

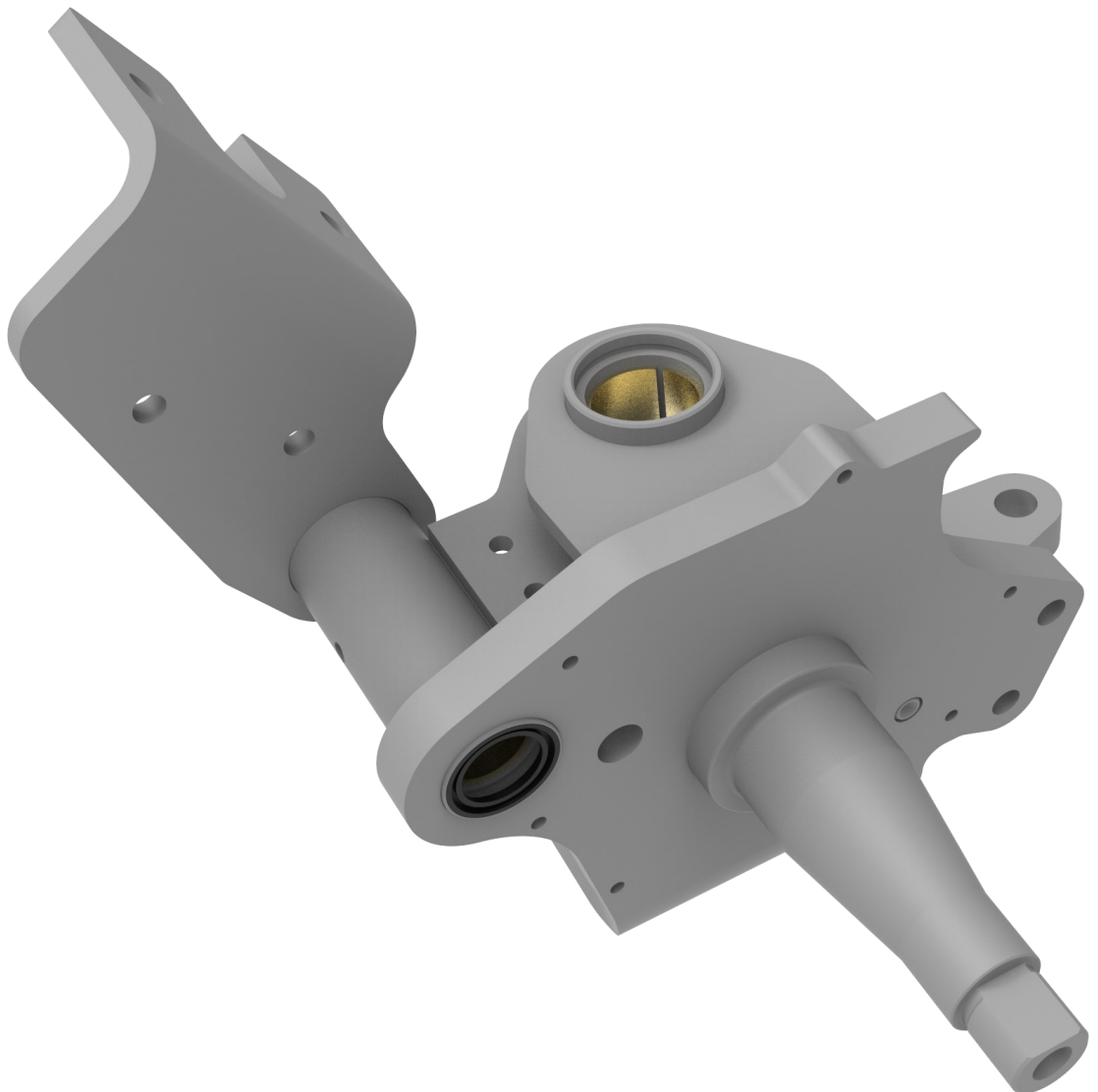


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**QUESTIONS?  
CALL CUSTOMER  
SERVICE  
1-800-222-6283**

# INSTALLATION INSTRUCTIONS

**4AS00039 / 4AS00040  
13.5K FABRICATED  
KNUCKLE ASSEMBLY**



**IMPORTANT:** IT IS IMPORTANT THAT THE ENTIRE INSTALLATION INSTRUCTIONS BE READ THOROUGHLY BEFORE PROCEEDING WITH THE INSTALLATION.

## 1. INTRODUCTION






Thank you for choosing a Link Auxiliary Suspension. We want to help you get the best results from this suspension and to operate it safely. This instruction contains information to assist in the installation of the fabricated steering knuckle for your Link Auxiliary Suspension. This instruction is intended solely for use with this product.

All information in this instruction is based on the latest information available at the time of printing. Link Manufacturing reserves the right to change its products or manuals at any time without notice.

Damaged components should be returned to Link with a pre-arranged Returned Materials Authorization (RMA) number through the Customer Service Department. The damaged component may then be replaced if in compliance with warranty conditions.

## 2. SAFETY SYMBOLS, TORQUE SYMBOL, and NOTES

### 3. SAFE WORKING PRACTICES

 <b>DANGER</b>	<b>DANGER</b> indicates a hazardous situation which if not avoided, will result in death or serious injury.
 <b>WARNING</b>	<b>WARNING</b> indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 <b>CAUTION</b>	<b>CAUTION</b> indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
 <b>NOTICE</b>	<b>NOTICE</b> indicates a potentially hazardous situation which, if not avoided, may result in property damage.
 <b>TORQUE</b>	<b>TORQUE</b> indicates named fasteners are to be tightened to a specified torque value.
<b>NOTE:</b>	A Note provides information or suggestions that help you correctly perform a task.

When handling parts, wear appropriate gloves, eyeglasses, ear protection, and other safety equipment.



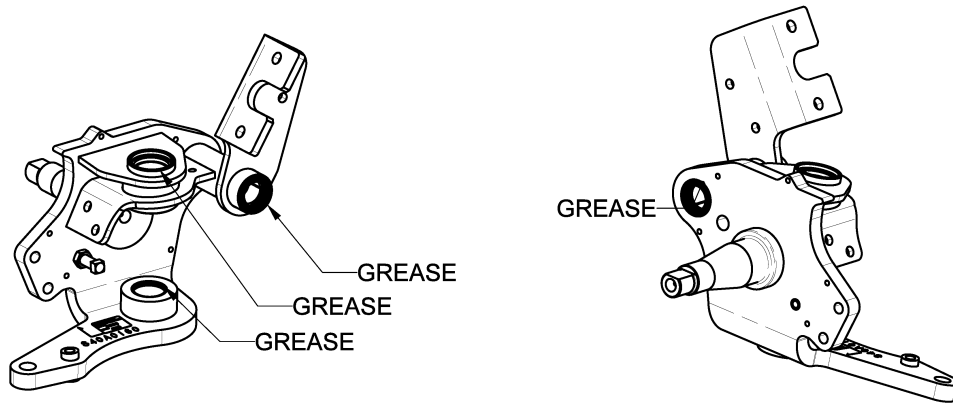
Proper tightening of fasteners is important to the performance and safety of the suspension. Follow all torque specifications throughout the instructions.



