

# **Load****LIFTER** 5000™

## **ULTIMATE**

ADJUSTABLE AIR HELPER SPRINGS

TOW AND HAUL WITH SAFETY AND COMFORT™

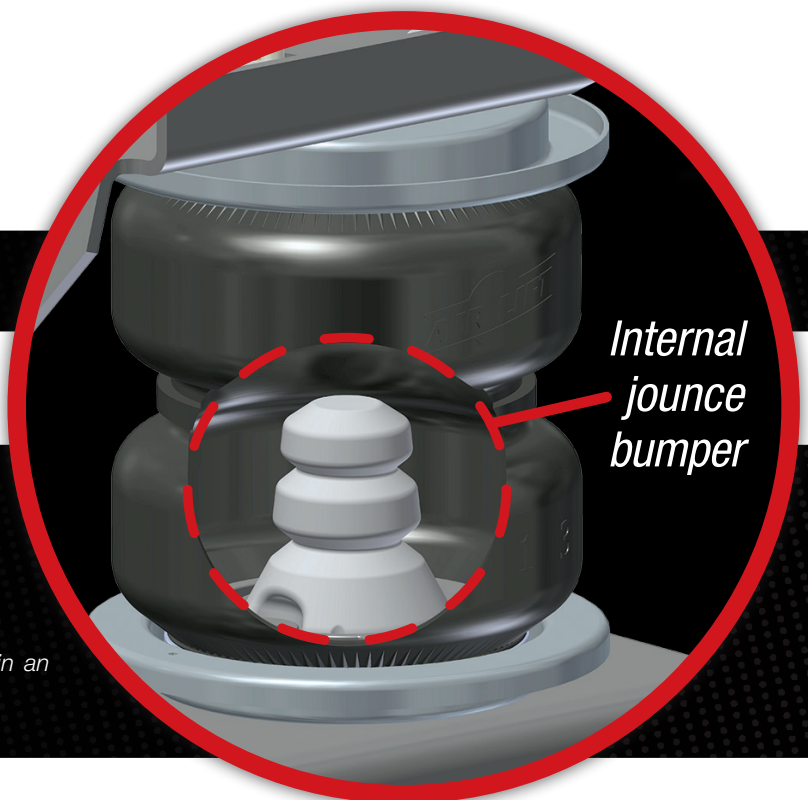


Kit Number  
**88219**

### 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 3/4 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 used in motor home rear applications and various front applications 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 TO THE MACHINE OR MINOR PERSONAL INJURY.



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## NOTE

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

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# Installation Diagram

## HARDWARE LIST

Item	Description	Quantity
A	Air Springs	2
B	Upper Bracket	2
C	Lower Bracket	2
D	Roll Plate	4
E	Elbow Fitting	2
F	3/8"-24 x .875" Bolt	8
G	3/8" Lock Washer	8
H	3/8" Flat Washer	20
I	J-Strap	4
J	3/8"-16 x 3.5" Carriage Bolt	4
K	3/8"-16 x 1.5" Carriage Bolt	8
L	3/8"-16 x 1.5" W. H. Bolt	4
M	3/8" Nylock Nut	12
N	3/8" Whiz Nut	4
O	Thermal Sleeve	2
P	Heat Shield*	2
Q	Heat Shield Clamp*	4
AA	Air Line Assembly*	1
BB	Tie Strap*	6
CC	Valve Caps*	2
DD	5/16" Flat Washer*	2
EE	Rubber Washer*	2
FF	5/16" Star Washer*	2
GG	5/16" Hex Nut*	4

