

LoadLIFTER5000

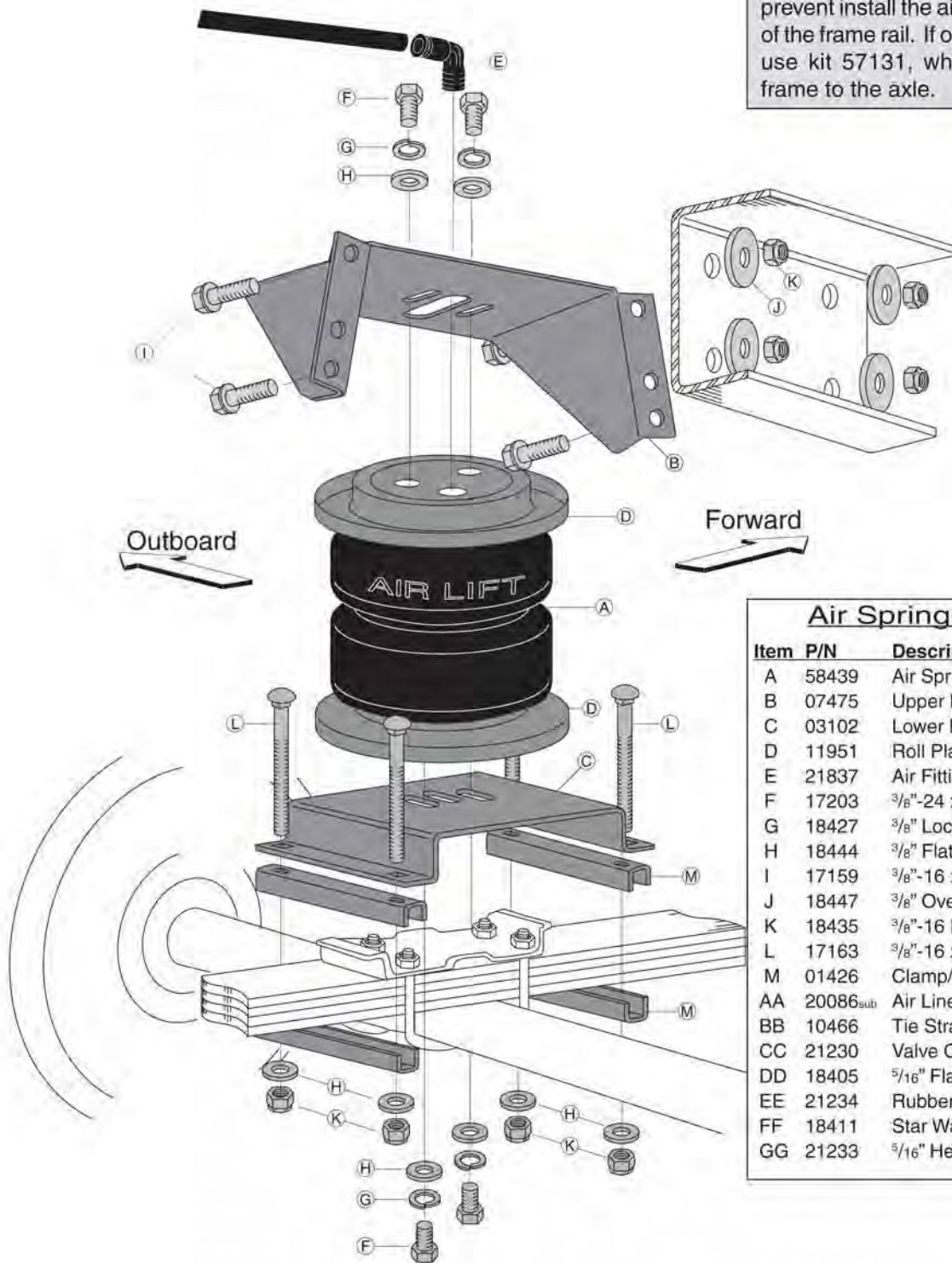
Kit No. 57242



MN-370
(04608)
ECR 5594

Please read these instructions completely before proceeding with installation

IMPORTANT: Check both sides of the frame rail for any interference or obstructions (specifically, propane lines) that may prevent install the air springs on the outside of the frame rail. If obstructions are present, use kit 57131, which mounts under the frame to the axle.



