

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

**Kit 60826**  
**2011 Toyota Sequoia**  
**4WD**



**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, 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.

 **DANGER** **WARNING** **CAUTION**

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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	46133	Air Spring .....	2
B	09116	Protector w/ Nubbins.....	2
C	09447	Protector .....	2
D	20937	Hose.....	15'
E	10466	Tie Strap .....	6
F	10638	Uni Clamp .....	6
G	18501	M8 Flat Washer.....	2
H	18411	Star Washer .....	2
I	21230	Valve Cap .....	2
J	21233	5/16" Hex Nut.....	4
K	21234	Rubber Washer.....	2
L	21236	Tee.....	1
M	21455	Valve.....	2

## TOOLS LIST

Description.....	Qty
Hoist or floor jack.....	1
Safety stands.....	2
Safety glasses .....	1
Air compressor or compressed air source.....	1
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 (fig. 1). Support the frame with safety stands. Lower the suspension or raise the body of the vehicle until the suspension is fully extended (wheels hanging).

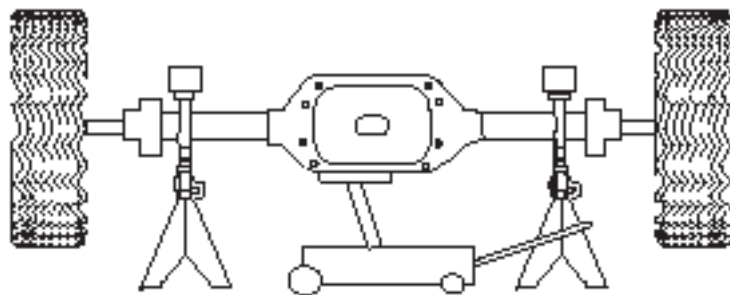


fig. 1

**CAUTION**

OBSERVE TENSION ON BRAKE LINE. DO NOT STRAIN.

2. 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. 2). Fold the air spring into a "hot dog bun shape".

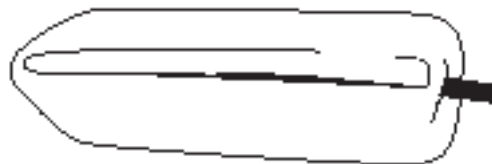


fig. 2

3. Insert the flattened air spring into the coil spring through the lowest opening with the stem at the top (fig. 3).

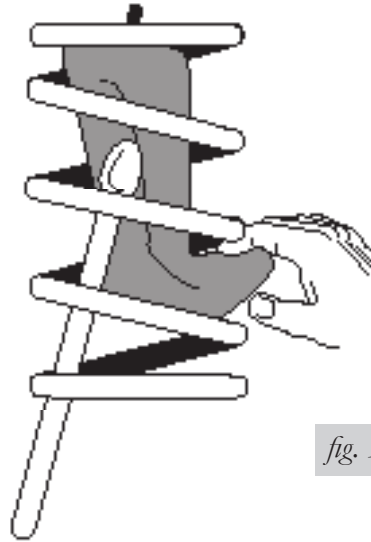


fig. 3

4. Push the air spring up within the coil by hand or with a blunt instrument such as a spoon-type tire iron.
5. 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 down to the bottom of the spring seat so that the stem at the top can be accessed for attaching the hose.
6. Snap the two protectors together (fig. 4). Route the hose through the large slot at the back of the upper spring mount and through the small hole (in the center that looks like an Air Lift symbol) at the top spring seat, then through the protectors that were previously snapped together. Attach the hose to the top of the cylinder (as noted in the next section).

