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Harsco Track Technologies

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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 7 - 2001

BULLETIN NO: 01-005

TITLE: Wheel, Lug Nut and Stud Inspection Procedures

RATING:

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

PRODUCT SERIES / MODEL: 1988 Through 2000 Chevrolet / GMC Series 4 X 2 Pickup Trucks and Sport Utility Vehicles with a GVWR of 8,600 to 9,200 lbs. Equipped with Harsco Track Technologies HY-RAIL® Guide Wheel Equipment

SERIAL NO: Not Applicable

SUMMARY: Procedures to properly inspect the guide wheel equipped vehicle wheels, vehicle lug nuts and studs.

OPERATIONAL IMPACT: To improve operational safety of guide wheel equipped vehicles.

ACTION: This inspection procedure requires:

1. Jack or hoist rated to lift the weight of the vehicle.
2. Dismounting and mounting of the vehicle wheels.
3. Replacement of any damaged wheels, lug nuts or studs.
4. An accurate torque wrench to properly torque the vehicle wheel lug nuts.

CONTACT: If you have any questions or if we can be of any service, please contact the HY-RAIL® Guide Wheel Equipment Department at the Fairmont, MN facility (507) 235-7112.

Safety Information



- FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURE TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE VEHICLE OR EQUIPMENT.
- JACK OR HOIST USED TO RAISE THE VEHICLE MUST BE RATED TO LIFT THE WEIGHT OF THE VEHICLE.

FAILURE TO HEED THESE WARNINGS COULD RESULT IN SEVERE BODILY INJURY.

Inspection Procedures

WHEEL STUDS - See Figures 1 and 2

1. Visually inspect the wheel studs for wear, damage, bent, missing or corrosion. Worn, damaged or bent studs must be replaced with the proper studs for its application.
2. Do not try to straighten a bent stud, replace the stud.
3. If any studs are broken on a hub, replace all studs on that hub.
4. Wire brush any corrosion from the studs, hub and wheel surface before re-installing the wheel and nuts.
5. A minimum of two threads on the stud must protrude out of the threaded portion of the wheel lug nut, after tightening the lug nut.

FIGURE 1
GOOD STUDS



01-214

FIGURE 2
BAD STUDS



01-215

Inspection Procedures

WHEEL LUG NUTS - See Figures 3 and 4

1. Inspect the lug nuts for rounded or damaged corners in the hex area. Inspect the cone seat area for distortion or damage.
2. Verify cone angle to determine if it mates up with the wheel cone seat.
3. If any of the lug nuts are damaged or if the cone seat on the lug nut does not match up to the cone seat on the wheel, replace the nut.

FIGURE 3
GOOD LUG NUTS



01-216

FIGURE 4
BAD LUG NUT



01-217

Inspection Procedures

VEHICLE WHEELS - See Figures 5 and 6

Inspect the vehicle wheels for the following out of service conditions.

Cracks

1. Crack(s) that are present anywhere on the wheel. If crack(s) are present, replace the wheel with the correct replacement wheel.

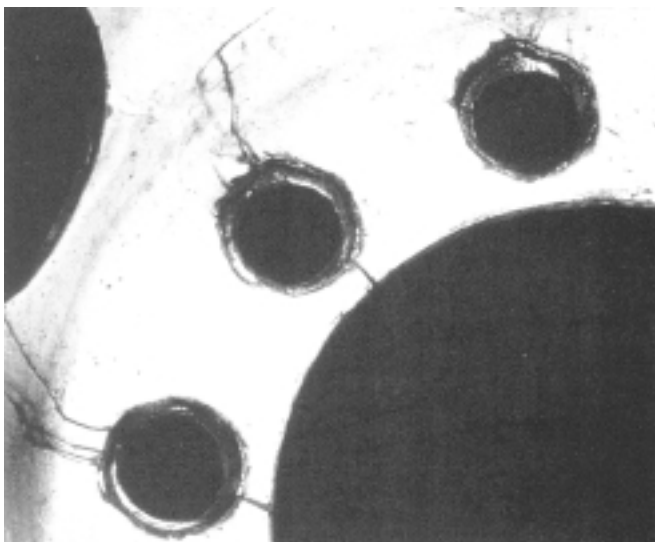
Rust Streaks

1. Rust Streaks extending from the bolt holes. Make sure the correct lug nuts for the applied wheel system are being used. Inspect the wheel bolt holes for wear or damage. If wear or damage is present, replace the wheel with the correct replacement wheel.
2. Tighten wheel lug nuts to the correct torque then remove the rust streaks.

