

Air Lift 1000™



Installation Guide



Buick Enclave, GMC Acadia, Saturn Outlook

Kit 60816



Watch the video

Info on Table of Contents page

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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Video-enhanced installation guides

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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	46165	Air spring..... 2
B	20315	Air line 15' 1
C	10466	Zip tie 4
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 4
J	21455	Valve..... 4

TOOLS LIST

Description.....Qty
Hoist or floor jacks 1
Safety stands..... 2
Safety glasses 1
Metric and standard sockets/ratchet and wrenches..... 1
Drill, drill bits..... 1
Grinder or rotary tool..... 1
Pliers..... 1
Air compressor or compressed air source 1
Spray bottle with dish soap/water solution..... 1

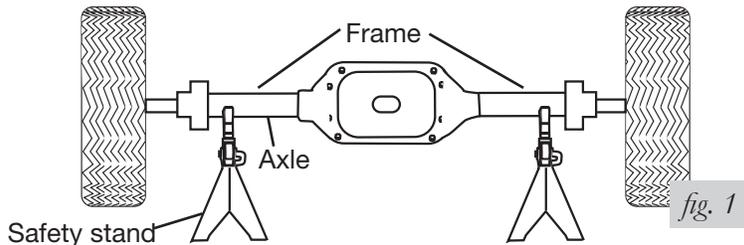


Missing or damaged parts? Call Air Lift customer service at (800) 248-0892 for a replacement part.

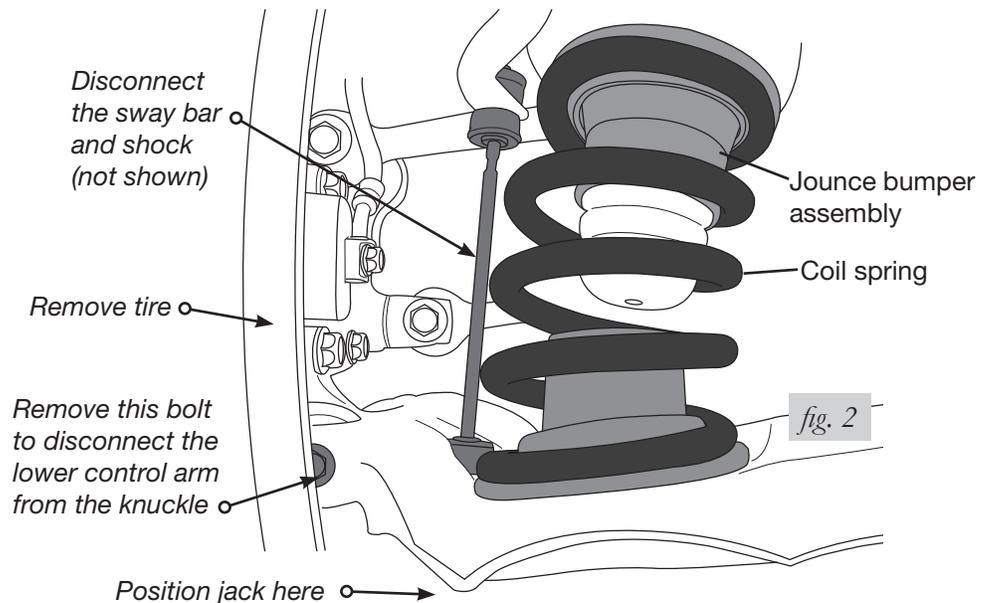
Installing the Air Lift 1000 System

PREPARING THE VEHICLE

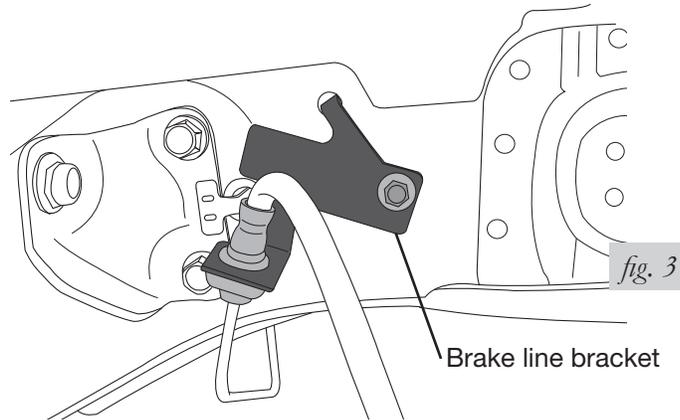
1. Jack up the rear of the vehicle or raise on a hoist. Support the frame with safety stands so that the wheels hang (fig. 1). Remove the rear wheels.



