FORGED EYE BOLT

WARNINGS & APPLICATION INSTRUCTIONS

Regular Nut Eye Bolt G-291

Shoulder Nut Eye Bolt G-277

Machinery Eye Bolt S-279 / M-279

Important Safety Information - Read & Follow

Inspection/Maintenance Safety:

- Always inspect eye bolt before use.
- Never use eye bolt that shows signs of wear or damage.
- Never use eye bolt if eye or shank is bent or elongated.
- Always be sure threads on shank and receiving holes are clean.
- Never machine, grind, or cut eye bolt.
- Do not leave threaded end of machinery eye bolt in aluminum loads for long periods of time as it may cause corrosion.

Assembly Safety:

- Never exceed load limits specified in Table I & Table 2.
- Never use regular nut eye bolts for angular lifts.
- Always use shoulder nut eye bolts (or machinery eye bolts) for angular lifts.
- For angular lifts, adjust working load as follows:

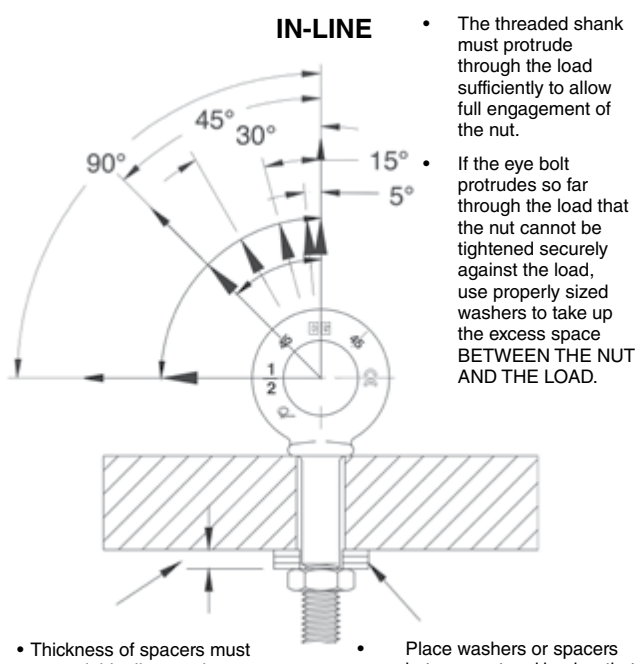
ANGLE FROM "IN-LINE"	ADJUSTED WORKING LOAD LIMIT
5 degrees	100% of rated working load
15 degrees	80% of rated working load
30 degrees	65% of rated working load
45 degrees	30% of rated working load
90 degrees	25% of rated working load

- Never undercut eye bolt to seat shoulder against the load.
- Always countersink receiving hole or use washers with sufficient I.D. to seat shoulder.
- Always screw eye bolt down completely for proper seating.
- Always tighten nuts securely against the load.

⚠ WARNING

- **Load may slip or fall if proper eye bolt assembly and lifting procedures are not used.**
- **A falling load can seriously injure or kill.**
- **Read and understand these instructions, and follow all eye bolt safety information presented here.**
- **Read, understand, and follow information in diagrams and charts below before using eye bolt assemblies.**

Shoulder Nut Eye Bolt – Installation for Angular Loading



- The threaded shank must protrude through the load sufficiently to allow full engagement of the nut.
- If the eye bolt protrudes so far through the load that the nut cannot be tightened securely against the load, use properly sized washers to take up the excess space BETWEEN THE NUT AND THE LOAD.
- Thickness of spacers must exceed this distance between the bottom of the load and the last thread of the eye bolt.
- Place washers or spacers between nut and load so that when the nut is tightened securely, the shoulder is secured flush against the load surface.

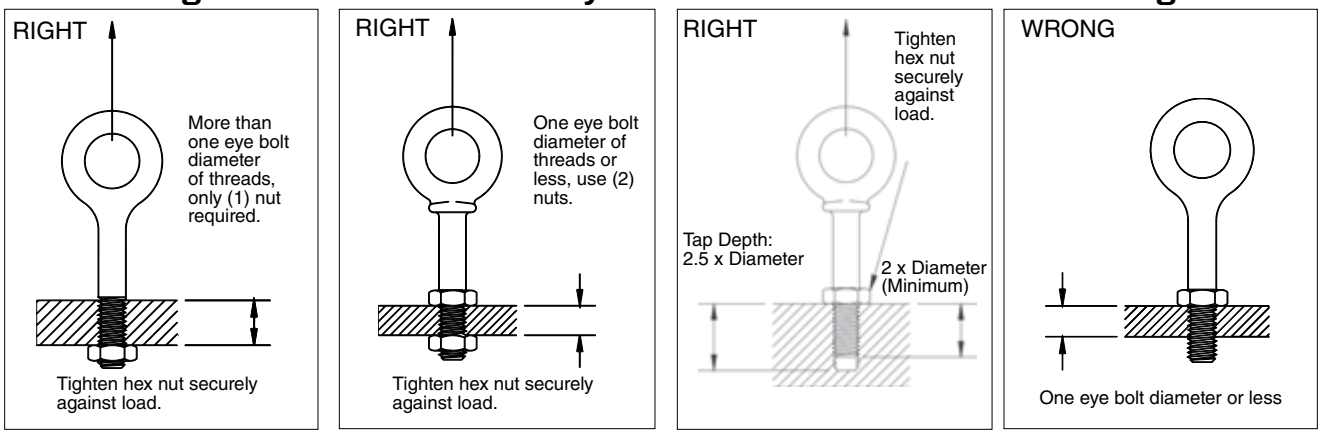
Figure 1

Table 1 (In-Line Load)	
Size (in)	Working Load Limit (lb)
1/4	650
5/16	1,200
3/8	1,550
1/2	2,600
5/8	5,200
3/4	7,200
7/8	10,600
1	13,300
1-1/8	15,000
1-1/4	21,000
1-1/2	24,000
1-3/4	34,000
2	42,000
2-1/2	65,000

Table 2 (In-Line Load)	
Metric Size	Working Load Limit - kg
m6	200
m8	400
m10	640
m12	1000
m16	1800
m20	2500
m24	4000
m27	5000
m30	6000
m36	8500
m42	14000
m48	17300
m64	29500

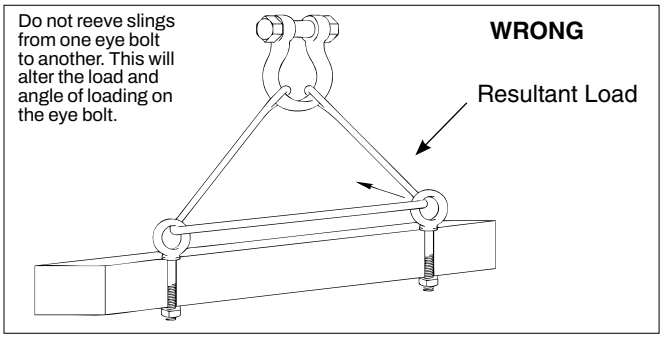
Important – Read and understand these instructions before using eye bolts.

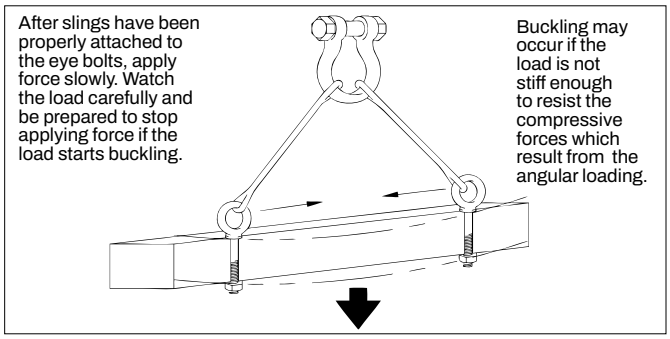
Regular Nut & Shoulder Nut Eye Bolt – Installation for In-Line Loading



Operating Safety

- Always stand clear of load.
- Always lift load with steady, even pull – do not jerk.
- Always apply load to eye bolt in the plane of the eye – not at an angle.
- Never exceed the capacity of the eye bolt–see Table 1 & 2.
- When using lifting slings of two or more legs, make sure the loads in the legs are calculated using the angle from the vertical sling angle to the leg and properly size the shoulder nut or machinery eye bolt for the angular load.





Machinery Eye Bolt - Installation for In-Line & Angular Loading

These eye bolts are primarily intended to be installed into tapped holes.

