



# AD SERIES

## MAINTENANCE AND PARTS LIST

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### AD Series

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Heavy-Duty Drive Axle Air Suspension  
Maintenance and Parts List Manual



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## INTRODUCTION

This manual provides you information necessary for the care, maintenance, inspection, and safe operation of Holland Neway's AD Series drive axle air suspension models.

The Holland Neway Air Suspension is designed and engineered to provide trouble-free service. In the event of minor breakdown, such as a loss of air in the air springs, there are safety features designed into the suspension that will allow the vehicle to be driven CAUTIOUSLY at slow speed, to the nearest service facility.

This suspension uses air drawn from the truck/tractor air system to pressurize the air springs. The height control valve regulates the air pressure required for varying loads and maintains the design ride height. This suspension can provide a cushioned ride throughout the load range, from empty to fully loaded.

## WARRANTY

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty is included with the product as well as in the suspension catalogs and the Holland Group Web Site ([www.thehollandgroupinc.com](http://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.

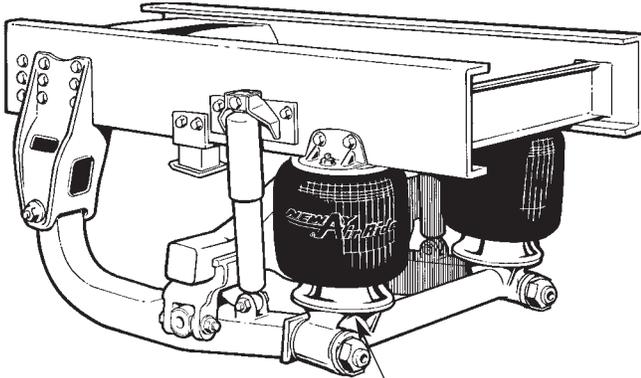
**CAUTION** Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, may result in property damage.

**⚠ 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.

## MODEL IDENTIFICATION

A serial number tag is attached to the underside of the transverse beam air spring mounting plate for identification purposes. This tag supplies valuable information regarding the exact components used to manufacture the suspension.



Serial Number Tag location  
(underside of plate)

Depending upon OEM configuration, the serial number tag may not call out the exact kit or parts list number. If so, the vehicle OEM should be able to identify the suspension model and its components using the vehicle's VIN number. Page 9 of this manual supplies a dimensional view of the various AD Series equalizing beams to aid in identifying equalizing beams to a particular series (i.e., AD-123, AD-126, AD-130).

**IMPORTANT:** Due to the custom built nature of each AD application, having the exact parts list used by the OEM is critical in determining proper replacement components.

It is recommended that you determine your specific model number, write that information below, and refer to it when obtaining information or replacement parts.

Model Number \_\_\_\_\_  
 Serial Number \_\_\_\_\_  
 Parts List Number \_\_\_\_\_  
 In Service Date \_\_\_\_\_

## MODEL NOMENCLATURE

### AIR DRIVE

#### NO. OF AXLES

- 1 - SINGLE
- 2 - TANDEM
- 3 - TRIDEM

#### RATED CAPACITY (X 1,000 LBS.)

#### RIDE HEIGHT (INCHES)

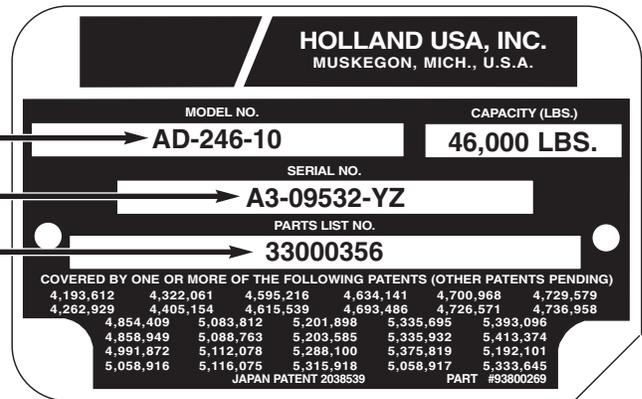
**AD - 2 46 - 10**

**IMPORTANT:** This manual applies to the suspension models or series listed below and for special orders of the same. It is very important to determine your specific model number, serial number, and parts list number. Record those numbers on this page, and refer to them when obtaining information or replacement parts.

<b>Single Axle:</b>	<b>Tandem Axle:</b>	<b>Tridem Axle:</b>
AD-123 AD-124*	AD-246 AD-248*	AD-369
AD-126 AD-127*	AD-252 AD-254*	AD-378
AD-130 AD-132*	AD-260 AD-264*	AD-390

\* Denotes special uprating for fire apparatus applications only with Holland Engineering approvals.

### Serial Number Tag



# OPERATING AND MAINTENANCE INSTRUCTIONS

In typical straight truck applications, the AD Series Suspension is controlled by dual height control valves.

In typical tractor applications, the AD Series suspension may be controlled by either a single or dual height control valve.

Buses and motor homes, depending on OEM specification, may use either single or dual height control valve.

When properly adjusted, the height control valve(s) will automatically maintain the desired ride height throughout the unloaded to loaded range. The height control valve automatically adds air to (or exhaust air from) the air suspension, to maintain a constant ride height.

Before putting the vehicle in operation, build air pressure in excess of 70 P.S.I.G. This will open the pressure protection valve, and allow air flow to the height control valves.

## Optional Air Controls

To prevent suspension damage during trailer uncoupling, dumping, or in other applications where a rapid change in load will occur, an optional air control is available for your drive axle air suspension. The part number is AC-77-M-1 for manual operation or AC-77-S-1 for electric operation (see page 11). It prevents a sudden rise of your tractor frame during the unloading operation by deflating the air springs. Contact Holland Truck Suspension Application Engineering for specific operational information.

## IMPORTANT:

### ROUTINE MAINTENANCE AND DAILY INSPECTION

#### Daily Inspection

Daily or before each trip, check the suspension to be sure it is fully operational. Visually inspect air springs for sufficient and equal pressure and to see that suspension is set at proper ride height. See page 10 for ride height measurement and re-setting instructions. Service as necessary.

#### Initial 5,000 Mile (8,000 KM) or 100 Hours of Service Inspection

1. Suspension ride height (underside of frame to centerline of axle) MUST BE WITHIN  $\pm 1/4$ " OF RECOMMENDED DESIGN HEIGHT. See page 10 for instructions on measuring ride height.

**CAUTION** An improperly set ride height could result in suspension component damage and/or poor vehicle ride performance.

2. After initial 5,000 miles (8,000 KM) or 100 hours of service, inspect bolts and nuts at the pivot connections, transverse beam connections, and axle connections to assure they are properly torqued. Check all other nuts and bolts for proper torque. Re-torque as necessary thereafter.

3. With vehicle on level surface and air pressure in excess of 70 P.S.I.G., all air springs should be of sufficient and equal firmness.

**NOTE:** Height control valves control all air springs. Check all fittings for air leaks, by applying a soapy water solution and checking for bubbles at all air connections and fittings.

### Routine Maintenance – 50,000 Miles (80,000 KM) or 1,000 Hours of Service or as Needed

At 50,000 miles or 1,000 hours of service, or when servicing vehicle brake system, inspect suspension components per 5,000 mile inspection. Also check all other suspension components for any sign of damage, looseness, wear or cracks. Replace any damaged parts to prevent equipment breakdown.

### TORQUE CHART

SIZE	ITEM	TORQUE IN FT. LBS. AD MODELS	NM
1/2" and 3/4"	Air Spring	30-35	40-47
1 1/8"	Pivot	600	813
1 1/4"	Pivot (AD-130 only)	700	949
3/4"	Shock Absorber	150	203
2 1/4"	Transverse Beam	500-550	677-745

#### TORQUE NOTE:

Torque specifications are with clean lubricated threads.

#### IMPORTANT:

Use of special lubricants with friction modifiers, such as Anti-Seize or Never-Seize, without written approval from Holland Engineering, will void warranty and could lead to bolt failure or other component issues.

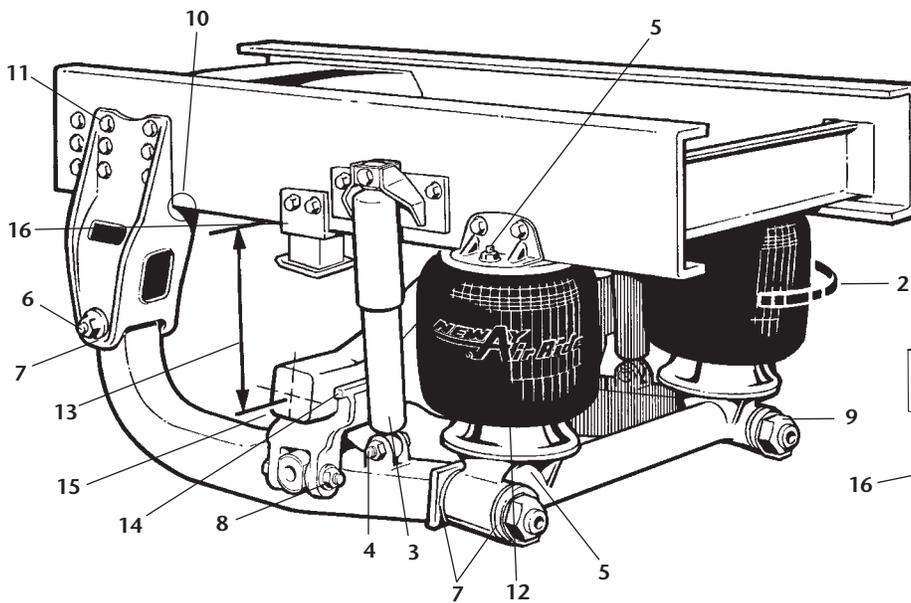
#### TRANSVERSE BEAM:

AD Models: Torque to specification, then bend one (1) tab that aligns with flat surface of nut.

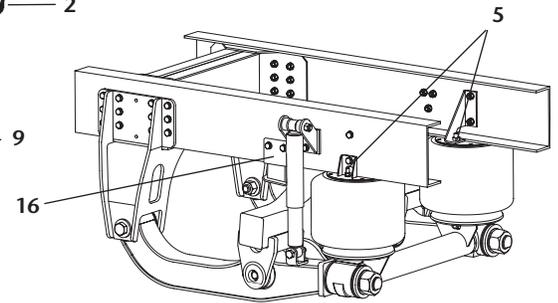
**NOTE:** As of June 2002, all pivot bolts supplied by Holland Newway will have a pre-applied coating that will provide thread lubrication throughout the bolts expected service life. See pages 18, 19, and 20 for additional information.

