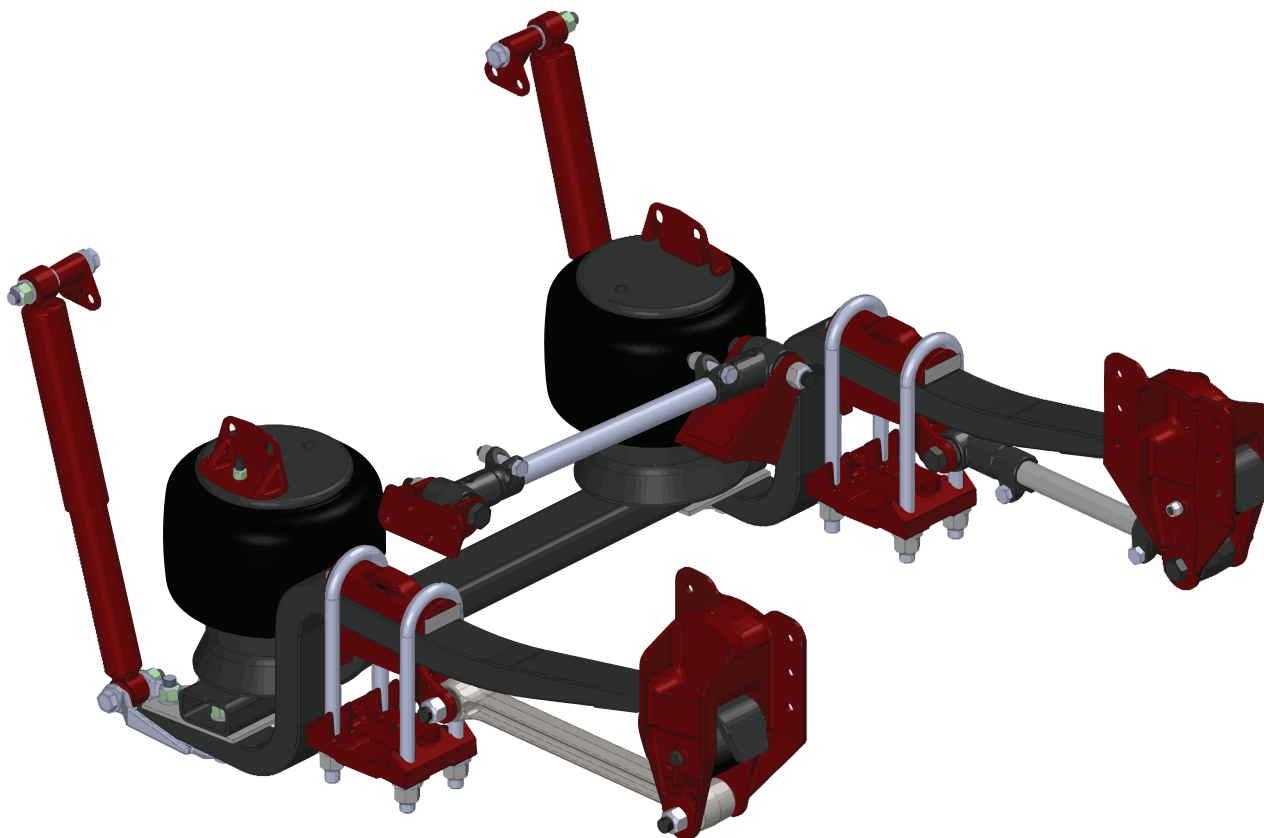


## Tractor and Straight Truck Suspensions

### 79AR | Drive Axle Air Ride Suspension

Installation Instructions  
Maintenance Instructions



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## **79AR Drive Axle Air-Ride Suspension System**

### **CONVERSION OF REYCO MODEL 79KB TO MODEL 79AR**

**These instructions pertain to a single drive axle suspension, only.**

The 79KB steel spring suspension can be converted to an air ride suspension with the appropriate conversion kit. This conversion is simplified through the re-use of many of the 79KB components, including the front hangers, axle seats and torque arms. Parts supplied in the conversion kit include air springs, spring beams, lower air spring support, track rod and shock absorbers.

#### **Basic steps to follow before planning to convert suspensions:**

- You should know and record the basics of your present suspension: Ride or Mounting Height, Weight Rating, Wheel Base, Frame Dimensions, etc.
- You should be familiar with how the “new” air ride suspension configuration will affect the “old” spring suspension drawing (See D/N 701987). The 79KB spring suspension has many options, and you should be familiar with the options you have. You should have an air ride system-plumbing diagram. See attached.
- Be familiar with the general steps (presented below) to remove the spring suspension and to install the air ride suspension. You will need to inspect the “old” suspension parts, which are not being converted, and ascertain if they are reusable. You are responsible for this step.

