

# ***Air Lift*1000™**

by AIR LIFT

# **Kit 60809**

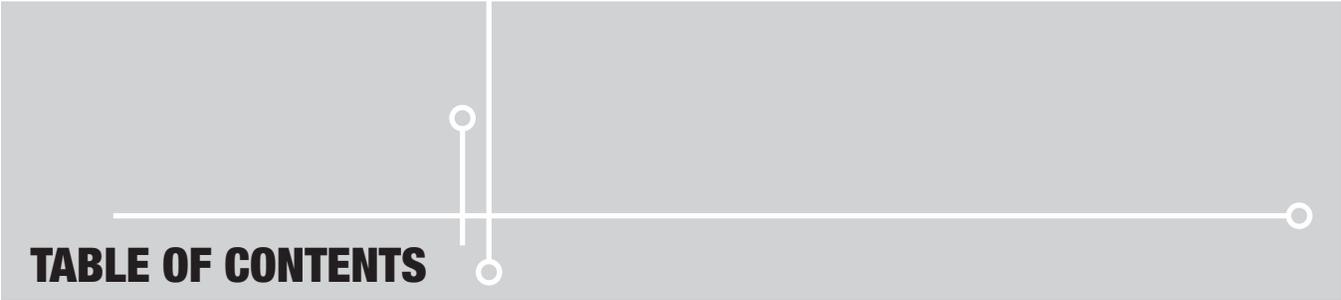


## **INSTALLATION GUIDE**

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 Air Lift 1000 air spring kit.

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 guidelines and operating tips.

Air Lift Company reserves the right to make changes and improvements to its products and publications at any time. For the latest version of this manual, contact Air Lift Company at (800) 248-0892 or visit our website at [www.airliftcompany.com](http://www.airliftcompany.com).

## 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 truck 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.

 **DANGER**

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

 **WARNING**

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

 **CAUTION**

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

---

## NOTE

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

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# Hardware and Tools Lists

## HARDWARE LIST

Item	Part #	Description .....	Qty
A	46151	Air spring.....	2
B	09191	Protector .....	2
C	20937	Hose.....	15'
D	10466	Zip tie .....	6
E	10638	Uni clamp.....	6
F	18501	M8 flat washer.....	2
G	18411	Star washer.....	2
H	21230	Valve cap .....	2
I	21233	5/16" Hex nut .....	4
J	21234	Rubber washer.....	2
K	21236	Tee .....	1
L	21455	Valve .....	2

## TOOLS LIST

Description.....	Qty
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



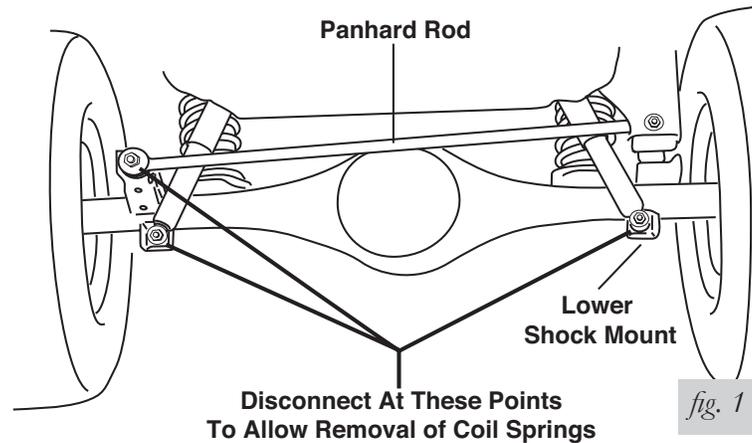
*Missing or damaged parts? Call Air Lift customer service at (800) 248-0892 for a replacement part.*

# Installing the Air Lift 1000 System

**IMPORTANT:** Always keep safety in mind when working on your vehicle.

## GETTING STARTED

1. Jack up rear of vehicle or raise on hoist. Support frame with safety stands.
2. The coil springs must be removed for installation:
3. Detach the shock absorbers at the lower shock mount (Figure 1).

