

Please read these instructions completely before proceeding with installation

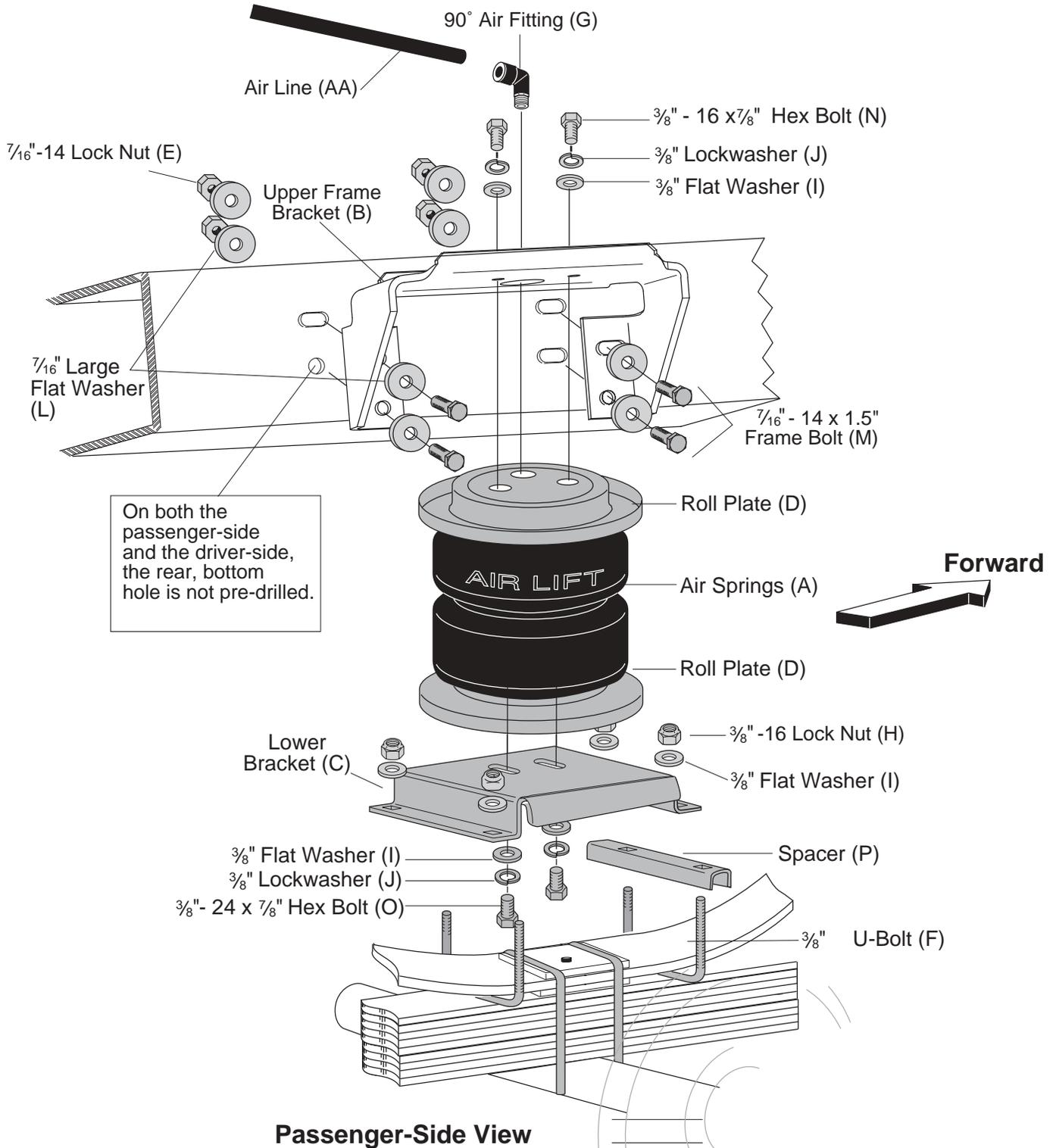


Figure 1

## Hardware

<u>Item</u>	<u>P/N</u>	<u>Description</u>	<u>Quantity</u>	<u>Item</u>	<u>P/N</u>	<u>Description</u>	<u>Quantity</u>
A	58115	2B7 Bellows	2	N	17187	3/8" - 16 x 7/8" HHCS GD2	4
B	07460	Upper Bracket	2	O	17203	3/8" - 24 x 7/8" HHCS GD2	4
C	03260	Lower Bracket	2	P	01426	3" Lower Clamp Bar	2
D	11897	Roll Plate 2B7	4				
E	18467	7/16" - 14 Nylock Nut	8	–Air Line Assembly Parts–			
F	10594	3/8" - 16 x 2" U-Bolt	4	AA	20086	Hose SubAssembly	1
G	21830	1/4" x 1/4" 90° Swivel Elbow	2	BB	10466	8" Zip Tie (Black)*	6
H	18435	3/8" - 16 Nylon Insert Nut	8	CC	21230	Poly Cap*	2
I	18444	3/8" Flat Washer	16	DD	18405	5/16" x 5/8" x .032 Flat Washer*	2
J	18427	3/8" Lock Washer	8	EE	21234	Rubber Washer*	2
L	18466	7/16" USS Flat Washer	16	FF	18411	5/16" Extended Tooth Lockwasher*	2
M	17255	7/16" - 14 x 1.5" HWHCS GD8	8	GG	21233	Hex Nut*	4

(\* not shown in Figure 1)

### Tools Needed

<p>7/16", 9/16" open-end or box wrenches          Crescent Wrench          Ratchet with 3/8", 9/16" and 1/2" deep well sockets          7/16" and 5/16" drill bits (very sharp)          3/8" Nut Driver          Heavy Duty Drill          Torque Wrench</p>	<p>Hose Cutter, Razor Blade, or Sharp Knife          Hoist or Floor Jacks          Safety Stands          Safety Glasses          Air Compressor, or Compressed Air Source          Spray Bottle with Dish Soap/Water Solution</p>
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**IMPORTANT:** The air springs will last much longer if they are not the suspension limiter in either compression or extension. The air spring compresses to 3.3" and extends to 9.1". Regardless of the load, the air pressure should always be adjusted so that the Normal Ride Height is maintained at all times. The shock absorber is usually the limiter on extension. If this is not the case, the use of limiting straps should be considered, in particular for vehicles that are used off-road.

