

# H ASSEMBLY INSTRUCTIONS

## Kingpin Bushing Service Kit

**SUBJECT:** Kit No. 60961-009, 60961-039  
and Axle Service Kit 60691-040

**LIT NO:** 59310-011

**DATE:** December 2007 **REVISION:** C

### KINGPIN BUSHING KIT CONTENTS

QTY.	DESCRIPTION
1	Thrust Bearing
2	Grease Cap Assy.
2	Retaining Ring
2	King Pin Bushing
2	King Pin Seal
2	5/8" Socket Head Cap Screw
4	King Pin Shim .005"
1	King Pin Shim .047"
1	Loctite® (Red)
1	LIT# 59310-011

### INTRODUCTION

This kit was developed to service vehicles that have a STEERTEK front steer axle. Proper maintenance, service, and repair is important to the reliable operation of the suspension and axle. For complete service instructions on the AIRTEK® and SOFTEK® suspensions with the STEERTEK axle see the Hendrickson website [www.hendrickson-intl.com](http://www.hendrickson-intl.com). Follow the procedure below for proper installation of the king pin bushing service kit.

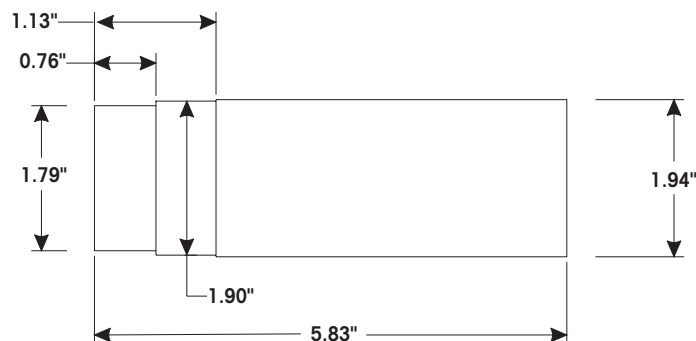
### KINGPIN BUSHING INSTALLATION

#### 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 INSTRUCTIONS PROVIDED ASSUME ALL RISKS OF CONSEQUENTIAL PERSONAL INJURY OR DAMAGE TO EQUIPMENT INVOLVED.

1. A hydraulic shop press with a minimum forcing capacity of 10 tons will be required and a kingpin bushing driver, see Figure 1.

**FIGURE 1** Driver for Kingpin Bushing Installation



#### WARNING

BEFORE APPLYING HYDRAULIC PRESSURE TO ANY TOOLING SET-UP, ALWAYS CHECK TO BE SURE THE PRESS PLATE, ADAPTERS, AND COMPONENTS BEING WORKED ON ARE POSITIONED PROPERLY, I.E. "IN LINE" WITH THE RAM. IMPROPER POSITIONING CAN CAUSE PERSONAL INJURY OR COMPONENT DAMAGE.

2. Install the lower or upper steering knuckle in the press.



3. Install the kingpin bushing from the machined side (axle side) of the lower or upper steering knuckle using a bushing driver, see Figure 1. Press in the bushing to a depth of no less than  $1\frac{5}{64}$ " (0.236") or 6 millimeters and no more than  $\frac{5}{16}$ " (0.32") or 8 millimeters, see Figures 2 and 3.
4. Following the installation of the kingpin bushing, it is necessary to ream the kingpin bushings to fit the kingpins.

**FIGURE 2**



**FIGURE 3**



**FIGURE 4**



## KINGPIN BUSHING REAMING

**CAUTION**

REAM THE KINGPIN BUSHINGS WITH AN ADJUSTABLE STRAIGHT FLUTE REAMER, SEE FIGURE 5. DO NOT HONE OR BURNISH THE KINGPIN BUSHINGS, IT WILL DAMAGE THE BUSHINGS AND VOID WARRANTY.

**WARNING**

WHEN INSTALLING STEERING KNUCKLE COMPONENTS IN A VISE IT IS NECESSARY TO PROTECT THE MACHINED SURFACES FROM GOUGES OR MARRING BY USING BRASS JAWS. FAILURE TO DO SO CAN CAUSE PREMATURE PART DAMAGE, DAMAGE TO THE STEERING KNUCKLE COMPONENTS, LOSS OF WARRANTY, LOSS OF VEHICLE CONTROL, CAUSING PERSONAL INJURY OR PROPERTY DAMAGE.

**FIGURE 5** Adjustable Straight Flute Reamer

**The dimension of cutting diameter must facilitate a range of 1.802" – 1.812"**

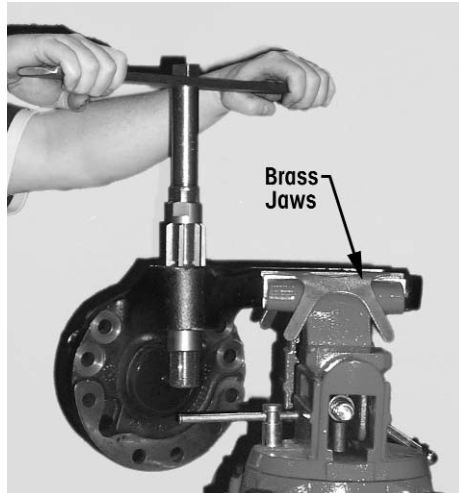
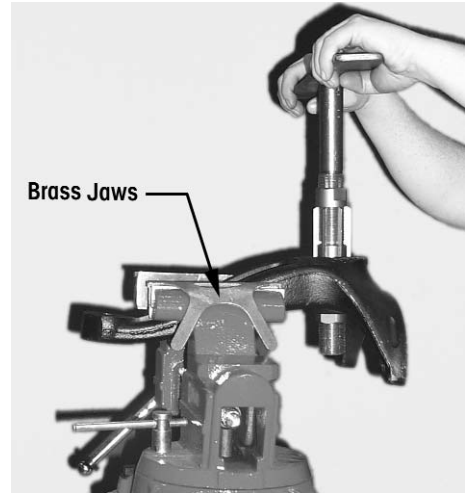