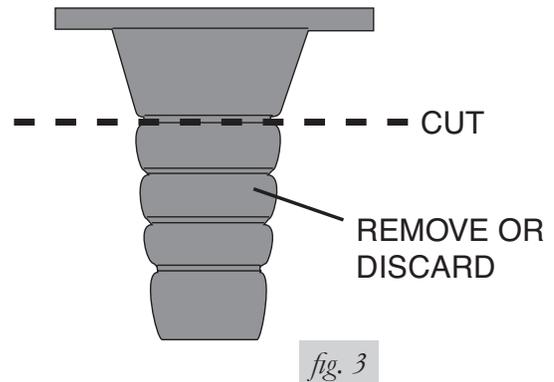
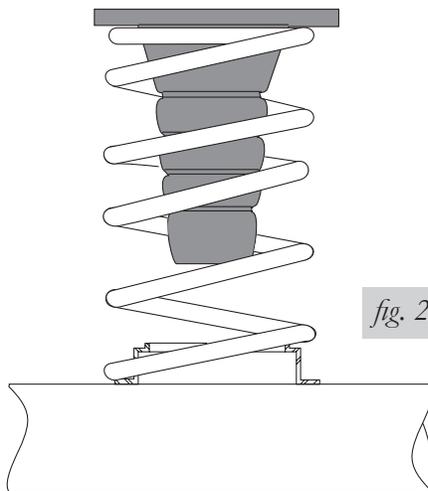


4. Detach the panhard rod at the lower axle mount (Figure 1).
5. If there is a rear anti-sway bar, you may have to disconnect the links.
6. Mark the position of the coil spring on the upper spring seat so that the spring can be reinstalled in the same position.
7. Carefully lower the axle until the coil springs are free.

**CAUTION**

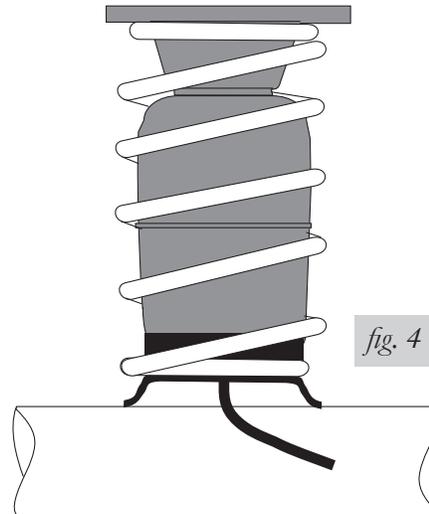
DO NOT STRAIN BRAKE LINES. DISCONNECT BRAKE LINE BRACKETS IF NECESSARY. REMOVE COIL SPRINGS.

8. There is a large jounce bumper at the top of the coil spring (Figure 2). Trim the jounce bumper as specified in Figure 3.



9. Drill the small hole in the lower spring seat out using a 9/16" drill bit or grind with a die grinder for hose access to cylinder.
10. Insert the cylinders into the springs with the stem pointing downward. Install the springs back onto the vehicle's rear suspension. Add one round protector on the stem side

(bottom) of the cylinder (Figure 4). Line up the mark previously made to align the air spring into position.



11. Select either dual air line or tee air line option depending on use of vehicle. The tee air line installation is best for vehicles that are loaded evenly from side to side. The dual air line installation should only be used if vehicle will have an unbalanced side to side loading. Depending on the chosen installation, proceed with I (tee) or II (dual).

## TEE AIR LINE ROUTING

### CAUTION

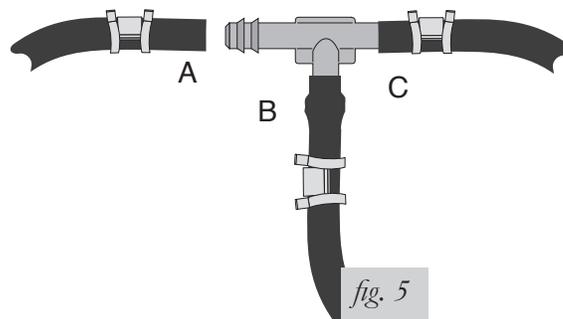
TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST EIGHT INCHES FROM EXHAUST SYSTEM.

1. Locate desired tee location on the frame rail or cross member.
2. Determine and cut adequate length of air line to reach from tee to left and right side on air cylinders.

### CAUTION

LEAVE SUFFICIENT AIR LINE SLACK TO PREVENT ANY STRAIN ON FITTING DURING AXLE MOTIONS.

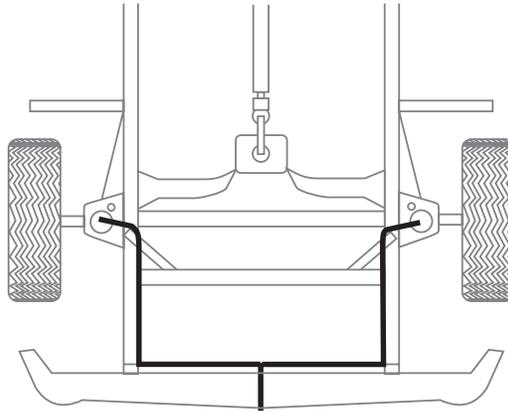
3. Slide air line clamp onto the air line.
4. Push the air line over one side of the tee until all the barbs are covered. With pliers slide the air line clamp forward until it fully covers the barbed section. Repeat procedure for other leg of tee (Figure 5).