**IMPORTANT:** Your vehicle may be equipped with a rear brake proportioning valve. Any type of load assist product could affect brake performance. We recommend that you check with your dealer before installing this type of product. If your vehicle DOES NOT have a rear brake proportioning valve or is equipped with an anti-lock type brake system, installation of a load assist product will have NO EFFECT ON BRAKE SYSTEM PERFORMANCE.

**DANGER:** Compressed air can cause injury and damage to the vehicle and parts if it is not handled properly. For your safety, do not try to inflate the air springs until they have been properly secured to the vehicle.

## I. Getting Started

1. Determine the Normal Ride Height. The Normal Ride Height is the distance between the bottom edge of the wheel-well and the center of the hub with the vehicle in the "as delivered" condition. In some cases, Normal Ride Height is not perfectly level.
  - a. Remove unusual loads and examine your vehicle from the side to ensure it is on a level surface.
  - b. If necessary (in cases where your leaf springs are sagging badly), use a jack to raise the rear end so that the vehicle achieves the original "as delivered" ride height.
2. Measure the distance between the center of the hub and the bottom edge of the wheel well (see Figure \_\_\_\_). This is the Normal Ride Height. Enter the measurement below:

NORMAL  
RIDE HEIGHT: \_\_\_\_\_ inches
3. Measure the distance between the frame and the tire. This kit requires a minimum of 8" of clearance for a fully inflated air spring (Figure 3).