1. After the loads on the eye bolts have been calculated, select the proper size eye bolt for the job.

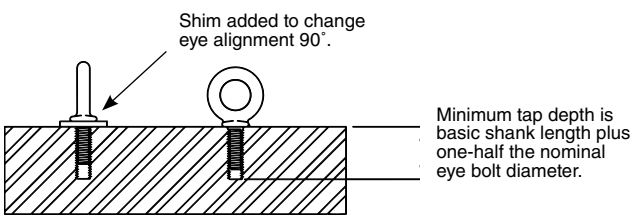
   For angular lifts, adjust working load as follows:

Direction of Pull (from In-Line)	Adjusted Working Load
45 degrees	30% of rated working load
90 degrees	25% of rated working load

2. Drill and tap the load to the correct sizes to a minimum depth of one-half the eye bolt size beyond the shank length of the machinery eye bolt.
3. Thread the eye bolt into the load until the shoulder is flush and securely tightened against the load.
4. If the plane of the machinery eye bolt is not aligned with the sling line, estimate the amount of unthreading rotation necessary to align the plane of the eye properly.
5. Remove the machinery eye bolt from the load and add shims (washers) of proper thickness to adjust the angle of the plane of the eye to match the sling line. Use Table 3 to estimate the required shim thickness for the amount of unthreading rotation required.

Table 3

Eye Bolt Size (in)	Shim Thickness Required to Change Rotation 90° (in)	Eye Bolt Size (mm)	Shim Thickness Required to change Rotation 90° (mm)
1/4	.0125	M6	.25
5/16	.0139	M8	.31
3/8	.0156	M10	.38
1/2	.0192	M12	.44
5/8	.0227	M16	.50
3/4	.0250	M20	.62
7/8	.0278	M24	.75
1	.0312	M27	.75
1-1/8	.0357	M30	.88
1-1/4	.0357	M36	1.00
1-1/2	.0417	M42	1.13
1-3/4	.0500	M48	1.25
2	.0556	M64	1.50
2-1/2	.0625	—	—



CROSBY® PIVOT HOIST RING

WARNINGS & APPLICATION INSTRUCTIONS

HR-100

⚠ WARNING

- **Load may slip or fall if proper Hoist Ring assembly and lifting procedures are not used.**
- **A falling load can seriously injure or kill.**
- **Do not use with damaged slings or chain. For inspection criteria see ASME B30.9.**
- **Never apply load except in line with the pivot direction.**
- **Use only genuine Crosby bolts as replacements.**
- **Read and understand these warnings and application instructions.**

Pivot Hoist Ring Application / Assembly Instructions

- Use pivot hoist ring only with ferrous metal (steel, iron) workpiece. Do not leave threaded end of hoist ring in aluminium for long periods of time due to corrosion.
- After determining the loads on each pivot hoist ring, select the proper size using the Working Load Limit (WLL) ratings in Table 1 for UNC threads.
- Drill and tap the workpiece to the correct size to a minimum depth of one-half the threaded bolt diameter plus the effective thread projection length (see Table 1, on next page). To select proper bolt and thread sizes see Table 1 on next page.
- Install the pivot hoist ring to recommended torque with a torque wrench making sure the pivot hoist ring body meets the load (workpiece) surface. See rated load limit and bolt torque requirements imprinted on top of the pivot hoist ring body (see Table 1, on next page).
- Never use spacers between the pivot hoist ring body and workpiece surface.
- Always select proper load rated lifting device for use with pivot hoist ring.
- Attach lifting device ensuring free fit to pivot hoist ring bail (lifting ring) (Figure 1).
- Apply partial load and check proper pivot. Ensure load alignment is in the direction of pivot (Figure 4). There should be no interference between load (workpiece) and pivot hoist ring bail (Figure 2).

Pivot Hoist Ring Inspection / Maintenance

- Always inspect pivot hoist ring before use.
- Regularly inspect pivot hoist ring parts (Figure 3).
- Never use pivot hoist ring that shows signs of corrosion, wear or damage.
- Never use pivot hoist ring if bail is bent or elongated.
- Do not use parts showing cracks, nicks or gouges.
- Always be sure threads on bolts and receiving holes are clean, not damaged or worn, and fit properly.
- Always check with torque wrench before using an already installed pivot hoist ring.
- Always make sure there are no spacers (washers) used between pivot hoist ring body and the workpiece surface. Remove any spacers (washers) and retorque before use.
- Always ensure free movement of the bail. The bail should pivot 180 degrees (Figure 4).
- Always be sure total workpiece surface is in contact with the pivot hoist ring body mating surface. Drilled and tapped holes must be 90 degrees to load (workpiece) surface.
- Always make sure that the load is applied in the direction of pivot.

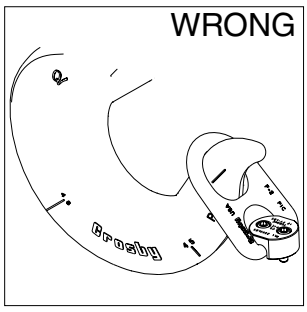


Figure 1

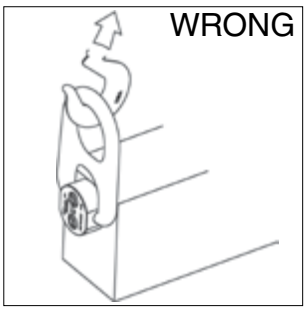


Figure 2

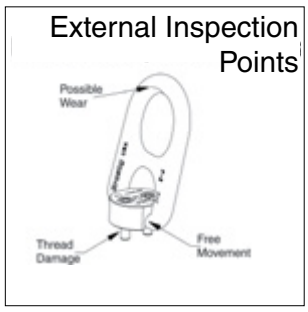


Figure 3

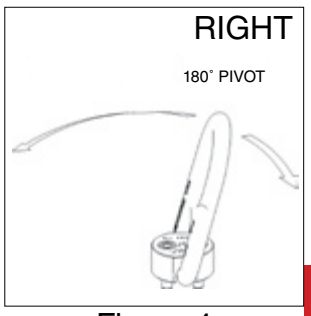


Figure 4

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Operating Safety

- Never exceed the capacity (WLL) of the pivot hoist ring, See Table 1 for UNC threads.
- When using lifting slings of two or more legs, make sure the forces in the legs are calculated using the angle from the horizontal sling angle to the leg and select the proper size pivot hoist ring. When using a multi-leg lifting sling, the pivot hoist ring must be mounted so that the pivot direction is inline with the load applied.

Table 1
HR-100 Pivot Hoist Rings**

Working Load Limit* (lb)	Torque in Ft • lb †	No. of Bolts	Dimensions (in)	
			Bolt Size††	Effective Thread Projection Length
2,000	7	2	5/16 - 18	0.82
2,500	12	2	3/8 - 16	0.65
5,000	28	2	1/2 - 13	1.40
12,000	28	4	1/2 - 13	1.65
20,000	60	4	5/8 - 11	1.65

* Ultimate load is 5 times the working load limit. Individually proof tested to 2-1/2 times the working load limit.

† Tightening torque values shown are based upon threads being clean, dry and free of lubrication.

** Designed to be used with ferrous workpiece only.

†† Only use Crosby high strength replacement bolts. Do not use any other bolts.

After slings have been properly attached to the hoist ring, apply force slowly.
Watch the load and be prepared to stop applying force if the load starts buckling.

Buckling may occur if the load is not stiff enough to resist the compressive forces which result from the angular loading.

Do not reeve slings from one bail to another. This will alter the load and angle of loading on the hoist ring.

WRONG

SIDE PULL HR-1200

WARNINGS & APPLICATION INSTRUCTIONS

HR-1200

Hoist Ring Application / Assembly Instruction

- The Crosby side pull swivel hoist ring is designed to accept standard Crosby fittings to facilitate wider slings and quick attachment. In order to use the larger fittings, the load rating on the (shackle) fitting may be greater than the hoist ring frame. **Never exceed the Working Load Limit of the hoist ring frame.**
- Use swivel hoist ring only with a ferrous metal (steel, iron) or non-ferrous (i.e., aluminum) loads (workpiece). Do not leave threaded end of hoist ring in aluminum loads for long time periods due to corrosion.
- After determining the loads on each hoist ring, select the proper size hoist ring using the Working Load Limit ratings in Table 1 for UNC threads and Table 2 for Metric threads (on next page.)
- For Subsea or Metric environment application, use the HR-1200 CT Series hoist ring only.
- Drill and tap the workpiece to the correct size to a minimum depth of one-half the threaded shank diameter plus the threaded shank length.
- Install hoist ring to recommended torque with a torque wrench making sure the bushing flange is fully supported by the load (workpiece) surface. See rated load limit and bolt torque requirements imprinted on hoist ring body (See Table 1 or Table 2).
- Never use spacers between bushing flange and mounting surface.
- Always select proper lifting device for use with Swivel Hoist Ring (See Tables 1 & 2 on next page).
- Attach lifting device ensuring free fit to hoist shackle (See Figure 3).
- Apply partial load and check proper rotation and alignment of shackle. There should be no interference between load (workpiece) and hoist shackle (See Figure 1 and Figure 4).
- The Hoist ring should rotate into normal operating position, with shackle aligned with load as shown in Figure 3. If shackle is oriented as shown in Figure 4, **DO NOT LIFT**.
- **Special Note:** when a Hoist Ring is installed with a retention nut, the nut must have full thread engagement and must meet one of the following standards to develop the Working Load Limit (WLL).
  1. ASTM A-563 (A) Grade D Hex Thick
  2. (B) Grade DH Standard Hex
  3. SAE Grade 8 - Standard Hex

Hoist Ring Inspection / Maintenance

- Always inspect hoist ring before use.
- Regularly inspect hoist ring parts (Figure 2).
- For hoist rings used in frequent load cycles or on pulsating loads, the bolt threads should be periodically inspected by magnetic particle or dye penetrant.
- Do not use part showing cracks, nicks or gouges.
- Repair minor nicks or gouges to hoist frame by lightly grinding until surfaces are smooth. Do not reduce original dimension more than 10%. Do not repair by welding.

