2.28	2.09	5.83	4.03	.97	.25	.06	
1	8-1/2	1019551	1019560	1262040	5.66	1.69	1.15	3.75	1.00	2.69	2.38	6.56	4.69	1.06	.25	.06	
1-1/8	9-1/2	1019579	1019588	1262059	8.27	1.81	1.25	4.25	1.13	2.91	2.69	7.47	5.16	1.25	.25	.06	
1-1/4	12	1019597	1019604	1262068	11.71	2.03	1.40	4.69	1.29	3.25	3.00	8.25	5.75	1.38	.25	.06	
1-3/8	13-1/2	1019613	1019622	1262077	15.83	2.25	1.53	5.25	1.42	3.63	3.31	9.16	6.38	1.50	.25	.13	
1-1/2	17	1019631	1019640	1262086	19.00	2.38	1.66	5.75	1.53	3.88	3.63	10.00	6.88	1.62	.25	.13	
1-3/4	25	1019659	1019668	1262095	33.91	2.88	2.04	7.00	1.84	5.00	4.19	12.34	8.80	2.25	.25	.13	
2	35	1019677	1019686	—	52.25	3.25	2.30	7.75	2.08	5.75	4.81	13.68	10.15	2.40	.25	.13	
2-1/2	55	1019695	1019702	—	98.25	4.13	2.80	10.50	2.71	7.25	5.69	17.90	12.75	3.13	.25	.25	
3	† 85	1019711	—	—	154.00	5.00	3.30	13.00	3.12	7.88	6.50	21.50	14.62	3.62	.25	.25	
3-1/2	† 120 ±	1019739	—	—	265.00	5.25	3.76	14.63	3.62	9.00	8.00	24.88	17.02	4.38	.25	.25	
4	† 150 ±	1019757	—	—	338.00	5.50	4.26	14.50	4.00	10.00	9.00	25.68	18.00	4.56	.25	.25	

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94. † Individually Proof Tested with certification. ‡ Furnished in Anchor style only and furnished with Round Head Bolts with welded handles.

**G-2150 / S-2150**

Bolt Type chain shackles with thin hex head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVB, Grade A, Class 3, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 1/2 thru 85 metric tons, grade 6.
- Working Load Limit and grade "6" permanently shown on every shackle.
- Forged — Quenched and Tempered, with alloy bolts.
- Hot Dip galvanized or self colored. (85, 120, and 150-metric ton shackles are all hot dip galvanized bows and the bolts are Dimetcoated® and painted red)
- Fatigue rated (1/2t - 55t).
- Shackles 25t and larger are **RFID EQUIPPED**.
- Approved for use at -40 degree C (-40 degree F) to 204 degree C (400 degree F).
- 3.25t through 25t bow and bolt are certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. avg. at -20 degree C (-4 degree F)
- Meets or exceeds all requirements of ASME B30.26.
- Sizes 1/2 - 25t meet the performance requirements of EN13889:2003.
- Shackles 55 metric tons and smaller can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification when requested at time of order.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- All 2150 shackles can meet charpy requirements of 42 joules (31 ft-Lbs) avg at -20 degree C (-4 degree F) upon special request.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



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G-2150 / S-2150 Bolt Type Chain Shackles

Nominal Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)									Tolerance + / -	
		G-2150	S-2150		A	B	D	F	G	K	M	P	R	G	A
1/4	1/2	1019768	—	.13	.47	.31	.25	.62	.91	1.59	.97	1.56	.25	.06	.06
5/16	3/4	1019770	—	.23	.53	.38	.31	.75	1.07	1.91	1.15	1.82	.31	.06	.06
3/8	1	1019772	—	.33	.66	.44	.38	.92	1.28	2.31	1.42	2.17	.38	.13	.06
7/16	1-1/2	1019774	—	.49	.75	.50	.44	1.06	1.48	2.67	1.63	2.51	.44	.13	.06
1/2	2	1019775	1019784	.75	.81	.64	.50	1.18	1.66	3.03	1.81	2.80	.50	.13	.06
5/8	3-1/4	1019793	1019800	1.47	1.06	.77	.63	1.50	2.04	3.76	2.32	3.56	.63	.13	.06
3/4	4-3/4	1019819	1019828	2.52	1.25	.89	.75	1.81	2.40	4.53	2.75	4.15	.81	.25	.06
7/8	6-1/2	1019837	1019846	3.85	1.44	1.02	.88	2.10	2.86	5.33	3.20	4.82	.97	.25	.06
1	8-1/2	1019855	1019864	5.55	1.69	1.15	1.00	2.38	3.24	5.94	3.69	5.39	1.00	.25	.06
1-1/8	9-1/2	1019873	1019882	7.60	1.81	1.25	1.13	2.68	3.61	6.78	4.07	5.90	1.25	.25	.06
1-1/4	12	1019891	1019908	10.81	2.03	1.40	1.25	3.00	3.97	7.50	4.53	6.69	1.38	.25	.06
1-3/8	13-1/2	1019917	1019926	13.75	2.25	1.53	1.38	3.31	4.43	8.28	5.01	7.21	1.50	.25	.13
1-1/2	17	1019935	1019944	18.50	2.38	1.66	1.50	3.62	4.87	9.05	5.38	7.73	1.62	.25	.13
1-3/4	25	1019953	1019962	31.40	2.88	2.04	1.75	4.19	5.82	10.97	6.38	9.33	2.12	.25	.13
2	35	1019971	1019980	46.75	3.25	2.30	2.10	5.00	6.82	12.74	7.25	10.41	2.36	.25	.13
2-1/2	55	1019999	1020004	85.00	4.12	2.80	2.63	5.68	8.07	14.85	9.38	13.58	2.63	.25	.25
3	† 85	1020013	—	124.25	5.00	3.25	3.00	6.50	8.56	16.87	11.00	15.13	3.50	.25	.25

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 6 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94. † Individually Proof Tested with certification. ‡ Furnished in Anchor style only and furnished with Round Head Bolts with welded handles.

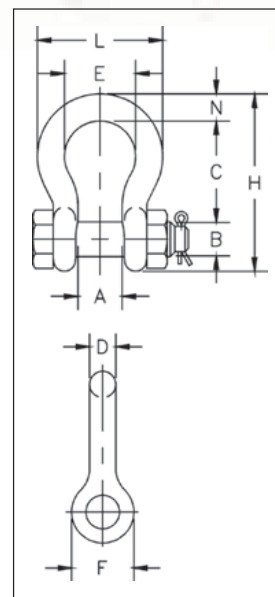
Crosby® Bolt Type Shackles



G-2130A

Bolt Type Anchor shackles with thin head bolt – nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade B, Class 3, except for those provisions required of the contractor. For additional information, see page 452.

- Capacities 2 to 17 metric tons.
- Meets or exceeds all requirements of Grade 8 shackles.
- Working Load Limit permanently shown on every shackle.
- Forged Alloy Steel – Quenched and Tempered, with bow and bolt.
- Hot Dip galvanized.
- Shackles can be **RFID EQUIPPED**.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, G-2130A meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.
- Shackles can be furnished proof tested with certificates to designated standards, such as ABS, DNV, Lloyds, or other certification when requested at time of order.
- Type Approval and certification in accordance with DNV Type Approval under DNV 2.7-1.
- Shackles are Quenched and Tempered and meet DNV impact requirements of 42 joules (31 ft.-lbs.) at -40 degrees C (-40 degrees F).



