

TECHNICAL PROCEDURE

TRAILER SUSPENSION SYSTEMS

SUBJECT: Suspension Inspection and Lubrication Guide

LIT NO: L578

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REVISION: B

INTRODUCTION

This document recommends inspection areas and lubrication points on Hendrickson trailer suspensions and components. Table 1 recommends inspection intervals for suspension components and systems. Table 2 recommends inspection and service after IDLE TIME and exposure to FLOOD. A list of relative literature is also included. The information in this document applies to Hendrickson products only.

For inspection and lubrication of vendor component products installed by Hendrickson, refer to VENDOR LITERATURE on page 3.

NOTE: Concepts and Functions is now included in literature T15001.

PERIODIC INSPECTION SCHEDULE

The Hendrickson trailer air suspension requires very little attention (Table 1). Your air suspension may well last the life of the vehicle by using the information in this publication and other Hendrickson technical publications.

IMPORTANT: This document includes minimal inspection requirements for normal on-highway applications. For trailers subjected to some off-road, abnormally rough or extreme conditions, **inspection and lubrication should be adjusted to ensure maximum suspension performance and integrity.**

NOTE: The frequency at which inspections are recommended is based on an average trailer usage of 100,000 miles (160,000 km) per year. Higher usage would require more frequent inspections.

LUBRICATION POINTS AND FREQUENCY

There are few areas requiring lubrication for Hendrickson suspensions and axles. For literature providing lubrication details, refer to relative HENDRICKSON PUBLICATIONS, VENDOR LITERATURE and TMC RP MANUAL on page 3.

The only Hendrickson components requiring lubrication are S-cam spider bushing and support bearing journal or S-cam tube. Each requires #2EP NLGI chassis lubricant and should be replenished MONTHLY. Always apply grease until fresh lubricant appears at purge point.

CONTACT HENDRICKSON

Methods of contacting Hendrickson Trailer Technical Services include:

EMAIL

For Hendrickson Trailer Technical Services (HTTS), use the following e-mail address:

htts@hendrickson-intl.com

PHONE

Contact Hendrickson Trailer Technical Services directly at **866-RIDEAIR (743-3247)**. From the voice menu, select **Technical Services/Warranty**.

SUSPENSION INSPECTION AND LUBRICATION GUIDE



| ITEMS TO CHECK ^{1, 3} (RECOMMENDED) | VISUAL, PHYSICAL LUBRICATION ² | INSPECTION INTERVALS | | | | | REFERENCE LITERATURE | |
|---|--|----------------------|----------------|----------------|-----------|----------|----------------------|---|
| | | PDI | DAILY | MONTHLY | QUARTERLY | ANNUALLY | LIT. NO. | TITLE OR COMMENTS ^{3, 4} |
| Air Springs | V | | | ✓ | | | L1155 | Air Springs |
| Axle Connections (welds & u-bolts, if equipped) | V | | | | ✓ | | L579 | Alignment Procedures |
| Bolts | V | ✓ | | ✓ | | | B31 | Torque Specifications |
| Brakes - Air Disc (Pads, rotor & overall condition) | V | | | | | | | Contact vendor² or refer to page 3 for TMC RP MANUAL information. |
| Brakes - Drum (Brake Chamber, pushrod, & overall condition) | V | | | | | ✓ | L974 | Drum Brake Maintenance Procedures Refer to fleet requirements for more details. Also refer to page 3 for TMC RP MANUAL information and details. |
| • S-Cam | V/P/L | | | ✓ | | | | |
| • S-Cam Tube | V/P/L | | | ✓ | | | | |
| • Slack Adjuster | V/P/L | | | ✓ ² | | | RP 609 | Contact vendor² or refer to page 3 for TMC RP MANUAL information. |
| Obvious signs of wear, damage or change in condition | V | | ✓ | | | | L1073 L1074 | Primary Fixed Suspension Information Slider Suspension Information |
| Pivot Connection | V | ✓ | | ✓ | | | L1071 | Pivot Bushing Inspection / Replacement Information |
| • Bushing Tube Spacers | V | | | | ✓ | | L750 | Bushing Tube Spacer Inspection / Replacement Procedure |
| • TRI-FUNCTIONAL® Bushing | V/P | | | | ✓ | | B106 | Pivot Bushing Inspection Procedures |
| Ride Height | P | ✓ | | | ✓ | | L388 L459 | Ride Height Settings Checking Trailer Ride Height |
| Shock Absorber | V | | | | ✓ | | L551 | Shock Absorber Inspection Procedures |
| Shock Mounting Brackets and Bolts | V | | | | ✓ | | L635 | INTRAAX® Shock Mount Assembly Procedure |
| Slider | V/P | | | | | ✓ | L1074 | Slider Suspension Information |
| TIREMAAX® TIS (Tire Inflation System) | | | | | | | L818 | TIREMAAX® EC TIS Installation, Service and Troubleshooting Procedures |
| • Indicator Lamp Operation (not constantly on) | V | ✓ | ✓ | | | | L995 | TIREMAAX® CP TIS Installation, Service and Troubleshooting Procedures |
| • Tires (low) / Listen for Air Leaks | V | ✓ | | | | | | |
| • Check Tire Pressure | V/P | | | | ✓ | | T51002 | TIREMAAX® CP and PRO Tire Inflation System Installation, Service and Troubleshooting |
| • Tire Hose Connection at Hubcap (damaged or loose) | w | ✓ | | | ✓ | | | |
| • Test Lamp Operation | V/P | | | | ✓ | | | |
| • Complete System Integrity Check | V/P | | | | | ✓ | | |
| Welds (all) | V | ✓ | | | ✓ | | L1073 L1074 | Primary Suspension Information Slider Suspension Information |
| Wheel-End Component Inspection ⁵ | A ⁶ | B ⁶ | C ⁶ | | | | Various | See applicable online literature online. ^{4, 7} |
| • Oil Colorization | X | | | V/L | | ✓ | | L496, L776, T72001, T72002, T72004 T72005, T72006 and T72007 are wheel-end maintenance procedures available online. ⁴ |
| • Lubricant Leaks (hubcaps & wheel seals) | X | X | X | V | | ✓ | | Contact vendor² literature or refer to page 3 for TMC RP MANUAL information Change oil per fleet requirements |
| • Smooth and Quiet Rotation | X | X | X | P | | ✓ | | |
| • WEM status (Applicable when equipped with HUS®3) | | | X | V | | ✓ | L1162 | Wheel-End Monitor (WEM™) Identification, Installation and Operation Instructions |
| • Hubcap integrity | X | X | X | V | | ✓ | | |
| • Check End Play ⁵ | X | ® | ® | P | | | ✓ ⁵ | Contact vendor² or refer to page 3 for TMC RP MANUAL information. |
| ConMet™ preset hub | V/P | | | | | | | |

