

# Load**LIFTER** 5000™

## **ULTIMATE**

ADJUSTABLE AIR HELPER SPRINGS

TOW AND HAUL WITH SAFETY AND COMFORT™



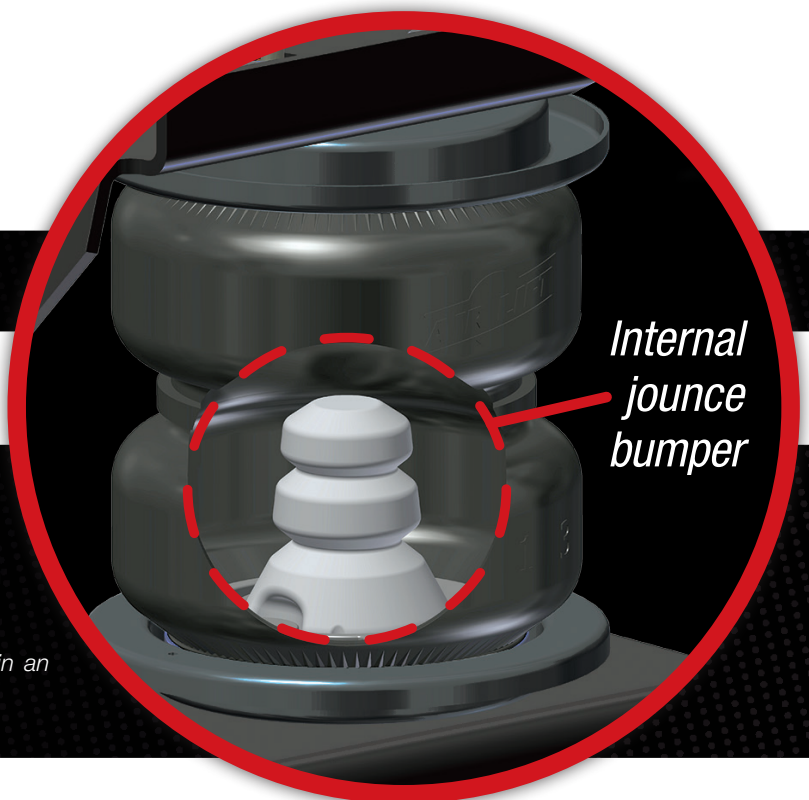
Kit Number

**88338**

### 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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# Installation Diagram