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G-2130A Alloy Bolt Bolt Type Shackles Grade 8

Nominal Size (in.)	Working Load Limit (t)*	G-2130A Stock No.	Weight Each (lbs.)	Dimensions (in)										Tolerance +/-	
				A	B	C	D	E	F	H	L	N	C	A	
1/2	2	1219472	.79	.81	.63	1.88	0.50	1.31	1.19	3.29	2.30	0.50	0.13	0.06	
5/8	3-1/4	1219491	1.37	1.06	.75	2.38	0.63	1.69	1.50	4.18	2.94	0.69	0.25	0.06	
3/4	4-3/4	1219516	2.71	1.25	.88	2.82	0.75	2.01	1.81	4.96	3.51	0.81	0.25	0.06	
7/8	6-1/2	1219534	3.95	1.44	1.00	3.31	0.88	2.29	2.09	5.83	4.02	0.97	0.25	0.06	
1	8-1/2	1219552	5.03	1.69	1.10	3.76	1.00	2.70	2.38	6.58	4.69	1.06	0.25	0.06	
1-1/8	9-1/2	1219578	8.27	1.81	1.25	4.26	1.13	2.92	2.70	7.49	5.16	1.25	0.25	0.06	
1-1/4	12	1219598	11.7	2.03	1.38	4.69	1.25	3.25	2.99	8.27	5.75	1.38	0.25	0.06	
1-3/8	13-1/2	1219614	15.8	2.25	1.50	5.24	1.38	3.62	3.31	9.18	6.38	1.50	0.25	0.13	
1-1/2	17	1219632	19.0	2.38	1.63	5.75	1.50	3.88	3.62	10.0	6.90	1.62	0.25	0.13	

* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Strength is 8 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

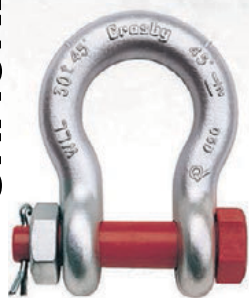


Testing the Limits

In 2013, Sir Ranulph Fiennes and five colleagues set out to test the limits of human endurance and achieve the feat of becoming the first individuals to cross the continent of Antarctica in winter. As a proud partner in this endeavor, Crosby provided its full range of COLD TUFF® products, which are specifically manufactured to function in extreme environments such as those encountered throughout the expedition—including temperatures as low as -90° C.

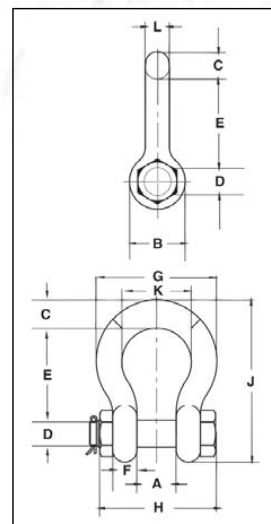


SHACKLES

**G-2140 / S-2140**

G-2140 meets the performance requirements of Federal Specification RR-C-271F, Type IVA, Grade B, Class 3, except for those provisions required of the contractor. For additional information, see page 452.

- Quenched and Tempered.
- Alloy bows, Alloy bolts.
- Forged Alloy Steel 2 thru 200 metric tons. Cast Alloy Steel 250 thru 400 metric tons. Meets performance requirements of Grade 8 shackles.
- Working Load Limit is permanently shown on every shackle.
- 30, 40, 55, and 85 metric ton shackle bows are available galvanized or self colored with bolts that are galvanized and painted red.
- 120, 150, 175 metric ton shackle bows are hot-dip galvanized; bolts are Dimetcoated and painted red.
- 400 metric ton shackle bows are Dimetcoated; bolts are Dimetcoated and painted red.
- Sizes 1-1/2 and larger are **RFID EQUIPPED**.
- Approved for use at -40 degrees C (-40 degrees F) to 204 degrees C (400 degrees F).
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules (31 ft.-lbs.) at -20 degrees C (-4 degrees F).
- All sizes are individually proof tested if requested at time of order, to 2.0 times the Working Load Limit.
- Refer to page 88 for Crosby COLD TUFF® shackles that meet the additional requirements of DNV rules for certification of lifting applications - Loose Gear.
- Shackles 200 metric tons and larger are provided as follows.
 - Serialized bolt and bow
 - Material certification (chemical)
 - Magnetic particle inspected.
 - Certification must be requested at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. 2140 shackles meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

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G-2140 / S-2140 Crosby® Alloy Bolt Type Anchor Shackles

Nominal Shackle Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)													Tolerance + / -	
		G-2140	S-2140		A	B	C	D +/- .02	E	F	G	H	J	K	L	M	N	A	E
3/8	2	1021015	-	0.33	0.66	0.91	0.38	0.44	1.44	0.38	1.78	2.17	2.49	1.03	0.38	-	-	0.06	0.13
7/16	2 2/3	1021020	-	0.49	0.75	1.06	0.44	0.50	1.69	0.41	2.03	2.51	2.91	1.16	0.44	-	-	0.06	0.13
1/2	3 1/3	1021029	-	0.79	0.81	1.19	0.50	0.64	1.88	0.46	2.31	2.80	3.28	1.31	0.50	-	-	0.06	0.13
5/8	5	1021038	-	1.68	1.06	1.50	0.69	0.77	2.38	0.58	2.94	3.56	4.19	1.69	0.63	-	-	0.06	0.13
3/4	7	1021047	-	2.72	1.25	1.81	0.81	0.89	2.81	0.69	3.50	4.15	4.97	2.00	0.75	-	-	0.06	0.25
7/8	9 1/2	1021056	-	3.95	1.44	2.09	0.97	1.02	3.31	0.81	4.03	4.82	5.83	2.28	0.88	-	-	0.06	0.25
1	12 1/2	1021065	-	5.66	1.69	2.38	1.06	1.15	3.75	0.92	4.69	5.39	6.56	2.69	1.00	-	-	0.06	0.25
1 1/8	15	1021074	-	8.27	1.81	2.69	1.25	1.25	4.25	1.04	5.16	5.90	7.47	2.91	1.13	-	-	0.06	0.25
1 1/4	18	1021083	-	11.7	2.03	3.00	1.38	1.40	4.69	1.16	5.75	6.69	8.25	3.25	1.29	-	-	0.06	0.25
1 3/8	21	1021092	-	15.8	2.25	3.31	1.50	1.53	5.25	1.28	6.38	7.21	9.16	3.63	1.42	-	-	0.13	0.25
1-1/2	30	1021110	1021129	18.8	2.38	3.62	1.62	1.63	5.75	1.39	6.88	7.73	10.00	3.88	1.53	-	-	0.13	0.25
1-3/4	40	1021138	1021147	33.8	2.88	4.19	2.25	2.00	7.00	1.75	8.81	9.33	12.34	5.00	1.84	-	-	0.13	0.25
2	55	1021156	1021165	49.9	3.25	4.81	2.40	2.25	7.75	2.00	10.16	10.41	13.68	5.75	2.08	-	-	0.13	0.25
2-1/2	85	1021174	1021183	103	4.12	5.81	3.12	2.75	10.50	2.62	12.75	13.58	17.90	7.25	2.71	-	-	0.25	0.25
3	120	1021192	-	162	5.00	6.50	3.63	3.25	13.00	3.00	14.62	15.13	21.50	7.88	3.12	-	-	0.25	0.25
3-1/2	† 150	1021218	-	327	5.25	8.00	4.38	3.75	14.63	3.75	17.02	20.33	24.88	9.00	3.62	4.00	1.80	0.25	0.25
4	† 175	1021236	-	318	5.50	9.00	4.56	4.25	14.50	4.00	18.00	21.20	25.68	10.00	4.00	4.00	1.80	0.25	0.25
4-3/4	† 200	1021234	-	461	7.25	10.50	5.00	4.75	15.19	4.58	20.84	24.04	27.81	11.00	4.75	4.00	1.80	0.25	0.25
5	† 250	1021443	-	608	8.50	12.00	5.62	5.00	18.50	4.85	23.62	24.87	32.61	13.00	5.00	4.00	1.80	0.25	0.25
6	† 300	1021252	-	797	8.38	13.00	6.06	6.00	18.72	4.89	24.76	26.22	34.28	13.00	5.88	4.00	1.80	0.25	0.25
7**	† 400	1021478	-	1289	8.25	14.00	7.25	7.00	22.50	6.50	26.00	29.66	40.25	13.00	6.00	4.00	1.80	0.25	0.25

* Note: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Load is 5 times the Working Load Limit on 2 thru 21 metric tons. For sizes 30 thru 175 metric tons, Minimum Ultimate Load is 5.4 times the Working Load Limit for 200 thru 400 metric tons, Minimum Ultimate Load is 4 times the Working Load Limit. ** Cast Alloy Steel. † Furnished with Round Head Bolts with an eyebolt for handling. For Working Load Limit reduction due to side loading applications, see page 92.