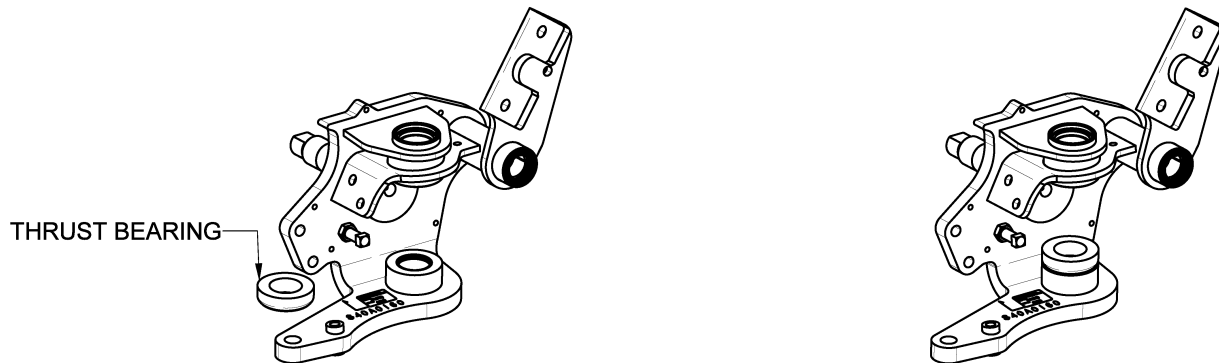
## 4. INSTALLATION

For instructional purposes, the proceeding will show the installation of the 4AS00039 - Fabricated Knuckle - Left Hand Side. The installation of the 4AS00040 - Fabricated Knuckle - Right Hand Side is the same.

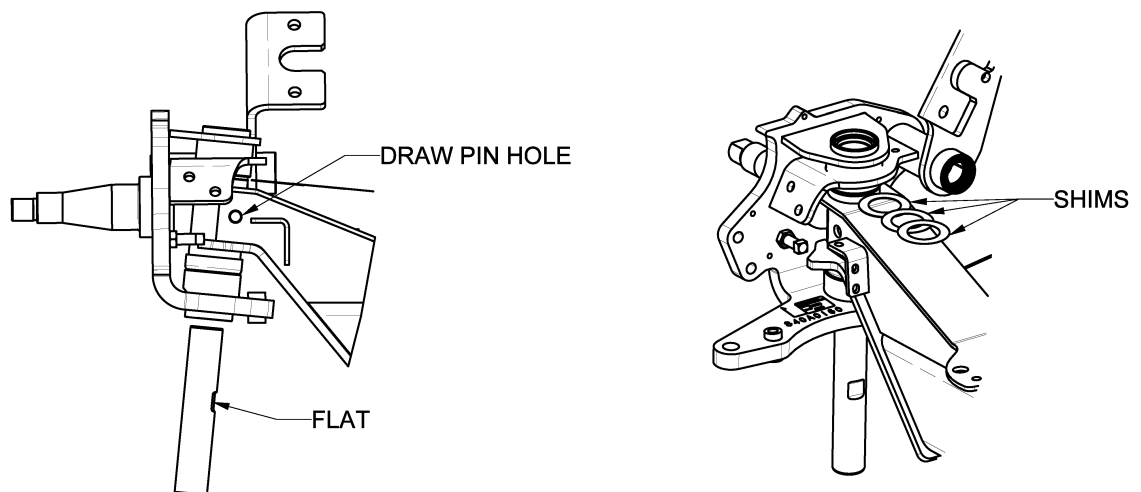
- A. PRIOR TO INSTALLATION, PACK THE DIMPLES OF THE UPPER AND LOWER STEERING KINGPIN BUSHINGS AND THE BRAKE CAM SHAFT TUBE BUSHINGS WITH MULTI PURPOSE LITHIUM BASED GREASE (NLGI GRADE 2).




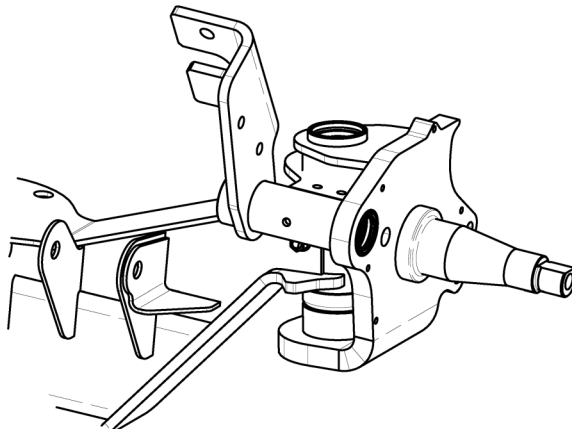
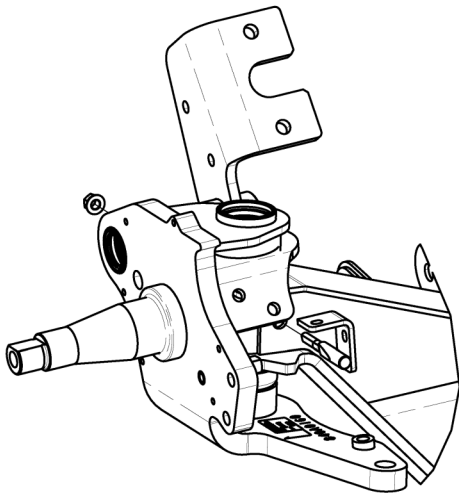
- B. PACK THE THRUST BEARING WITH GREASE AND INSTALL IT ONTO THE LOWER KNUCKLE KINGPIN BOSS WITH THE SEAL FACING UP.




