TECHNICAL PROCEDURE

HENDRICKSON VALUE SYSTEM™ (HVS™) HUB

SUBJECT: Hub Maintenance Procedures

LIT NO: T72005 Supersedes L496
DATE: May 2012

HENDRICKSON
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CONVENTIONS APPLIED IN THIS DOCUMENT

This section explains techniques used in this document to convey important information, safety issues, how to contact Hendrickson and how to apply hyperlinks.

EXPLANATION OF SIGNAL WORDS

Hazard signal words (such as DANGER, WARNING or CAUTION) appear in various locations throughout this publication. Information accented by one of these signal words must be observed at all times. Additional notes are utilized to emphasize areas of procedural importance and provide suggestions for ease of repair. The following definitions comply with ANSI Z535.4 and indicate the use of safety signal words as they appear throughout the publication.

⚠DANGER: INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

⚠WARNING: Indicates hazards or unsafe practices which could result in severe personal injury or death.

⚠CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates hazards or unsafe practices which could result in damage to machine or equipment.

IMPORTANT: An operating procedure, practice or condition that is essential to emphasize.

⚠ Safety alert symbol used to indicate a condition exists that may result in personal injury or harm to individuals. It must be applied to DANGER, WARNING and CAUTION statements, which emphasize severity.

LINKS

Links are identified by a dark grey line under the linked text. Internal links allow the reader to jump to a heading, step or page in this document. External links open the website or document referenced.

GENERAL SERVICE NOTES

IMPORTANT: Special attention should be paid to the information included in EXPLANATION OF SIGNAL WORDS.

Before you begin:
Read, understand and comply with:

- All instructions and procedures.
- All signal word (CAUTION, WARNING and DANGER) statements to help avoid personal injury or property damage.
- Company's maintenance, service, installation and diagnostic practices.
- Vehicle manufacturer's safety instructions when working on the vehicle.
- Vehicle manufacturer's instructions for recommended practices not described in this manual.
- Local safety regulations.

DURING SERVICE:

- Work must be carried out by trained personnel.
- Sudden release of tensioned springs (e.g. the spring brake part of the brake chamber or the brake return spring) may cause injury.
- Use recommended tools only.
- Before releasing trailer back into service, perform operational checks and test the trailer to make sure brakes are working correctly.

Hendrickson reserves the right to make changes and improvements to its products and publications at any time. Consult the Hendrickson website (www.hendrickson-intl.com) for the latest version of this manual.

IMPORTANT SAFETY NOTICES

Proper maintenance, service and repair is important to the reliable operation of the suspension system and components. The procedures recommended by Hendrickson and described in this publication are methods of performing inspection, maintenance, service and repair.

The warnings and cautions should be read carefully to help prevent personal injury and to assure that proper methods are used. Improper maintenance, service or repair can cause damage to the vehicle and other property, personal injury, an unsafe operating condition or void the manufacturer's warranty.

Carefully read, understand and follow all safety related information within this publication.

⚠WARNING: DO NOT modify or rework parts. Use ONLY Hendrickson authorized replacement parts. Use of substitute, modified or replacement parts not authorized by Hendrickson may not meet Hendrickson's specifications. It can also result in failure of the part, loss of vehicle control and possible personal injury or property damage. Do not modify parts without written authorization from Hendrickson.

⚠WARNING: Always wear proper eye protection and other required PPE (personal protective equipment) when performing vehicle maintenance, repair or service.

⚠WARNING: Solvent cleaners can be flammable, poisonous and can cause burns. To help avoid serious personal injury, carefully follow the manufacturer's product instructions and guidelines and the following procedures:

- **WEAR proper eye protection**
- **WEAR clothing that protects your skin**
- **WORK in a well ventilated area**
- **DO NOT use gasoline, or solvents that contain gasoline. Gasoline can explode.**
- **HOT solution tanks or alkaline solutions must be used correctly. Follow the manufacturer's recommended instructions and guidelines carefully to help prevent personal accident or injury.**

⚠WARNING: Avoid creating dust. Dust from brake pads and/or parts is a possible cancer and lung disease hazard.

- **WHILE Hendrickson does not offer asbestos brake linings, long term affects of some non-asbestos fibers have not been determined. Current OSHA Regulations cover exposure levels to some components of non-asbestos linings but not all. The following precautions and considerations must be applied when handling these materials:**
- **COMPRESSED air or dry brushing must never be used for cleaning brake assemblies or work area.**
- **HENDRICKSON recommends that workers doing brake work must take steps to minimize exposure to airborne brake lining particles. Proper procedures to reduce exposure include working in well ventilated area, segregation of areas where brake work is done, use of local filtered ventilation systems or use of enclosed cells with filtered vacuums.**
- **RESPIRATORS approved by the Mine Safety and Health Administration (MSHA) or National Institute for Occupational Safety and Health (NIOSH) should be worn at all times during brake servicing.**
- **WORKERS must wash before eating, drinking or smoking; shower after working and should not wear work clothes home. Work clothes should be vacuumed and laundered separately with out shaking.**

