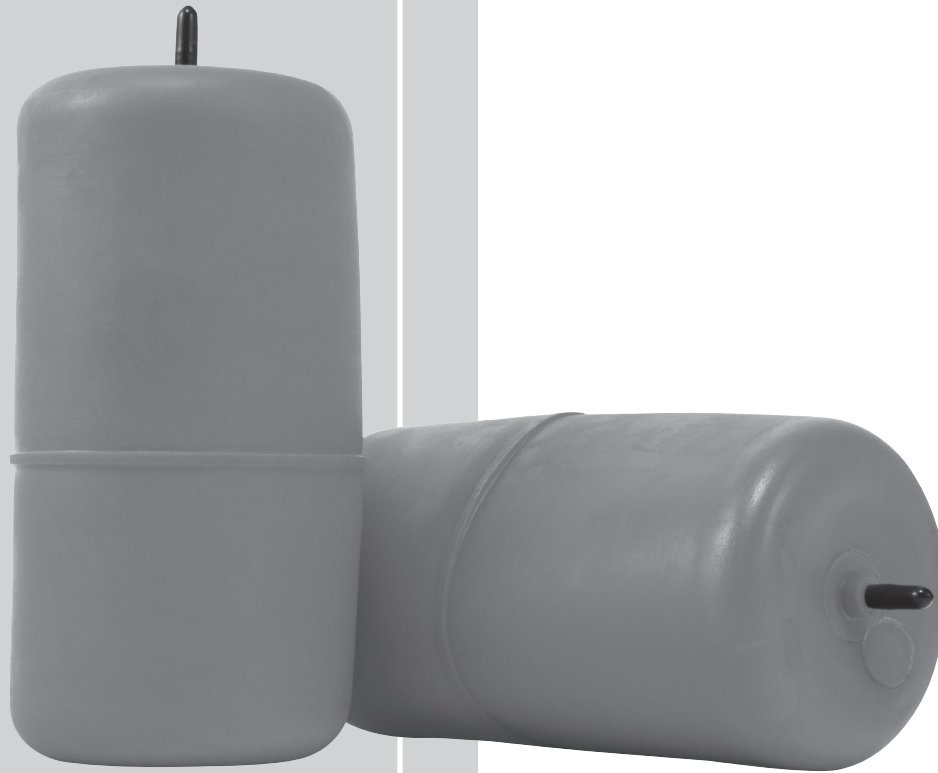


**Air Lift1000**<sup>™</sup>  
by AIR LIFT®

**Kit 60852**  
**Ram Promaster City**



## **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

<b>Introduction</b> . . . . .	<b>2</b>
Important Safety Notice . . . . .	2
Notation Explanation . . . . .	2
<b>Hardware and Tools Lists</b> . . . . .	<b>3</b>
Hardware List . . . . .	3
Tools List . . . . .	3
<b>Installing the Air Lift 1000 System</b> . . . . .	<b>3</b>
Getting Started . . . . .	3
Installing the Air Line . . . . .	5
Dual Air Line Routing . . . . .	8
Heat Shield Installation . . . . .	9
Completing the Installation . . . . .	9
Checking for Leaks . . . . .	10
Fixing Leaks . . . . .	10
<b>Before Operating</b> . . . . .	<b>11</b>
Installation Checklist . . . . .	11
Post-installation Checklist . . . . .	11
<b>Product Use, Maintenance and Servicing</b> . . . . .	<b>12</b>
Suggested Driving Pressure and Maximum Air Pressure . . . . .	12
Maintenance Guidelines . . . . .	12
Operating Tips . . . . .	12
Troubleshooting Guide . . . . .	12
Frequently Asked Questions . . . . .	13
Tuning the Air Pressure . . . . .	14
Guidelines for Adding Air . . . . .	14
<b>Choosing the Right On-Board Air Compressor System</b> . . .	<b>15</b>
<b>Replacement Information</b> . . . . .	<b>16</b>
<b>Contact Information</b> . . . . .	<b>16</b>
<b>Limited Warranty and Return Policy</b> . . . . .	<b>17</b>