⚠ WARNING

- **Loads may slip or fall if proper Hoist Ring assembly and lifting procedures are not followed.**
- **A falling load may cause serious injury or death.**
- **Install hoist ring bolt to torque requirements listed in tables.**
- **The side pull hoist ring frame will be only one part of a lifting system with several components (i.e., shackles and slings). Never exceed the Working Load Limit of the hoist ring frame.**
- **Do not use damaged slings or chain. For inspection criteria, see ASME B30.9.**
- **Read and understand these instructions before using hoist ring.**
- **The tension of the sling must be calculated or measured and can not exceed the working load limit (WLL) of the load connection fitting.**
- **Use only genuine Crosby parts as replacements.**
- **Replacement bolt kits are available from Crosby.**

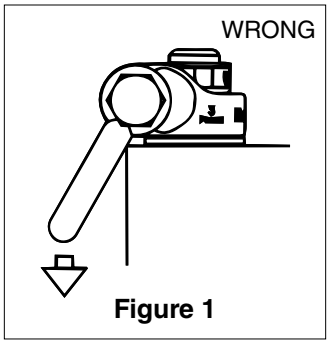


Figure 1

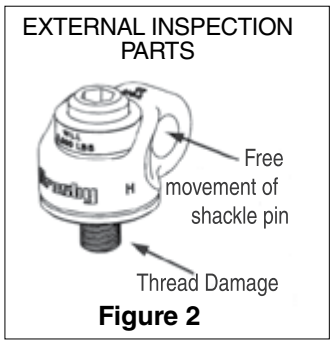


Figure 2

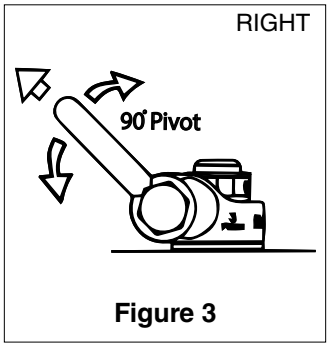


Figure 3

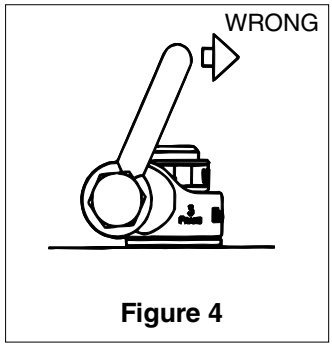
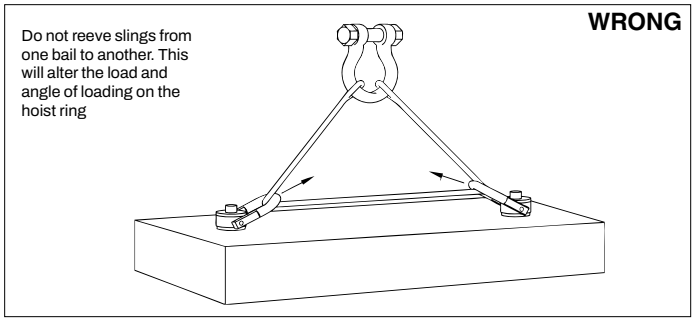


Figure 4

- Never use hoist ring that shows signs of corrosion, wear or damage.
- Never use hoist ring if components are bent or elongated.
- Always be sure threads on bolt and receiving tapped holes are clean, undamaged, and fit properly.
- Always check with torque wrench before using an already installed hoist ring.
- Always make sure there are no spacers (washers) used between bushing flange and the mounting surface. Remove any spacers (washers) and retorque before use.
- Always ensure free movement of shackle. The shackle should pivot 90° and the hoist ring should swivel 360° (See Figure 3).
- Always be sure total workpiece surface is in contact with hoist ring bushing mating surface. Drilled and tapped hole must be 90° to load (workpiece) surface.

OPERATING SAFETY

- Never exceed the capacity of the hoist ring, see Table 1 for UNC threads and Table 2 for Metric threads.
- When using lifting slings of two or more legs, make sure the forces in the legs are calculated using the angle from the horizontal sling angle to the leg and select the proper size swivel hoist ring to allow for the angular forces.



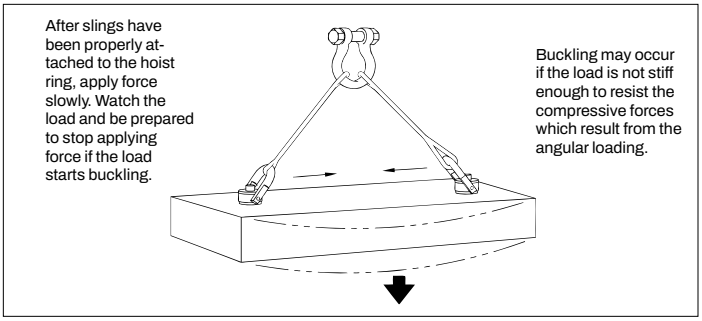


TABLE 1

HR-1200 UNC Threads

Frame Size	Working Load Limit * (lb)	Hoist Ring Bolt Torque in Ft • lb †	Bolt Size ‡ (in)	Effective Thread Projection Length (in)	Recommended Shackles	
					Red Pin ® Shackles 209, 210, 213 215, 2130, 2150	Red Pin ® Web Shackles S-281
1	650†† 800††	7 12	5/16 - 18 x 1.5 3/8 - 18 x 1.5	.59 .59	1/2" - (2) 5/8" - (3-1/4)	2" - (3-1/4)
2	2000 2000†† 3000 3000††	28 28 60 60	1/2 - 13 x 2.0 1/2 - 13 x 2.5 5/8 - 11 x 2.0 5/8 - 11 x 2.75	.71 1.21 .71 1.46	5/8" - (3-1/4) 3/4" - (4-3/4)	2" - (3-1/4) 1-1/2" - (4-1/2)
3	5000 5000†† 6500 6500†† 8000 8000††	100 100 160 160 230 230	3/4 - 10 x 2.75 3/4 - 10 x 3.5 7/8 - 9 x 2.5 7/8 - 9 x 3.5 1 - 8 x 3.0 1 - 8 x 4.0	1.46 1.63 .90 1.68 1.15 2.15	7/8" - (6-1/2)	2" - (6-1/4)
4	14000	470	1-1/4 - 7 x 4.5	2.22	1" - (8-1/2) 1-1/8" - (9-1/2) 1-1/4" - (12)	3" - (8-1/2)
5	17200 29000	800 1100	1-1/2 - 6 x 6.5 2 - 4-1/2 x 6.5	2.88 2.98	1-3/8" - (13-1/2) 1-1/2" - (17) 1-3/4" - (25)	—

HR-1200M Metric Threads

Frame Size	Working Load Limit * (kg)	Hoist Ring Bolt Torque in Nm †	Bolt Size ‡ (mm)	Effective Thread Projection Length (mm)	Recommended Shackles	
					Red Pin ® Shackles 209, 210, 213 215, 2130, 2150	Red Pin ® Web Shackles S-281
1	300 400	10 16	M8 x 1.25 x 40 M10 x 1.5 x 40	16.9 16.9	1/2" - (2) 5/8" - (3-1/4)	2" - (3-1/4)
2	1000 1400	38 81	M12 x 1.75 x 50 M16 x 2.00 x 60	17.2 27.2	5/8" - (3-1/4) 3/4" - (4-3/4)	2" - (3-1/4) 1-1/2" - (4-1/2)
3	2250 3500	136 312	M20 x 2.50 x 75 M24 x3.00 x 80	28.1 33.1	7/8" - (6-1/2)	2" - (6-1/4)
4	6250	637	M30 x 3.5 x 120	65.1	1" - (8-1/2) 1-1/8" - (9-1/2) 1-1/4" - (12)	3" - (8-1/2)
5	7750 10000 13000	1005 1005 1350	M36 x 4.0 x 150 M42 x 4.5 x 160 M48 x 5.0 x 160	60.6 70.6 70.6	1-3/8" - (13-1/2) 1-1/2" - (17) 1-3/4" - (25)	—

Designed to be used with Ferrous workpiece only.