# PRE-OPERATIONAL CHECKLIST

## AD-123/126 Models



## AD-130 Model

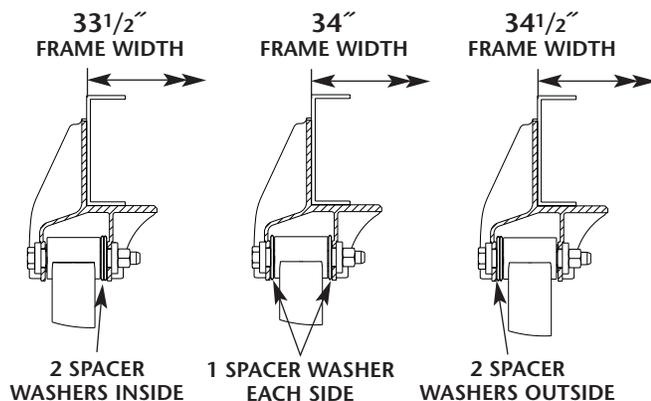


Prior to placing unit in service, check the following items:

1. Build the vehicle's air pressure above 70 P.S.I.G. With the vehicle shut off, check the system for air leaks.
2. Minimum clearance around air springs must be  $1\frac{3}{4}$ ".
3. Check the shock absorbers for proper installation.
4.  $\frac{3}{4}$ " Shock absorber nuts must be torqued to the specifications found in the torque chart on page 4.
5.  $\frac{1}{2}$ " and  $\frac{3}{4}$ " Air spring mounting nuts must be torqued to the specifications found in the torque chart on page 4.
6. A  $\frac{11}{8}$ " pivot nut ( $\frac{11}{4}$ " pivot nut for AD-130 Series) must be torqued to the specifications found in the torque chart on page 4.

**NOTE:** As of June 2002, all pivot bolts supplied by Holland will have a pre-applied coating (silver in color) that will provide thread lubrication throughout the bolts expected service life. See pages 19 and 20 for additional information.

7. Check for proper installation of the spacer washers at the transverse beam and pivot connection.



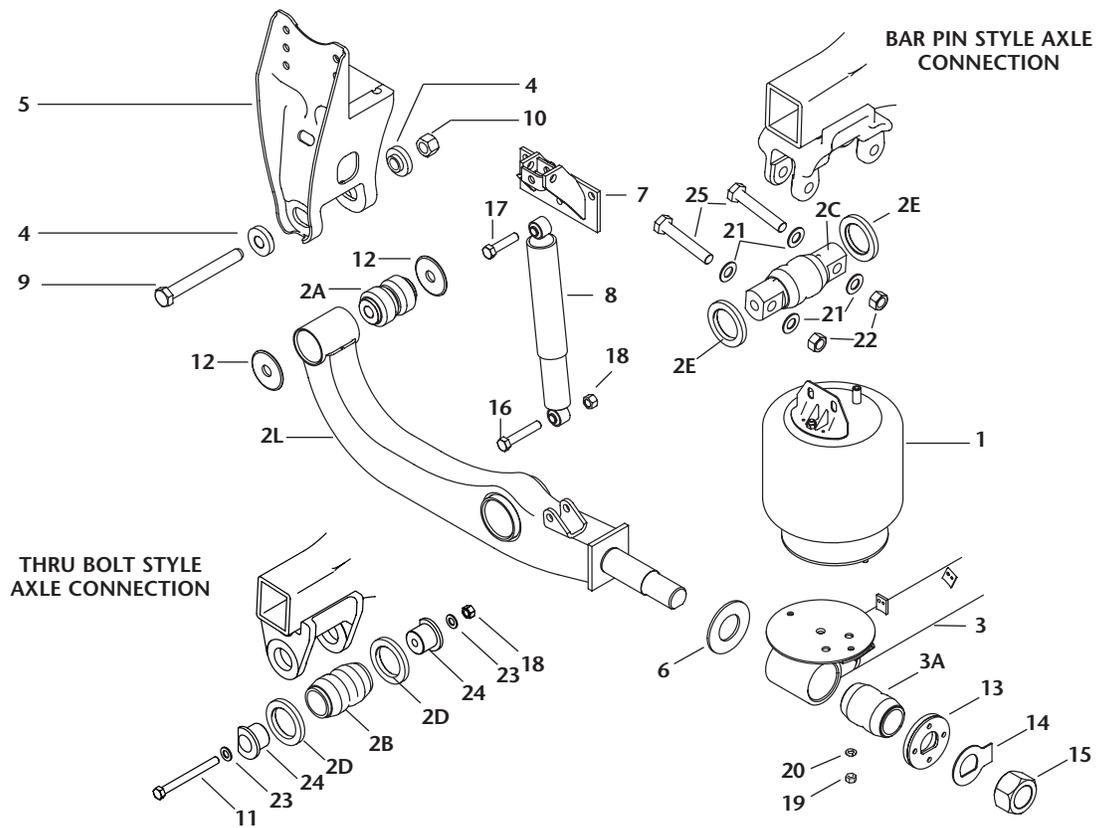
**NOTE:** Different frame widths require various spacer washer placement at the pivot connection.

8. Axle hanger bracket connection nuts must be torqued to OEM specifications. Bar pin style shown.
9. The transverse beam connection nut ( $2\frac{1}{4}$ " ) must be torqued to the specifications found in the torque chart on page 4. Bend the tab over after the nut is torqued.
10. The lower flange of the frame bracket must be securely attached by fasteners to the bottom of the crossmember.
11.  $\frac{3}{4}$ " Frame bracket mounting bolts must be torqued to OEM specifications. OEM-supplied spacers must be used between the frame bracket and crossmember.
12. With the vehicle on a level surface, and the air supply pressure in excess of 70 P.S.I.G., check all the air springs for equal firmness.

**CAUTION** 100 P.S.I.G. is the maximum allowable operating air system pressure. If the air system pressure exceeds 100 P.S.I.G., there is a potential for air spring failure.

13. The suspension ride height should be within  $\pm \frac{1}{4}$ " of the recommended design height. See Height Control Valve Adjustment for the proper setting, page 10.
14. Welds connecting the adapters to the axle must be per axle manufacturer's specifications.
15. The pinion angle should be within OEM specifications.
16. Be sure that functional axle stops are present. The axle stop design should be adequate for the capacity and proper height; and should distribute the vertical forces sufficiently on the axle housing to prevent damage to the vehicle frame and/or axle. Unless supplied by Holland Neway, the axle stop is the responsibility of the vehicle OEM.

# PARTS LIST – AD-123/246/369 SERIES

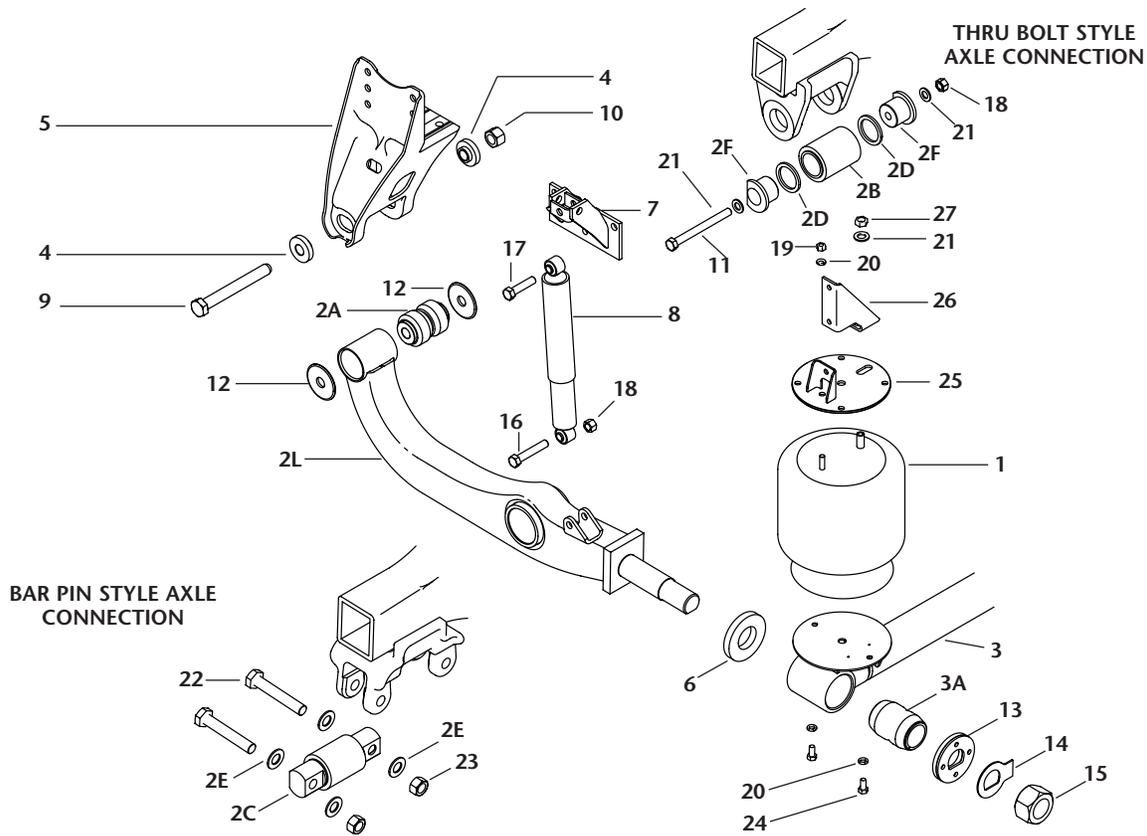


ITEM #	AD-123/246/369 PART NO.	DESCRIPTION	AXLE GROUPINGS		
			SINGLE QTY.	TANDEM QTY.	TRIDEM QTY.
1	**	Air Spring with mounting bracket	2	4	6
2L	**	Eq. Beam Assembly - Left Hand - Thru Bolt Design	1	2	3
2R	**	Eq. Beam Assembly - Right Hand - Thru Bolt Design	1	2	3
2L	**	Eq. Beam Assembly - Left Hand - Bar Pin Design	1	2	3
2R	**	Eq. Beam Assembly - Right Hand - Bar Pin Design	1	2	3
2A	90008151	Rubber Bushing - Front Pivot	2	4	6
2B	90008008	Bushing - Beam Center - Thru Bolt style	2	4	6
2C	90008175	Bushing - Beam Center - Bar Pin style	2	4	6
2D	90001065	Washer for Thru Bolt style connection	4	8	12
2E	90001205	Washer for Bar Pin style connection	4	8	12
3	**	Transverse Beam Assembly	1	2	3
3A	90008219	Bushing - Transverse Beam	2	4	6
4	90008120	Alignment Bushing (Qty. per adjustable bracket)	2	4	6
5	**	Frame Bracket - LH adjustable (requires item 4)	1	2	3
	**	Frame Bracket - RH fixed	1	2	3
6	93600498	Spacer Washer	2	4	6
7	**	Upper Shock Bracket	2	4	6
8	**	Shock Absorber	2	4	6
9	93201055	Hex Bolt 1-1/8" - 7 x 9.53	2	4	6
10	93400506	Hex Nut 1-1/8" - 7	2	4	6
11	93003693	Hex Bolt 3/4" - 10 x 7-1/2" ( Thru Bolt Design only)	2	4	6
12	93600502	Washer - Pivot Spacer	4	8	12
13	90536006	Locking Spacer Assembly	2	4	6
14	93600533	Lock Tab Washer	2	4	6
15	93400607	Heavy Nex Nut 2-1/4" - 8	2	4	6
16	93003615	Cap Screw 3/4 - 10 x 4.25"	2	4	6
17	93003591	Cap Screw 3/4 - 10 x 3.25"	2	4	6
18	93400492	Hex Nut 3/4"	2***	4***	6***
19	93400136	Hex Nut 1/2"	2	4	6
20	93600072	Lock Washer 1/2"	2	4	6
21	93600168	Washer Flat Narrow 1"	8	16	24
22	93400502	Hex Nut Lock 1"-8	4	8	12
23	93600156	Washer Flat Narrow (Thru) 3/4"	4	8	12
24	90001002	Bushing Adapter (Thru)	4	8	12
25	93004301	Cap Screw - 1 - 8 x 6 Gr. 8 (Bar Pin Only)	4	8	12

\*\* Refer to the OE/vehicle manufacturer's build specifications to properly identify the Holland Newway part numbers for the components noted with " \*\* ". A serial tag may be affixed to the transverse beam that also denotes the Holland Newway kit number that will provide the individual component numbers needed.

