

# AirLift1000

by AIR LIFT®

**Kit 60778,  
60777, 60811,  
60820**  
*multiple applications*



*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.*

# Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of the Air Lift 1000 air spring kit. Air Lift 1000 utilizes sturdy, reinforced, commercial grade single or double, depending on the kit, convolute bellows. The bellows are manufactured like a tire with layers of rubber and cords that control growth. Air Lift 1000 kits are recommended for most  $\frac{3}{4}$  and 1 ton pickups and SUVs with leaf springs and provide up to 5,000 lbs of load leveling support with air adjustability from 5-100 PSI. The kits are also used in motorhome rear kits and some motorhome fronts where leaf springs are used.

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 tips, safety information and a troubleshooting guide.

## 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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# Installing the Air Lift 1000 System

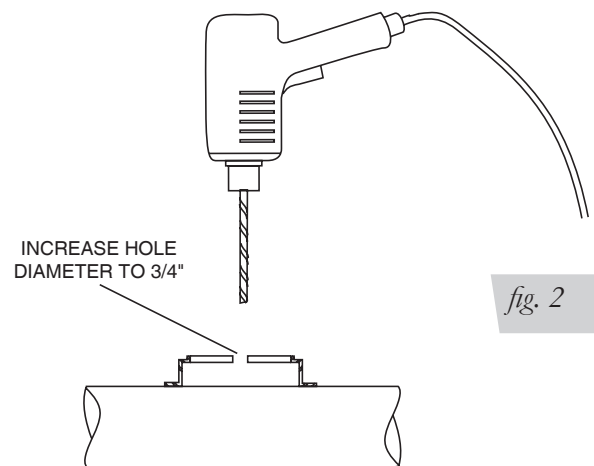
## GETTING STARTED

1. Jack up rear of vehicle or raise on hoist. Support frame with safety stands. Remove lower shock absorber attaching bolts.
2. Mark the upper spring seat and coil spring with a marker so as to index the spring back in the same position upon installation.
3. Lower the axle or raise the body of the vehicle until the suspension has extended far enough to remove the coil spring.

### CAUTION

IT MAY BE NECESSARY TO UNBOLT THE BRAKE LINE HANGERS SO AS NOT TO PULL ON THE HOSE DURING THIS STEP. IT MAY ALSO BE NECESSARY TO UNBOLT THE SWAY BAR TO GAIN ADDITIONAL CLEARANCE TO DROP THE AXLE FAR ENOUGH FOR THE LOWER SPRING SEAT ACCESS. NOTE: MOST SWAY BARS UNBOLT FROM THE AXLE, SOME MAY BE ATTACHED TO THE LOWER CONTROL ARM.

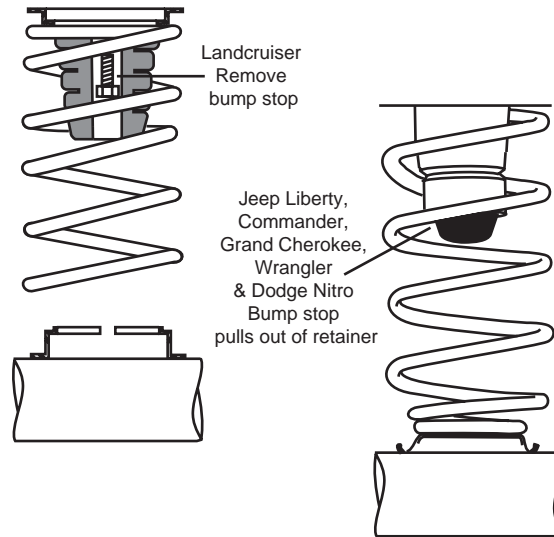
4. A 3/4" access hole must be made for the valve stem. Using the template on the last page, cut out the circle which best fits your model to center punch the lower spring seat for the hose/stem access. Drill a 3/4" hole, or enlarge the existing hole, in the center of the lower spring seat. Option: you can drill the hole out to 1/2" and grind larger as previously suggested. Remove all burrs and sharp edges (Figure 2).



