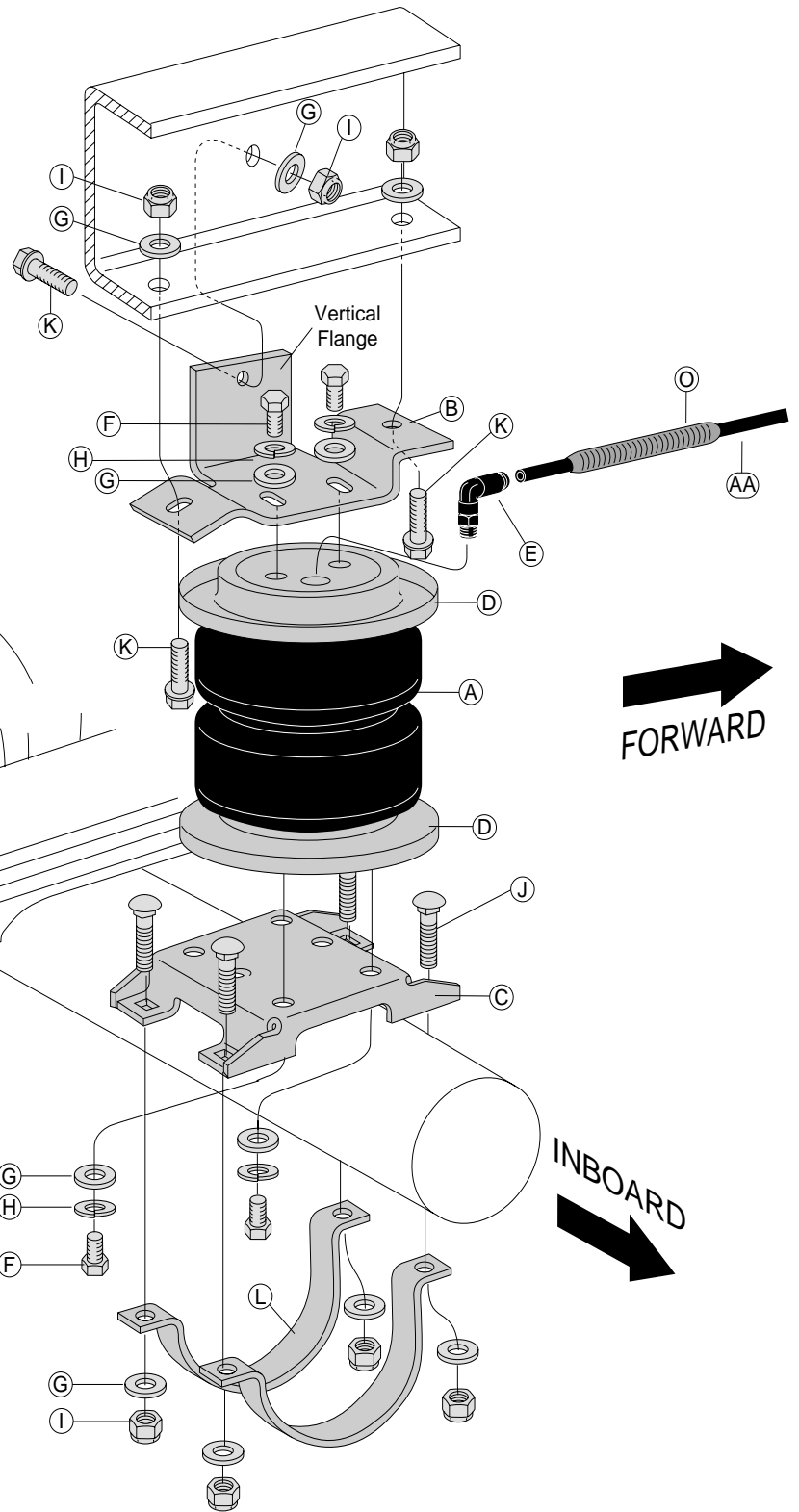


Please read these instructions completely before proceeding with installation.

