

Kit No. 59518

Please read these instructions completely before proceeding with installation

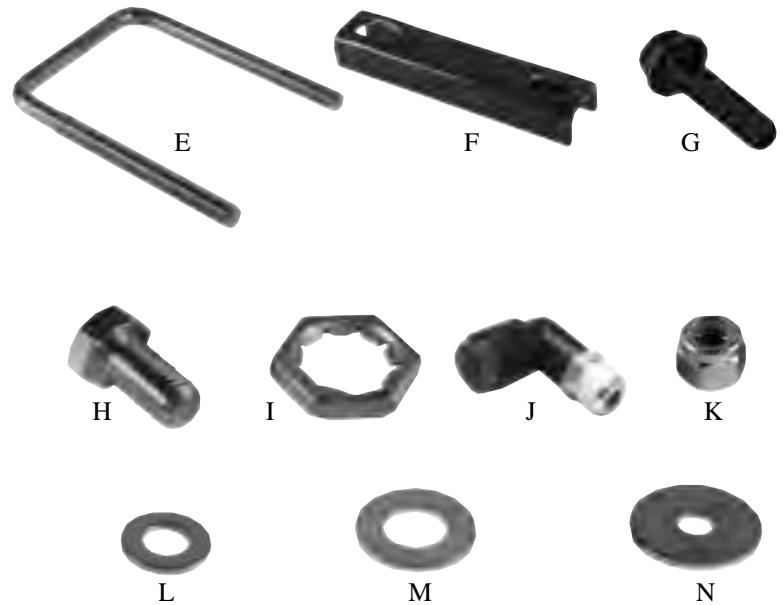
Air Spring Kit Parts List

Item	Description	Quantity
A	Upper Bracket	2
B	Lower Bracket	2
C	Installation Tool	1
D	Air Spring	2



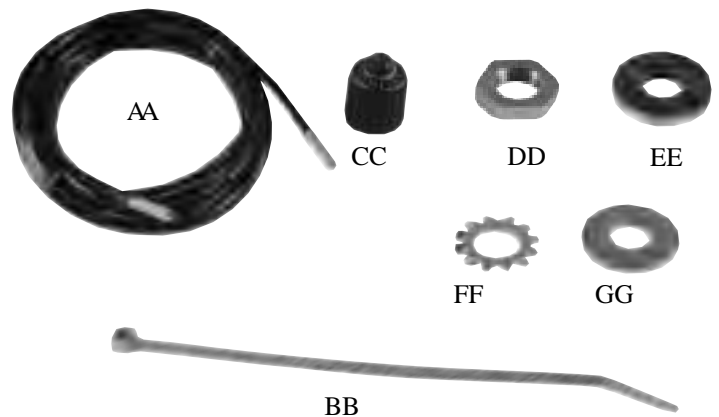
Attaching Hardware Parts List

Item	Description	Quantity
E	U-Bolt	2
F	Lower Clamp Bar	2
G	Washer Head Frame Bolt	8
H	1/2" Hex Head Cap Screw 7/8"	2
I	Pal Nut	3
J	Swivel Air Fitting	2
K	3/8" Lock Nut	12
L	3/8" Flat Washer	4
M	1/2" Flat Washer	2
N	3/8 Oversized Flat Washer	8



Air Line Assembly Parts List

Item	Description	Quantity
AA	Air Line	16'
BB	Tie Strap	6
CC	Valve Cap	2
DD	5/16" Hex Nut	4
EE	Rubber Washer	2
FF	Star Washer	2
GG	5/16" Flat Washer	2



Tools Needed

1/2", 3/4", 9/16", and 1-1/16" open-end or box wrenches
Crescent Wrench
Ratchet with 3/8", 9/16" and 1/2" deep well sockets
3/8" and 5/16" drill bits (very sharp)
Heavy Duty Drill

Torque Wrench
Hose Cutter, Razor Blade, or Sharp Knife
Hoist or Floor Jacks
Safety Stands
Safety Glasses
Air Compressor, or Compressed Air Source
Spray Bottle with Dish Soap/Water Solution

Before You Start

You need to determine Normal Ride Height. Normal Ride Height is the distance between the bottom edge of the wheelwell and the center of the hub with the vehicle in the "as delivered" condition. In some cases, Normal Ride Height is not perfectly level.



