

Kit Number

88242

INSTALLATION GUIDE

For maximum effectiveness and safety, please read these instructions completely before proceeding with installation.

Failure to read these instructions can result in an incorrect installation.

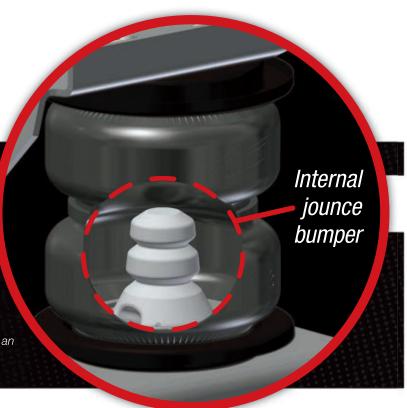


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Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of the LoadLifter 5000 Ultimate air spring kit. LoadLifter 5000 Ultimate utilizes sturdy, reinforced, commercial grade single or double, depending on the kit, convolute bellows. The bellows are manufactured like a tire with layers of rubber and cords that control growth. An internal jounce bumper inside the spring absorbs shock and eliminates harsh jarring on rough roads. The internal jounce bumper replaces the factory bumper and allows the air springs to safely be run at zero air pressure. LoadLifter 5000 Ultimate kits are recommended for most ¾ and 1 ton pickups and SUVs with leaf springs and provide up to 5,000 lbs. of load leveling support with air adjustability from 5-100 PSI. The kits are also used in motorhome rear kits and some motorhome fronts where leaf springs are used.

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair. The information here includes a hardware list, tool list, step-by-step installation information, maintenance tips, safety information and a troubleshooting guide.

IMPORTANT SAFETY NOTICE

The installation of this kit does not alter the Gross Vehicle Weight Rating (GVWR) or payload of the vehicle. Check your vehicle's owner's manual and do not exceed the maximum load listed for your vehicle.

Gross Vehicle Weight Rating: The maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tire, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

Payload: The combined, maximum allowable weight of cargo and passengers that the vehicle is designed to carry. Payload is GVWR minus the Base Curb Weight.

NOTATION EXPLANATION

Hazard notations appear in various locations in this publication. Information which is highlighted by one of these notations must be observed to help minimize risk of personal injury or possible improper installation which may render the vehicle unsafe. Notes are used to help emphasize areas of procedural importance and provide helpful suggestions. The following definitions explain the use of these notations as they appear throughout this guide.

INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE







NOTE

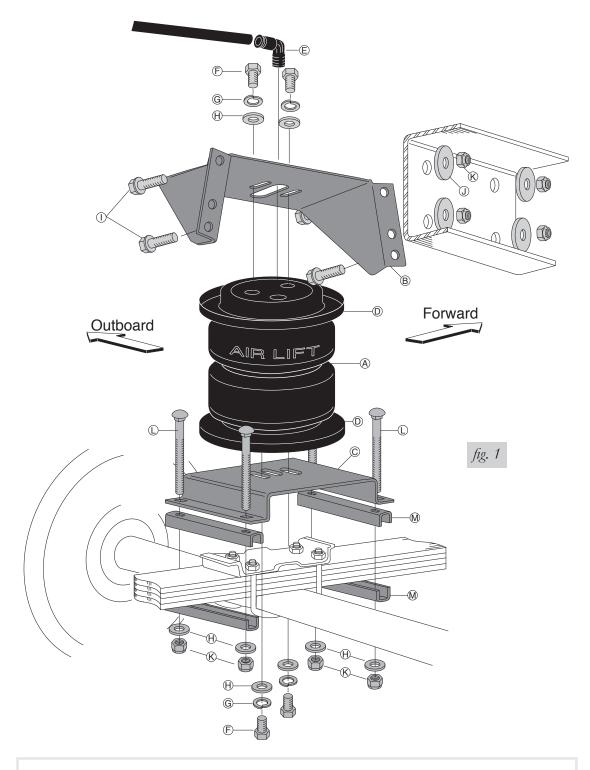
Indicates a procedure, practice or hint which is important to highlight.

TO THE MACHINE OR MINOR PERSONAL INJURY.



Installation Diagram

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.