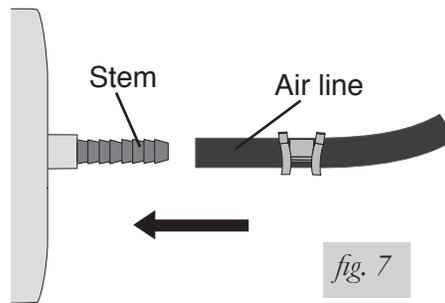
### Use this procedure for all air line connections:

- a. Slide the air line clamp onto the air line.
- b. Push the air line over the barbed stem.
- c. Compress the ears on the air line clamp with pliers and slide it forward to fully cover the barbed section.

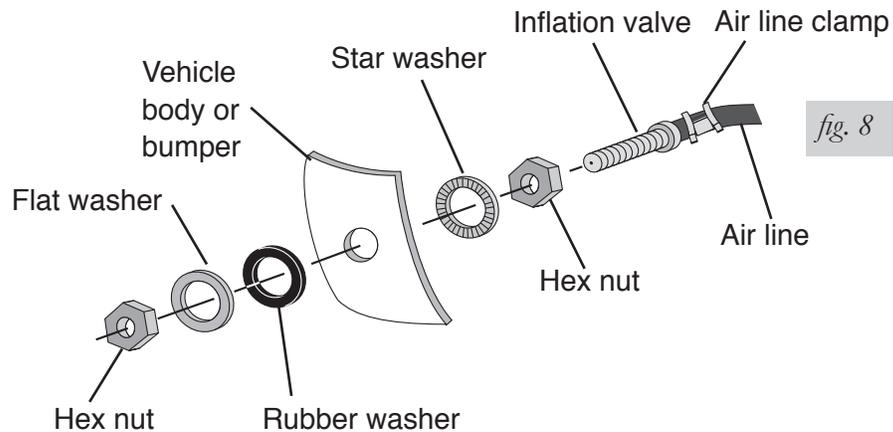
- Route air line along cross member and upper spring seat to air cylinder (Figure 6).


*fig. 6*

- Insert air line through spring seat and protector (Figure 4).
- Slide air line clamp onto the air line. Push the air line onto the stem, covering all the barbs (Figure 7). With pliers slide the air line clamp upward until it fully covers the barbed section. Repeat for the other side.

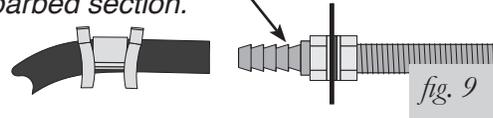

*fig. 7*

- Push the remaining air line over the last fitting on tee and route along frame to desired inflation valve location (Figure 6). Attach with zip ties.
- Select a location for inflation valve in the gas cap well, the trunk, rear bumper, fender flange or behind the license plate, ensuring that the valve will be protected and accessible with an air hose.
- Drill a 5/16" (8mm) hole for inflation valve and mount as in illustration (Figure 8). Rubber washer is for outside weather seal.


*fig. 8*

- Slide air line clamp over the air line. Push air line onto fitting covering all barbs, with pliers slide the air line clamp forward until it fully covers the barbed section (Figure 9).

*Be sure to fully cover  
the barbed section.*



- Continue with step 11, page 8.

**CAUTION**

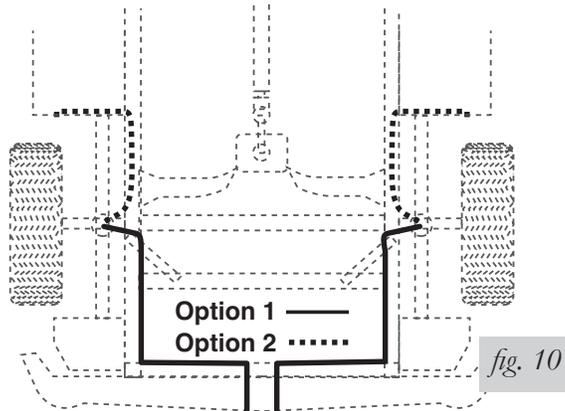
DO NOT INFLATE AIR CYLINDERS BEFORE READING MAINTENANCE & OPERATING TIPS.