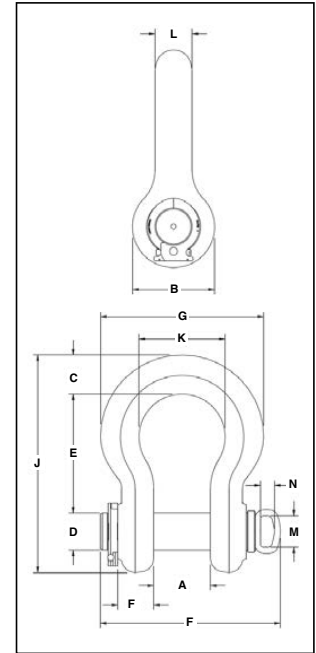
Crosby® Alloy Easy-Loc® Shackles



G-2140E

G-2140E meets the performance requirements of Federal Specification RR-C-271F, Type IVA, Grade B, Class 3, except for those provisions required of the contractor. For additional information, see page 452.

- Quenched and Tempered.
- Alloy bows, Alloy bolts.
- Forged Alloy Steel 200 thru 300 metric tons. Meets performance requirements of Grade 8 shackles.
- Working Load Limit is permanently shown on every shackle.
- 200, 250, and 300 metric ton shackle bows are Dimetcoated®; bolts are Dimetcoated® and painted red.
- Sizes 1-1/2 and larger are **RFID EQUIPPED**.
- Approved for use at -40 degrees C (-40 degrees F) to 204 degrees C (400 degrees F).
- Shackles are Quenched and Tempered and can meet DNV impact requirements of 42 joules (31 ft-lbs.) at -20 degree C (-4 degree F).
- All sizes are individually proof tested to 2.0 times the Working Load Limit.
- Refer to page 88 for Crosby COLD TUFF® shackles that meet the additional requirements of DNV rules for certification of lifting applications - Loose Gear.
- Shackles are provided as follows:
 - Serialized pin and bow
 - Material certification (chemical)
 - Magnetic particle inspected.
 - Certification must be requested at time of order.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including impact properties and material traceability, not addressed by ASME B30.26.
- Type Approval and certification in accordance with ABS 2006 Steel Vessel Rules 1-1-17.7, and ABS Guide for Certification of Cranes.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



Load Rated

QT

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TA



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G-2140E Crosby® Alloy Easy-Loc Shackles

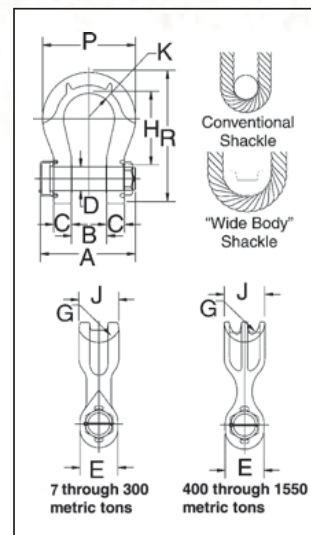
Nominal Shackle Size (in.)	Working Load Limit (t)*	Stock No.		Weight Each (kg)	Dimensions (mm)												Tolerance + / -		
		G-2140E	S-2140E		A	B	C	D +/- .5	E	F	G	H	J	K	L	M	N	A	E
4-3/4	† 200	1021475	—	209	184	267	127	121	386	116	529	587	706	279	121	101	45.7	6.4	6.4
5	† 250	1021484	—	276	216	305	143	127	470	114	600	617	829	330	127	101	45.7	6.4	6.4
6	† 300	1021493	—	362	213	330	154	152	475	124	629	646	871	330	149	101	45.7	6.4	6.4

* Note: Maximum Proof Load is 2.0 times the Working Load Limit. Minimum Ultimate Load is 5.4 times the Working Load Limit. † Furnished with Round Head Bolts with an eyebolt for handling. For Working Load Limit reduction due to side loading applications, see page 94.



G-2160 / S-2160

- All sizes Quenched and Tempered for maximum strength.
- Forged alloy steel from 7 through 300 metric tons.
- Cast alloy steel from 400 through 1550 metric tons.
- Sizes 300 metric tons and smaller are proof tested to 2 times the Working Load Limit.
- Sizes 400 metric tons and larger are tested to 1.33 times Working Load Limit.
- All ratings are in metric tons, embossed on side of bow.
- G-2160, (7-55t), are Hot Dip Galvanized and pins are painted red.
- G-2160, (75t and larger), bows are furnished Dimetcoated, and pins are Dimetcoated, then painted red.
- S-2160 bows and pins are painted red.
- Shackles, 30t and larger, are **RFID EQUIPPED**.
- Can be used to connect Synthetic Web Slings, Synthetic Round Slings or Wire Rope Slings.
- Increase in shackle bow radius provides minimum 58% gain in sling bearing surface and eliminates need for a thimble.
- Increases usable sling strength minimum of 15% and greatly improves life of wire rope slings.
- Approved for use at -40 degrees C (-40 degrees F) to 204 degrees C (400 degrees F).
- Bow and bolt are certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. avg. at -20 degree C (-4 degree F).
- All 2160 shackles are individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Shackles requiring ABS, Lloyds and other certifications are available upon special request and must be specified at time of order.
- Type approved and certification to DNV Rules for Certification of Lifting Appliances, and are produced in accordance with DNV MSA requirements. Databook is provided that includes required documents.
 - Serialization / Identification
 - Material Testing (Physical / Chemical / Charpy)
 - Proof Testing
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



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G-2160 / S-2160 Crosby® “Wide Body” Shackles

Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)														Effective Body Diameter
	G-2160	S-2160		A	B +/- .25	C	D +/- .02	E	G	H	J	K	M	N	P	R		
7	1021256	1021548	4.0	4.14	1.25	.69	.88	1.82	1.25	3.56	1.60	1.25			4.10	5.87	2.1	
12.5	1021265	1021557	8.80	5.38	1.69	.92	1.13	2.38	1.37	4.63	2.13	1.63			5.51	7.63	2.4	
18	1021274	1021566	14.90	6.69	2.03	1.16	1.38	2.69	1.50	5.81	2.50	2.00			6.76	9.38	2.8	
30	1021283	1021575	26.50	7.69	2.37	1.38	1.63	3.50	2.50	6.94	3.13	2.50			8.50	11.38	4.1	
40	1021285	1021584	46.00	9.28	2.88	1.69	2.00	4.00	1.75	8.06	3.75	3.00			10.62	13.62	3.6	
55	1021287	1021593	68.00	10.36	3.25	2.00	2.25	4.63	2.63	9.36	4.50	3.50			12.26	15.63	4.3	
75	1021290	—	112	14.37	4.13	2.12	2.75	5.34	3.50	15.91	4.75	3.64	4.00	1.80	12.28	18.41	6.3	
125	1022110	—	195	18.32	5.12	2.66	3.15	6.50	3.75	14.37	5.91	4.33	4.00	1.80	15.46	22.98	—	
200	1022118	—	420	21.20	5.91	2.94	4.12	8.41	5.25	18.91	8.63	5.42	4.00	1.80	20.26	30.43	—	
300	1022127	—	805	24.20	7.38	3.84	5.25	10.50	6.13	23.63	10.38	6.31	4.00	1.80	23.93	37.66	—	
400	1021334	—	1143	30.27	8.66	5.16	6.30	12.56	7.99	28.72	12.60	7.28	4.00	1.80	27.17	38.78	14.3	
500	1021343	—	1439	33.35	9.84	5.73	7.09	13.39	8.09	31.21	13.39	8.86	4.00	1.80	31.10	42.72	14.8	
600	1021352	—	2132	36.02	10.83	6.23	7.87	15.50	13.00	35.36	14.57	9.74	5.75	2.25	34.05	47.24	20.3	
700	1021361	—	2579	38.91	11.81	6.59	8.46	17.03	8.87	37.52	15.75	10.63	5.75	2.25	37.01	50.18	16.6	
800	1021254	—	3025	41.66	12.80	7.30	9.06	17.69	9.76	39.90	16.54	10.92	5.75	2.25	38.39	52.09	18.0	
900	1021389	—	3775	43.73	13.78	7.78	9.84	18.81	13.00	42.20	18.81	11.52	5.75	2.25	40.35	54.59	22.4	
1000	1021370	—	4079	45.98	14.96	8.33	10.63	20.00	10.26	44.30	18.11	12.11	5.75	2.25	42.32	55.31	19.3	
1250	1021272	—	5320	49.86	16.99	9.16	11.81	22.56	13.92	39.62	20.87	12.70			46.26	65.35	24.4	
1550	1021281	—	8302	54.89	18.31	11.10	12.60	24.25	12.52	42.32	22.82	13.29			51.81	74.63	23.9	

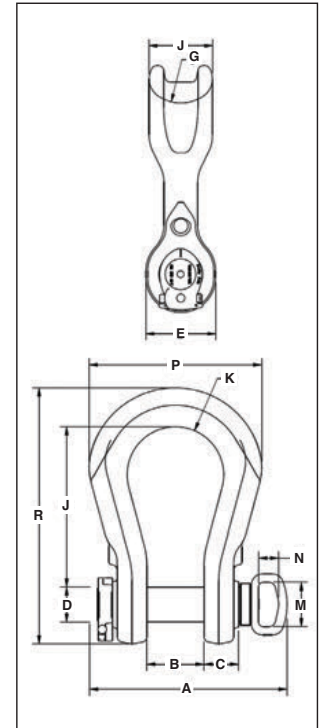
* 7t-300t Proof Load is 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit. 400t-1550t Proof Load is 1.33 times the Working Load Limit. Ultimate Load is 4.5 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

Crosby® Wide Body Shackles



G-2160E

- All sizes Quenched and Tempered for maximum strength.
- Forged alloy steel from 75 through 300 metric tons.
- Sizes 300 metric tons and smaller are proof tested to 2 times the Working Load Limit.
- All ratings are in metric tons, embossed on side of bow.
- G-2160E, (75t and larger), bows are furnished Dimetcoated, and pins are Dimetcoated, then painted red.
- Shackles are **RFID EQUIPPED**.
- Can be used to connect HIGH STRENGTH Synthetic Web Slings, HIGH STRENGTH Synthetic Round Slings or Wire Rope Slings.
- Increase in shackle bow radius provides minimum 58% gain in sling bearing surface and eliminates need for a thimble.
- Increases usable sling strength minimum of 15% and greatly improves life of wire rope slings.
- Approved for use at -40 degrees C (-40 degrees F) to 204 degrees C (400 degrees F).
- Bow and bolt are certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. avg. at -20 degrees C (-4 degrees F).
- All 2160E shackles are individually proof tested and magnetic particle inspected. Crosby certification available at time of order.
- Shackles requiring ABS, Lloyds and other certifications are available upon special request and must be specified at time of order.
- Shackles have DNV Type Approval to Rules for Certification of Lifting Appliances, and are produced in accordance with DNV MSA requirements. Databook is provided that includes required documents.
 - Serialization / Identification
 - Material Testing (Physical / Chemical / Charpy)
 - Proof Testing
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



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G-2160E Crosby® Easy-Loc “Wide Body” Shackles

Working Load Limit (t)*	Stock No.		Weight Each (lbs.)	Dimensions (in.)														Effective Body Diameter
	G-2160E	S-2160E		A	B +/- .25	C	D +/- .02	E	F	G	H	J	K	M	N	P	R	
75	1021500	—	110	16.75	5.12	3.50	3.15	6.50	1.19	3.75	15.04	5.91	4.33	4.00	1.80	15.47	23.00	6.8
125	1021509	—	190	16.75	5.12	3.50	3.15	6.50	1.19	3.75	17.70	5.91	4.33	4.00	1.80	15.47	23.00	6.8
200	1021518	—	408	19.76	5.91	3.39	4.12	8.41	1.75	5.25	18.90	8.63	5.41	4.00	1.80	20.47	30.44	9.5
300	1021527	—	787	23.05	7.38	5.63	5.25	10.50	1.75	6.13	19.35	10.38	6.31	4.00	1.80	23.83	37.51	11.4

* 75t-300t Proof Load is 2 times the Working Load Limit. Ultimate Load is 5 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

Shackle Bolt Securement MADE EASY

The Patent Pending Easy-Loc V2™ shackle bolt securement system will change the way you make your next critical lift. It's shackle bolt securement made as easy as 1,2,3.

Wide opening ergonomic grip provides easy access for all hand sizes

Both shackle and pin are RFID equipped

316 stainless steel design resists corrosion

The new Easy-Loc V2™ can be retrofitted on all original Crosby Easy-Loc® Shackles

No cotter pin or tools required



1 Open collar



2 Push collar onto bolt



3 Close collar

- No cotter pins or tools required, reducing install/release time up to 90%
- Meets all industry standards
- Up to 60% lighter than conventional nut and cotter pin design

Crosby

Made in the U.S.A.



Scan the QR code for more information on the new Easy-Loc V2™

Contact your local authorized Crosby distributor or visit Crosby at www.thecrosbygroup.com

Crosby® Grommet Shackles

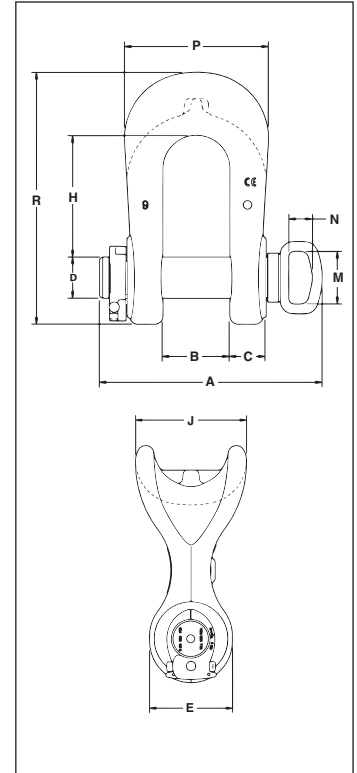


G-2170
Grommet
Shackle



Scan our QR Code
with your smart
device to visit the
online flyer.

- All sizes Quenched and Tempered for maximum strength.
- All sizes cast alloy steel.
- All ratings are in metric tons, embossed on side of bow.
- G-2170 bows are furnished Dimetcoated and pins are Dimetcoated, then painted red.
- All sizes are **RFID EQUIPPED** in bow and pin.
- Designed for use with single or double large diameter grommets.
- Extra large sling contact area improves efficiency of the grommet sling.
- Shackles utilize new Easy-Loc bolt system
- Large machined flat on ears that can be drilled and tapped for adapting other accessories.
- Increases usable sling strength minimum of 60% and greatly improves life of grommet slings.
- Bow and bolt are certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. avg. at -20 degrees C (-4 degrees F).
- All 2170 shackles are individually proof tested and magnetic particle inspected.
- Shackles requiring ABS, Lloyds, and other certifications are available upon special request and must be specified at time of order.
- All 2170 shackles can meet requirements of DNV Rules for Certification of Lifting Appliances upon special request and must be specified at time of order.
 - Serialization / Identification
 - Material Testing (Physical / Chemical / Charpy)
 - Proof Testing
- Look for the Red Pin®....the mark of genuine Crosby quality.