- **OSHA Regulations regarding testing, disposal of waste and methods of reducing exposure for asbestos are set forth in 29 Code of Federal Regulations §1910.001. These Regulations provide valuable information which can be utilized to reduce exposure to airborne particles.**
- **MATERIAL Safety Data Sheets (MSDS) on this product, as required by OSHA, are available from Hendrickson.**

⚠CAUTION: A mechanic using a service procedure or tool which has not been recommended by Hendrickson must first satisfy himself that neither his safety nor the vehicle's safety will be jeopardized by the method or tool selected. Individuals deviating in any manner from the provided instructions assume all risks of consequential personal injury or damage to equipment.

⚠CAUTION: Brake lining contains non asbestos fibers. Wear approved eye protection and respirator when working on or near the brakes to prevent a possible health hazard.

NOTICE: When welding to or on the axle, take every caution to prevent bearing damage. When grounding welding equipment to axle, prevent current from passing through the wheel bearings

A connection that places a wheel tearing between the ground cable connection and the weld area can damage the bearing by electric arcing.

CONTACTING HENDRICKSON

Contact Hendrickson Trailer Technical Services for technical assistance as needed. To do so, several options are available.

Prior to contacting Technical Services, it may be best to have the following information about your Hendrickson suspension available (all that apply):

- Suspension ID Tag information (Refer to Hendrickson Lit. No. L977 *ID Guide*, page 2 for tag location and details):
  - Suspension model number
  - Suspension serial number
  - Approximate number of suspension miles.
- Vehicle VIN number. Refer to trailer OEM manual for VIN plate location.
  - Trailer Type (van, reefer, flat bed, etc...)
  - Manufacturer
  - VIN (vehicle identification number)
  - In-service date [1]
- If applicable, description of the system problem, part number and/or part description of the reported non-functioning part.
  - Date of failure
  - Where applicable: location of problem on suspension / trailer; e.g., road side, front axle, rear axle, curb side rear, etc
  - Symptoms-
    - » Systems, components or function effected by failure.
    - » When does failure occur?
    - » How often do they occur?
    - » Etc...
- What troubleshooting and/or measurements have been performed?
- What service data literature do you have or need?
- Digital photos of suspension and damaged areas.
- Special application approval documentation (if applicable).

EMAIL

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

htts@hendrickson-intl.com

[1] If the in-service date is unknown or not available, the vehicle date of manufacture can be substituted.

PHONE

Contact Hendrickson directly in United States at 866-RIDEAIR (743-3247) or in Canada at 800-668-5360. From voice menu, select:

- Technical Services/Warranty for technical information.
- Other selections include:
  - Aftermarket Sales for replacement parts information and ordering.
  - Original Equipment Sales for parts inquires and ordering for trailer manufactures.

RELATIVE LITERATURE

If you suspect your version of this or any other Hendrickson manual is not "Up-to-Date", the most current version is free online at:

www.hendrickson-intl.com/literature/

Available Hendrickson documentation can be viewed or downloaded from this site.

All Hendrickson online documentation are PDF files that require Adobe Acrobat Reader to open. This is a free application downloadable from Adobe's home page (http://get.adobe.com/reader/).

Other relative literature may include:

NAME	DESCRIPTION
L496	*Standard Wheel End Maintenance Procedures*
L583	*Comprehensive Warranty Statement*
TMC	*Technology & Maintenance Council* publishes recommended practices (RP) for commercial transportation equipment through the American Trucking Association (ATA) (www.trucking.org).
RP 618	*Wheel Bearing Adjustment Procedures*
RP 622	*Wheel Seal and Bearing Removal, Installation and Maintenance*
RP 624	*Lubricant Fundamentals*
RP 631	*Recommended Wheel End Lubrication*
RP 640	*Alternate Wheel Bearing Adjustment Systems*
RP 644	*Wheel End Conditions Analysis Guide*
RP 656	*Hub and Spoke Wheel Fastener Maintenance*

NOTE: The above mentioned TMC RPs are for reference only. For like procedures, those in this document take precedence and must be followed when maintaining Hendrickson wheel end systems.

PREPARING TRAILER FOR SERVICE

NOTE: DO NOT service a suspension or any component that is under warranty without first CONTACTING HENDRICKSON Technical Services.

⚠WARNING: To prevent serious eye injury, always wear safety glasses when performing trailer maintenance and service.