Pitting Or Corrosion

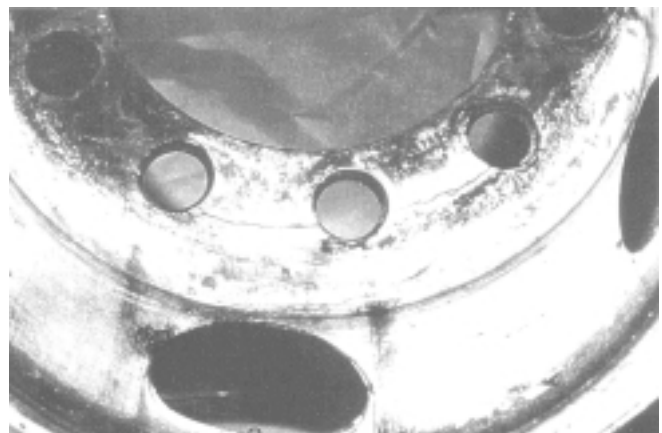
1. Pitting or corrosion that has reduced the metal thickness of the wheel. Replace any wheel that has excessive corrosion.

FIGURE 5
BOLT HOLE TO CENTER HOLE CRACKS



01-218

FIGURE 6
BOLT HOLE TO BOLT HOLE CRACKS



01-219

Inspection Procedures

VEHICLE WHEELS - See Figures 7 and 8

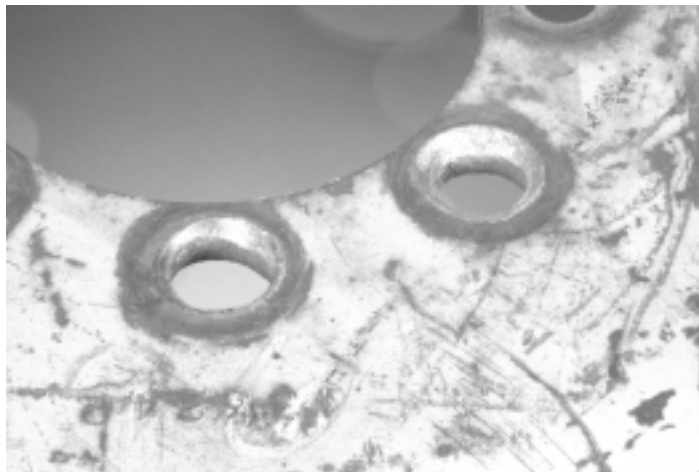
Wallowed / Elongated Bolt Holes

1. A gross distortion of the bolt hole(s) typified by bolt hole elongation and extrusion of metal from the chamfer surface. If wallowed / elongated bolt holes are present, replace the wheel with the correct replacement wheel.

Worn Bolt Hole Chamfers

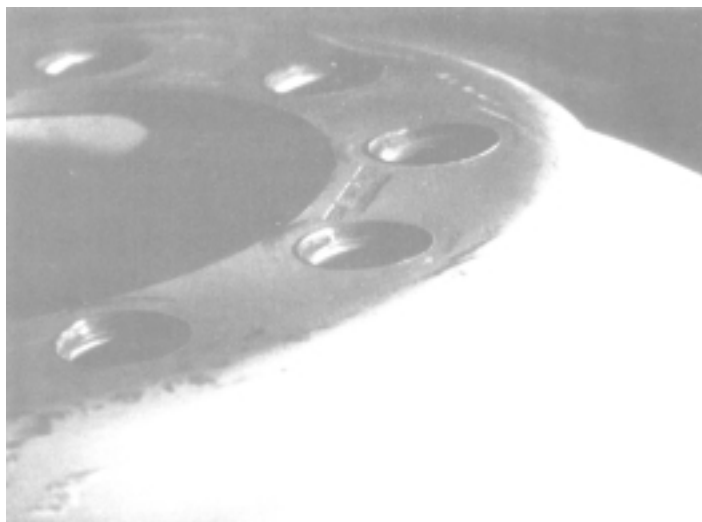
1. A general worn condition in the bolt hole chamfers. If worn bolt hole chamfers are present, replace the wheel with the correct replacement wheel.

