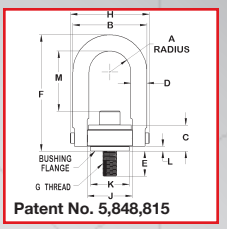
SAFETY ENGINEERED HOIST RINGS

- Material: High strength 4140 alloy steel
- Range of movement: Swivel 360°, Pivot 180° Under Load
- Design Factor: Minimum of 5:1
- Meets manufacturing and design requirements of ASME-B30.26 and MIL-STD 209
- Magnetic Particle Inspected Per ASTM 1444
- Black oxide coated
- Each Individually Serial Numbered



Patent No. 5,848,815

Part No.	Rated Load (lbs)	A	B	C	D	E +/- .12	F	G	H	J	K	L	M	TL* (ft-lbs)	Weight (lbs)
23050	550	.43	1.61	.71	3/8	.54	2.67	1/4-20	1.84	1.00	.75	.17	1.33	5	5 oz.
23051	800	.43	1.61	.71	3/8	.29	2.67	5/16-18	1.84	1.00	.75	.17	1.27	7	5 oz.
23052	800	.43	1.61	.71	3/8	.54	2.67	5/16-18	1.84	1.00	.75	.17	1.27	7	5 oz.
23053	1000	.43	1.61	.71	3/8	.54	2.67	3/8-16	1.84	1.00	.75	.17	1.21	12	5 oz.
23301	2500	.70	2.40	.93	1/2	1.07	3.77	1/2-13	2.58	1.49	1.25	.20	1.84	28	1 lb
23004	2500	.88	3.25	1.22	3/4	.78	4.78	1/2-13	3.52	1.99	1.50	.16	2.31	28	2 lb. 5 oz
•23322	2500	.88	3.25	1.22	3/4	.78	6.72	1/2-13	3.52	1.99	1.50	.16	4.25	28	2 lb. 12 oz
23005	2500	.88	3.25	1.22	3/4	1.03	4.78	1/2-13	3.52	1.99	1.50	.16	2.31	28	2 lb. 5 oz
•23323	2500	.88	3.25	1.22	3/4	1.03	6.72	1/2-13	3.52	1.99	1.50	.16	4.25	28	2 lb
23006	2500	.88	3.25	1.22	3/4	1.28	4.78	1/2-13	3.52	1.99	1.50	.16	2.31	28	2 lb. 5 oz
•23324	2500	.88	3.25	1.22	3/4	1.28	6.72	1/2-13	3.52	1.99	1.50	.16	4.25	28	2 lb. 12 oz
23001	4000	.88	3.25	1.22	3/4	.78	4.78	5/8-11	3.52	1.99	1.50	.16	2.18	60	2 lb. 7 oz
•23319	4000	.88	3.25	1.22	3/4	.78	6.72	5/8-11	3.52	1.99	1.50	.16	4.12	60	2 lb. 12 oz
23002	4000	.88	3.25	1.22	3/4	1.03	4.38	5/8-11	3.52	1.99	1.50	.16	2.18	60	2 lb. 7 oz
•23320	4000	.88	3.25	1.22	3/4	1.03	6.72	5/8-11	3.52	1.99	1.50	.16	4.12	60	2 lb. 14 oz
23003	4000	.88	3.25	1.22	3/4	1.28	4.38	5/8-11	3.52	1.99	1.50	.16	2.18	60	2 lb. 9 oz
•23321	4000	.88	3.25	1.22	3/4	1.28	6.72	5/8-11	3.52	1.99	1.50	.16	4.12	60	3 lb
23007	5000	.88	3.25	1.22	3/4	1.03	4.78	3/4-10	3.52	1.99	1.50	.16	2.06	100	2 lb. 9 oz
•23325	5000	.88	3.25	1.22	3/4	1.03	6.72	3/4-10	3.52	1.99	1.50	.16	4.00	100	3 lb
23008	5000	.88	3.25	1.22	3/4	1.28	4.78	3/4-10	3.52	1.99	1.50	.16	2.06	100	2 lb. 8 oz
•23326	5000	.88	3.25	1.22	3/4	1.28	6.72	3/4-10	3.52	1.99	1.50	.16	4.00	100	3 lb. 1 oz
23009	5000	.88	3.25	1.22	3/4	1.53	4.78	3/4-10	3.52	1.99	1.50	.16	2.06	100	6 lb. 10 oz
•23327	5000	.88	3.25	1.22	3/4	1.53	6.72	3/4-10	3.52	1.99	1.50	.16	4.00	100	7 lb. 4 oz
23102	7000	1.40	4.80	1.71	1"	1.04	6.52	3/4-10	5.14	3.00	2.37	.24	3.06	100	6 lb. 10 oz
•23329	7000	1.40	4.80	1.71	1"	1.04	8.11	3/4-10	5.14	3.00	2.37	.24	4.65	100	6 lb. 10 oz
