

# **Load***LIFTER* **5000**<sup>™</sup> **ULTIMATE** ADJUSTABLE AIR HELPER SPRINGS

TOW AND HAUL WITH SAFETY AND COMFORT<sup>™</sup>

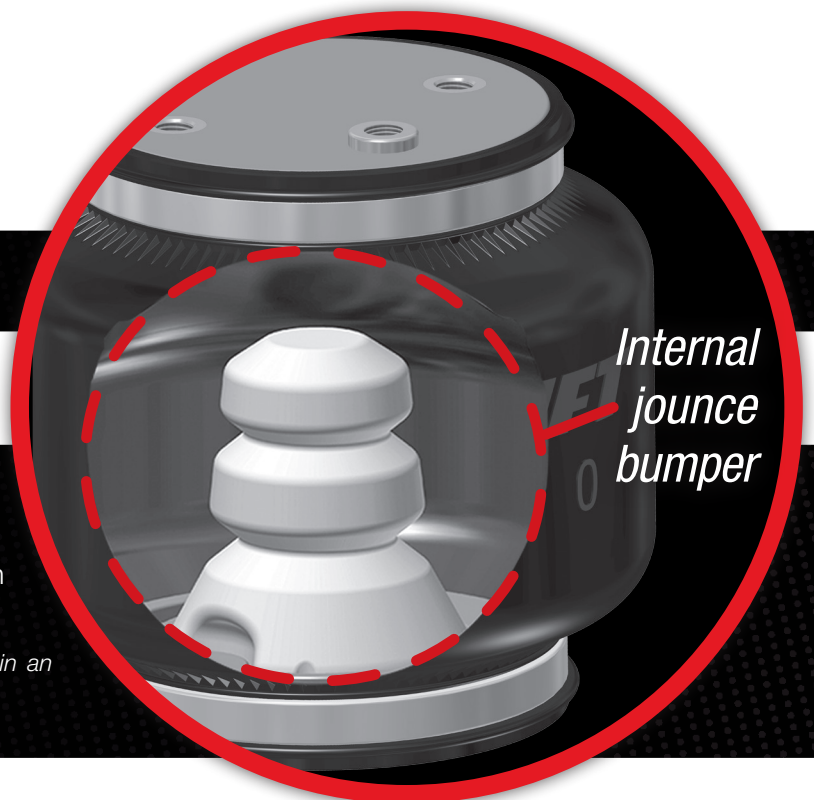


Kit Number  
**88240**

## 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.

 **DANGER**

 **WARNING**

 **CAUTION**

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## NOTE

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

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# Installation Diagram

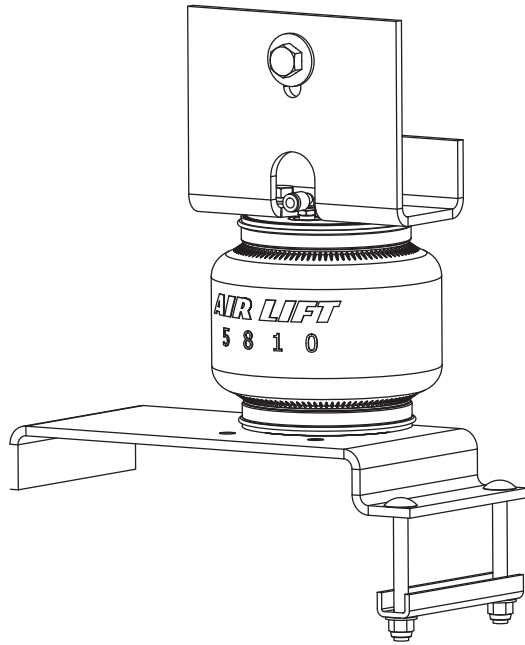
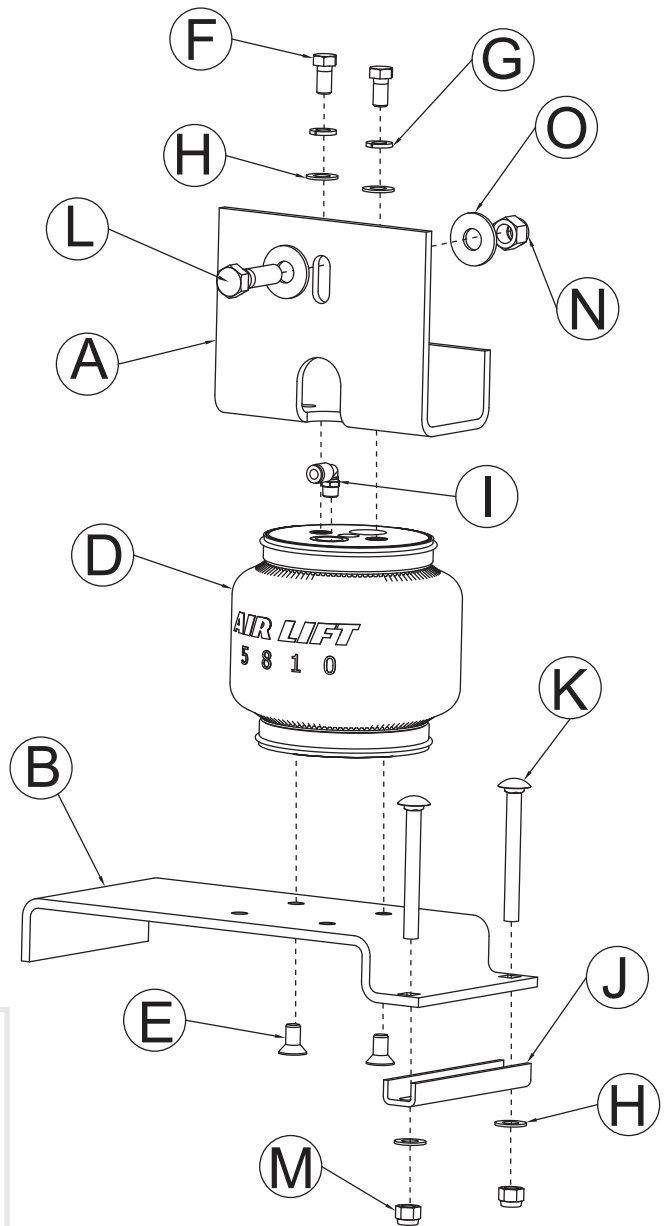


fig. 1



## HARDWARE LIST

Item	Part #	Description .....	Qty
A	07991	Upper Bracket.....	2
B	03989	Lower Bracket.....	2
C	11084	Spacer.....	1
D	58740	Bellows.....	2
E	17215	3/8"-24 X 3/4" Flat Head Screw .....	4
F	17203	3/8"-24 X 3/4" Hex Cap Screw .....	4
G	18427	3/8" Split Lock Washer .....	4
H	18444	3/8" Flat Washer .....	8
I	21848	90° Swivel Fitting .....	2
J	01665	Clamp Bar.....	2
K	17142	3/8"-16 X 3.5" Carriage Bolt.....	4
L	17247	1/2"-13 X 1.75" Hex Cap Screw .....	2
M	18435	3/8"-16 Nyloc Nut.....	4
N	18460	1/2"-13 Nyloc Nut.....	2