AIR SPRING KIT PARTS LIST

Item	Description	Quantity
A	Air Springs	2
B1	Upper Bracket (Right)	1
B2	Upper Bracket (Left)	1
C	Lower Bracket	2
D	Roll Plate	4
E	Elbow Fitting	2
F	3/8"-24 x 7/8" Bolt	8
G	3/8" Flat Washer	22
H	3/8" Lock Washer	8
I	3/8" Nylock Nut	14
J	3/8"-16 x 2.5" Carriage Bolt	8
K	3/8"-16 x 1.5" Frame Bolt	6
L	Axle Strap	4
M	Heat Shield	1
N	Clamp	2
O	Thermal Sleeve	1
AA	Air Line Assembly	16'
BB	Tie Strap	6
CC	Valve Caps	2
DD	5/16" Flat Washer	2
EE	Rubber Washer	2
FF	Small Star Washer	2
GG	5/16" Hex Nut	4



**NOTE:** In order to install this kit, it may be necessary to move or modify the exhaust.

Figure 1

## TOOLS NEEDED

$\frac{5}{16}$ " ,  $\frac{7}{16}$ " ,  $\frac{9}{16}$ " open-end or box wrenches

Crescent Wrench

Ratchet with  $\frac{9}{16}$ " , metrics, and  $\frac{1}{2}$ " deep well sockets

$\frac{3}{8}$ " and  $\frac{5}{16}$ " drill bits (very sharp)

Heavy Duty Drill

Torque Wrench

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

**IMPORTANT:** Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, overextension, or rubbing against another component will void the warranty. Do not inflate the bellows when unrestricted. Bellows must be contained by suspension or other adequate structure.

**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.

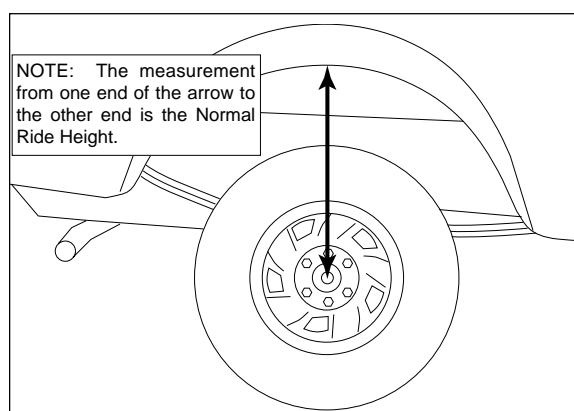


Figure 2

## 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.

- Remove unusual loads and examine your vehicle from the side to ensure it is on a level surface.
- 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 2). This is the Normal Ride Height. Enter the measurement below:

NORMAL  
RIDE HEIGHT: \_\_\_\_\_ inches

## II. ASSEMBLING THE AIR SPRING UNIT

1. Install 90 degree air swivel fitting (E) to the top of the bellow. This fitting is precoated with sealant. Using an open-end wrench, tighten 1 and  $\frac{1}{2}$  turns (Figure 3).

**IMPORTANT:** Tighten on the metal hex nut only. Do not over tighten.

2. Install backer plates (D) to the top and bottom of the air springs (A).

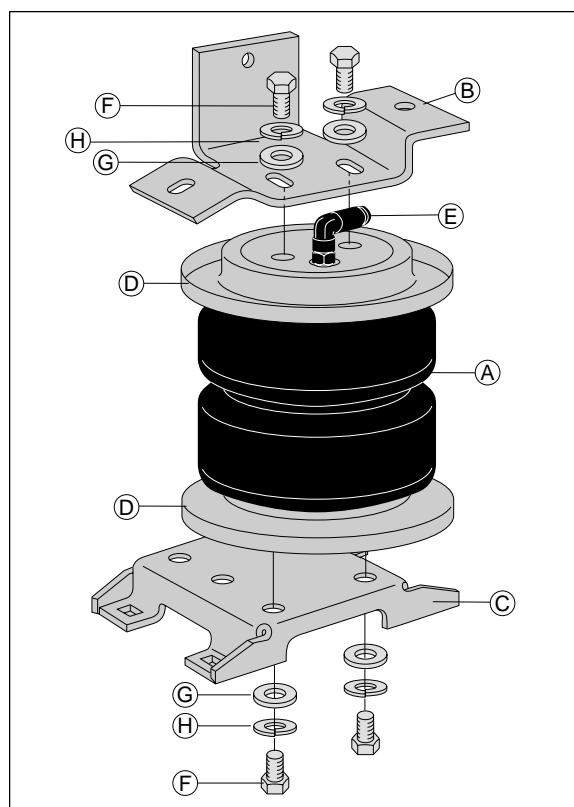


Figure 3

3. Set upper bracket (B1 or B2) on top of the air spring assembly backer plate with the vertical flange opposite of the air fitting. Attach with two bolts (F) and two lock washers (H), and two flat washers (G). Refer to Figure 3.
4. Use the lower bracket template provided on page 9 to determine the proper mounting location for the bellow. Use the holes marked "C" for mounting. Attach lower bracket (C) and backer plate to the bottom of the bellow using two bolts (F), two lock washers (H), and two flat washers (G). Attach so that the bracket offsets to the outside of the axle (Figure 3).
5. Tighten both the upper and lower brackets to the bellow to 20 ft-lbs. *NOTE: The upper bracket is slotted for final adjustment after installation is complete.*