5. LANDCRUISER: using a socket and extension, remove the rubber bump stop from the upper spring seat and discard (fig. 3).

### NOTE

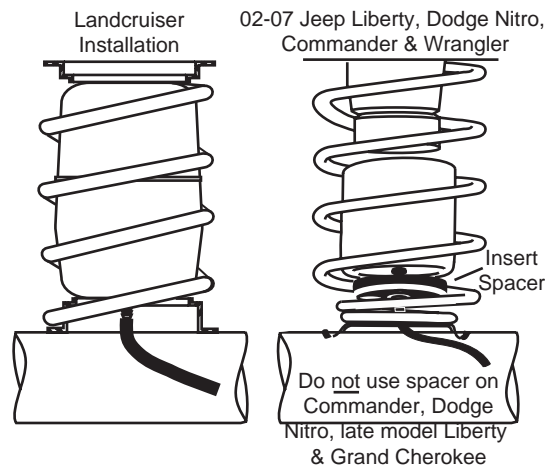
*Jeep Liberty, Commander, Grand Cherokee, Wrangler and Dodge Nitro: pull jounce bumper out of cup (fig. 3).*


*fig. 3*

6. Insert air cylinder into coil spring with stem at bottom.

**NOTE**

*2002-2007 Jeep Liberty & Wrangler: Insert spacers at the bottom between the cylinder and the bottom spring seat (Figure 4). Do not use spacer for Commander, late model Liberty, Dodge Nitro or the Grand Cherokee.*


*fig. 4*

7. Raise the axle or lower the body to install the coil spring into the spring seats and rotate to proper location marked in step two. Attach the lower shock absorber attaching bolts.
8. Install air line as detailed on pages 2 and 3. A tee air line installation is recommended unless weight in vehicle varies from one side to the other and unequal pressures are needed to level load (or compensate for axle torque transfer in racing application). Dual air lines are used in this case. Proceed with tee air line routing or dual air line routing
9. Inflate cylinders to 25 lbs. air pressure. Test for air leaks by applying a liquid soap and water solution to all valve cores, fittings and connections.
10. Lower the vehicle to the ground. Re-attach all brake lines previously removed and torque all mounting hardware removed per the torque chart supplied (fig. 5). Recheck air pressure after 24 hours. A 2-4 p.s.i. loss after initial installation is normal. If pressure has dropped more than 5 lbs. re-test for leaks with soapy water solution.

		Sway Bar Nm/ft-lbs	Shock Nm/ft-lbs
	LandCruiser	18 Nm/13ft-lbs	98 Nm/72ft-lbs
08 - Current	Liberty	47 Nm/35ft-lbs	115 Nm/85ft-lbs
2002 - 2007	Liberty	99 Nm/73ft-lbs	115 Nm/85ft-lbs
	Nitro	47 Nm/35ft-lbs	115 Nm/85ft-lbs
	Commander	42 Nm/31ft-lbs	115 Nm/85ft-lbs
	Grand Cherokee	54 Nm/40ft-lbs	115 Nm/85ft-lbs
	Wrangler	90 Nm/66ft-lbs	76 Nm/56ft-lbs

fig. 5

## TEE AIR LINE ROUTING

### NOTE

*Tee air line installation 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.*

### CAUTION

TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST EIGHT INCHES FROM EXHAUST SYSTEM.

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

- C. 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.
- D. With pliers slide the air line clamp forward until it fully covers the barbed section. Repeat for other leg of tee (Figure 6).