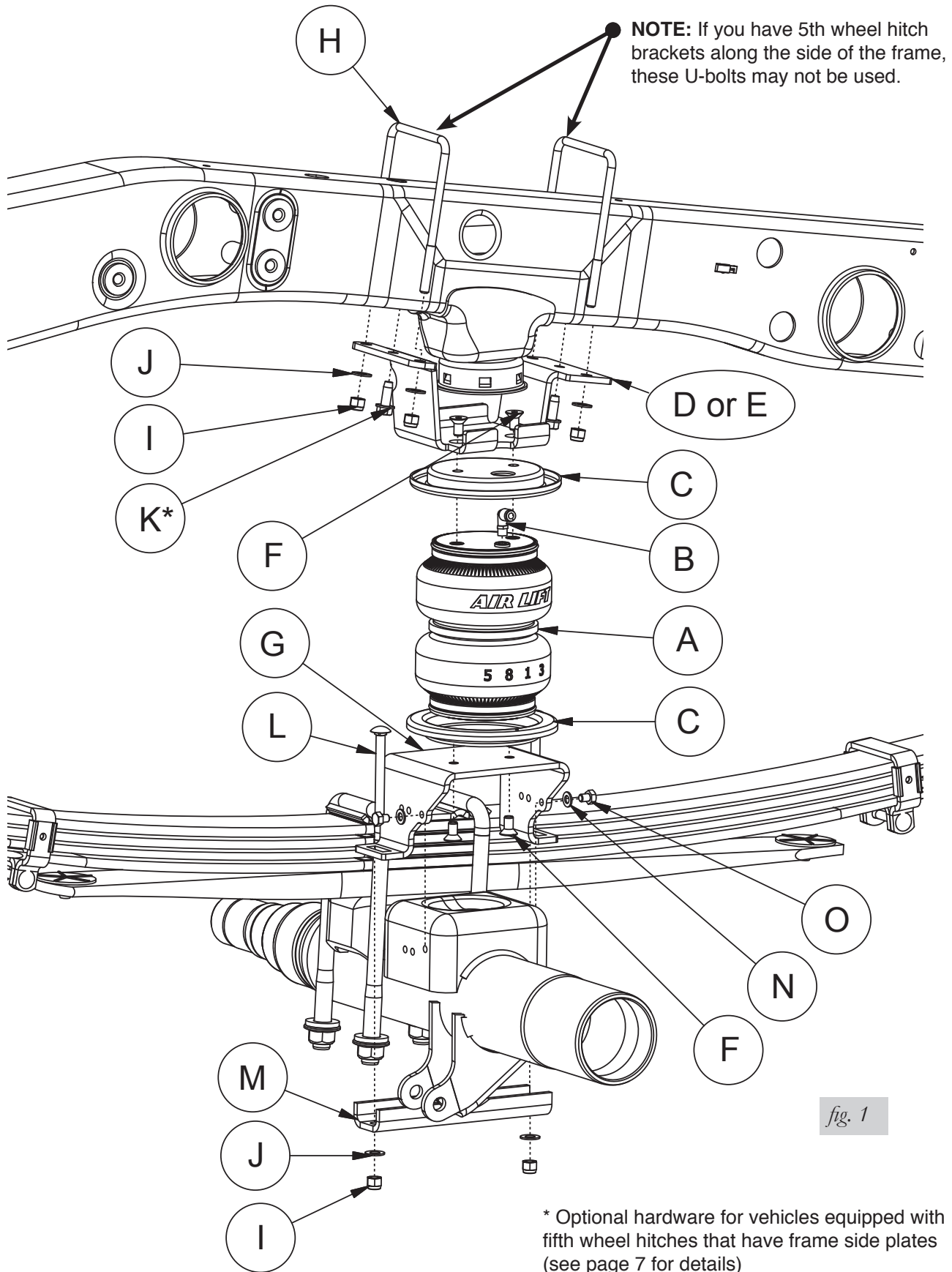


fig. 1

\* Optional hardware for vehicles equipped with fifth wheel hitches that have frame side plates (see page 7 for details)

# Hardware and Tools Lists

## HARDWARE LIST

Item	Part #	Description .....	Qty
A	58496	Air Spring .....	2
B	21848	90° Swivel Air Fitting .....	2
C	11967	Roll Plate.....	4
D	07276	Upper Bracket, Right.....	1
E	07377	Upper Bracket, Left.....	1
F	17215	3/8"-24 X .75" Flat Head Screw .....	8
G	03962	Lower Bracket .....	2
H	11046	U-bolt .....	4
I	18435	3/8"-16 Nyloc Nut.....	12
J	18444	3/8" Flat Washer .....	12
K	17129	3/8" Self Tapping Screws.....	4
L	17142	3/8"-16 X 3.5" Carriage Bolts .....	4
M	01851	Clamp Bar .....	2
N	18501	M8 Flat Washer.....	5
O	17449	M8-1.25 X 10 Hex Cap Screw .....	3
P	18422	3/8"-16 Serrated Flange Lock Nut.....	1
Q	26333	Emergency Brake Cable Bracket.....	1
R	10466	Zip Tie .....	6
S	21230	Valve Cap .....	2
T	21233	5/16" Hex Nut.....	4
U	21234	5/16" Rubber Washer.....	2
V	18411	Star Washer .....	2

## TOOLS LIST

Description.....	Qty
5/16" Open-end or box wrench.....	1
7/16" Open-end or box wrench.....	1
9/16" Open-end or box wrench.....	1
Ratchet w/ 9/16", Metric, & 1/2" Deep Well Sockets.....	1
Heavy Duty Drill.....	1
Drill 3/8" and 5/16" Drill Bits (very sharp).....	2
Crescent Wrench.....	1
Torque Wrench.....	1
Hose Cutter, Razor Blade or Sharp Knife.....	1
Hoist or Floor Jack.....	1
Safety Stands .....	2
Safety Glasses .....	1
Air Compressor or Compressed Air Source .....	1
Spray Bottle with Dish Soap/Water Solution .....	1
7/32" Allen Wrench.....	1

# 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.

 **DANGER**

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

 **WARNING**

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE MACHINE OR MINOR PERSONAL INJURY.

