

***Air Lift*1000™**
by AIR LIFT®

Kit 80537



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.



TABLE OF CONTENTS

Installation Diagram	2
Hardware and Tools Lists	3
Hardware List	3
Tools List	3
Introduction	4
Important Safety Notice	4
Notation Explanation	4
Installing the Air Lift 1000 System	5
Getting Started	5
Installing the Air Line	6
Tee Air Line Routing	6
Dual Air Line routing	8
Completing the Installation	9
Checking for Leaks	9
Fixing Leaks	9
Before Operating	10
Installation Checklist	10
Post-installation checklist	10
Product Use, Maintenance and Servicing	11
Suggested Driving Pressure and Maximum Air Pressure	11
Maintenance Guidelines	11
Operating Tips	11
Troubleshooting Guide	11
Frequently Asked Questions	12
Tuning the Air Pressure	12
Guidelines for Adding Air	13
Limited Warranty and Return Policy	17
Replacement Information	17
Contact Information	17



Installation Diagram

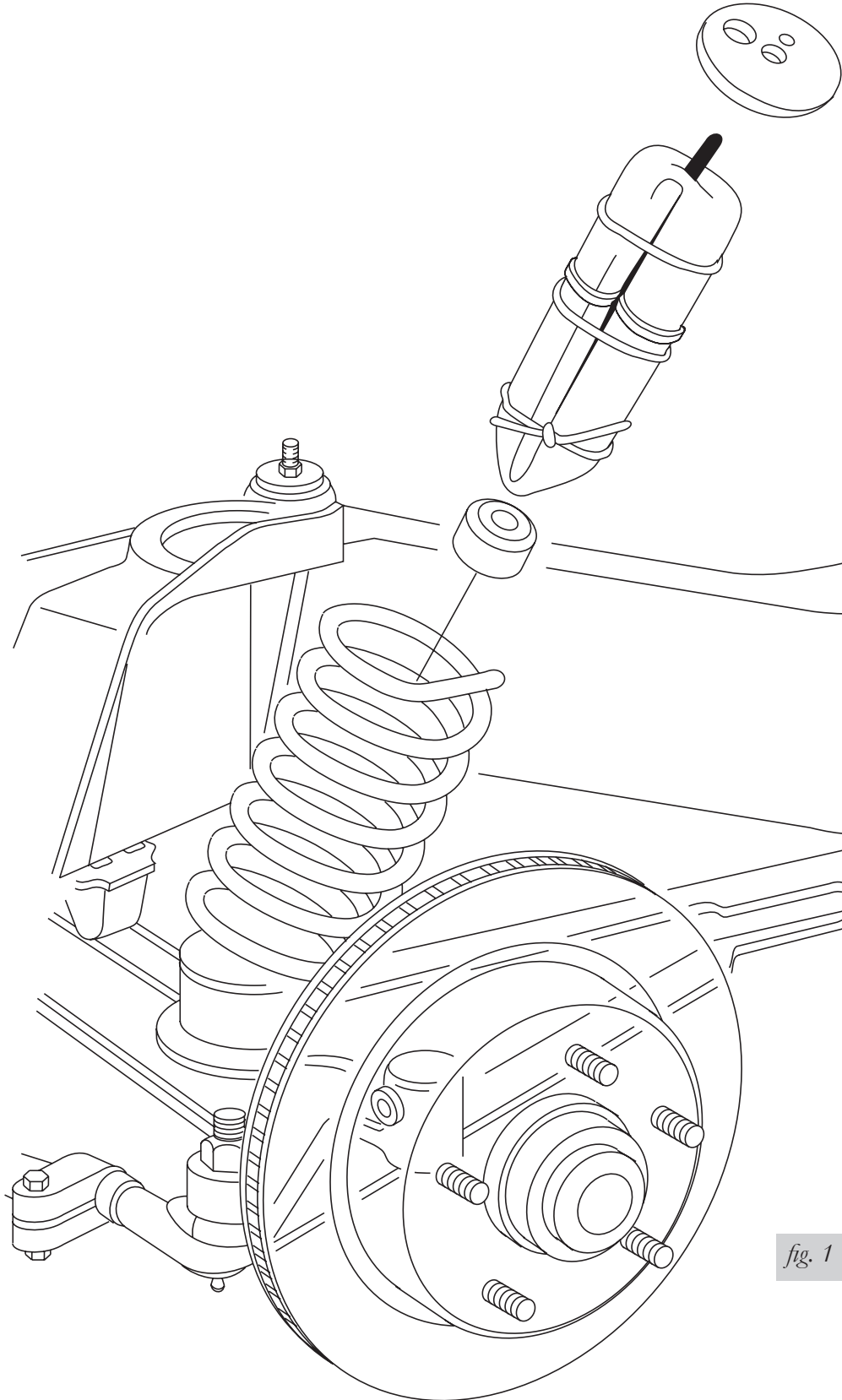


fig. 1

Hardware and Tools Lists

HARDWARE LIST

Item	Part #	Description	Qty
A	46131	Air spring.....	2
B	09119	Protector	2
C	09558	Protector	2
D	20937	Hose.....	15'
E	10466	Zip tie	6
F	10638	Uni clamp.....	6
G	18501	M8 Flat washer	2
H	18411	Star washer.....	2
I	21230	Valve cap	2
J	21233	5/16" Hex nut	4
K	21234	Rubber washer.....	2
L	21236	Tee	1
M	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.

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.

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.