\*\*\*The quantity shown is for a bar pin style unit. If a thru bolt style is used, increase the quantity by two per axle.

# PARTS LIST – AD-126/252/378 SERIES

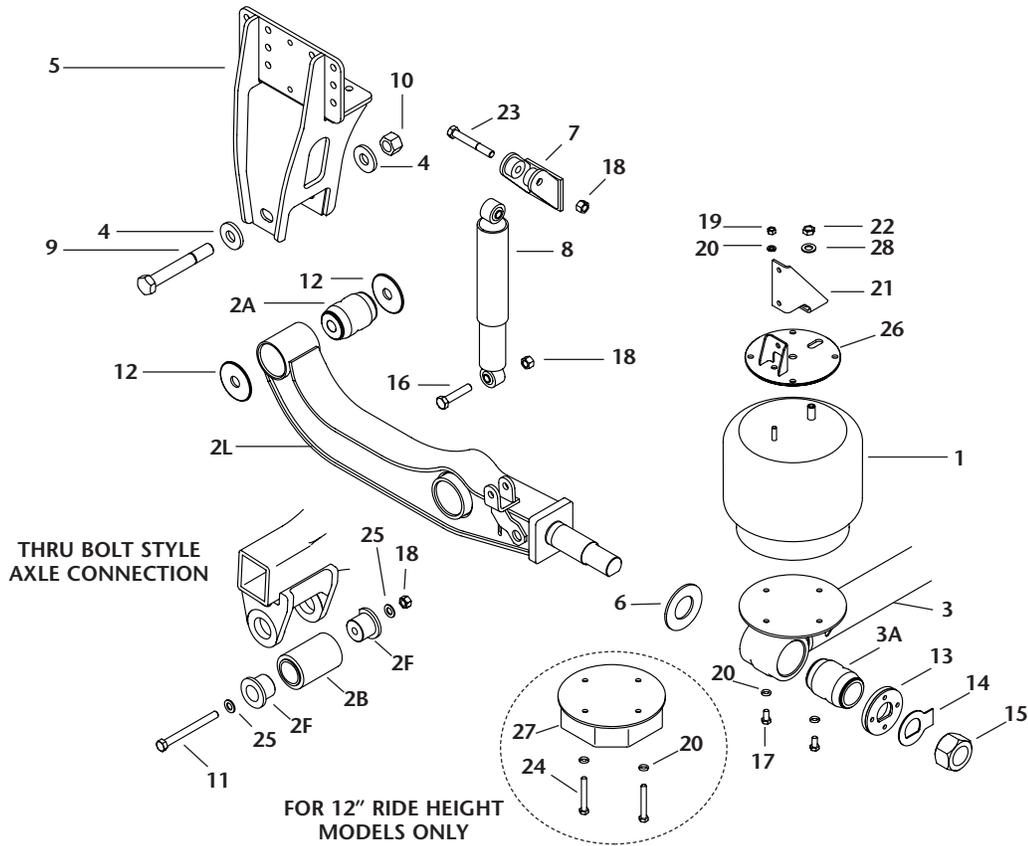


ITEM #	AD-126/252/378 PART NO.	DESCRIPTION	AXLE GROUPINGS		
			SINGLE QTY.	TANDEM QTY.	TRIDEM QTY.
1	**	Air Spring	2	4	6
2L	**	Eq. Beam Assembly - Left Hand - Thru Bolt Design(Shown)	1	2	3
2R	**	Eq. Beam Assembly - Right Hand - Thru Bolt Design	1	2	3
2L	**	Eq. Beam Assembly - LH - Bar Pin Design (side view)	1	2	3
2R	**	Eq. Beam Assembly - Right Hand - Bar Pin Design	1	2	3
2A	90008151	Bushing - Front Pivot	2	4	6
2B	90008195	Bushing - Beam Center - Thru Bolt style	2	4	6
2C	90508012	Bushing - Beam Center - Bar Pin style	2	4	6
2D	93036210	Washer for Thru Bolt style connection	4	8	12
2E	93600168	Washer for Bar Pin style connection	8	16	24
2F	90001002	Adapter Bushing	4	8	12
3	**	Transverse Beam Assembly	1	2	3
3A	90008219	Bushing - Transverse Beam	2	4	6
4	90008120	Alignment Bushing (qty. per Adj. bracket)	2	4	6
5	**	Frame Bracket - LH adjustable (Shown) (Requires Item 4)	1	2	3
	**	Frame Bracket - RH fixed	1	2	3
6	90036209	Washer	2	4	6
7	**	Upper Shock Bracket	2	4	6
8	**	Shock Absorber	2	4	6
9	93201055	Cap Screw 1.12 - 7 x 9.53"	2	4	6
10	93400506	Lock Nut 1.12 - 7	2	4	6
11	93003693	Cap Screw 3/4" - 10 x 7 1/2" ( Thru Bolt Design only)	2	4	6
12	93600502	Washer - Pivot Spacer	4	8	12
13	90536006	Locking Spacer Assembly	2	4	6
14	93600533	Tab Washer	2	4	6
15	93400607	Heavy Nex Nut 2 1/4" - 8	2	4	6
16	93003615	Cap Screw 3/4 - 10 x 4.25"	2	4	6
17	93003591	Cap Screw 3/4 - 10 x 3.25"	2	4	6
18	93400492	Lock Nut 3/4"	2 ***	4 ***	6 ***
19	93400136	Hex Nut 1/2"	2	4	6
20	93600072	Lock Washer 1/2"	6	12	18
21	93600156	Washer Flat Narrow 0.75	2	4	6
22	93004301	Bolt Hex 1 - 8x6 Gr 8	4	8	12
23	93400502	Nut Hex Lock 1 - 8	4	8	12
24	93002893	Bolt Hex 0.5 -13x1 Gr 2	4	8	12
25	90531001	Air Spring Mounting Plate	2	4	6
26	90023131	Brace	2	4	6
27	93400417	Nut Hex Lock Thin .75 -16 Gr A	2	4	6

\*\* Refer to the OE/vehicle manufacturer's build specifications to properly identify the Holland Neway part numbers for the components noted with " \*\* ". A serial tag maybe affixed to the transverse beam that also denotes the Holland Neway kit number that will provide the individual component numbers needed.

\*\*\*The quantity shown is for a bar pin style unit. If a thru bolt style is used, increase the quantity by two per axle.

# PARTS LIST – AD-130/260/390 SERIES



ITEM #	AD-130/260/390 PART NO.	DESCRIPTION	AXLE GROUPINGS		
			SINGLE QTY.	TANDEM QTY.	TRIDEM QTY.
1	**	Air Spring with mounting bracket	2	4	6
2L	**	Eq. Beam Assembly - Left Hand - Thru Bolt Design (shown)	1	2	3
2R	**	Eq. Beam Assembly - Right Hand - Thru Bolt Design	1	2	3
2A	90008226	Bushing - Front Pivot	2	4	6
2B	90008225	Bushing - Beam Center - Thru Bolt style	2	4	6
2F	90001349	Adapter Bushing	4	8	12
3	**	Transverse Beam Assembly	1	2	3
3A	90008135	Bushing - Transverse Beam	2	4	6
4	90008232	Alignment Bushing (qty. per Adj. Bracket)	2	4	6
5	**	Frame Bracket - LH adjustable (Shown, requires Item 4)	1	2	3
6	**	Frame Bracket - RH fixed	1	2	3
6	93600498	Washer	2	4	6
7	**	Upper Shock Bracket	2	4	6
8	**	Shock Absorber	2	4	6
9	93201068	Cap Screw 1.25 - 7 x 9"	2	4	6
10	93400510	Lock Nut 1.25 - 7	2	4	6
11	93003705	Cap Screw 3/4" - 10 x 8.00" ( Thru Bolt Design only)	2	4	6
12	93600546	Washer - Pivot Spacer	4	8	12
13	90536006	Locking Spacer Assembly	2	4	6
14	93600533	Tab Washer	2	4	6
15	93400607	Heavy Nex Nut 2 1/4" - 8	2	4	6
16	93003603	Cap Screw 3/4 - 10 x 3.75"	2	4	6
17	93002893	Cap Screw 1/2 - 13 x 1"	4	8	12
18	93400492	Lock Nut 3/4"	6	12	18
19	93400136	Hex Nut 1/2"	2	4	6
20	93600072***	Lock Washer 1/2"	6	12	18
21	90023131	Brace Angle	2	4	6
22	93400417	Hex Nut Thin - 0.75" - 16 Gr A	2	4	6
23	93003645	Cap Screw 3/4 - 10 x 5.5"	2	4	6
24	93002961	Bolt Hex 0.5-13 x 3.75 Gr 5 - for 12" ride height models only	4	8	12
25	93600156	Washer Flat Narrow 0.75	4	8	12
26	90531001	Plate Air Spring Mounting Upper	2	4	6
27	90536009	Spacer Air Spring Assembly - for 12" ride height models only	2	4	6

\*\* Refer to the OE/vehicle manufacturer's build specifications to properly identify the Holland Newway part numbers for the components noted with " \*\* ". A serial tag maybe affixed to the transverse beam that also denotes the Holland Newway kit number that will provide the individual component numbers needed.

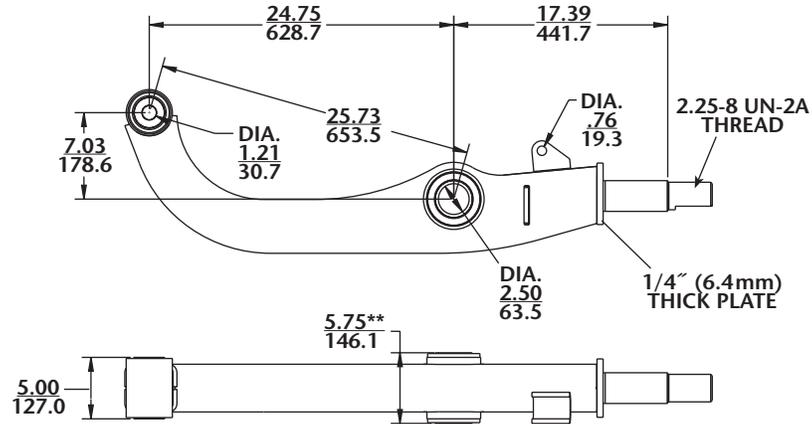
\*\*\*For 12" ride height models, increase quantity by 4 per axle.