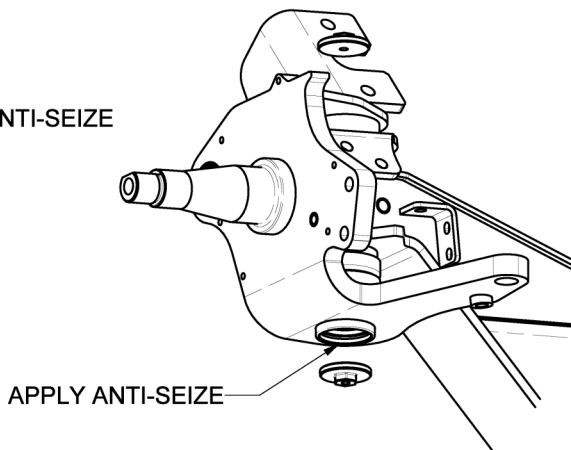
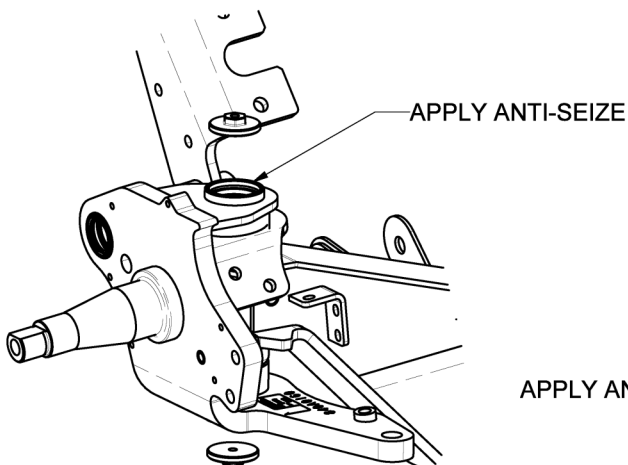
- C. ALIGN THE KNUCKLE WITH THE KINGPIN PIVOT BUSHING ON THE AXLE. WITH THE NUMBERS ON THE KINGPIN FACING DOWN AND THE FLAT SURFACE ON THE KINGPIN ORIENTED WITH THE DRAW PIN HOLE, INSERT THE KINGPIN FROM THE BOTTOM THROUGH THE KNUCKLE AND AXLE BUSHINGS. INSERT SHIMS AS NECESSARY BETWEEN THE TOP OF THE AXLE BUSHING AND THE BOTTOM OF THE UPPER KNUCKLE BUSHING TO ACHIEVE A VERTICAL PLAY OF 0.002-0.012 INCHES.



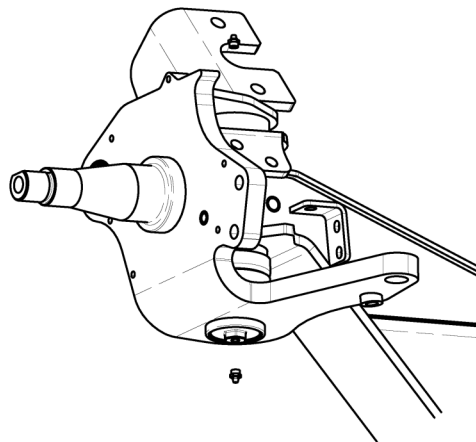
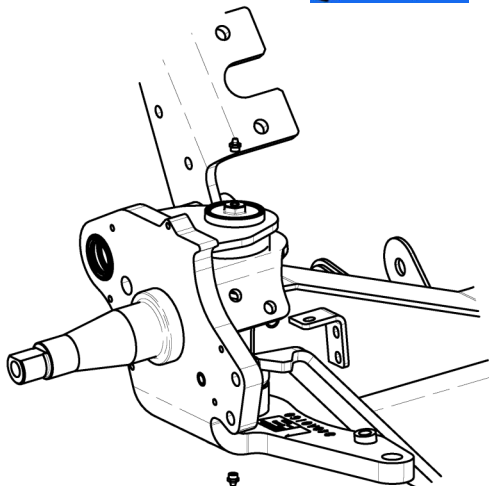
- D. USE A HAMMER AND PUNCH TO MAKE SURE THE DRAW PIN IS FULLY SEATED AND THEN TIGHTEN THE DRAW PIN NUT WITH A  **TORQUE** OF 35 FT-LBS.



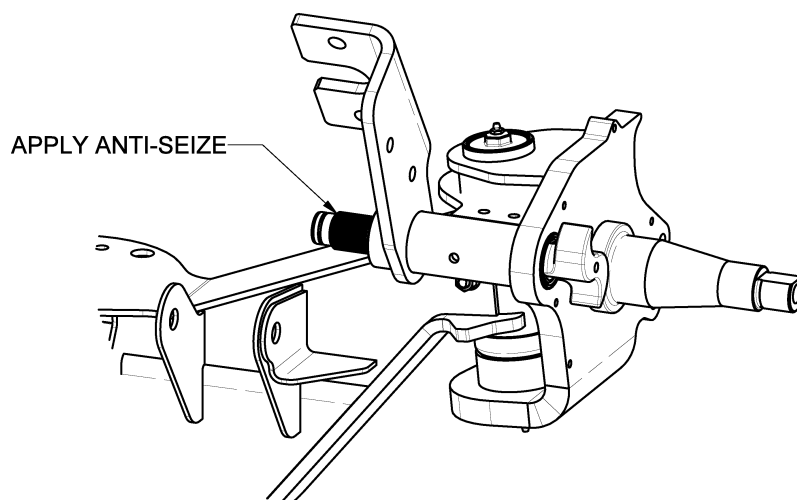
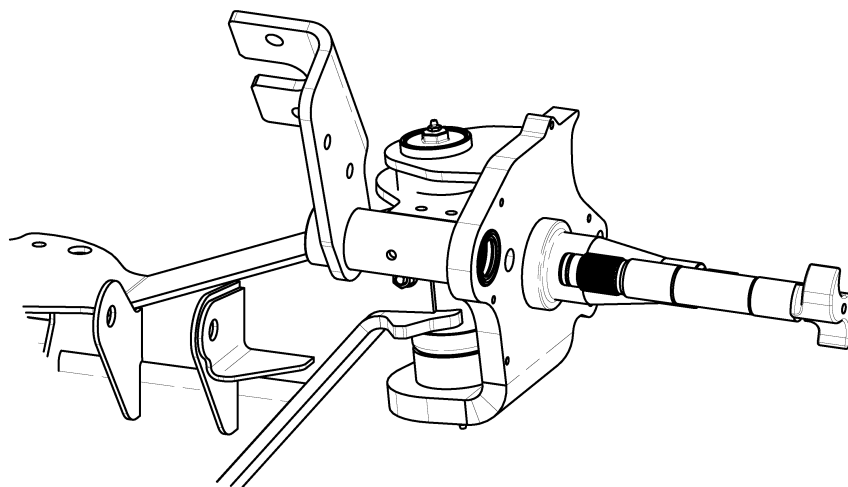
- E. APPLY LOCTITE 76732 ANTI SEIZE TO THE EACH KINGPIN GREASE CAP HOLE. TIGHTEN EACH GREASE CAP WITH A  **TORQUE** OF 60 FT-LBS.




