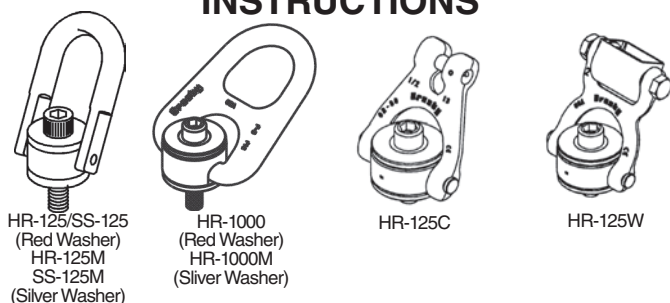


# CROSBY SWIVEL HOIST RING WARNINGS AND APPLICATION INSTRUCTIONS



## Hoist Ring Application Assembly Safety

- Use swivel hoist ring only with a ferrous metal (steel, iron) or soft metal (i.e., aluminum) loads (work piece). 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 1,2,4 & 5 for UNC threads and Table 3 & 6 for Metric threads.
- Drill and tap the work piece 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 thru Table 6).
- Install hoist ring to recommended torque with a torque wrench making sure the bushing flange meets the load (work piece) 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 (work piece) and hoist ring bail (Fig. 2).
- Special Note: When a Hoist Ring is installed with a retention nut, the nut must have a 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  
(B) Grade DH Standard Hex
  2. **SAE Grade 8** — Standard Hex

## Hoist Ring Inspection / Maintenance

- Always inspect hoist ring before use.
- Regularly inspect hoist ring parts (Fig.3).
- 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.
- Always ensure free movement of bail. The bail should pivot 180 degrees and swivel 360 degrees (Fig. 4).
- Always be sure total work piece surface is in contact with hoist ring bushing mating surface. Drilled and tapped hole must be 90 degrees to load (work piece) surface.

## ⚠ 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,HR125C, HR-125M, HR-1000M and HR125W, SS-125 and SS-125M respectively.
- Web sling HR-125W spool bolt must be securely tightened in place. The jam nut must then be securely tightened onto the spool bolt, see Table 4, last column.
- 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.
- Use only genuine Crosby parts as replacements.
- HR-125C chain connecting pin must be properly secured with the locking pin into the clevis ear.
- Before use, tighten bolt first, then tighten nut (HR-125W).

## Operating Safety

- Never exceed the capacity of the swivel hoist ring, see Tables 1, 2, 4 and 5 for UNC threads and Tables 3 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 to the leg and select the proper size swivel hoist ring to allow for the angular forces.

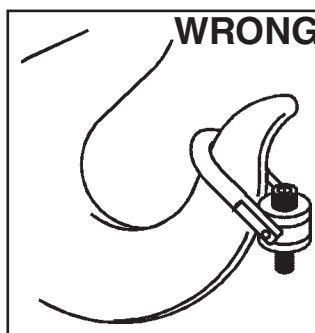


Figure 1

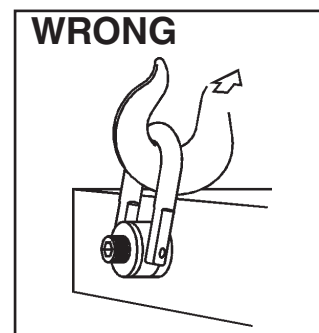


Figure 2

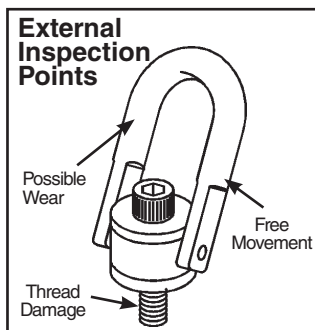


Figure 3

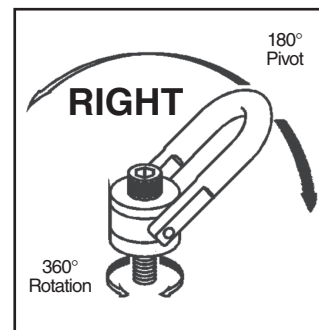


Figure 4

Table 1					
Working Load Limit* 5:1 (lbs.)	Hoist Ring Bolt Torque Ft. lbs. †	HR-125		HR-1000	
		Bolt Size ‡ (in.)	Effective Thread Projection Length (in.)	Bolt Size ‡ (in.)	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 **	100	3/4 - 10 x 2.75	.89	3/4 - 10 x 3.00	.85
7000 ††**	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	—	—

\*\* 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 footnote at bottom of table 3).