# EQUALIZING BEAM MODEL IDENTIFICATION

(Left Hand/Road Side Beams Shown)

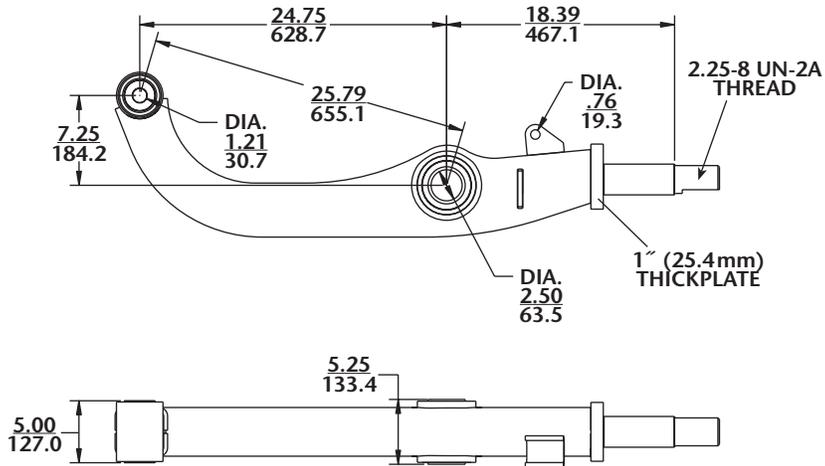
Measurements on this page show  $\frac{\text{INCHES}}{\text{MILLIMETERS}}$

MODEL: AD-123 / 246 / 369

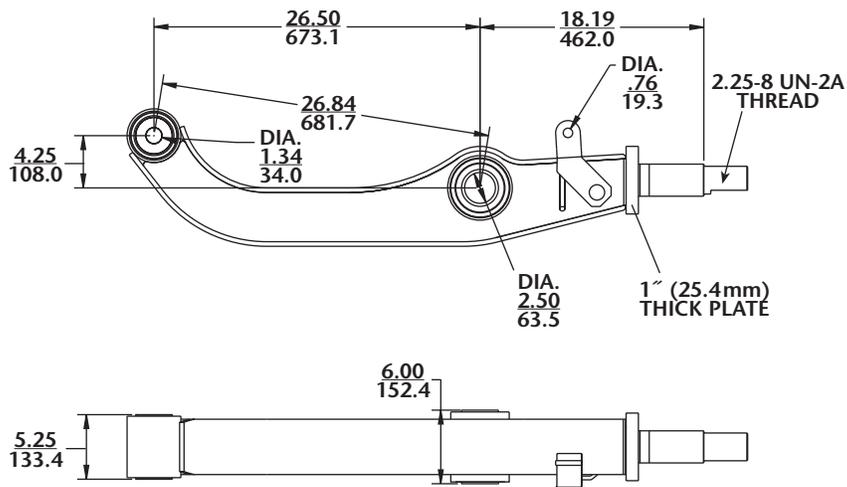


\*\* Dimension includes spacer washer. Dimension is 5.25" (133.4mm) without spacers included.

MODEL: AD-126 / 252 / 378



MODEL: AD-130 / 260 / 390



# HEIGHT CONTROL VALVE ADJUSTMENT

## Procedure

1. Prior to adjustment, drive the vehicle in a straight line for at least 2 vehicle lengths to release any possible bushing wind up. The vehicle must be on level ground and in an unladen condition. Block the front tires to prevent the vehicle from rolling forward or backward.

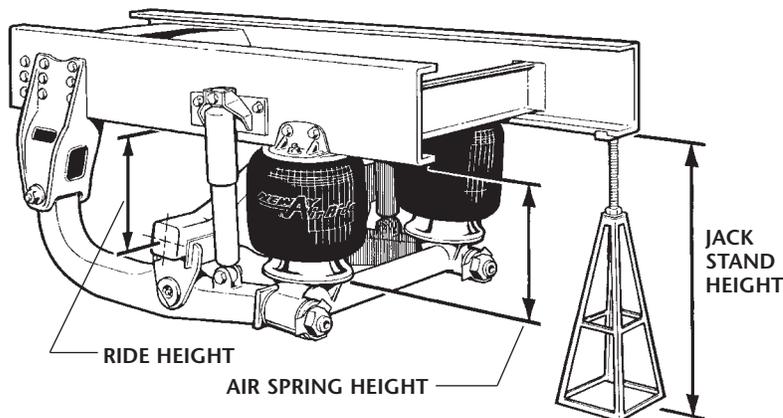
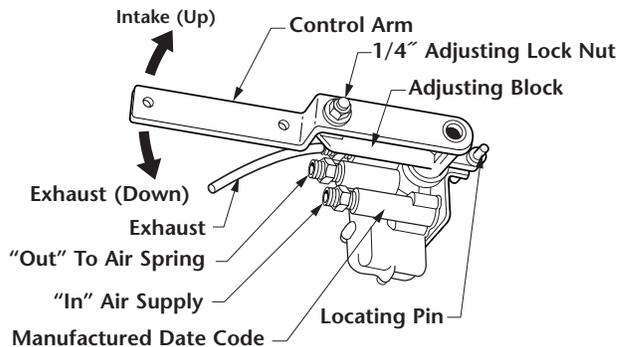
**⚠ WARNING** Always use jack stands of sufficient strength and position them according to OEM recommendations. Failure to do so may cause the vehicle to fail, resulting in vehicle damage and/or personal injury.

2. Disconnect linkages at lower brackets, push control arms to “up” position, and raise vehicle. Then position jack stands (one each side) at proper ride height between the vehicle frame and the ground. With jack stands in position, push control arms to “down” position lowering vehicle and deflating all air from air springs and vehicle system.

**NOTE:** It may be necessary to shim jack stands to achieve proper ride height.

3. Move height control arms to 45° down position for 10 - 15 seconds. Return the control arms slowly to the center position, then insert the locating pins into the adjusting block and bracket.
4. Loosen the 1/4” adjusting lock nuts on the height control valves, reconnect linkage at lower brackets, tighten to 4 - 5 ft. lbs. (lubricated) torque. Remove the locating pin.
5. Tighten the 1/4” adjusting lock nut on the height control valves 2 - 4 ft. lbs. (lubricated) torque. Remove the locating pin.
6. Pressurize the air system with a constant supply of air in excess of 70 P.S.I.G. All air springs should inflate and the suspension should be at a proper ride height. Inspect the air system and eliminate any air leaks. The height control valve may have a built-in time delay feature, therefore, several seconds may elapse prior to air flow.

**NOTE:** If proper ride height is not obtained or air springs do not inflate properly, check air pressure, check for proper piping and repeat above steps. Then, if not functioning properly, contact Holland Technical Service for assistance.



## Ride Height Chart

Model No.	Ride Height (RH) inches (mm)	Jack Stand Height with 20.5" Unladen Radius Tire	Approximate** Air Spring Height at Ride Height	Approximate** Shock Absorber Length at RH
AD-123/246/369-8.75	8.75" (222mm)	29.25" (743mm)	11.4" (289.5mm)	18.7" (475mm)
AD-123/246/369-10	10" (254 mm)	30.5" (775mm)	13.4" (340mm)	20.3" (515.5mm)
AD-123/246/369-12	12" (305mm)	32.5" (825.5mm)	16.5" (419mm)	22.7" (576.5mm)
AD-126/252/378-8.75	8.75" (222mm)	29.25" (743mm)	12.7" (322mm)	17.8" (452mm)
AD-126/252/378-10	10" (254mm)	30.5" (775mm)	12.7" (322mm)	19.4" (493mm)
AD-126/252/369-12	12" (305mm)	32.5" (825.5mm)	14.33" (363mm)	21.5" (546mm)
AD-130/260/390-8.75	8.75" (222mm)	29.25" (743mm)	12.1" (307mm)	20" (508mm)
AD-130/260/390-10	10" (254mm)	30.5" (775mm)	13" (330mm)	21.1" (536mm)
AD-130/260/390-12	12" (305mm)	32.5" (825.5mm)	13.2" (335mm)	21" (533.5mm)

Ride Height (RH) is defined as the distance from the underside of the frame to the centerline of the axle. This is always the preferred measurement technique.

\*\* Approximate – The air spring height is measured from the center of the top plate to the center of the bottom edge of the air spring piston from a side view perspective. The shock length is measured from the center of each eyelet.

**NOTE:** The air spring height and shock length measurement techniques are not the preferred method due to many variables that may impact the dimensions (pinion angles, axle hanger drops, frame variations, unique OE brackets, etc.). These are for reference only.

## Air Pressure vs. Gross Axle Weight (Ground Load)\*

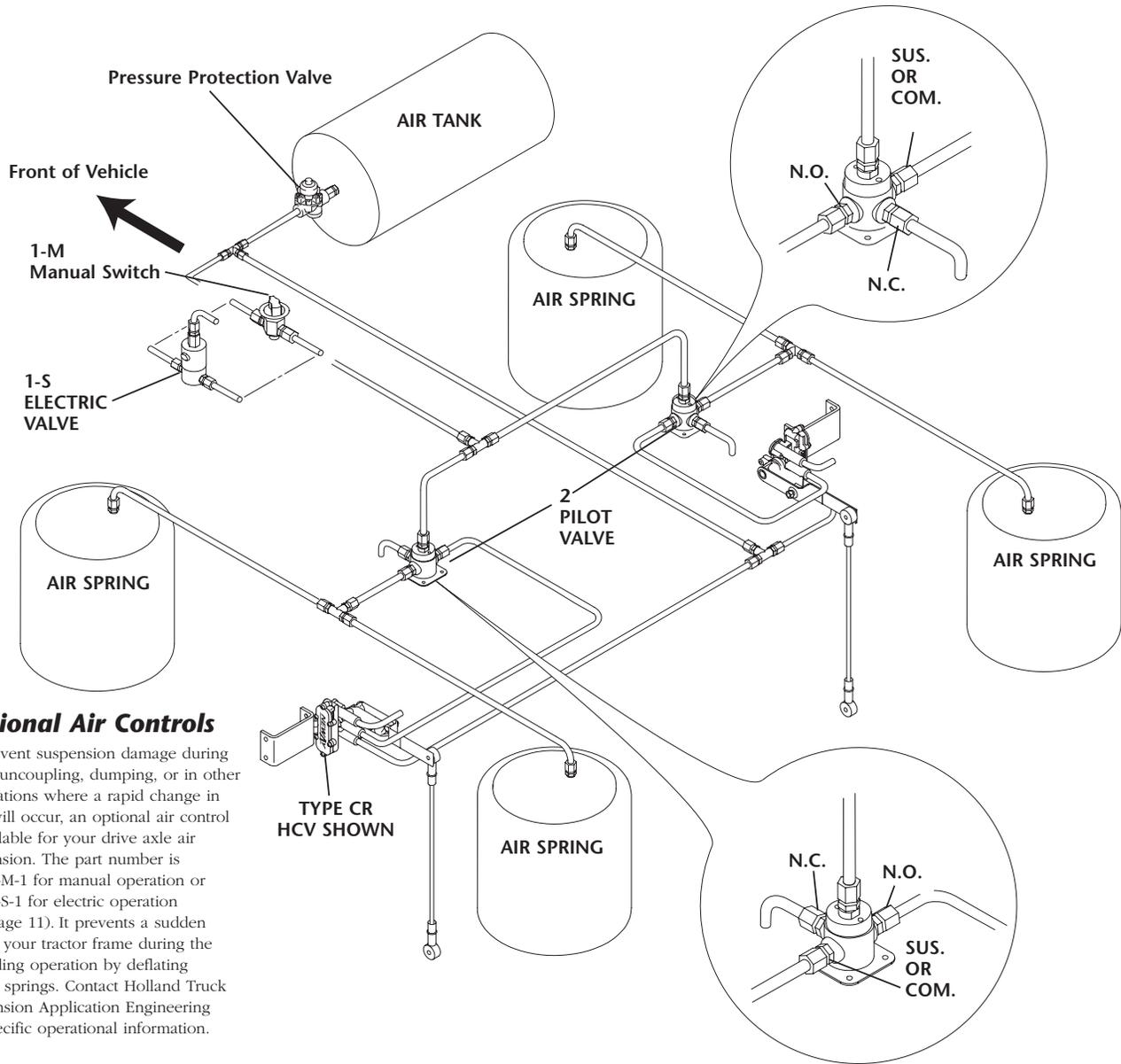
AD-123/246/369		AD-126/252/378		AD-130/260/390	
Ground Load (lb.)	Air Pressure PSIG	Ground Load (lb.)	Air Pressure PSIG	Ground Load (lb.)	Air Pressure PSIG
2,500**	0	2,500**	0	2,500*	0
5,000	11	5,000	10	5,000	14
10,000	36	10,000	28	10,000	28
15,000	63	15,000	46	15,000	42
20,000	78	20,000	64	20,000	55
23,000	87	26,000	86	25,000	70
				30,000	83