* Ultimate load is 5 times the Working Load Limit. Individually proof tested to 2-1/2 times the Working Load Limit.
† Tightening torque values shown are based upon threads being clean, dry and free of lubrication.
†† Long bolts are designed for use with soft metal (i.e., aluminum) workpiece. While the long bolts may also be used with ferrous metal (i.e., steel & iron) workpieces, short bolts are designed for ferrous workpieces only.
‡ Bolt specification is a Grade 8 Alloy socket head cap screw to ASTM A574. All threads are UNC - 3A.
‡‡ Bolt specification is a Grade 12.9 Alloy socket head cap to DIN 912. All threads are metric (ASME/ANSI B18.3.1m).

CROSBY® WELD-ON PIVOTING LINK

WARNING & APPLICATION INSTRUCTIONS

S-265

⚠ WARNING

- **Loads may disengage from link if proper welding, assembly, and lifting procedures are not used.**
- **A falling load may cause serious injury or death.**
- **Do not use with damaged slings or chain. For sling inspection criteria see ASME B30.9.**
- **Read and understand these instructions before welding on, or using the pivoting link.**

Important Safety Information - Read and Follow

- Use weld-on pivoting link only with ferrous metal (steel) workpiece.
- After determining the loads on each weld-on pivoting link, select the proper size using the Working Load Limit (WLL) ratings in Table 1 on next page.
- Always make sure the weld-on pivoting link and mounting surface is free of dirt or contaminants before installation.
- Never use spacers between the weld-on pivot link and mounting surface.
- Always select proper load rated lifting device for use with weld-on pivoting link.
- Attach lifting device ensuring free movement of weld-on pivoting link bail (Figure 1).
- Apply partial load and check proper alignment. There should be no interference between load (workpiece) and weld-on pivoting link (Figure 2).
- Always ensure free movement of bail. The bail should pivot 180 degrees (Figure 4).
- The support structure that the pivot link is attached to must be of suitable size, composition and quality to support the anticipated loads of all operating positions. The required support structure thickness for a given application is dependent on variables such as unsupported length and material strength, and should be determined by a qualified individual.
- Never repair, alter, rework or reshape the pivoting link bail by welding, heating, burning or bending.

Weld-on Pivoting Link Inspection / Maintenance

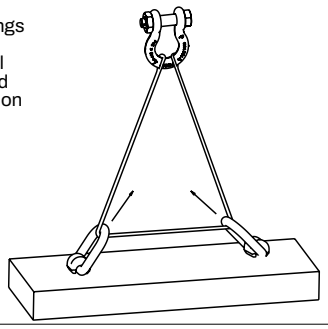
- Always inspect weld-on pivoting link before use.
- Regularly inspect weld-on pivoting link parts (Figure 3).
- Never use weld-on pivoting link that shows signs of corrosion, wear or damage.
- Never use weld-on pivoting link if bail is bent or elongated.
- Do not use part showing cracks, nicks or gouges.
- Always make sure there are no spacers used between weld-on pivoting link and the mounting surface.
- Always be sure workpiece surface is in total contact with the weld-on pivoting link base mating surface.
- Always inspect the weld-on pivoting link bail and base for wear.
- A visual periodic inspection of the weld should be performed. Check the weld visually, or use a suitable NDE method if required.

Operating Safety

- Never exceed the capacity (WLL) of the weld-on pivoting link (Table 1, next page).
- Always apply load within 90˚ of inline, at any pivot angle (Figure 4 & 5).
- When using lifting slings of two or more legs, make sure the forces in the legs are calculated using the angle from the horizontal sling angle to the leg and select the proper size link.

Do not reeve slings from one bail to another. This will alter the load and angle of loading on the pivoting link.

WRONG



After slings have been properly attached to the pivoting link, apply force slowly. Watch the load and be prepared to stop applying force if the load starts buckling.

Buckling may occur if the load is not stiff enough to resist the compressive force which results from the angular loading.

Figure 1

Figure 2

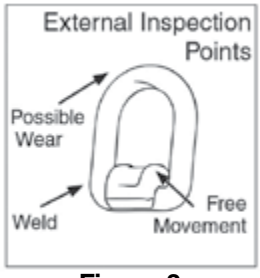


Figure 3

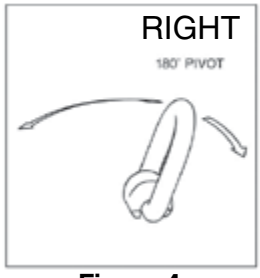


Figure 4

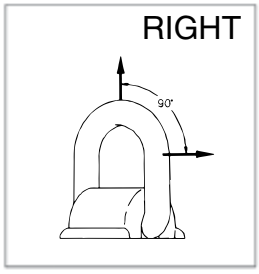


Figure 5

Weld-on Pivoting Link Welding Guidelines

1. Select the correct size weld-on pivoting link to be used. Be sure to calculate the maximum load that will be applied to the weld-on pivoting link.
2. Place the weld-on pivoting link onto the mounting surface. The bottom of the link base must be parallel and even with the mounting surface.
3. Welding is to be performed by a qualified welder using a qualified procedure in accordance with American Welding Society and/or American Society of Mechanical Engineers requirements. Always follow your country or local mandatory regulations or codes.
4. The following welding recommendations should be included in the qualified procedure for welding to low or medium carbon plate steel. For welding to other grades of steel, a qualified weld procedure must be developed.
   - A. Saddle material is equivalent to SAE/AISI 1024, EN S355J2, or DIN 1.0570.
   - B. Weld material is to have a minimum tensile strength of 70,000 PSI (such as AWS A5.1 E-7018). Observe the electrode manufacturer's recommendations. Completely fill internal fillet created between weld-on pivoting link base and mounting surface.
   - C. Before welding, all weld surfaces must be clean and free from rust, grease, paint, slag and any other contaminants.
   - D. Fillet weld leg size should be minimum shown in Table 1. Weld profiles to be in accordance with AWS. Weld size is measured by length of leg.
   - E. Welding should be carried out in a minimum of two passes to ensure adequate root penetration at the base of the pivoting link.
   - F. Weld full length of "D" dimension on both sides of link base (Figure 5).
   - G. Do not weld close to the bail. After welding, ensure bail pivots full 180° without interfering with the weld.
   - H. Do not rapidly cool the weld.
   - I. The ends of the weld must be ground sufficiently so that the weld-on pivoting link will fit flush against the mounting surface.
   - J. A thorough inspection of the weld should be performed. 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.
   - K. If repair is required, grind out the defect and re-weld using the original qualified procedure.

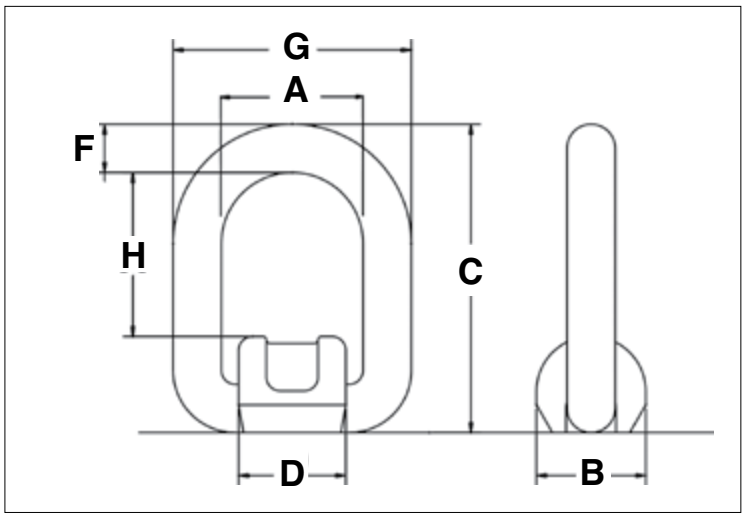


Figure 5

Table 1
S-265 Weld-on Pivoting Links*

Stock Number	Working Load Limit (t)		Dimensions (in)								Weight Each (lb)
	Design Factor 5:1	Design Factor 4:1	A	B	C	D	F	G	H	Minimum Fillet Weld Size	
1290839	1	1.2	1.57	1.42	3.27	1.38	0.51	2.60	1.65	3/32	.88
1290848	2.5	3.2	1.77	1.73	3.90	1.65	0.71	3.19	1.89	3/32	1.32
1290857	4	5.3	2.17	1.97	4.84	1.93	0.87	3.90	2.24	1/4	2.65
1290866	6.4	8	2.76	2.52	5.67	2.52	1.02	4.80	2.64	1/4	5.29
1290875	12	15	3.82	3.54	7.60	3.39	1.34	6.50	3.70	5/16	13.01

*Designed to be used with ferrous workpiece only.

