

Air Lift 1000

by AIR LIFT®

Kits 60824 & 60825

2011- Dodge Durango (AWD)*

**2011- Jeep Grand Cherokee
(2WD/4WD)****



Kit #60824 pictured



INSTALLATION GUIDE

- * DOES NOT FIT DURANGO HEAT AND R/T APPLICATIONS
- ** DOES NOT FIT JEEP QUADRA-LIFT EQUIPPED AND SRT-8 VEHICLES

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.



Thank you for purchasing Air Lift products!

We're delighted to be a part of your air suspension solution. Air Lift Company is dedicated to ensuring that you have the best possible experience with our products. If you have any questions, concerns or even a suggestion, please feel free to contact us.

It's easy to put your air springs to work with an Air Lift on board air compressor system!

Air Lift offers the most advanced compressor systems in the industry. Choose the best option for your ride from many models and features!



WirelessAIR
#72000

WirelessONE
#25870

*Four air springs require TWO compressor systems.

Choose the system best suited for your...	Analog Series		Wireless Series		Automatic Leveling
	Standard Duty	Heavy Duty	Single/Standard Duty	Dual/Heavy Duty	Automatic Leveling
<i>Pick-up with any towable</i>	25850*	25854**	25870	72000	25415
<i>Pick-up with camper</i>	25852***	25856****	N/R	72000	25430
<i>Van/SUV with leaf springs</i>	25850*	25854**	25870	72000	25415
<i>Vehicle with coil springs</i>	25850*	25854**	25870	72000	N/R
<i>Motor home</i>	N/R	25856****	N/R	72000	25430
<i>Unique applications</i>	call	call	call	call	call



LoadController/Single
#s 25850 & 25854



LoadController/Dual
#s 25852 & 25856

Still available in panel mount style: *25592, ** 25655, ***25812, ****25651

N/R = Not Recommended

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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.

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 and Tool List

HARDWARE LIST

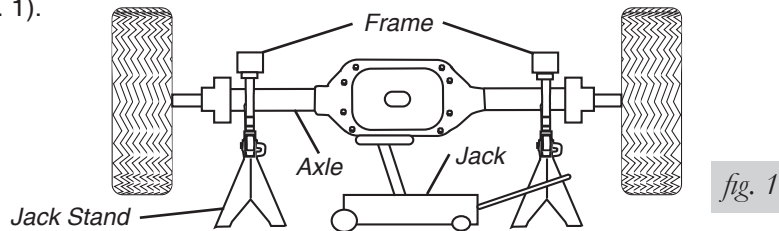
Item	Part #	Description	Qty
A1	46161	Air Spring (Kit #60824).....	2
A2	46129	Air Spring (Kit #60825).....	2
B	09447	Protector (spacer)	2
C	20937	Poly hose	15'
D	10466	Tie Strap	6
E	10638	Uni Clamp	6
F	18501	M8 Flat Washer.....	2
G	18411	Star Washer.....	2
H	21230	Valve Cap	2
I	21233	5/16" Hex Nut.....	2
J	21234	Rubber Washer.....	2
K	21236	Tee.....	2
L	21455	Valve	2

TOOLS LIST

Description.....	Qty
Hoist or Floor Jack.....	1
Safety Stands	2
Tire Spoon.....	1
Safety Glasses	1
Air Compressor or Compressed Air Source	1
Spray Bottle with Dish Soap/Water Solution	1
Box Cutter or Knife	1
Hack Saw Blade or Equivalent	1
Rat Tail File	1

Installing the Air Lift1000 System

1. Jack up the rear of the vehicle or raise on a hoist. Support the frame with safety stands (fig. 1).



2. Lower the axle or raise the body until the springs are completely extended (wheels hanging).

CAUTION

OBSERVE TENSION ON BRAKE LINE. DO NOT STRAIN.

3. Since there is no access to route a hose through the top spring seat, the hose will need to be routed down through the bottom spring seat. In order to do this, the rubber diaphragm (cover) on the lower spring seat will have to be trimmed using a box cutter or knife (fig. 2). Cut just enough to create a one inch hole in the center of the rubber diaphragm.