\* Assuming 2,500 lb. unsprung weight.

**CAUTION** Do not overload the axle or suspension. If overloaded, suspension component damage may occur.

# OPTIONAL SUSPENSION LOWERING SYSTEM

(shown installed on standard AC-3800 air control system)



## Optional Air Controls

To prevent suspension damage during trailer uncoupling, dumping, or in other applications where a rapid change in load will occur, an optional air control is available for your drive axle air suspension. The part number is AC-77-M-1 for manual operation or AC-77-S-1 for electric operation (see page 11). It prevents a sudden rise of your tractor frame during the unloading operation by deflating the air springs. Contact Holland Truck Suspension Application Engineering for specific operational information.

## PARTS LIST – AIR CONTROL NO. AC-77-M/S-1

Part No.:

AC-77-M-1 (Manual)

AC-77-S-1 (Electric/Solenoid)

**NOTE:** Be sure to secure the valves to the vehicle frame, or a suitable bracket.

Refer to valve details for mounting holes.

### Kit Model No. AC-77-S-1 (Electric/Solenoid)

Parts List No. 42130014

Item	Part No.	Description	Qty.
1-S	900 54 074	Valve, Electrically Operated	1
2	905 54 615	Pilot Valve	2
3	900 44 206	Decal (not shown)	1
4	932 00 724	Machine Screw No. 10-32 x 1/2" (not shown)	2
5	936 00 442	Lock Washer No. 10 (not shown)	2
6	900 54 700	Air Gauge (not shown)	1
7	900 54 082	Hand Valve (not shown)	1

### Kit Model No. AC-77-M-1 (Manual)

Parts List No. 42130012

Item	Part No.	Description	Qty.
1-M	900 54 088	Valve, Manually Operated	1
2	905 54 615	Pilot Valve	2
3	900 44 206	Decal (not shown)	1
4	900 54 700	Air Gauge (not shown)	1
5	900 54 082	Hand Valve (not shown)	1

# UNIVERSAL TRACK BAR & TORQUE ROD

**NOTE:** Typically, the track and torque rods required for the AD Series suspension are supplied by the vehicle OEM. Replacement track bars and torque arms of equivalent length can be supplied by the OEM. Holland also supplies a universal repair kit that requires additional welding.

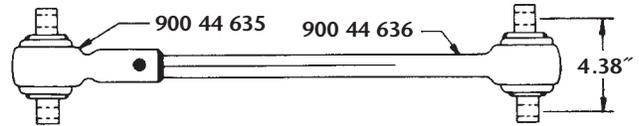
## Welding Instructions

1. Measure center to center of bushings on assembly to be replaced, "A" Dim. Determine "B" Dim. plus  $3\frac{1}{2} \pm 1/8$ " to obtain "A" Dim. If necessary, cut any excess off the male end. The removal process should produce a square, flush cut to facilitate the welding process.

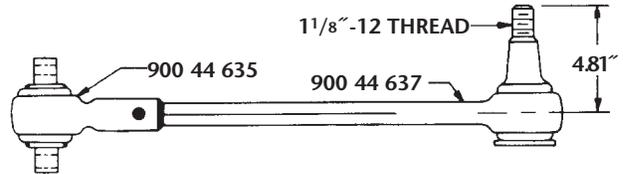
**CAUTION** Do not flame or arc cut as heat may affect the material properties.

2. Insert ends and install on vehicle. With proper pinion angle and scribe line located in center of plug weld hole, tack weld to proper length.
3. Remove from vehicle, then complete welding using E-7018 or equivalent. Plug weld both sides securely and apply continuous fillet weld around rod.

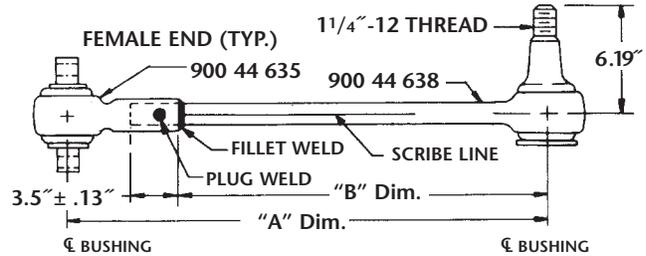
## SRK-121 Torque Rod Assembly



## SRK-122 1 1/8-12 Track Bar

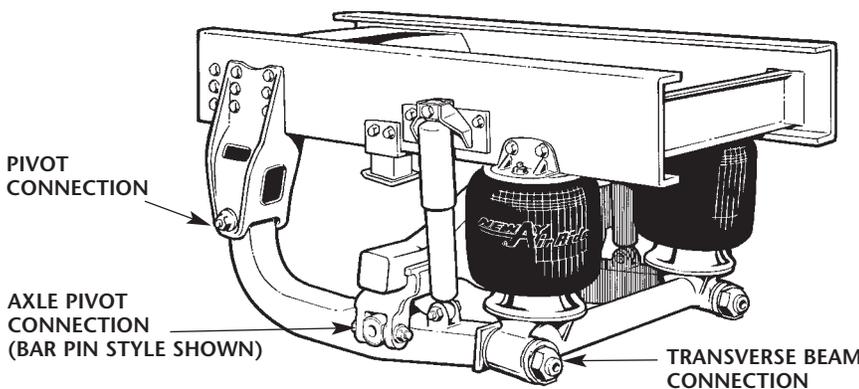


## SRK-123 1 1/4-12 Track Bar



Item No.	Part No.	Description	SRK-121	SRK-122	SRK-123
1	900 44 635	Control Arm End (Female)	1	1	1
2	900 44 636	Control Arm	1	-	-
	900 44 637	Control Arm	-	1	-
	900 44 638	Control Arm	-	-	1
3	930 03 417	Cap Screw 5/8 - 11 x 5	2	2	2
4	934 00 488	Lock Nut 5/8 - 11	4	2	2
5	936 00 150	Washer 5/8	8	4	4
6	930 03 395	Cap Screw 5/8 - 11 x 4	2	-	-
7	934 00 507	Lock Nut 1 1/8 - 12	-	1	-
	934 00 511	Lock Nut 1 1/4 - 12	-	-	1
8	936 00 174	Washer 1 1/8	-	1	-
	936 00 180	Washer 1 1/4	-	-	1

## SERVICE REPAIR KITS (SRK)



When servicing your AD Series suspension, use the convenient service repair kits noted below.

Descriptions are found on the following pages.

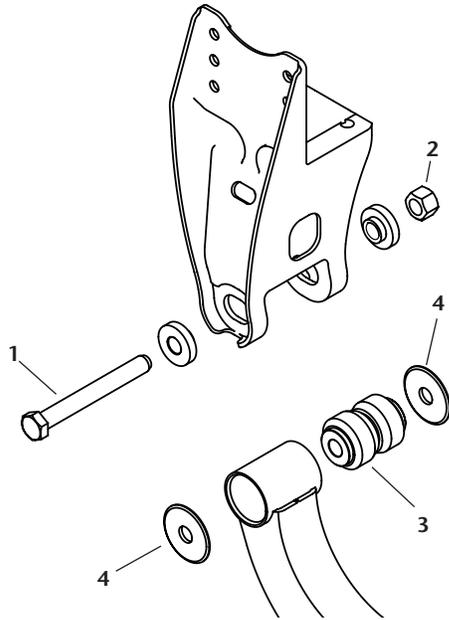
**NOTE:** One (1) SRK Required per axle.

Model	Front Pivot Connection	Axle thru bolt Connection	Axle Bar Pin Connection	Transverse Beam Connection
AD-123/246/369	SRK-200	SRK-80	SRK-452	SRK-214
AD-126/252/378	SRK-200	SRK-471	SRK-450	SRK-472
AD-130/260/390	SRK-499	SRK-498	N/A	SRK-500

## SERVICE REPAIR KITS *continued*

**NOTE:** New alignment bushings recommended when alignment bushing surface become deformed. Refer to parts list.

**NOTE:** Item 4 is not used on former Ford production units.



### Pivot Connection — AD-123 & AD-126 Series

SRK-200: 481 00 260

ITEM	PART NO.	DESCRIPTION	QTY.
1	932 01 055	Rod Bolt 1 <sup>1</sup> / <sub>8</sub> " - 7 x 9 <sup>17</sup> / <sub>32</sub> "	2
2	934 00 506	Lock Nut 1 <sup>1</sup> / <sub>8</sub> " - 7	2
3	900 08 151	Rubber Bushing	2
4	936 00 502	Spacer Washer	4

### Pivot Connection — AD-130 Series

SRK-499: 481 00 363

ITEM	PART NO.	DESCRIPTION	QTY.
1	932 01 068	Rod Bolt 1 <sup>1</sup> / <sub>4</sub> " - 7 x 9.0"	2
2	934 00 510	Lock Nut 1 <sup>1</sup> / <sub>4</sub> " - 7	2
3	900 08 226	Rubber Bushing	2
4	936 00 546	Spacer Washer	4

### Transverse Beam Connection — AD-123 Series

SRK-214: 481 00 276

ITEM	PART NO.	DESCRIPTION	QTY.
1	905 36 006	Lock Spacer	2
2	934 00 607	Heavy Nut 2 <sup>1</sup> / <sub>4</sub> "-8	2
3	900 08 219	Bushing	2
4	936 00 498	Washer - Spacer	2
5	936 00 533	Tab Washer	2