CROSBY SWIVEL HOIST RING

WARNING & APPLICATION INSTRUCTIONS

HR-125/SS-125
(Red Washer)
HR-125M
SS-125M
(Silver Washer)

HR-1000
(Red Washer)
HR-1000M
(Sliver Washer)
HR-1000CT
(Blue Washer)

Hoist Ring Application Assembly Safety

- Use swivel hoist ring only with a ferrous metal (steel, iron) or soft metal (i.e., aluminum) load (workpiece). Do not leave threaded end of hoist ring in aluminum loads for long time periods due to corrosion.
- For subsea or marine environment applications, use the HR-1000CT series Hoist Ring only.
- After determining the loads on each hoist ring, select the proper size hoist ring using the Working Load Limit ratings in Tables 1, 3, and 5 for UNC threads and Tables 2, 4 and 6 for Metric threads (on next page).
- Drill and tap the workpiece to the correct size to a minimum depth of one-half the threaded shank diameter plus the threaded shank length. See rated load limit and bolt torque requirements imprinted on top of the swivel trunnion (See Table 1 through Table 6 on next page).
- When a hoist ring is used in a side load application, ensure equal loading on the pins by aligning the bail as shown in (Fig. 3).
- Always be sure total hoist ring bushing mating surface is in contact with the (workpiece) surface. Drilled and tapped hole must be 90 degrees to load (workpiece) surface.
- Install hoist ring to recommended torque with a torque wrench making sure the bushing flange meets the load (workpiece) surface.
- Never use spacers between bushing flange and mounting surface.
- Always select proper load rated lifting device for use with Swivel Hoist Ring.
- Attach lifting device ensuring free fit to hoist ring bail (lifting ring) (Fig. 1).
- Apply partial load and check proper rotation and alignment. There should be no interference between load (workpiece) and hoist ring bail (Fig. 2).
- Special Note: Recommended thru hole clearance is 1/32" for bolts smaller than 1" and 2/32" for bolts 1" and larger in diameter.

UNC NUTS

1. **ASTM A-563**
   Grade D
   (Heavy Hex or Hex Thick)
   Grade DH
   Grade DH3
2. **ASTM A-194**
   Grade 2H
   Grade 4
   Grade 7
3. **FNL**
   Grade 9
4. **SAE J995**
   Grade 8

METRIC NUTS

1. **ASTM A-563M**
   Class 10S
2. **ISO 898-2**
   (EN 20898-2/DIN 267-4)
   Class 10
   Class 12

Minimum thread engagement length is one times thread diameter.

Hoist Ring Inspection / Maintenance

- Always inspect hoist ring before use.
- Regularly inspect hoist ring parts.
- Never use hoist ring that shows signs of corrosion, wear or damage.
- Never use hoist ring if bail is bent or elongated.
- Always be sure threads on shank and receiving hole are clean, not damaged, and fit properly.
- Always check with torque wrench before using an already installed hoist ring.
- Always make sure there are no spacers (washers) used between bushing flange and the mounting surface. Remove any spacers (washers) and retorque before use.
- Prior to loading always ensure free movement of bail. The bail should pivot 180 degrees and swivel 360 degrees.

⚠ WARNING

- **Loads may slip or fall if proper Hoist Ring assembly and lifting procedures are not used.**
- **A falling load may cause serious injury or death.**
- **Install hoist ring bolt to torque requirements listed in tables 1, 2, 3, 4, 5, & 6 for the HR-125, HR-1000, HR-1000CT, HR-125M, HR-1000M and SS-125.**
- **Read, understand and follow all instructions and chart information.**
- **Do not use with damaged slings, chain, or webbing. For inspection criteria see ASME B30.9.**
- **The tension of the sling must be calculated or measured and can not exceed the working load limit (WLL) of the load connection fitting.**
- **Use only genuine Crosby parts as replacements.**

Operating Safety

- Never exceed the capacity of the swivel hoist ring, see Tables 1, 2 and 5 for UNC threads and Tables 3, 4 and 6 for Metric threads (See next page for tables.).
- When using lifting slings of two or more legs, make sure the forces in the legs are calculated using the angle from the horizontal sling angle to the leg and select the proper size swivel hoist ring to allow for the angular forces.

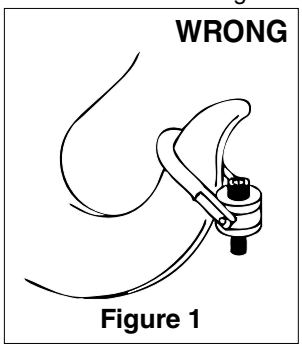


Figure 1

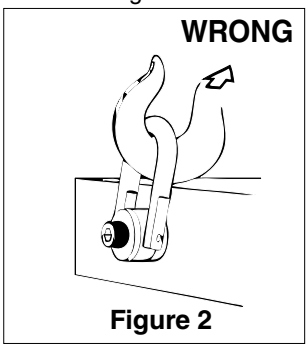


Figure 2

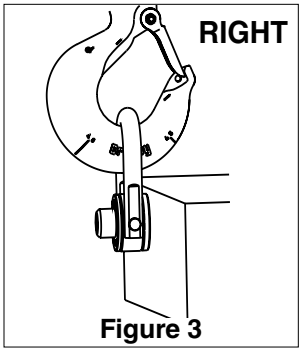


Figure 3

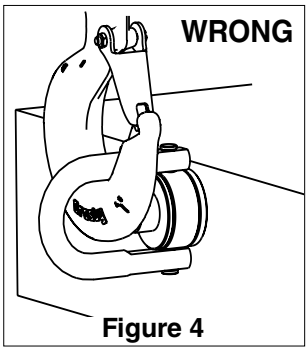


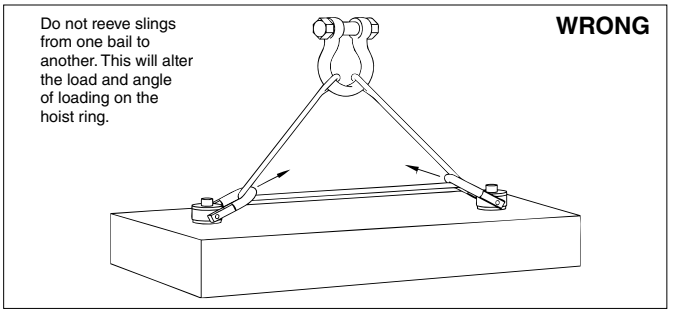
Figure 4

17

Table 1

WLL* 5:1 (lb)	Hoist Ring Bolt Torque Ft•lbs †	HR-125 Bolt Size ‡ (in)	HR-125 Effective Thread Projection Length (in)	HR-1000 Bolt Size ‡ (in)	HR-1000 Effective Thread Projection Length (in)
800 ††	7	5/16 - 18 x 1.50	.58	5/16 - 18 x 1.50	.52
1000 ††	12	3/8 - 16 x 1.50	.58	3/8 - 16 x 1.50	.52
2500	28	1/2 - 13 x 2.00	.70	1/2 - 13 x 2.25	.69
2500 ††	28	1/2 - 13 x 2.50	1.20	1/2 - 13 x 2.75	1.19
4000	60	5/8 - 11 x 2.00	.70	5/8 - 11 x 2.25	.69
4000 ††	60	5/8 - 11 x 2.75	1.45	5/8 - 11 x 3.00	1.44
5000	100	3/4 - 10 x 2.25	.95	3/4 - 10 x 2.50	.94
5000 ††	100	3/4 - 10 x 2.75	1.45	3/4 - 10 x 3.00	1.44
7000 Ω	100	3/4 - 10 x 2.75	.89	3/4 - 10 x 3.00	.85
7000 ††Ω	100	3/4 - 10 x 3.50	1.64	3/4 - 10 x 3.50	1.35
8000	160	7/8 - 9 x 2.75	.89	7/8 - 9 x 3.00	.85
8000 ††	160	7/8 - 9 x 3.50	1.64	7/8 - 9 x 3.50	1.35
10000	230	1 - 8 x 3.00	1.14	1 - 8 x 3.50	1.35
10000 ††	230	1 - 8 x 4.00	2.14	1 - 8 x 4.50	2.35
15000	470	1-1/4 - 7 x 4.50	2.21	1-1/4 - 7 x 5.00	2.09
24000	800	1-1/2 - 6 x 6.75	2.97	1-1/2 - 6 x 5.50	2.59
30000	1100	2 - 4-1/2 x 6.75	2.97	—	—
50000	2100	2-1/2 - 4 x 8.00	4.00	—	—
75000	4300	3 - 4 x 10.50	5.00	—	—
100000	5100	3-1/2 - 4 x 13.00	7.00	—	—

Ω Ultimate Load is 4.5 times Working Load Limit for 7000# Hoist Ring when tested in 90° orientation. All sizes are individually proof tested to 2-1/2 times the Working Load Limit. *, †, ††, ‡ (See footnotes at bottom of Table 5).