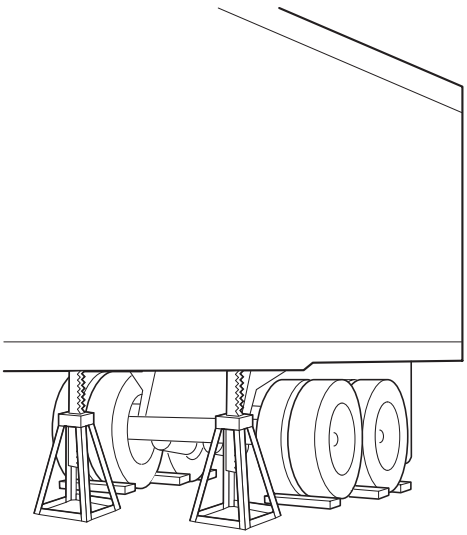


Figure 1: *Trailer preparation*

Before beginning any work on a trailer suspension system, the following steps help to ensure conditions are safe. Refer to GENERAL SERVICE NOTES on page 3.

1. Park trailer on a level, debris-free surface.
2. Set trailer parking brakes.
3. To prevent trailer from moving, chock wheels of an axle not being raised.
4. Exhaust air from the trailer suspension.
5. Release trailer parking brakes.
6. Using a jack, raise trailer until wheels clear the work surface.
7. Support raised trailer with trailer stands.

⚠WARNING: Do not work under a trailer supported only by jacks. Jacks can slip or fall over, resulting in serious personal injury.

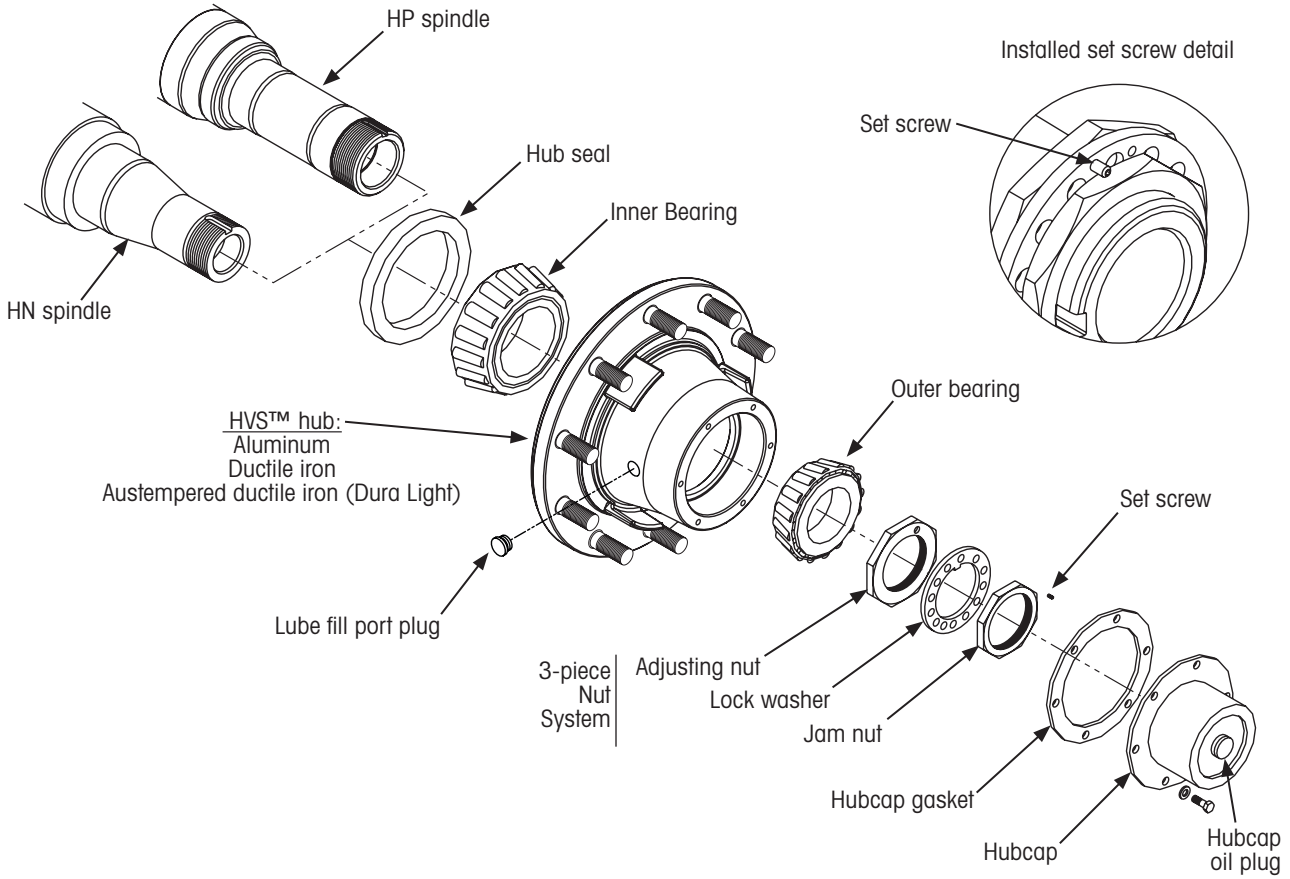


Figure 2: *Hendrickson Value System™ (HVS™) wheel-end parts identification*

INTRODUCTION

The Hendrickson Value System™ (HVS™) hub assembly (Figure 2) comes pre-assembled, adjusted, sealed and lubricated from Hendrickson. Because we control the assembly, internal cleanliness, bearing adjustment and seal installation in our facilities, we can offer premium performance and an extended-service warranty on these hub assemblies.