#### **Basic Disassembly Steps**

- Jack up frame, remove tires, and wheels. Put unit on frame stands, with separate stand for frame and axle.
- If unit has shock absorbers and/or sway bar option, remove these first, and discard, or save for spares.
- Carefully mark exact locations of axle seats before U-bolt removal.
- Loosen or cut off U-bolts, nuts and washers, and discard.
- Remove spring assemblies and discard, or save for spares.
- Retain Top and Bottom plates.
- Remove rear hangers, and discard. Cross-member to remain as-is.
- Front hanger and cross-member to remain in place, as-is. The torque arms and connections to the front hangers and axle seats to remain, as-is.

## **Basic Frame/Axle Preparation Steps**

- Reference drawing # 701987hp1 for frame drilling pattern and locations.
- Drill holes for shock absorber brackets (both sides), air spring brackets (both sides), track rod bracket (right side only), and height control valve bracket (right side only). Hint: For best track rod bracket locations on frame and axle, loosely assemble track rod (adjusted to proper length), both end brackets, and bolts, and set on axle (at proper ride height), while marking positions on frame and axle.
- When drilling frames, note that they are hardened steel, and care should be exercised in bringing holes up to size in steps, keeping drills cool and sharp, etc.
- Once position of track rod axle bracket is located, weld bracket to top of axle bowl, while following instructions on Drawing 701987.

## **Basic Reassembly Steps**

- Obtain trailing spring “Z” beams and slide front tips into front hanger slots and onto axle seats. Engage beam pins into holes in seats.
- Loosely assemble axle clamp groups using the new 7/8” U-bolts, washers, and nuts, with the spring liners, top plates, bottom plates, and axle seats, around the axle, per the print. Important Note: Place the spring liners between the top plates and spring trailing beams. Do not tighten nuts.
- Loosely install the Lower Air Spring Support Assembly (LASSA) onto the top of the trailing beams, using the 3/4” fasteners provided and at the same time, install the lower shock absorber brackets under the beam using the same fasteners, per the print.
- Install the rubber retainer rollers in the front hangers.
- At this point, square the spring trailing beams with each other, and with the frame. Hint: Small shim spacers placed at both sides of the beams in the hanger location, centering them there, greatly aids in squaring the beam in the vehicle.
- Gradually bring the torque up in all fasteners holding the trailing beams, to ~200ft-lb level, to keep them square.
- Install the air springs to the LASSA, and the upper frame locations using the fasteners provided.
- Install the track rod to the frame and axle bracket, using the fasteners provided.
- With the unit at ride height, (Hint: Suggest using wooden blocks between axle and frame) begin tightening all fasteners to their specified torque requirements, see list attached.

## **The Air Ride Control System**

- One height control Valve (HCV) is used to control the air system. The air springs (on each side of the vehicle) should be connected by 3/8" minimum diameter tubing (customer furnished). The HCV maintains the same ride height, empty or loaded. Insure the valve is positioned per the print. Refer to the plumbing diagram.
- Install the valve and mounting bracket on the right side of the frame, using customer furnished hardware.
- Install the lower link bracket to the LASSA, with fasteners provided.
- Install the HCV linkage between the valve leveler and the lower link bracket.
- Tighten the 1/4" fasteners to 5 ft-lbs.
- Install the pressure protection valve/filter (PPV) at the outlet of the main air supply reservoir, and install 3/8" tubing from the outlet of the PPV to the HCV.
- Plumb the air springs from the HCV using customer furnished tubing and fittings.
- Install necessary grommets, wire ties, etc, to insure lines are not pinched, rubbing, etc.

## **Air System Checkout**

- With all jacks and stands removed, position the unladen vehicle on a level floor, with air pressure maintained above 70psi.
- Disconnect one end of the HVC linkage, and exhaust all air from the air springs.
- Reconnect the link to the HCV, and allow air to flow until it automatically shuts off. Measure the distance from the bottom of the frame to the center of the axle, and compare to the ride height. If the dimension is incorrect, adjustments can be made on the lever's slotted bolt.
- In any case, recheck the ride height by deflating the air springs about halfway, and allowing the air springs to refill to the proper height.

