TECHNICAL PROCEDURE

TRAILER SUSPENSION SYSTEMS

SUBJECT: Preventive Maintenance Guide
Flood Service Requirements

LIT NO: L578
DATE: May 2024 **REVISION:** M

INTRODUCTION

This document outlines recommended inspection areas and lubrication points on Hendrickson suspensions, axles and components. Table 1 recommends inspection points and intervals for suspension components and systems. Table 2 recommends inspection and service after IDLE TIME or exposure to FLOOD. A list of related 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.

NOTE: Auto lubricating systems are not recommended for use on Hendrickson brake components.

PERIODIC INSPECTION SCHEDULE

Using the information in this publication and other Hendrickson publications will ensure maximum air suspension component life.

IMPORTANT: This document includes minimal inspection requirements for normal on-highway applications. For trailers subjected to 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 requires more frequent inspections.

LUBRICATION POINTS AND FREQUENCY

Few areas require lubrication for Hendrickson suspensions and axles. For literature providing lubrication details, refer to related HENDRICKSON PUBLICATIONS or VENDOR LITERATURE. The only Hendrickson components requiring lubrication are slacks, S-cam spider bushings and spherical bearing or cam tubes. Each requires Extreme Pressure NLGI #2 grease and should be replenished MONTHLY.

CONTACT HENDRICKSON

Methods of contacting Hendrickson Trailer Technical Services include:

EMAIL

For **H**endrickson **T**railer **T**echnical **S**ervices, use the following e-mail address:

HTTS@Hendrickson-intl.com

PHONE

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

⚠WARNING Always wear proper eye protection and other required PPE (personal protective equipment) when performing vehicle maintenance, repair or service. Follow federal, state and local safety regulations as appropriate.

PREVENTIVE MAINTENANCE 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*
MAXX22T™ ADB									T72009	*Installation and Maintenance Procedures*
• **Pad wear, retaining springs, bar & mounting holes**			V/P				✔			Also inspect during brake and wheel-end service.
• **Pad retaining springs**			V			✔				
• **Rotor condition, separation cracks & excessive or abnormal wear**			V/P			✔			T72011	*ADB Wear Indicator Tool Instructions*
• **Damage to adjuster, guide pin & piston boots**			V/P			✔				
• **Presence/Condition of adjuster & guide pin caps**			V/P			✔				Refer to page 3 for more information.
Brakes - Air disc										**Contact vendor** [7] .
Brakes - Drum									L974	*Drum Brake Maintenance Procedures*
• **Brake chamber, pushrod, & overall condition**			V/P/L	✔		✔				Refer to fleet requirements for more details.
• **S-cam & cam tube**			V/P/L	✔		✔				**Contact vendor** [7]
• **Slack adjuster**			V/P/L	✔				✔ [7]		
HT YS & YB Y-beam inspection			V				✔		T49001	*Y-beam Inspection* (See notes on next page)
Obvious signs of wear, damage or change in condition of suspension & axle components			V		✔				L1073 L1074	*Primary Fixed Suspension Information* *Slider Suspension Information*
Pivot connections			V	✔		✔			L1071 L1072	*Pivot Bushing Inspection/Replacement Information*
• **Bushing tube spacers**			V				✔		L750	*Bushing Tube Spacer Maintenance Procedures*
• **Pivot bushing**			V/P				✔		B106	*Pivot Bushing Inspection Procedures*
Ride height			P	✔			✔		L459	*Checking Trailer RH, see* L388 *RH Settings*
CONNEX® ST Self-Steer Suspension System									T62001	*Self-steer Axle Maintenance Procedures*
• **Tie rod ends**			V/P/L	✔		✔			T60001	*Decal: Self-steer Axle Lubrication*
• **Kingpin bushing**			V/P/L	✔		✔				
• **Lock straight pivot arms**			V/P/L	✔		✔				
• **Lock straight air spring & chamber**			V/P	✔			✔			
Shock absorbers			V				✔		L551	*Shock Absorber Inspection Procedures*
Shock mounting brackets, down stops & bolts			V				✔		L635	*INTRAAX® Shock Mount Assembly Procedure*
Slider suspension or slider box			V/P					✔	L1074	*Slider Suspension Information*
TIREMAAX® Tire inflation system									L818	*TIREMAAX® EC TIS Installation, Service and Troubleshooting Procedures*
• **Indicator lamp operation (not constantly on)**			V	✔	✔					
• **Tires (low) / Listen for air leaks**			V	✔					L995	*TIREMAAX® CP TIS Installation, Service and Troubleshooting Procedures*
• **Check tire pressure**			V/P				✔			
• **Tire hose connections (damaged or loose)**			V/P	✔			✔		T51002	*TIREMAAX® CP and PRO Tire Inflation System Installation, Service and Troubleshooting*
• **Test lamp operation**			V/P				✔			
• **Complete system integrity check**			V/P					✔		
Welds (all)			V	✔			✔		L64	*Weld Procedures,* also see L1073 & L1074
Wheel-end component inspection [5]	**A** [6]	**B** [9]							Various	L496 (std) [8], L775/L776 (HUS), T72002 (HXL7), T72004 (HLS), T72005 (HVS) [8], T72006 (HXL3) [8] and T72007 (HXL5) wheel-end maintenance procedures available online. [4,7]
• **Lube level** [8] **and colorization**	**X**		V/L		✔					
• **Lubricant leaks (hubcaps & wheel seals)**	**X**	**X**	V			✔				
• **Smooth and quiet rotation**	**X**	**X**	P				✔			
• **Hubcap integrity**	**X**	**X**	V			✔				*If wheel-end is a std 1 year service type, at 12 months / 100,000 miles, (see page 3), install new oil or NLGI # 2 grease lubricant - re-pack bearing rollers; re: L496 (std)*
• **Check end play** [5]	**X**	[9]	P					✔ [5]		

1 The above checks should be done any time suspension is damaged or otherwise NOT functioning properly.

2 **V** = Visual Check, **P** = Physical Check (operation, 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 or contact Hendrickson for assistance. Also refer to PERIODIC INSPECTION SCHEDULE if adjustments are required.