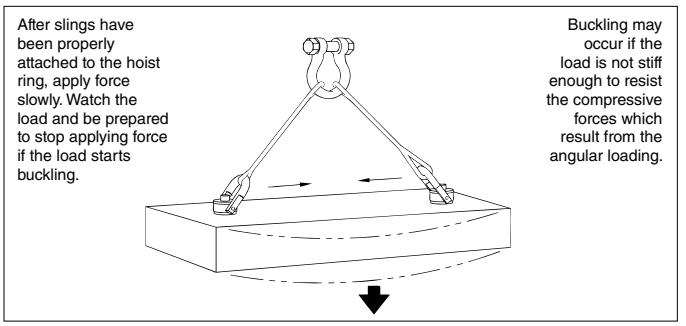


Table 2

Working Load Limit (kg) ****		HR-1000MCT		
Design Factor 5:1	Design Factor 4:1	Hoist Ring Bolt Torque in (Nm) †	Bolt Size (mm) ‡‡	Effective Thread Projection Length (mm)
825	1030	38	M12 x 1.75 x 55	15.6
1350	1690	81	M16 x 2.00 x 65	25.5
2250	2810	136	M20 x 2.50 x 80	25.3
3175	3970	312	M24 x 3.00 x 90	35.4
5450	6810	637	M30 x 3.50 x 140	65.9
7450	9310	1005	M36 x 4.00 x 130	56.3
13250	16560	1350	M48 x 5.00 x 180	50.7

Table 3

HR-1000CT

Working Load Limit 5:1 (lb) ****	Hoist Ring Bolt Torque in (Ft • lbs) †	Bolt Size (in) Δ	Effective Thread Projection Length (in)
1900	28	1/2 - 13 x 2.25	.70
1900	28	1/2 - 13 x 2.75	1.20
3000	60	5/8 - 11 x 2.25	.70
4800	100	3/4 - 10 x 3.00	.85
6200	160	7/8 - 9 x 3.00	.85
8300	230	1 - 8 x 3.50	1.35
12500	470	1 1/4 - 7 x 5.00	2.10
20000	800	1 1/2 - 6 x 5.50	2.60
20000	800	1 1/2 - 8 x 5.50	2.60
28000	1100	2 - 4.5 x 7.50	3.20
45000	2100	2 1/2 - 4 x 9.50	3.73

Table 4

Working Load Limit (kg)***			HR-125M		HR-1000M	
Design Factor 5:1	HR-125M Design 4:1	Hoist Ring Bolt Torque in Nm †	Bolt Size ‡‡ (mm)	HR-125M Effective Thread Projection Length (mm)	Bolt Size ‡‡ (mm)	HR-1000M Effective Thread Projection Length (mm)
400	500	10	M 8 X 1.25 X 40	16.9	M 8 X 1.25 X 40	15.2
450	550	16	M 10 X 1.50 X 40	16.9	M 10 X 1.50 X 40	15.2
1050	1300	38	M 12 X 1.75 X 50	17.2	M 12 X 1.75 X 55	15.5
1900	2400	81	M 16 X 2.00 X 60	27.2	M 16 X 2.00 X 65	25.5
2150	2700	136	M 20 X 2.50 X 65	31.2	M 20 X 2.50 X 70	30.5
3000	3750	136	M 20 X 2.50 X 75	28.1	M 20 X 2.50 X 80	25.4
4200	5250	312	M 24 X 3.00 X 80	33.1	M 24 X 3.00 X 90	35.4
7000	8750	637	M 30 X 3.50 X 120	65.1	M 30 X 3.50 X 140	66.2
11000	13750	1005	M 36 X 4.00 X 150	60.6	M 36 X 4.00 X 150	56.2
12500	15600	1005	M 42 x 4.50 x 160	70.6	—	—
13500	16900	1350	M 48 x 5.00 x 160	101	—	—
22300	27900	2847	M 64 x 6.00 x 204	101	—	—
31500	39400	5830	M 72 x 6.00 x 265	132	—	—
44600	55800	6914	M 90 x 6.00 x 330	177	—	—

See Footnotes on next page.

† Tightening torque values shown are based upon threads being clean, dry and free of lubrication.

Footnotes below relate to tables 1-4

* Ultimate load is 5 times the Working Load Limit. Individually proof tested to 2-1/2 times the Working Load Limit.

** Ultimate load is 4 times the Working Load Limit. Individually proof tested to 2-1/2 times the Working Load Limit.

*** Individually proof tested to 2-1/2 times the Working Load Limit based on 4:1 design factor

**** Ultimate load is 5 times the Working Load Limit. Individually proof tested to 2 times the Working Load Limit.

†† Long bolts are designed to be used with soft metal (i.e., aluminum) workpiece. While the long bolts may also be used with ferrous metal (i.e., steel & iron) workpieces, short bolts are designed for ferrous workpieces only.

‡ Bolt specification is a Alloy socket head cap screw to ASTM A574. All threads are UNC .

‡‡ Bolt specification is a Grade 12.9 Alloy socket head cap screw to DIN 912. All threads are metric (ASME/ANSI B18.3.1m)

Δ Bolt specification is a Grade L7 or L43 Alloy socket head cap screw to ASTM A320. All threads are UNC.

‡‡‡ Tighten bolt to specified torque, then tighten nut to specified torque.

All Swivel Hoist Rings are individually proof tested.

Table 5

SS-125 ¥¥

Working Load Limit (lb) ¥	Torque in Ft • lbs †	Bolt Size (in) §	Effective Thread Projection (in)
400	3.5	5/16 - 18 x 1	.29
400	3.5	5/16 - 18 x 1.25	.54
500	6	3/8 - 16 x 1.25	.54
1250	14	1/2 - 13 x 2	.78
1250	14	1/2 - 13 x 2.25	1.03
1250	14	1/2 - 13 x 2.5	1.28
2000	30	5/8 - 11 x 2	.78
2000	30	5/8 - 11 x 2.25	1.03
2000	30	5/8 - 11 x 2.5	1.28
2500	50	3/4 - 10 x 2.25	1.03
2500	50	3/4 - 10 x 2.75	1.53
3500	50	3/4 - 10 x 2.75	1.04
3500	50	3/4 - 10 x 3.25	1.54
4000	80	7/8 - 9 x 2.75	1.04
4000	80	7/8 - 9 x 3	1.29
5000	115	1 - 8 x 3	1.29
5000	115	1 - 8 x 3.25	1.54
5000	115	1 - 8 x 4	2.29
7500	235	1-1/4 - 7 x 4	1.89
12000	400	1-1/2 - 6 x 5.5	2.70
15000	550	2 - 4-1/2 x 5.75	2.96
25000	1050	2-1/2 - 4 x 8	4.00
25000	1050	2-1/2 - 8 x 8	4.00
37500	2150	3 - 4 x 10.25	5.00
50000	2550	3-1/2 - 4 x 13	7.00

Table 6

SS-125M ¥¥

SS-125M ¥¥ Working Load Limit (kg) ¥	Torque in Lbs †	Bolt Size (mm) §§	Effective Thread Projection (mm)
200	4	M 8 x 1.25x30	13
250	8	M 10 x 1.50x35	18
525	18	M 12 x 1.75x50	19
950	40	M 16 x 2.00x60	29
1075	68	M 20 x 2.50x65	34
1500	68	M 20 x 2.50x75	32
2100	108	M 24 x 3.00x80	37
2100	108	M 30 x 3.50x110	58
3500	318	M 30 x 3.50x95	42
3500	318	M 30 x 3.50x115	62
5500	542	M 36 x 4.00x135	64
6250	542	M 42 x 4.50x155	82
6750	746	M 48 x 5.00x155	82
11150	1423	M 64 x 6.00x205	101
15750	2915	M 72 x 6.00x265	132
22300	3459	M 90 x 6.00x330	177

Footnotes below relate to Tables 5 and 6

¥ Ultimate load is 5 times the Working Load Limit. Individually proof tested to 2 times the Working Load Limit.

¥¥ All components are 316 Stainless Steel, except Bolt Retainers, which are made from15-7 PH (UNS 15700) magnetic stainless steel.

§ Bolt specification is 316 Stainless Steel socket head cap screw to ASTM F837 Group 1 (316).

§§ Bolt specification is 316 Stainless Steel socket head cap screw to ASTM F837M (316). All threads are Metric (ASME/ANSI B18.3.1M).

CROSBY Slide-Loc® Lifting Point

WARNINGS & APPLICATION INSTRUCTIONS

SL-150 & SL-150M
Slide-Loc Lifting Point

LIFTING POINT APPLICATION / ASSEMBLY INSTRUCTIONS

- Lifting Points incorporate a red indented area on each forged bail that provides a quick indicator to determine whether the Lifting Point is in the installation position or the lifting position. If the **QUIC-CHECK** mark is visible, product is in installation mode and shall not be used for lifting.