Hardware and Tools Lists

HARDWARE LIST

Item	Part #	Description Qt	у
Α	58494	Air Spring2	
В	07475	Upper Bracket2	
С	03102	Lower Bracket2	
D	11967	Roll Plate4	
Ε	21837	Air Fitting2	
F	17203	3/8"-24 X 7/8" Bolt8	
G	18427	3/8" Lock Washer8	
Н	18444	3/8" Flat Washer, SAE16	ò
I	17159	3/8"-16 X 1.5" Frame Bolt8	
J	18447	3/8" Oversized Flat Washer8	
K	18435	3/8"-16 Nylock Nut16	ò
L	17163	3/8"-16 X 7" Carriage Bolt8	
M	01426	Clamp/Spacer Bar8	
AA	20086sub	Air Line Assembly1	
BB	10466	Tie Strap6	
CC	21230	Valve Cap2	
DD	18405	5/16" Flat Washer2	
EE	21234	Rubber Washer2	
FF	18411	Star Washer2	
GG	21233	5/16" Hex Nut4	

TOOLS LIST

Description

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



Installing the LoadLifter 5000 Ultimate System

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.



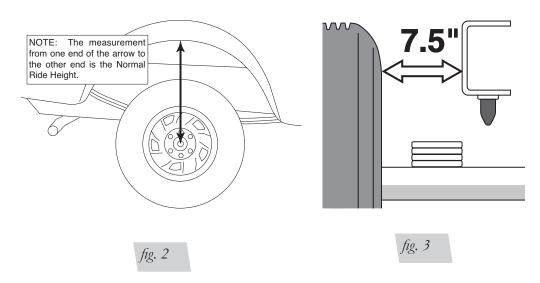
COMPRESSED AIR CAN CAUSE INJURY AND DAMAGE TO THE VEHICLE AND PARTS IF IT IS NOT HANDLED PROPERLY. FOR YOUR SAFETY, DO NOT TRY TO INFLATE THE AIR SPRINGS UNTIL THEY HAVE BEEN PROPERLY SECURED TO THE VEHICLE.

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).





RAISING THE VEHICLE

- Raise the vehicle and remove the wheels.
- 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.

ASSEMBLING THE AIR SPRING UNIT

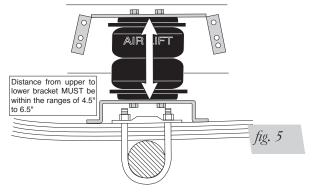
1. Place a roll plate (D) on the top and bottom of the air spring (A) so that the air spring is seated within the roll plates (Figure 4).



- 2. Install the air fitting (E) finger tight plus 1 ½ turns (Figure 4). Use a ⅓/16" 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.

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.

4. 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.

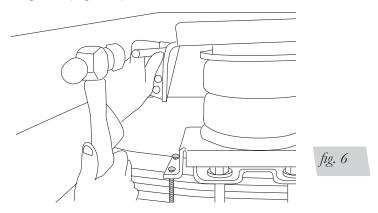
5.

6. 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

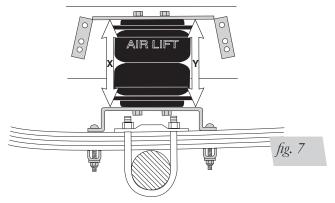
The kit will be mounted on the same angle as the leaf springs.

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.

8. 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").



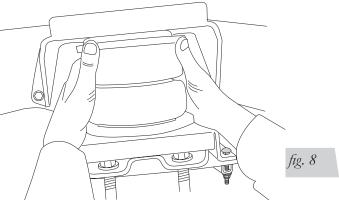
9. Drill one ³/₈" hole in the previously marked location and loosely install a frame bolt (I), an oversized flat washer (J), and a nylock nut (K).



- 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").
- 2. 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.
- 3. 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.

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 9/16" wrench. Tighten securely.

INSTALLING THE AIR LINES

 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 5/16 " hole to install the inflation valves.
- 3. Cut the air line assembly (AA) in two equal lengths.