23103	7000	1.40	4.80	1.71	1"	1.54	6.52	3/4-10	5.14	3.00	2.37	.24	3.06	100	6 lb. 12 oz
•23330	7000	1.40	4.80	1.71	1"	1.54	8.11	3/4-10	5.14	3.00	2.37	.24	4.65	100	6 lb. 12 oz
23101	8000	1.40	4.80	1.71	1"	1.04	6.52	7/8-9	5.14	3.00	2.37	.24	2.93	160	7 lb
•23328	8000	1.40	4.80	1.71	1"	1.04	8.11	7/8-9	5.14	3.00	2.37	.24	4.52	160	7 lb
23105	10000	1.40	4.80	1.71	1"	1.29	6.52	1"-8	5.14	3.00	2.37	.24	2.81	230	7 lb
•23331	10000	1.40	4.80	1.71	1"	1.29	8.11	1"-8	5.14	3.00	2.37	.24	4.40	230	7 lb
23106	10000	1.40	4.80	1.71	1"	1.54	6.52	1"-8	5.14	3.00	2.37	.24	2.81	230	7 lb
•23332	10000	1.40	4.80	1.71	1"	1.54	8.11	1"-8	5.14	3.00	2.37	.24	4.40	230	7 lb
23107	10000	1.40	4.80	1.71	1"	2.29	6.52	1"-8	5.14	3.00	2.37	.24	2.81	230	7 lb
•23333	10000	1.40	4.80	1.71	1"	2.29	8.11	1"-8	5.14	3.00	2.37	.24	4.40	230	7 lb
23108	10000	1.40	4.80	1.71	1"	2.29	6.52	1-1/8"-8	5.14	3.00	2.37	.24	2.81	230	7 lb
23402	15000	1.75	6.00	2.11	1-1/4	1.89	8.73	1-1/4"-8	6.50	3.76	3.2	.35	4.12	470	14 lb
23401	15000	1.75	6.00	2.11	1-1/4	1.89	8.73	1-1/4"-7	6.50	3.76	3.20	.35	4.12	470	14 lb
†23204	24000	2.25	8.00	2.81	1-3/4	2.70	12.47	1-1/2"-8	8.55	4.87	4.20	.47	6.41	800	33 lb. 12 oz
23202	24000	2.25	8.00	2.81	1-3/4	2.70	12.47	1-1/2"-6	8.55	4.87	4.20	.47	6.41	800	33 lb. 12 oz
†23203	30000	2.25	8.00	2.81	1-3/4	2.96	12.47	2"-8	8.55	4.87	4.20	.47	6.41	1100	36 lb
†23200	30000	2.25	8.00	2.81	1-3/4	2.96	12.47	2"-4-1/2	8.55	4.87	4.20	.47	6.41	1100	36 lb
23201	30000	2.25	8.00	2.81	1-3/4	2.96	12.47	2"-4-1/2	8.55	4.87	4.20	.47	6.41	1100	36 lb
†23501	50000	3.00	10.50	4.09	2-1/4	4.00	16.87	2-1/2"-8	11.67	6.52	5.75	1.12	8.03	2100	87 lb. 8 oz
†23503	50000	3.00	10.50	4.09	2-1/4	4.00	16.87	2-1/2"-4	11.67	6.52	5.75	1.12	8.03	2100	87 lb. 8 oz
†23600	75000	3.75	13.00	5.27	2-3/4	5.20	19.50	3"-4	14.15	8.10	7.25	1.00	8.48	4300	166 lb
†23701	100000	4.00	14.50	6.06	3-1/4	7.00	22.09	3-1/2"-4	15.90	8.60	7.25	1.09	9.28	6600	240 lb
†23751	150000	5.00	18.00	7.50	4.00	8.50	27.38	4-1/4"-4	19.69	10.75	9.87	1.33	12.13	12000	525 lb
†23760	200000	6.00	22.00	9.00	5.00	9.00	33.00	5"-4	24.00	13.00	12.38	1.88	14.50	19800	760 lb
†23770	250000	6.00	22.00	9.00	5.00	9.00	33.00	6"-4	24.00	13.00	12.38	1.88	14.00	29000	841 lb

For higher working load limits, see EZ-Torque Hoist Rings.
† Supplied with stud and nut • Long Bar Models * Recommended Torque Load

ADB Hoist Rings Mfg.

WARNING!

General Hoist Ring Safety and Installation Guidelines

Improper use of ADB® lifting devices could result in personal injury, damaged equipment, or death. In order to ensure maximum safety, please read and understand the following ADB® safety guidelines prior to using any ADB® lifting device.