Installing the Air Lift 1000 System

GETTING STARTED

1. Jack up the front end of the vehicle and place safety stands under the frame. Disconnect the bottom shock bolts (Figure 2).

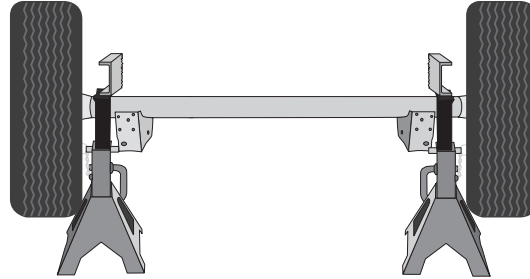


fig. 2



CAUTION

2. Lower the axle or raise the body until the spring is loose in the upper seat.

DO NOT STRAIN THE FLEXIBLE HYDRAULIC BRAKE LINE.

3. Install the lower protector (Figure 3) by dropping it through the upper coil spring seat with the tapered side facing down. Set the protector securely in place with a spoon-type tire iron.

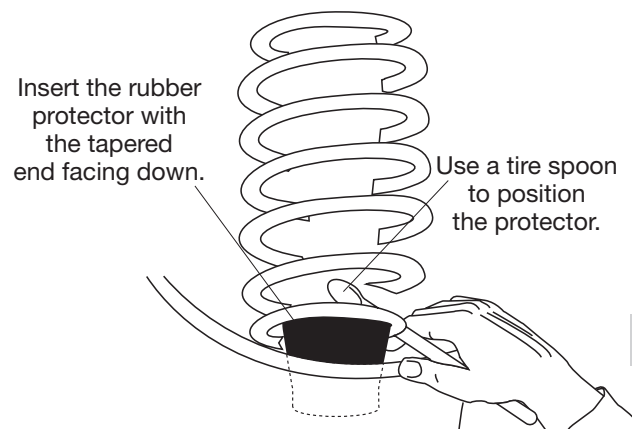


fig. 3

4. Remove the plastic cap from the barbed stem on the end of the cylinder. Exhaust the air from the cylinder by rolling it up toward the barbed stem. Form the cylinder into a "hot dog bun" shape.
5. Insert the flattened air cylinder into the coil spring through the top opening with the stem end up.
6. Push the cylinder down within the coil by hand with a twisting motion or with a blunt instrument such as a spoon-type tire iron.
7. When the cylinder is completely within the coil, remove the cap and allow the cylinder to assume its "as molded" shape,
8. Push the cylinder to the bottom of the coil.
9. Set the large circular upper protector on top of the cylinder. Attach the hose to the top of the cylinder as noted in the next section. Repeat for the other side of the vehicle.
10. Seat the spring back into position. Attach the shocks.