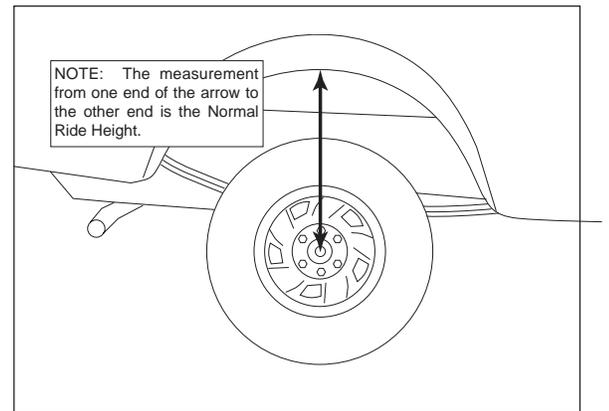


Figure 2

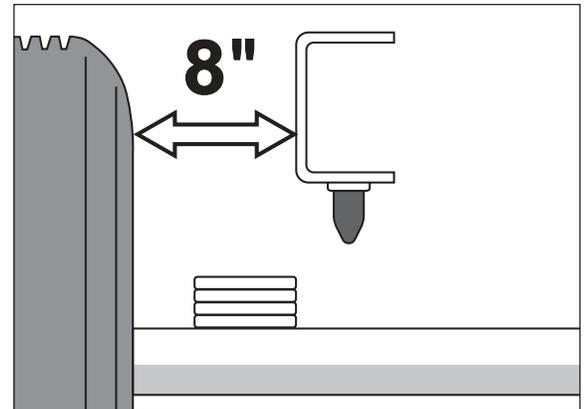


Figure 3

## II. Raising the Vehicle

1. Raise the vehicle and remove the wheels.
2. Check the distance between the center of the hub and the bottom edge of the wheel to ensure that it is at the normal ride height recorded earlier. If not, raise the frame or lower the axle as necessary to restore the original distance.
  - a. If the vehicle is raised with an axle contact hoist, place axle stands under the frame and lower the axle as needed.
  - b. If the vehicle is raised with a frame contact hoist, place axle stands under the axle and lower the frame as needed.
  - c. If the vehicle is raised with a jack and supported with axle stands on the frame, use a floor jack to lower the axle.

## III. Assembling the Air Spring Unit

1. Set a roll plate (D) on both ends of the air spring (A). The radiused (rounded) edge of the roll plate will be towards the air spring so that the air spring is seated in both roll plates (Figure 1).
2. Install a 90° swivel air fitting (G) finger tight plus 1½" turns (Figure 1). Use a 9/16" open end wrench, being careful to tighten on the metal hex nut only. *Do not overtighten.* This fitting is precoated with sealant.
3. Place the upper bracket (B) onto the top of the bellows and roll plate with the legs facing down. Guide the swivel fitting through the large hole in the center (Figure 1).
4. Place the lower bracket (C) on the air spring so that the flat edge of the lower bracket mounts toward the legs of the upper bracket (inboard). See Figure 1.
5. Attach the upper bracket to the assembly using 3/8" flat washers (I), lock washers (J), and hex head bolts (N). Remember that the legs face down (Figure 1). Tighten securely.
6. Loosely attach the lower bracket to the bellows using 3/8" flat washers (I), lock washers (J), and hex head bolts (O) (Figure 1).

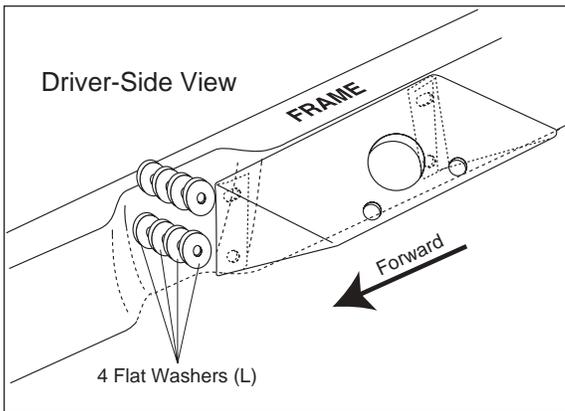


Figure 4

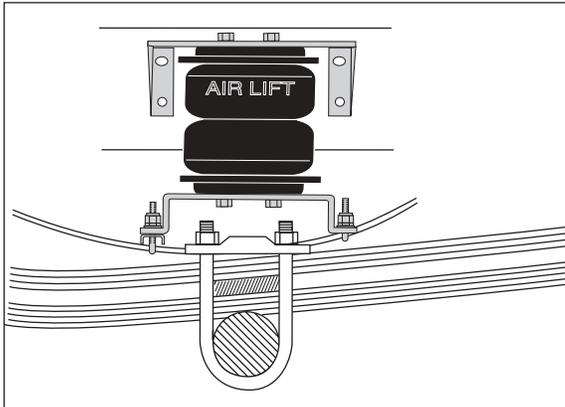


Figure 5

## IV. Positioning the Brackets

1. Set the air spring assembly on the leaf spring over the axle (Figure 1).

*NOTE: This kit can only be mounted with the upper bracket in a legs down position and with the upper bracket reinforcement lip up.*

## V. Attaching the Lower Bracket

1. Place the short U-bolts (F) under the frame contact overload springs with the threads facing up (Figure 1).
2. Place the spacer (P), legs down, on the front leg of the lower bracket between the frame contact overload and the lower bracket (Figure 1).
3. Attach the lower bracket to the frame contact overload using  $\frac{3}{8}$ " flat washers (I) and  $\frac{3}{8}$ " lock nuts (H) (Figure 1).
4. Tighten securely.