 **CAUTION**

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## NOTE

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

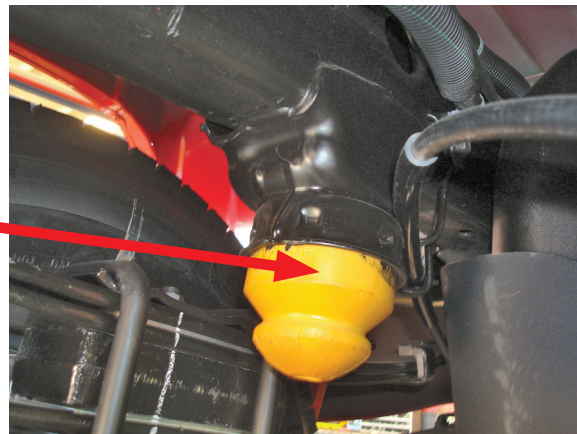
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# Installing the LoadLifter 5000 Ultimate System

## GETTING STARTED

1. Raise the frame and support the frame with jack stands. Lower the axle as far as it can go.
2. Remove the jounce bumpers from the jounce bumper brackets on both sides by prying them out with a pry bar or large screw driver (Figs. 2 & 3).

Jounce bumper  
in mounting cup



*fig. 2*

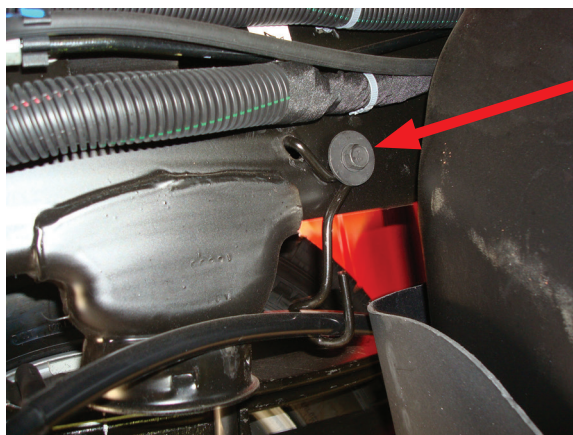
Jounce bumper  
removed



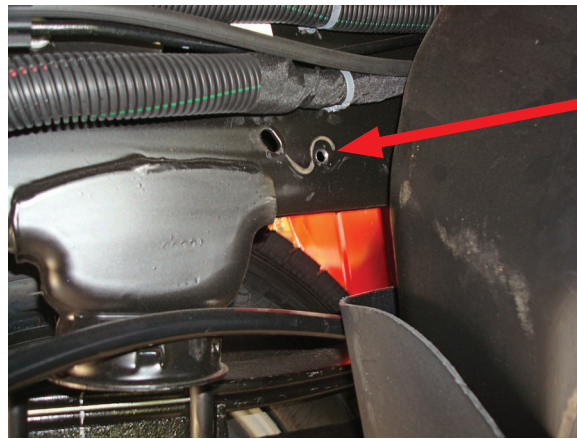
*fig. 3*

3. Remove the bolt that holds the emergency bracket to the inside of the driver side frame rail (Figs. 4 & 5).

Remove the bolt  
and discard the  
wire retaining  
bracket



*fig. 4*

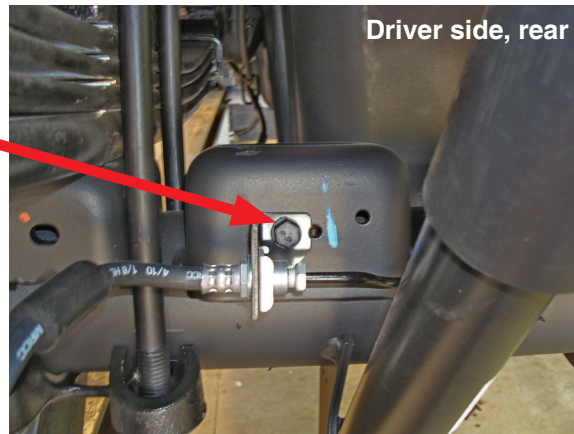


Bolt and retaining bracket removed

*fig. 5*

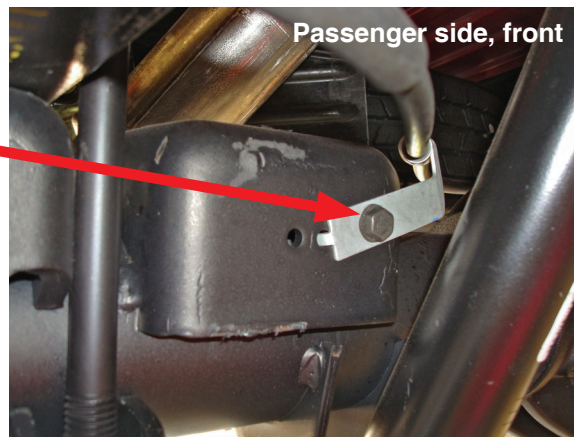
4. Remove the three bolts that hold the brake lines to the rear axle jounce bumper strike plates (Figs. 6 & 7).

Remove the bolt holding the brake line to the Jounce Bumper Strike Plate in the rear on both driver and passenger side



*fig. 6*

Remove the bolt holding the Emergency brake cable on the front of the passenger side Jounce Bumper Strike Plate



*fig. 7*

5. Pull the lines clear of the jounce bumper strike plate on the axle to make room for the lower bracket (Fig. 7).