Air Spring Kit Parts List

Item	P/N	Description	Quantity
A	58439	Air Spring	2
B	07475	Upper Bracket	2
C	03102	Lower Bracket	2
D	11951	Roll Plate	4
E	21837	Air Fitting	2
F	17203	3/8"-24 x 7/8" Bolt	8
G	18427	3/8" Lock Washer	8
H	18444	3/8" Flat Washer, SAE	16
I	17159	3/8"-16 x 1.5" Frame Bolt	8
J	18447	3/8" Oversized Flat Washer	8
K	18435	3/8"-16 Nylock Nut	16
L	17163	3/8"-16 x 7" Carriage Bolt	8
M	01426	Clamp/Spacer Bar	8
AA	20086 _{sub}	Air Line Assembly	1
BB	10466	Tie Strap	6
CC	21230	Valve Cap	2
DD	18405	5/16" Flat Washer	2
EE	21234	Rubber Washer	2
FF	18411	Star Washer	2
GG	21233	5/16" Hex Nut	4

Tools Needed

1/2", 9/16" open-end or box wrenches
Crescent Wrench
Ratchet with 9/16" and 1/2" deep well sockets
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: The 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 the 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.

IMPORTANT: Check both sides of the frame rail for any interference or obstructions (specifically, propane lines) that may prevent install the air springs on the outside of the frame rail. If obstructions are present, use kit 57131, which mounts under the frame to the axle.

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.

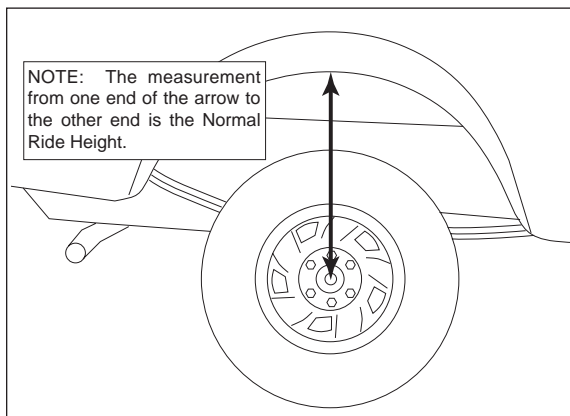


Figure 2

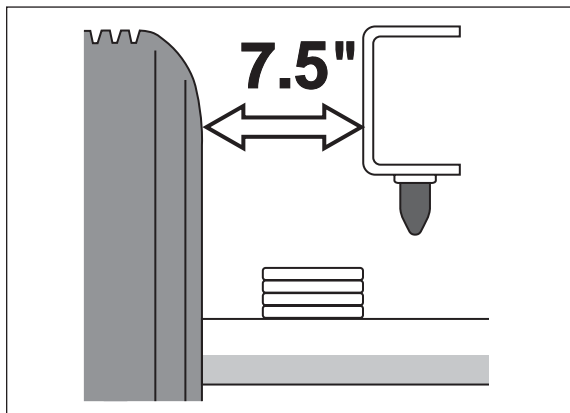


Figure 3

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 the 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
3. Measure the distance between the frame and the tire. This kit requires a minimum of 7.5" of clearance for a fully inflated air spring (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 above. 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, 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 raised with a jack and supported with axle stands on the frame, then use a floor jack to lower the axle.

