



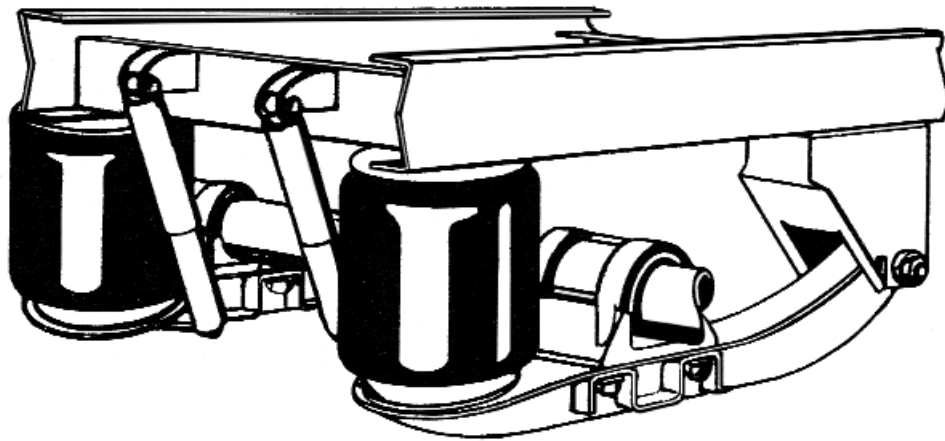
AR SERIES

COMPONENT REPLACEMENT INSTRUCTIONS



Pivot Connection Axle Connection

AR-41	AR-50US-F-1	AR-95 Series
AR-45	AR-50-US-F-2	AR-955 Series
AR-45-1	AR-51-US	AR-120-US Series
AR-50-US	AR-70 Series	AR-125-US Series
AR-50-US-F	AR-75 Series	AR-165-US



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INTRODUCTION

This manual provides you with the proper removal and installation of the Pivot Connection and Axle Connection Components. Following these steps will allow you to safely remove and reinstall the axle adapters to the axle and the suspension to the trailer. All welding must be performed by a qualified welder.

WARRANTY

Refer to the complete warranty for the country in which the product will be used on the Holland Group Web Site (www.thehollandgroupinc.com)

It may also be ordered directly from the address shown on the back cover.

NOTES, CAUTIONS, AND WARNINGS

You must read and understand all of the safety procedures presented in this manual before starting any work on the suspension.

Proper tools must be used to perform the maintenance and repair procedures described in this manual. Many of these procedures require special tools.

Failure to use the proper equipment could result in personal injury and/or damage to the suspension.

Safety glasses must be worn at all times when performing the procedures covered in this manual.

Throughout this manual, you will notice the terms “NOTE,” “IMPORTANT,” “CAUTION” and “WARNING” followed by important product information. So that you may better understand the manual, those terms are as follows:

NOTE: Includes additional information to enable accurate and easy performance of procedures.

IMPORTANT: Includes additional information that if not followed could lead to hindered product performance.

CAUTION Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, may result in property damage.

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

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

COMPONENT REPLACEMENT INSTRUCTIONS

Axle Connection Pads and Wrappers

When replacing the axle connection pads and wrappers it is recommended to replace the hardware items. It may be advantageous to replace the pivot connection at this time.

NOTE: On trailers with 15" wheels, it will be easier to remove the wheels and pull the camshaft before proceeding.

IMPORTANT: It is recommended that the vehicle be unloaded before beginning service procedures.

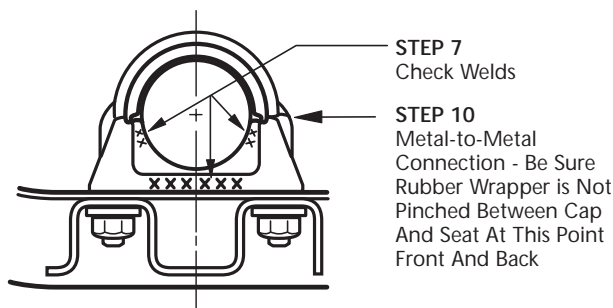
1. Support the frame with adequate jack stands. Set jack stand height at approximately 2" (51mm) above the suspension's specified ride height.