The HVS™ system is available with ductile iron, austempered ductile iron (ADI) or aluminum hub and are field serviceable with Hendrickson authorized components. However, do not remove the HVS hubcap or attempt any kind of field service without first CONTACTING HENDRICKSON Technical Services.

STANDARD HUB MAINTENANCE PROCEDURES

.includes standard maintenance procedures which apply to most Hendrickson wheel end systems. These include spindle nut adjustments and stud replacement. However, those procedures are superseded by like procedures applicable to HVS and included in this document.

TOOLS REQUIRED

The following tools may be required during the performance of some maintenance procedures:

TOOL [1]	WHERE USED
Torque Wrench (10 - 400 ft-lb or 13 - 542 N•m)	To be used with sockets listed in this table.
$3^{13}/_{16}$ inch socket	Inner Adjusting nut
$3^{1}/_{4}$ inch socket	Outer jam nut
$^{5}/_{64}$ inch hex key	3-piece nut system set screw
$^{1}/_{2}$ inch socket	Hubcap fasteners
$^{1}/_{4}$ or $^{5}/_{16}$ inch hex key	Lube fill port plug
Dial Indicator, with mounting stand (resolution to 0.0001", 0.002 mm)	End-play measurement. Refer to Figure 5 on page 9.

Table 1: *List of required tools*

IMPORTANT: Torque cannot be properly applied with an ordinary wrench. A calibrated torque wrench must be used to tighten fasteners to specified values with even distribution of applied forces.

INSPECTION

At regular intervals, the HVS™ hub assembly should be checked for seal leaks and smooth rotation.

⚠WARNING: Prior to performing inspection procedures, help ensure conditions are safe by following steps in section PREPARING TRAILER FOR SERVICE.

NOTE: The frequency or periodicity 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. Conversely, lower usage would require less inspection. Refer to L578 *Inspection and Lubrication* for more details.

Inspections should be performed:

- **Daily** pre-operation check. This would include a general walk around to check for signs of obvious damage, wear or other abnormalities.
- **Every month**, visually inspect back of hub and hubcap gasket for leakage. Refer to the section titled CHECKING FOR SEAL LEAKS for complete inspection details.
- **Every three to four months**:
  - Perform monthly inspection.
  - Check for smooth rotation.
    - » Refer to the section titled CHECKING FOR SMOOTH ROTATION for details.
    - » If assistance is required or the hub feels rough, sounds noisy or does not rotate freely, refer to CONTACTING HENDRICKSON Technical Services department for further assistance.
- **During brake service** and relining when the wheel end will be dismantled enough to easily make these inspections. In addition to the inspection at brake service, always maintain current shop preventive maintenance and pre-trip inspection practices.

Refer to L578 for more details on more recommended suspension inspection procedures.

CHECKING FOR SEAL LEAKS

The HVS™ hub assembly is filled with synthetic oil at the factory during the assembly process. Oil is contained in the hub by the hub seal where leakage can occur (Figure 2 on page 7).

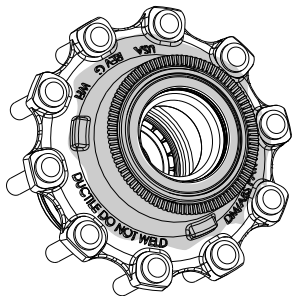


Figure 3: *Check back side of hub for leaking oil*

To check for leaks, look at the inboard side of the hub, (Figure 3). A small amount of oil may be visible at the hub seal. **This is a normal occurrence and does not necessarily indicate a seal leak**.

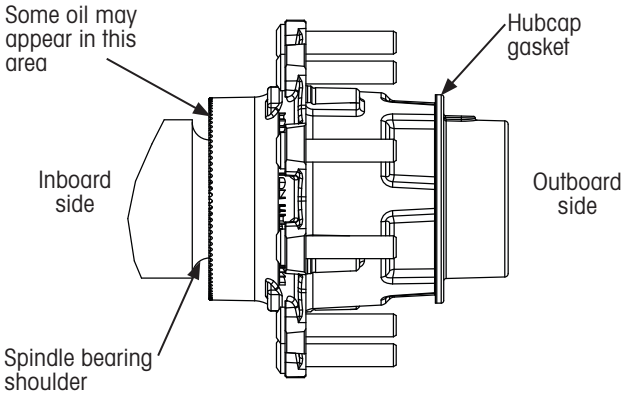


Figure 4: *Spindle bearing shoulder*

A small amount of oil may also appear at the spindle bearing shoulder to hub joint and hubcap gasket (Figure 4). **This is also normal and does not necessarily indicate a leak**. It should be wiped clean to minimize any accumulation of dirt.