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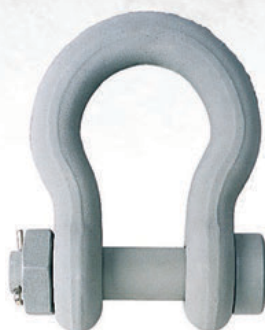
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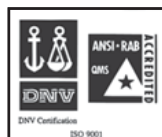
G-2170 Crosby® Grommet Shackles

Working Load Limit (t)*	Stock No.	Weight Each (lbs.)	Dimensions (in.)												Effective Body Diameter
			A	B +/- .25	C	D +/- .02	E	F	H	J	M	N	P	R	
75	1023147	115	14.08	4.13	2.39	2.75	5.50	1.19	7.77	7.50	4.00	1.80	9.50	16.20	11.25
125	1023156	179	16.05	5.13	2.75	3.15	6.72	1.19	9.31	9.00	4.00	1.80	11.00	19.25	13.50
200	1023174	374	19.13	5.91	3.39	4.12	9.00	1.75	11.64	12.90	4.00	1.80	13.63	25.01	18.45
300	1023183	692	22.44	7.38	4.30	5.25	11.13	1.75	15.20	15.50	4.00	1.80	17.00	31.82	22.75
500	1022119	1671	30.38	9.84	6.00	7.09	13.75	-	19.72	20.00	4.00	1.80	23.00	41.44	30.00

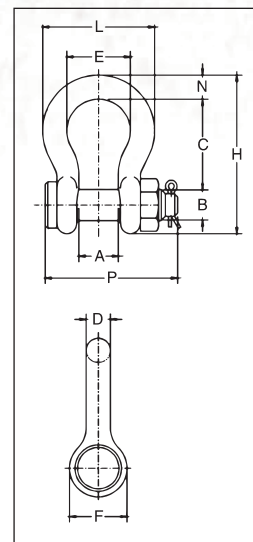
* Sizes 75-300 metric tons are proof tested to 2 times the Working Load Limit. 500 metric ton proof tested to 1.33 times Working Load Limit. Ultimate Load is 5 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.



**G-2130CT
and
G-2140CT**



- Forged - Quenched and Tempered, with alloy bolt.
 - G-2130CT - Carbon Steel
 - G-2140CT - Alloy Steel
- Working Load Limit permanently shown on every shackle.
- Individually serialized with certification.
- Fatigue Rated (G-2130CT only).
- Shackles 25t and larger are **RFID EQUIPPED**.
- All sizes are individually proof tested to 2.0 times the Working Load Limit.
- Finish is inorganic zinc primer.
- Bow and bolt are certified to meet charpy impact testing of 42 joules (31 ft-lbs.) min. avg. at -20 degrees C (-4 degrees F).
- Individually mag inspected with certification.
- Type Approval and certification in accordance with DNV 2.7-1 Offshore Containers, and Rules for Certification of Lifting Appliances, DNV OS-101 and are produced in accordance with DNV MSA requirements, including required documents.
- COLD TUFF® shackles are suitable for use to -50° F.
- Refer to page 167 for COLD TUFF® Master Links and Master Link assemblies.



Fatigue Rated

Load Rated

"QT"

QUIC-CHECK®

RFID

RFID

CE

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Crosby® G-2130CT COLD TUFF® Shackles

Nominal Shackle Size (in.)	Working Load Limit (t)*	G-2130CT Stock No.	Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
				A	B	C	D	E	F	H	L	N	P	A	C
3/4	4-3/4	1260568	2.72	1.25	.88	2.81	.75	2.00	1.81	4.97	3.50	.81	4.25	.06	.25
7/8	6-1/2	1260577	3.87	1.44	1.00	3.31	.88	2.28	2.09	5.83	4.03	.97	4.71	.06	.25
1	8-1/2	1260586	5.66	1.69	1.13	3.75	1.03	2.69	2.38	6.56	4.69	1.06	5.38	.06	.25
1-1/8	9-1/2	1260595	8.26	1.81	1.25	4.25	1.13	2.91	2.69	7.47	5.16	1.25	5.90	.06	.25
1-1/4	12	1260604	11.71	2.03	1.38	4.69	1.29	3.25	3.00	8.25	5.75	1.38	6.63	.06	.25
1-3/8	13-1/2	1260613	15.1	2.25	1.50	5.25	1.38	3.63	3.31	9.16	6.38	1.50	7.21	.13	.25
1-1/2	17	1260622	20.8	2.38	1.63	5.75	1.54	3.88	3.63	10.00	6.88	1.62	7.66	.13	.25
1-3/4	25	1260633	33.9	2.88	2.00	7.00	1.84	5.00	4.19	12.34	8.86	2.25	9.19	.13	.25

Bolt Type Anchor shackle with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 3, except for those provisions required of the contractor. For additional information, see page 94.



* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. 4-3/4t - 25t, Minimum Ultimate Load is 5.4 times the Working Load Limit. For Working Load Limit reduction due to side loading applications, see page 94.

Crosby® G-2140CT COLD TUFF® Shackles

Nominal Shackle Size (in.)	Working Load Limit (t)*	G-2140CT Stock No.	Weight Each (lbs.)	Dimensions (in.)										Tolerance + / -	
				A	B	C	D	E	F	H	L	N	P	A	C
1-1/2	30	1260801	20.8	2.38	1.63	5.75	1.54	3.88	3.62	10.00	6.88	1.62	7.73	.13	.25
1-3/4	40	1260812	33.9	2.88	2.00	7.00	1.84	5.00	4.19	12.34	8.81	2.25	9.33	.13	.25
2	55	1260823	52.0	3.25	2.25	7.75	2.08	5.75	4.81	13.68	10.16	2.40	10.41	.13	.25
2-1/2	85	1260834	96.0	4.12	2.75	10.50	2.72	7.25	5.69	17.84	12.87	3.12	13.58	.25	.25
3	120	1260843	178.0	5.00	3.25	13.00	3.11	7.88	6.50	21.50	14.36	3.63	15.13	.25	.25
3-1/2	† 150	1260852	265.0	5.25	3.75	14.63	3.62	9.00	8.00	24.62	16.50	4.12	17.62	.25	.25
4	† 175	1260861	338.0	5.50	4.25	14.5	4.10	10.00	9.00	25.69	18.42	4.56	20.37	.25	.25
4-3/4	† 200	1260870	450.0	7.25	4.75	15.63	4.50	11.00	10.50	29.25	21.00	6.00	21.21	.25	.25
5	† 250	1260889	600.0	8.50	5.00	20.00	4.50	13.00	12.00	35.00	24.50	6.50	22.68	.25	.25

Bolt Type Anchor shackle with thin head bolt - nut with cotter pin. Meets the performance requirements of Federal Specification RR-C-271F Type IVA, Grade A, Class 3, except for those provisions required of the contractor. For additional information, see page 94.

