

***Air Lift*1000**

by AIR LIFT®

Kit 60821

***Ford D3 & D4 Chassis
front-wheel and
all-wheel drive***



*Cover illustration
may not depict
actual kit.*



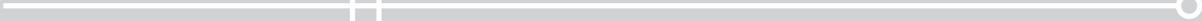
INSTALLATION GUIDE

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, tools 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. Contact Air Lift Company at (800) 248-0892 or go online at www.airliftcompany.com for the latest version of this manual.

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.

HARDWARE LIST

Item	Part #	Description.....	Qty
A	46135	Air spring.....	2
B	20937	Hose 15' (4.6m).....	1
C	10466	Zip tie.....	6
D	21230	Valve cap.....	2
E	21233	5/16" Hex nut.....	4
F	21234	Rubber washer.....	2
G	18411	Star washer.....	2
H	18501	M8 Flat washer.....	2
I	21236	Tee.....	1
J	21455	Valve.....	2

TOOLS LIST

Description.....	Qty
Hoist.....	1
Floor jack.....	1
Safety stands.....	2
Safety glasses.....	1
Standard sockets/ratchet and wrenches.....	1
Drill, drill bits.....	1
Pliers.....	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.

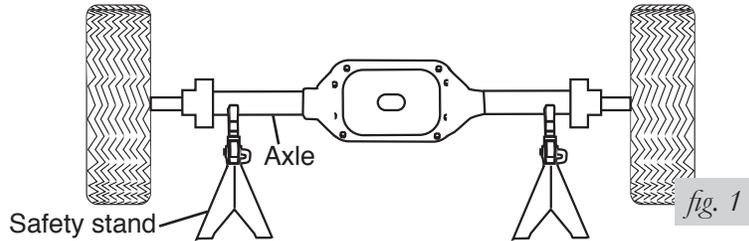
Installing the Air Lift 1000 System

PREPARING THE VEHICLE

1. Jack up the rear of the vehicle or raise on a hoist. Support the frame with safety stands (fig. 1). Disconnect the sway bar at the spindle and remove the lower shock mounting hardware (fig. 2). Lower the axle or raise the body of the vehicle until the suspension is fully extended.

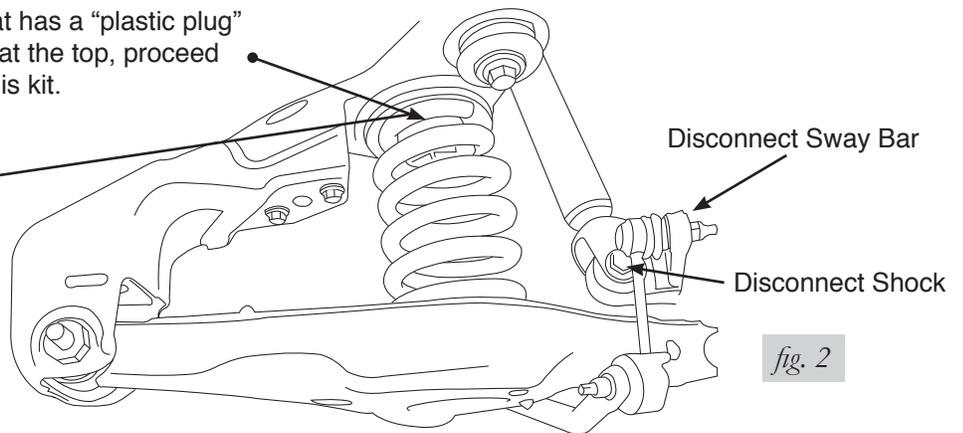


OBSERVE TENSION ON BRAKE LINE/ABS LINE. DO NOT STRAIN.