### Transverse Beam Connection — AD-126 Series

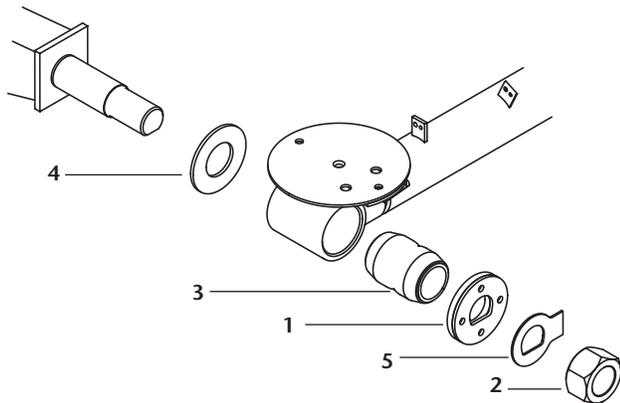
SRK-472: 481 00 335

ITEM	PART NO.	DESCRIPTION	QTY.
1	905 36 006	Lock Spacer	2
2	934 00 607	Heavy Nut 2 <sup>1</sup> / <sub>4</sub> "-8	2
3	900 08 219	Bushing	2
4	900 36 209	Washer - Spacer	2
5	936 00 533	Tab Washer	2

### Transverse Beam Connection — AD-130 Series

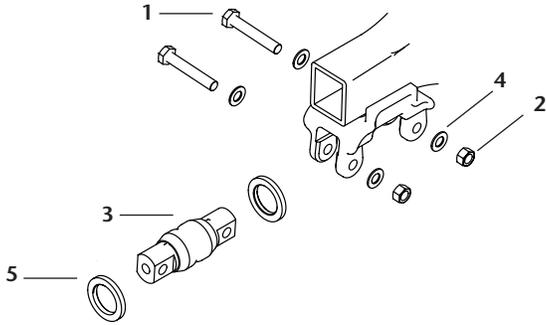
SRK-500: 481 00 364

ITEM	PART NO.	DESCRIPTION	QTY.
1	905 36 006	Lock Spacer	2
2	934 00 607	Heavy Nut 2 <sup>1</sup> / <sub>4</sub> "-8	2
3	900 08 135	Bushing	2
4	936 00 498	Washer - Spacer	2
5	936 00 533	Tab Washer	2



**Axle Bar Pin Connection — AD-123 Series**

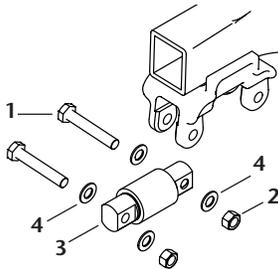
SRK-452: 481 00 315



ITEM	PART NO.	DESCRIPTION	QTY.
1	930 04 301	Cap Screw - Bar Pin Only 1- 8 x 6 Gr. 8	4
2	934 00 502	Hex Nut Lock 1"-8	4
3	905 08 175	Bushing - Beam Center	2
4	936 00 168	Washer Flat Narrow 1"	8
5	900 01 205	Spacer Washer	4

**Axle Bar Pin Connection — AD-126 Series**

SRK-450: 481 00 313

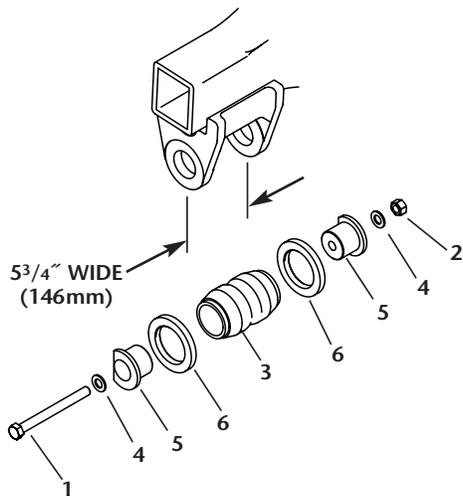


ITEM	PART NO.	DESCRIPTION	QTY.
1	930 04 301	Cap Screw - Bar Pin Only 1- 8 x 6 Gr. 8	4
2	934 00 502	Nut Hex Lock 1- 8	4
3	905 08 012	Bushing - Beam Center	2
4	936 00 168	Washer Flat Narrow 1"	8

**NOTE:** The AD-130 Series does not utilize the bar pin connection.

**Axle Thru Bolt Connection — AD-123 Series**

SRK-80: 481 00 124



ITEM	PART NO.	DESCRIPTION	QTY.
1	930 03 693	Hex Bolt 3/4" - 10 x 7 1/2	2
2	934 00 492	Hex Nut 3/4"	2
3	900 08 008	Bushing - Beam Center	2
4	936 00 156	Washer Flat Narrow 3/4"	4
5	900 01 002	Adapter Bushing	4
6	900 01 065	Spacer Washer	4

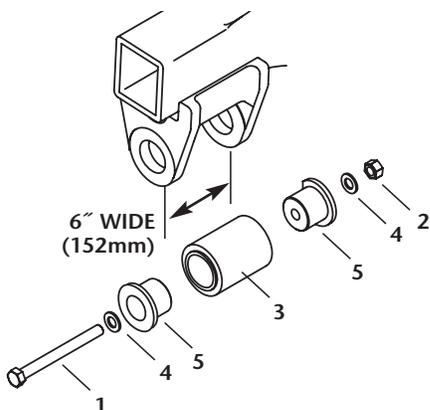
**Axle Thru Bolt Connection — AD-126 Series**

SRK-471: 481 00 334

ITEM	PART NO.	DESCRIPTION	QTY.
1	930 03 693	Hex Bolt 3/4" - 10 x 7 1/2	2
2	934 00 492	Hex Nut 3/4"	2
3	900 08 195	Bushing - Beam Center	2
4	936 00 156	Washer Flat Narrow 3/4"	4
5	900 01 002	Adapter Bushing	4
6	900 36 210	Spacer Washer	4

**Axle Thru Bolt Connection — AD-130 Series**

SRK-498: 481 00 362



ITEM	PART NO.	DESCRIPTION	QTY.
1	930 03 705	Hex Bolt 3/4" - 10 x 8"	2
2	934 00 492	Hex Nut 3/4"	2
3	900 08 225	Bushing - Beam Center	2
4	936 00 156	Washer Flat Narrow 3/4"	4
5	900 01 349	Adapter Bushing	4

# REPLACEMENT INSTRUCTIONS

## Shock Absorbers

1. It is recommended the vehicle be unloaded. Block vehicle to prevent rolling. Vehicle must be at approximate ride height to assure that tension is relieved on shocks.
2. Remove upper and lower mounting bolts and shock absorber.
3. Replace with correct shock absorber, and reinstall bolts.
4. Torque nuts. See page 4 for torque specifications.

## Bushings – Equalizing Beam – Replacement

The rubber bushings in the equalizing beam may be replaced using a hydraulic press with a capacity of 10,000 lbs. or greater. There is a 30,000 lb. minimum for the metal sleeved AD-126 and the AD-130 axle beam hanger bushing.

To replace the bushings in an equalizing beam, first remove the beam from the vehicle. The following procedure is recommended:

1. It is recommended the vehicle be unloaded. Block the vehicle to prevent rolling. Raise vehicle frame 2" above ride height and support with adequate jack stands. The height control valve(s) may be used to raise vehicle.

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

2. Exhaust air by:
  - A. Using the height control valve – disconnect link at lower connection, then rotate control arm to exhaust (approx. 45° down) position. Drain all air from air reservoir, or
  - B. Disconnecting air supply line from air spring.
3. Disconnect shock absorbers, and air springs at lower connections.
4. Disconnect transverse beam, axle connection and pivot connection.

### NOTE the position of the following:

- Pivot: Note spacer placement (see step 7 on page 5).
- Axle: Note the pinion angle.
- Transverse beam: Note spacer position and orientation.

5. Support the beam. Press out old bushings with a hydraulic press.

**⚠ CAUTION** The Beam support fixture must be securely mounted to the hydraulic press, otherwise the beam may abruptly shift and personal injury could occur.

6. Clean out bushing receptacles in beam of all foreign material before pressing new bushings into the beam.

**NOTE: DO NOT** use an open flame or other heat source to remove the bushings.

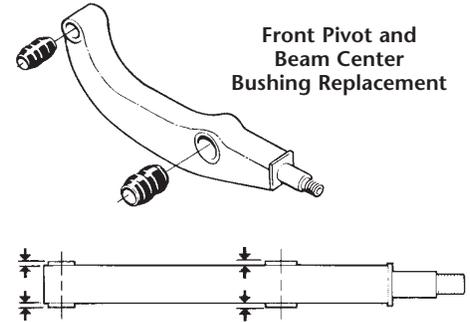
7. Inspect all parts for wear, cracks or field welds – repair or replace.

**⚠ WARNING** Do not repair a cracked equalizing beam – replace it. Secondary welding may create a stress concentration leading to a potential for premature component failure and loss of vehicle control.

8. Lubricate the new replacement bushing with an approved rubber lubricant or a soap and water solution.

**NOTE: DO NOT** use an oil-based lubrication or brake fluid, as it can cause damage to the rubber. With the beam supported, press the new bushing into the beam. (Refer to Step #9.)

9. **NOTE:** Bushings are to be centered in the equalizing beam and bar pin bushings should match prior orientation for pinion angles.



10. Reassemble new or rebushed equalizing beam to frame bracket. Install spacer washers same as prior configuration.
11. Reassemble axle connection and the transverse beam.
12. Reconnect air springs, shock absorbers, height control valve link.
13. Re-install, if necessary, wheels, camshafts and tires. Remove jacks and stands, and build air reservoir pressure in excess of 70 P.S.I.G.. Check for proper ride height, page 10.

**⚠ CAUTION** 100 P.S.I.G. is the maximum allowable operating air system pressure. If the air system pressure exceeds 100 P.S.I.G., there is a potential for air spring failure.

## Bushings – Transverse Beam – Replacement

1. **NOTE:** Refer to and perform procedure 1 and 2 of *Bushings – Equalizing Beam – Replacement* (this page) before proceeding.
2. Disconnect air springs at the lower connections.
3. Remove transverse beam.

### NOTE the position of the following:

- Transverse beam: Note spacer position and orientation.

4. Support the beam. Press out the old bushings with a hydraulic press capable of 10,000 lb. force.

**NOTE:** The transverse beam bushing may feature a split core to enhance removal.

**⚠ CAUTION** The beam support fixture must be securely mounted to the hydraulic press, otherwise the beam may abruptly shift and personal injury could occur.

**NOTE: DO NOT** use an open flame or other heat source to remove the bushings.

## REPLACEMENT INSTRUCTIONS *continued*

### Bushings – Transverse Beam – Replacement *cont.*

5. Clean out bushing receptacles in beam of all foreign material before pressing new bushings into the beam.

Inspect all parts for wear, cracks or failed welds – replace.

**⚠ WARNING** DO NOT repair a cracked transverse beam – replace it.

Secondary welding may create a stress concentration, leading to a potential for component failure and loss of vehicle control.