## DUAL AIR LINE ROUTING

**CAUTION**

TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST EIGHT INCHES FROM EXHAUST SYSTEM.

- Select a location for the inflation valves in the rocker panel flange, or rear bumper, assuring that each valve will be protected and accessible with an air hose (Figure 10).



- Determine and cut adequate length of air line to reach from valve location to left side air cylinder.

**CAUTION**

LEAVE SUFFICIENT AIR LINE SLACK TO PREVENT ANY STRAIN ON VALVE STEM DURING NORMAL AXLE MOTIONS.

- Insert the air line through the spring seat and protector (Figure 4).
- Slide air line clamp onto the cut air line.
- Push the air line onto the stem, covering all the barbed section (Figure 7). With pliers slide the air line clamp forward until it fully covers barbed section.
- Repeat process for right side.
- Drill 5/16" (8mm) hole for inflating valves and mount as illustrated. Rubber washer is for outside weather seal (Figure 8).
- Route air line along control arm and frame to inflation valve location and cut off excess.
- Slide a clamp onto the air line and push the air line over the fitting, covering all the barbs. With pliers slide the air line clamp forward until it fully covers the barbed section (Figure 9).

- Continue with step 11.

**CAUTION**

DO NOT INFLATE AIR CYLINDERS BEFORE READING MAINTENANCE & OPERATING TIPS.

11. Reattach all components disconnected in step 2:
12. Reconnect brake lines to mounting brackets on rear axle and swaybar link if removed.
13. Reconnect panhard rod.
14. Reconnect shock absorbers.
15. Raise axle completely making sure air line going into cylinder does not get pinched.
16. Inflate Air Springs to 30 PSI (2BAR). Check for air leaks at all fittings and valve core with a soapy water solution.
17. Replace wheels, remove safety stands and carefully lower vehicle to ground.
18. Deflate Air Springs in 5 PSI (.34BAR) intervals to determine best ride and handing. Sufficient air pressure should be maintained to help prevent bottoming-out on large bumps, chuck holes, etc.
19. Recheck air pressure after 24 hours. A 2-4 PSI (.14-.28BAR) loss is normal after initial installation. If the pressure has dropped more than 5 PSI (.34BAR) re-test for leaks with a soapy water solution. Please read and follow the Maintenance Guidelines and Operating Tips on page 11.

## COMPLETING THE INSTALLATION

1. Once the air line has been installed, raise the suspension or lower the body so that the air spring just touches the top and the bottom of the upper and lower spring mounts.

### NOTE

*The snap together protectors will nest inside of the coil spring upper mount. Inflate the air spring to 30 PSI (2BAR).*

2. Lower the vehicle to the ground. Read the "Maintenance and Servicing" section for proper care and for setting up the proper pressure in your suspension system.

## CHECKING FOR LEAKS

1. Inflate the air spring to 30 PSI (2BAR).
2. Spray all connections and the inflation valves with a solution of liquid dish soap and 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 (.34BAR).
4. Check the air pressure again after 24 hours. A 2-4 PSI (.14-.28BAR) loss after initial installation is normal. Retest for leaks if the loss is more than 5 PSI (.34BAR).

## FIXING LEAKS

1. 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.

2. If the preceding steps have not resolved the problem, call Air Lift customer service at (800) 248-0892.

# Before Operating

## INSTALLATION CHECKLIST (To be completed by installer)

- Clearance test — Inflate the air springs to 30 PSI (2BAR) and ensure there is at least 1/2" (13mm) clearance around each air spring, 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 30 PSI (2BAR), check all connections for leaks with a soapy water solution. See *Checking for Leaks* on how to spot leaks. All leaks must be eliminated before the vehicle is road tested.
- Heat test — Be sure there is sufficient clearance from any heat sources — at least 6" (150mm) for air springs and air lines. If a heat shield was included in the kit, install it. If there is no heat shield, but one is required, call (800) 248-0892.
- Fastener test — Recheck all bolts for proper torque. Re-torque after 100 miles (160km).
- Road test — The vehicle should be road tested after the preceding tests. Inflate the air springs to 25 PSI ((1.7BAR) (30 PSI [2BAR] if the vehicle is loaded). Drive the vehicle 10 miles (16km) 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 (.34BAR), 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 (800km) test — Recheck the air spring system after 30 days or 500 miles (800km), 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 Air Pressure	Maximum Air Pressure
5 PSI (.34BAR)	35 PSI (2.4BAR)
FAILURE TO MAINTAIN CORRECT MINIMUM PRESSURE (OR PRESSURE PROPORTIONAL TO LOAD), BOTTOMING OUT, OVER-EXTENSION OR RUBBING AGAINST ANOTHER COMPONENT WILL VOID THE WARRANTY.	