WARNING Always use jack stands of sufficient strength and position them according to OEM recommendations. Failure to do so may cause the trailer to fall, resulting in trailer damage and/or serious personal injury.

CAUTION If the suspension is a coil lift model, the axle will lift when the air is exhausted.

2. Exhaust Air by:
 - Manual Control – turn hand control valve handle to deflate position.
 - Automatic Air Control – height control valve- disconnect the link at the lower connection, then rotate the height control valve arm to the exhaust position (approximately 45° down).
 - Disconnect the air supply from the air springs.
3. If the suspension is a coil spring lift model, refer to “Coil Spring Lift Disconnecting Procedure”, page 4. If it has an AL-75 Axle Lift, disconnect the chains from the equalizing beam bracket. With the Equalizing Beam and axle supported with jacks, disconnect the shock absorbers and air springs at the lower connection.
4. Disconnect the axle connection and lower the equalizing beam away from the axle.
5. Inspect all suspension parts for wear and cracks. Repair or replace if necessary. **Do not** repair a cracked Equalizing Beam — Replace the Equalizing Beam.
6. Inspect the equalizing beam bushing and replace if necessary.

FIGURE 1

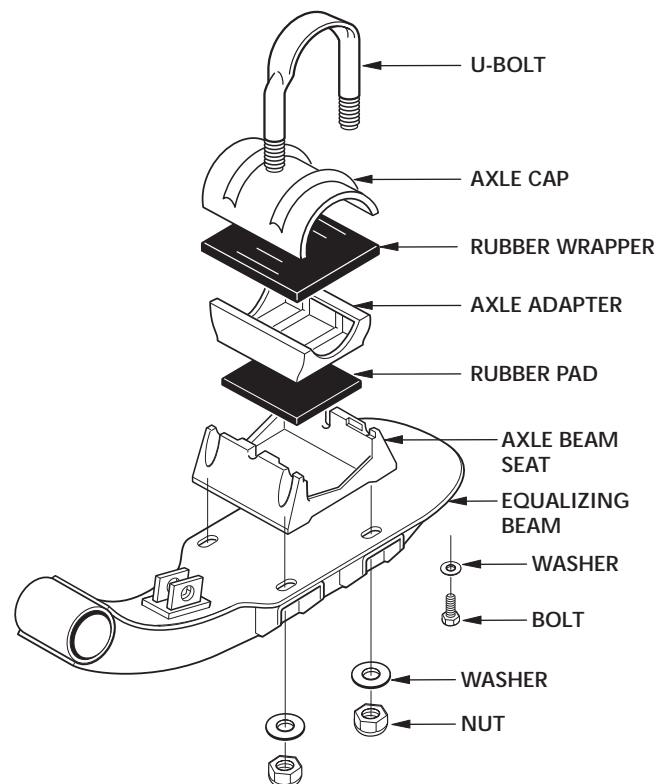


7. Inspect the Axle Adapters for excessive wear; inspect the welds at the axle for cracks (FIGURE 1). Repair if necessary at this time. For “Axle Adapter Replacement”, see page 6.
8. Inspect the Equalizing Beam for wear, cracks or failed welds. Replace if necessary.

WARNING Never repair a cracked equalizing beam. If cracks are detected anywhere on the beam — Replace the Beam. Otherwise, secondary weld failures during use may cause loss of vehicle control and could cause serious injury or death.