¹ The above checks should be done any time suspension is damaged or otherwise NOT functioning improperly.
² V = Visual Check, P = Physical Check (some measuring, access, disassembly or other physical contact may be required), L = Lubrication Point.
³ For any inspection issues requiring service, refer to documents listed in the "Lit. No." column, T12002 *Suspension Troubleshooting Procedures* (includes list of relative TMC RP MANUAL RPs) or T15001 *Air Ride Suspension Concepts and Functions* for assistance or PERIODIC INSPECTION SCHEDULE as needed.
⁴ Relative literature for inspected items is available on the Hendrickson Trailer Suspension Literature web page at www.hendrickson-infll.com.
⁵ While under warranty, Hendrickson Technical Services must be contacted prior to hubcap removal and servicing.
⁶ A = Standard Service 1-year warranty wheel end package), B = Extended-Life wheel ends (HLS®, HVS®, HUS®, HXL3™, HXL5™, HXL7®), C = HUS®
⁷ Links to some VENDOR LITERATURE is available on Hendrickson Trailer Suspension Literature web page online at www.hendrickson-infll.com.
⁸ Servicing of wheel ends is not recommended while under warranty, unless necessary and after contacting Hendrickson Technical Services.

Table 1: Hendrickson trailer suspension systems recommended inspection points and schedule



TABLE 1: INSPECTION

Table 1 includes a list of recommended areas to inspect, periodic intervals and related literature.

AREAS TO INSPECT

Publication T12002 *Suspension Troubleshooting*, Appendix A, identifies various suspension components listed in Table 1 for inspection. Although the areas indicated are specific, a general inspection should include any point on the suspension where suspected wear or damage may occur.

For inspection of vendor components, some of which is included, refer to trailer OEM, TMC RP MANUAL or **component vendor** documentation for more information.

INSPECTION/LUBRICATION INTERVALS

As stated on page 1, the following periodic intervals for inspection and lubrication can be modified according to trailer use. Inspection and lubrication may be required more often if:

- Required by OEM
- Required by component vendor; **contact vendor**.
- Trailer type and application demands are high
- Impact or other evidence of suspension damage.

PDI

Pre-Delivery Inspections are typically required by the trailer OE to be conducted prior to new trailer delivery to the customer. It is to be performed by the vehicle manufacturer or new trailer dealer and includes testing the suspension proper operation of the vehicle. This should also be performed by a repair facility after replacing a suspension, slider box or HALFTRAAX.