O	18485	1/2" Flat Washer .....	4
P	20086	Hose Assembly .....	1
Q	10466	Zip Ties .....	6
R	18501	M8 Flat washer .....	2
S	18411	5/16" Serrated Lock Washer.....	2
T	21230	Valve Cap .....	2
U	21233	5/16" Hex Nut.....	4
V	21234	5/16" Flat Washer .....	2

## TOOLS LIST

Description
Standard open end or box end wrenches
Ratchet with standard sockets
Drill and 5/16", 1/2" Drill Bits
Torque Wrench
Hose Cutter, Razor Blade or Sharp Knife
Safety Glasses
Air Compressor or Compressed Air Source
Spray Bottle with Dish Soap/Water Solution

# Installing the LoadLifter5000 Ultimate System

## ASSEMBLING THE AIR SPRING

1. Install the 90° swivel fitting (I) onto the bellows (D) finger tight plus one and a half turns. Do not over tighten.
2. Set the upper bracket (A) onto the bellows (Fig. 2) so that the fitting is in the slot of the bracket.
3. Attach the upper bracket using the two 3/8" bolts (F), lock washers (G) and flat washers (H). Tighten to 20 lb.-ft.

Fitting on bellows goes into the slot in the upper bracket.

Bracket attaches with 3/8" bolt, lock and flat washers. Torque to 20 ft./lbs.