**NOTE**

*Leave some slack in the hose when securing!*

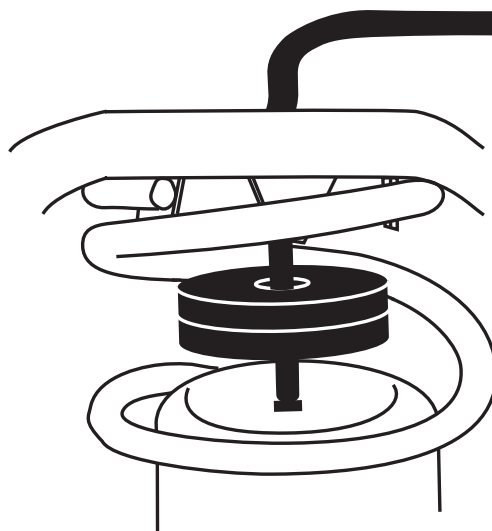
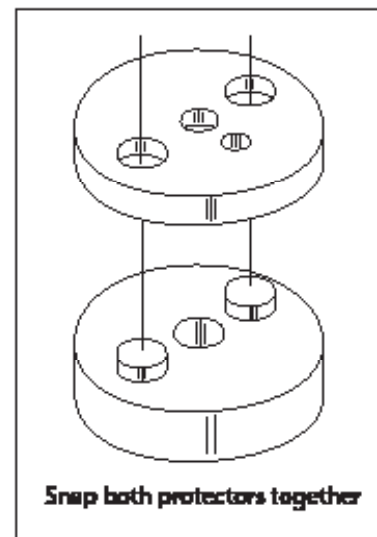


fig. 4

**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.

## TEE AIR LINE ROUTING

### CAUTION

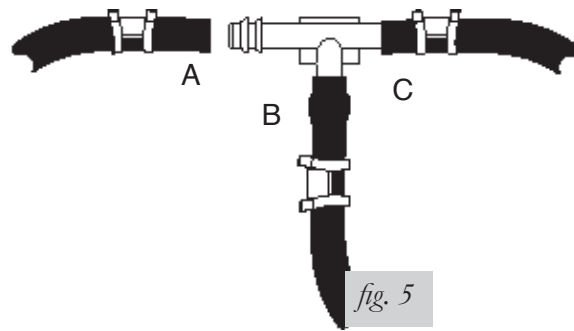
TO PREVENT THE AIR LINE FROM MELTING, MAINTAIN AT LEAST 8" FROM THE EXHAUST SYSTEM TO THE AIR LINE.

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

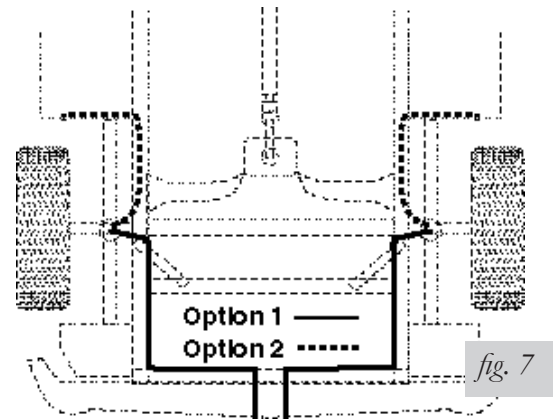
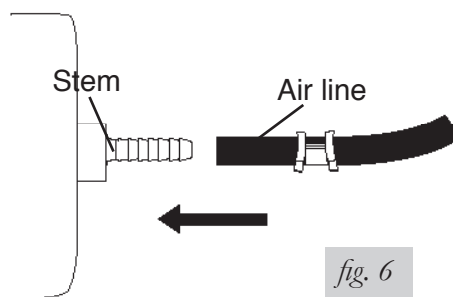
2. Slide an air line clamp onto the air line.
3. Push the air line over one side of the tee until all the barbs are covered. With a pair of pliers, slide the air line clamp forward until it fully covers the barbed section. Repeat entire procedure for other leg of the tee (fig. 5).
4. Route the air line 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:

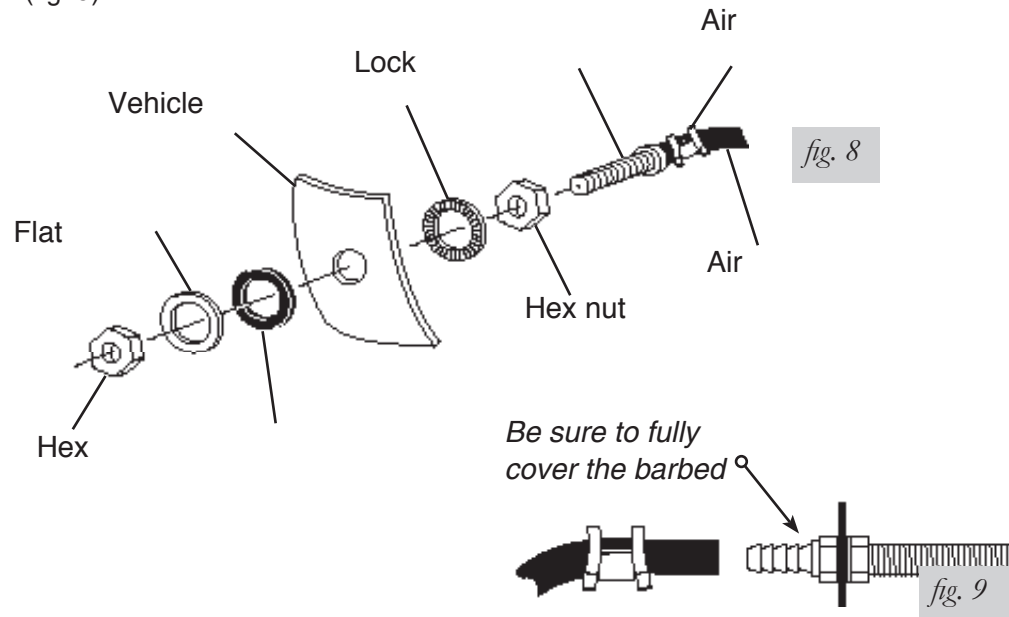
- a. Slide the air line clamp onto the air line.
- b. Push the air line over the barbed stem.
- c. Compress the ears on the air line clamp with pliers and slide it forward to fully cover

5. Push the air line onto the stem, covering all the barbs (fig. 6). With the pliers, slide the air line clamp upward until it fully covers the barbed section.
6. 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.
7. Select a location for the inflation valve in the gas cap well, the trunk, rear bumper, fender flange or behind license plate, insuring that the valve will be protected and accessible with an air hose (fig. 7).



8. Drill a 5/16" hole for the inflation valve and mount as shown (fig. 8). The rubber washer serves as an outside weather seal.

- 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. 9).



### CAUTION

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

- Continue to "Completing the Installation."

## DUAL AIR LINE ROUTING

### CAUTION

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

- 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.
- 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.

- Slide air clamp onto the cut air line.
- Push the air line onto the stem, covering all the barbed section (see fig. 6). With pliers slide the air line clamp forward until it fully covers barbed section.
- Repeat process for right side.
- Drill 5/16" hole for inflating valves and mount as illustrated. Rubber washer is for outside weather seal (see fig. 8).
- Route air line along control arm and frame to inflation valve location and cut off excess.
- 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. 9).

### CAUTION

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

## COMPLETING THE INSTALLATION

- 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.

**NOTE**

*The snap together protectors will nest inside of the coil spring upper mount. Inflate the air spring to 35psi.*

2. Lower the vehicle to the ground. Read the “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 lbs.

**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

- 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 cylinder. 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
- Road test — The vehicle should be road tested after the preceding tests. Inflate the 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 on page 9 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 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 your 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. 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.
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. 10). 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. 11). 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. 12). Tuning out these problems usually requires an increase in pressure.



Bad headlight aim *fig. 10*



Sway and body roll *fig. 12*

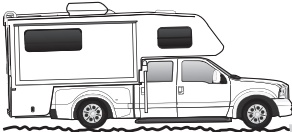


Rough ride *fig. 11*

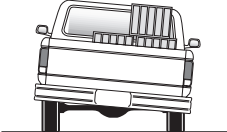
## GUIDELINES FOR ADDING AIR

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. 13).
5. Adjust the pressure up and down to find the best ride.

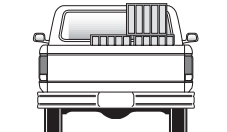
- 6. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
- 7. It may be necessary to maintain different pressures on each side of the vehicle. Loads such as water, fuel, and appliances will cause the vehicle to be heavier on one side (fig. 14).



*fig. 13*



Unlevel



Level

*fig. 14*