QUIC-CHECK®

- **To check,** look for indented surface (red) on bail. A visible **QUIC-CHECK** mark (Figure 2) means the slide lock and bolt are engaged for installation. When Lifitng Point is properly installed, move slide lock to lifting position (Figure 1).
- Use Lifting Points only with a ferrous metal (i.e., steel, iron) or soft metal (e.g., aluminum) load (workpiece). Do not leave threaded end of Lifting Point in aluminum loads for long time periods due to corrosion.
- When using lifting slings of two or more legs, make sure the forces in the legs are calculated using the angle from the horizontal sling angle to the leg and select the proper size swivel hoist ring to allow for the angular forces.
- After determining the loads on each Lifting Point, select the proper size Lifting Point using the Working Load Limit ratings in Table 1 for UNC threads and Table 2 for Metric threads.
- Never exceed rated capacity of Lifting Point. See Table 1 for UNC threads, and Table 2 for metric threads.
- Drill and tap the workpiece to the correct size to a minimum depth of one-half the threaded shank diameter plus the threaded shank length.
- Install Lifting Point by hand so that the bushing flange is held tight to the mounting surface by the bolt. The bushing flange should engage the entire mounting surface.
- Never use spacers between bushing flange and mounting surface.
- Always select proper load rated lifting device for use with Lifting Points.
- Attach lifting device ensuring free fit to Lifting Point bail (Figure 6).
- Never lift load if Red **QUIC-CHECK** indicator is visible (Figure 2).
- Apply partial load and check proper rotation and alignment. The Lifting Point bail should be in-line with the direction of the load.

⚠ WARNING

- **Load may slip or fall if proper Lifting Point assembly and lifting procedures are not used.**
- **A falling load can seriously injure or kill.**
- **Do not use with damaged slings or chain. For inspection criteria see ASME B30.9.**
- **Use only genuine Crosby bolts as replacements.**
- **Read and understand these warnings and application instructions.**
- **Do not load the Lifting Point if the slide lock is in the installation position (Red QUIC-CHECK mark is visible).**
- **The tension of the sling must be calculated or measured and can not exceed the working load limit (WLL) of the load connection fitting.**

USING THE LIFTING POINT

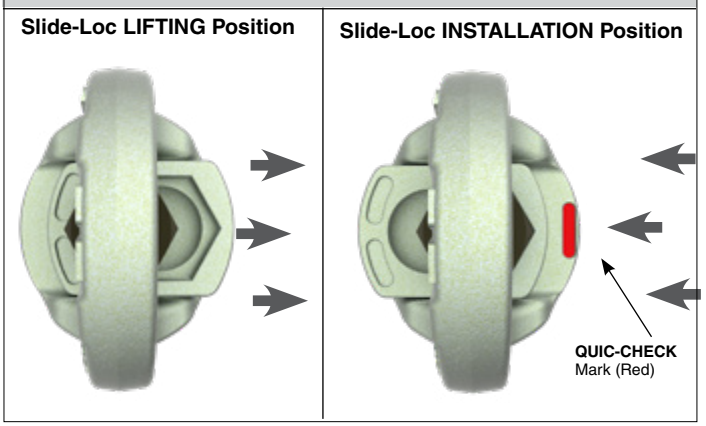


Figure 1 **Figure 2**

- Do not load in a direction perpendicular to the bail (Figure 5).
- Special Note: Recommended thru hole clearance is 1/32" for bolts smaller than 1" and 2/32" for bolts 1" and larger in diameter.

1. ASTM A-563

   A. Grade D Hex Thick

   B. Grade DH Standard Hex

2. SAE Grade 10.9 — Standard Hex

To place the Lifting Point:

- Move the slide lock into the installation position, such that the four flats on the bolt head are engaged (Figure 2).
- Thread the bolt of the Lifting Point into the hole of your workpiece making sure that the entire length of exposed bolt thread is engaged. If the hole on your workpiece is not threaded, ensure that the Lifting Point is secured with a nut on the opposite side of your workpiece and that that nut thread is fully engaged.

- Before applying any load, ensure that the slide lock has been moved back into the lifting position and that the bail is free to rotate (Figure 1).
- The Lifting Point can be loaded in any direction shown in Figure 4.
- Do not swivel the Lifting Point while supporting a load. The Lifting Point is a positioning device and is not intended to swivel under load.

To remove Lifting Point

- Move the slide lock into the installation position, such that the four flats on the bolt head flats are engaged (Figure 2).
- Unthread the Lifting Point from your workpiece.

Lifting Point Inspection / Maintenance

- Perform regular daily inspections as recommended.
- Always inspect Lifting Point before use.
- Regularly inspect Lifting Point parts (Figure 3).
- Never use Lifting Point that shows signs of corrosion, wear or damage.
- Never use Lifting Point if bail is bent or elongated.
- Always be sure threads on shank and receiving hole are clean, not damaged, and fit properly.
- Never use spacers (washers) between bushing flange and the mounting surface.
- Always ensure free movement of bail. The bail should swivel 360 degrees (Figure 3).
- Always be sure total workpiece surface is in contact with Lifting Point bushing mating surface. Drilled and tapped hole must be 90 degrees to load (workpiece) surface.

Table 1

Working Load Limit 4:1 (t)	UNC Bolt Size (in)	Effective Thread Projection Length (in)
.5	3/8	.61
.75	1/2	.80
1.50	5/8	1.01
2.30	3/4	1.28
2.30	7/8	1.63
3.20	1	1.93

Table 2

Working Load Limit 4:1 (t)	Metric Bolt Size (mm)	Effective Thread Projection Length (mm)
.5	10	14.7
.75	12	18.1
1.50	16	24.5
2.30	20	31.0
3.20	24	37.0

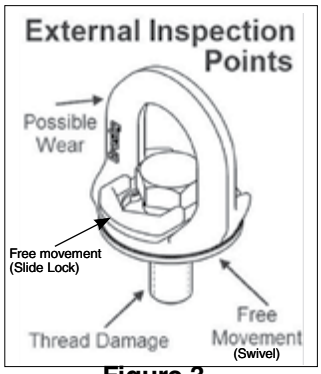


Figure 3

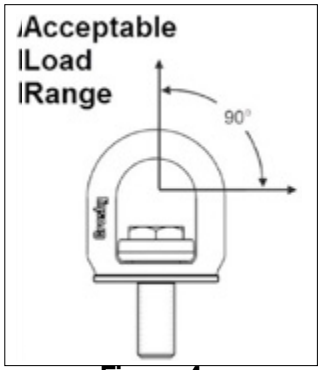


Figure 4

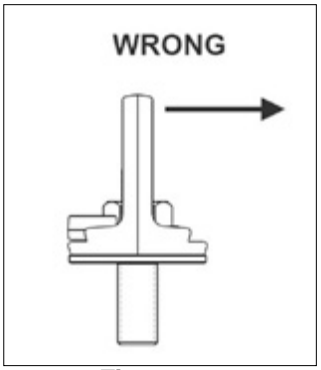


Figure 5

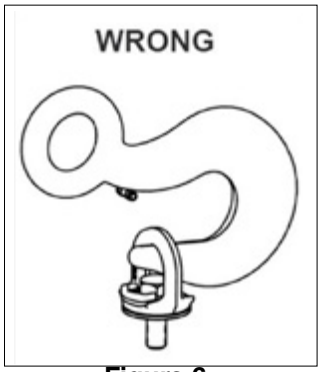
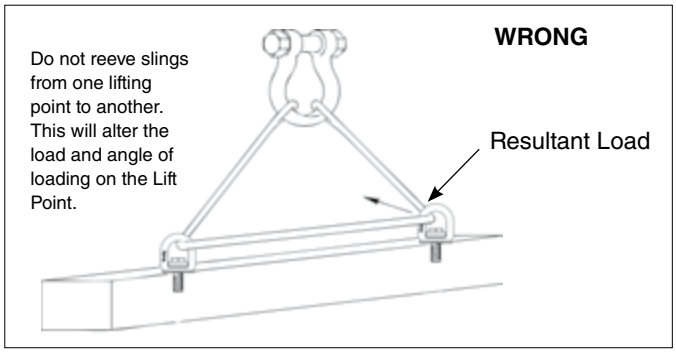
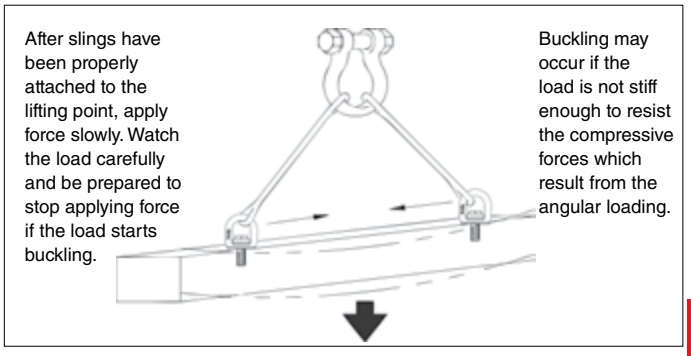


Figure 6





Technical Information

The following information aims to give advice and explain the most common questions in order to ensure correct and proper use of lifting points. This technical information refers to RELP, RLP, DLP and BLP unless other is stated. Always refer to the user instructions of the specific model of lifting point before use. It is of the most importance that this information is known to the user and in accordance with the Machinery Directive 2006/42/EC this information must be delivered to the customer. See website or user instructions for assembly instructions. Meets listed current specifications and standards at time of publication of this catalog.