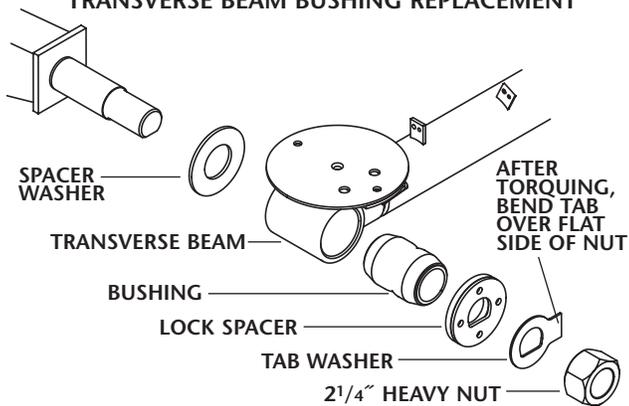
6. Lubricate the new replacement bushing with an approved rubber lubricant or soap and water solution.

**NOTE:** DO NOT use an oil-based lubrication or brake fluid, as it can cause damage to the rubber.

With the beam supported, press the new bushing into the beam until it is centered in the bushing receptacle.

7. Reassemble the rebushed transverse beam on the equalizing beam. Install spacer washers same as prior configuration.

#### TRANSVERSE BEAM BUSHING REPLACEMENT



8. After the nut is torqued (see the Torque Chart on page 4), bend the tab of the washer over a flat side of the T-beam nut.
9. Reconnect air springs.
10. Re-install, if necessary, wheels, camshafts and tires. Remove the jack stands and build air reservoir pressure in excess of 70 P.S.I.G. Check for proper ride height.

### Suspension Air Springs

**IMPORTANT:** Air springs must be replaced with the proper air spring for your application. Check the flexible member and piston for the part number. If the part number is unidentifiable, reference the OEM vehicle build specifications.

**NOTE:** Refer to the Holland Newway Air Spring Replacement parts catalog (XL-AM104-01) for further identification methods and part numbers.

1. Prior to removing the air spring, the vehicle must be unloaded. Support the vehicle frame with adequate jack stands at the approximate ride height.

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

2. Exhaust the air from the suspension system. Exhaust air by:
  - A. Use height control valve – disconnect link at lower connection, then rotate control arm to exhaust (Approx. 45° down position). Drain all air from reservoir, or
  - B. Disconnect the air supply line from the air spring.
3. Disconnect and remove old air spring assembly.
4. Install new air spring assembly and properly torque fasteners. See Torque Chart Page 4.

**NOTE:** AD-123 air springs require a nut on the rear stud only.

5. Reconnect air supply line and link connections.
6. Remove jacks or stands.
7. Build suspension air supply system in excess of 70 P.S.I.G. check for leaks.

**CAUTION** 100 P.S.I.G. is the maximum allowable operating air system pressure. If the air system pressure exceeds 100 P.S.I.G., there is a potential for air spring failure.

8. If ride adjustment is necessary, refer to Page 10 for the proper procedure.

## REPLACEMENT INSTRUCTIONS *continued*

### **Frame Brackets**

The original orientation of the frame bracket must be maintained when replacing the frame bracket. Frame brackets for the AD-123/246/369 and the AD-126/252/378 models may be installed by the OEM in reverse orientation (e.g.: a Left Hand [LH] or roadside frame bracket installed on the Right Hand [RH] or curbside vehicle frame rail; or a RH frame bracket installed on the LH vehicle frame rail. Examples below depict a typical and a reverse frame bracket installation. The AD-130/260/390 models utilize a symmetrical frame bracket that can be used for both left- and right-hand orientations.

Original OEM installed frame brackets are drilled to OEM specifications and have a unique 8-digit part number. This part number can be determined by using the OEM Service Network. Identify the vehicle's Vehicle Identification Number (VIN) or obtain kit number from the serial number tag located on the transverse beam under the air spring plate (see page 3).

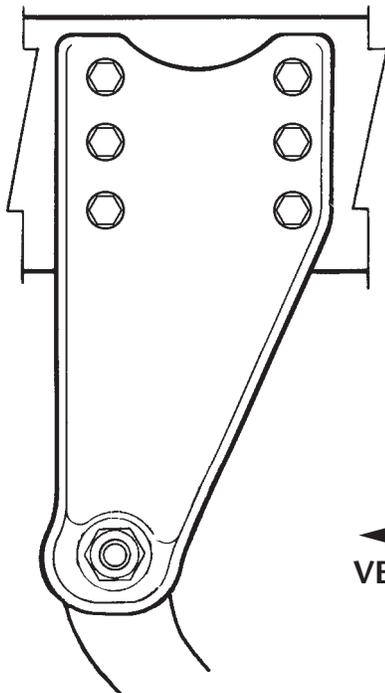
A universal (UNDRILLED) - LH (900 18 578) or RH (900 18 579) frame bracket is available for AD-123/246/369 and AD-126/252/378 models. These universal (undrilled) frame brackets provide the flexibility required to replace a variety of frame brackets. These frame brackets require one Service Repair Kit (SRK-200) and (2) 900 08 120 Alignment Bushings per frame bracket. Universal frame brackets are less pre-drilled mounting holes and will require back drilling at installation. Position the new undrilled frame brackets in the proper mounting location and use the existing frame bolt holes as a drill pattern.

The AD-130/260/390 models utilize a symmetrical, drilled frame bracket and cannot be ordered as undrilled.

The axle alignment feature will allow approximately 1/2" (12.7mm) of axle alignment fore and aft for a 1" (25.4mm) total.

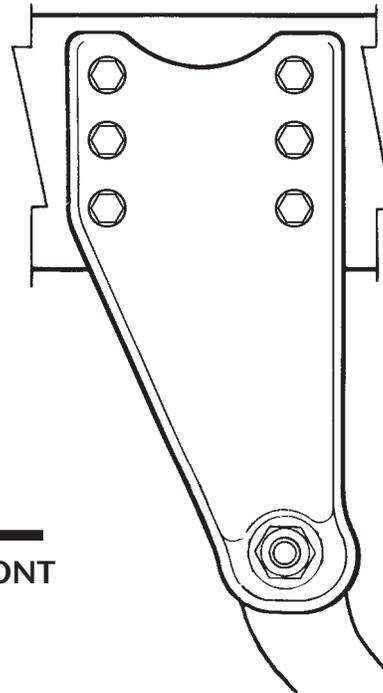
### **Typical Installation**

LH (roadside) frame bracket on  
LH vehicle frame rail



### **Reverse Installation**

RH (curbside) frame bracket on  
LH vehicle frame rail



←  
VEHICLE FRONT

# REPLACEMENT INSTRUCTIONS *continued*

## Frame Bracket *continued*

### FRAME BRACKET INSTALLATION

1. Prior to removing the frame bracket, the vehicle must be unloaded. Support the vehicle frame with adequate jack stands at the approximate ride height.

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

2. Exhaust the air from the suspension system. Exhaust air by:
  - A. Use height control valve – disconnect link at lower connection, then rotate control arm to exhaust (Approx. 45° down position), or
  - B. Disconnect the air supply line from the air spring.
3. Disconnect frame bracket and remove. Make note of the spacer washer placement for proper re-assembly. Refer to step 7 on page 5.
4. Replace pivot bushing if necessary.
5. Clamp new frame brackets in proper position. Back drill mounting holes, use existing frame mounting holes as pattern.

**NOTE:** 5/8" min. mounting bolts required. If holes in frame are worn, drill to next larger size necessary. Fasten frame bracket to frame with Grade 5 min. bolts and torque to specifications. Use a hardened washer under the head of the bolt.

6. Reassemble pivot connection. Position spacer washers as previously noted in Step 2.

### AXLE ALIGNMENT PROCEDURES

**NOTE:** The following steps assumes that the pivot connection is assembled with the proper hardware based on the frame width and frame bracket type specified for the application.

Perform the following procedures for each axle.

1. Determine whether the frame bracket is "fixed" (alignment block centered and welded to the frame bracket by Holland) or "adjustable" (alignment block shipped loose by Holland) (see **FIGURE 2**).

**NOTE:** Typically, suspension kits are shipped to the OEM with one frame bracket "fixed" and one frame bracket "adjustable". Some OEM's however specify both frame brackets as "adjustable".

2. Holland recommends that the chassis be set at the specified Ride Height prior to axle alignment (see **FIGURE 1**).
3. "Fixed" frame bracket – torque pivot connection to the specifications listed in Torque Chart on page 4.
4. "Adjustable" frame brackets – adjust axle alignment by

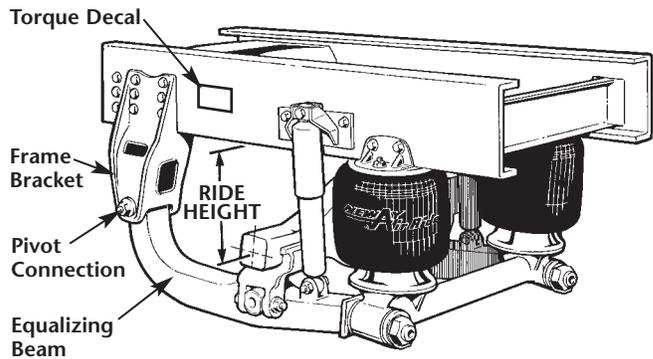
sliding alignment blocks fore/aft (see **FIGURE 2**). Torque to specifications listed in Torque Chart on page 4.

5. Weld alignment blocks on both sides of the adjustable frame bracket (see **FIGURE 2**).

**IMPORTANT:** A minimum 3 minute cool down period is required after welding connection before re-applying torque to pivot bolt nut.

6. Re-torque the cooled down pivot connection on the "Adjustable" frame bracket to the specifications listed in Torque Chart on page 4.

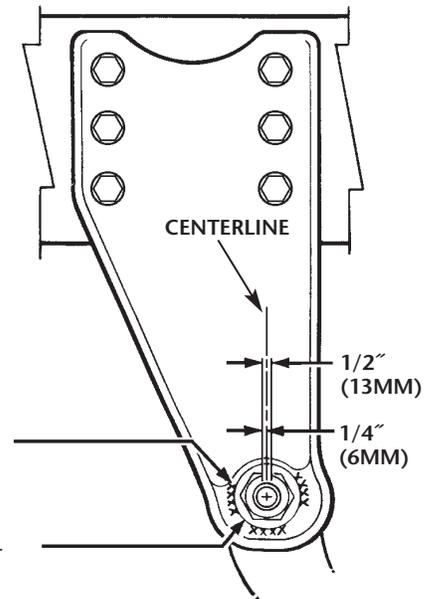
**FIGURE 1**  
Installed AD Series Suspension



**FIGURE 2**  
"Adjustable" Frame Bracket

**WELDS** – weld the alignment block to the frame bracket with three (3) 1" (26mm) welds equally spaced around the circumference of the alignment block. Allow the alignment block to cool for at least 3 minutes and then re-torque connection as specified in the Torque Chart found on page 4.

**ALIGNMENT BLOCK** – 1/2" (13mm) total travel for alignment (1/4" fore and 1/4" aft travel from alignment slot centerline).



**TABLE 1****Recommended Torque Specifications for AD Series Suspension Pivot Connections****GENERAL INFORMATION**

The torque specifications listed throughout the manual are applied to the nut, not the bolt.