# 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.

## 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.

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



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



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




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## 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	46129	Air Spring .....	2
B	09112	Protector .....	2
C	11907	Heat Shield .....	1
D	17132	#8 Self Tapping Screw .....	3
E	20937	Air Line .....	15 ft.
F	10466	Tie Straps.....	6
G	10638	Uni Clamps .....	6
H	21230	Valve Cap .....	2
I	21233	5/16" Hex Nut.....	4
J	21234	Rubber Washer.....	2
K	18411	Star Washer .....	2
L	18501	5/16" Flat Washer .....	2
M	21236	Union Tee .....	1
N	21455	Inflation Valve .....	2

## TOOLS LIST

Description.....	Qty
Flat Tire Spoon .....	1
Pliers.....	1
Sharp Knife or Scissors .....	1
Safety Glasses .....	1
5/16" Drill Bit (Very Sharp).....	1
#2 Philips Bit for Driving Screws.....	1
Heavy-Duty Drill.....	1
Grinder with Burr or Rat-Tail File.....	1
Hoist or Floor Jack.....	1
Jack Stands .....	2
Spray Bottle with Dish Soap/Water Solution .....	1

# Installing the Air Lift1000 System

## GETTING STARTED

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



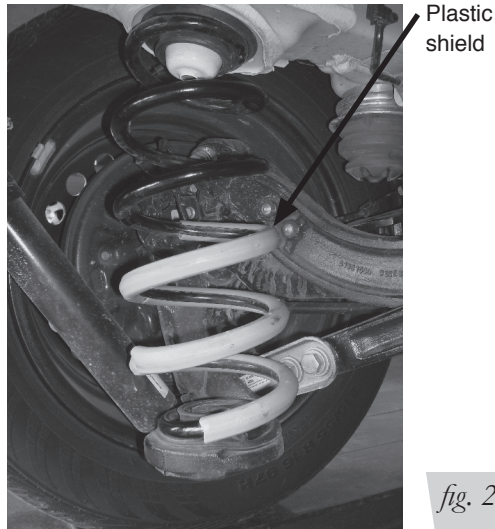
fig. 1

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

**CAUTION**

OBSERVE TENSION ON BRAKE LINE. DO NOT STRAIN.

3. Remove the plastic shield from the rear coil springs on both sides. (Fig. 2)


*fig. 2*

4. It will be necessary to grind or file out the slot in the lower spring seat to increase the hose clearance (Figs. 3 & 4). From the bottom (as shown), open the hole up so the diameter at the top of the lower spring seat is more of a round shape than an oval shape it originally is. Make sure there is no sharp edge once complete.

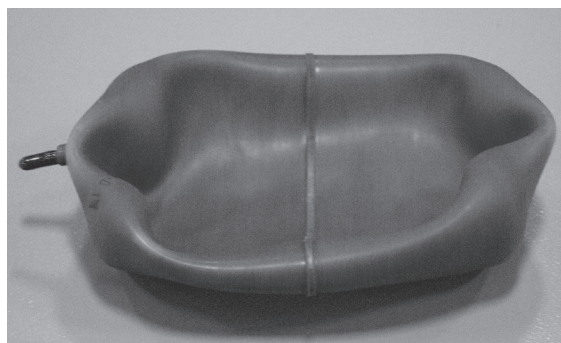

*fig. 3*

Top view of spring seat showing bur in position.


*fig. 4*

Open up slot so it is more of a round shape on top of the lower spring seat.

5. Remove the plastic cap from the barbed stem on the end of the air spring (A). 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 air spring into a "hot dog bun shape."