NOTICE: Pressure or steam washing should be avoided in this area as water could be forced past the seal and degrade lubricant performance and corrode bearings.

If the hub seal or gasket is leaking, a large quantity of oil will be present in the areas of the hub, spindle hubcap and wheel. If found, refer to CONTACTING HENDRICKSON Technical Services for guidance on how to proceed.

CHECKING FOR SMOOTH ROTATION

Many factors can effect smoothness of rotation. Primary causes include:

- Bearing wear
- Damaged hub seal
- Debris

NOTE: A reasonable assessment can be performed without removing tires and rims. However, this procedure is best performed with hub only as shown in Figure 6.

1. **Ensure** trailer is secure per PREPARING TRAILER FOR SERVICE on page 6.
2. **Disengage** brakes and remove brake drum (recommended).
3. While maintaining physical contact, **slowly rotate** hub in both directions at least five revolutions.
4. **During rotation**, ensure smooth and quiet rotation. Bearings should move smoothly. Feel for any resistance in movement. Any debris in bearings should be felt or heard as it moves over rollers in bearings.

IMPORTANT: If bearings feel rough, sound noisy, or do not rotate freely, do not place the suspension back into service. Refer to CONTACTING HENDRICKSON Technical Services for guidance.

CHECKING END PLAY

This procedure must be performed when:

- **After** CONTACTING HENDRICKSON Technical Services has advised you to perform this check because wheel end play movement or other issues are identified during CHECKING FOR SMOOTH ROTATION.
- Installing hub and required during INSTALL 3-PIECE SPINDLE NUT on page 12, Step 11.

1. If not already done so:
   A. **Perform** PREPARING TRAILER FOR SERVICE on page 6
   B. **Remove** wheel (tires and rims).
   C. **Drain** oil from wheel end.
   D. **Remove** hubcap and discard gasket.
   E. **Disengage brakes and remove brake drum** (recommended).

IMPORTANT: End play can be checked with brake drum installed or removed (preferred). If installed, **make sure all brake drum wheel fasteners are installed and tightened to manufacturers specifications** before checking end play.

2. **Ensure** hub hubcap mounting surface and end of spindle are **clean and totally free of any burrs or debris**.

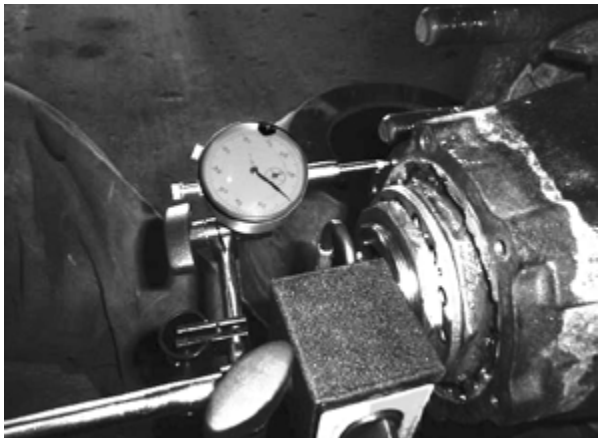


Figure 5: *Checking end play*

3. **Rotate** hub **at least 5 revolutions** to ensure bearings are fully seated.
4. **Attach** dial indicator (Table 1) with magnetic base to flat surface at end of spindle (Figure 5).
5. **Adjust** dial indicator so its pointer line of action is parallel to spindle axis and touches hub.
6. **Zero** indicator.

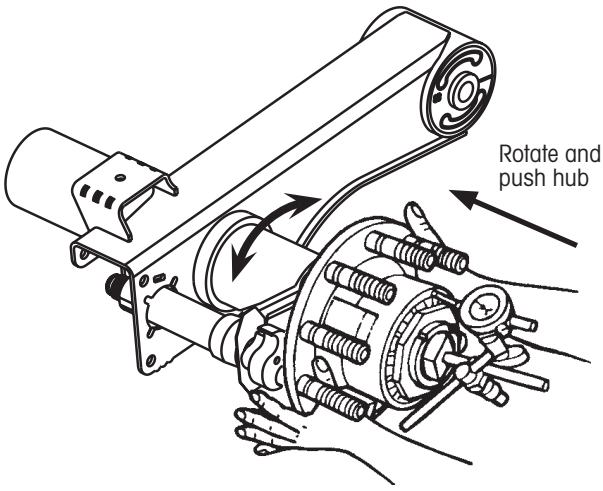


Figure 6: *Checking inward end-play*

7. **Grasp** hub as shown in Figure 6, and rotate the hub in both directions while **pushing** the hub inward until the dial indicator reading remains constant. **Record** reading.

