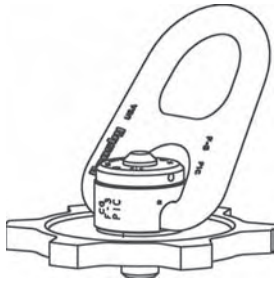


CROSBY® TRENCH COVER HOIST RING

WARNINGS AND APPLICATION INSTRUCTIONS



HR-500

Trench Cover Hoist Ring Application / Assembly Instructions

- Use trench cover hoist ring only with ferrous metal (steel, iron) work piece.
- After determining the loads on each trench cover hoist ring, select the proper size using the Working Load Limit (WLL) ratings in Table 1 (see next page). For proper nut selection, reference trench plate nut welding guidelines (see next page). Nut thickness must equal plate thickness.
- For proper welding of nut, reference Nut Welding Guidelines on the following page.
- Always make sure the nut is free of dirt or contaminants before installation of the Trench cover Hoist Ring. A clean out tool is available from Crosby.
- To install, spin base down flush with work piece surface and tap one of the lugs on the base with a hammer to tighten; repeat procedure before each use.
- Never use spacers between the trench cover hoist ring base and work piece surface.
- Always select proper load rated lifting device for use with trench cover hoist ring.
- Attach lifting device ensuring free fit to trench cover hoist ring bail (lifting ring) (Figure 1).
- Apply partial load and check proper rotation and alignment. There should be no interference between load (work piece) and trench cover hoist ring bail (Figure 2).
- Always ensure free movement of bail. The bail should pivot 180 degrees and swivel 360 degrees (Figure 4).

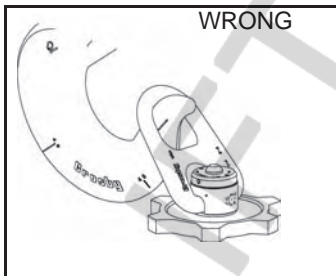


Figure 1

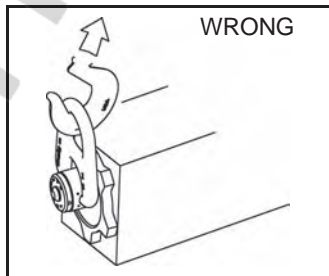


Figure 2

⚠ WARNING

- Loads may slip and fall if proper Trench cover Hoist Ring assembly and lifting procedures are not used.
- A falling load may cause serious injury or death.
- Do not use with damaged slings or chain. For inspection criteria see ASME B 30.9.
- Use only genuine Crosby parts as replacements.
- Read and understand these warnings and application instructions.

Trench Cover Hoist Ring Inspection / Maintenance

- Always inspect trench cover hoist ring parts before use (Figure 3). Be sure threads on shank and receiving hole are clean, not damaged or worn, and fit properly. A thread gauge is available from Crosby.
- Never use trench cover hoist ring that shows signs of corrosion, wear or damage.
- Never use trench cover hoist ring if bail is bent or elongated.
- Do not use parts showing cracks, nicks or gouges.
- Always make sure there are no spacers (washers) used between trench cover hoist ring body and the work piece surface. Remove any spacers (washers) and retighten before use.
- Always be sure total work piece surface is in contact with the trench cover hoist ring body mating surface.
- Drilled and tapped hole in the weld-in nut must be 90 degrees to load (work piece) surface. A welding fixture is available from Crosby.
- A visual periodic inspection of the nut to plate weld should be performed. Check the weld visually, or use a suitable NDE (Non-Destructive Examination) method if required.

Operating Safety

- Never exceed the capacity (WLL) of the trench cover hoist ring, see Table 1, next page.
- 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 trench cover hoist ring.



Figure 3

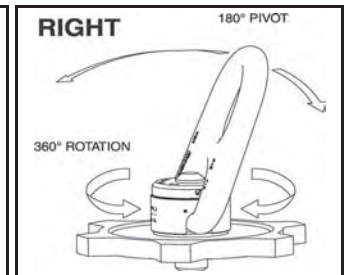


Figure 4

BY ENGINEERING AND LIFTING SAFETY LTD. TEL: +44 (0) 1977 684 600

Table 1 HR-500 Trench Cover Hoist Rings**			
Working Load Limit (t)*	Dimensions		Weight Each (Kg)
	Coil Thread Size (in.) A	Effective Thread Projection Length (mm) B	
2.27	1" - 3.5	25.4	3.6
4.54	1-1/4" - 3.5	25.4	7.3
6.82	1-1/2" - 3.5	38.1	12.7