\* not shown

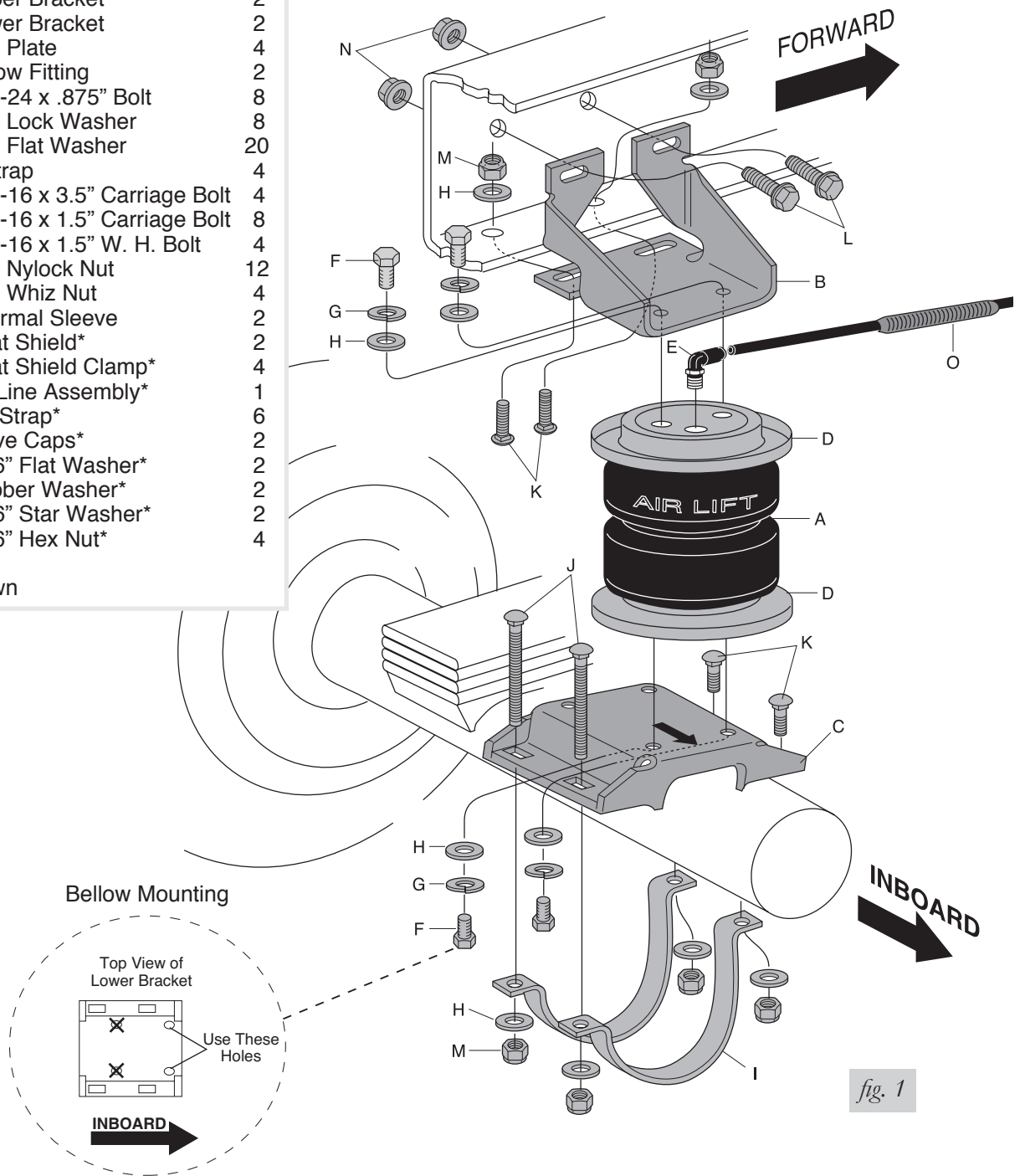
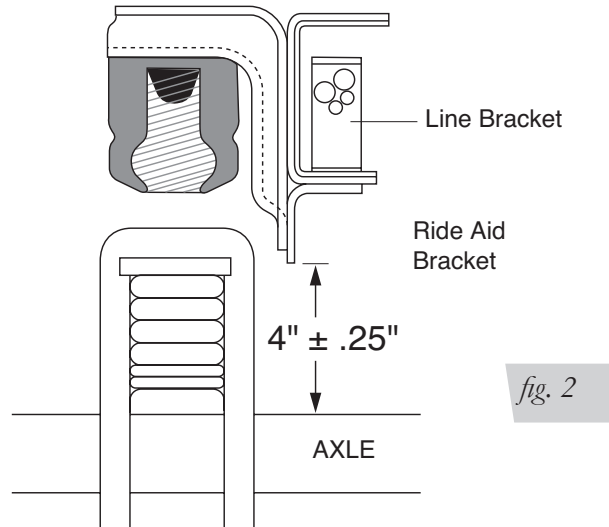


fig. 1

# Installing the LoadLifter 5000 Ultimate System

## ASSEMBLING THE AIR SPRINGS

1. Jack up rear of vehicle or raise on hoist. Place safety jack stands under axle and adjust so that the axle to ride aid bracket distance is  $4" \pm .25"$ . See Figure 2. This distance will place the vehicle at normal ride height.