*fig. 5*

- Insert the flattened air spring (A) into the coil spring through the lowest opening with the stem at the bottom. (Fig. 6)

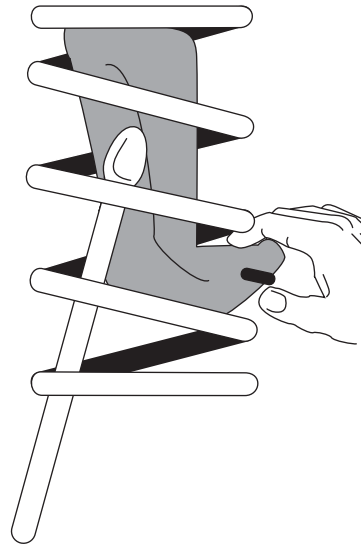


fig. 6

- Push the air spring up within the coil by hand or with a blunt instrument such as a spoon-type iron.
- 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 up to the top of the spring so that the stem at the bottom can be accessed for attaching the hose. Repeat for the opposite side.

## INSTALLING THE AIR LINE

- A tee air line installation is recommended unless the weight in the vehicle varies from one side to the other and unequal pressures are needed to level the load or compensate for axle torque transfer in racing application. Dual air lines are used in this case.



### CAUTION

TO PREVENT THE AIR LINE FROM MELTING, ROUTE THE AIR LINE AS SPECIFIED IN THIS SECTION.

### NOTE

*Spray the barbed fittings of the air spring, tee and fitting with a soapy water solution to aid in inserting them in the hose.*

- Slide an air line clamp (G) onto the air line (Fig. 7). Install the hose onto the right side (passenger) air spring first.

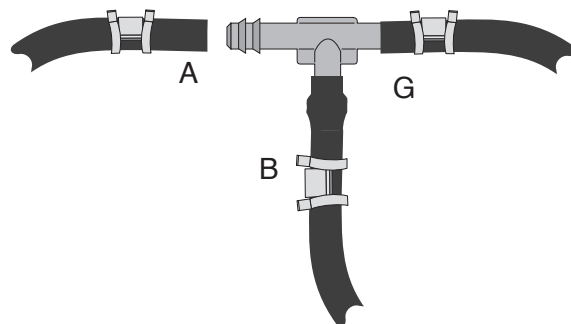


fig. 7

### 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 with pliers and slide it forward to fully cover the barbed section.



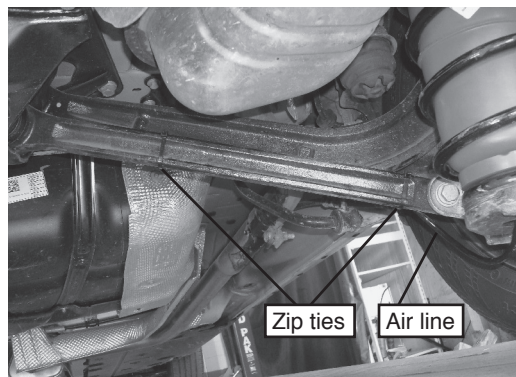
3. Route the hose up through the modified hole in the lower spring seat and through the protector (B) (Fig. 8). Push the air line over the barbed stem of the air spring (A) until it covers all the barbs.

With a pair of pliers, slide the air line clamp up on the hose so that it clamps around the hose that is over the barbed stem of the air spring.


*fig. 8*

4. Route the hose so that it follows the front side of the lower control arm. Attach the hose to the control arm with two tie straps. (Fig. 9)

Route hose on the front side of the right side (passenger) lower control arm. Secure with tie straps. Leave sufficient slack as shown.