## **Final Alignment and Checkout**

- With the air system operating, perform final alignment checks. See attached alignment diagram. If alignment is required, adjust the torque arm length to obtain squareness.
- Make sure all fasteners have been brought up to specified torque levels.
- Make sure vehicle is at proper ride height.

## RECOMMENDED MAINTENANCE SCHEDULES

1. Pre-service inspection
2. First service inspection, after 1,000-3,000 miles, (1,600-4,800km).
3. PM inspections, concurrently with required annual inspection.
4. During replacement of any service parts.
5. Upon discovery of any loose components.

## TORQUE REQUIREMENTS (Verify with each inspection.)

1. Tighten 7/8" u-bolt nuts	400-425 ft lb	545-580 Nm
2. Tighten 3/4" Lower cross support nut	400-425 ft lb	545-580 Nm
3. Tighten 3/4" shock absorber end nut	150-175 ft lb	205-240 Nm
4. Tighten 1" torque arm end nut, hanger end	500-525 ft lb	680-715 Nm
5. Tighten 7/8" torque arm end nut, seat end	400-425 ft lb	545-580 Nm
6. Tighten 5/8" torque arm/track rod clamp nut	125-150 ft lb	170-205 Nm
7. Tighten 3/4" top air spring mount fasteners	40-45 ft lb	55-60 Nm
8. Tighten 1/2" top & bottom air spring mount fasteners	25-30 ft lb	35-41 Nm
9. Tighten 1/2" beam retainer bolt	70-80 ft lb	95-110 Nm
10. Tighten 7/8" track rod end nut	400-425 ft lb	545-580 Nm
11. Tighten 1/2" track rod bracket nut	110-120 ft lb	150-165 Nm
12. Tighten 1/4" air valve and linkage nut	5 ft lb	7 Nm

All torque values are with clean, dry fasteners, and should only be verified with a quality calibrated wrench, of known accuracy. Failure to follow these recommendations could void the warranty. Failure to maintain the specified torque values and/or to replace worn parts, can cause component and/or system failure resulting in an accident with consequent injury.

Ft lb = Foot - Pounds; Nm= Newton – Meters

## VISUAL INSPECTION

1. Loose or missing fasteners, especially U-bolt nuts.
2. Damaged hangers or axle connection brackets.
3. Axle and spring alignment.

## **ALIGNMENT PROCEDURE**

Place unloaded truck on a level floor area. Move it back and forth several times, slowly and without using brakes, to free all suspension joints.

Chock front wheel and release truck brakes. Before alignment, make certain that all springs are not binding in hangers; that u-bolts and torque arm bolts are torqued to the manufacturers specifications and all bushings are in good condition.

Begin by centering the axle to the frame by adjusting the lateral track rod. Tolerance is  $\pm 1/8"$ .

Next, clamp an 8-foot piece of straight bar stock or angle iron securely after positioning it squarely across the frame. (The use of a carpenters square is recommended to be certain the bar is square to the frame.)

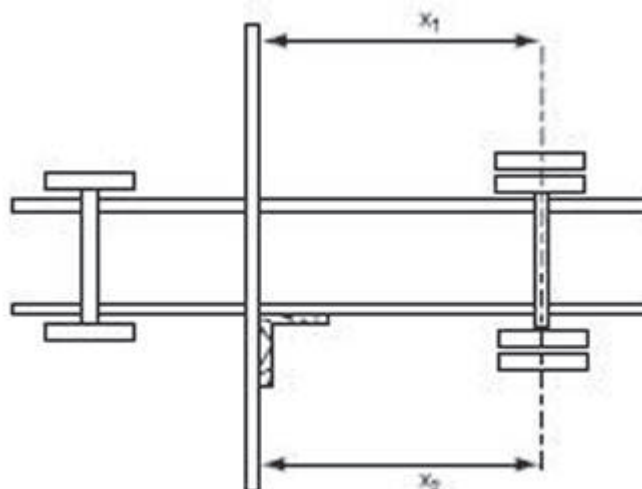
The cross bar should be positioned as far forward of the drive axle as room will permit.

Beginning on the fixed torque arm side, measure from the bar stock to the centerline of the rear drive axle on both sides.

If the measurements vary more than  $1/8"$ , alignment adjustment should be made through the adjustable torque arm side.