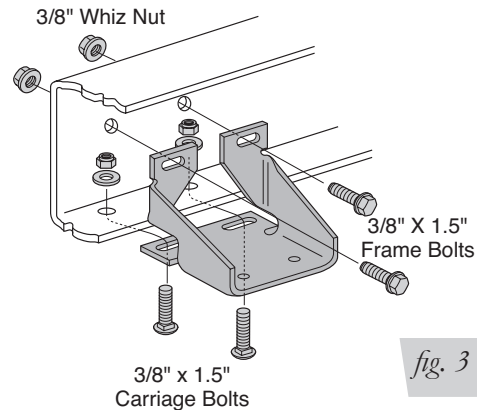


Normal Ride Height is the distance between the bottom edge of the wheel well to the center point of the hub with the vehicle in an “as delivered condition” (without a load, i.e. tool box, camper, etc.). Measurements should be taken before beginning the installation. The distance from the bottom edge of the wheel well to the center point of the hub should be recorded. This kit is designed to be installed and operated at normal ride height.

2. Install the roll plates (D) to the top and bottom of the bellows (A).
3. In the forward holes on the lower bracket, insert two  $3/8" \times 1.5"$  carriage bolts (K). In the rearward holes on the lower bracket, insert two  $3/8" \times 3.5"$  carriage bolts (J). NOTE: Be sure the rounded head of the carriage bolts faces the bellows (Fig. 1).
4. Attach the lower bracket (C) to the bottom of bellows using two  $3/8" \times .875"$  bolts (F), two  $3/8"$  lock washers (G), and two  $3/8"$  flat washers (H). See Figures 1 & 4.
5. Install the swivel elbow fitting on the top side of bellows. Tighten finger tight plus  $1 \frac{1}{2}$  turns. Use a  $7/16"$  open end wrench being careful to tighten on the metal hex nut only. Do not over tighten. This fitting is precoated with thread sealant.
6. Attach the upper bracket (B) to the top of the bellows with two  $3/8" \times .875"$  bolts (F), two  $3/8"$  lock washers (G), and two  $3/8"$  flat washers (H). See Figure 1.

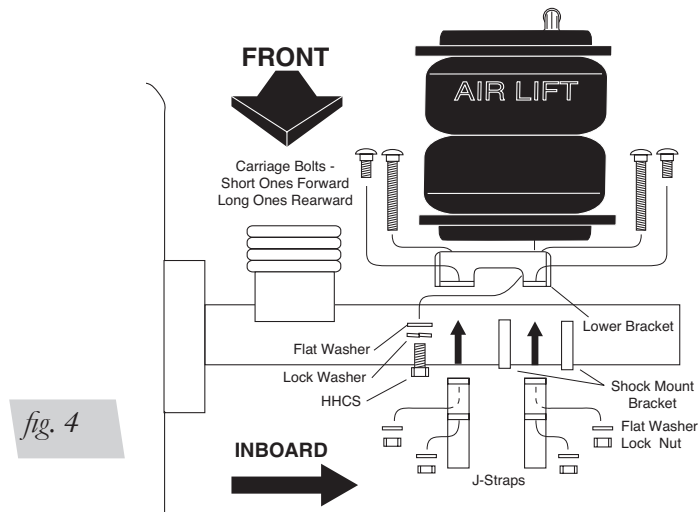
## ATTACHING THE ASSEMBLY

1. Remove and discard the two nuts and bolts holding the line bracket on the bottom of the flange.
2. This upper bracket is designed to fit BEHIND any and all lines that run along the inside of the frame rail. After removing and discarding the bolts and nuts holding the line bracket to the flange, gently pull the lines out just far enough to slide the upper mounting bracket up behind them, flat to the rail.
3. Loosely attach upper bracket to the frame rail by using the  $3/8" \times 1.5"$  washerhead frame bolts (L) and whiz nuts (N) through the side of the rail and the two  $3/8" \times 1.5"$  carriage bolts (K) through the flange (Fig. 3).



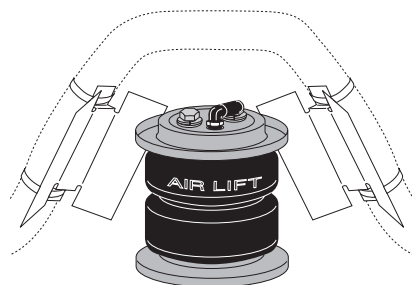
*fig. 3*

- Secure the lower bracket with the two J-straps (I) and corresponding nuts, bolts, and washers (Figs. 1 & 4).