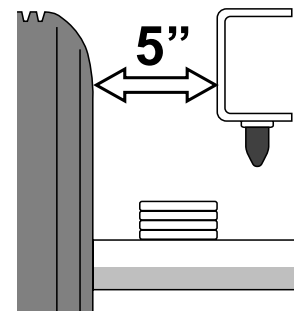
Remove unusual loads and examine your vehicle from the side to ensure it is on a level surface. If necessary (in cases where your leaf springs are sagging badly), use a jack to raise the rear end so that the vehicle achieves the original "as delivered" ride height.

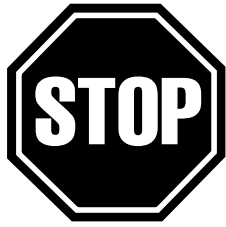


Measure the distance between the center of the hub and the bottom edge of the wheel well. This is the Normal Ride Height. Enter the measurement below:

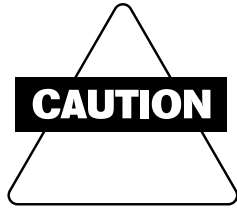
NORMAL
RIDE HEIGHT: _____ inches

Measure the distance between the frame and the tire. This kit requires a minimum of 5" of clearance for a fully inflated air spring.





IMPORTANT: Your vehicle may be equipped with a rear brake proportioning valve. Any type of load assist product could effect brake performance. We recommend that you check with your dealer before installing this type of product. If your vehicle **DOES NOT** have a rear brake proportioning valve or is equipped with an anti-lock type brake system, installation of a load assist product will have **NO EFFECT ON BRAKE SYSTEM PERFORMANCE.**



Compressed air can cause injury and damage to the vehicle and parts if it is not handled properly. For your safety, do not try to inflate the air sleeves until they have been properly secured to the vehicle.



If for any reason it becomes necessary to return a part, please use the provided Product Return Form included with your literature pack (Form #AD-240).

Raising the Vehicle

Raise the vehicle and remove the wheels. Check the distance between the center of the hub and the bottom edge of the wheel well to ensure it is at the normal ride height recorded on page 2. If not, raise the frame or lower the axle as necessary to restore the original distance.



If the vehicle is raised with an axle contact hoist, place stands under the frame and lower the axle as needed . . .

or . . .



If the vehicle is raised with a frame contact hoist, place stands under the axle and lower the frame as needed . . .

or . . .



If the vehicle was raised with a jack and supported with stands on the frame, use a floor jack to raise the axle.



Your air springs will last much longer if they are not the suspension limiter in either compression or extension. **Regardless of load, the air pressure should always be adjusted so that the Normal Ride Height is maintained at all times.** The shock absorber is usually the limiter on extension. If this is not the case, you should consider the use of limiting straps; especially if the vehicle is used off-road.

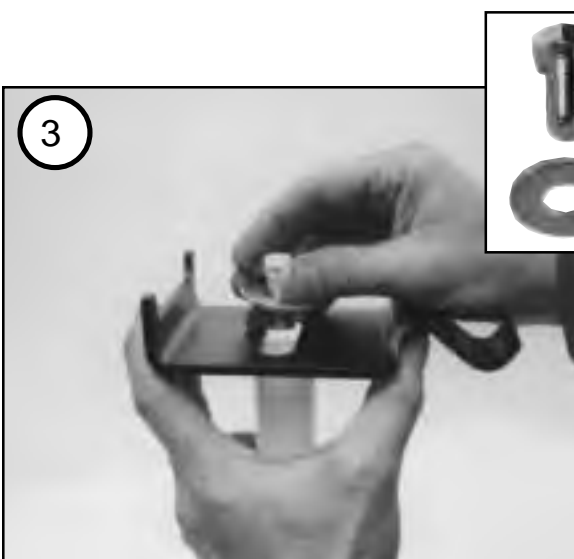
Assemble the Installation Tool



The tool provided with your kit will help you properly align the air spring and position the upper bracket for drilling the bolt holes. The tool attaches to the upper and lower bracket. The tool is rigid so that it will self-align the upper bracket. The threaded section of the upper part of the tool ensures that the air spring can only be mounted at the correct height.