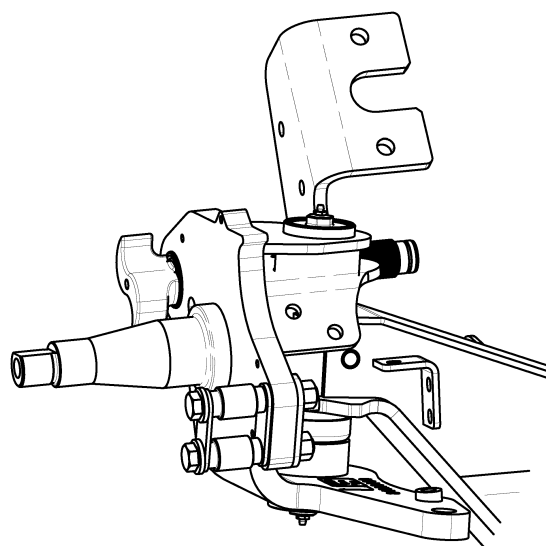
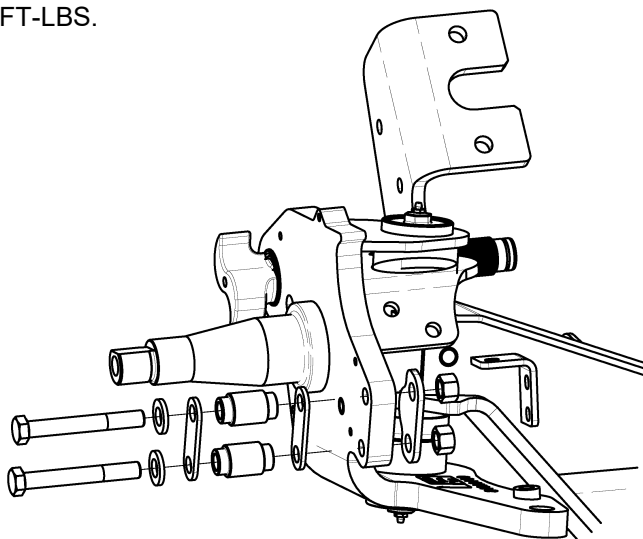
- F. TIGHTEN EACH GREASE ZERK WITH A  **TORQUE** OF 25 FT-LBS.



G. INSTALL THE BRAKE CAM SHAFT AS SHOWN. APPLY ANTI-SEIZE TO SPLINES OF CAMSHAFT.



H. INSTALL THE BRAKE SHOE ANCHOR PINS AS SHOWN. TIGHTEN FASTENERS WITH A  **TORQUE** OF 200 FT-LBS.



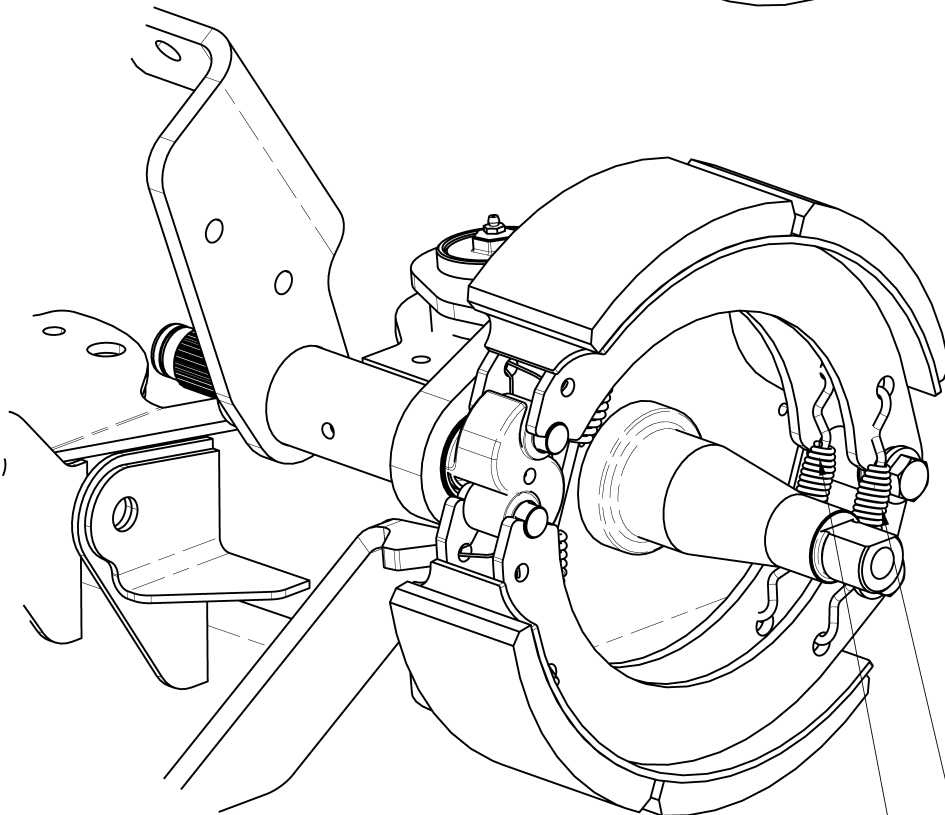
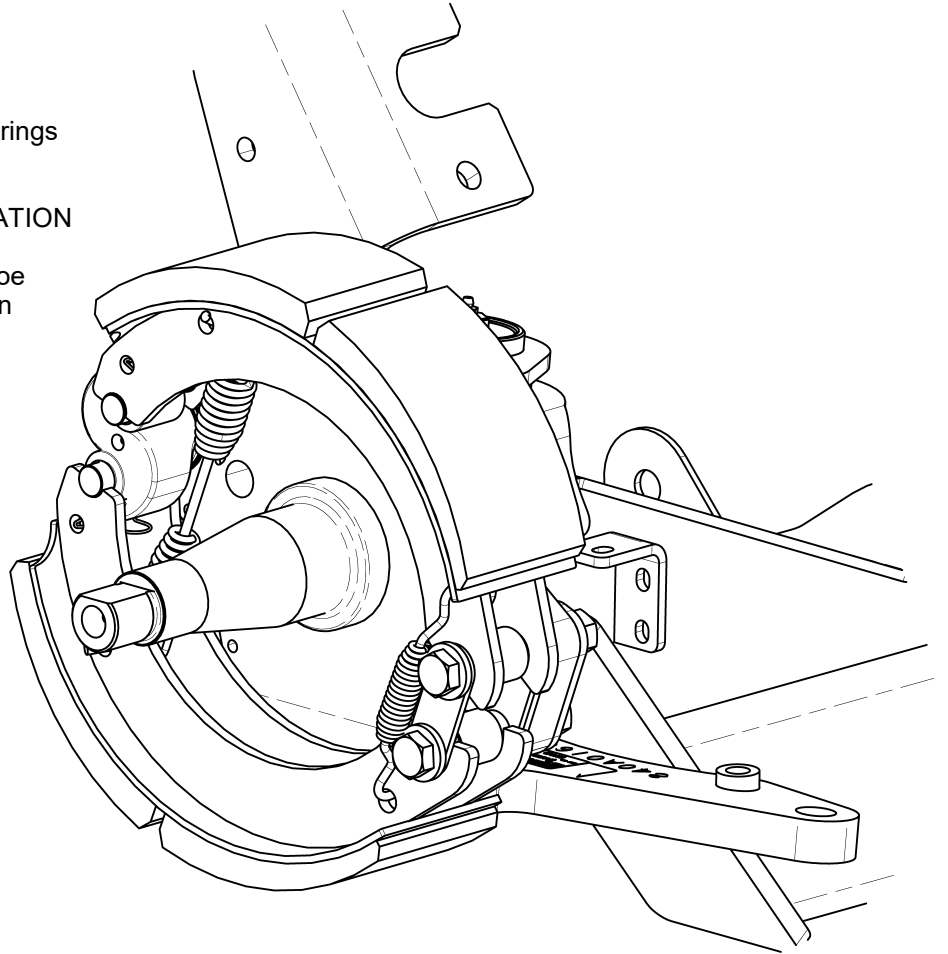
I. ORIENT AND INSTALL BRAKE SHOES, ROLLERS, AND SPRINGS AS SHOWN.