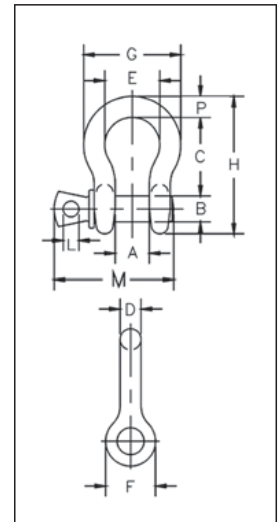


* NOTE: Maximum Proof Load is 2.0 times the Working Load Limit. 30t - 175t, Minimum Ultimate Load is 5.4 times the Working Load Limit. 200t and larger, Minimum Ultimate Load is 4 times the Working Load Limit. † Furnished with Round Head Bolts with welded handle. For Working Load Limit reduction due to side loading applications, see page 94.



**S-209T
THEATRICAL
SHACKLE**

- Sizes: 3/8" through 3/4"
- Capacities: 1 through 4-3/4 metric tonnes.
- Forged - Quenched and Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Flat black baked on power coat finish.
- Fatigue Rated.
- Industry leading 6 to 1 design factor.
- Screw pin anchor shackles meet the performance requirement of Federal Specification RR-C-271F Type A, Grade A, Class 2, except for those provisions required of the contractor.
- Meets the performance requirements of EN 13889:2003.
- Meets or exceeds all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, these shackles meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.



Load Rated

Fatigue Rated

"QT"

MAXTOUGH

QUIC-CHECK

SEE APPLICATION INFORMATION

On Page 92 of the General Catalog
Para Español: www.thecrosbygroup.com

S-209T Theatrical Shackles

Nominal Size (in.)	Working Load Limit (t)*	S-209T Stock No.	Weight Each (lbs.)	Dimensions (in.)												Tolerance + / -	
				A	B	C	D	E	F	G	H	L	M	P	C	A	
3/8	1	1018706	.31	.66	.44	1.44	.38	1.03	.91	1.78	2.49	.25	2.02	.38	.13	.06	
7/16	1-1/2	1018724	.38	.75	.50	1.69	.40	1.16	1.06	2.03	2.91	.31	2.37	.44	.13	.06	
1/2	2	1018742	.72	.81	.63	1.88	.50	1.31	1.19	2.31	3.28	.38	2.69	.50	.13	.06	
5/8	3-1/4	1018760	1.37	1.06	.75	2.38	.63	1.69	1.50	2.94	4.19	.44	3.34	.69	.13	.06	
3/4	4-3/4	1018778	2.35	1.25	.88	2.81	.75	2.00	1.81	3.50	4.97	.50	3.97	.81	.25	.06	

* Minimum Ultimate Load is 5 times the Working Load Limit. Maximum Proof Load is 2.0 times the Working Load Limit.

S-209T...The "Crosby"

When you're looking for the top-named shackle used for theatrical and stage rigging applications, ask for a "Crosby"—the name synonymous with quality, safety and heavy lifting. The S-209T shackle is enhanced with a flat black baked-on power coat finish that causes the shackle to blend in with stage surroundings. This guarantees "behind-the-scene" strength and dependability without detracting the eye from on-stage action.



SHACKLES



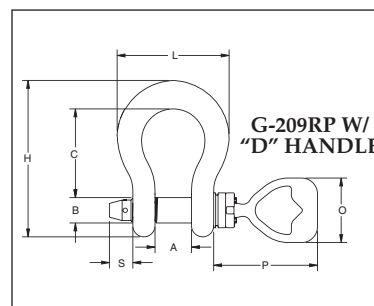
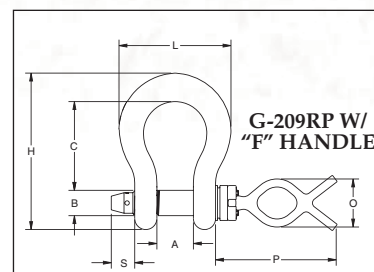
**G-209RP
ROV SHACKLE**
with "D" Style Handle
Shown



Scan our QR Code
with your smart
device to visit the
online flyer.

- Capacities from 8-1/2t through 55t.
- Forged Steel, Quenched & Tempered, with alloy pins.
- Handles are stainless steel.
- Shackles and bolts are available in both "D" and "F" designs.
- Working Load Limit permanently shown on every shackle.
- **QUIC-CHECK®** deformation and angle indicators forged on the bow.
- All ROV shackle bows are galvanized, then painted fluorescent yellow.
- Handles are painted fluorescent orange.
- New Interchangeable handles on ROV shackle bolts.
- "D" and "F" handle kits available containing handle, retaining bolts and individual packet of Loctite® for easy installation.
- Handles are **RFID EQUIPPED**.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.

NOTE: ROV Hooks available on page 130 and 131.



Load Rated

QT

CE



QUIC-CHECK®

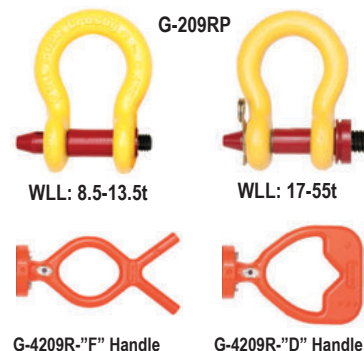
SEE APPLICATION INFORMATION

On Page 92 of the General Catalog
Para Español: www.thecrosbygroup.com

G-209RP ROV Shackles with "D" or "F" Style Handle

Working Load Limit (t)*	G-209RP with "F" Style Handle Dimensions (in.)										G-209RP with "D" Style Handle Dimensions (in.)									
	Weight Each (lbs.)	A +/-	B	C +/-	H	L	O	P	S	T	Weight Each (lbs.)	A +/-	B	C +/-	H	L	O	P	S	T
8-1/2	7.7	.06	1.13	.25	6.56	4.69	3.79	8.66	1.23	0.63	8.3	.06	1.13	.25	6.56	4.69	5.09	7.25	1.23	0.63
9-1/2	9.8	.06	1.25	.25	7.47	5.16	3.79	8.66	1.23	0.63	10.4	.06	1.25	.25	7.47	5.16	5.09	7.25	1.23	0.63
12	12.4	.06	1.38	.25	8.25	5.75	3.79	8.66	1.30	0.63	12.9	.06	1.38	.25	8.25	5.75	5.09	7.25	1.30	0.63
13-1/2	15.6	.13	1.50	.25	9.16	6.38	3.79	8.66	1.40	0.63	16.2	.13	1.50	.25	9.16	6.38	5.09	7.25	1.40	0.63
17	18.5	.13	1.63	.25	10.00	6.88	3.79	9.60	1.79	0.63	19.1	.13	1.63	.25	10.00	6.88	5.09	8.19	1.79	0.63
25	34.1	.13	2.00	.25	12.34	8.80	3.79	9.60	1.85	0.63	34.7	.13	2.00	.25	12.34	8.80	5.09	8.19	1.85	0.63
35	48.5	.13	2.25	.25	13.68	10.15	3.79	9.78	1.94	0.63	49.1	.13	2.25	.25	13.68	10.15	5.09	8.37	1.94	0.63
55	95.2	.25	2.75	.25	17.90	12.74	3.79	10.16	2.06	0.63	95.8	.25	2.75	.25	17.90	12.74	5.09	8.75	2.06	0.63

* Minimum Ultimate Load is 5 times the Working Load Limit. * NOTE: Maximum Proof Load is 2.0 times the Working Load Limit.



G-4209R-"F" Handle

G-4209R-"D" Handle



G-4209RFB



G-4209RDB

G-209RP Bows with Pin. G-4209 Handles and Pin Assemblies

Working Load Limit (t)*	G-209RP Bow with Pin (less Handle)		G-4209R Handle Only				G-4209RFB "F" Pin Assembly		G-4209RDB "D" Pin Assembly	
	Stock No.	Weight Each (lbs.)	"F" Handle Stock No.	Weight Each (lbs.)	"D" Handle Stock No.	Weight Each (lbs.)	Stock No.	Weight Each (lbs.)	Stock No.	Weight Each (lbs.)
8-1/2	1021200	1.2	1021085	2.8	1021094	3.5	1020638	4.0	1020816	4.7
9-1/2	1021208	1.7					1020647	4.5	1020825	5.2
12	1021217	2.2					1020656	5.0	1020834	5.7
13-1/2	1021226	2.9					1020665	5.7	1020843	6.4
17	1021235	5.1					1020674	7.9	1020852	8.6
25	1021244	8.0					1020683	10.8	1020861	11.4
35	1021253	11.2					1020692	14.0	1020870	14.6
55	1021262	21.2					1020709	24.0	1020889	24.6

* Minimum Ultimate Load is 5 times the Working Load Limit. * NOTE: Maximum Proof Load is 2.0 times the Working Load Limit.