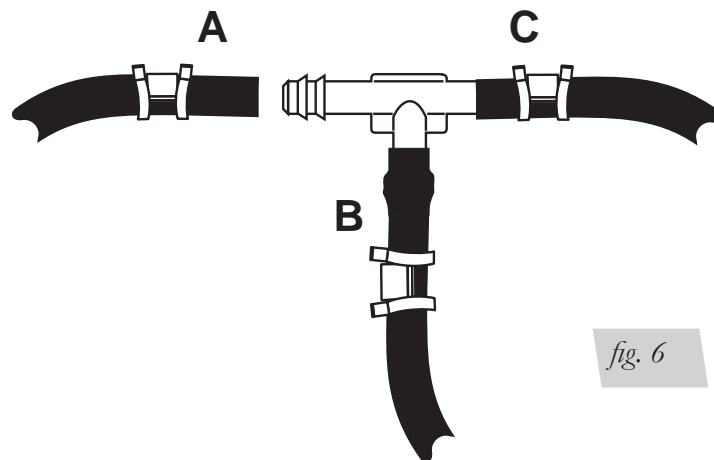
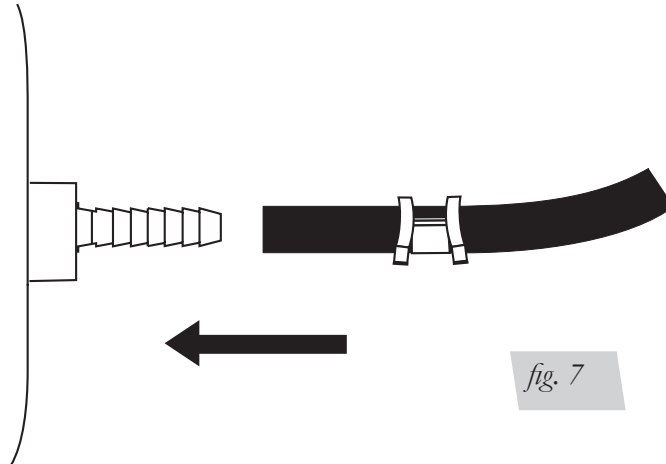


fig. 6

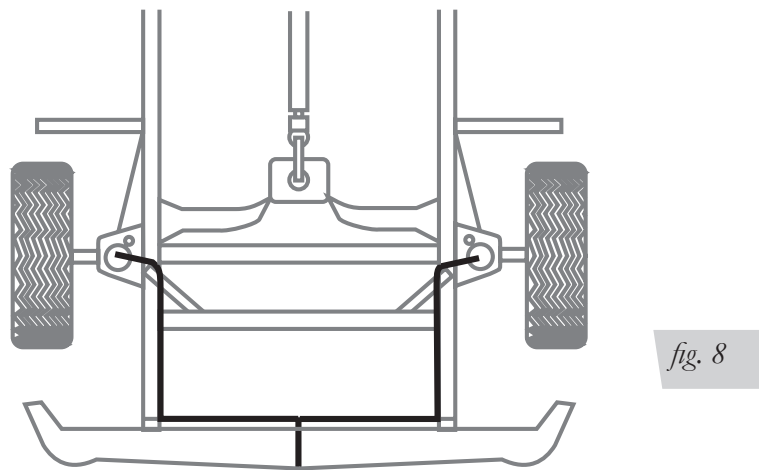
Use this procedure for all air line connections:

- A. Slide the air 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.

- E. Route along cross member and either lower control arm or upper spring seat to air cylinder.
- F. Insert air line through lower spring seat then slide on air line clamp.
- G. Push the air line onto the stem, covering all the barbs. With pliers slide the air line clamp upward until it fully covers the barbed section (Figure 7).



- H. Push the remaining air line over the last fitting on tee and route along frame to desired inflation valve location (Figure 7). Attach with plastic straps or wire.
- I. Select a location for inflation valve in the gas cap well, the trunk, rear bumper, fender flange or behind the license plate, assuring that the valve will be protected and accessible with an air hose (Figure 8).



- J. Drill a 5/16" hole for inflation valve and mount as in illustration (Figure 9). Rubber washer is for outside weather seal.