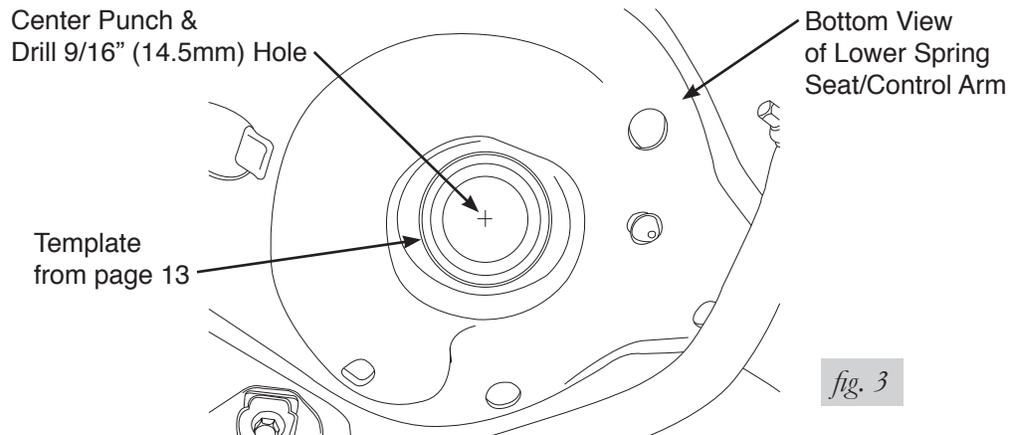
If the upper spring seat has a “plastic plug” in it covering the hole at the top, proceed with step 2 to install this kit.

If you have an open hole at the top, move on to step 3.

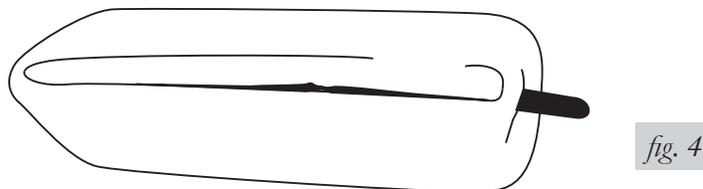


Almost all of these applications have a hole in the upper spring seat, if you have a “plastic plug” covering the hole in the upper spring seat, proceed with step 2. If you have an “open hole” in the spring seat that you can see, move on to step 3 for further instructions.

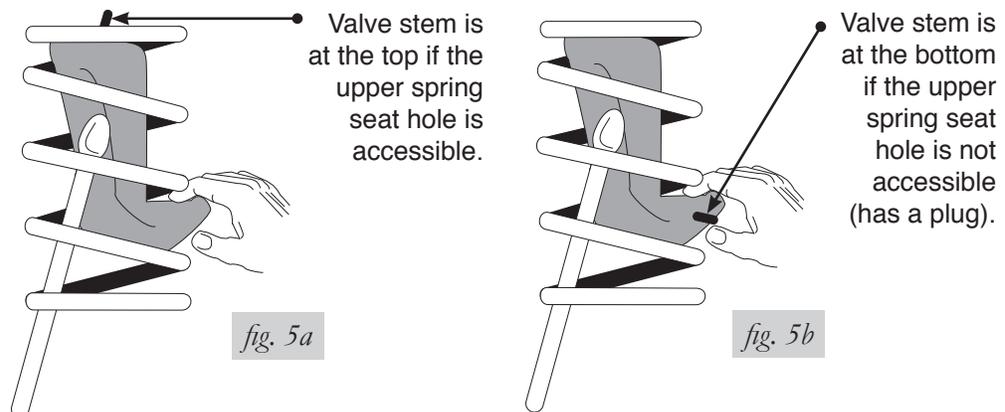
- It will be necessary to drill an access hole for the hose through the lower spring seat. Cut out the hole template on page 13, cut out the circle size that best fits into the lower spring seat pocket and paste it onto the lower spring seat with a dab of grease. Using the cross as a guide, center punch and drill a 9/16" (14.5mm) hole (fig. 3).



- Remove the plastic cap from the barbed stem on the end of the air spring. Exhaust the air from the air spring by rolling it up toward the barbed stem. Replace the cap on the stem to hold the flat shape (fig. 4).



- Insert the flattened air spring into the coil spring through the lowest opening of the coil spring with the stem pointed in the direction determined in step 2 (stem down if a plug is covering the hole in the spring seat at the top, or up if the hole is open and accessible) (fig. 5a or 5b).
- Push the air spring up within the coil by hand or with a blunt instrument such as a spoon-type tire iron (fig. 5a or 5b).