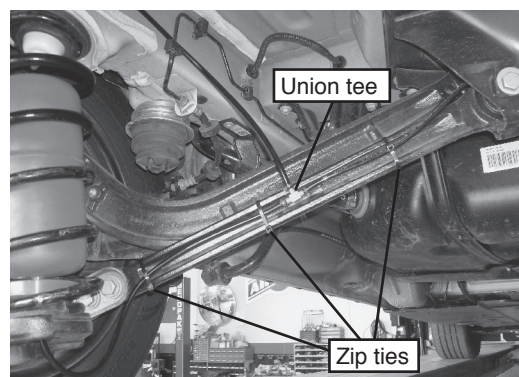

*fig. 9*

**CAUTION**

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

5. Route hose through the suspension's center mount and to the other lower control arm. Install the union tee (M) on the back side, in the middle, of this control arm. (Fig. 10)

Place union tee (M) on back side of left side lower control arm. Secure with three tie straps as shown.


*fig. 10*

6. Cut the right side hose that is installed where the tee location will be. Slide an air line clamp onto the air line and push the air line over one side of the tee until all the barbs are covered. Slide the air line clamp forward until it fully covers the barbed section of the tee. Repeat for the other leg of the tee and route to the left side air spring. (Fig. 7)
7. Leaving sufficient slack as on the right side, install the hose onto the air spring as in steps 1 and 2. Tie down the hose to the lower control arm with three zip ties as shown in Figure 10.
8. Push the remaining air line and hose clamp over the last fitting on the tee and route the hose up to the left frame section and behind the hard rear brake line on the inside of the frame. Route the hose along the frame to the back of the vehicle (Fig. 11) securing the hose with the remaining zip ties.

Route the hose under the hard brake line and along the inside of the frame back to the bumper support as shown. Secure with remaining tie straps.

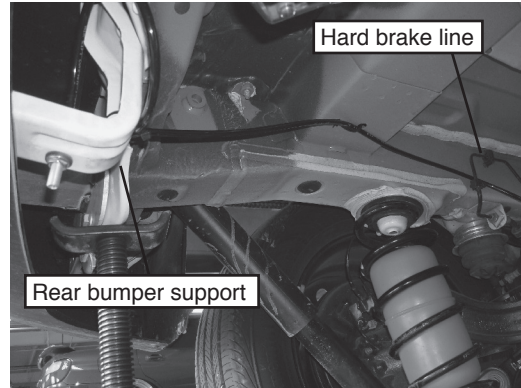


fig. 11

9. There is a hole in the lower bumper support where the inflation valve (N) can be installed. Cut the hose to length and install onto the barbed stem of the inflation valve as you installed the hose on the tee and the air spring stem. (Fig. 12)
10. Install the valve in the mounting hole. (Figs. 12 & 13)

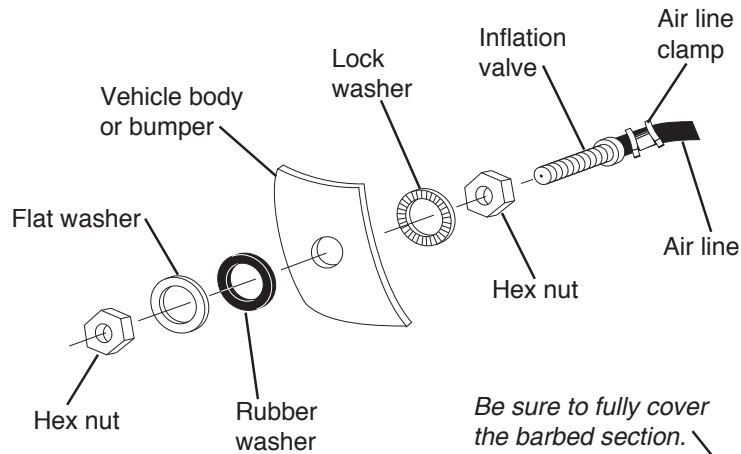


fig. 12

Be sure to fully cover the barbed section.