Daily

This pre-operation inspection can detect worn, broken or loose parts before any serious problems occur. During a walk-around check for any obvious problems or abnormalities.

Monthly

Inspection

This inspection is a more comprehensive than the daily inspection and covers more areas.

Seals, hubcap and hubcap gaskets should be checked for condition and potential leaks.

Lubrication

S-cam spider bushing and support bearing journal or S-cam tubes should be greased at this time and

during any service when grease points are easily accessible.

Quarterly

Inspection

Along with monthly inspection, perform quarterly inspections listed in Table 1.

Lubrication

Same as Monthly. As a minimum requirement, all lubrication points should be re-lubricated at this time interval, including slack adjusters.

Annually

Inspection

Along with Monthly and Quarterly, perform annual inspections listed in Table 1.

Lubrication

Same as Monthly.

REFERENCES

Several Hendrickson (Table 1) and vendor references provide inspection and lubrication information and details that are beyond the scope of this document.

HENDRICKSON PUBLICATIONS

References to Hendrickson Trailer literature can be found online at www.hendrickson-intl.com. Click on the hyperlinked literature number, listed in Table 1, to open.

VENDOR LITERATURE

References to vendor literature and contact information can be found online, starting at the vendor's home page. Some vendor literature is listed and linked from the bottom of the [Hendrickson Trailer literature web site](#).

TMC RP MANUAL

The Technology & Maintenance Council (TMC) is a branch of the American Trucking Associations (ATA) (www.truckline.com). For the past 30+ years they have been defining and publishing recommended practices (RPs) for commercial vehicles and equipment. They are listed in the *TMC Recommended Maintenance Practices Manual*.

| ITEMS TO CHECK (RECOMMENDATION) | TYPE ¹ | EVENT | | COMMENTS |
|---|-------------------|-----------|-------------|--|
| | | IDLE TIME | AFTER FLOOD | |
| INSPECTION¹ | | | | |
| Air Springs | V | ✓ | ✓ | While sitting idle, condensation (moisture) can build internally as temperatures change. |
| Brakes | P | ✓ | ✓ | |
| Bushing Tube | V | ✓ | | |
| Bushing Tube Spacers | V | ✓ | | |
| Air line Hoses, tubing, fittings, Valves, etc... | V/P | ✓ | ✓ | Pests and insects will enter and nest in any small opening. Seals and gaskets can dry and become non-functional. |
| Obvious signs of damage or wear | V | ✓ | ✓ | |
| Shock Absorber | V | ✓ | ✓ | Internal components can degrade, refer to |
| Wires | V | | ✓ | Exposure to moisture can corrode electrical connection and connectors. |
| SERVICE¹ | | | | |
| Contamination | V | | ✓ | Where critical, remove all containments. |
| Lubrication | V/P | | ✓ | Ensure lubricant is fresh and moisture free. Refer to relative literature column of Table 1 for lubrication details. |
| S-cam and Cam Tube | P | ✓ | ✓ | |
| Smooth Wheel Bearing Rotation | P | ✓ | ✓ | |
| Change Seals, Gaskets, Lubricant | P | | ✓ | Mandatory after flood, as needed after idle. |

¹ Recommended checks before returning suspension to normal operation. Relative literature is listed in [Table 1](#).

² V = Visual Check, P = Physical Check (some disassembly may be required). In addition, all systems should be operationally checked and tested.

³ Replacing lubricant drives out moisture that may have collected and drives out any degraded lubricant.

Table 2: *Special event inspections & service*

TABLE 2: AFTER IDLE TIME OR FLOOD

[Table 2](#) includes recommended inspections and service for trailers that have been idle or submerged in water.

IDLE TIME

Trailer suspensions not operated (idle) for prolonged periods of time must be inspected prior to renewed operation (e.g. Trailer used for storage, etc...).

Normally, machined surfaces (bearing races, bearings, etc...) are protected by lubrications flowing onto, over and around during use. Lack of trailer motion causes lubricants to flow downward and away from these surfaces until it reaches a level pool in the hub. Metal surfaces are eventually unprotected and exposed to the environment.

Seals and gaskets not exposed to lubricant can degrade in performance. Check and replace as needed.

Surface cracks on rubber components do not effect performance. Refer to vendor for questions if needed.

FLOOD

Oil and water do not mix. Lubricants continue to seek a level state, even while under water. All metal surfaces, wires and materials are directly exposed to moisture, pollutants and other contaminants, leading to rust and corrosion.

[PERIODIC INSPECTION SCHEDULE](#) for any questions or issues relative to inspection or lubrication.

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