- The air line kit includes 15 feet (4.5m) of air line and fitting to route either to a tee air line with one fill valve or a dual air line with two individual fill valves. Before proceeding with the installation instructions, determine the air line routing best suited to your needs. A tee air line installation can be used unless the weight of your vehicle varies from side to side, and unequal pressures are needed to level the vehicle. Dual air line routing is used in this case. Proceed with either the tee or dual air line routing instructions (found on pages 6-8). Keep in mind to avoid areas which may cause failure of the air line, such as the battery, exhaust, engine radiator, and moving parts, such as steering, suspension, and cables.

INSTALLING THE AIR LINE

Tee air line installation is recommended unless weight in vehicle varies from one side to the other and unequal pressures are needed to level the load. Dual air lines are used in this case.

TEE AIR LINE ROUTING

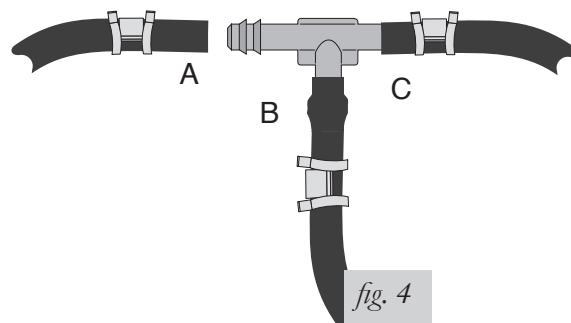
IMPORTANT: To prevent air line from melting, keep it at least 8" (203mm) from the exhaust system.

- Locate desired tee location on the frame rail or cross member.
- 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.

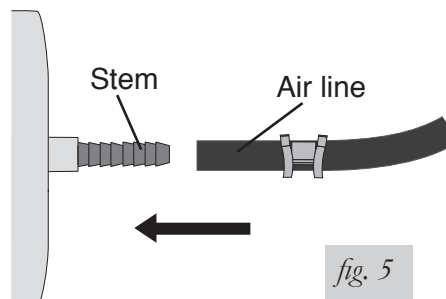
- Slide air line clamp onto the air line.
- Push the air line over one side of the tee until all the barbs are covered. Repeat procedure for other leg of tee. Use pliers to slide the air line clamp forward until it fully covers the barbed section. Repeat for other leg of tee (Figure 4).



Use this procedure for all air line connections:

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

- Route along cross member and lower control arm to air cylinder.
- Insert air line through the upper spring seat.
- Push the air line onto the stem of the air spring, covering all the barbs (Figure 5). Use pliers to slide the air line clamp upward until it fully covers the barbed section.



8. 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.

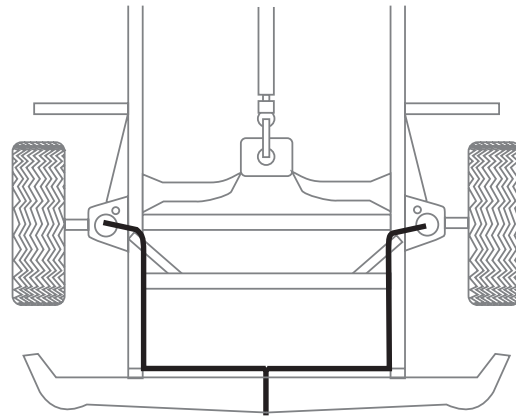


fig. 6

9. Select a location for inflation valve on the truck, front bumper, fender flange or behind the license plate, insuring that the valve will be protected and accessible with an air hose.
10. Drill a 5/16" (8mm) hole for inflation valve and mount as in illustration (Figure 7). Rubber washer is for outside weather seal.