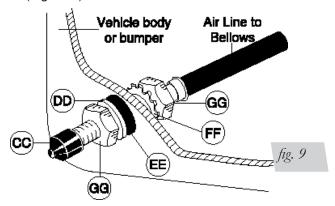
WHEN CUTTING OR TRIMMING THE AIR LINE, USE A HOSE CUTTER (AIR LIFT P/N 10530), A RAZOR BLADE OR A SHARP KNIFE. A CLEAN, SQUARE CUT WILL ENSURE AGAINST LEAKS. DO NOT USE WIRE CUTTERS OR SCISSORS TO CUT THE AIR LINE. THESE TOOLS MAY FLATTEN OR CRIMP THE AIR LINE, CAUSING IT TO LEAK AROUND THE O-RING SEAL INSIDE THE ELBOW FITTING.

4. Place a 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 5/16" nut (GG) and cap (CC). There should be enough

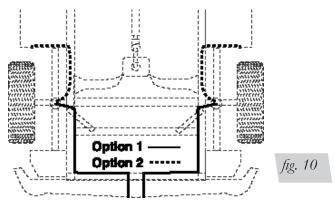


valve exposed after installation - approximately 1/2" - to easily apply a pressure gauge or an air chuck (Figure 9).

5. Push the inflation valve through the hole and use the rubber washer (EE), flat washer (DD), and another 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 (9/16" of air line should be in the fitting).
- 8. Install the minimum/maximum air pressure decal in a highly visable 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.

CHECKING FOR LEAKS

- 1. Inflate the air spring to 60 PSI.
- 2. Spray all connections and the inflation valves with a solution of 1/5 liquid dish soap and 4/5 water. 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 system to normal ride height. Do not deflate to lower than 10 PSI.
- 4. Check the air pressure again after 24 hours. A 2 4 PSI loss after initial installation is



normal. Retest for leaks if the loss is more than 5 lbs.

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 pushto-connect fitting.
 - b. Check the threaded connection by tightening the swivel fitting another ½ 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 and 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 by removing the air line from the barbed type fitting. 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 of the fitting.



DO NOT CUT OFF THE AIR LINE COMPLETELY AS THIS WILL USUALLY NICK THE BARB AND RENDER THE FITTING USELESS.



Before Operating

INSTALLATION CHECKLIST (To be completed by installer)

D	ate
7	echnician's Signature
	Operating instructions — If professionally installed, the installer should review the Product Use, Maintenance and Servicing section on page 12 with the owner. Be sure to provide the owner with all of the paperwork which came with the kit.
	Road test — The vehicle should be road tested after the preceding tests. Inflate the air springs to 25 PSI (50 PSI if the vehicle is loaded). Drive the vehicle 10 miles and recheck for clearance, loose fasteners and air leaks.
	Fastener test — Recheck all bolts for proper torque. Axle clamp bar carriage bolt lock nuts should be torqued to 16 ft/lbs. Re-torque after 100 miles.
	Leak test before road test — Inflate the air springs to 60 PSI, check all connections for leaks with a soapy water solution. See page 9 for tips on how to spot leaks. All leaks must be eliminated before the vehicle is road tested.
_	Clearance test — Inflate the air springs to 60 PSI and ensure there is at least ½" clearance around each bellow, away from anything that might rub against them. Be sure to check the tire, brake drum, frame, shock absorbers and brake cables.

POST-INSTALLATION CHECKLIST

Overnight leak down test — Recheck air pressure after the vehicle has been used for
24 hours. If the pressure has dropped more than 5 PSI, then there is a leak that mus
be fixed. Either fix the leak yourself or return to the installer for service.

- ☐ Air pressure requirements Regardless of load, the air pressure should always be adjusted to maintain ride height at all times.
- ☐ Thirty day or 500 mile test 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.



Product Use, Maintenance and Servicing

Minimum Recommended Pressure

Maximum Air Pressure

20 PSI

100 PSI

MAINTENANCE GUIDELINES

NOTE

By following the steps below, 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 PSI.
- If you develop an air leak in the system, use a soapy water solution (1/5 liquid dish soap and 4/5 water) to check all air line connections and the inflation valve core before deflating and removing the air spring.



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.