## VI. Installing the Upper Bracket

*NOTE FOR DRIVER-SIDE ONLY: It will be necessary to remove the bolt holding the emergency brake cable bracket.*

*CAUTION: Before drilling, check the back-side of the frame for clearance issues with the brake lines, gas lines, and electrical lines. Any obstacles will need to be temporarily relocated to clear the area.*

1. Align the assembly with the three slots in the frame. There must be sufficient clearance between the air spring, the frame, the tire, and the brake drum when the air spring is at the maximum inflated diameter of 8.0"
2. Using the bottom, rear hole of the upper bracket as a template, center punch and drill one  $\frac{7}{16}$ " hole through the frame (Figure 1).
3. Drill out the remaining three slots to  $\frac{7}{16}$ " on both the driver-side and passenger-side.
4. Attach the upper bracket using  $\frac{7}{16}$ " frame bolts (M),  $\frac{7}{16}$ " large flatwashers (L), and  $\frac{7}{16}$ " lock nuts (E).

*NOTE FOR DRIVER-SIDE ONLY: There is an indent in the frame for the shock bracket. When installing the upper bracket, it will be necessary to add four  $\frac{7}{16}$ " flat washers (L) on the top and bottom bolts between the frame and the bracket to properly mount the upper bracket. Fastening hardware is the same as listed in the previous step with the addition of the flat washers (L) (Figure 4).*

5. Tighten the installed nuts to 44 ft-lbs.

## VII. Checking the Air Spring Alignment

1. With the air spring still loose in the lower brackets, align the air spring, inboard and outboard, using the slotted holes in the bracket so that it is uniformly positioned between the brackets (Figure 6).
2. Maintain at least a thumbs width of clearance between the air spring and the frame (uninflated).

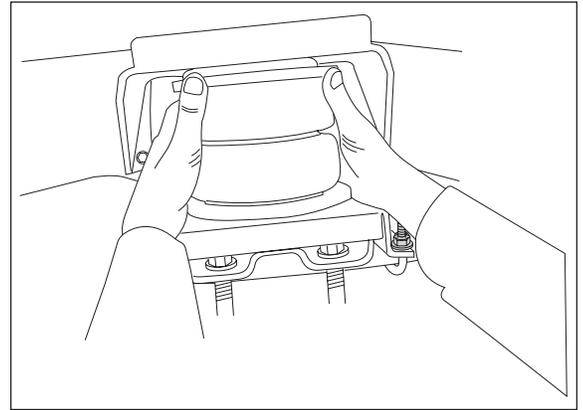


Figure 6

## VIII. Securing the Air Spring to the Brackets

*NOTE: Push the roll plate out-board before tightening the lower bracket.*

1. Secure the air spring to the lower brackets using an open ended  $\frac{9}{16}$ " wrench by tightening the two bolts on the bottom of the spring assembly.
2. When both sides are installed, check all hardware to ensure that all is secure.

## IX. Installing the Air Lines

1. Choose a convenient location for mounting the inflation valves. Popular locations for the inflation valve are:
  - a. The wheel well flanges.
  - b. The license plate recess in bumper.
  - c. Under the gas cap access door.
  - d. Through license plate itself.

*NOTE: Whatever the chosen location is, make sure there is enough clearance around the inflation valves for an air chuck.*

2. Drill a  $\frac{5}{16}$ " hole to install the inflation valves.
3. Cut the air line assembly (AA) in two equal lengths.

*CAUTION: When cutting or trimming the air line, use a hose cutter (Air Lift P/N 10530), a razor blade or a sharp knife. A clean, square cut will ensure against leaks. Do not use wire cutters or scissors to cut the air line. These tools may flatten or crimp the air line causing it to leak around the O-ring seal inside the elbow fitting.*

4. Place a  $\frac{5}{16}$ " nut (GG) and a star washer (FF) on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole and have room for the rubber washer (EE), flat washer (DD), and  $\frac{5}{16}$ " nut (GG) and cap (CC). There should be enough valve exposed after installation - approximately  $\frac{1}{2}$ " - to easily apply a pressure gauge or an air chuck (Figure 7).
5. Push the inflation valve through the hole and use the rubber washer (EE), flat washer (DD), and another  $\frac{5}{16}$ " nut (GG) to secure it in place. Tighten the nuts to secure the assembly in place (Figure 7).
6. Route the air line along the frame to the air fitting on the air spring. Keep at least 6" of clearance between the air line and heat sources, such as the exhaust pipes, muffler, or catalytic converter. Avoid sharp bends and edges. Use the plastic tie straps (BB) to secure the air line to fixed, non-moving points along the chassis. Be sure that the tie straps are tight, but do not pinch the air line. Leave at least 2" of slack to allow for any movement that might pull on the air line.
7. Cut off air line leaving approximately 12" of extra air line. A clean square cut will ensure against leaks. Insert the air line into the air fitting. This is a push-to-connect fitting. Simply push the air line into the 90° swivel fitting until it bottoms out ( $\frac{9}{16}$ " of air line should be in the fitting).