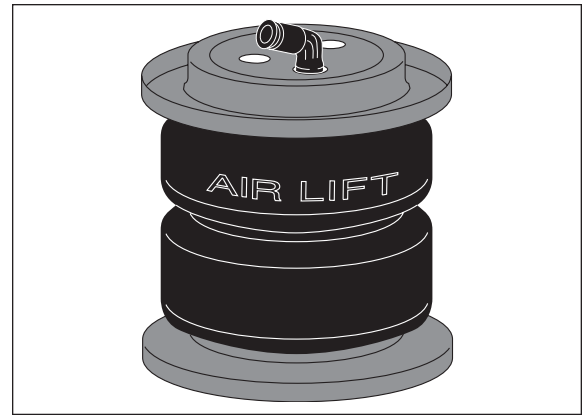


Figure 4

III. Assembling the Air Spring Unit

1. Place a roll plate (D) on the top and bottom of the air spring (A) so that the air spring is seated within the roll plates (Figure 4).
2. Install the air fitting (E) finger tight plus 1 1/2 turns (Figure 4). Use a 7/16" open end wrench, being careful to tighten on the metal hex nut only. *Do not overtighten*. This fitting is precoated with sealant.
3. Attach the upper bracket (B) with the legs down using two flat washers (H), two lock washers (G), and two bolts (F). Refer to Figure 1. Leave loose for adjustment.
4. Place the lower bracket (C) on to the bottom of the air spring and roll plate so that the flat edge of the lower bracket mounts towards the legs of the upper bracket (inboard). Refer to Figure 1.
5. Attach the lower bracket to the air spring assembly using two flat washers (H), two lock washers (G), and two bolts (F). Refer to Figure 1. Leave loose for adjustment.

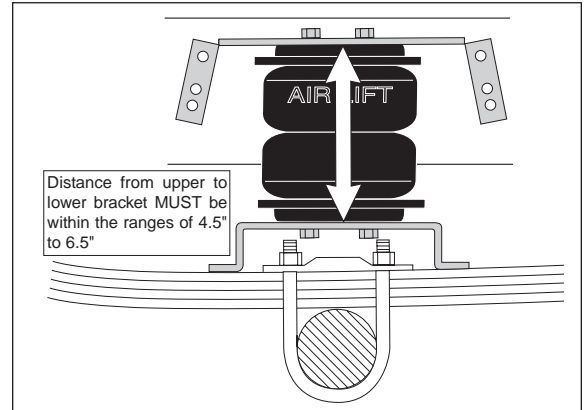


Figure 5

IV. Attaching the Air Spring Assembly

1. Set the assembly on the leaf spring over the axle. The upper and lower brackets must be positioned with 4.5" to 6.5" between the brackets at normal ride height (Figure 5).

NOTE: If the measurement is not within the specified parameters or if the stock u-bolts hit on the lower bracket, use two spacer bars (M) provided under the lower bracket to achieve the distance of 4.5" to 6.5" (Figure 1).
2. Position the upper bracket so that at least four bolt holes (two on each side) are on the flat section of the frame rail. Use the widest spacing possible to achieve the required distance of 4.5" to 6.5" making sure that the holes do not fall on the radiused edges of the frame rail.
3. Attach the lower bracket using two clamp bars (M), four carriage bolts (L), four flat washers (H), and four nylock nuts (K). Refer to Figure 1. Tighten securely.