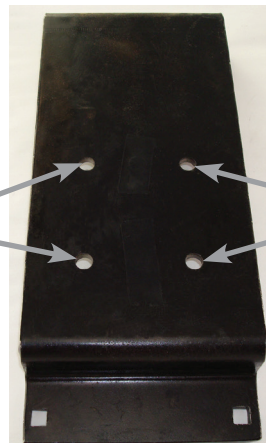
*fig. 2*

4. The lower bracket has holes in it for a left and right hand installation (Fig. 3).
5. Attach the lower bracket to the bellows assembly with two 3/8" flat head screws (E) and torque to 20 lb.-ft. (Fig. 4).

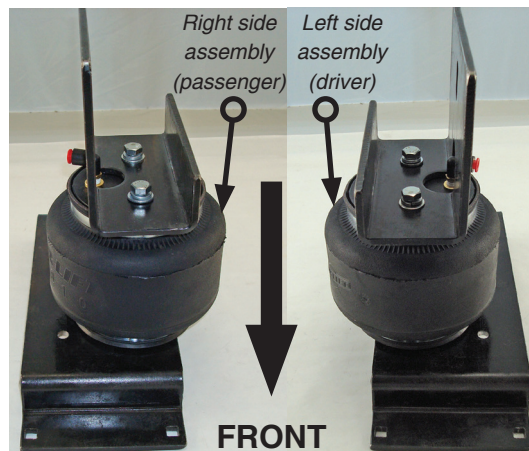
Driver side mounting holes for bellows

Passenger side mounting holes for bellows

FRONT



*fig. 3*



*fig. 4*

## PREPARING THE VEHICLE

1. Before the assemblies can be installed, it will be necessary to remove the jounce bumpers from under the frame (Fig. 5). Note: do not discard the right OEM bolt; it will be used in the next step on the right side of the vehicle.

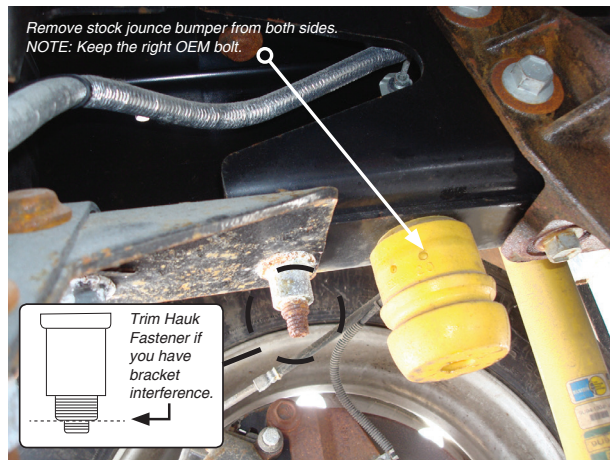


fig. 5

2. Install the small spacer (C) onto the bottom of the frame (where the jounce bumper mounted) on the right side of the vehicle with the existing jounce bumper bolt previously removed (Fig. 6). Tighten securely.

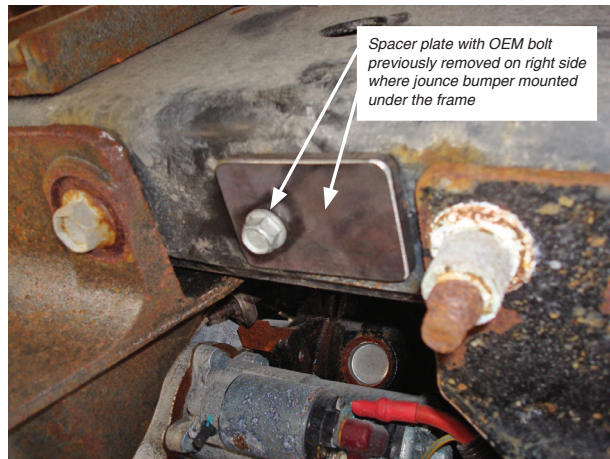


fig. 6

## INSTALLING THE ASSEMBLIES

1. Set the right and left hand unit in place under the frame, over the axle retainer. Note: the flange for the mounting bolts goes forward on the spring. (Figs. 7 & 8).