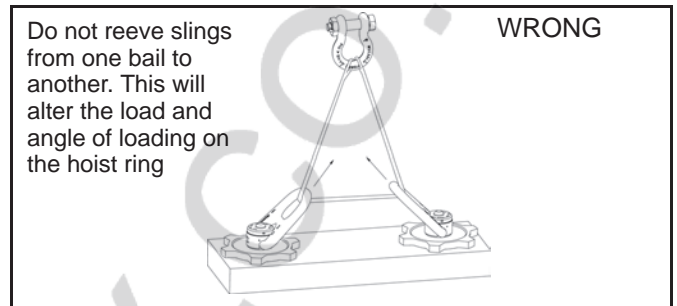
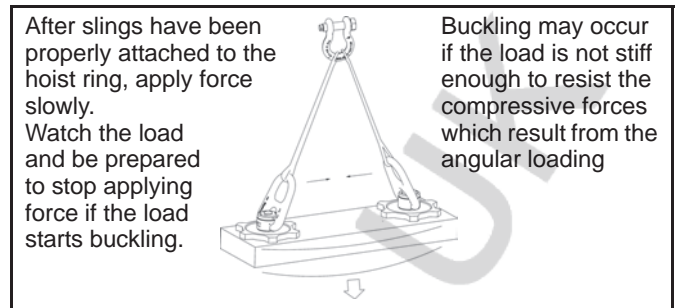
* Ultimate load is 5 times the working load limit. Individually proof tested to 2-1/2 times the working load limit.

** Designed to be used with ferrous work piece only.

Trench Cover Nut Welding Guidelines

1. Select the correct size trench cover hoist ring to be used. Be sure to calculate the maximum load that will be applied to the trench cover hoist ring. The nut thickness should be equal to the plate thickness.
2. Cut a hole in the plate per Table 2 below.
3. Insert the trench cover nut into the hole. The trench cover nut should have 1/16" clearance around its outer edge. The surface of the trench cover nut must be parallel and even with the surface of the plate (See Figure 5). A welding fixture is available from Crosby for this.
4. Welding is to be performed by a qualified welder using a qualified procedure in accordance with American Welding Society and/or American Society of Mechanical Engineers requirements.

Table 2 HR-500 Weld-In Nuts				
Working Load Limit (t)	Dimensions (mm)			
	Coil Thread Size (in.)	Nut Diameter K	Trench cover Hole Diameter L	Nut Thickness = cover Thickness M
2.27	1" - 3.5	76.2	79.2	19
2.27	1" - 3.5	76.2	79.2	22
2.27	1" - 3.5	76.2	79.2	25
4.54	1-1/4" - 3.5	76.2	79.2	19
4.54	1-1/4" - 3.5	76.2	79.2	22
4.54	1-1/4" - 3.5	76.2	79.2	25
4.54	1-1/4" - 3.5	76.2	79.2	32
4.54	1-1/4" - 3.5	76.2	79.2	38
6.82	1-1/2" - 3.5	88.9	91.9	25
6.82	1-1/2" - 3.5	88.9	91.9	32
6.82	1-1/2" - 3.5	88.9	91.9	38



5. When welding to low or medium carbon plate steel, the following suggestions should be included in the qualified procedure.
 - A. Before welding, all weld surfaces must be clean and free from rust, grease, paint, slag and any other contaminates.
 - B. Weld material is to have a minimum tensile strength of 70,000 PSI (such as AWS A5. 1E-7018). Observe the electrode manufacturer's recommendations.
 - C. Completely fill internal bevel created between trench plate nut and the plate.
 - D. Do not rapidly cool the weld.
 - E. The surface of the weld must be ground sufficiently so that the trench cover hoist ring will fit flush against the plate.
 - F. Using the same procedure, weld the opposite side.
 - G. A thorough inspection of the weld should be performed. No cracks, pitting, inclusions, notches or undercuts are allowed. If doubt exists, use a suitable NDE method, such as magnetic particle or liquid penetrant to verify.
 - H. If repair is required, grind out the defect and re-weld using the original qualified procedure.

NOTE: For welding to other grades of steel, a qualified weld procedure must be developed.

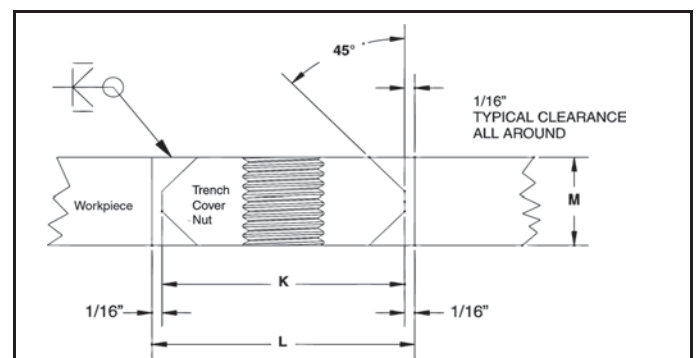


Figure 5