- When the air spring is completely within the coil, remove the cap and allow the air spring to assume its "as molded" shape.
- Push the cylinder to the top or bottom of the coil spring so that the stem will be accessible allowing for the attachment of the hose. If the hose is routed through the top (had an open hole) there are holes that are above the modular frame you will need to route the hose through, to gain access to the upper spring mount hole for the stem. If necessary, use a coat hanger to route the hose through this opening. Read through the hose installation instructions first before proceeding with these next steps.

TEE AIR LINE ROUTING



CAUTION

TO PREVENT THE AIR LINE FROM MELTING, MAINTAIN AT LEAST 8" FROM THE EXHAUST SYSTEM TO THE AIR LINE.



CAUTION

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

1. Locate the desired tee location on the frame rail or cross member. Determine and cut an adequate length of air line to reach from the tee to the left and right side air springs.
2. Slide an air line clamp onto the air line.
3. Push the air line over one side of the tee until all the barbs are covered. With a pair of pliers, slide the air line clamp forward until it fully covers the barbed section. Repeat the entire procedure for the other leg of the tee (fig. 6).
4. Route the air line along the cross member and either the lower control arm or the upper spring seat to the air spring.
5. Insert the air line through the upper spring seat.

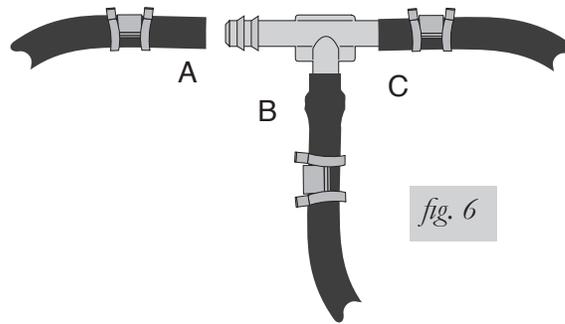


fig. 6

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.

6. Push the air line onto the stem, covering all the barbs (fig. 7). With the pliers, slide the air line clamp upward until it fully covers the barbed section.

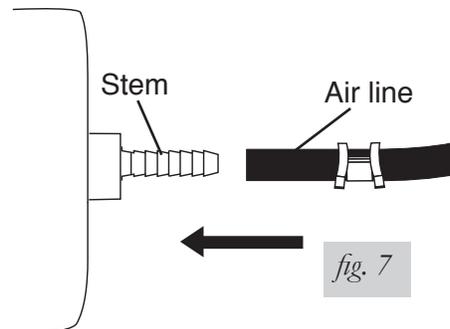
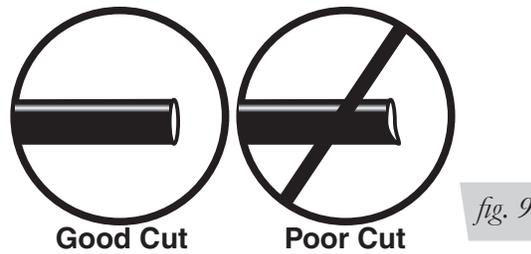
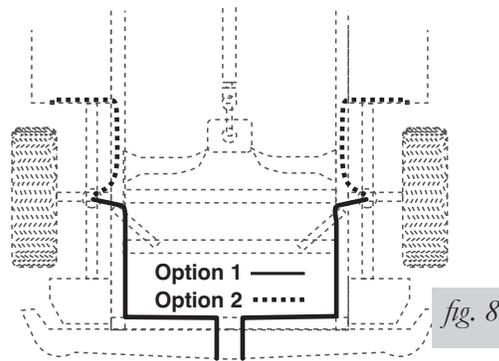