2. Position a floor or an adjustable jack stand under the control arm (fig. 2). Disconnect the sway bar and the shock from the lower control arm.



- Unbolt the brake line bracket from the side of the frame and pull away so it is loose (fig. 3).

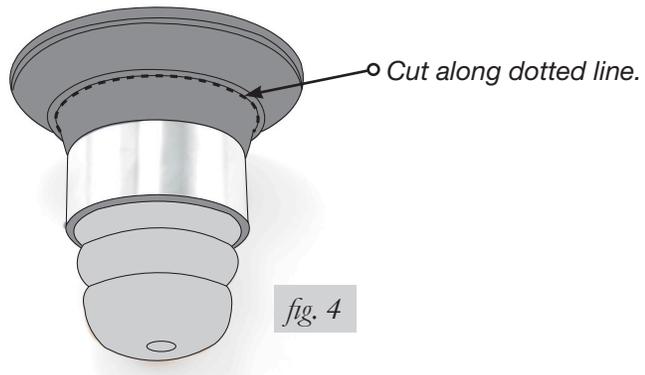


- With the lower control arm supported from the jack or adjustable jack stand, remove the bolt that connects the lower control arm to the knuckle (where the wheel is attached to the control arm) (fig. 2).

CAUTION

THE LOWER CONTROL ARM IS UNDER PRESSURE FROM THE COIL SPRING. USE CAUTION DURING THIS STEP FOR SAFETY PURPOSES.

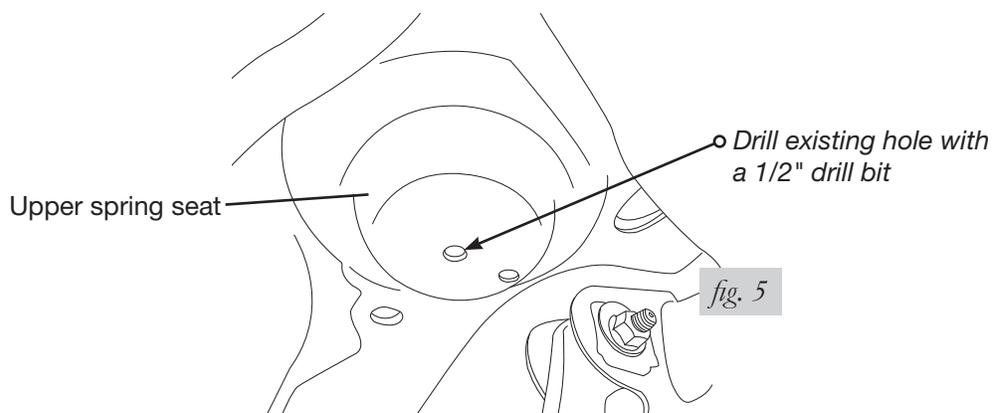
- Lower the floor jack gradually until tension is released and the coil spring can be removed.
- Remove the coil spring and jounce bumper assembly at the top (fig. 2).
- Cut the jounce bumper in two above the rubber isolator using a hack saw or cut-off wheel (fig. 4).



- In order to make and maintain the air line clearance, it will be necessary to increase the hole size in the center of the upper spring seat (fig. 5). Drill out to 1/2" and then using an air grinder or rotary tool, open the hole up to a 3/4" diameter.

NOTE

Remove any burrs or sharp edges.



INSTALLING THE AIR SPRING

1. Insert the cylinder back into the coil spring with the stem up. Set the trimmed jounce bumper on the top of the coil spring and insert it back in between the upper and lower control arm.

NOTE

The coil spring may have an index into the lower control arm, be sure to install the coil spring back in correctly.