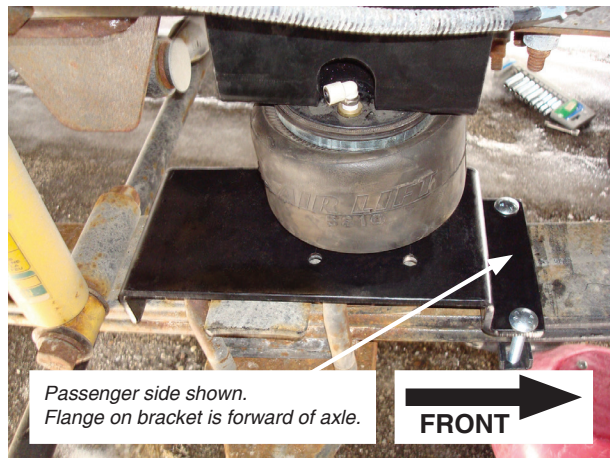


fig. 7

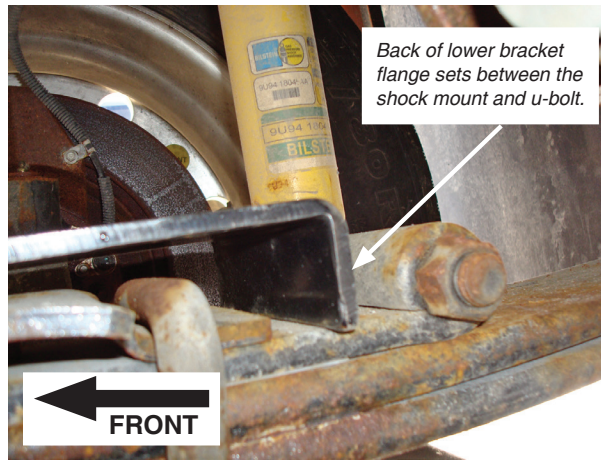


fig. 8

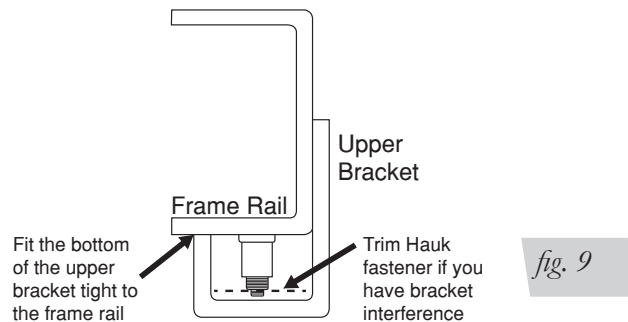
2. Insert the two carriage bolts (K) through the square holes in the lower bracket. Set the clamp bar (J) over the carriage bolts (under the leaf spring) and cap with two 3/8" flat washers (H) and two 3/8" nyloc nuts (M) (Fig. 1). Leave loose at this time.
3. Some models have existing holes in the frame that the upper bracket lines up to for mounting. If you have existing holes in the frame, align the slot in the upper bracket with the hole in the frame and attach the upper bracket with one 1/2" bolt (L), one 1/2" flat washer (O) through the upper bracket and frame, cap with a 1/2" flat washer (O) and 1/2" nyloc nut (N) (Fig. 1). Note: make sure that the flange on the upper bracket is setting against the frame (Fig. 9). Torque 1/2" hardware to 90 lb.-ft.

**CAUTION**

BEFORE DRILLING, CHECK THE BACK-SIDE OF THE FRAME FOR CLEARANCE ISSUES WITH THE BRAKE LINES, GAS LINES, AND ELECTRICAL LINES. ANY OBSTACLES WILL NEED TO BE TEMPORARILY RELOCATED TO CLEAR THE AREA.

If there is no hole in the frame for the upper bracket, position the lower bracket so that the back leg on the bracket is in between the shock mount and u-bolt (Fig. 8). Align the upper bracket so the bellows is perpendicular between the upper and lower bracket. Note: make sure that the flange on the upper bracket is setting against the frame. Some late models may have longer Hawk fasteners. If the fastener hits on the upper bracket and keeps its form contacting the frame (Figs. 5 and 9) hack saw or grind the end of the fastener just enough so that the upper bracket contacts the frame. Using the center of the slot in the upper bracket as a guide, center punch and drill a 1/2" hole through the frame. Repeat for the other side.

Attach the upper brackets per instructions in the beginning of this step.



4. Once the upper bracket hardware is tight, adjust the lower bracket forward or back so that the bellows is parallel between them and torque the carriage bolt mounting hardware to 16 lb.-ft. (Fig. 1).