## ASSEMBLING THE AIR SPRING ASSEMBLY

1. Set a roll plate (C) on both ends of the air spring (A). The radiused (round) edge of the roll plate will be towards the air spring, enabling the air spring to be seated in both roll plates.
2. Install the 90° elbow fitting (B) on top of the air spring. Tighten finger tight plus 1 and a 1/2 turns. Be careful to only tighten on the metal hex nut. Do not over tighten (Fig. 1).

3. Install the upper brackets (D or E) onto the top of the air springs using the 3/8" Flat Head bolts (F) (Fig. 1). Tighten securely.
4. Install the lower brackets onto the air spring assembly using the 3/8" Flat Head bolts.

## NOTE

*The angle portion of the lower bracket will be on the fitting side of the air spring (Fig. 1).*

## POSITIONING THE AIR SPRING ASSEMBLY ON THE AXLE

1. With the suspension hanging, set the left and right hand units over the axle jounce bumper strike plates (Fig. 1).

## NOTE

*The fittings will be on the inside of the frame.*

2. Position the upper brackets to nest around the Jounce Bumpers that are under the frame (Fig. 1).

## ATTACHING THE UPPER BRACKETS

There are two ways of attaching the upper bracket:

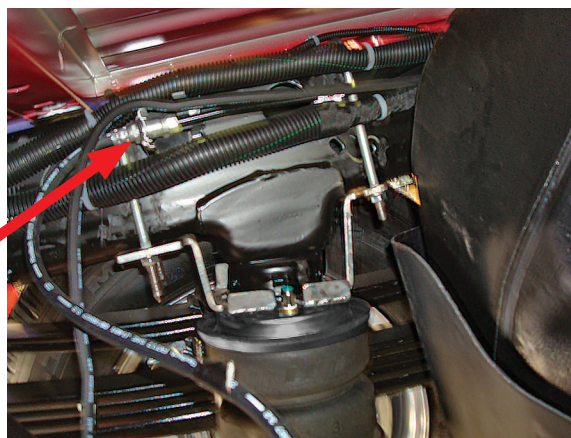
For trucks that do not have a fifth wheel hitch bracket along side of the frame:

1. Insert two u-bolts (H) onto the top of the frame and through the upper bracket mounting holes (Fig. 8).

## NOTE

*It may be necessary to raise the axle at this point for the upper bracket to reach the frame.*

Insert the U-bolts between the brake line and harness as shown. Do not pinch these items between the U-bolt and frame.