9. Insert the steel/rubber pad into the axle beam seat with the metal side up. Insert the rubber wrapper into the axle cap (FIGURE 2).
10. Reassemble the axle connection. Lubricate the U-bolt threads and tighten the connection evenly until the axle cap and the beam seat are metal-to-metal across the front and rear (FIGURE 1). Be sure the rubber wrapper is not pinched between the axle cap and the beam seat. Torque the U-bolts evenly to 680 ft. lbs.
11. Reconnect the shock absorber, air springs and height control valve. If AL-75 Axle Lift was used, reconnect the chain to the bracket on the Equalizing Beam. If a coil spring lift was used refer to “Coil Spring Lift Connecting Procedures” on page 4. Refer to page 7 for Torque Values (FIGURE 13).
12. Reinstall, if necessary, wheels, camshafts and tires. Remove jacks and jack stands.

FIGURE 2

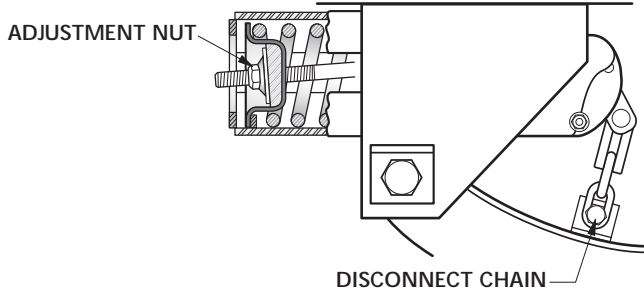


COMPONENT REPLACEMENT INSTRUCTIONS

Coil Spring Lift Disconnecting Procedure

1. With the axle in the lift (up) position, place the jack under the axle for lowering.
2. Turn adjusting nut on yoke rod to release the tension on the chain (FIGURE 3).
3. Disconnect the chain from the bracket on the Equalizing Beam.
4. Lower the axle to approximate ride height.

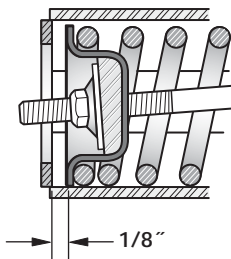
FIGURE 3



Coil Spring Lift Connecting Procedure

1. Jack the axle up to the full up position and connect the chain to the bracket on the equalizing beam. Torque the 5/8" nut to 40 ft. lbs. lubricated torque.
2. Grease the surface of the adjusting nut which contacts the rubber grommet. Turn the adjusting nut to the 1/8" dimension shown (FIGURE 4).

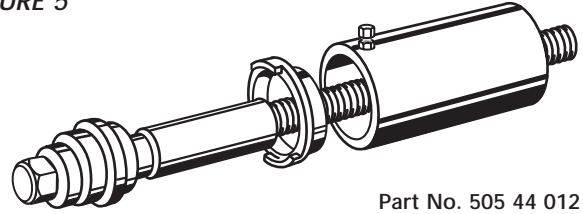
FIGURE 4



Equalizing Beam Pivot Bushing Replacement

NOTE: If replacing the pivot bushing only, you can use a Holland Bushing Service Tool, part number 505 44 012 (FIGURE 5). If the bushing tool is used it will not be necessary to disassemble the axle connection.

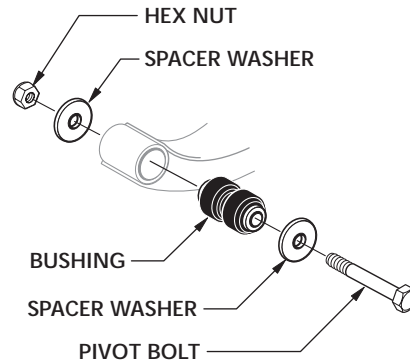
FIGURE 5



1. Follow steps 1 through 3 on page 3.
2. Remove the pivot bolt, nuts and washers at the frame bracket. Lower the beam away from the frame bracket (FIGURE 6). Follow the directions provided with the bushing tool if used.

NOTE: For torsion bar style connection, see page 5, Step 5.