fig. 7

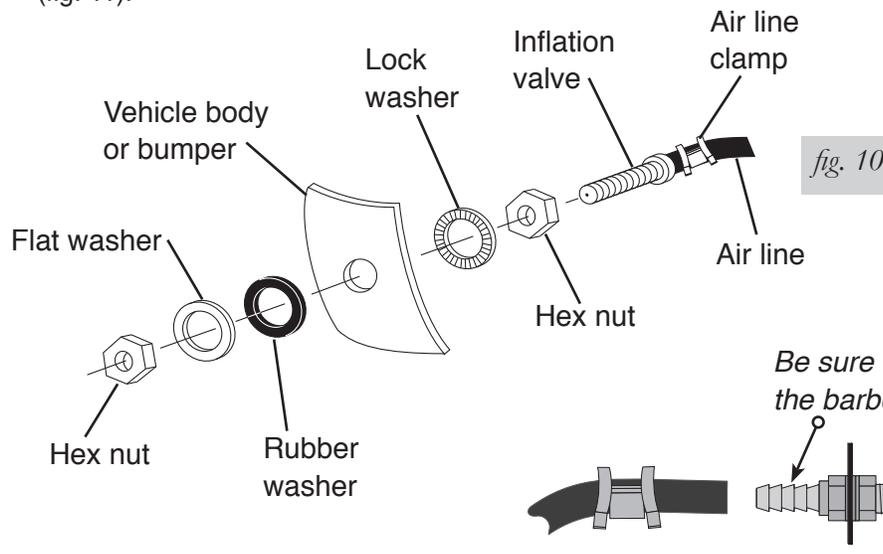
7. Push the remaining air line over the last fitting on the tee and route it along the frame to the desired inflation valve location. Attach the air line with zip ties.
8. Select a location for the inflation valve in the gas cap well, the trunk, rear bumper, fender flange or behind the license plate, insuring that the valve will be protected and accessible with an air hose (fig. 8).



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. 9).

9. Drill a 5/16" hole for the inflation valve and mount as shown (fig. 10). The rubber washer serves as an outside weather seal.
10. Slide the air line clamp over the air line. Push the air line onto the fitting covering all barbs. Using pliers, slide the air line clamp forward until it fully covers the barbed section (fig. 11).



11. Raise the axle or lower the vehicle body until the air springs lightly touch the upper and lower spring seats.

 **CAUTION**

DO NOT INFLATE AIR SPRINGS BEFORE READING THE MAINTENANCE AND OPERATION SECTION.

12. Continue to “Completing the Installation.”

DUAL AIR LINE ROUTING

 **CAUTION**

TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST 8” FROM EXHAUST SYSTEM.

1. 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.
2. Determine and cut an adequate length of air line to reach from the valve location to the left side air spring.

 **CAUTION**

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

3. Insert the air line through the spring seat and spacer.
4. Slide the air clamp onto the cut air line.
5. Push the air line onto the stem, covering all the barbed section (see fig. 8). With pliers slide the air line clamp forward until it fully covers the barbed section.
6. Repeat process for the right side.
7. Drill a 5/16” hole for the inflating valves and mount as illustrated. The rubber washer is for an outside weather seal (see fig. 10).
8. Route the air line along the control arm and frame to the inflation valve location and cut off the excess.
9. 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 (see fig. 11).
10. Raise the axle or lower body until the air springs lightly touch the upper and lower spring seat.

 **CAUTION**

DO NOT INFLATE AIR SPRINGS BEFORE READING THE MAINTENANCE AND OPERATION SECTION.

COMPLETING THE INSTALLATION

1. Attach the sway bar and lower shock mounts. Tighten securely.
2. If you used step 2 on page 4 (had a plastic plug covering the upper spring seat hole) for your hose installation, raise and lower the suspension up and down while viewing the hose/barbed cylinder interface, if hose/barb rubs on the lower spring seat it will be necessary to grind this area out for more clearance. The hose/barb area of the cylinder cannot rub on the lower spring seat.
3. Inflate the air springs to 35 PSI (2.4BAR). Test for air leaks by applying soap to 4/5 water to all valve cores, fittings and connections.
4. Recheck air pressure after 24 hours. A 2-4 PSI (.14-.28BAR) loss after initial pressure has dropped more than 5 PSI (.34BAR), retest for leaks.

NOTE

It may be necessary to leave the maximum pressure in the system overnight for the first few nights to stretch the cylinder out inside the coil spring.

CHECKING FOR LEAKS

1. Inflate the air spring to 30 PSI (2.07BAR).
2. Spray all connections and the inflation valves with a soapy water solution. 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.

Maintenance and Servicing

Minimum Air Pressure	Maximum Air Pressure
5 PSI (.34BAR)	35 PSI (2.41BAR)
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

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

1. Check the air pressure weekly.
2. Always maintain at least the recommended minimum air pressure to prevent the air spring from being pinched. Never inflate beyond the maximum air pressure.
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 air spring.
4. Always add air to springs in small quantities, checking the pressure frequently. Air springs require less air volume than a tire and inflate quickly.