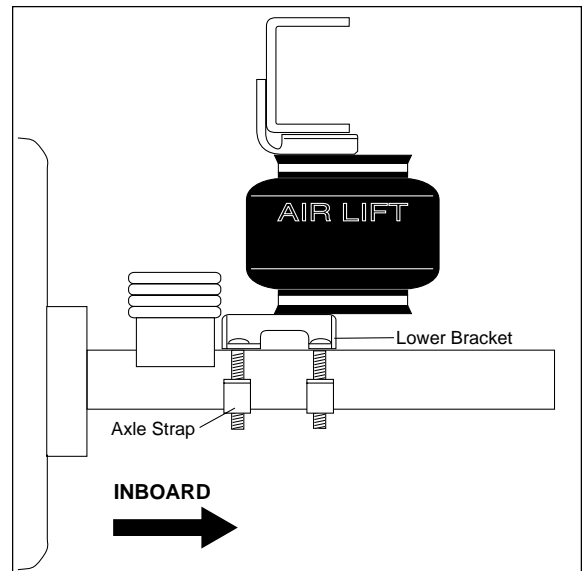


Figure 4

### III. LOWERING THE SUSPENSION

1. Jack up the rear of the vehicle or raise on a hoist. Be sure that the vehicle is secure before proceeding with the installation. Remove the rear wheels
2. Remove the jounce bumper and jounce bumper bracket. The air springs will mount in place of the jounce bumper assembly.
3. Lower the suspension for additional 2 – 3 inches so that there is sufficient clearance to install the air spring unit. Do this by lowering the axle or raising the frame.
  - a. If the vehicle is raised with an axle contact hoist, then place axle stands under the frame and lower the axle as needed.
  - b. If the vehicle is raised with a frame contact hoist, then place axle stands under the axle and lower the frame as needed.
  - c. If the vehicle is raise with a jack and supported with axle stands on the frame, then use a floor jack to lower the axle.

### IV. INSTALLING THE AIR SPRING

1. Set the assembly on the axle housing and align it so that the air springs follow the natural arc of the suspension travel (Figures 1 and 4).
 

*NOTE: There is a left and right hand unit (the upper brackets are designated left for driver side and right for passenger side as indicated by the "L" and "R" on the bracket.*
2. Loosely attach the lower bracket to the axle housing using four carriage bolts (J), two axle straps (L), four flat washers (G), and four nylock nuts (I). Refer to Figures 1 and 4.
3. Raise the axle or lower the frame until the axle is at the normal (no load) position, as it was for the normal ride height measurement.