## INSTALLING THE AIR LINES

1. Choose a convenient location for mounting the inflation valves. Popular locations for the inflation valve are:
  - a. The wheel well flanges

- b. The license plate recess in bumper
- c. Under the gas cap access door
- d. Through the license plate

## NOTE

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

2. Drill two 5/16" holes to install the inflation valves.
3. Cut the air line assembly in two equal lengths.

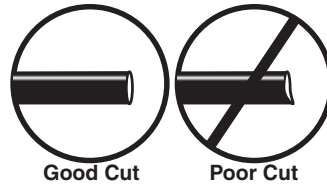


fig. 10

## 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 (FIG. 10).

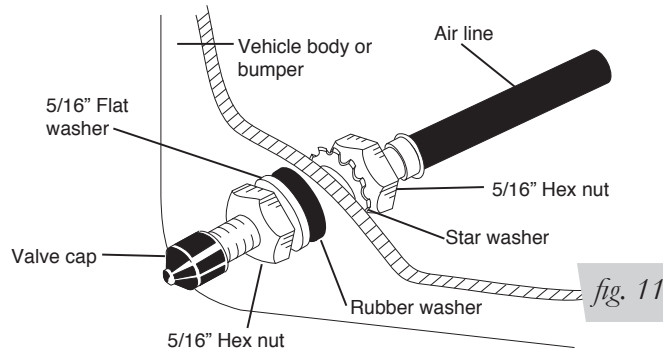


fig. 11

4. Place a 5/16" nut and star washer 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, flat washer, and 5/16" nut and cap. There should be enough valve exposed after installation—approximately 1/2"—to easily apply a pressure gauge or an air chuck (Fig. 11).
5. Push the inflation valve through the hole and use the rubber washer, flat washer, and another 5/16" nut to secure it in place. Tighten the nuts to secure the assembly.
6. Route the air line along the frame to the air fitting on the air spring (Fig. 12). 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 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 (Fig. 12).

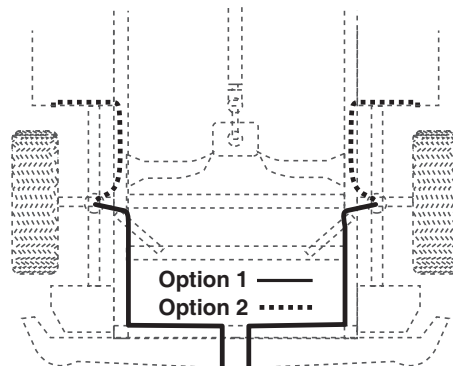


fig. 12



7. Cut off the 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 (9/16" of air line should be in the fitting).
8. Install the minimum/maximum air pressure decal in a highly visible location. We suggest placing the decal on the driver-side window, just above the door handle.

## CHECKING FOR LEAKS

1. Inflate the air spring to 30 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 5 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 (see Fig. 10). Reinsert the air line into the push-to-connect fitting.
  - 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.



**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 the *Checking for Leaks* section 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. Retorque 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 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**

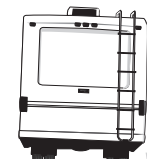
Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (Fig. 2.3). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 2.1*



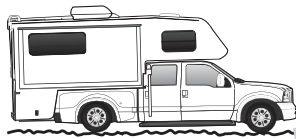
Rough ride *fig. 2.2*



Sway and body roll *fig. 2.3*

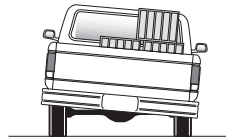
## GUIDELINES FOR ADDING AIR

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.

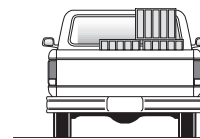


Bottoming out

*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.

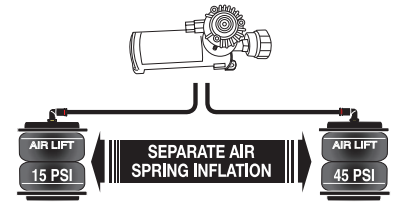
**1. Choose single or dual path inflation (see illustrations at right)**

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

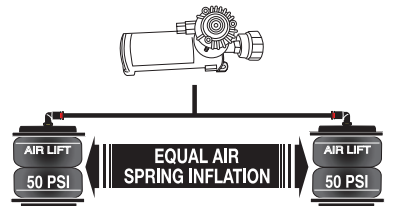
- **Wireless:** Control your air springs from inside or outside the vehicle. Easiest installation — no wires to the cab.
- **Analog:** In-cab control of your air springs. Economically priced.
- **Automatic:** Self-leveling system, keeps the vehicle level no matter what.

**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.

WIRELESS

ANALOG

AUTOMATIC

**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