1) CAM ROLLER INSTALLATION

Assemble cam rollers with retention springs as shown

2) BRAKE SHOE SPRING INSTALLATION

Install spring mount bars and brake shoe return spring near cam rollers as shown



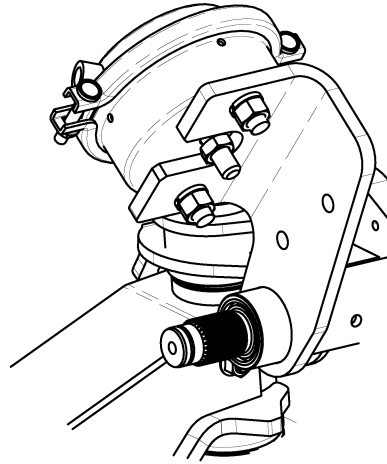
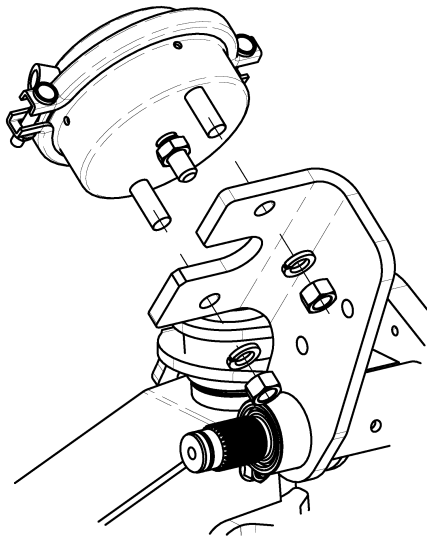
**NOTICE**

ORIENTATION OF INNER SPRING ON INSIDE BRAKE SHOE BETWEEN SHOE RIBS

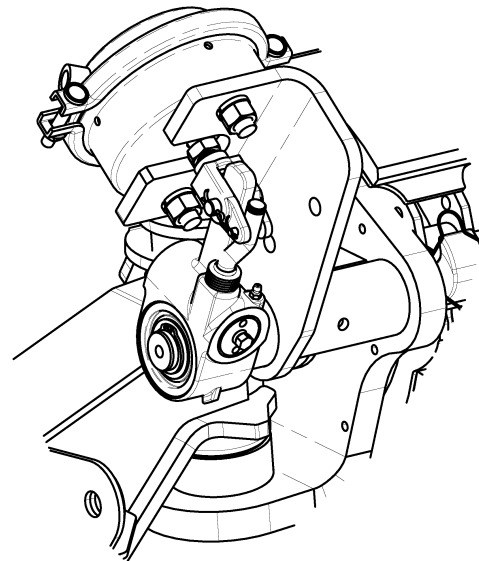
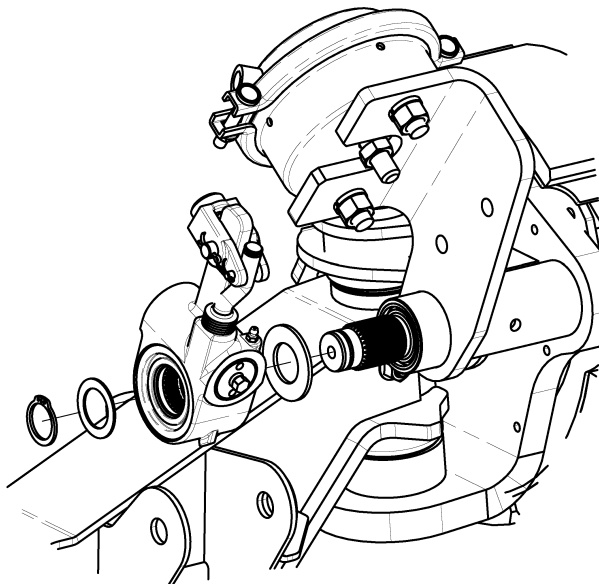
**NOTICE**

ORIENTATION OF OUTER SPRING ON OUTSIDE OF BRAKE SHOE RIB

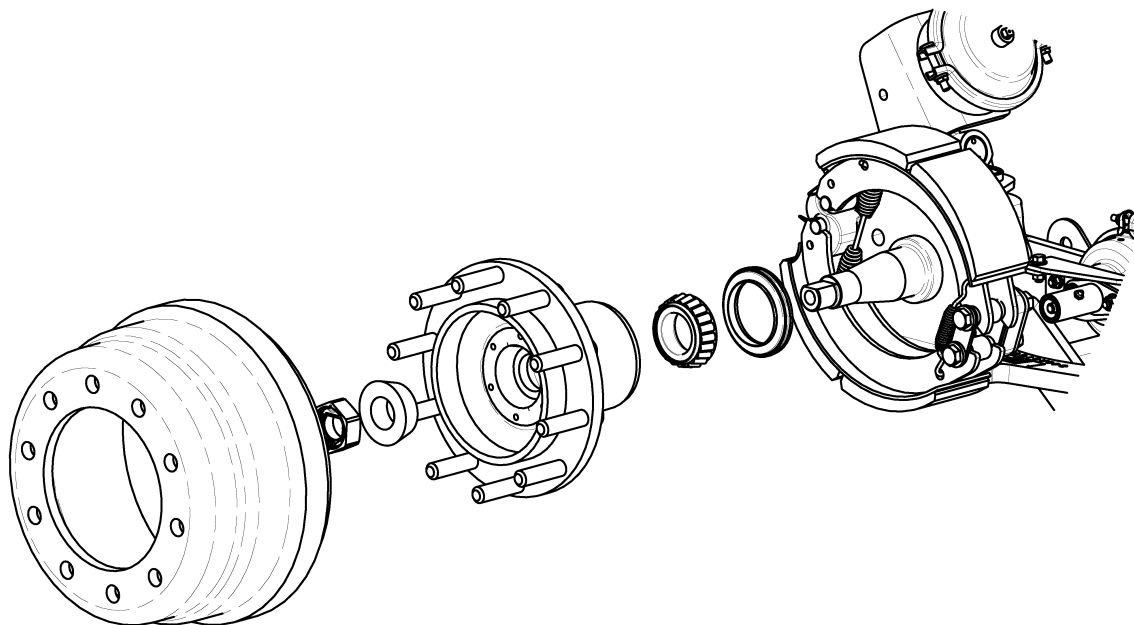
J. INSTALL THE AIR BRAKE CHAMBER AS SHOWN. TIGHTEN FASTENERS WITH A **TORQUE** OF 145 FT-LBS.



K. THREAD THE YOKE ONTO THE BRAKE CHAMBER STUD WITH 2 THREADS SHOWING THROUGH THE YOKE. THEN INSTALL THE BRAKE CAM SHAFT WASHERS AND BRAKE ADJUSTER AS SHOWN. SECURE WITH SNAP RING. CHECK SLACK ADJUSTMENT.