*fig. 8*

2. Cap with four 3/8" nylon lock nuts (I) and flat washers (J). Torque u-bolts evenly in a criss cross pattern to 10 lb.-ft. Repeat for the opposite side.

## NOTE

*Stuff a shop towel between the gas tank and shield to keep washer or nut from falling in between in case they are dropped during installation.*

## CAUTION

THE DRIVER SIDE HAS A BRAKE LINE AND A WIRING HARNESS RUNNING ALONG THE INSIDE OF THE FRAME. MAKE SURE THE U-BOLT IS BETWEEN THESE ITEMS AND THE FRAME (DO NOT PINCH THESE ITEMS) (FIG. 8).

## NOTE

*On the passenger side of some models you may have to bend the heat shield a little to gain access for the u-bolt to go over the frame correctly (Fig. 9).*

For trucks that have fifth wheel hitch brackets along side the frame rail:

1. There are holes in the middle of the bracket just forward and behind the jounce bumper mounting cups on the upper bracket (Fig. 1). Once the upper brackets are in position, drill two 5/16" holes through the bottom of the frame using the holes as a template and attach the upper brackets using the self tapping screws (K). Torque all four fasteners to 15 lb.-ft.



On the passenger side on some models it may be necessary to bend the heat shield slightly for the U-bolt to align properly with the upper bracket

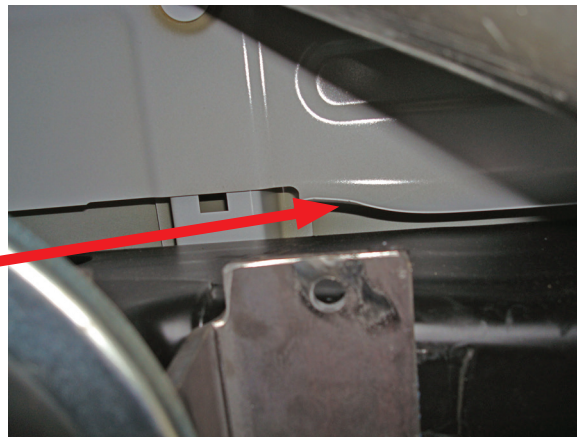


fig. 9

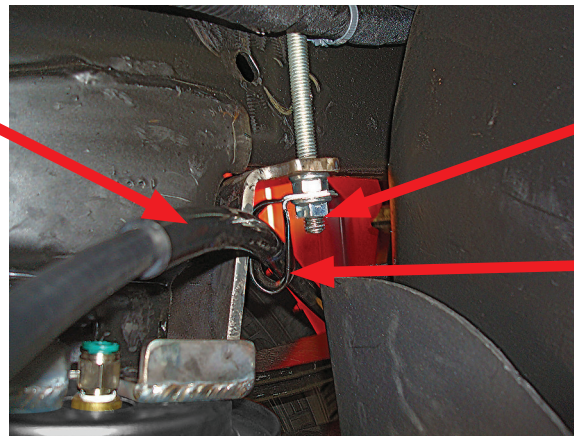
## RE-ATTACHING THE EMERGENCY BRAKE CABLE TO FRAME

1. Attach the emergency brake cable removed in the “getting started” section with the emergency brake cable bracket (Q) and 3/8” serrated flange lock nut (P) (Fig. 10). Use the inside forward leg of the u-bolt on the driver side for the attachment. Tighten securely.

### NOTE

*It may be necessary to pinch the clamp together with pliers to align the two holes up enough to get over the U-bolts.*

Emergency Brake Cable



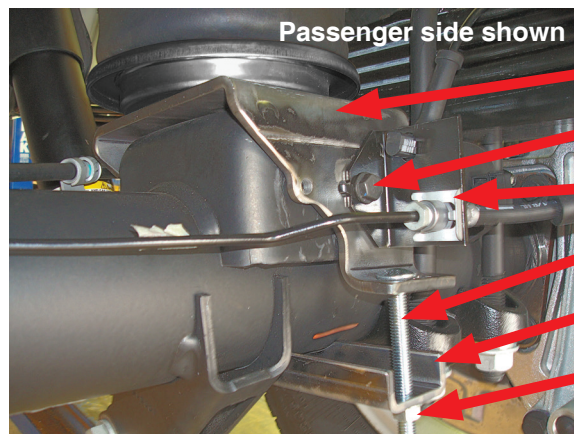
3/8” Serrated Flange Nut (P)

Emergency Brake Cable Bracket (Q)

fig. 10

## ATTACHING THE LOWER BRACKETS

1. Position the lower bracket in/out to best align the bellows. Insert two 3/8” carriage bolts (I) through lower bracket mounting legs (Fig. 11).