FIGURE 6



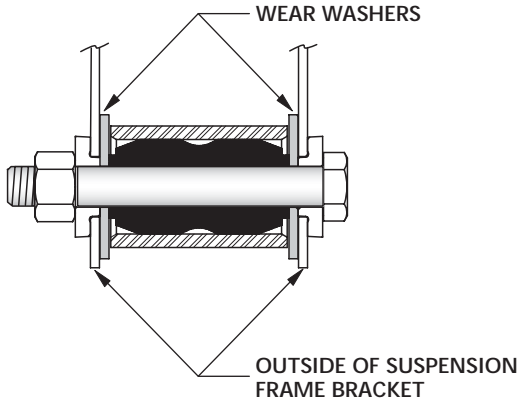
3. If the service tool is not used you must remove the Equalizing Beam from the axle and press out the old bushing. Clean the bushing tube prior to inserting the new bushing. Lubricate the new bushing with soap and water to help with insertion of the new bushing. Centrally locate the bushing in the equalizing tube. **Do not** use an oil base lubricant while pressing in new bushing.

COMPONENT REPLACEMENT INSTRUCTIONS

Equalizing Beam Pivot Bushing Replacement *continued*

- Reinstall the beam into the frame bracket with the spacer washers, one on each side (FIGURE 7). If the axle connection was removed, see page 3 for instructions.

FIGURE 7



- Remove bolts from pivot connection and drive torsion bar completely out of assembly (a wedge may be used).

CAUTION Do not distort edge of torsion bar.

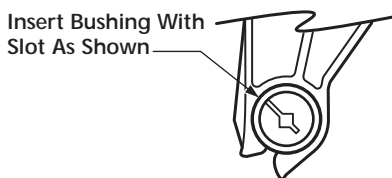
- Inspect axle adapters, beam seats and equalizing beams for wear, cracks or failed welds; if broken or worn, replace.

CAUTION Do not repair equalizing beam — Replace it. Axle adapters should be welded per instructions on page 6. If replacing beam seat on an Underslung model, do not weld in position until after axle alignment.

NOTE: If installing new Equalizing Beams only, skip step 9.

- Remove old bushing from frame bracket. Clean bushing receptacle, and then install new bushing centered in frame bracket. Refer to view for proper position (FIGURE 8).

FIGURE 8



- Place spacer washers on ends of bushing; then insert beams into frame brackets; be sure left-hand beam is installed on left-hand side (FIGURE 9).
- Grind 1/4" x 45° chamfer on end of torsion bar; then insert it into beam-ends and bushing. Be sure notch in torsion bar is positioned in left-hand frame bracket so bolt will lock it in place (FIGURE 10). **DO NOT** install front pivot bolts at this time.

FIGURE 9

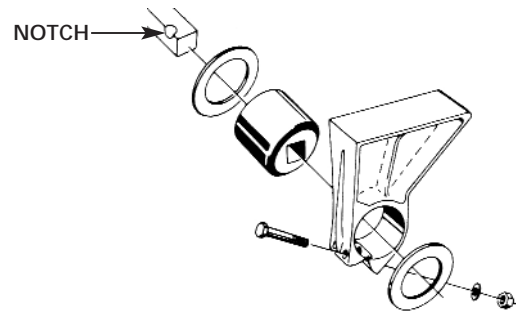
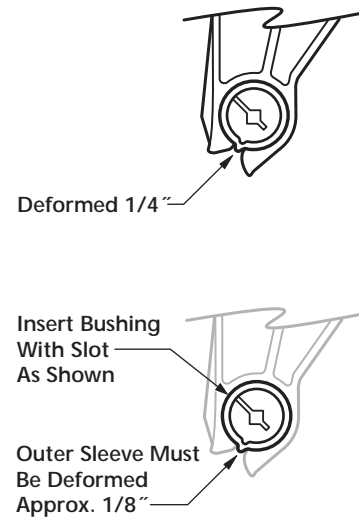


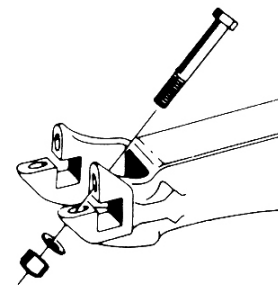
FIGURE 10



- Position axle at proper ride height.