OPERATING TIPS

1. Inflate your air springs to 35 PSI (2.41BAR) 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 (45kg) additional load on the axle.



DO NOT EXCEED THE VEHICLE MANUFACTURERS' MAXIMUM GROSS VEHICLE WEIGHT RATING.

Troubleshooting Guide

1. Leak test the air line connections, threaded connection of the elbow into the air spring, and the inflation valves. See "Fixing Leaks" on page 8 for repair.
2. Check for dirt debris in the valve core.
3. 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.
4. Inspect the air line for holes and cracks. Replace as needed.
5. Look for a kink or fold in the air line. Reroute as needed.

If the preceding steps do not solve the problem, it is most likely caused by a failed air spring — either a factory defect or an operating problem. Please call Air Lift at (800) 248-0892 for assistance or a replacement air spring.

Product Use

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. 12). 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. 13). 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. 14). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim

fig. 12



Rough ride

fig. 13



Sway and body roll

fig. 14

GUIDELINES FOR ADDING AIR

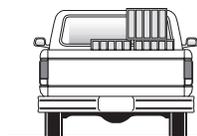
1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. For motorhomes, start with 50-100 PSI (3.45-6.9BAR) in the rear because it can be safely assumed that it is heavily loaded.
4. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
5. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 15).
6. Adjust the pressure up and down to find the best ride.
7. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
8. 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. 16). As much as a 50 PSI (3.45BAR) difference is not uncommon.



Bottoming out

fig. 15

Unlevel



Level

fig. 16

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.

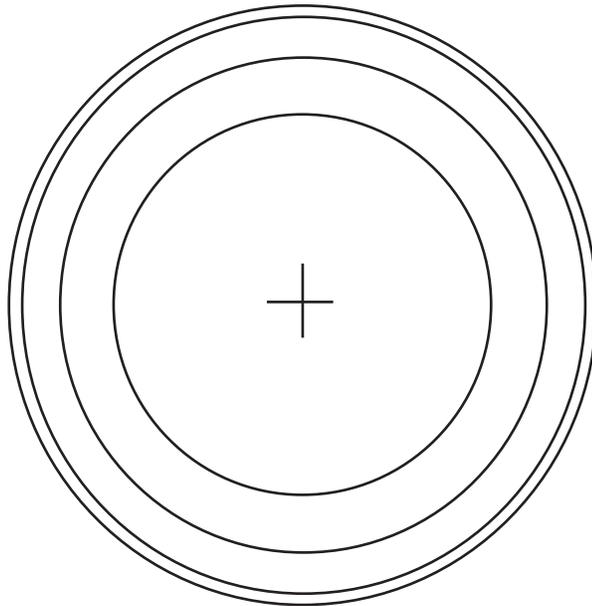
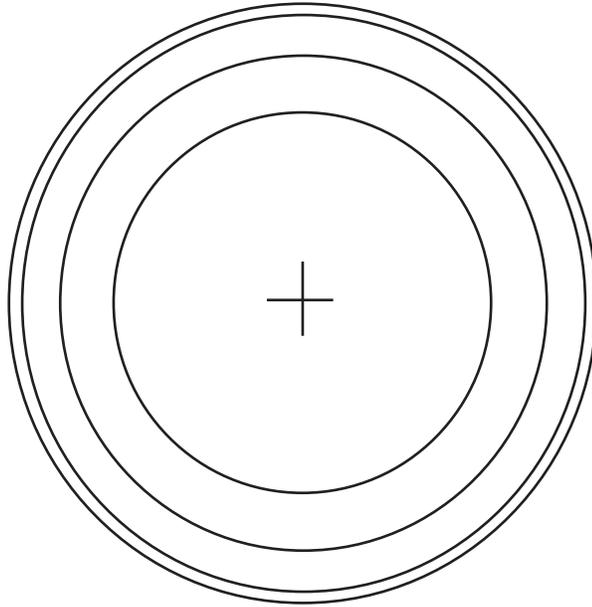
Contact the retailer where the kit was purchased:

- 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

Kit 60821 Template



Notes

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Notes

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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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Printed in the USA
JJC-0517