FIGURE 7
WALLOWED / ELONGATED BOLT HOLES



01-220

FIGURE 8
WORN BOLT HOLE CHAMFERS



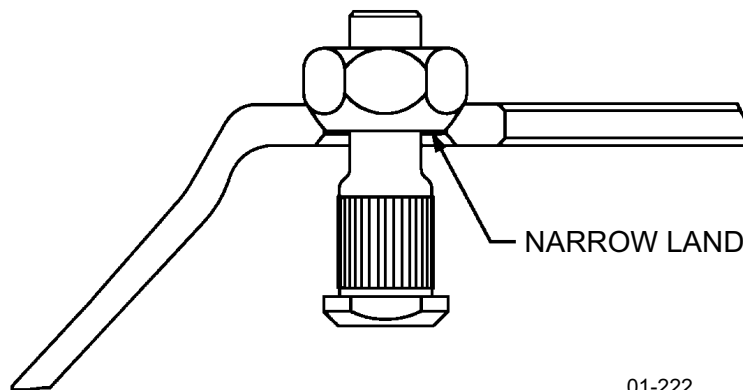
01-221

Inspection Procedures

WHEEL CONE SEAT - See Figure 9

1. Inspect cone seats to determine if the cone angle of the wheel mates up with lug nut. If the cone angle of the wheel mates up with lug nut, the wheel should be cleaned up and can be left in service.
2. If burrs are found around the edge of the cone seat, they should be removed.
3. If wear is severe so that the area between the cone seat is worn away to less than the thickness of a dime (.050"), the wheel should be removed from service and scrapped. Replace the wheel with the correct replacement wheel.

FIGURE 9
WHEEL CONE SEAT

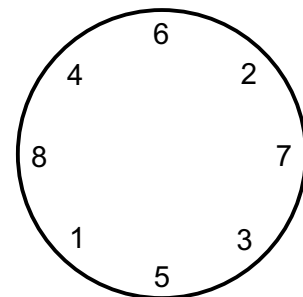


01-222

WHEEL TORQUE - See Figure 10

1. The stud, lug nut and wheel must be dry and clean. Dry torque all wheel lug nuts to 140 ft-lbs. Never use lubricants or penetrating fluids on wheel studs, lug nuts or the mounting surface, as this can raise the actual torque on the nut and stud.
2. Tighten all nuts evenly and in a crisscross method. Finish tightening to 140 ft-lbs. with a torque wrench.
3. ***Re-torque all vehicle wheel lug nuts to 140 ft-lbs. after the first 50 miles of operation.***

FIGURE 10
TIGHTENING SEQUENCE



Maintenance Procedures



- **PERFORM THE FOLLOWING MAINTENANCE PROCEDURES AND ALL MAINTENANCE PROCEDURES LISTED IN THE OPERATOR'S SERVICE AND PARTS MANUAL PROVIDED WITH THE GUIDE WHEEL UNITS. FAILURE TO COMPLY COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.**

DAILY

Visually check all wheel lug nuts for signs of looseness. If you suspect any wheel lug nuts to be loose, check the wheel lug nuts to ensure they are torqued to 140 ft-lbs. Visually check the wheels and studs for signs of cracks, broken, damage or missing parts.

Check tire inflation to ensure the tires are inflated to the recommended air pressure, being sure not to exceed the tire and / or wheel inflation rating.

WEEKLY

In addition to the daily check, check all wheel lug nuts with the OEM supplied lug nut wrench every week to ensure the vehicle lug nuts remain tight. If any vehicle lug nuts are found loose, torque the wheel lug nuts to 140 ft-lbs.

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