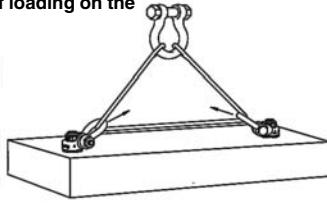


## OPERATING SAFETY

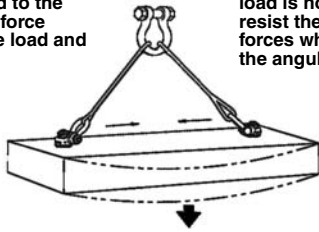
Do not reeve slings from one bail to another. This will alter the load and angle of loading on the hoist ring.

WRONG



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.



- 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.

HR1200 UNC Threads

TABLE 1

Frame Size	Working Load Limit * (lbs.)	Hoist Ring Bolt Torque in Ft. Lbs. †	Bolt Size ‡ (in.)	Effective Thread Projection Length (in.)	Recommended Shackles	
					Red Pin ® Shackles 209, 210, 213 215, 2130, 2150 (tons)	Red Pin ® Web Shackles S-281 (tons)
1	650††	7	5/16 - 18 x 1.5	.59	1/2" - (2)	2" - (3-1/4)
	800††	12	3/8 - 18 x 1.5	.59	5/8" - (3-1/4)	
2	2000	28	1/2 - 13 x 2.0	.71	5/8" - (3-1/4) 3/4" - (4-3/4)	2" - (3-1/4) 1-1/2" - (4-1/2)
	2000††	28	1/2 - 13 x 2.5	1.21		
	3000	60	5/8 - 11 x 2.0	.71		
	3000††	60	5/8 - 11 x 2.75	1.46		
3	5000	100	3/4 - 10 x 2.75	1.46	7/8" - (6-1/2)	2" - (6-1/4)
	5000††	100	3/4 - 10 x 3.5	1.63		
	6500	160	7/8 - 9 x 2.5	.90		
	6500††	160	7/8 - 9 x 3.5	1.65		
	8000	230	1 - 8 x 3.0	1.15		
	8000††	230	1 - 8 x 4.0	2.15		
4	14000	470	1-1/4 - 7 x 4.5	2.22	1" - (8-1/2)	3" - (8-1/2)
					1-1/8" - (9-1/2)	
					1-1/4" - (12)	
5	17200 29000	800 1100	1-1/2 - 6 x 6.5 2 - 4-1/2 x 6.5	2.98 2.98	1-3/8" - (13-1/2)	—
					1-1/2" - (17)	
					1-3/4" - (25)	

HR1200M Metric Threads

TABLE 2

Frame Size	Working Load Limit * (kg)	Hoist Ring Bolt Torque Nm †	Bolt Size (mm) ‡	Effective Thread Projection Length (mm)	Recommended Shackles	
					Red Pin ® Shackles 209, 210, 213 215, 2130, 2150 (tons)	Red Pin ® Web Shackles S-281 (tons)
1	300	10	M8 x 1.25 x 40	16.9	1/2" - (2)	2" - (3-1/4)
	400	16	M10 x 1.5 x 40	16.9	5/8" - (3-1/4)	
2	1000	38	M12 x 1.75 x 50	17.2	5/8" - (3-1/4)	2" - (3-1/4) 1-1/2" - (4-1/2)
	1400	81	M16 x 2.00 x 60	27.2	3/4" - (4-3/4)	
3	2250	136	M20 x 2.50 x 75	28.1	7/8" - (6-1/2)	2" - (6-1/4)
	3500	312	M24 x 3.00 x 80	33.1		
4	6250	637	M30 x 3.5 x 120	45.1	1" - (8-1/2)	3" - (8-1/2)
					1-1/8" - (9-1/2)	
					1-1/4" - (12)	
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 work piece 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 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 - 3A.

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