1. IMPORTANT!! The force on each hoist ring is not just the total weight divided by the number of hoist rings. The force can be greater at lower lift angles. See example below:

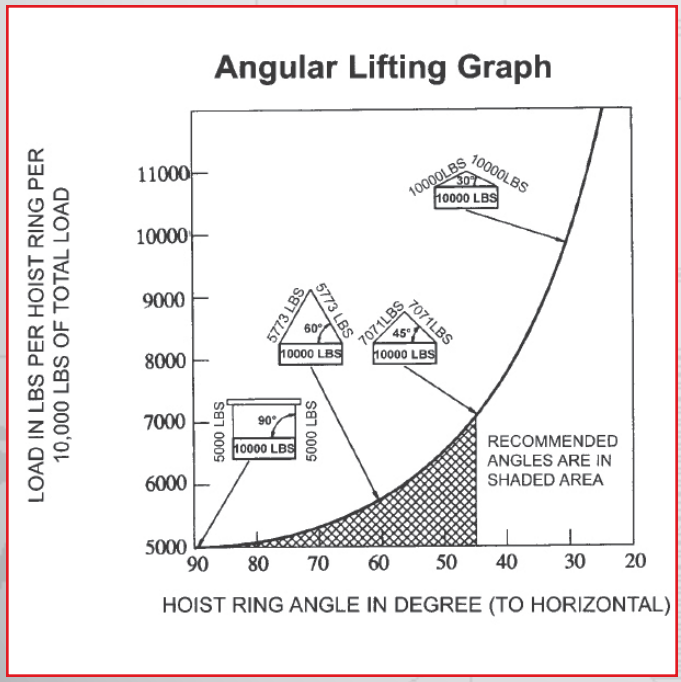
2. Never exceed the rated load capacity (except when proof testing) of the hoist ring. The 5:1 design factor is provided in case of mis-use such as overload or uneven loading.

$$F = \frac{W}{N \sin A}$$

$$A=65°,\ F = \frac{4000}{4 \sin 65°} = 1103 \text{ lbs.}$$

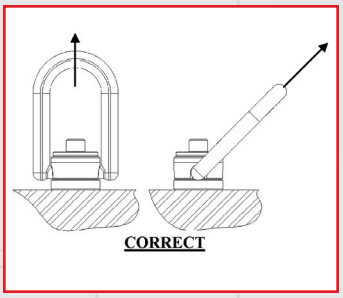
$$A=14°,\ F = \frac{4000}{4 \sin 14°} = 4134 \text{ lbs.}$$

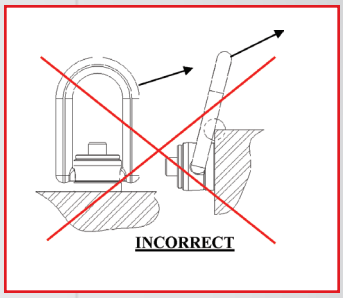
F = Force on each hoist ring
W = Total weight = 4000 lbs.
N = Number of hoist rings = 4
A = Lifting angle



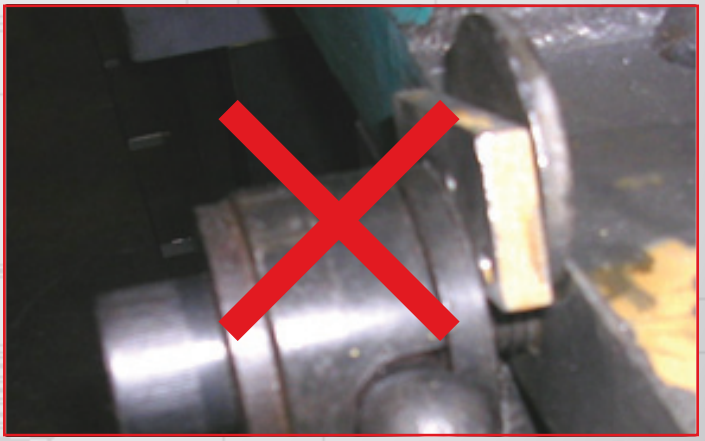
3. ADB® recommends the parent material to have an ultimate tensile strength of least 80,000 psi in order to maintain the full load rating. For lower tensile materials, through hole mounting with a bolt and washer on the opposite side is required. If the user cannot achieve these requirements, contact ADB®'s engineering department for other possible options.

4. Do not allow hoist rings to bind and avoid applying side loads to the bail. Ensure that loads applied are in the same direction of the bail. If necessary, use a spreader bar to avoid binding. See below:





5. The use of free fit spacers should not be used between the hoist ring and the mounting surface. This will reduce the working capacity of the device. See below:



6. Hoist rings should be installed in a manner that allows 360 degrees of rotation and 180 degrees of pivot. Any obstructions within this range will prohibit a safe and proper use of the device. The mounting surface must be flat and smooth for full contact of the device. All ADB® lifting devices are to be installed perpendicular to the surface of the work station. Any lifting device installed at any other angle other than 90 degrees could cause failure to the device and/or damage to the equipment being lifted.