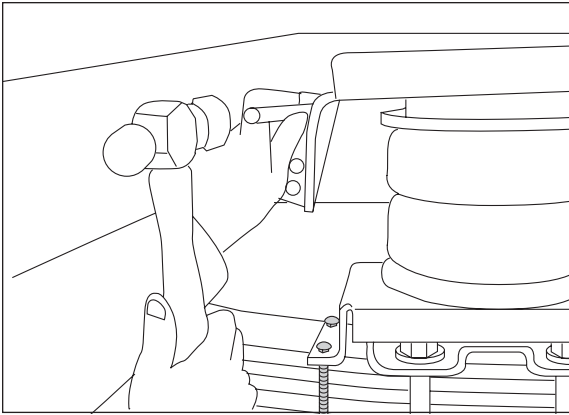


Figure 6

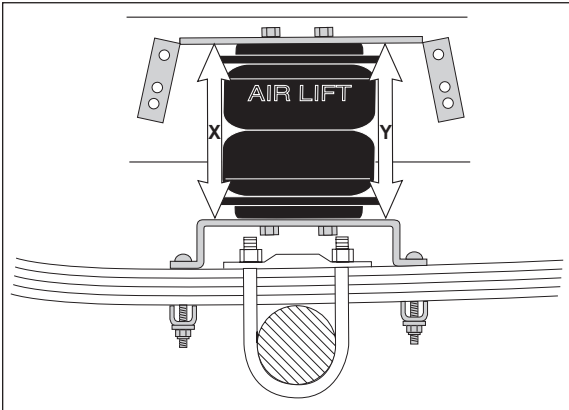


Figure 7

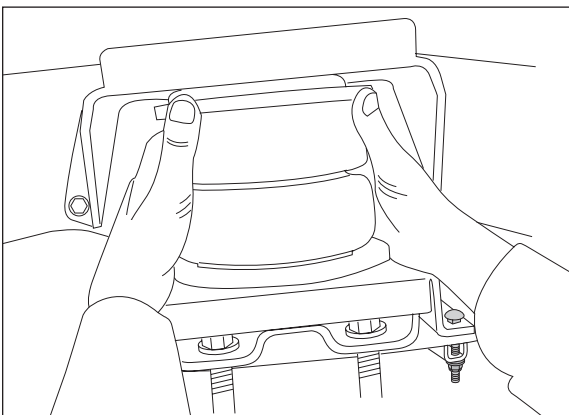


Figure 8

4. Position the upper bracket as high on the frame as possible and so that it is parallel with the lower bracket. If the correct mounting height can not be achieved with the top hole and one of the two lower holes, then position the top holes above the frame and use the two sets of lower holes for mounting. Align the assembly both vertically and horizontally. Be sure that there is sufficient clearance between the air spring, the frame, the tire and brake drum at the maximum inflated diameter (6.5").

NOTE: The kit will be mounted on the same angle as the leaf springs.

5. Clamp the upper bracket to the frame rail with a C-clamp or welding clamp and center punch one mounting hole (Figure 6).

IMPORTANT: Do not drill any holes into the frame without first checking for interference such as hydraulic lines, gas lines, and/or electrical wires. If there are any such interferences, move them aside to proceed with the installation.

6. Check the upper to lower bracket measurement to ensure that it is still between 4.5" to 6.5" on the side of the center punched hole (in Figure 7, measurement X must equal measurements Y, as well as between 4.5" to 6.5").

7. Drill one $\frac{3}{8}$ " hole in the previously marked location and loosely install a frame bolt (I), an oversized flat washer (J), and a nylock nut (K).

8. Measure the upper to lower bracket clearance on the other side of the upper bracket. This measurement should be equal to the measurement of the other side of the upper bracket (in Figure 7, measurements X must equal measurement Y, as well as be between 4.5" to 6.5").

9. Center punch and drill a hole on the other side of the upper bracket and install a frame bolt (I), an oversized flat washer (J), and a nylock nut (K). Refer to Figure 1.

10. Remove the clamps and drill the remaining two holes and install a frame bolt (I), an oversized flat washer (J), and a nylock nut. Tighten all upper bracket hardware to 44 ft-lbs.

V. Checking Air Spring Alignment

1. With the air spring hardware still loose, align the air spring inboard and outboard using the slotted holes for adjustment so that it is uniformly positioned between the brackets (Figure 8). NOTE: Maintain at least a thumb's width of clearance between the air spring and frame when uninflated.
2. When fully aligned, secure the air spring to the upper and lower brackets by tightening the mounting hardware with a $\frac{9}{16}$ " wrench. Tighten securely.

VI. Installing the Air Lines

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

NOTE: What ever 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 9).

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 9).

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 (Figure 10).

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 air fitting until it bottoms out ($\frac{9}{16}$ " of air line should be in the fitting).

8. Install the minimum/maximum air pressure decal in a highly visible location, such as the driver's side window just above the door handle.