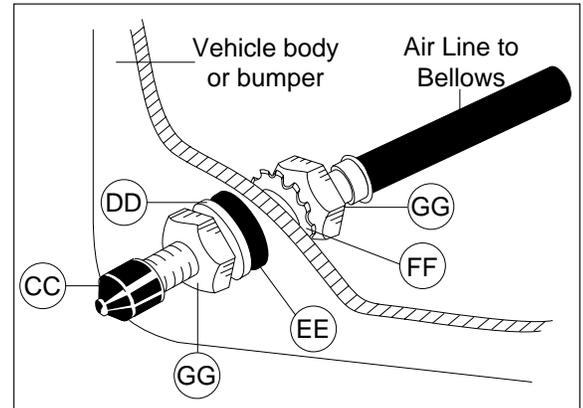


Figure 7

## X. Checking for Leaks

1. Inflate the air spring to 30 p.s.i.
2. Spray all connections and the inflation valves with a solution of  $\frac{1}{5}$  liquid dish soap and  $\frac{4}{5}$  water to check for leaks. You should be able to spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the Normal Ride Height, but not less than 10 p.s.i.
4. **IMPORTANT:** Check the air pressure again after 24 hours. A 2 to 4 p.s.i. loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

## XI. Fixing Leaks

1. If there is a problem with the swivel fitting:
  - a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" off the end of the air line. Be sure the cut is clean and square. Reinsert the air line into the push-to-connect fitting.
  - b. Check the threaded connection by tightening the swivel fitting another  $\frac{1}{2}$  turn. If it still leaks, deflate the air spring, remove the fitting, and re-coat the threads with thread sealant. Reinstall by hand tightening as much as possible, then use a wrench for an additional two turns.
2. If there is a problem with the inflation valve:
  - a. Check the valve core by tightening it with a valve core tool.
  - b. Check the air line connection by removing the air line from the barbed type fitting. **CAUTION: Do not cut it off as this will usually nick the barb and render the fitting useless.** Cut the air line off a few inches in front of the fitting and use a pair of pliers or vice-grips to pull/twist the air line off the fitting.
3. If the preceding steps have not resolved the problem, call Air Lift Technical Service at 1-800-248-0892 for assistance.

## XII. Troubleshooting Guide

*Problems maintaining air pressure, without on-board compressor.*

1. Leak test the air line connections and threaded connection of the elbow into the air spring. See Section XI to repair.
2. Leak test the inflation valve for leaks at the air line connection or dirt or debris in the valve core. See Section XI to repair.
3. Inspect air lines to be sure it is not pinched. Tie straps may be too tight. Loosen or replace strap. Replace leaking components.
4. Inspect air line for holes and cracks. Replace as needed.
5. A kink or fold in the air line. Reroute as needed.

*You have now tested for all of the most probable leak conditions that can be easily fixed. At this point, the problem is most likely a failed air spring - either a factory defect or an operating problem. Please call Air Lift at 1-800-248-0892 for assistance or a replacement air spring.*

### XIII. Checklist

You can protect your warranty on this product and prevent unnecessary wear by ensuring the following checks have been made:

#### Section I – Installation (To be completed by the installer):

- 1. Clearance Test: Inflate the air springs to 60 p.s.i. and ensure there is at least 1/2" clearance around each sleeve from anything that might rub against them. Be sure to check the tire, brake drum, frame, shock absorbers and brake cables.
- 2. Leak Test Before Road Test: Inflate the air springs to 60 p.s.i., check all connections for leaks with a soapy water solution. See pages 8 and 9 of the manual for tips on how to spot leaks. All leaks must be eliminated before the vehicle is road tested.
- 3. Heat Test – Be sure there is sufficient clearance from heat sources - at least 6" for air springs and air lines. If a heat shield was included in the kit - install it. If there is no heat shield, but one is required, call 1-800-248-0892.
- 4. Fastener Test – Recheck all bolts for proper torque.