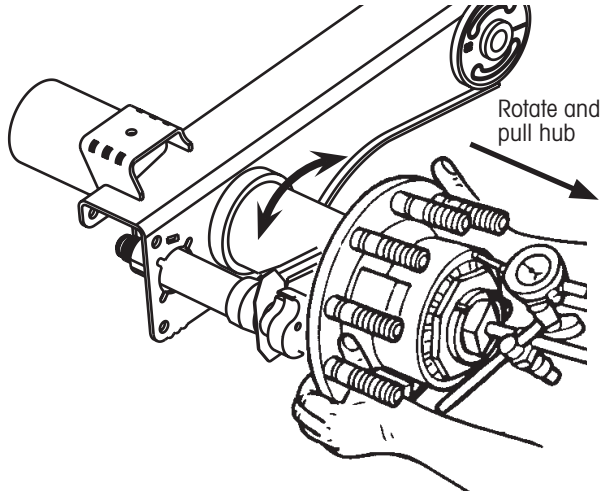


Figure 7: *Checking outward end-play*

8. While still grasping hub (Figure 7), **rotate** the hub in both directions while **pulling** the hub outward until the dial indicator reading remains constant. **Record** reading.

9. **Calculate** difference between recorded values of Step 7 and Step 8 to determine end play, **record** value.

IMPORTANT: End play must be between 0.001" (0.0254 mm) and 0.005" (0.0127 mm).

A. If end play is **within specification**, no bearing adjustment is necessary. Continue to final Step 10.

B. **If checking after** INSTALL 3-PIECE SPINDLE NUT on page 12 and end play is less than 0.001":

   i. Without rotating wheel, **remove** outer jam nut.

   ii. **Pull** lock washer away from hub, but not entirely off spindle.

   iii. **Loosen** inner adjusting nut so its dowel aligns with the previous alignment hole in lock washer.

NOTE: If a smaller loosening increment is desired, remove lock washer from spindle, flip it over, reinstall it on spindle and loosen inner adjusting nut so its dowel aligns with the previous alignment hole in lock washer.

   iv. **Slide** lock washer up against inner adjusting nut and install outer jam nut. Tighten nut according to Table 2 on page 13.

   v. **Return** to step 3 on page 9 and repeat end play procedure.

C. If end play is **NOT within specification**, refer to CONTACTING HENDRICKSON Technical Services for guidance on required next steps.

IMPORTANT: DO NOT place suspension back into service without correcting the problem. Unless installing new hub, disturbing spindle nut can void warranty.

10. The CHECKING END PLAY procedure is **complete if**:

A. Performing CHECKING END PLAY **only** and:
   – Adjusting nut is secure
   – Interlock washer dowel and tang are properly seated
   – Retaining set screw is securely in place

   Go to INSTALL HUBCAP on page 14.

B. CHECKING END PLAY as part of **spindle nut installation**. Return to INSTALL 3-PIECE SPINDLE NUT on page 12, Step 11.

REMOVING AND INSTALLING HUB

IMPORTANT: To ensure continued warranty, **DO NOT** perform the following procedures without obtaining prior authorization by CONTACTING HENDRICKSON Trailer Technical Services.

⚠WARNING: Prior to performing maintenance procedures, ensure conditions are safe. Refer to PREPARING TRAILER FOR SERVICE on page 6.

HUB REMOVAL

Only after receiving proper authorization from Hendrickson Technical Services, use the following procedure to remove HVS™ hub assembly:

1. **Remove** tire / wheel assembly.
2. **Disengage** brakes and **remove** brake drum.
3. **Drain** oil from wheel end and discard.
4. **Remove** hubcap bolts (Table 1) and hubcap, discard gasket.
5. Using a $^{5}/_{64}$ inch hex key, **remove** set screw from lock washer (Figure 2 on page 7 and Figure 8 on page 12).
6. **Remove** spindle nuts and lock washer.
7. **Carefully pull** HVS hub assembly slightly toward spindle end. A short quick motion should allow outer bearing to exit the hub. Be prepared to catch outer bearing if it slides off the end of the spindle. Otherwise, simply remove it.
8. **Remove** hub from spindle. The inner bearing is held in hub by the hub seal and should come off with hub.
9. **Remove** and DISCARD HUB SEAL:
   A. **If the seal is in the hub** - a pry bar can be used to carefully remove the seal from the hub bore. Damage to hub and hub surfaces must be avoided.
   B. **If the seal is on the spindle** - Using a brass, leather or other soft-faced mallet, drive the seal off the spindle by carefully striking the seal from the back side.