- 4. Loaded vehicles require at least 25 PSI or more. A "loaded vehicle" refers to a vehicle with a heavy bed load, a trailer, or both. As discussed above, never exceed GVWR, regardless of air spring, air pressure, or other load assist. The springs in this kit will support approximately 40 lbs. of load (combined on both springs) for each 1 PSI of pressure. 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.
- 5. 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.
- 6. Always add air to springs in small quantities, checking the pressure frequently.
- 7. Should it become necessary to raise the vehicle by the frame, make sure the system is at minimum pressure (5 PSI) to reduce the tension on the suspension/brake components. Use of on board leveling systems do not require deflation or disconnection.
- 8. Periodically check the air spring system fasteners for tightness. Also, check the air springs for any signs of rubbing. Realign if necessary.
- 9. On occasion, give the air springs a hard spray with a garden hose in order to remove mud, sand, gravel or other abrasive debris.

TROUBLESHOOTING GUIDE

- 1. Leak test the air line connections, the threaded connection into the air spring, and all fittings in the control system.
- 2. Inspect the air lines to be sure none are pinched. Tie straps may be too tight. Loosen or replace the strap and replace leaking components.
- 3. Inspect the air line for holes and cracks. Replace as needed.
- 4. Look for a kink or fold in the air line. Reroute as needed.



If the preceding steps do not solve the problem, it is possibly caused by a failed air spring — either a factory defect or an operating problem. Please call Air Lift at (800) 248-0892 for assistance.

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 times and how much pressure will they need?

For LoadLifter 5000 Ultimate, the recommended minimum air pressure is 5 PSI, but it can safely be run at zero air pressure.

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

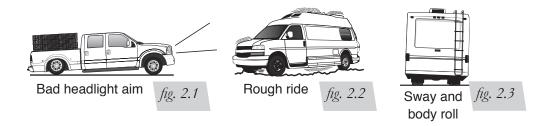
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 2.1). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough (fig. 2.2). Try different pressures to determine the best ride comfort.

3. Stability

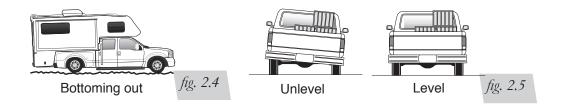
Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (fig. 2.3). Tuning out these problems usually requires an increase in pressure.





GUIDELINES FOR ADDING AIR

- 1. Start with the vehicle level or slightly above.
- 2. When in doubt, always add air.
- 3. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
- 4. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 2.4).
- 5. Adjust the pressure up and down to find the best ride.
- 6. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
- 7. 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. 2.5). As much as a 50 PSI difference is not uncommon.





Choosing the Right On-Board Air Compressor System





Add an on-board air compressor sytem to inflate and deflate your air springs with the touch of a button — from inside or outside of the vehicle.

- For convenient, on-the-go control of your air springs, add an Air Lift on-board air compressor system.
- Air Lift on-board air compressor systems eliminate the search for gas stations that have a working compressor, saving you time, energy and money.
- All systems include a compressor, controller and all parts needed for easy installation.

1. Choose single or dual path inflation (see illustrations at right)

2. Choose wireless or analog control

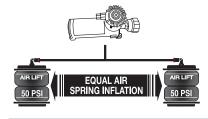
- Wireless: Control your air springs from inside or outside the vehicle. Easiest installation - no wires to the cab.
- **Analog:** In-cab control of your air springs. Economically priced.

3. Choose heavy or standard duty compressor

- · Standard duty: A standard duty compressor will work well for most customers who use their system on an intermittent basis.
- · Heavy duty: For daily use, consider the heavy duty compressor - it inflates faster and more quietly than the standard compressor.



Dual path systems Air springs are controlled separately to allow for different air pressure from side-to-side. Perfect for uneven or top-heavy loads.



Single path systems Two springs will inflate at the same time. Good for loads that are evenly distributed from left-toright or front-to-back.

ANALOG



- Easy installation
- Includes heavy duty compressor



LoadCONTROLLER[™]

Dual

Compact, economically priced control.





DEFLATE INFLATE DEFLATE BOTH.

P/N 72000

WirelessONE™

- Easy installation
- Includes standard duty compressor



LoadCONTROLLER™

Single

Compact, economically priced control.



Н ⋖

Н ⋖

⋖

P/N 25870