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Issuing Entity:
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SAFETY BULLETIN

Ride Manufacturer: Dartron Industries, Inc.	Affected Production Dates: January 1998 – May 2007
Ride Name: Cliff Hanger	Affected Serial #'s: All
Model #: All	

Abstract of Issue: On August 26, 2010; a Dartron Industries, Inc. Cliff Hanger sustained a failure in the material of the lower ears of the bearing base. There were no injuries.

Reason for release: To insure that all Cliff Hanger rides install reinforcement plates in a critical area of support for the bearing base. A failure in this area could result in injuries. Installation procedures are included.

Action to be taken:

1. No Cliff Hanger is to be operated after December 31, 2010 until this Safety Bulletin is complied with.
2. Contact Battech at (503) 362-2341 to arrange purchase of the structural reinforcing plates.
3. A welding technician certified in the F2, F3 and F4 positions or equivalent (see D1.1 section 4 figure 4.3) must perform the welding procedure. This certification can be issued by any State. The attached form will need to be completed by the welder and retained with the ride documentation.
4. Welding to be performed using 7018 stick electrode DC reverse polarity.
5. Prepare the Cliff Hanger for the repairs as explained on Page 2.
6. Install the plates as explained on Page 3.

Detail of issue:

Prepare Cliff Hanger for Bearing Base Reinforcing Plate Installation

1. The ride must be at least partially set-up to perform this operation. The front car racks must be down and the wheel must be pinned together.
2. Material required will include a support for the bearing base such as blocking stacked on the ground.
3. Using the ride hydraulics, the boom should be raised off the Boom Rest Pad to provide a comfortable working height for the repair person. This height should be approximately 3 feet.
4. Support must be provided under the Bearing Base to prevent the Boom from dropping during the repair process. This support can be blocking or similar material stacked on the ground under the Bearing Base. The support should be provided directly under the Pivot Pin Ears where the Drag Link Pins to the Bearing Base. **Do Not Place this Support Under the 6" Square Drag-Link Tube – Damage Will Occur.**

Another method of supporting the Bearing Base is to build a cross member bridge. The cross member bridge can be supported across the trailer frame behind the boom rest and will support the Bearing Base Pivot Pin Ears.

Cliff Hanger Bearing Base Ears Reinforcing Plate Installation

1. Welder shall be qualified to weld with 7018 electrodes in the F2, F3 and the F4 positions See D1.1 section 4 Figure 4.3.
2. Storage of Low-Hydrogen Electrodes shall be in accordance with D1.1 Section 5 paragraph 5.3.2.1. They shall be purchased in hermetically sealed containers or be baked by user in conformance with paragraph 5.3.2.4. The 7018 Electrodes **shall not** be stored outside the hermetically sealed containers or storage ovens for more than 4 hours.
3. The repair procedure shall be in accordance with AWS D1.1 Section 8 Paragraph 8.5.1 Base metal shall to be prepared and surfaces of existing base metal in contact with new base metal shall be cleaned of dirt, rust and other foreign matter. The portions of such surfaces which will be welded shall be thoroughly cleaned of all foreign matter **including paint** for at least 2 inches from the root of the weld.
4. Protectively cover the spherical bearing / pivot pin to insure no welding debris affects the performance of the pivot.
5. The ground must be connected as close the weld location as possible to insure that the current does not pass through any bearings
6. Tack securely in place, the Reinforcement Plate orientation to the Bearing Base **must remain intact**. There should be approximately 1/2" lap for welding in the vertical positions. See the attached illustration on page 4 of this bulletin.
7. Preheat the joint to at least 100 degrees Fahrenheit.
8. Weld the joint with 7018 electrode using DCEP (reverse polarity). Apply stringers in the horizontal positions. Weave beads are acceptable for vertical application. Clean between passes and continue to weld until a 3/8" fillet weld is achieved. The top of the Reinforcement Plate will receive a 1/4" fillet.
9. Complete the installation of the Reinforcing Plates.
10. Complete and **RETAIN** the form on page 5 of this bulletin.
11. Clean and prepare for painting all unpainted surfaces. Primer and paint as close to original color as possible. Original paint colors are available from any DuPont Centari paint dealer.

**Battech Enterprises, LLC
Dba Dartron
Welder Verification**

Date: _____ **Location:** _____

Customer Name: _____

Serial Number of Cliff Hanger: _____

Date of Manufacture: _____

Welder: _____

Certification Type: _____ **Certification Date:** _____

Entity that issued certification: _____

Employer: _____ **Supervisors Name:** _____

I, Undersigned, certify that the statements in this report are correct and that the welds were in compliance with the procedures in this bulletin (_____)

Welders Signature: _____