NOTICE: Any damage to the spindle's machined surfaces can effect wheel end performance.

SPINDLE PREPARATION

Before installing or re-installing the hub, follow this procedure to ensure spindle machined surfaces are clean and undamaged.

1. **Remove** old lubricant and thoroughly clean spindle.
2. **Inspect** machined spindle seal surface for nicks, scratches, burrs or marks. If needed, use crocus cloth or emery cloth to repair any damaged areas.
3. **Clean** spindle threads and keyway thoroughly with a wire brush to avoid false bearing adjustments and to avoid introduction of contaminants into the lubricant cavity.
4. **Thoroughly clean** spindle machined surfaces of rust, dirt, oil or any other contaminants that could damage the hub seal and cause it to leak.
5. **Lubricate** spindle with clean oil.

PREPARE AND INSTALL HUB

If installing new hub, start with Step 2.

1. **Thoroughly clean** the hub bore of any dirt, oil, rust or any other substance that may be present.
2. **Remove** all sharp edges, nicks and burrs from seal bore, hubcap bore and hubcap mounting surface of the hub.
3. **Inspect** hub seal bore for roughness. If needed, use emery cloth to remove any burrs or old bore sealant, and wipe hub clean.
4. **Ensure** hubcap mounting surface is smooth and free of debris.
5. **Lubricate** inner bearing and install into hub (Figure 2 on page 7).

NOTE: A hub seal driver is recommended and can be obtained from seal manufacturer.

6. **Lubricate** seal according to seal manufacturer's recommendations, then place it on an installation tool.
   A. **Align** seal tool with hub seal bore.
   B. **Drive** seal until it bottoms out in the hub seal bore.
   C. **Rotate** installation tool and apply several light blows to ensure seal is properly seated.
   D. **Check** inner bearing to make sure it rotates freely.

7. **Gently slide** hub onto spindle, taking care not to damage seal.

NOTICE: The HUB SEAL CAN BE DAMAGED if:

- **HUB seal is improperly installed.**
- **HUB seal is rammed into the spindle bearing shoulder.**
- **HUB is not kept supported and aligned with spindle until the outer bearing and axle nut are installed.**

8. **Lubricate** outer bearing and install into hub.

9. While sliding hub onto spindle, oil is collected at spindle bearing shoulder inboard of hub. **Clean** as needed.

INSTALL 3-PIECE SPINDLE NUT

The HVS™ hub system typically uses a 3-piece spindle nut system (Figure 8).

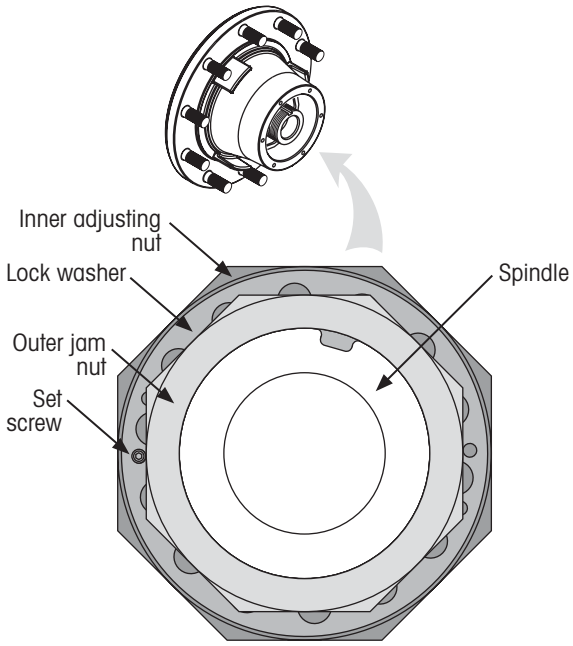


Figure 8: *3-piece nut system components*

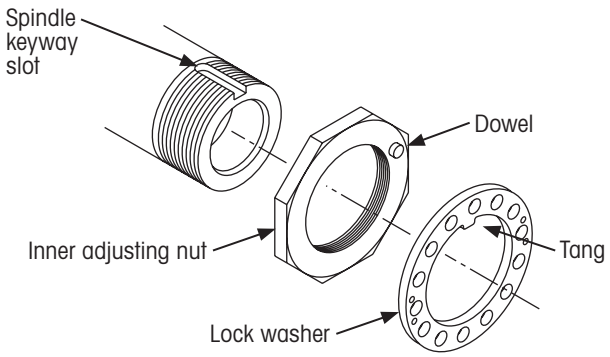


Figure 9: *Adjusting nut and lock washer installation*

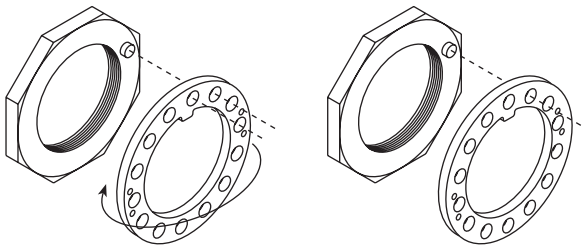
1. **Install** inner adjusting nut (Figure 9) on spindle, dowel side out, and tighten to 200 ft. lbs. (271 N•m) of **torque while rotating** wheel.