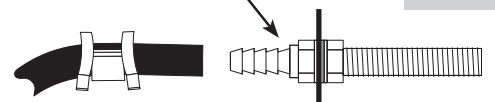


fig. 13

**CAUTION**

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



## 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 adequate length of air line to reach from valve location to 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 air clamp onto the cut air line.
5. Push the air line onto the stem, covering all the barbed section (see Fig. 7). With pliers slide the air line clamp forward until it fully covers barbed section.
6. Repeat process for right side.
7. Drill 5/16 " hole for inflating valves and mount as illustrated. Rubber washer is for outside weather seal (see Fig. 12).
8. Route air line along control arm and frame to inflation valve location and cut off 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. 13).
10. Raise axle or lower body until air springs lightly touch upper spring seat and lower spacers.
11. Check tail pipe clearance and insure that it is at least 2-3 inches from air springs. If necessary, loosen clamps and rotate or move to obtain additional clearance. If heat shields are supplied, install them. Attach shock absorbers if removed earlier in the installation.

### CAUTION

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

## HEAT SHIELD INSTALLATION

Because the muffler is so close to the coil spring, it will be necessary to install a heat shield onto the frame.

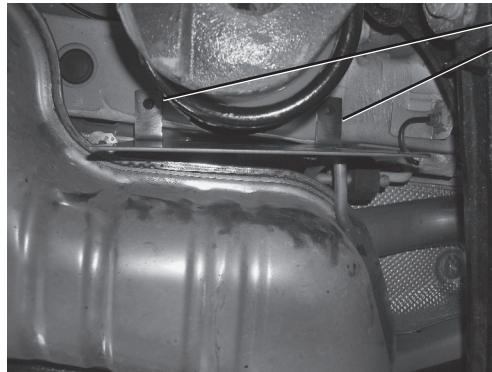
1. Set the heat shield up against the frame half way between the muffler and the coil spring making sure the slot in the heat shield is around the muffler mounting bracket. (Fig. 14)



Make sure the slot in the heat shield is around the muffler mounting bracket.

*fig. 14*

2. Mount the heat shield to the frame using the two self tapping screws (D). (Fig. 15)



The heat shield attaches to the frame with self-tapping screws (D).

*fig. 15*

## 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.
2. Lower the vehicle to the ground. Read the "Proper Use, 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.
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 PSI.

## 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.

# Before Operating

## INSTALLATION CHECKLIST (To be completed by installer)

- Leak test before road test — Inflate the air springs to 30 PSI, 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” for air springs and air lines. If a heat shield was included in the kit, install it.
- Fastener test — Recheck all bolts for proper torque. Re-torque after 100 miles.
- Road test — The vehicle should be road tested after the preceding tests. Inflate the air springs to 25 PSI (30 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 with the owner. Be sure to provide the owner with all of the paperwork which came with the kit.

**Technician's Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## POST-INSTALLATION CHECKLIST

- Overnight leak down test — Recheck air pressure after the vehicle has been used for 24 hours. If the pressure has dropped more than 5 PSI, then there is a leak that must be fixed. Either fix the leak yourself or return to the installer for service.
- Air pressure requirements — Regardless of load, the air pressure should always be adjusted to maintain ride height at all times.
- Thirty-day or 500-mile test — Recheck the air spring system after 30 days or 500 miles, whichever comes first. If any part shows signs of rubbing or abrasion, the source should be identified and moved, if possible. If it is not possible to relocate the cause of the abrasion, the air spring may need to be remounted. If professionally installed, the installer should be consulted. Check all fasteners for tightness.

# Product Use, Maintenance and Servicing

Minimum 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 springs.*

1. Check the air pressure weekly.
2. Always maintain normal ride height. Never inflate beyond 35 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. 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) to reduce tension on the suspension/brake components. Use of on-board leveling systems do not require deflation or disconnection.

## OPERATING TIPS

1. Inflate the air springs to 30 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 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. Air Lift recommends a 2 PSI 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. 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.

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.

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## 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. a). 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. b). 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. c). Tuning out these problems usually requires an increase in pressure.



## 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. d).
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. e).