Torque specifications:  $\pm$  5% tolerance.

**Lubricated Vs. Non-Lubricated Threads**

The torque specifications stated are for lubricated and non-lubricated fasteners. Holland defines lubricated vs. non-lubricated as follows:

**Lubricated** .....a bolted connection, such as the pivot bolt/nut arrangement, that has some form of friction modifier or lubricant pre-applied or applied to the thread surfaces, providing a lower torque requirement for a predetermined clampload.

**Non-Lubricated** ..a bolted connection, either new or in service, that has little or no lubricant on the thread surfaces. Typically, this applies to bolted connections that have been in service for a certain length of time where the original protective coating has evaporated or deteriorated due to environmental exposure. Thus, a “non-lube” torque specification is commonly required for in-service torque check or retorquing procedures. A “non-lube” specification could be required for new installations if the pivot bolt has seen sufficient shelf life to allow for evaporation and deterioration of the protective coating.

**IMPORTANT:** Use of special lubricants with friction modifiers, such as Anti-Seize or Never-Seize, without written approval from Holland Engineering will void warranty and could lead to premature bolt failure or other component issues.

**IMPORTANT:**

1. **Prior to June of 2002**, all AD Series pivot bolts supplied by Holland were coated with an industry standard corrosion protectant commonly referred to as “phos & oil”. The black colored phos & oil protectant is susceptible to evaporation. Thus, the lubricating properties of the phos & oil coating varies significantly depending on the age of the coating. Holland recommends pivot bolts to be considered “non-lube” even though the phos & oil coating may still be present (see **FIGURE 3** on page 19).
2. **As of June 2002**, Holland will supply all AD Series pivot bolts with a new coating that effectively eliminates the non-lube vs. lubricated issue. This silver colored coating is specifically formulated to provide greatly enhanced corrosion protection and act as a permanent lubricant. No additional lubrication is required (**FIGURE 3**). Thus, the new coating will only require one torque setting (with the possible exception of severe duty applications): 600 ft. lbs. Additionally, the coating will provide a superior, more consistent clampload.
3. **Retorque Procedure** – to re-torque a connection, Holland recommends that the nut be loosened a couple of turns and then torqued to the recommended specification.

**TORQUE SPECIFICATIONS FOR SUSPENSION MODELS****AD-123 / 246 / 369 and AD-126 / 252 / 378  
1 1/8" - 7 Pivot Connection Bolt**

**OEM Installation** – 600 ft. lbs.\* for lubricated threads or 800 ft. lbs.\* for non-lubricated threads.

**Dealer Pre-Delivery Inspection** – 600 ft. lbs.\* for lubricated threads or 800 ft. lbs.\* for non-lubricated threads. Threads may be lubricated or non-lubricated depending on OEM installation procedures. Check with the Truck OEM to confirm lubricated or non-lubricated threads.

**AD-130 / 260 / 390  
1 1/4" - 7 Pivot Connection Bolt**

**OEM Installation** – 700 ft. lbs.\* for lubricated threads or 900 ft. lbs.\* for non-lubricated threads.

**Dealer Pre-Delivery Inspection** – 700 ft. lbs.\* for lubricated threads or 900 ft. lbs.\* for non-lubricated threads. Threads may be lubricated or non-lubricated depending on OEM installation procedures. Check with the Truck OEM to confirm lubricated or non-lubricated threads.

\* Torque specifications:  $\pm$  5% tolerance.

# AD SERIES SUSPENSION TORQUE AND LUBRICATION IDENTIFICATION

FIGURE 3

## Pivot Bolt Torque Lubrication Requirements: Old Style vs. New Style Identification

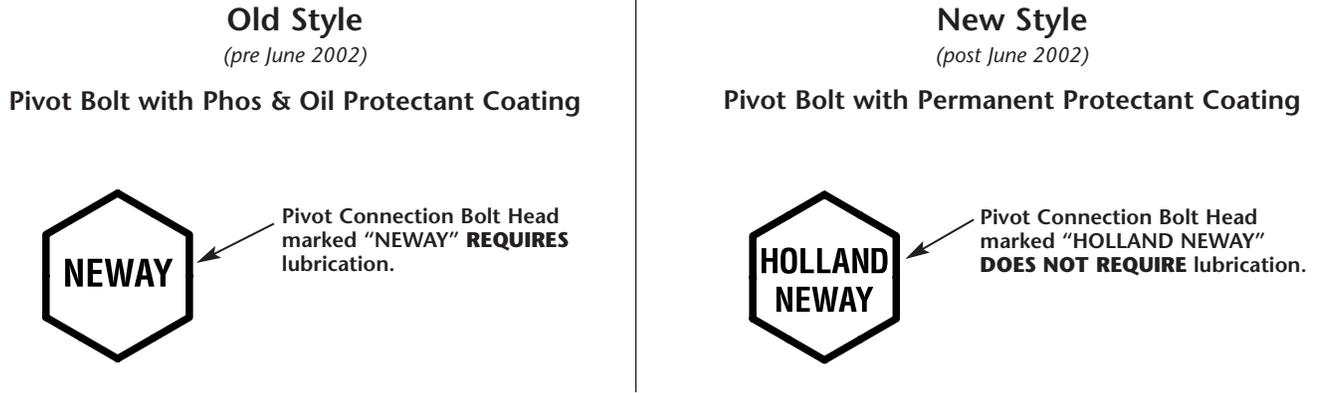


FIGURE 4

## New AD Series Torque Specification Decal (XL-AK399-01)



### AD SERIES SUSPENSION TORQUE SPECIFICATIONS

Fastener Size	Pivot Connection*		Transverse Beam**	Shock Absorber	Air Spring Attachments
	AD-123/126	AD-130			
	1 - 1/8"	1 - 1/4"	2 - 1/4"	3/4"	3/4"
Torque Ft. Lbs. (Nm)	600 (813)	700 (949)	525 (711)	150 (203)	35 (47)

ALL TORQUE SPECIFICATIONS ARE ± 5%. TORQUES ARE WITH CLEAN, LUBRICATED THREADS. ALWAYS APPLY TORQUE TO NUT IF POSSIBLE.

\*\* AFTER APPLYING PROPER TORQUE TO THE TRANSVERSE BEAM NUT, FOLD THE WASHER TAB OVER A FLAT SIDE OF THE NUT.

**\* IMPORTANT: SEE PIVOT BOLT HEAD**



Pivot Bolt Head marked "NEWAY" **REQUIRES** lubrication.



Pivot Bolt Head marked "HOLLAND NEWAY" **DOES NOT REQUIRE** lubrication.

**REQUIRED RE-TORQUING SCHEDULE:**

- ALL FASTENERS AFTER FIRST 100 HOURS OF SERVICE OR 5,000 MILES.
- 50,000 MILE INTERVALS, ROUTINE P.M., OR BRAKE RELINING.



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# TROUBLESHOOTING

Problem	Possible Cause and Remedy
All air springs flat (no air).	<p><b>Insufficient air pressure in the vehicle air system.</b> Check the air pressure gauge on instrument panel. If air pressure is low, run the engine until a minimum pressure of 70 P.S.I.G. is indicated on the gauge.</p> <p><b>Air leakage from the suspension air system or the air brake system.</b> Test for air leakage due to loose fittings or damaged air lines, air springs, brake actuators or control valve. Tighten loose fittings to stop leakage and/or replace worn or damaged parts.</p>
Air springs deflate rapidly when vehicle is parked.	<p><b>Air leakage from the suspension air system.</b> Test for air leakage due to loose fittings between air tank and air suspension or damaged air lines, air springs or height control valve. Apply a soapy solution to connections and air springs if necessary to check for bubbles (leaks). Tighten loose fittings to stop leakage and/or replace worn or damaged parts with new ones.</p>
Ride height too high or too low.	<p><b>Height control valve out of adjustment.</b> Re-adjust the height control valve.</p>
Air springs ruptured.	<p><b>Tires, rims, chains or other objects are rubbing the air spring.</b> Check the clearance between the air spring and the tire. If the tire, rim, chains or other objects contact the inflated air spring when the vehicle is loaded, change to narrower tires and rims to provide clearance for tires with chains (contact your vehicle manufacturer for recommendations).</p>
Air spring failed.	<p><b>Continual or repeated over-extension of the air spring.</b> Visually inspect for broken or loose shock absorber or shock absorber mounting bracket. Reconnect loose parts and replace any defective parts. Check the adjustment of the height control valves.</p> <p><b>Air spring(s) worn out.</b> Replace.</p>
Air spring(s) fail to fully deflate when all weight is removed from the suspension.	<p><b>Restricted air lines(s) between the height control valve and the air spring(s).</b> Disconnect the height control valve linkage and rotate the actuating lever to the 45° down position. If the air spring(s) remain inflated, check for pinched or blocked line(s).</p>
Front pivot connection worn and loose.	<p><b>Check pivot connection for worn bushings or looseness</b> by inserting a 2' pry bar between the frame bracket and nose of the equalizing beam. Visually check for movement while moving the bar back and forth. If .25" or more movement is detected, disassemble the connection and visually inspect the rubber bushing. Replace the bushing if wear is detected. If the bushing appears to be okay, reassemble the connection and—with the suspension set at the proper ride height—torque the connection to proper specification.</p> <p><b>Worn out due to length of service.</b> Replace pivot connection.</p> <p><b>Axle alignment block not welded properly.</b> Replace worn parts, realign, torque and weld to specifications.</p>
Shock absorber failures.	<p><b>Elongated eyes/over-extension.</b> Mis-located shock brackets. Improper length shocks installed.</p>
Excessive tire wear.	<p><b>Axles mis-aligned.</b> Re-align axles per vehicle manufacturer's recommendations. Suspension has alignment blocks located on the frame bracket pivot connections for axle alignment. Alignment blocks are welded in position, weld must be removed prior to re-alignment. Reweld after alignment.</p> <p><b>Worn pivot or axle bushings.</b> Rebush with proper bushing, refer to replacement instructions.</p>

*continued*

## TROUBLESHOOTING *continued*

Problem	Possible Cause and Remedy
<b>Vehicle unstable or handles poorly.</b>	<p><b>Loose frame bolts or attachments.</b> Tighten frame bolts and attaching parts to proper specifications.</p> <p><b>Cracked or loose frame crossmembers.</b> Repair or replace damaged frame members and torque all nuts and bolts to proper torque specifications.</p> <p><b>Check the ride height.</b> Readjust if necessary.</p> <p><b>Loose transverse beam connection.</b> Replace worn bushings, retorque to specifications. Refer to replacement instructions.</p> <p><b>Wrong bushings.</b></p> <p><b>Loose or worn pivot connection.</b> Check pivot connection for worn bushings or looseness by inserting a 2' pry bar between the frame bracket and nose of the equalizing beam. Visually check for movement while moving the bar back and forth. If .25" or more movement is detected, disassemble the connection and visually inspect the rubber bushing. Replace the bushing if wear is detected. If the bushing appears to be okay, reassemble the connection and—with the suspension set at the proper ride height—torque the connection to proper specification.</p>

*Contact your vehicle OEM for recommendations if these possible causes and effects do not solve the vehicle handling problem.*



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