2. **Back off** inner adjusting nut one full turn.

3. **Rotate** wheel at least 5 revolutions to seat bearings.

4. **Tighten** inner adjusting nut to 50 ft. lbs. (68 N•m) of torque while rotating wheel.

5. **Back off** the inner adjusting nut ¼ turn.



If dowel and hole do not align, flip lock washer over

Dowel and hole aligned

Figure 10: *Align adjusting nut dowel with hole in lock washer*

6. **Install** lock washer (Figure 9). Make sure lock washer tang fits in the spindle keyway slot and inner adjusting nut dowel fits in one of the holes in the lock washer. If this alignment cannot be achieved, remove the lock washer, flip it over and reinstall it on spindle (Figure 10).

   NOTICE: DO NOT tighten inner adjusting nut for dowel pin alignment. This can excessively pre-load bearings, resulting in premature failure.

   If the dowel and hole still don't line up, loosen the inner adjusting nut slightly until alignment occurs.

7. **Install** outer jam nut (Figure 2 on page 7).

8. **Tighten** outer jam nut to:

SPINDLE	TORQUE
HN	315 ft. lbs. (427 N•m)
HP	385 ft. lbs. (522 N•m)

Table 2: *Outer jam nut torque values.*

10. **Perform** CHECKING END PLAY on page 9. Return to next step when procedure is complete.

11. **Install** set screw (Figure 2 on page 7) into an accessible threaded hole in lock washer (Figure 8). Set screw must contact inner adjusting nut. Tighten to 16-20 in. lbs. (1.8-2.2 N•m) of torque.

INSPECTING INSTALLATION

To ensure correct installation, follow these procedures:

1. **Make sure** lock washer is properly positioned and flush with inner adjusting nut at dowel pin (Figure 8 and Figure 10).

2. **Ensure** set screw contacts nut face. When properly installed, the set screw will be approximately half the height of the outer jam nut.

3. Test for free hub rotation, perform CHECKING FOR SMOOTH ROTATION on page 9.

INSTALL HUBCAP

After the hub installation and inspection is complete, the hubcap can be installed.

IMPORTANT: Always install a new gasket when reinstalling hubcap.

NOTICE: Interference between nut system and hubcap could occur if improper components are used. Use only genuine Hendrickson or Hendrickson approved replacement components. Refer to RELATIVE LITERATURE on page 6 or CONTACTING HENDRICKSON on page 5 as needed.

1. **Visually inspect** hubcap, hub mating surface, bolt holes and new gasket for:
   - Signs of damage
   - Debris, such as silicon gasket sealer
   - Burs or sharp edges
   - Cracks
2. **Clean, repair or exchange** as needed.
3. **Align** hubcap and new gasket onto hub and **insert** bolts.
4. **Hand-tighten** bolts.
5. Using a star pattern, **torque** hubcap bolts to 15±3 ft. lbs. (20±4 N•m) torque.

NOTICE: Do not overtighten hubcap bolts. Overtightening will distort metal hubcap mounting flange, which will prevent hubcap from achieving a leak-free seal.

HUB LUBRICATION

SAE 75W-90 synthetic gear lubricant or SAE 80W / 90W gear oil is approved for use in the HVS™ wheel-end hub. Refer to TMC RP 631 *Recommendations for Wheel End Lubrication* for more lubrication details.

1. **Remove** fill port plug (Figure 2 on page 7) on the side of the hub, hubcap or at hubcap window plug.
2. **Fill** wheel end with SAE 75W-90 synthetic gear lubricant or SAE 80W / 90W gear oil to "FULL" line on hubcap window.

NOTE: Allow sufficient time for oil to settle prior to final oil level check (it may be necessary to add oil more than once to adequately fill the wheel end)

3. **If** oil was inserted through fill port in **hub**, Install fill port plug and tighten to 22±2 ft. lbs. (30±3 N•m) torque.

   If oil was inserted through **hubcap** side fill port, Install fill port plug and tighten to 7±2 ft. lbs. (9±3 N•m) torque.

   Otherwise, reinstall hubcap oil plug in window.
4. **Spin hub** more than three revolutions to distribute oil.
5. **Install** brake drum and wheel (tire and rim).
6. **Restore** trailer to normal operation.

REPLACING STUDS

Replacing studs is a common hub procedure. Refer to L496 *Conventional Hub Maintenance Procedures* for information.

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