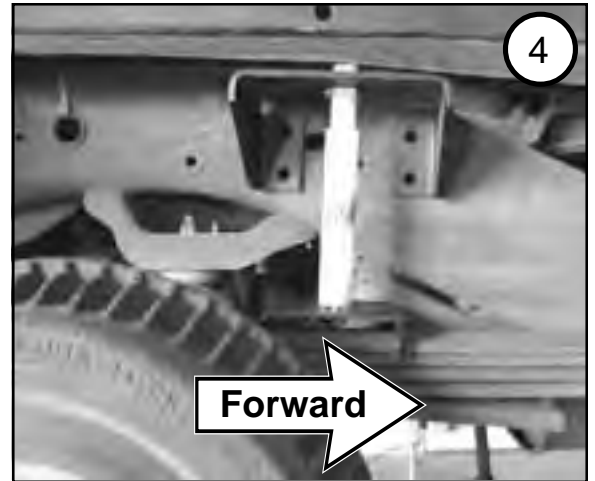
Secure the upper bracket (A) to the tool (C) using the provided pal nut (I).



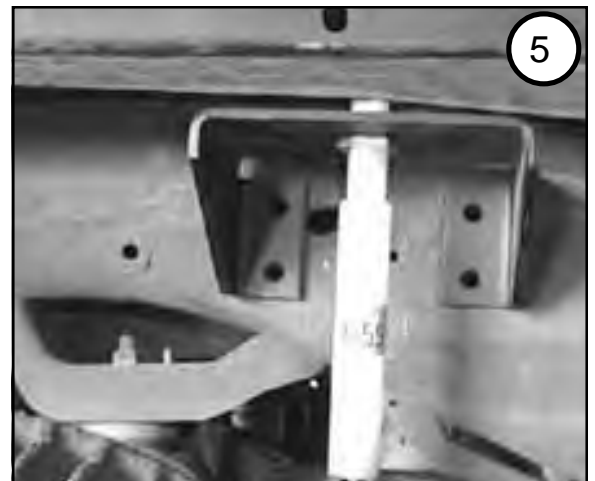
LOOSELY attach the tool (C) to the lower bracket (B) using 1/2 Flat Washer (M) and 1/2 Hex Head Cap Screw 7/8" (H). Leave loose for adjustment.

Positioning Upper Bracket

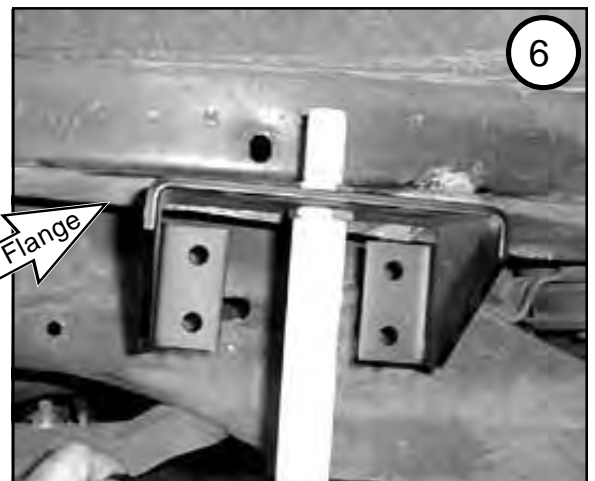
Set the assembled bracket/tool unit on the leaf spring **FORWARD** of the axle.