WARNING!

7. Never lift with any device, such as oversized hooks, chains, or cables, that could cause side loading or damage to the bail. See photo to right:

8. Ensure that the mounting screw/stud is tightened to the recommended torque value (see top of washer). All torque values are based on a dry installation without the use of lubricant. If lubricant is used, contact ADB®'s engineering department for revised torque value. For temporary installations or weaker parent material, the torque can be reduced by 50% in order to prevent thread stripping.

9. Apply loads gradually to AVOID SHOCK LOADS.

10. Environment:

A. Temperature - When ADB® Swivel Hoist Rings are to be used at temperatures above 400 degrees F (204 degrees C or below –20 degrees F (-29 degrees C), please consult ADB®'s engineering department for available options.

B. Chemically Active Environments Caution!! The integrity of ADB® hoist rings can be jeopardized by exposure to chemical, caustic, or acidic substances. Contact ADB®'s engineering department for available options.

Refer to ADB® plating options for the use of hoist rings in chemical, saltwater, or offshore environments, military or aviation operations, or sandy/dry areas

11. Repairs, alterations or modifications to any ADB® lifting device is prohibited unless otherwise specified by ADB®. In the event that the bolt needs to be replaced, use only ADB® certified replacement bolts.

12. Do not reeve slings from one bail to another, as this can decrease the lifting angle and increase the load per hoist ring.

13. Do not allow hoist rings to bind and avoid applying side loads to the bail. Ensure that loads applied are in the same direction of the bail. If necessary, use a spreader bar to avoid.

Safe

Unsafe
Do Not Reeve

WARNING!

Improper maintenance and inspections of ADB® lifting devices could result in damaged equipment, personal injury, or death. In order to ensure maximum safety, please read and understand the following ADB® maintenance and inspection guidelines prior to using any ADB® lifting device.

Maintenance

1. When ADB® hoist rings are not being used, they should be stored in a manner that prevents corrosion or damage from occurring.

2. Do not remove the installation and safety tag from the lifting device.

3. The identification of the lifting device should remain legible and maintained by the user during the life of the device.

Inspection

1. Visually examine the lifting device prior to any lifting operation.

2. The frequency of inspection should depend upon the frequency of use, severity of service conditions, and the criticality of the lift.

3. Removal criteria: ADB®'s lifting device should be removed from service if the following conditions exist:

A. Missing Manufacturers identification
B. Indications of heat damage
C. Excessive corrosion or pitting
D. Damaged or missing load bearing components
E. Excessive nicks or gouges
F. Excessive thread damage
G. Evidence of unauthorized welding or modification
H. Lack of ability to swivel 360 degrees or pivot 180 degrees

4. If it is suspected that damage has been done to an ADB® lifting device, ADB® offers evaluation services thru magnetic particle testing, tensile testing, and mechanical hardness testing. Call ADB®'s engineering department for more information.

ADB® recommends ADB-Field inspection form to be used for customer inspection programs (available for download @ www.adbhoistrings.com).

WARNING!

READ PRIOR TO USE AND COMPLY WITH ALL INSTALLATION AND SAFETY NOTES

INSTALLATION NOTES: Tap thread perpendicular to the mounting surface. Mounting surface should be flat to provide 360° flush seating for the hoist ring. For installation in ferrous materials the bolt should be tightened to the full torque load (+0-20%). To maintain the 5:1 design factor of **ADB®** hoist rings, **ADB®** recommends the ultimate tensile strength of the mating material to be a minimum of 80,000 psi. For weaker mating material, if possible, consider using longer bolts or through-hole mounting with a nut and washer on the back side. To prevent stripping the mating thread, lower torque value (down to half of value) may be considered, especially in temporary installations. After installation, validate that hoist ring swivels and pivots freely in all directions.
SAFETY NOTES: (1) NEVER EXCEED WORKING LOAD LIMIT. (2) Visually inspect hoist ring for damage before each use. **(3)** Some loosening of the bolt may develop after prolonged service in a permanent installation and it is advisable to periodically retighten to maintain the specified torque value. **(4)** Apply loads gradually to, **AVOID SHOCK LOADS. (5)** The use of free fit spacers between the bushing flange and the mounting surface is not recommended. **(6) DO NOT USE OVERSIZED HOOKS OR ATTACHMENT METHODS THAT SPREAD THE RING. (7) RING MUST BE ALIGNED WITH THE DIRECTION OF THE LOAD (SEE FIG) (8)** Do not attach guidelines to hoist rings. **(9) DO NOT LEAVE GAP BETWEEN BUSHING AND MOUNTING SURFACE (SEE FIG).** Do not interchange **ADB®** hoist ring components with other manufacturers. **(10) For further information or answers to any questions, consult ADB® Engineering Support at: 1.800.423.4425.**