1. Install the steering knuckle assembly in a vise with brass jaws.

### SERVICE HINT

It is acceptable to mount the knuckle components in a vise either vertically or horizontally when performing the reaming procedure.

2. Install the reamer into the steering knuckle until the blades touch the kingpin bushing.
3. Rotate the reamer with light downward pressure. Rotate the reamer smoothly. **DO NOT** apply too much pressure, see Figures 6 and 7.
4. Slide the reamer out of the bottom of the steering knuckle assembly. If it is necessary to remove the reamer from the top, rotate the reamer opposite of cutting rotation.

**FIGURE 6** Lower Steering Knuckle in Vise

**FIGURE 7** Upper Steering Knuckle in Vise


5. Clean and remove all kingpin bushing material from the steering knuckle assembly. Take special attention to remove material from the grease channels and dimples.
6. Clean the  $\frac{5}{8}$ " brake backing plate bolts with a wire wheel and run a tap through the threads of the lower steering knuckle assembly and then flush out with brake cleaner and dry with compressed air.

**WARNING**

PRIOR TO INSTALLATION, ENSURE THAT ALL RESIDUAL LOCTITE® MATERIAL IS REMOVED FROM THE MOUNTING BOLTS AND THE THREAD BORES IN THE UPPER STEERING KNUCKLES, AND NEW LOCTITE 277 (INCLUDED IN KIT) OR EQUIVALENT IS APPLIED TO HELP ENSURE THAT THE BOLTS SUSTAIN THE PROPER TORQUE REQUIREMENT. FAILURE TO DO SO CAN CAUSE LOSS OF VEHICLE CONTROL RESULTING IN PERSONAL INJURY OR PROPERTY DAMAGE.

**NOTE**

The Hendrickson Genuine part, socket head cap screw comes with a pre-applied Loctite compound.

7. Install the upper and lower steering knuckle on the kingpin.
8. Check for the proper fit by rotating the knuckle assembly back and forth to verify there is no binding on the kingpin, see Figures 8 and 9.
9. If the bushing is too tight repeat steps 1 through 8 until the proper clearance is achieved.

**NOTE**

Bushing size is to be 0.001" larger than the kingpin size.

**FIGURE 8**

**FIGURE 9**



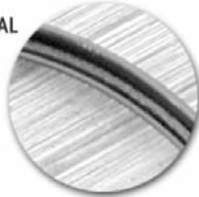

## KINGPIN SEAL INSTALLATION

1. Place the steering knuckle assembly in a vise with brass jaws or place on a suitable workbench. The steering knuckle will have the machined surface facing up (axle side up).
2. Lay the kingpin seal into the bore of the knuckle. The lip seal should face outward, or toward the axle.
3. Using a bushing driver tool, press seal firmly into the knuckle assembly.
4. Install the kingpin seal until it makes contact with the kingpin bushing, see Figures 10 and 11.

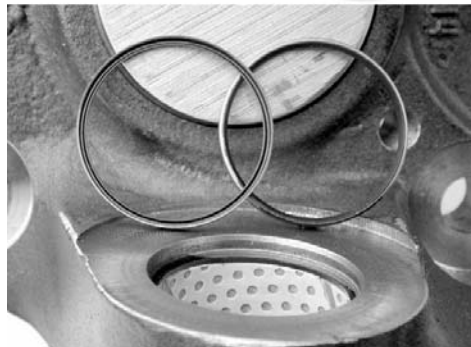
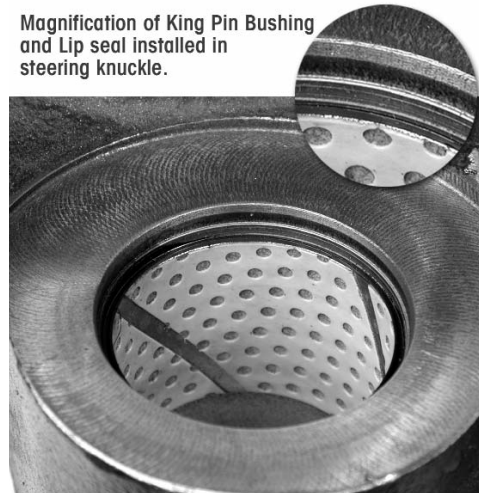
### FIGURES 10 AND 11

#### MAGNIFICATION OF LIP SEAL

Lip seal faces toward axle.



Magnification of King Pin Bushing and Lip seal installed in steering knuckle.



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Truck Suspension Systems  
800 South Frontage Road  
Woodridge, IL 60517-4904 USA

630.910.2800  
Fax 630.910.2899