Passenger side shown

Lower Bracket

M8 Screw and Washer

Stock Brake Bracket

Carriage Bolt

Clamp Bar

3/8” Nylon Lock Nut and Washer

fig. 11

2. Insert the lower clamp bar (M) over the two carriage bolts previously installed and cap with two 3/8" nylon lock nuts (I) and flat washers (J). Torque evenly to 16 lb.-ft.
3. Attach the brake lines that were un-bolted from the rear of the axle in the "getting started" section by attaching them to the lower bracket with the new M8 screws (O) and flat washers (N) provided (Fig. 11). Tighten securely.
4. Attach the brake cable on the passenger side, forward of the axle with the new M8 screw (O) and flat washer (J). Tighten securely.

## NOTE

*It may be necessary to slightly bend this bracket to clear the edge of the lower bracket (Fig. 12).*

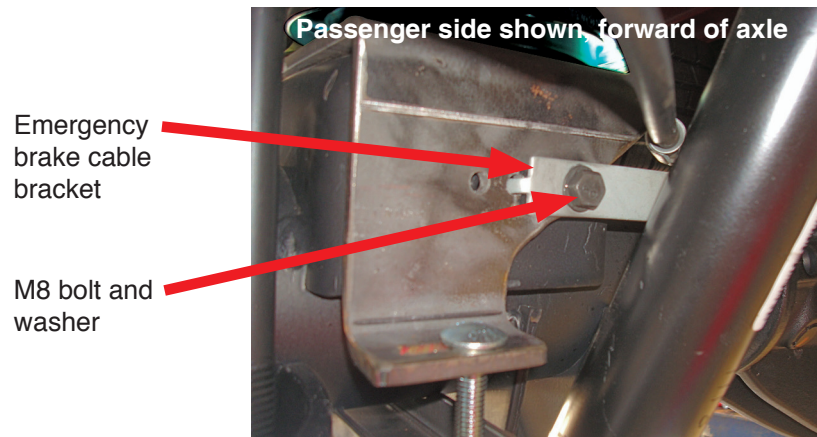


fig. 12

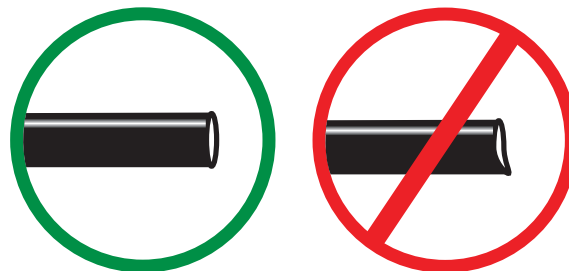
## INSTALLING THE AIR LINES

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

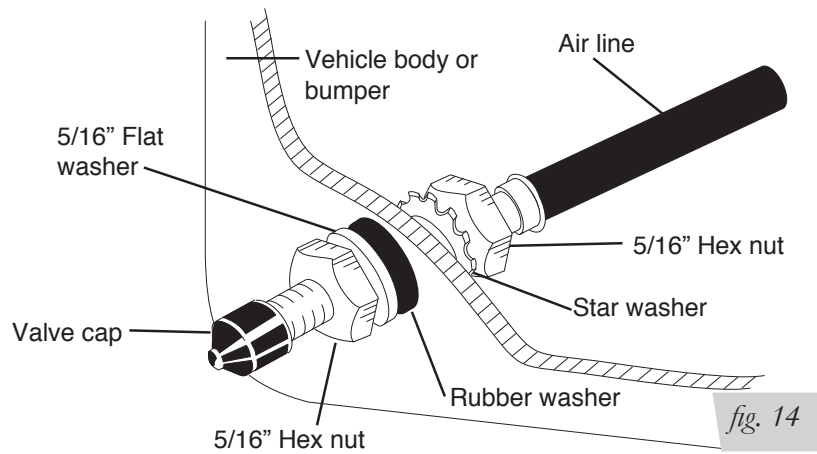
*Whatever the chosen location, make sure there is enough clearance around the inflation valves for an air chuck.*