9. Return to the beginning of the manual and install the remaining air spring on the other side.

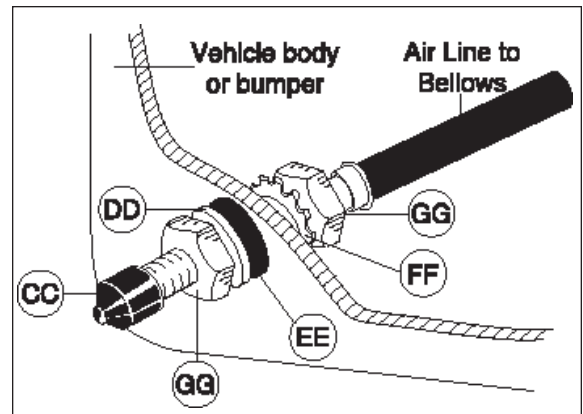


Figure 9

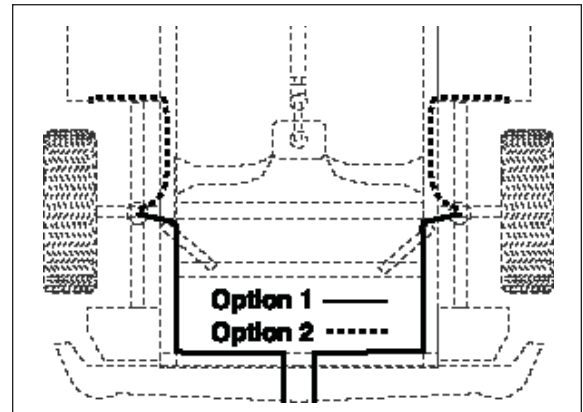


Figure 10

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.

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 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.

XI. Maintenance and Operations

Minimum Air Pressure	Maximum Air Pressure
20 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. (See page 8.)
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 (20 p.s.i.) to reduce the tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.*



Product Use Information

Frequently asked questions

Q. Will installing air springs increase the weight ratings of a vehicle?

No. Adding air springs will not change the weight ratings (GAWR, GCWR and/or GVWR) of a vehicle. Exceeding the GVWR is dangerous and voids the Air Lift warranty.

Q. Is it necessary to keep air in the air springs at all time and how much pressure will they need?

The minimum air pressure should be maintained at all times. The minimum air pressure keeps the air spring in shape, ensuring that it will move throughout its travel without rubbing or wearing on itself.

Q. Is it necessary to add a compressor system to the air springs?

No. Air pressure can be adjusted with any type of compressor as long as it can produce sufficient pressure to service the springs. Even a bicycle tire pump can be used, but it's a lot of work.

Q. How long should air springs last?

If the air springs are properly installed and maintained they can last indefinitely.

Q. Will raising the vehicle on a hoist for service work damage the air springs?

No. The vehicle can be lifted on a hoist for short-term service work such as tire rotation or oil changes. However, if the vehicle will be on the hoist for a prolonged period of time, support the axle with jack stands in order to take the tension off of the air springs.

Tuning the air pressure

Pressure determination comes down to three things — level vehicle, ride comfort, and stability.

1. Level vehicle

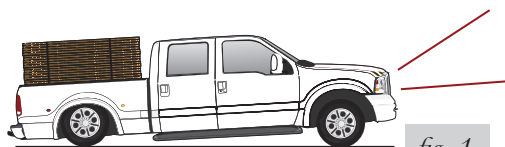
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 1). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

If the vehicle has a rough and harsh ride it may be due to either too much pressure or not enough (fig. 2). Try different pressures to determine the best ride comfort.

3. Stability

Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (fig. 3). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim



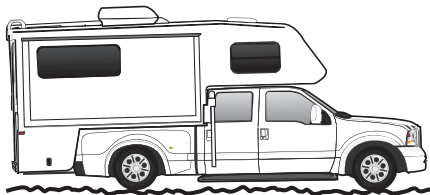
Sway and body roll



Rough ride

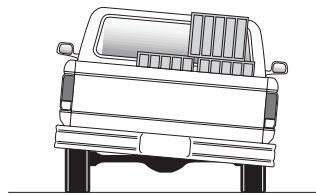
Guidelines for adding air:

1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. For motorhomes, start with 50-100 PSI in the rear because it can be safely assumed that it is heavily loaded.
4. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
5. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 4).
6. Adjust the pressure up and down to find the best ride.
7. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
8. It may be necessary to maintain different pressures on each side of the vehicle. Loads such as water, fuel, and appliances will cause the vehicle to be heavier on one side (fig. 5). As much as a 50 PSI difference is not uncommon.

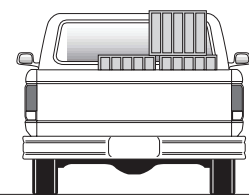


Bottoming out

fig. 4



Unlevel



Level

fig. 5