Rubber diaphragm covering lower spring seat hole. Cut a one inch hole in the center.



4. Once the hole is created; in order to make access to the barb on the cylinder it will be necessary to remove the cross ribs from the lower spring retainer (fig. 3).

Lower spring retainer showing cross ribs

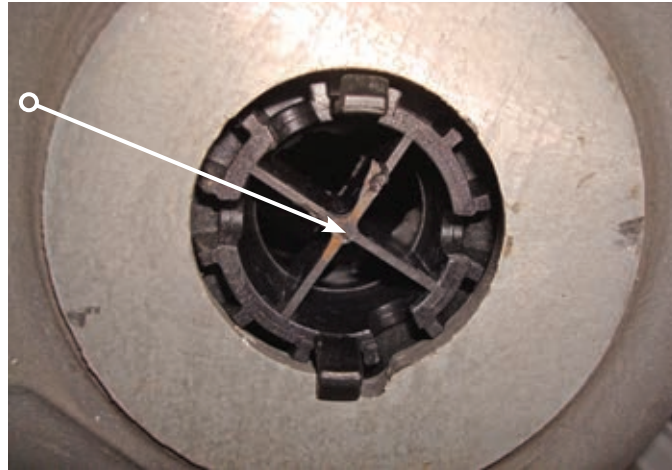


fig. 3

5. To do this you can use a hack saw blade (or anything comparable) and cut each rib out creating access in the center of the lower spring seat, to the cylinder that will be installed (fig. 4). Try to smooth any sharp edges with a rat tail file or Dremel tool.

Lower spring retainer showing the ribs cut out. Smooth any sharp edges with a file.

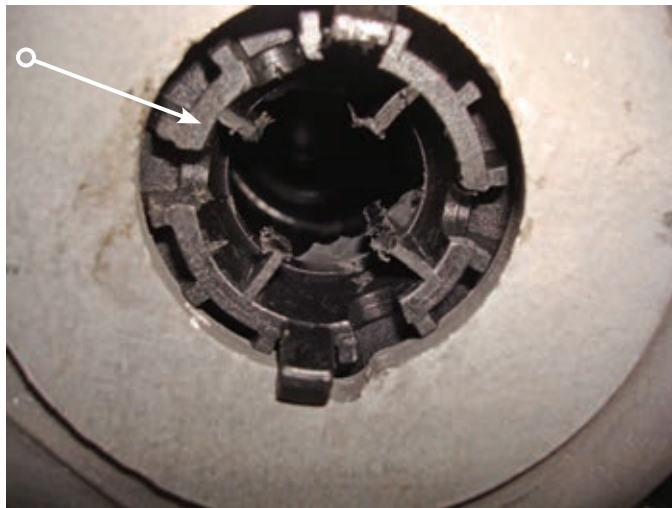


fig. 4

6. 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. 5). Fold the spring into a “hot dog bun shape.”

Air spring

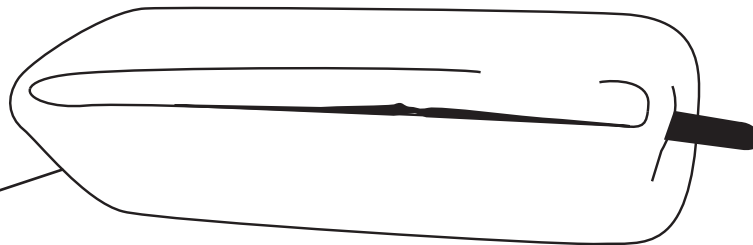
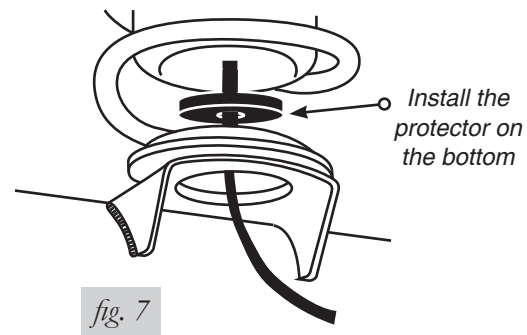
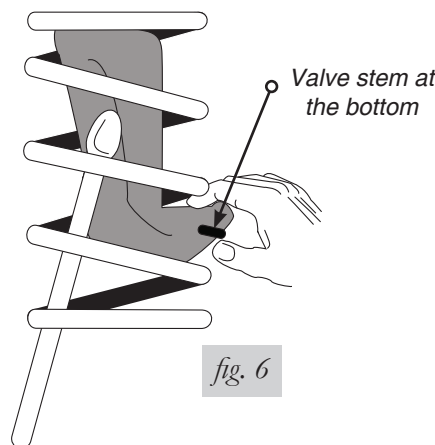