*fig. 4*

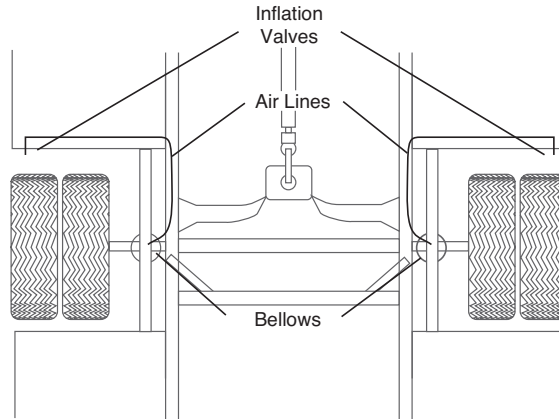
- On the shock absorber side of the lower bracket, the J-strap will fit between the installed shock and the axle housing. It is not necessary to remove the shock absorber. Loosely assemble the lower straps. Use the short carriage bolts on the shock side (Fig. 4).
- The upper bracket is slotted for adjustment. Inspect the assembly and make sure the bellows is mounted straight up and down, the lower bracket is centered, and the fasteners are in the proper positions.
- Now tighten all nuts to the carriage bolts. Torque setting for all fasteners is 15 to 20 lb.-ft. Do not over tighten
- Repeat procedures 2 through 11 for other side.
- IMPORTANT:** Installation of this kit requires two exhaust heat shields (Fig. 5). The shields (P) are attached with the stainless steel clamps (Q) to the exhaust pipe, with the flanges being bent inward. Shields may be trimmed or bent to attain component clearance. Bend tabs to provide 1/2" dead air space between exhaust pipes and heat shield and maximum clearance with bellows.



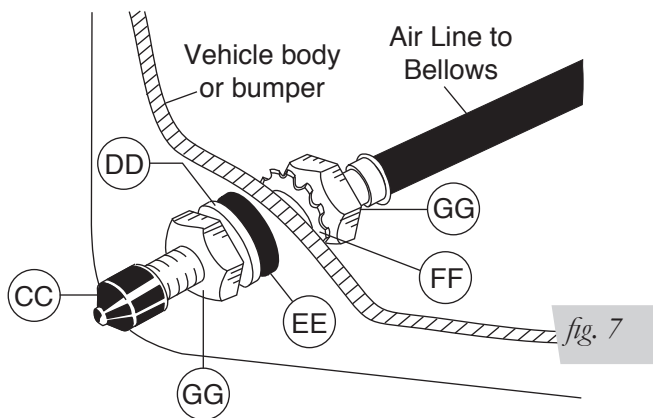
*fig. 5*

## INSTALLING THE AIR LINES

1. Select locations on the vehicle for the air inflation valve (Fig. 6). The location chosen should provide protection so the valve will not be damaged but be accessible for the air inflation chuck. Recommended location is in the wheel well or lower body ahead of rear wheel. One on each side provides ease of filling, checking and measuring body height to compensate for side to side lean and front to rear sag.


*fig. 6*

2. Measure from selected location inboard along frame rail. Measure this same distance from each pre-installed inflation valve on the air line and cut air line off squarely. Use a standard tube cutter, a razor blade, or very sharp knife to cut the air line. A clean square cut will ensure against leaks.
3. Slide a thermal sleeve (O) onto air line (AA) from the cut end on the tail pipe side.
4. Push the air line into the swivel elbow fitting as far as it will go. A definite "click" (approximately 9/16") can be heard/felt. This is a self locking fitting and the air line is now installed.
5. Slide the thermal sleeve down to the air fitting.
6. Route the air line from the bellows to the pre-determined inflation valve location. Insure that it is protected from the direct heat of the exhaust system and kept away from sharp edges. Caution should be taken not to kink or bend the air line. Secure along frame with the nylon ties supplied with this kit (Fig. 6).
7. Drill two 5/16" holes, and install inflation valves, nuts, and washers as shown in Figure 7.