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

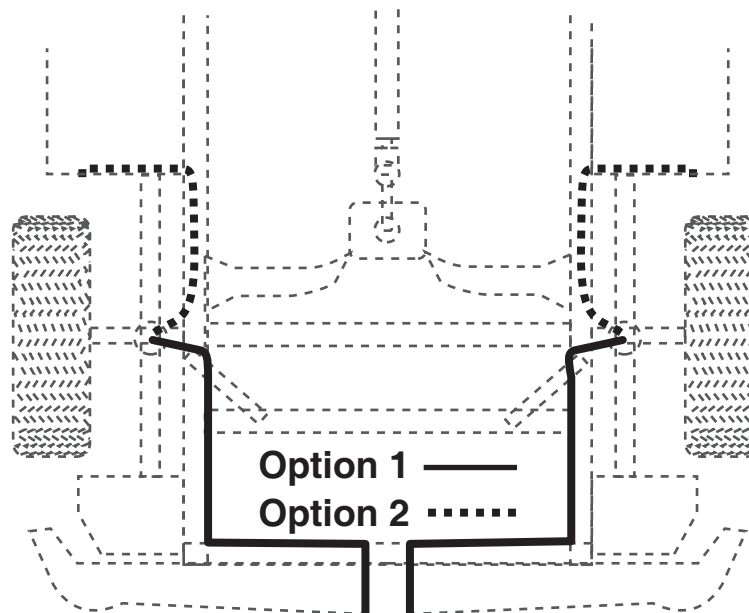


## CAUTION

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. 13).



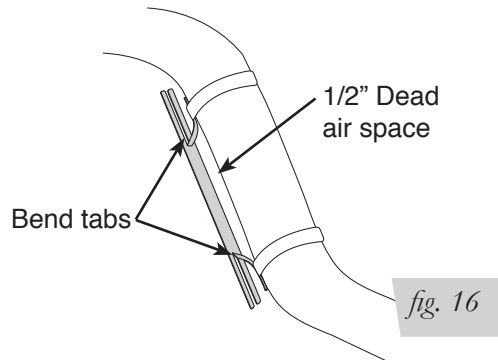
4. Place a 5/16" nut (T) and star washer (V) on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole and have room for the rubber washer (U), flat washer (N), and 5/16" nut (T) and cap. There should be enough valve exposed after installation — approximately 1/2" — to easily apply a pressure gauge or an air chuck (Fig. 14).
5. Push the inflation valve through the hole and use the rubber washer (U), flat washer (N), and another 5/16" (T) 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. 15). 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.



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).

## INSTALLING THE HEAT SHIELD

1. Bend tabs to provide a 1/2" dead air space between exhaust pipe and heat shield (Fig. 16).
2. Attach the heat shield to the exhaust pipe using the clamps. Bend the heat shield for maximum clearance to the air spring (Fig. 16).



## 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. 13). 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 page 11 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 ft/lbs. 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 13 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 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.

## 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**

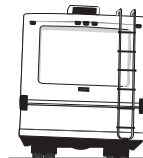
Stability translates into safety and should be the priority, meaning the driver may need to sacrifice a perfectly level and comfortable ride. Stability issues include roll control, bounce, dive during braking and sponginess (Fig. 2.3). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 2.1*



Rough ride *fig. 2.2*



Sway and body roll *fig. 2.3*

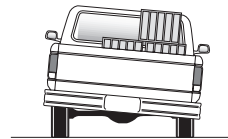
## GUIDELINES FOR ADDING AIR

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.

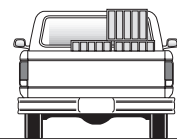


Bottoming out

*fig. 2.4*



Unlevel



Level

*fig. 2.5*