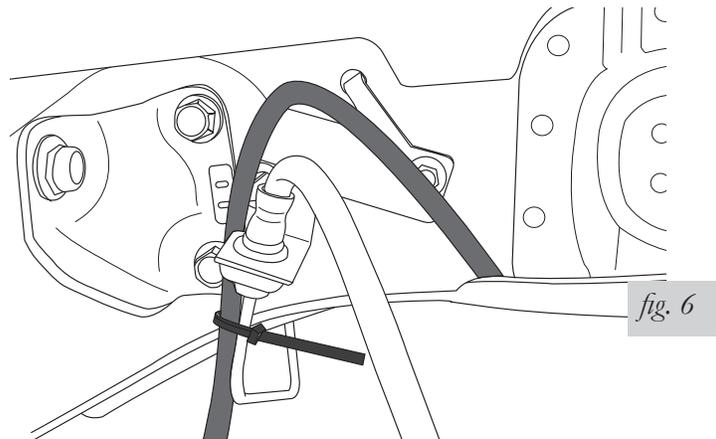
2. While centering the upper coil spring in the spring seat, raise the lower control arm up enough to insert the knuckle/lower control arm retaining bolt. Do not tighten at this time.
3. Raise and lower the control arm up and down while watching the stem on the cylinder. If interference is noted from the new hole in the upper spring seat hitting on the stem or cylinder boss, grind the new upper spring seat hole for clearance.
4. Raise the control arm up far enough to just pick the vehicle up off the safety jack and torque the flange bolt to 147 lb.-ft. Reinstall the brake line bracket on the side of the frame, lower the shock bolt and sway bar to the lower control arm.

INSTALLING THE AIR LINE

1. Lower the control arms back down to help in connecting the air line to the cylinder.
2. Insert the air line through the hole previously drilled for the valve stem and up through the front opening in the outer frame/upper spring seat reinforcement (fig. 6).

NOTE

It may be easier to run the air line down to the cylinder through this opening.



A tee air line installation is recommended. If 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 applications, use dual air lines (see page 7).

TEE AIR LINE ROUTING

CAUTION

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

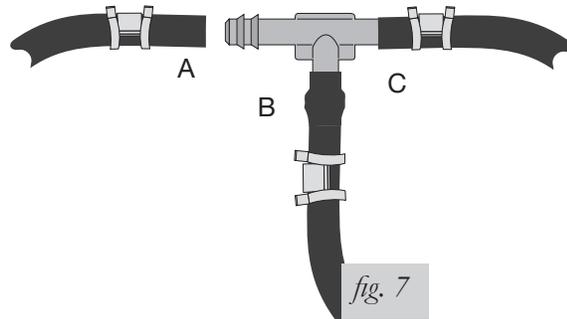
1. Locate the desired tee location on the frame rail or cross member. Determine and cut an adequate length of air line to reach from the tee to the left and right side air springs.

CAUTION

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

2. Slide an air line clamp onto the air line.

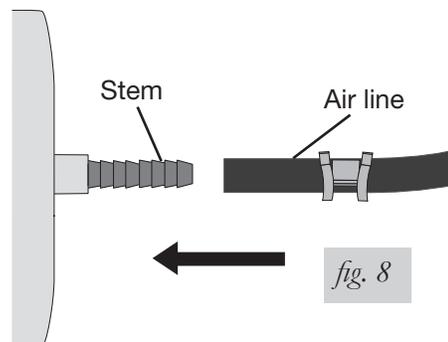
3. Push the air line over one side of the tee until all the barbs are covered. With a pair of pliers, slide the air line clamp forward until it fully covers the barbed section. Repeat the entire procedure for the other leg of the tee (fig. 7).
4. Route the air line along the cross member and either the lower control arm or the upper spring seat to the air spring.



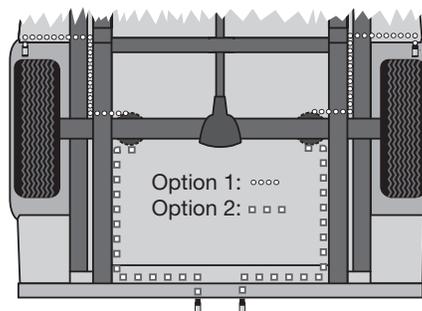
Use this procedure for all air line connections:

- 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.