- L. INSTALL WHEEL HUB WITH SEAL, BEARINGS, AND PRO-TORQ NUT AS SPECIFIED BELOW.







M. REMOVE THE KEEPER FROM THE NUT:

- 1) IF THE KEEPER IS PRE-ASSEMBLED, USE A SMALL SCREWDRIVER TO CAREFULLY PRY THE KEEPER ARM FROM THE UNDERCUT GROOVE ON THE SIDE UNTIL THE KEEPER IS RELEASED

N. SEAT THE BEARING:

- 1) ASSEMBLE THE NUT TO THE SPINDLE.
- 2)  TORQUE THE NUT TO 200 FT-LBS AND SPIN THE HUB AT LEAST ONE FULL ROTATION.
- 3)  TORQUE THE NUT AGAIN TO 200 FT-LBS AND SPIN THE HUB AT LEAST ONE FULL ROTATION.
- 4)  TORQUE THE NUT TO 200 FT-LBS AND THEN BACK OFF THE NUT UNTIL LOOSE.

O. ADJUST THE BEARING:

- 1)  TORQUE THE NUT TO 100 FT-LBS AND SPIN THE HUB AT LEAST ONE FULL ROTATION.
- 2)  TORQUE THE NUT AGAIN TO 100 FT-LBS AND SPIN THE HUB AT LEAST ONE FULL ROTATION.
- 3)  TORQUE THE NUT TO 100 FT-LBS AND THEN BACK OFF THE NUT SLIGHTLY.
- 4)  TORQUE FOR ACCEPTABLE END PLAY. REPEAT STEPS N AND O IF NECESSARY.

P. INSTALL THE KEEPER:

- 1) ALIGN THE FLAT OF THE KEEPER WITH THE MILLED FLAT ON THE SPINDLE AND INSERT THE SINGLE KEEPER TAB INTO THE UNDERCUT GROOVE OF THE NUT. INSERT KEEPER TAB WITH THE ORANGE SIDE FACING OUT.
- 2) ENGAGE THE MATING TEETH OF THE KEEPER TO THE NUT.
- 3) COMPRESS AND INSERT THE KEEPER ARMS, ONE AT A TIME, INTO THE UNDERCUT GROOVE WITH A SMALL SCREWDRIVER.

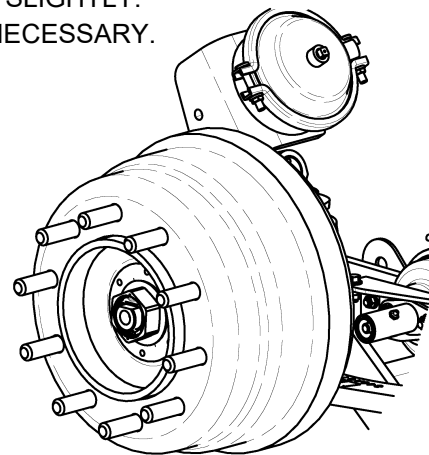
Q. INSPECT THE INSTALLATION:

- 1) MAKE SURE THAT THE KEEPER TAB AND KEEPER ARM ARE FULLY SEATED INTO THE UNDERCUT GROOVE.

R. INSTALL BRAKE DRUM

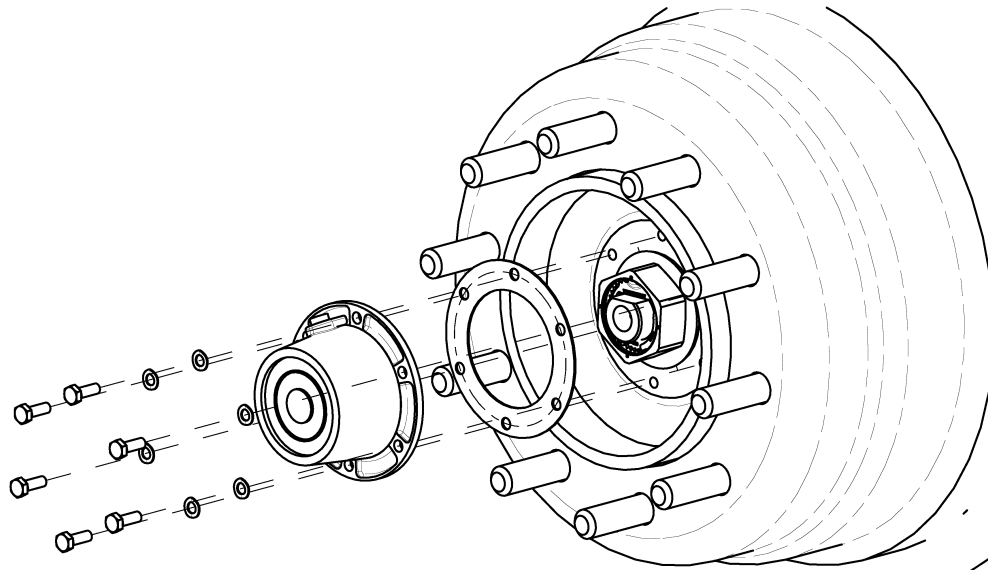
S. ACCEPTABLE END PLAY:

- 1) THE DIAL INDICATOR SHOULD BE ATTACHED TO THE HUB OR BRAKE DRUM WITH ITS MAGNETIC BASE. ADJUST THE DIAL INDICATOR SO THAT ITS PLUNGER IS AGAINST THE END OF THE SPINDLE WITH ITS LINE OF ACTION APPROXIMATELY PARALLEL TO THE AXIS OF THE SPINDLE.
- 2) WITH THE DRUM SECURED TO THE HUB, GRASP THE ASSEMBLY AT 3 O'CLOCK AND 9 O'CLOCK POSITIONS. PUSH AND PULL THE ASSEMBLY IN AND OUT WHILE OSCILLATING THE ASSEMBLY APPROXIMATELY 45 DEGREES. STOP OSCILLATING THE HUB SO THAT THE DIAL INDICATOR TIP IS IN THE SAME POSITION AS IT WAS BEING OSCILLATING. READ THE BEARING END-PLAY AS THE TOTAL INDICATOR MOVEMENT.
- 3) **ACCEPTABLE END PLAY IS .001" - .005".**