- Install front pivot bolts. With clean and oiled threads, torque 5/8" nuts to 150 ft. lbs. or until outer steel on bushing bulges approximately 1/4". Torque 3/4" nuts to 200 ft. lbs (FIGURE 11).

FIGURE 11



- Reconnect lower shock and air spring connection.

NOTE: If coil spring is used, see "Coil Spring Lift Connecting Procedure" on page 4.

- Reconnect links to height control valve and axle brackets.
- Reinstall tires; then apply air pressure to suspension in excess of 65 psig and unblock frame.

COMPONENT REPLACEMENT INSTRUCTIONS

Axle Adapter Replacement

NOTE: Care should be taken when removing welds not to damage the axle. Clean the axle so the new adapter(s) will seat flush on the axle.

1. Make sure both Axle Adapters are on the same plane prior to welding. See welding instructions on page 6 (FIGURE 12).
2. Refer to page 3 for Reassembly Instructions.

Axle Adapter Welding Specification

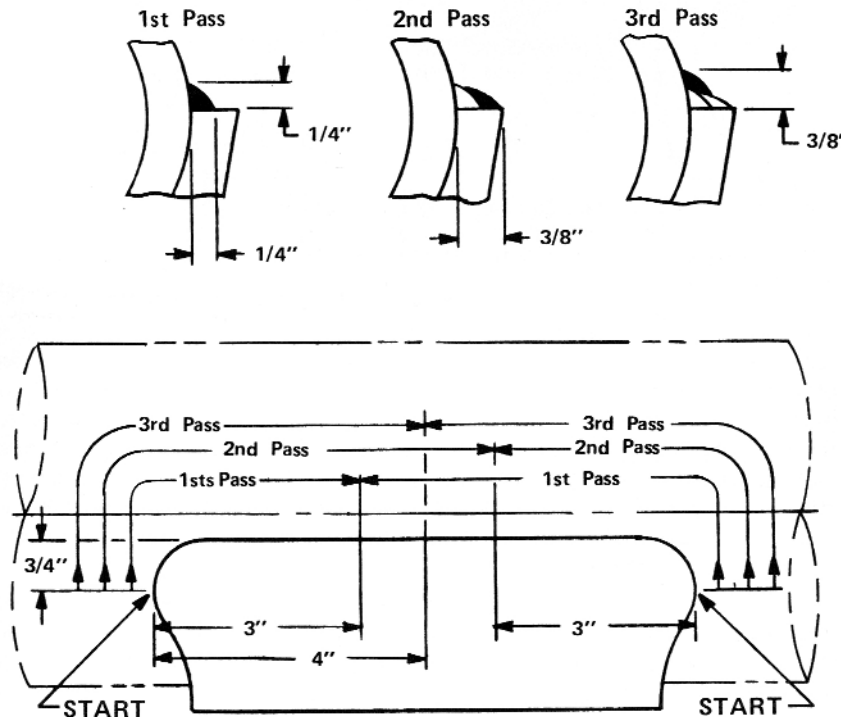
The following welding recommendations are for the field installation of a Holland air ride axle adapter and should be performed by a qualified welder.

1. The adapter should be clamped securely in the proper position.
2. The axle tube and adapter must be 70° F minimum and be free from dirt, scale and grease.
3. The electrode or wire selected must conform to one of the following specifications:
 - a. Electrode AWS E-7018 (Oven-Dried)
 - 5/32" Dia. 120-190 Amps D.C. + 135-225 Amps A.C.
 - 3/16" Dia. 170-280 Amps D.C. + 200-300 Amps A.C.
 - b. Wire

AWS E-70S-3	AWS E-70T-1
Gas C-25	CO2
Volts 19-20	21-23
Amps 180-200	200-220
Wire Dia. .045	.062 Flux Cored
4. Apply welds in the sizes and sequence shown in (FIGURE 12). Fill the crater at the end of the weld and clean the weld between passes.