4 Related literature for inspected items are available on the Hendrickson Trailer Suspension Literature web page at www.Hendrickson-intl.com/TrailerLit.

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®).
NOTE: HUS is no longer available from its original supplier. If necessary, please contact Hendrickson for details.

7 For information on vendor components, contact the vendor directly. Links to ADB and wheel-end VENDOR LITERATURE is available at www.Hendrickson-intl.com/TrailerLit.

8 If applicable and during warranty coverage of Standard 1-year, HVS and HXL3 wheel-ends; topping off oil to the hubcap fill line is allowed. The oil type must be the same as originally filled by Hendrickson during suspension build. CONTACT HENDRICKSON for more details or questions.

9 Servicing of wheel-ends is not recommended while under warranty unless necessary and only after contacting Hendrickson Technical Services.

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

TABLE 1: INSPECTION

Table 1 includes a list of recommended systems and components to inspect, periodic inspection intervals and related literature. For inspection procedures, refer to the literature listed or manufacturer's documentation.

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 OEM to be conducted prior to new trailer delivery to the customer. It should be performed by the vehicle manufacturer or trailer dealer and includes testing suspension and vehicle for proper operation. This should also be performed by a repair facility after replacing a suspension, slider box (AMBOX™) or axle/beam weldment (HTRAAX™).

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 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 spherical bearing or cam tubes should be greased at this time, plus during any service when grease points are easily accessible. Use Extreme Pressure NLGI #2 grease until clean lubricant appears at purge point.

CONNEX® ST kingpins and kingpin bushings should be greased at this time, plus during any service when grease points are easily accessible.

Quarterly

Inspection

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

While inspecting bolts and obvious signs of wear, damage or change to the condition of suspension and axle components, listed in Table 1, this should include frame bracket bolt-on attachments, cross-channel and strut fasteners.

Lubrication

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

Annually

Inspection

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

Lubrication

Same as Monthly, including slack adjusters.

If wheel-end is a std 1 year service type, at annual 12 months or 100,000 miles, whichever occurs first, install new oil or NLGI # 2 grease lubricant - re-pack bearing rollers appropriately, and replace hub cap gasket-retorque fasteners to 15ft. lbs.

ADB MAINTENANCE REQUIREMENTS

Proper care of ADB systems include regular inspections and operational checks to include:

- Pad wear and retaining hardware (springs, bar, etc.).
- Protective covers (boots & caps).
- Mechanical movement and mating surfaces.

REFERENCES

Several Hendrickson 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/TrailerLit. 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 in the "Brake & Wheel-End Components" section of www.Hendrickson-intl.com/TrailerLit.

HT Y-BEAM INSPECTION

Depending on application, operation and usage; the HT™ Y-beam suspension may develop cracking in the yoke area. Inspect Y-beams anytime maintenance

or service is performed on the trailer. CONTACT HENDRICKSON if any cracking is found.

FLOOD SERVICE REQUIREMENTS

ITEMS TO CHECK (RECOMMENDED)	TYPE [1]	EVENT: IDLE TIME	EVENT: AFTER FLOOD [3]	COMMENTS
INSPECTION [4]				
Air springs [3]	V	✔	✔	*Inspect while aired up at ride height.*
Brakes, Drum [2, 3]	V/P	✔	✔	
Brakes, ADB [2, 3] (Air Disc Brakes)	V/P	✔	✔	*If submerged, replace caliper assemblies, otherwise inspect for contamination and check function.*
Brakes, Brake chamber actuator [3]	V/P	✔	✔	*If submerged, replace brake chamber actuator.*
Bushing tubes	V	✔		
Bushing tube spacers	V	✔		
Air line hoses, tubing, fittings, valves [3], 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 absorbers	V	✔	✔	*Refer to L551 Shock Absorber Inspection Procedures.*
Wires, electrical connections and connectors	V/P		✔	*If submerged, disassemble, clean and apply dielectric grease during assembly.*
SERVICE [4]				
Contamination [5]	V		✔	*Where critical, remove all containments.*
Lubrication [5]	V/P/L	✔	✔	*Ensure lubricant is fresh and moisture free at all grease fittings. Refer to items (L) and relative literature column of Table 1 for more details.*
S-cam and cam tubes	P/L	✔	✔	
Smooth wheel bearing rotation	P	✔		*If submerged, see line below.*
Change hub seals, gaskets, lubricant [5] and axle filter	P/L		✔	*Mandatory after flood, as needed after idle. Inspect axle interior and remove any existing moisture. Replace spindle filter and plug with new.*

1 **V** = Visual Check, **P** = Physical Check (some disassembly may be required), **L** = Lubrication Point.

2 If drum or ADB rotor contact surface is corroded following flood and being submersed for any length of time, they must be replaced.

3 All systems should be operationally checked and tested.

4 Recommended checks before returning suspension to normal operation. Relative literature is listed in Table 1.

5 Replacing lubricant purges any collected moisture and/or degraded lubricant.

Table 2: Special event inspections & service

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 or production installation (e.g. Manufacturing outside storage, trailer used for storage at dock or in parking areas, 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 that are directly exposed to moisture, pollutants and other contaminants can lead to rust and corrosion.

*Call Hendrickson at **866.RIDEAIR (743.3247)** for additional information.*

HENDRICKSON

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