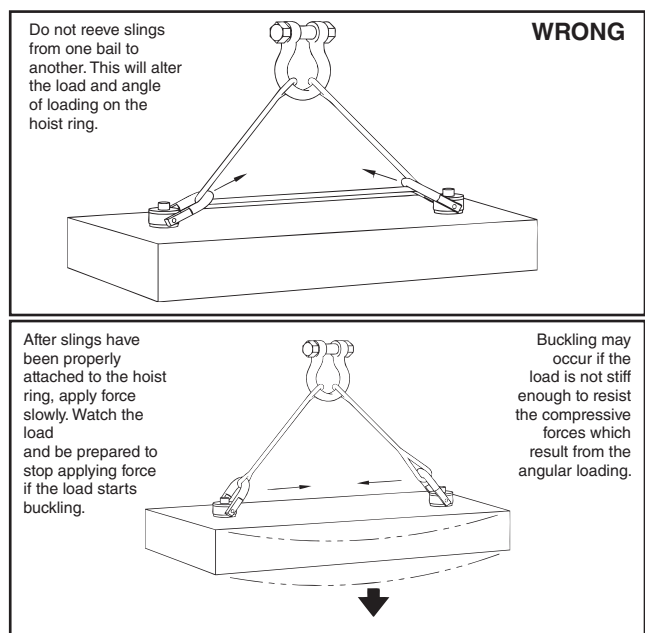


Table 2				
HR-125C Swivel Hoist Ring to Grade 8 Chain				
Working Load Limit 4:1 (lbs.) **	Hoist Ring Bolt Torque in Ft. lbs. †	Bolt Size (in.) ‡	Effective Thread Projection Length (in.)	Spectrum 8 Chain Size (in. - mm)
4500	60	5/8 - 11 x 2.00	.71	1/4 - 5/16 - 7 - 8
4500 ††	60	5/8 - 11 x 2.75	1.46	1/4 - 5/16 - 7 - 8
7100	100	3/4 - 10 x 2.75	.90	3/8 - 10
7100 ††	100	3/4 - 10 x 3.50	1.65	3/8 - 10
12000	230	1 - 8 x 3.00	1.15	1/2 - 13
12000 ††	230	1 - 8 x 4.00	2.15	1/2 - 13
18100	470	1-1/4 - 7 x 4.50	2.22	5/8 - 16

Table 3						
Working Load Limit		Hoist Ring Bolt Torque in Nm †	HR-125M		HR-1000M	
Design Factor 5:1	HR-125M Design Factor 4:1		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	15.2
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	—	—

\* 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.

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

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

§ Bolt specification is a Grade 8 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)

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

All Swivel Hoist Rings are individually proof tested.

Table 4								
HR-125W Swivel Hoist Ring to Webbing								
HR-125W Web Sling				HR-125W Working Load Limit 5:1 (tons) *	Hoist Ring Bolt Torque in Ft. lbs. †	Bolt Size (in.) ‡	Effective Thread Projection Length (in.)	Torque in Ft. - lbs. Spool bolt and nut ‡‡
Round Sling Size (in.)	Web Width (in.)	Eye Width (in.)	Ply. (in.)					
1 & 2	2	2	2	3-1/4	100	3/4 - 10 x 2.75	.90	90
1 & 2	2	2	2	3-1/4	100	3/4 - 10 x 3.50	1.65	90
3	3	1.5	2	4-1/2	230	1 - 8 x 3.00	1.15	110
3	3	1.5	2	4-1/2	230	1 - 8 x 4.00	2.15	110
4	4	2	2	6-1/4	470	1-1/4 - 7 x 4.50	2.22	130

Table 5			
SS-125 ¥¥			
Working Load Limit (lbs.) ¥	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	400	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 ¥¥ Working Load Limit (Kg) ¥	Torque in Nm †	Bolt Size (mm) §§	Effective Thread Projection (mm)
200	4	M 8 x 1.25 x 30	13
250	8	M 10 x 1.50 x 35	18
525	18	M 12 x 1.75 x 50	19
950	40	M 16 x 2.00 x 60	29
1075	68	M 20 x 2.50 x 65	34
1500	68	M 20 x 2.50 x 75	32
2100	68	M 24 x 3.00 x 80	37
2100	108	M 30 x 3.50 x 110	58
3500	318	M 30 x 3.50 x 95	42
3500	318	M 30 x 3.50 x 115	62
5500	542	M 36 x 4.00 x 135	64
6250	542	M 42 x 4.50 x 155	82
6750	542	M 48 x 5.00 x 155	82
11150	1423	M 64 x 6.00 x 205	101
15750	2915	M 72 x 6.00 x 265	132
22300	3459	M 90 x 6.00 x 330	177

¥ 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 from 15-7

PH (UNS 15700) magnetic stainless steel.

§ Bolt specification is 316 Stainless Steel socket head cap screw to ASTM F 837 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).