NOTE: Each weld pass is to be completed in two segments.

FIGURE 12



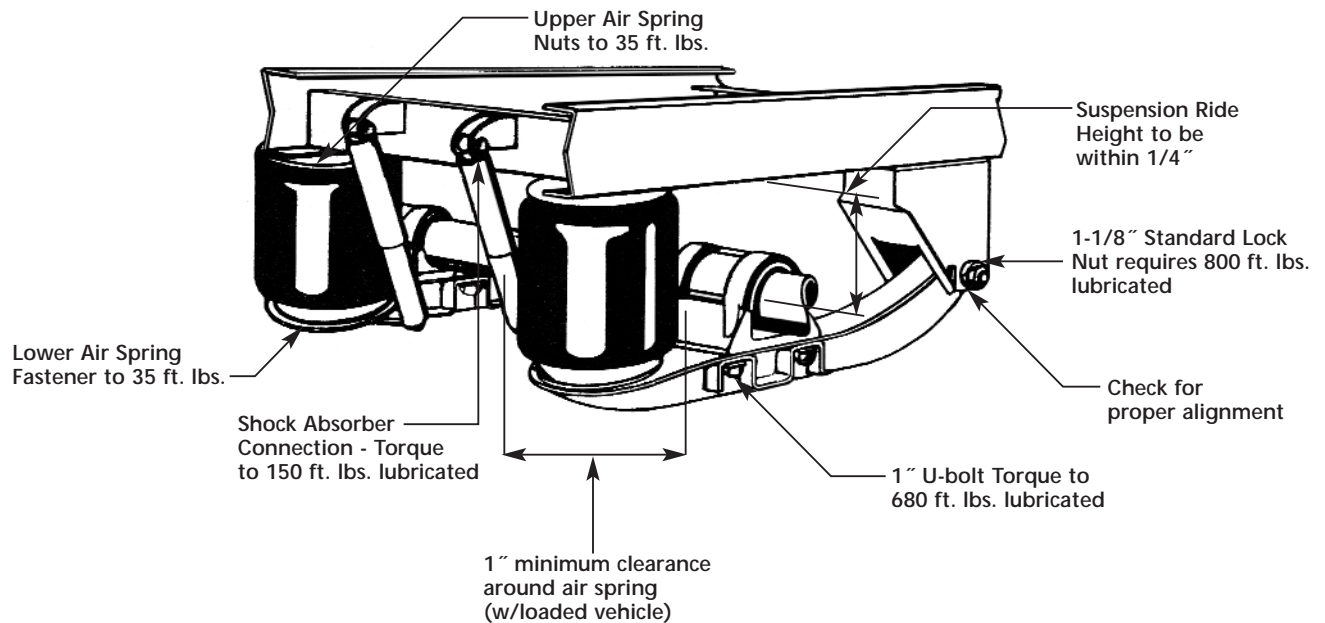
PRE-OPERATIONAL CHECKLIST

Prior to placing unit in service, check the following items:

⚠ WARNING Always chock tires to prevent rollaway — serious injury or death could occur.

1. Build air pressure above 75 psig (5.2 bars). With the vehicle shut off, check the system for air leaks.
2. With the vehicle on a level surface and air supply pressure in excess of 75 psig (5.2 bars); check the air springs for equal firmness.
3. Check the shock absorbers for proper installation. The 3/4" shock absorber nuts must be torqued to specifications (FIGURE 13).
4. The 1/2" and 3/4" air spring mounting nuts must be torqued to specifications (FIGURE 13).
5. Check for 1" (25mm) minimum clearance around the air springs with vehicle loaded.
6. The suspension ride height should be within $\pm 1/4"$ of the recommended design height.
7. A 1-1/8" pivot nut must be torqued to specifications (FIGURE 13).

FIGURE 13



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