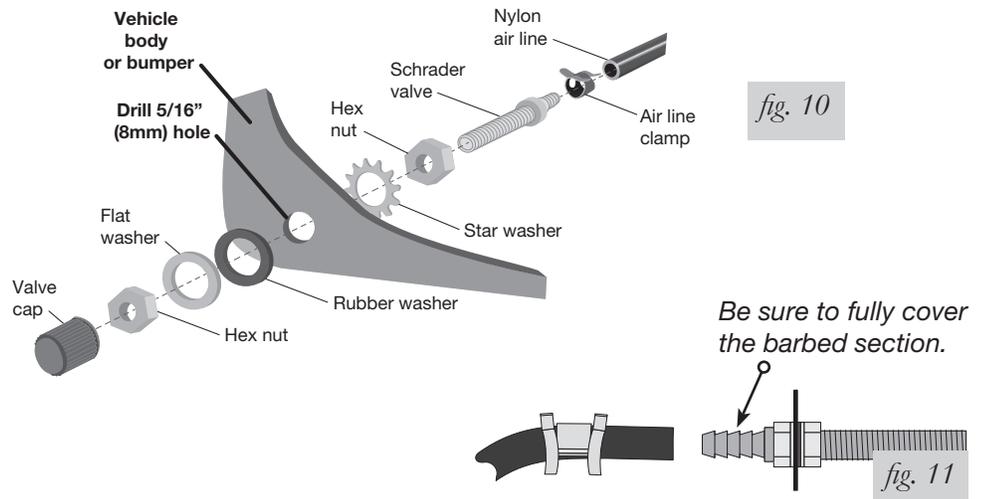
5. Insert the air line through the upper spring seat.
6. Push the air line onto the stem, covering all the barbs (fig. 8). With the pliers, slide the air line clamp upward until it fully covers the barbed section.



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 plastic straps or wire.
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. 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 spring seat and lower spacers.
12. Check the tail pipe clearance and ensure that it is at least 2-3 inches from the air spring. If necessary, loosen the clamps and rotate or move to obtain additional clearance. Reattach the shock absorbers if removed earlier in the installation.

CAUTION

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

13. 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 spring seat and lower spacers.
11. Check the tail pipe clearance and ensure that it is at least 2-3 inches from the air springs. If necessary, loosen the clamps and rotate or move to obtain additional clearance. Reattach the shock absorbers if removed earlier in the installation.

 **CAUTION**

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

COMPLETING THE INSTALLATION

1. Leave slack at the top for the air line to move in and out freely during normal driving and in case the vehicle is serviced on a frame contact hoist.

NOTE

Loosely attach the air line to the brake line using a zip tie (fig. 6).

2. Inflate the air springs to 35 PSI. Test for air leaks by applying a soapy water solution to all valve cores, fittings and connections.
3. Lower the vehicle to the ground. Read Maintenance and Use Guidelines for proper care of your air springs.
4. Recheck air pressure after 24 hours. A 2-4 PSI loss after initial installation is normal. If pressure has dropped more than 5 lbs, retest for leaks.

INSTALLATION CHECKLIST

- Clearance test** — Inflate the air springs to 30 PSI (2BAR) and make sure there is at least 1/2" (13mm) clearance from anything that might rub against each air spring. Be sure to check the tire, brakes, frame, shock absorbers and brake cables.
- Leak test before road test** — Inflate the air springs to 30 PSI (2BAR) and check all connections for leaks. 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" (152mm) 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 Air Lift customer service at (800) 248-0892.
- Fastener test** — After 500 miles, recheck all bolts for proper torque.
- Road test** — The vehicle should be road tested after the preceding tests. Inflate the air springs to recommended driving pressures. 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 operating instructions with the owner. Be sure to provide the owner with all of the paperwork that came with the kit.

MAINTENANCE AND USE GUIDELINES

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

Minimum Recommended Pressure	Maximum Air Pressure
5 PSI (.34BAR)	35 PSI (2.4BAR)

CAUTION

FOR SAFETY AND TO PREVENT POSSIBLE DAMAGE TO THE VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR) OR PAYLOAD RATING, AS INDICATED BY THE VEHICLE MANUFACTURER.

ALTHOUGH THE AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 35 PSI (2.4BAR), THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON LOAD AND GROSS VEHICLE WEIGHT RATING.

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 at www.airliftcompany.com/warranty.

For additional warranty information contact Air Lift Company customer service.



Thank you for purchasing Air Lift Products — the Authorized Installer's choice!

Need Help?

Contact Air Lift Company Customer Service at (800) 248-0892
or email service@airliftcompany.com.

For calls outside the U.S. or Canada, dial (517) 322-2144.



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Air Lift Company • 2727 Snow Road • Lansing, MI 48917 or P.O. Box 80167 • Lansing, MI 48908-0167

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