## MAINTENANCE GUIDELINES

### NOTE

*By following these steps, vehicle owners will obtain the longest life and best results from their air spring.*

1. Check the air pressure weekly.
2. Always maintain normal ride height. Never inflate beyond 35 PSI (2.4BAR).
3. If you develop an air leak in the system, use a soapy water solution to check all air line connections and the inflation valve core, before deflating and removing the spring.
4. When increasing load, always adjust the air pressure to maintain 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.



### CAUTION

FOR YOUR SAFETY AND TO PREVENT 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 35 PSI (2.4BAR), THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON YOUR LOAD AND GVWR.

5. Always add air to the springs in small quantities, checking the pressure frequently. Cylinders require less air volume than a tire and inflate quickly.
6. Should it become necessary to raise the vehicle by the frame, make sure the system is at a minimum pressure (5 PSI [.34BAR]) to reduce tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.

## OPERATING TIPS

1. Inflate your air springs to 30 PSI (2BAR) before adding the payload. This will allow the air cylinder to properly mesh with the coil spring. After the vehicle is loaded, adjust your air pressure down to level the vehicle and for ride comfort.
2. When carrying a payload it will be helpful to increase the tire inflation pressure in proportion to any overload condition. We recommend a 2 PSI (.14BAR) increase above normal for each 100 pounds additional load on the axle.

## TROUBLESHOOTING GUIDE

1. Leak test the air line connections.
2. Inspect the air lines to be sure none are pinched. Zip ties 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?

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

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

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

### Q. How long should air springs last?

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

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

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

## TUNING THE AIR PRESSURE

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

### 1. Level vehicle

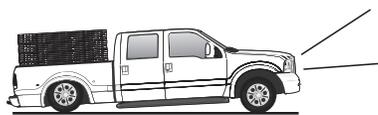
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 11). Raise the air pressure to correct either of these problems and level the vehicle.

### 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. 12). 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. 13). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 11*



Rough ride *fig. 12*



Sway and body roll *fig. 13*

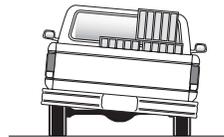
## GUIDELINES FOR ADDING AIR

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. 14).
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. 15).

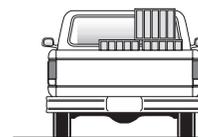


Bottoming out

*fig. 14*



Unlevel



Level

*fig. 15*

## Limited Warranty and Return Policy

Air Lift Company provides a limited lifetime warranty to the original purchaser of its Load Support products, that the products will be free from defects in workmanship and materials when used on cars and trucks as specified by Air Lift Company and under normal operating conditions, subject to the requirements and exclusions set forth in the full Limited Warranty and Return Policy that is available online at [www.airliftcompany.com/warranty](http://www.airliftcompany.com/warranty).

For additional warranty information contact Air Lift Company customer service.

## Replacement Part Information

If replacement parts are needed, contact the local dealer or call Air Lift customer service at **(800) 248-0892**. Most parts are immediately available and can be shipped the same day.

**Contact Air Lift Company customer service at (800) 248-0892 first if:**

- Parts are missing from the kit.
- Need technical assistance on installation or operation.
- Broken or defective parts in the kit.
- Wrong parts in the kit.
- Have a warranty claim or question.

**Contact the retailer where the kit was purchased:**

- If it is necessary to return or exchange the kit for any reason.
- If there is a problem with shipping if shipped from the retailer.
- If there is a problem with the price.

## Contact Information

<b>Mailing address</b>	P.O. Box 80167 Lansing, MI 48908-0167
<b>Shipping address for returns</b>	2727 Snow Road Lansing, MI 48917
<b>Phone</b>	Toll free: (800) 248-0892 International: (517) 322-2144
<b>Email</b>	<a href="mailto:service@airliftcompany.com">service@airliftcompany.com</a>
<b>Web address</b>	<a href="http://www.airliftcompany.com">www.airliftcompany.com</a>

## Need Help?

Contact our customer service department by calling (800) 248-0892, Monday through Friday. For calls from outside the USA or Canada, our local number is (517) 322-2144.

**Register your warranty online at  
[www.airliftcompany.com/warranty](http://www.airliftcompany.com/warranty)**



*Thank you for purchasing Air Lift products — the professional installer's choice!*

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