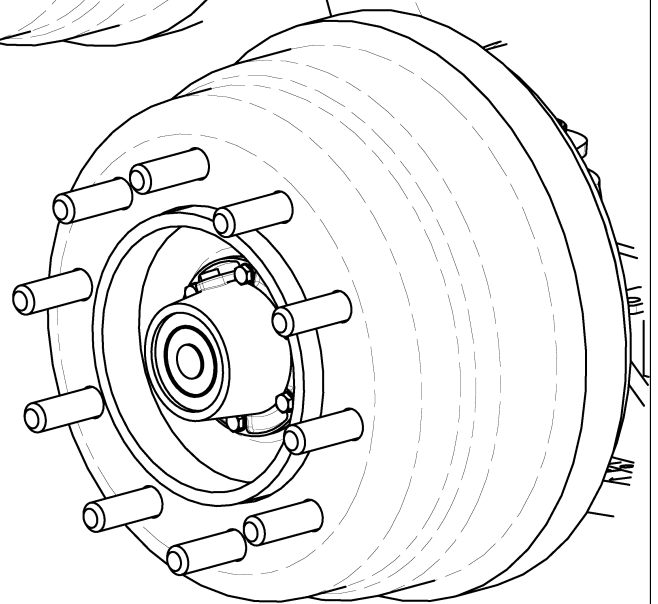





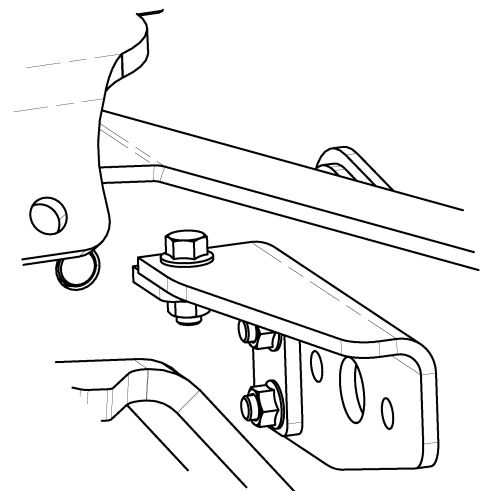
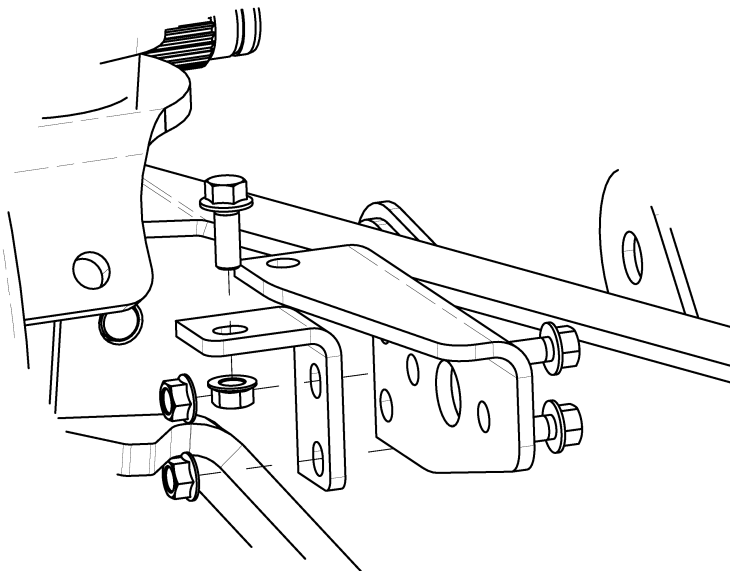
T. INSTALL HUB CAP WITH GASKET. TIGHTEN FASTENERS WITH A  **TORQUE** OF 15 FT-LBS.




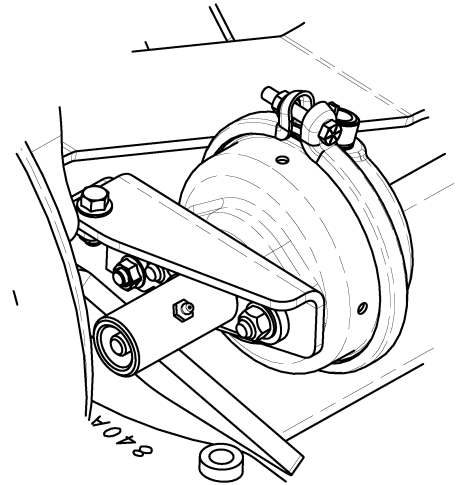
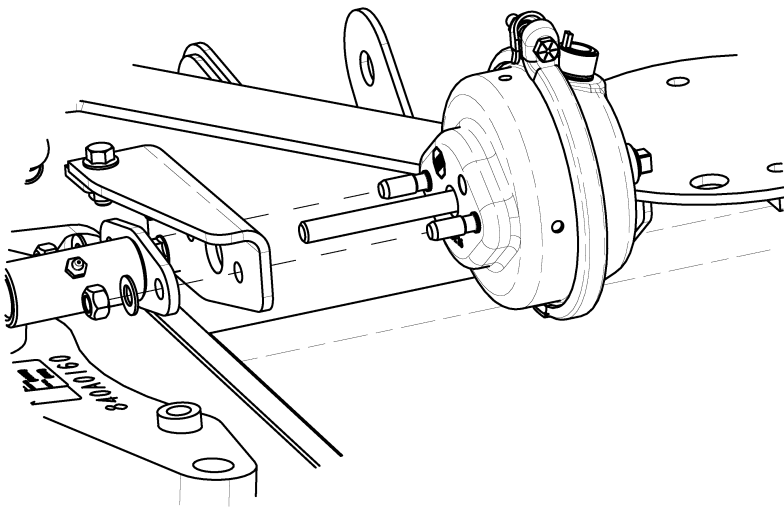
U. REMOVE OIL FILL PLUG FROM HUB CAP AND FILL WITH OIL (SAE 80W/90 MINERAL BASED) TO THE TOP OF THE OIL LINE. RE-INSTALL OIL PLUG INTO HUB CAP.




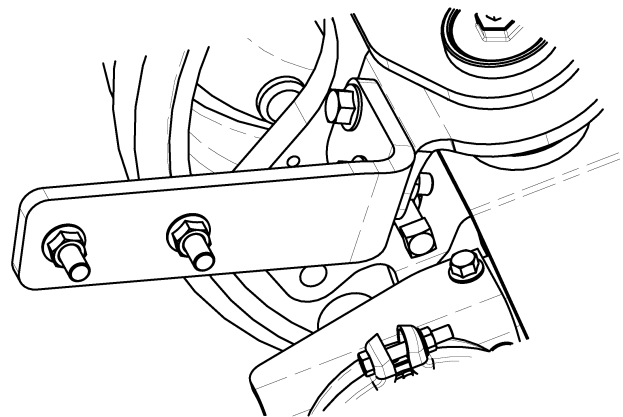
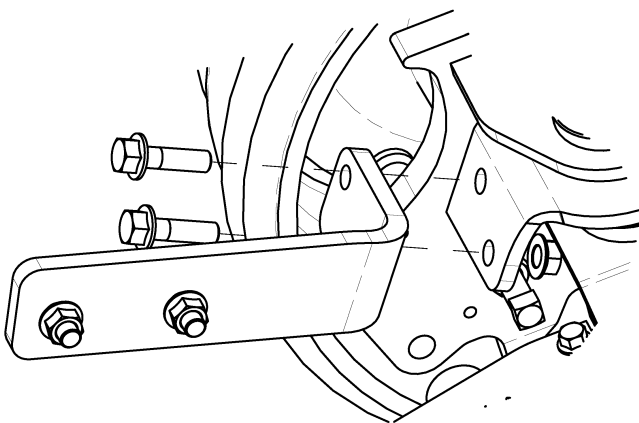
V. INSTALL REVERSE LOCK IF REVERSE LOCK WAS PREVIOUS INSTALLED. TIGHTEN MOUNTING BRACKET FASTENERS WITH A  **TORQUE** OF 35 FT-LBS.