General Advice

Reference should be made to relevant standards and other statutory regulations. Inspections must be carried out only by people who possess sufficient knowledge.

Before installation and before every use, visually inspect the lifting points, paying particular attention to any evidence of corrosion, wear, weld cracks or deformations. Please ensure compatibility of bolt thread and tapped hole.

The material construction, to which the lifting point will be attached, should be of adequate strength to withstand forces during lifting without deformation.

Ensure minimum thread depth, see table (d refers to bolt diameter).

Thread depth	Yield limit of base material
1 x d	For steel, yield limit >29 ksi
1.25 x d	For cast iron, yield limit >29 ksi
2.5 x d	Aluminum
	For other metal alloys or base materials consult your Gunnebo Industries distributor.

- If the bolt length needs to be adjusted the bolt should be cut with a cold saw or lathe and temperature kept as low as possible during cutting. After cutting check the shape of the threads nearest the cut with an appropriately sized die (there must not be any burrs).
- The surface facing around the thread hole shall be flat (plane), clear of dirt and smooth to ensure perfect contact with the shoulder surface of the Lifting Point.

Nut and washer

The nut and washer must be the original equipment supplied from Gunnebo Industries to ensure the correct mechanical properties. No warranty, insurance or liability will be accepted if bolts not supplied by Gunnebo Industries have been used.

Extreme Environments

The in-service temperature affects the WLL as follows:

RLP

Temperature (°F)	Reduction of WLL
-40 to +392 °F	0 %
+392 to +572 °F	10 %
+572 to +752 °F	25 %
Temperatures below -40°F or above 752 °F are not allowed.	

RELP

Temperature (°F)	Reduction of WLL
-40 to +212 °F	0 %
+212 to +392 °F	15 %
+392 to +482 °F	20%
+482 to +662 °F	25 %
Temperatures below -40 F or above 662 F are not allowed.	

BLP / DLP

Temperature (°F)	Reduction of WLL
-40 to +392 °F	0 %
Temperatures below -40° F or above 392º F are not allowed.	

Severe Environments

Lifting points must not be used in alkaline (> pH10) or in acidic condition (< pH6).
Comprehensive and regular examination must be carried out when used in severe or corrosive environments. In uncertain situations consult your Gunnebo Industries distributor.

Surface Treatment

- Hot dip galvanizing or plating is not allowed outside the control of the manufacturer.
- Acid or Alkaline cleaning is not allowed.

Protect yourself and others

- Before each use the Lifting Point should be checked for obvious damage or deterioration.
- Know the weight of the load and its center of gravity.
- Ensure the load is ready to move and that no obstacles will obstruct the lifting.
- Check the conformity of the load with the Working Load Limit.
- Prepare the landing site.
- Never overload and avoid shock loading.
- Never use an improper configuration.
- Never use a worn or damaged Lifting Point.
- Do not ever ride on the load.
- Do not ever walk or stand under a suspended load.
- Take into consideration that the load may swing or rotate.
- Watch your feet and fingers while loading/unloading.

Inspection

Periodic thorough examination must be carried out at least every 12 months or more frequently according to local statutory regulations, type of use and past experience.

- Ensure correct bolt and nut size, quality and length.
- Ensure compatibility of bolt thread and tapped hole – control of the torque.
- The lifting point should be complete.
- The working load limit and manufacturers stamp should be clearly visible.
- Check for deformation of the component parts such as body, load ring and bolt.
- Check for mechanical damage, such as notches, particularly in high stress areas.
- Wear should be no more than 10 % of cross sectional diameter.
- Evidence of corrosion.
- Evidence of cracks.
- Damage to the bolt, nut and/or thread.
- The body of the Lifting Point must be free to rotate.

Symmetric Loading Conditions

- For three and four leg lifts, the Lifting Points should be arranged symmetrically around the center of gravity and in the same plane if possible.
- The WLL for Gunnebo Industries Lifting Points is based on symmetrical loading.
- The Lifting Point must be positioned on the load in such way that movement is avoided during lifting.
- For single leg lifts, the lifting point should be vertically above the center of gravity of the load.
- For two leg lifts, the Lifting Points must be equidistant to or above the center of gravity of the load.

Asymmetric Loading Conditions

- For unequally loaded lifts we recommend that the WLL is determined as follows:
- 2-leg slings are calculated as the corresponding 1-leg sling.
- 3 and 4-leg slings are calculated as the as the corresponding 1-leg sling*

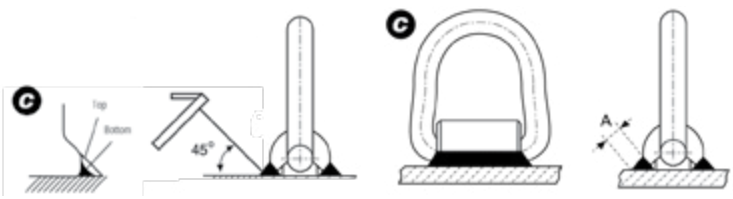
**(If 2-legs with full certainty are carrying the major part of the load, the WLL can be calculated as for the corresponding 2-leg sling).*

WLP - WELDING

Preheat the structure if the temperature is below 0°C; otherwise follow AS 1554 or other suitable national standard.

- Ensure that the WLP cannot move during welding by welding the corners of the welding block. Continue the weld around the welding block without interruption in a single operation.
- The nozzle or electrode should be at 45° (see Fig. C), so that the required penetration is obtained. The minimum throat (A) should be maintained.

Product	Min. plate gauge (Rm-181.3 ksi) tmin	Min. throat thickness
WLP 2.5 T	43”	0.43
WLP 4 T	74”	0.51
WLP 7 T	94”	0.63
WLP 10 T	1.18”	0.71
WLP 16 T	1.57”	0.79



- The weld should not contain cracks or pores.
- Do not cool the weld with water. It should be left to cool naturally.

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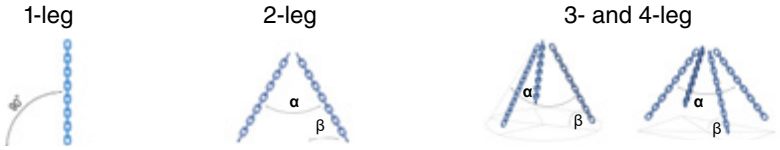
Working Load Limits (lb) for WLP



Typ	WLL lb*	α 0-90° β 45°	α 90-120° β 30°	α 0-90° β 45°	α 90-120° β 30°
WLP-2.5T	5 510	7 714	5 510	11 681	8 115
WLP-4T	8 816	12 342	8 815	18 514	13 224
WLP-7T	15 428	21 599	15 428	32 619	23 142
WLP-10T	22 040	31 076	22 040	46 725	33 060
WLP-16T	35 300	49 810	35 300	74 716	52 896

Working Load Limits (lb) for SLP

Typ	WLL lb*	α 0-90° β 45°	α 90-120° β 30°	α 0-90° β 45°	α 90-120° β 30°
SLP-1T	2 204	3 085	2 204	4 628	3 306
SLP-3T	6 612	9 256	6 612	13 885	9 918
SLP-5T	11 020	15 428	11 020	23 362	16 530

Working Load Limits (lb) for ELP

Typ	WLL (lb)*	α 0-90° β 45°	α 90-120° β 30°	α 0-90° β 45°	α 90-120° β 30°
ELP-16-8	2 204**	3 085	2 204	4 628	3 306
ELP-20-8	3 306**	4 628	3 306	6 832	4 848
ELP-24-8	4 408**	6 171	4 408	9 256	6 612
ELP-30-8	6 612**	9 256	6 612	13 885	9 918

Note: The above loads apply to normal usage and equally loaded legs. For asymmetric loaded chain slings, the following is recommended:

- A two-legged system is rated as a single-legged system.
- A three- or four-legged system is rated as a two-legged system.

** In case of 1-leg application where loading is limited to straight loading in the direction of thread (no bending force) it is possible to use ELP with four times higher WLL. Note: Threaded depths need to be at least 1xM for steel, 1.25xM for cast iron and 2xM for aluminum alloy.