HOW TO ORDER: Crosby ROV shackles are designed in a way to allow multiple handle styles to be used with each size of shackles bow. To ensure the proper components are selected, please use the following steps.

STEP 1 - Determine the Working Load Limit (WLL) of the desired shackle.

STEP 2 - Select the G-209RP bow with pin (less handle) that corresponds to the desired WLL.

STEP 3 - Select the G-4209R handle that best meets your requirements.

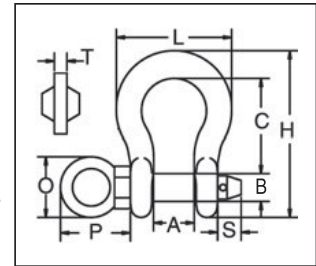
STEP 4 - When placing the order through your local authorized Crosby dealer, reference the corresponding stock numbers associated with the items selected in Steps 2 and 3 above.

Crosby® ROV Shackles



**G-209R
ROV SHACKLE**

- Capacities from 6-1/2t through 55t.
- Forged Steel, Quenched & Tempered, with alloy pins.
- Working Load Limit permanently shown on every shackle.
- Fatigue rated.
- **QUIC-CHECK®** deformation and angle indicators forged on the bow.
- All ROV shackle bows are galvanized, then painted fluorescent yellow.
- Look for the Red Pin® . . . the mark of genuine Crosby quality.



NOTE: ROV Hooks available on page 130 and 131.

Load Rated

Fatigue Rated

"QT"

CE



QUIC-CHECK®

SEE APPLICATION INFORMATION
On Page 92 of the General Catalog
Para Español: www.thecrosbygroup.com

G-209R Subsea Shackles

Working Load Limit (t)*	G-209R Stock No.	Weight Each (lbs.)	Dimensions (in.)								
			A +/- .25	B	C	H	L	O	P	S	T
6-1/2	1020872	3.62	1.44	1.00	3.31	5.83	4.03	1.18	2.28	.65	.39
8-1/2	1020902	5.03	1.69	1.13	3.75	6.56	4.69	1.18	2.40	.73	.39
9-1/2	1020932	7.41	1.81	1.25	4.25	7.47	5.16	2.28	3.27	.75	.47
12	1020952	9.50	2.03	1.38	4.69	8.25	5.75	2.28	3.31	.89	.47
13-1/2	1020972	13.53	2.25	1.50	5.25	9.16	6.38	2.36	3.58	.91	.59
17	1020992	17.20	2.38	1.63	5.75	10.00	6.88	2.36	3.66	1.18	.59
25	1021102	27.78	2.88	2.00	7.00	12.34	8.86	2.16	4.49	1.14	.69
35	1021125	45.00	3.25	2.25	7.75	13.68	9.97	2.60	5.12	1.18	.79
55	1021158	85.75	4.13	2.75	10.50	17.84	12.87	2.76	5.63	1.50	.98

* Minimum Ultimate Load is 5 times the Working Load Limit. Maximum Proof Load is 2.0 times the Working Load Limit.

ROV Shackles & Hooks

In conjunction with major North Sea operations, Crosby has developed specifically-designed products to be used in underwater and/or subsea exercises. These products are designed to be highly visible and easy to use for the ROV operator. The Crosby ROV product line reflects the company's unmatched quality and safety standards while providing versatility for a variety subsea applications. ROV hooks can be found on pages 130 and 131 of this catalog.



SHACKLES

Round Pin Shackles



Round Pin Shackles can be used in tie down, towing, suspension or lifting applications where the load is strictly applied in-line. Round pin shackles should never be used in rigging applications to gather multiple sling legs, or where side loading conditions may occur.

Screw Pin Shackles



Screw Pin Shackles are used in Pick and Place* applications. For permanent or long-term installations, Crosby recommends the use of bolt type shackles.

If you choose to disregard Crosby's recommendation, the screw pin shall be secured from rotation or loosening (Page 93).

Screw pin shackles can be used for applications involving side-loading circumstances. Reduced working load limits are required for side-loading applications. While in service, do not allow the screw pin to be rotated by a live line, such as a choker application.

* Pick and Place application: Pick (move) a load and place as required. Tighten screw pin before each pick.

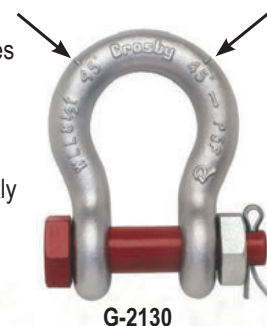
Bolt-Type Shackles



Bolt-Type Shackles can be used in any application where round pin or screw pin shackles are used. In addition, they are recommended for permanent or long term installations and where the load may slide on the shackle pin causing the pin to rotate. The bolt-type shackle's secondary securement system, utilizing a nut and cotter, eliminates the requirement to tighten pin before each lift or movement of load.

QUIC-CHECK® All Crosby Shackles, with the exception of 2160, 2169, 2170, 252 and 253 styles incorporate markings forged into the product that address an easy to use **QUIC-CHECK®** feature. Angle indicators are forged into the shackle bow at 45 degree** angles from vertical. These are utilized on screw pin and bolt type shackles to quickly check the approximate angle of a two-legged hitch, or quickly check the angle of a single leg hitch when the shackle pin is secured and the pull of the load is off vertical (side loaded), thus requiring a reduction in the working load limit of the shackle.

** Round Pin Shackles utilize the 45 degree **QUIC-CHECK®** indicators to ensure load is applied strictly in-line.

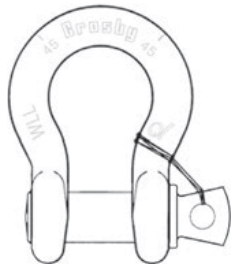




RIGGING PRACTICE SHACKLES

Screw pin shall be fully engaged. If designed for a cotter pin, it shall be used and maintained. Applied load should be centered in the bow to prevent side loading. Multiple sling legs should not be applied to the pin. If side loaded, the rated load shall be reduced according to Table 1 on page 94.

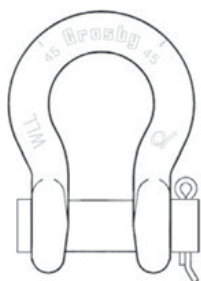
Screw Pin Shackles Pin Security



MOUSE SCREW PIN WHEN USED IN LONG-TERM OR HIGH-VIBRATION APPLICATIONS.

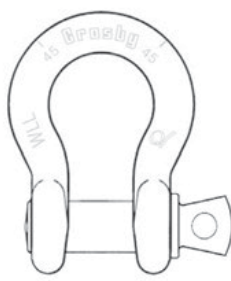
Mouse or Mousing (screw pin shackle) is a secondary securement method used to secure screw pin from rotation or loosening. Annealed iron wire is looped through hole in collar of pin and around adjacent leg of shackle body with wire ends securely twisted together.

Shackles



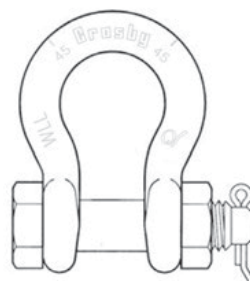
ROUND PIN

Do not side load, do not use as a collector ring, always use cotter pin.