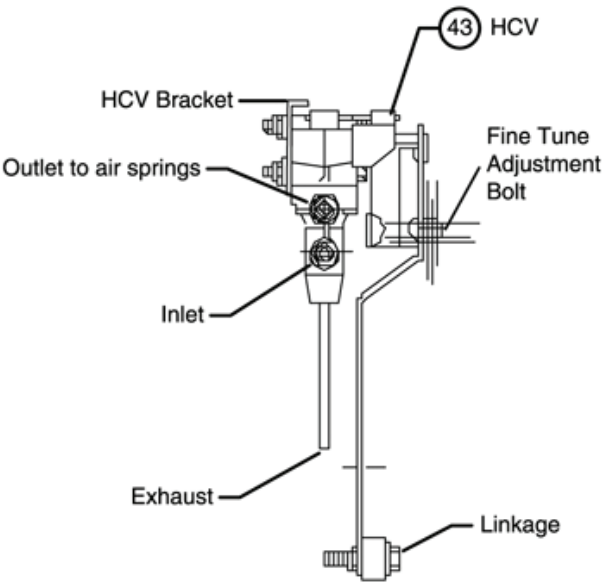
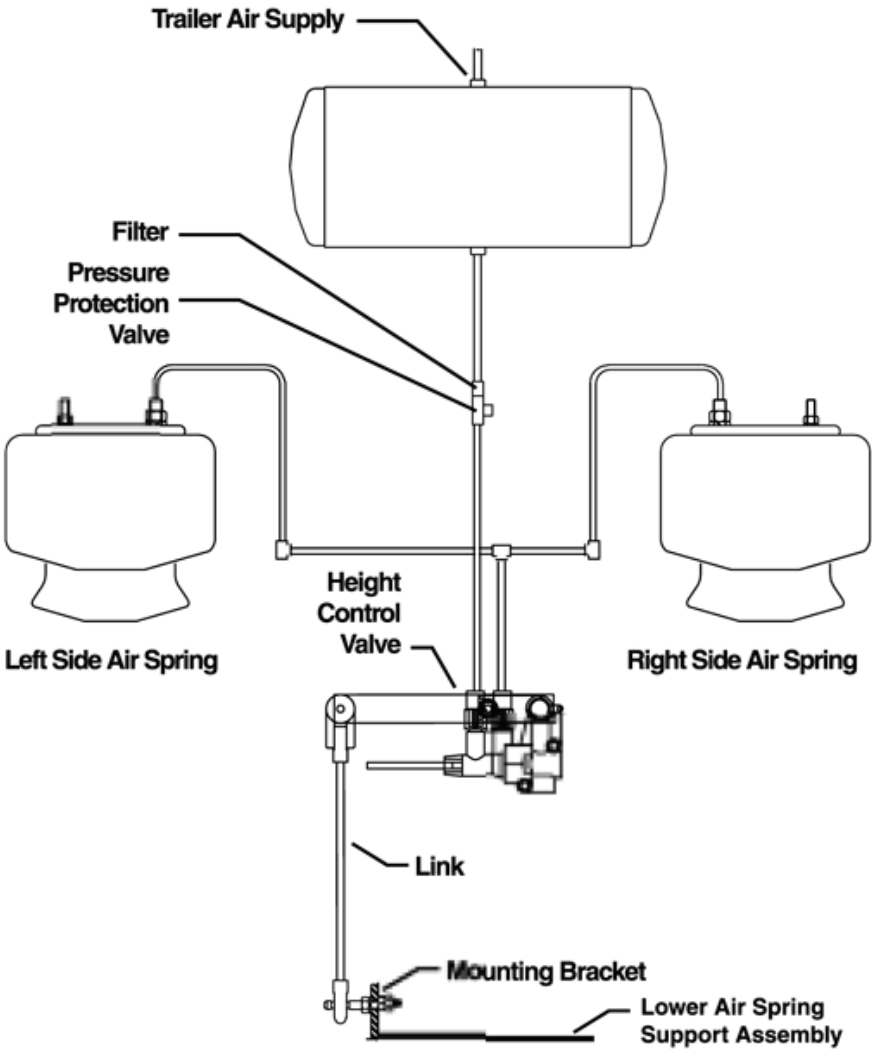
After aligning, tighten the  $5/8"$  adjustable torque arm clamp bolt to 125-150 ft. lbs. Tighten older  $3/4"$  clamp nuts to 175-200 ft. lbs. If so equipped.

Following the alignment, it is recommended that it be driven through a short series of turns and then returned to the shop and the alignment rechecked.



# Plumbing Diagram

Air Supply With  
Height Control Valve



# **Reyco<sup>®</sup>** **Granning<sup>®</sup>** **S U S P E N S I O N S**

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