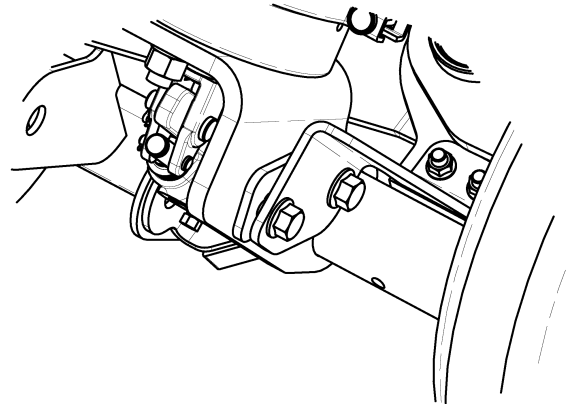
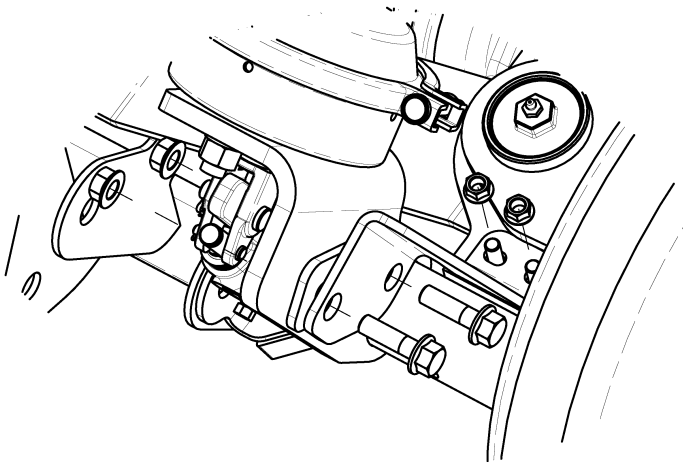
W. TIGHTEN STOP TUBE WELDMENT AND AIR CHAMBER FASTENERS WITH A  **TORQUE** OF 25 FT-LBS.



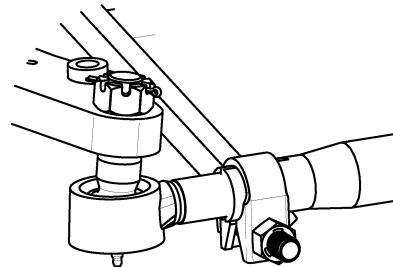
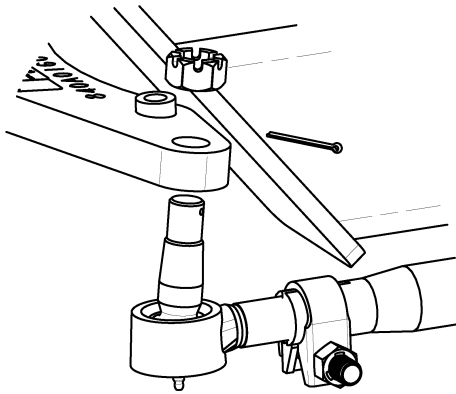
X. RE-INSTALL FENDER BRACKETS TO STEERING KNUCKLE IF PREVIOUSLY EQUIPPED. TIGHTEN THE REAR MOUNTING BRACKET FASTENERS TO THE KNUCKLE WITH A  **TORQUE** OF 100 FT-LBS. FOR ILLUSTRATION CLARITY PURPOSES, FENDERS AND ALUMINUM FENDER ARMS ARE NOT SHOWN.



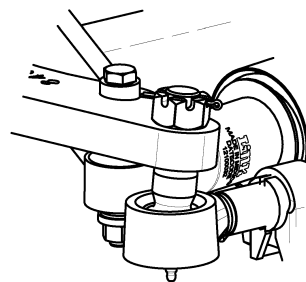
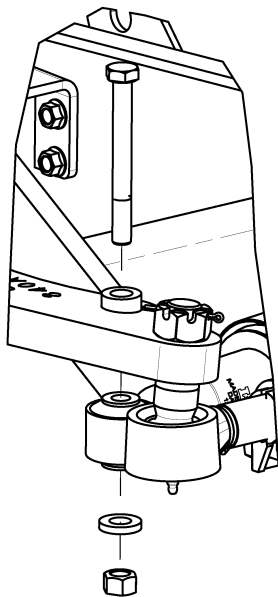
Y. TIGHTEN THE FRONT MOUNTING BRACKET FASTENERS TO THE KNUCKLE WITH A **TORQUE** OF 50 FT-LBS. FOR ILLUSTRATION CLARITY PURPOSES, FENDERS AND ALUMINUM FENDER ARMS ARE



Z. RE-CONNECT TIE ROD ASSEMBLY. TIGHTEN CASTLE NUT WITH A **TORQUE** OF 140 FT-LBS. IF NECESSARY, CONTINUE TO TIGHTEN CASTLE NUT TO INSTALL COTTER PIN.



AA. RE-CONNECT STEERING SHOCK ABSORBER. TIGHTEN FASTENERS WITH A **TORQUE** OF 85 FT-LBS.



Wherever possible, Link Manufacturing, LTD encourages the use of best practices in the industry in service and support of the products it manufactures. Many of these recommended practices that Link Manufacturing, LTD supports can be found in documentation compiled by The Technology & Maintenance Council (TMC). To obtain copies of the following Recommend Practice (RP's), contact TMC at

TMC/ATA  
2200 Mill Road  
Alexandria, VA 22314

Phone: 703-838-1763  
Website: [tmc.truckline.com](http://tmc.truckline.com)  
Online ordering: [www.truckline.com/store](http://www.truckline.com/store)

TMC RP 222C	User's Guide to Wheels and Rims
TMC RP 607B	Preventative Maintenance and Inspection of S-Cam Foundation Brakes
TMC RP 608B	Brake Drums and Rotors
TMC RP 609B	Self Adjusting and Manual Brake Adjuster Removal, Installation, and Maintenance
TMC RP 618A	Wheel Bearing Adjustment Procedure
TMC RP 622A	Wheel Seal and Bearing Removal, Installation, and Maintenance
TMC RP 631B	Recommendations For Wheel End Lubrication
TMC RP 644A	Wheel End Conditions Analysis Guide
TMC RP 645	Tie Rod End Inspection and Maintenance Procedure
TMC RP 648	Troubleshooting Ride Complaints
TMC RP 651	Steer Axle Maintenance Guidelines
TMC RP 1503	Brake Maintenance Guidelines for Severe Vocational Applications
TMC RP 1515	Auxiliary Axle Maintenance Guidelines For Vocational Vehicles



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