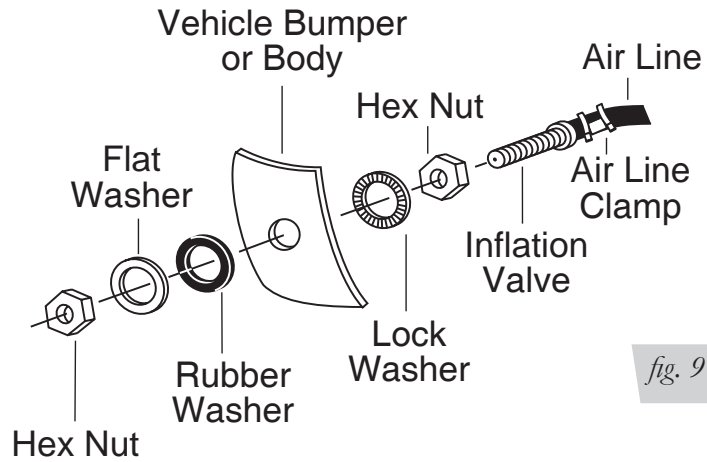


fig. 9

K. Slide air line clamp over the air line. Push air line onto fitting covering all barbs, with pliers slide the air line clamp forward until it fully covers the barbed section (Figure 10).

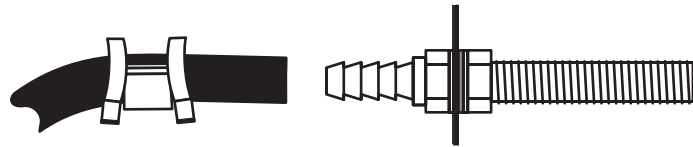


fig. 10

L. Raise axle or lower body until air cylinders lightly touch the upper and lower spring seat.

M. Check TAILPIPE clearance and insure that it is at least 2-3 inches from air cylinder. If necessary, loosen clamps and rotate or move to obtain additional clearance. If heat shield is provided, install it.

N. Continue with step 9, page 5.

## DUAL AIR LINE ROUTING



TO PREVENT AIR LINE FROM MELTING, KEEP IT AT LEAST EIGHT INCHES FROM EXHAUST SYSTEM.

A. 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 (Fig. 11).

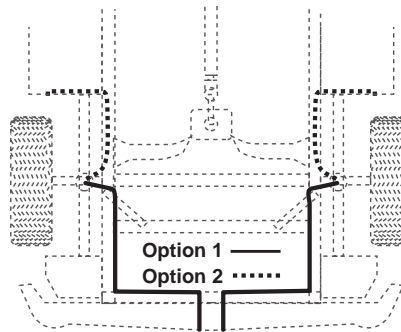


fig. 11

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

 **CAUTION**

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

C. Insert the air line through the lower spring seat.

D. Slide air line clamp onto the cut air line. Push the air line onto the stem, covering all the barbed section. With pliers slide the air line clamp forward until it fully covers barbed section (Figure 10).

E. Repeat process for right side.

F. Drill 5/16" hole for inflating valves and mount as illustrated. Rubber washer is for outside weather seal (Figure 9).

G. Route air line along control arm and frame to inflation valve location and cut off excess air line.

H. Slide air line 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.

I. Raise axle or lower body until air cylinders lightly touch the upper and lower spring seat.

J. Check TAILPIPE clearance and insure that it is at least 2-3 inches from air cylinders. If necessary, loosen clamps and rotate or move to obtain additional clearance. If heat shields are supplied, install them.

K. Continue with step 9, page 5.

 **CAUTION**

DO NOT INFLATE AIR CYLINDERS BEFORE READING MAINTENANCE/ OPERATION TIPS.



# 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 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.

# 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**

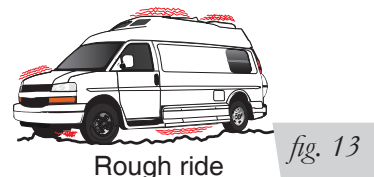
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 12). Raise the air pressure to correct either of these problems and level the vehicle.

**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.



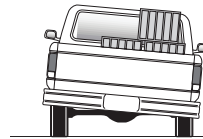
## GUIDELINES FOR ADDING AIR

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. 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).

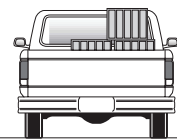


Bottoming out

*fig. 15*



Unlevel



Level

*fig. 16*

# Template for use with Air Lift 1000

