

# ⚠️ 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.

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

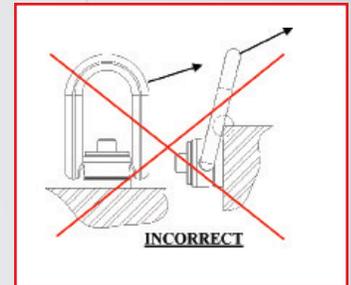
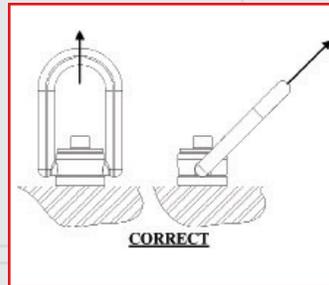
$$A=65^\circ, F = \frac{4000}{4 \sin 65^\circ} = 1103 \text{ lbs.}$$

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

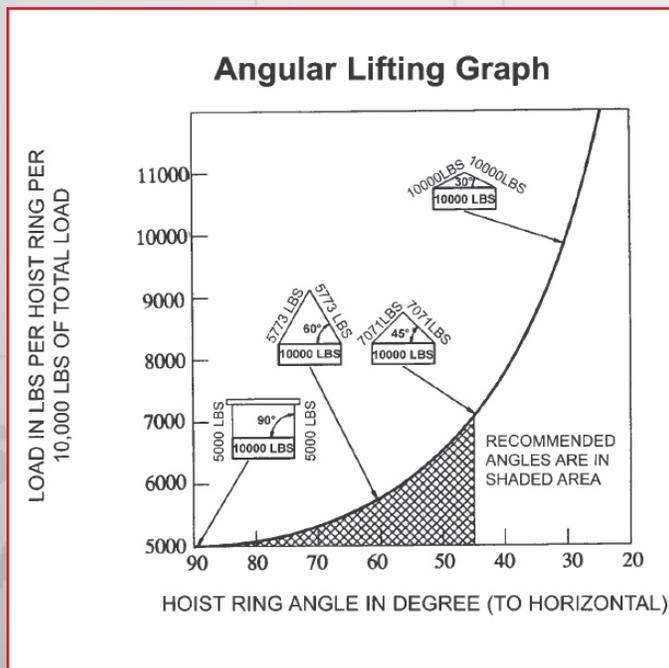
F = Force on each hoist ring  
 W = Total object weight = 4000 lbs.  
 N = Number of hoist rings = 4  
 A = Lifting angle in relation to horizontal

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.

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. Hoist ring material mechanical properties change when not used within a safe operating temperature and can result in a failure which can cause injury or death.

B. Chemically Active Environments Caution!! The integrity of ADB® hoist rings can be jeopardized by exposure to chemical, caustic, or acidic substances. A change in material properties which reduce the mechanical performance of the hoist ring can occur and can result in a failure which can result in injury or death. 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 and installation shall be performed by qualified persons which have demonstrated the ability and are trained to perform bolt replacements. See also ADB Socket head cap screw bolt replacement instructions on the replacement screw page within this catalog.

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

The General Hoist Ring and Installation Guidelines is NOT a substitute for a formal training and education program related to hoist rings and **DOES NOT** intend to provide a comprehensive list of all hoist ring related uses or mis-uses. Formal classroom rigging classes and training is recommended to assist in the development of competent and skilled persons which gain further experience during on the job field applications. Training in specific to ASME B30.26-2015 Sec. 26-2 is recommended. See also [www.asme.org](http://www.asme.org)