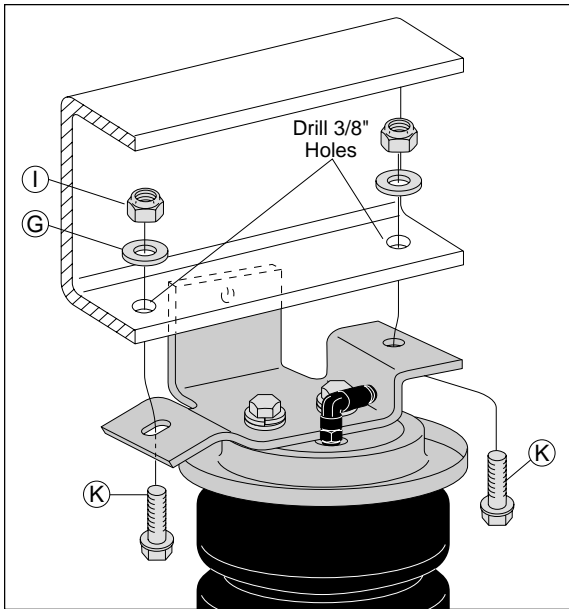


Figure 5

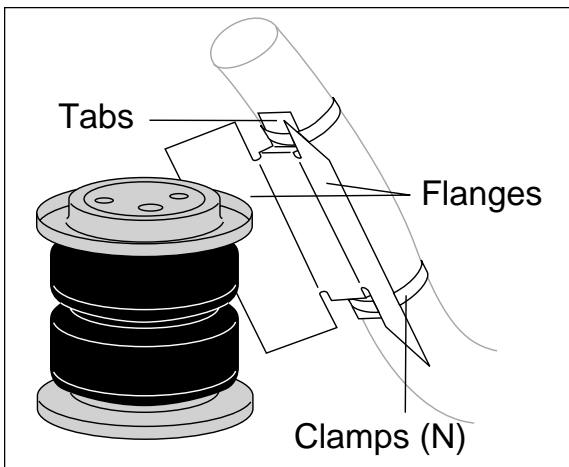


Figure 6

4. CAUTION: Do not drill holes into the frame until all obstacles are cleared out of the way or shielded, including hydraulic, fuel, and/or electrical lines.
5. Being sure that the air spring assembly is still aligned, use the holes on each end of the upper bracket as a template to mark and drill two  $\frac{3}{8}$ " diameter holes for mounting (Figure 5). *NOTE: Be sure that the flange is flat against the side of the frame.*
6. Install a frame bolt (K), flat washer (G), and nylock nut (I) to each of the previously drilled holes (Figures 1 and 7). Tighten to 16 ft-lbs.
7. Using the upper bracket as a template, mark and drill  $\frac{3}{8}$ " diameter hole on the outboard side of the frame rail.
8. Install a frame bolt (K), flat washer (G), and nylock nut (I) to the previously drilled hole (Figure 1). Tighten to 16 ft-lbs.
9. With the unit aligned vertically and horizontally (the upper bracket is slotted for in and out adjustment), tighten the lower assembly to the axle housing. It is important to tighten the forward straps to the lower bracket first, and then the back. Tighten the lock nuts (J) to 16 ft-lbs.
10. Repeat the entire installation procedure on the remaining side.

## V. INSTALLING THE HEAT SHIELD

1. Bend tabs to provide a  $\frac{1}{2}$ " dead air space between exhaust pipe and heat shield (Figure 6).
2. Attach the heat shield (M) to the exhaust pipe using the provided clamps (N). Bend the heat shield for maximum clearance to the air spring (Figure 6).

## VI. INSTALLING THE AIR LINES

1. Choose a convenient location for mounting the inflation valves (Figure 7). Popular locations for the inflation valve are: wheel well flanges, license plate recess in bumper., under the gas cap access door, through license plate itself.

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

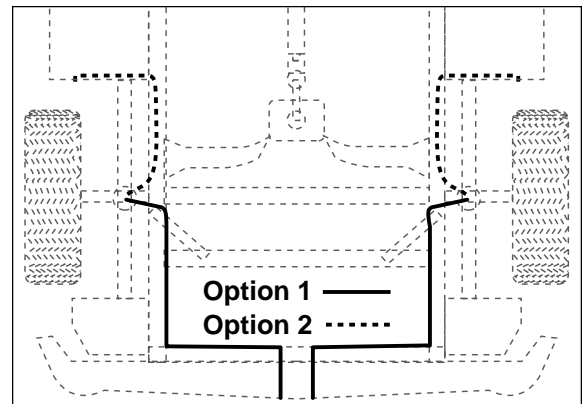


Figure 7

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, 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.*

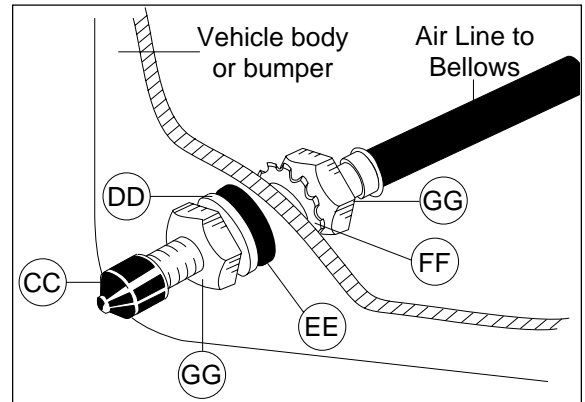


Figure 8

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 to 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 8).
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 8).
6. Route the air line along the frame to the air fitting on the air spring (Figure 7). 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. On the exhaust side only, place the provided thermal sleeve (O) on the air line near the exhaust.
8. 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).