fig. 5

7. Insert the flattened end of the air spring into the coil spring through the lowest opening in the coil spring with the stem at the bottom (fig. 6). Push the spring up into the cylinder by hand or with a blunt instrument such as a spoon-type tire iron.



8. When the air spring is completely within the coil, remove the cap and allow the air spring to assume its “as molded” shape.
9. Push the air spring to the top of the coil spring and insert the protector on the bottom between the lower spring seat and air spring (figs. 7 & 8).



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

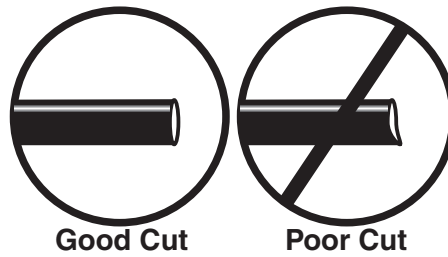
NOTE

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

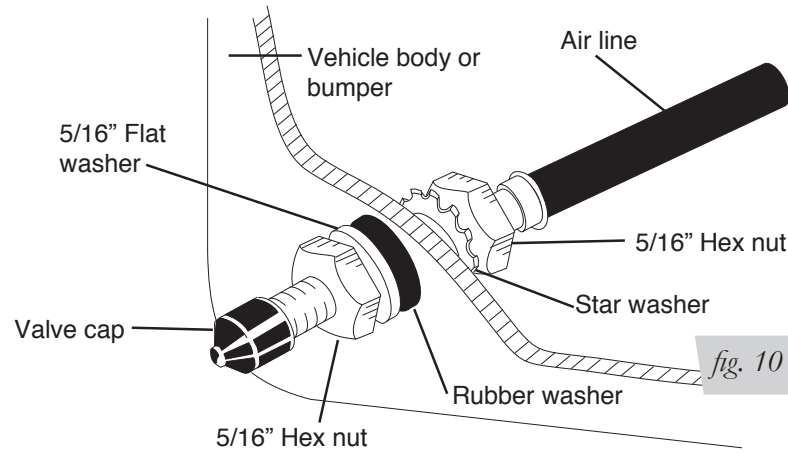
2. Drill two 5/16” holes to install the inflation valves.
3. Cut the air line assembly in two equal lengths.

CAUTION

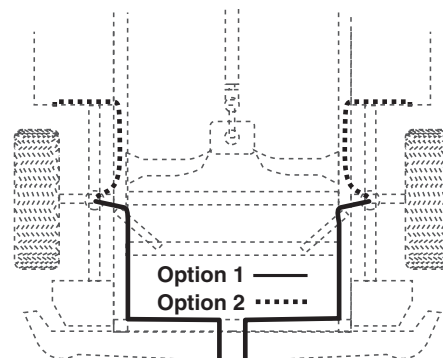
WHEN CUTTING OR TRIMMING THE AIR LINE, USE A HOSE CUTTER, A RAZOR BLADE, OR A SHARP KNIFE. A CLEAN, SQUARE CUT WILL ENSURE AGAINST LEAKS. DO NOT USE WIRE CUTTERS OR SCISSORS TO CUT THE AIR LINE. THESE TOOLS MAY FLATTEN OR CRIMP THE AIR LINE CAUSING IT TO LEAK AROUND THE O-RING SEAL INSIDE THE ELBOW FITTING (FIG. 9).


fig. 9

- Place a 5/16" nut and star washer on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole and have room for the rubber washer, flat washer, and 5/16" nut and cap. There should be enough valve exposed after installation—approximately 1/2"—to easily apply a pressure gauge or an air chuck (fig. 10).


