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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 12-2011

BULLETIN NO: 11-008

TITLE: Rotary Encoder Upgrade

RATING:

<input type="checkbox"/>	DIRECTIVE (Action Is Required)	<input type="checkbox"/>	ALERT (Potential Problem)
<input type="checkbox"/>	INFORMATION (Action Is Optional)	<input checked="" type="checkbox"/>	PRODUCT IMPROVEMENT (Enhance Product)

PRODUCT SERIES / MODEL: Various Harsco Rail Equipment

SERIAL NO: N/A

SUMMARY: Harsco Rail's applies a number of different rotary encoders, provided by the same supplier, on Harsco Rail equipment. Our supplier has developed an improved and more robust encoder. The rotary encoders that were being supplied to Harsco Rail are being discontinued and replaced by the improved encoders. Electrical characteristics will remain the same, but the improved encoders are wider and have a larger diameter. The replacement encoders will still mount and function the same as the ones they are replacing. However, due to the fact that the replacement encoders are wider, the shaft that the encoder is attached to will not protrude completely through the encoder as it did with the original encoder. This is acceptable as long as the shaft engages the encoder by 1.75 inch or greater.

OPERATIONAL IMPACT: No operational impact is expected. Mounting and electrical connections will be the same as the discontinued rotary encoders. Electrical control systems and software will adapt to the new encoders. If problems occur, use the contact information included with this service bulletin for assistance.

ACTION: When ordering a replacement rotary encoder, the new encoder, with a new part number, will be shipped to you. Or, you may use the chart included in this service bulletin to find your current encoder part number, cross reference it to the replacement number and order the new number.

CONTACT: Frank Mack, Technical Service Representative, (803) 822-7546

Safety Information



- **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE EQUIPMENT. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.**

Rotary Encoder Cross Reference Chart

OLD PART NUMBER	REPLACEMENT PART NUMBER
0-3160001-0-08 (obsolete)	5004537
0-3160001-0-09 (obsolete)	No Replacement
2003698	2003698 (same number, new encoder)
2006673	2006673 (same number, new encoder)
2006934 (obsolete)	5001513
2006977 (obsolete)	5004402
2006977 (obsolete)	5010825 <i>NOTE: 6700 Tamper Applications Only</i>
2013933	2013933 (same number, new encoder)
3424703 (obsolete)	5004543
FOR007742 (obsolete)	5004402
FOR007748 (obsolete)	No Replacement
FOR007812 (obsolete)	No Replacement

Replacing Rotary Encoder

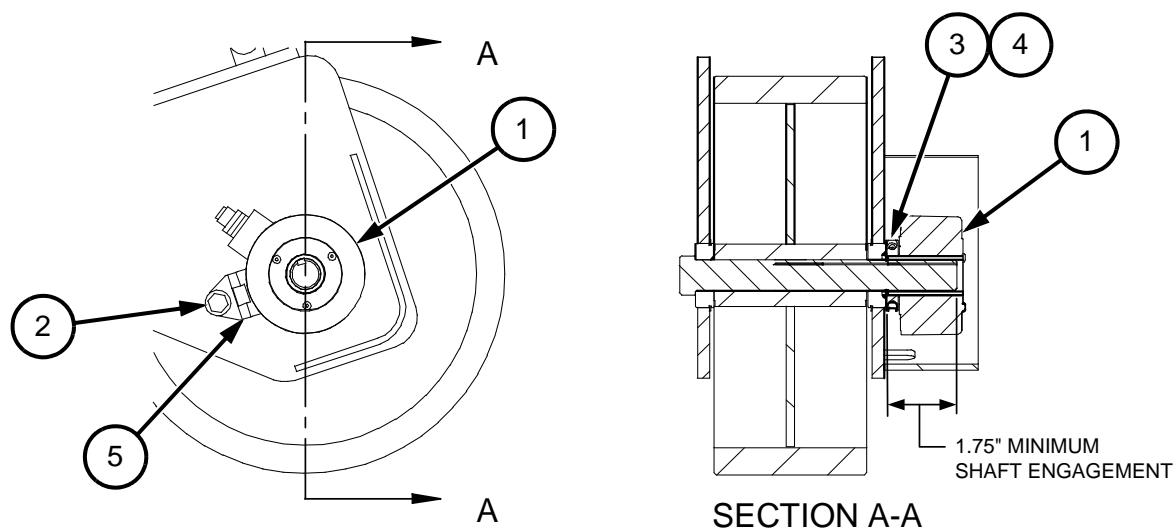
1. Make sure machine is in a safe location to perform the encoder replacement. Follow applicable railroad lockout - tagout procedures to disable energy sources on the machine.
2. Apply parking brakes and / or chock machine wheels. Stop machine engine. Turn off all electrical power sources.
3. Refer to the installation instructions provided with new encoder kit. The new encoder kit will include a tether, plastic washer for tether mount and a dust cover with mounting screws.
4. Note the current orientation of the encoder as new the encoder will need to be mounted in the same fashion. Typically, in most applications, the locking collar is on the inside end of the shaft. The exception will be Model 6700 Tamping Machines where the locking collar is located on the outside end of the shaft.

Replacing Rotary Encoder - See Figure 1

Note: Some applications have two encoders installed on the shaft. The second encoder is supplied as a back-up incase one encoder fails. Due to the fact that the new encoders are wider, it is unlikely that two encoders can be installed on the shaft. The outside encoded may not have the necessary 1.75 inch engagement on the shaft.

5. Disconnect the electrical cable from the encoder (1). Inspect the cable and connector for damage. If damage is found, replace the electrical cable.
6. Remove the dust cover from the encoder. Remove the tether securing cap screw and washer (2).
7. Use a 7/64" hex allen wrench to loosen the #6-32 hex socket screw (3) that secures the split collar (4). Slide the old encoder off of the shaft using care not to lose the encoder key.
8. Mount the supplied tether (5) to the new encoder (1), using the old encoder for positioning reference.
9. Slide the new encoder onto shaft aligning the encoder key with one of the slots in the encoder hollow shaft. Apply Loctite 242 Thread Locker to the #6-32 hex socket screw (3). Install the screw in the split collar and torque to 8 - 10 lb-in.
10. Make sure plastic washer is located in the hole on the tether. Apply Loctite 242 Thread Locker to the tether securing cap screw. Install the tether securing cap screw and washer (2). Torque the cap screw to 125 - 150 lb-in.
11. Install the dust cover on the encoder and secure with the provided fasteners. Reconnect the electrical cable.
12. Safely return the machine to operating condition. Operate the machine to verify correct installation and function.

FIGURE 1
TYPICAL ROTARY ENCODER APPLICATION



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