Torque Guide:

<sup>3</sup> / <sub>8</sub> " Frame Bolts	44 ft-lbs
U-bolt Lock Nuts	16 ft-lbs

- 5. Road Test – The vehicle should be road tested after the preceding tests. Inflate the springs to 25 p.s.i. (50 p.s.i. if vehicle is loaded). Drive the vehicle 10 miles and recheck for clearance, loose fasteners and/or air leaks.
- 6. Operating Instructions – If professionally installed, the installer should review the operating instructions on page 13 with the owner. Be sure to provide the owner with all of the paperwork that came with the kit.

#### Section II - Post Installation Checklist (To be completed by the owner):

- 1. Overnight Leakdown Test – Recheck air pressure after vehicle has been used for 24 hours. If pressure has dropped more than 5 p.s.i. then, you have a leak that must be fixed. Either fix the leak yourself (see pages 8 - 10) or return to the installer for service.
- 2. Air Pressure Requirements – I understand that the air pressure requirements of my air spring system are as follows:

Minimum \_\_\_\_\_ Maximum \_\_\_\_\_

I also understand that I must inflate the air springs until the Ride Height measurement that was recorded on page 2 has been restored. Regardless of load, the air pressure should always be adjusted so that the Ride Height is maintained at all times.

- 3. Thirty Day or 500 Mile Test. I understand that I must recheck the air spring system after 30 days or 500 miles, whichever comes first. If any part shows signs of rubbing or abrasion, the source should be identified and moved, if possible. If it is not possible to relocate the cause of the abrasion, the air spring may need to be remounted. If professionally installed, the installer should be consulted. Check all fasteners for tightness.

## XIV. Maintenance and Operations

Minimum Air Pressure	Maximum Air Pressure
5 p.s.i.	100 p.s.i.
<i>Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, over-extension, or rubbing against another component will void the warranty.</i>	

By following these steps, vehicle owners will obtain the longest life and best results from their air springs.

1. Check the air pressure weekly.
2. Always maintain Normal Ride Height. Never inflate beyond 100 p.s.i.
3. If you develop an air leak in the system, use a soapy water solution to check all air line connections and the inflation valve core before deflating and removing the air spring.
4. **IMPORTANT:** For your safety and to prevent possible damage to your vehicle, *do not exceed maximum Gross Vehicle Weight Rating (GVWR), as indicated by the vehicle manufacturer.* Although your air springs are rated at a maximum inflation pressure of 100 p.s.i. The air pressure actually needed is dependant on your load and GVWR, which may be less than 100 p.s.i. Check your vehicle owners manual and do not exceed the maximum load listed for your vehicle.
5. Loaded vehicles require at least 25 p.s.i. or more. A "loaded vehicle" refers to a vehicle with a heavy bed load, a trailer, or both. As discussed above, never exceed the GVWR, regardless of air spring, air pressure, or other load assist. The springs in this kit will support approximately 40 pounds of load (combined for both springs) for each 1 p.s.i. of air pressure. The following chart can be used as a guideline for operating air pressure:

<u>Load</u>	<u>Air Pressure</u>
1000 lbs	25-35 p.s.i.
2000 lbs	45-55 p.s.i.
3000 lbs	70-80 p.s.i.
4000 lbs	90-100 p.s.i.

Again, the above chart is a general guideline only. Use enough pressure to level the vehicle to the Normal Ride Height recorded on page 2 of this manual. The required air pressure will vary depending on the state of the original suspension. Operating the vehicle below the minimum air spring pressure will void the Air Lift Warranty.

6. When increasing the load, always adjust the air pressure to maintain the Normal Ride Height. Increase or decrease the pressure from the system as necessary to attain Normal Ride Height for optimal ride and handling. Remember that loads carried behind the axle (including tongue loads) require more leveling force (pressure) than those carried directly over the axle.
7. Always add air to the springs in small quantities, checking the pressure frequently. Air springs require less air volume than a tire and inflate quickly.
8. *Should it become necessary to raise the vehicle by the frame, make sure the system is at minimum pressure (5 p.s.i.) to reduce the tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.*
9. Periodically check all of the air spring system fasteners for tightness. Also, check the air springs for any signs of rubbing. Realign if necessary.
10. On occasion, give the air springs a hard spray with a garden hose in order to remove mud, sand, gravel, or other abrasive debris.



***Thank you for purchasing Air Lift Products***

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