fig. 10

- Push the inflation valve through the hole and use the rubber washer, flat washer, and another 5/16" nut to secure it in place. Tighten the nuts to secure the assembly.
- Route the air line along the frame to the air fitting on the air spring (fig. 11). Keep AT LEAST 6" of clearance between the air line and heat sources, such as the exhaust pipes, muffler, or catalytic converter. Avoid sharp bends and edges. Use the plastic tie straps to secure the air line to fixed, non-moving points along the chassis. Be sure that the tie straps are tight, but do not pinch the air line. Leave at least 2" of slack to allow for any movement that might pull on the air line (fig. 11).


fig. 11

- 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).
- Install the minimum/maximum air pressure decal in a highly visible location. We suggest placing the decal on the driver-side window, just above the door handle.

CHECKING FOR LEAKS

1. Inflate the air spring to 30 PSI.
2. Spray all connections and the inflation valves with a solution of 1/5 liquid dish soap and 4/5 water. Spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the system to normal ride height. Do not deflate to lower than 5 PSI.
4. Check the air pressure again after 24 hours. A 2 - 4 PSI loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

FIXING LEAKS

1. If there is a problem with the swivel fitting:
 - a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" off the end of the air line. Be sure the cut is clean and square (see fig. 9). 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.

COMPLETING THE INSTALLATION

1. Inflate the air springs to 25psi. Test for air leaks by applying a liquid solution of 1/5th dish soap to 4/5^{ths} soapy water (in a spray bottle) to all valve cores, fittings and connections.
2. Lower the vehicle to the ground. Read Product Use, Maintenance and Servicing section for proper care of your air springs.
3. Re-check air pressure after 24 hours. A 2-4psi loss after the initial installation is normal. If pressure has dropped more than 5lbs, re-test for leaks.
4. Figures 12 & 13 (on page 8) show the completed installation.



fig.12



fig. 13

Before Operating

INSTALLATION CHECKLIST

- Clearance test — Inflate the air springs to 30 PSI and make sure there is at least ½” clearance from anything that might rub against each sleeve. 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 and check all connections for leaks. Refer to “Checking for Leaks” on page 7. All leaks must be eliminated before the vehicle is road tested.
- Heat test — Be sure there is sufficient clearance from heat sources, at least 6” for air springs and air lines
- Fastener test — Recheck all bolts for proper torque.
- Road test — The vehicle should be road tested after the preceding tests. Inflate the 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 10 with the owner. Be sure to provide the owner with all of the paperwork that 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 — I understand the air pressure requirements of my air spring system. Regardless of load, the air pressure should always be adjusted to maintain ride height at all times.
- Thirty day or 500 mile test — I understand that I must 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 Air Pressure	Maximum Air Pressure
5 PSI	35 PSI
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 100 PSI.
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, 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. Sleeves 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) 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 25 PSI 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 or up 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 increase above normal for each 100 lbs additional load on the axle.

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?

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. 14). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

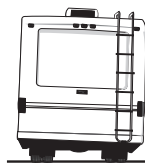
If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough (fig. 15). Try different pressures to determine the best ride comfort.

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. 16). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 14*



Sway and body roll *fig. 15*

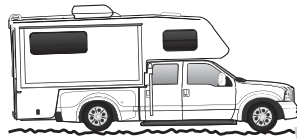


Rough ride *fig. 16*

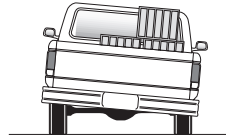
GUIDELINES FOR ADDING AIR

1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. For motorhomes, start with 50-100 PSI 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.

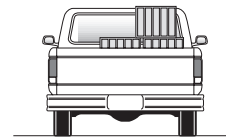
5. If it is ever suspected that the air bags have bottomed out, increase the pressure (fig. 17).
6. Adjust the pressure up and down to find the best ride.
7. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
8. It may be necessary to maintain different pressures on each side of the vehicle. Loads such as water, fuel, and appliances will cause the vehicle to be heavier on one side (fig. 18). As much as a 50 PSI difference is not uncommon.



Bottoming out

fig. 17

Unlevel



Level

fig. 18