



Hoist Ring SAFETY INSTRUCTIONS

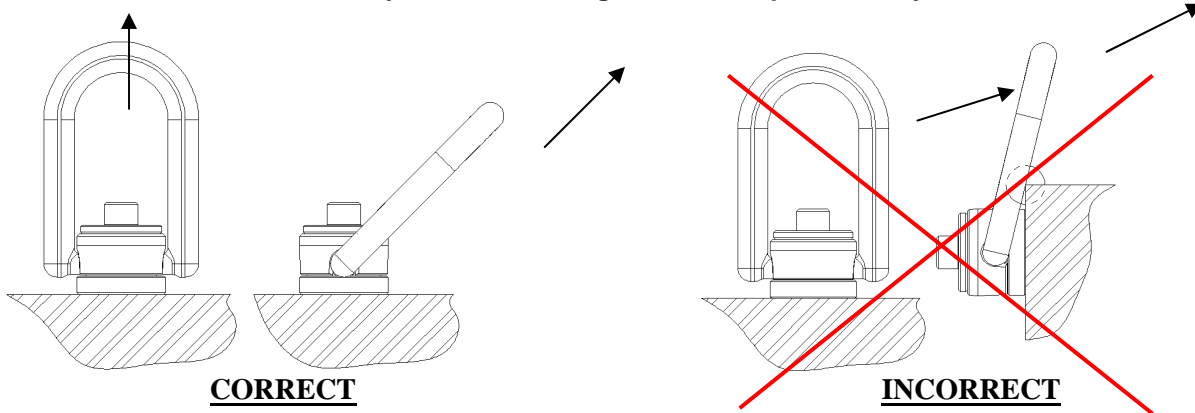
CAUTION: PRIOR TO USING ANY HOIST RING, PLEASE READ THE FOLLOWING FOR PROPER INSTALLATION AND USAGE.

As with all mechanical devices, regular inspection for wear and strict adherence to use instruction is necessary to prevent misuse failure.

- Despite the 5:1 safety factor, NEVER EXCEED THE RATED LOAD CAPACITY. This safety margin is needed in case of misuse, which could drastically lower load capacity.
- Tighten mounting screws to recommended torque. Periodically check torque because screws could loosen with extended service.

- Tensile strength of parent material should be above 80,000 PSI to achieve full load rating. For weaker material, consider through-hole mounting with a nut and washer on the other side.
- AVOID SHOCK LOADING. Always lift gradually. Repeat magnetic particle inspection if shock loading ever occurs.

• After installation, always check that ring rotates and pivots freely in all directions.



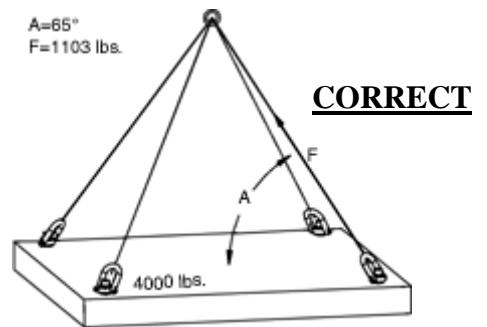
IMPORTANT! The force on each hoist ring is not just the total weight divided by the number of hoist rings. The force will be greater at lower lift angles. Make sure load is evenly distributed. See below.
Formula with example data: $F = \frac{W}{N \sin A}$

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

Safe
Fig. 1

$$A = 65^\circ$$

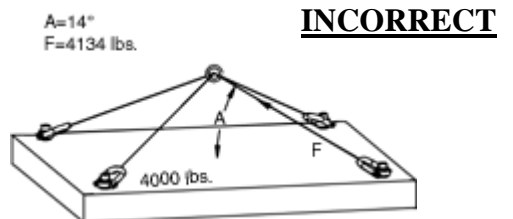
$$F = 4000 / 4 \sin 65^\circ = 1103 \text{ lbs.}$$



Unsafe
Fig. 2

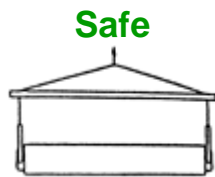
$$A = 14^\circ$$

$$F = 4000 / 4 \sin 14^\circ = 4134 \text{ lbs.}$$

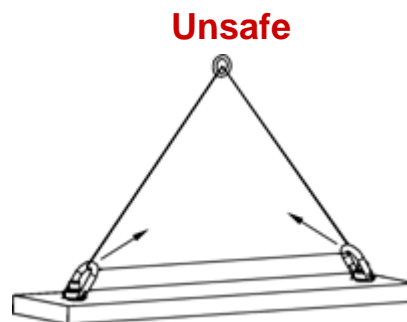
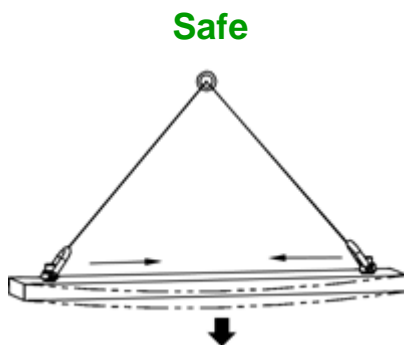




2. Never exceed the rated load capacity of the hoist ring.
3. Tensile strength of material to be lifted should be at least 80,000 PSI for full load rating. For lower tensile materials, increase thread length or use a through hole with a nut and washer on other side.
4. Do not allow hoist rings to bind. If necessary use a spreader bar to avoid binding. See example below.



5. Spacers should not be used between the hoist ring and the mounting surface.
6. Mounting surface must be flat and smooth for full contact with the safety hoist ring. Tapped mounting holes must be perpendicular to the mounting surface.
7. Mounting screws should be tightened to the recommended torque. Torque should be checked periodically as bolts could loosen in extended service.
8. Never lift with any device, such as hooks, chains or cables that could spread or damage the bail.
9. Never apply shock loads and use good lifting practices. Always lift gradually. If shock loading ever occurs, the safety lifting device should be magnetic particle inspected.
10. After installation, always check that ring rotates and pivots freely in all directions.



After slings have been properly attached to the hoist ring, apply force slowly. Make sure the bail is parallel to the direction of the load. Watch the load and be prepared to stop applying force if the load starts buckling.

Slings should not be reeved from one bail to another.