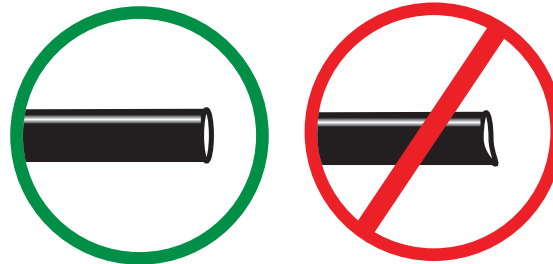

*fig. 7*

## CHECKING FOR LEAKS

1. Inflate the bellows and check the fittings for air leaks with a solution of soap and water.
2. Raise vehicle and remove safety jack stands. Lower vehicle to ground.
3. This now completes the installation. Before proceeding, check once again to be sure you have proper clearance around the bellows. With a load on the vehicle and the helper springs inflated, there must be at least 1/2" clearance all around the bellows.
4. Recheck air pressure after 24 hours. A 5-7 PSI loss after initial installation is normal. If pressure has dropped more than 7 PSI retest for leaks with a soapy water solution.
5. For best ride use only enough air pressure in the air springs to level the vehicle when viewed from the side (front to rear). Inflate/deflate the air springs to maintain this height under various conditions of load. NOTE: Too much air pressure in the air springs will result in a stiffer ride, while too little air pressure will allow the vehicle to bottom out. Too little air pressure will also not provide the improvement in handling that is possible.

## 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 (see Fig. 8). Reinsert the air line into the push-to-connect fitting.



*fig. 8*

- b. Check the threaded connection by tightening the swivel fitting another 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 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.

 **CAUTION**

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)

- Clearance test — Inflate the air springs to 60 PSI and ensure there is at least 1/2" 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.
- Leak test before road test — Inflate the air springs to 60 PSI, check all connections for leaks with a soapy water solution. See page 7 for tips on how to spot leaks. All leaks must be eliminated before the vehicle is road tested.
- Fastener test — Recheck all bolts for proper torque. Axle clamp bar carriage bolt lock nuts should be torqued to 16 lb.-ft. Re-torque after 100 miles.
- 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.
- Operating instructions — If professionally installed, the installer should review the Product Use, Maintenance and Servicing section on page 9 with the owner. Be sure to provide the owner with all of the paperwork which came with the kit.

**Technician's Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## 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 must 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
5 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.
3. 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.

### CAUTION

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 PSI, 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.

## 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**

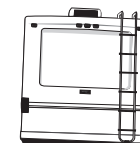
Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (Fig. 2.3). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 2.1*



Rough ride *fig. 2.2*



Sway and body roll *fig. 2.3*

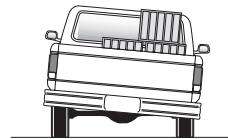
## GUIDELINES FOR ADDING AIR

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.

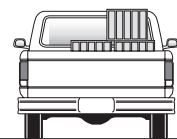


Bottoming out

*fig. 2.4*



Unlevel



Level

*fig. 2.5*

# Choosing the Right On-Board Air Compressor System

**60 DAY** NO QUESTIONS ASKED, MONEY-BACK GUARANTEE

**TWO-YEAR** COMPRESSOR SYSTEM WARRANTY

Add an on-board air compressor system to inflate and deflate your air springs automatically or 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.

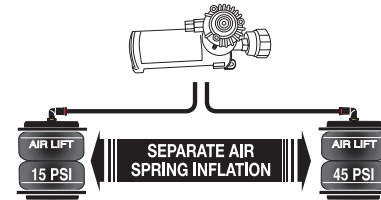
**1. Choose single or dual path inflation (see illustrations at right)**

**2. Choose wireless, analog control or automatic**

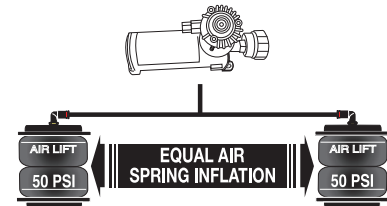
- **Wireless:** Control your air springs from inside or outside the vehicle. Easiest installation — no wires to the cab.
- **Analog:** In-cab control of your air springs. Economically priced.
- **Automatic:** Self-leveling system, keeps the vehicle level no matter what.

**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-to-right or front-to-back.

W I R E L E S S

A N A L O G

A U T O M A T I C

**WirelessAIR™**

**OUR PREMIUM SYSTEM!**

- Easy installation
- Includes heavy-duty compressor



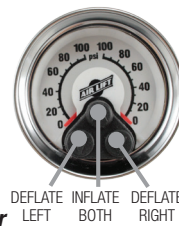
P/N 72000

**LoadCONTROLLER™**

**Dual**

Compact, economically priced control.

P/N Standard Duty Compressor 25850; P/N Heavy Duty Compressor 25854



**WirelessONE™**

- Easy installation
- Includes standard-duty compressor



P/N 25870

**LoadCONTROLLER™**

**Single**

Compact, economically priced control.

P/N Standard Duty Compressor 25852; P/N Heavy Duty Compressor 25856



**SmartAIR™ II**

- Easy installation
- Automatic self-leveling system
- No in-cab controls required



Single Path P/N 25490, Dual Path P/N 25491