## VII. CHECKING FOR LEAKS

1. Inflate the air spring to 60 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.

## VIII. FIXING LEAKS

1. If there is a problem with the swivel fitting, then:
  - 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, then:
  - 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 air line off a few inches in front of the fitting and use a pair of pliers or vise-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.

## IX. 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 VIII 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 VIII for 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.*

## X. 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 30 p.s.i., check all connections for leaks with a soapy water solution. See page 6 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:

3/8 " Frame Bolts	16 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 8 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 page 6) 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 \_\_\_\_\_

Regardless of load, the air pressure should always be adjusted so that the Ride Height (recorded on page 2) 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.

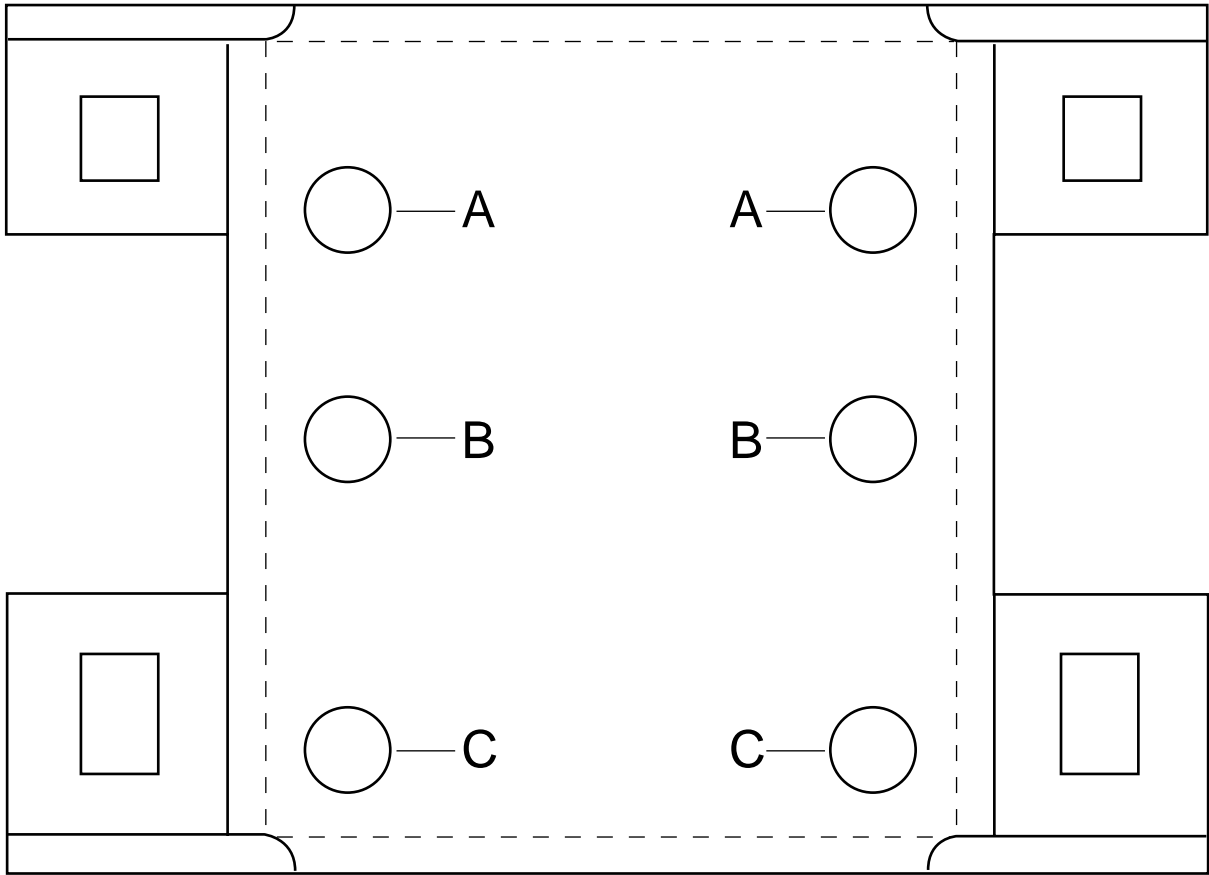
## XI. MAINTENANCE AND OPERATIONS

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 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. When increasing load, always adjust the air pressure to maintain the Normal Ride Height. Increase or decrease 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.
5. **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.
6. Always add air to springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.
7. *Should it become necessary to raise the vehicle by the frame, make sure the system is at minimum pressure (10 p.s.i.) to reduce the tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.*

LOWER BRACKET TEMPLATE





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