SCREW PIN

Use when picking and placing a load, tighten pin prior to each lift.



BOLT-TYPE

Use in permanent or long-term installations, always use nut and cotter.

Connection of Slings to Shackles

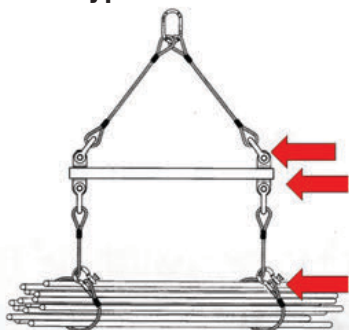


Diameter of shackle must be greater than wire rope diameter if no thimble in eye.



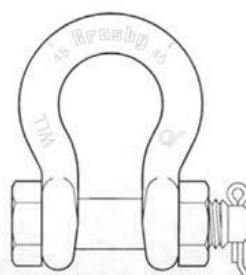
Shackle must be large enough to avoid pinching of synthetic slings.

Bolt-Type Shackles

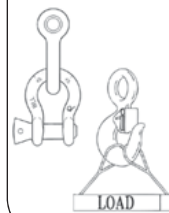


Use Bolt-Type Shackle when a permanent or long-term connection.

Use a screw pin shackle when it will be a temporary connection.



WIRE ROPE SLINGS AND CONNECTIONS TO FITTINGS

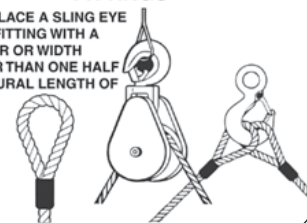


USE A THIMBLE TO PROTECT SLING AND TO INCREASE D/d

NEVER PLACE EYE OVER A FITTING SMALLER DIAMETER OR WIDTH THAN THE ROPE'S DIAMETER

WIRE ROPE SLINGS AND CONNECTIONS TO FITTINGS

NEVER PLACE A SLING EYE OVER A FITTING WITH A DIAMETER OR WIDTH GREATER THAN ONE HALF THE NATURAL LENGTH OF THE EYE



SYNTHETIC SLINGS RATED LOAD

FOLDING, BUNCHING OR PINCHING OF SYNTHETIC SLINGS, WHICH OCCURS WHEN USED WITH SHACKLES, HOOKS OR OTHER APPLICATIONS, WILL REDUCE THE RATED LOAD



BUNCHING

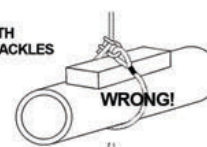


PINCHING

ASME B30.9

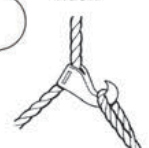
CHOKER HITCH FORMED

WITH SHACKLES



WRONG!

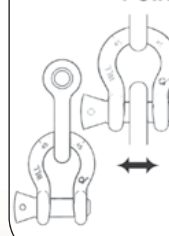
WITH CHOKER HOOK



PLACE PIN IN EYE OF SLING

CORRECT!

CROSBY SHACKLES POINT LOADING

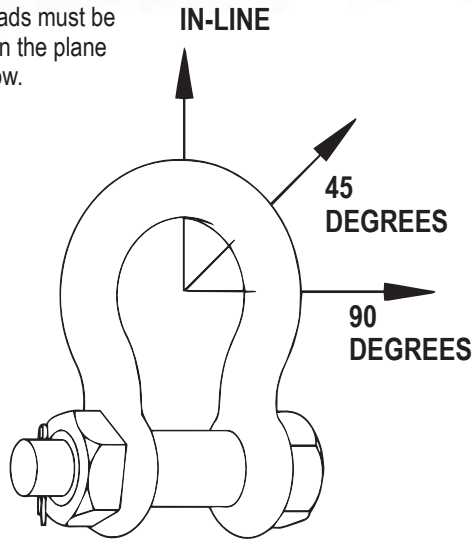


POINT LOADING OF CROSBY SHACKLE BOWS IS ACCEPTABLE

POINT LOADING OF CROSBY SHACKLE PINS IS ACCEPTABLE AS LONG AS LOAD IS REASONABLY CENTERED ON THE PIN

ALTHOUGH POINT LOADING IS ACCEPTABLE, A PAD EYE WIDTH OF 80% OR MORE OF SHACKLE SPREAD IS BEST PRACTICE

Angle loads must be applied in the plane of the bow.



**SIDE LOADED RATING REDUCTION
TABLE FOR 3/16" - 3" (120 METRIC TONS)**

Table 1	
Side Loading Reduction Chart for Screw Pin and Bolt Type Shackles Only+	
Angle of Side Load from Vertical In-Line of Shackle	Adjusted Working Load Limit
0° - 5° In-Line*	100% of Rated Working Load Limit
45° from In-Line*	70% of Rated Working Load Limit
90° from In-Line*	50% of Rated Working Load Limit

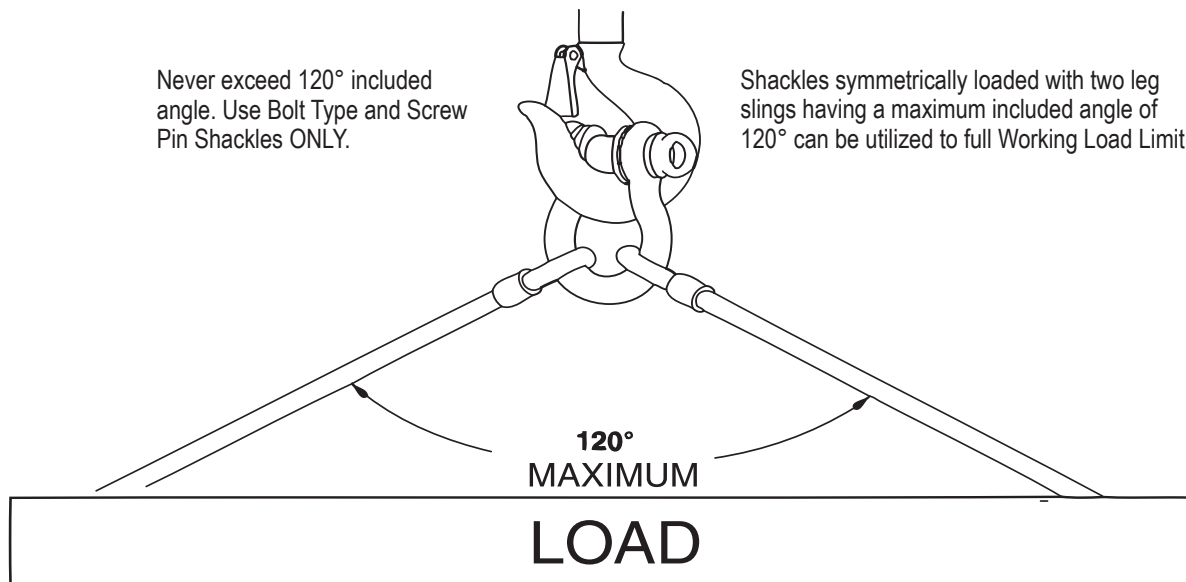
+ In-Line load is applied perpendicular to pin. * **DO NOT SIDE LOAD ROUND PIN SHACKLE.**

For shackles larger than 125 metric tons, where the angle of the side load is greater than 5 degrees, contact Crosby Engineering.

INCLUDED ANGLE - SHACKLES

Never exceed 120° included angle. Use Bolt Type and Screw Pin Shackles ONLY.

Shackles symmetrically loaded with two leg slings having a maximum included angle of 120° can be utilized to full Working Load Limit.



For shackles larger than 125 metric tons, the maximum included angle is 90 degrees for full working load limit. Contact Crosby Engineering if included angle is greater than 90 degrees.