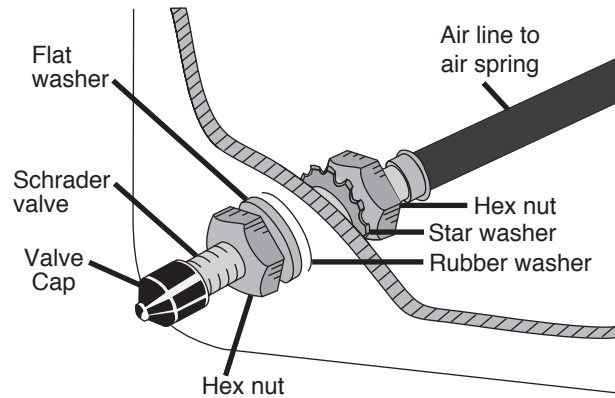


fig. 7

11. Slide air line clamp over the air line. Push air line onto fitting covering all barbs, use pliers to slide the air line clamp forward until it fully covers the barbed section (Figure 8).

Be sure to fully cover the barbed section.

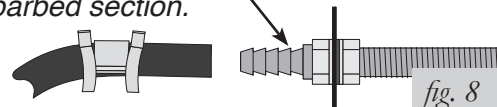


fig. 8

12. Raise axle or lower body until air cylinders lightly touch upper spring seat and lower spacers.

CAUTION

DO NOT INFLATE AIR CYLINDERS BEFORE READING THE MAINTENANCE AND OPERATION TIPS.

DUAL AIR LINE ROUTING

CAUTION

TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST 8" (203MM) FROM THE EXHAUST SYSTEM.

1. Select a location for the inflation valves in the plow frame or front bumper, insuring that each valve will be protected and accessible with an air hose (Figure 9).

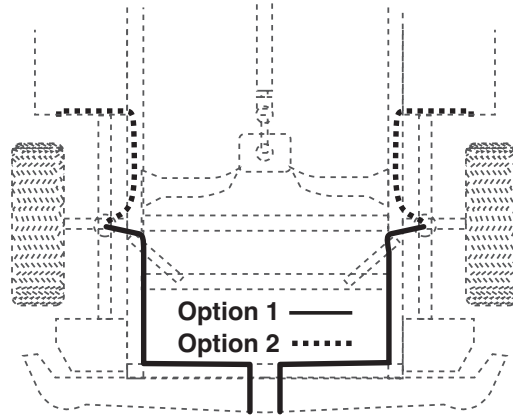


fig. 9

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

CAUTION

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

3. Slide air line clamp onto the cut air line.
4. Push the air line onto the stem of the air spring, covering all the barbed section. Use pliers to slide the air line clamp forward until it fully covers barbed section (Figure 5).
5. Repeat process for right side.
6. Drill 5/16" (8mm) hole for inflating valves and mount as illustrated. Rubber washer is for outside weather seal (Figure 7).
7. Route air line along control arm and frame to inflation valve location and cut off excess.
8. Slide a clamp onto the air line and push the air line over the fitting, covering all the barbs. Use pliers to slide the air line clamp forward until it fully covers the barbed section (Figure 8).
9. Raise axle or lower body until air cylinders lightly touch upper spring seat and lower spacers.

CAUTION

DO NOT INFLATE AIR CYLINDERS BEFORE READING THE MAINTENANCE AND OPERATION TIPS.

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 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 10 PSI (.7BAR).
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 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 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
10 PSI (.7BAR)	50 PSI (3.5BAR)
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 50 PSI (3.5BAR).
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 50PSI, 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 (10 PSI [.7BAR]) 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 (46kg) 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 (Figure 10). 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 (Figure 11). 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 (Figure 12). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 10*



Rough ride *fig. 11*



Sway and body roll *fig. 12*

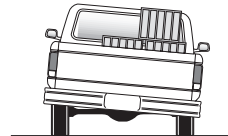
GUIDELINES FOR ADDING AIR

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 (Figure 13).
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 (Figure 14).

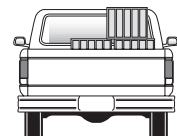


Bottoming out

fig. 13



Unlevel



Level

fig. 14

Notes



Notes

Notes

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.

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

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

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**



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

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