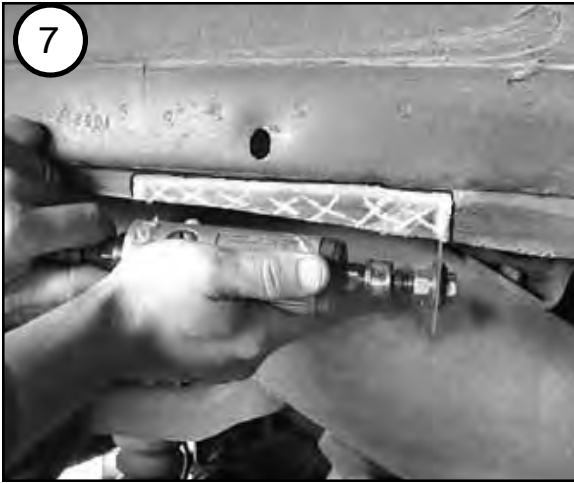
Using the slot in the lower bracket, push the upper bracket against the frame rail. Use the Pal nuts on the threaded portion of the installation tool to adjust the upper bracket so that the legs of the upper bracket are flat against the frame rail and all four mounting holes are on the middle section of the frame rail. The mounting holes must not fall on the rounded edges of the frame rail. You must also **ALLOW AT LEAST 1.5"** above the top of the upper bracket for air fitting clearance. **The brackets can be mounted anywhere within the threaded range of the installation tool.**



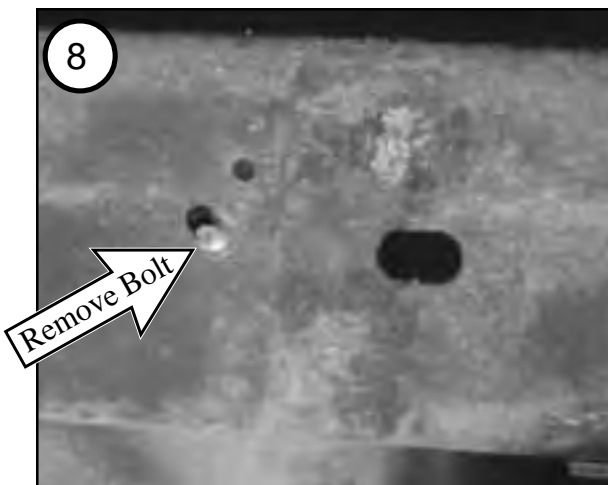
IMPORTANT On some models it will be necessary to **trim the inner body flange** to allow the air spring to be mounted at our recommended mounting height of 5.5" - 7" with 1.5" of clearance for the air fitting. The threaded section of the upper part of the tool ensures that the air spring can only be mounted at the correct height.



Note: The passenger side has A/C heater lines on some models. It will be necessary to clear the lines so no damage results from trimming the inner body flange.

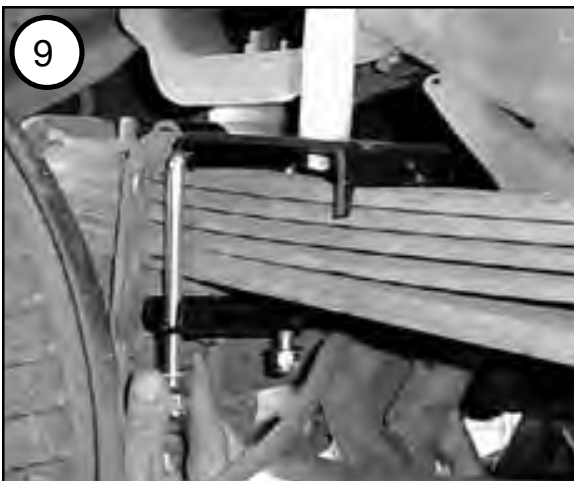


Mark the area of the body flange that will need to be removed and using a die grinder or tin snips cut away the necessary area.



IMPORTANT NOTE: DRIVER SIDE - On some models there may also be a **bolt protruding through the frame rail** that may rub on the air sleeve. The threaded end of the bolt that holds brake line clip on the inside of the frame protrudes through to the outside of the frame rail where the upper bracket will be attached to the frame. The bolt will prevent the upper bracket from laying flush to the frame rail. It will be necessary to remove the bolt or trimmed flush to the frame rail. There are other clips to sufficiently hold the lines to the frame rail.

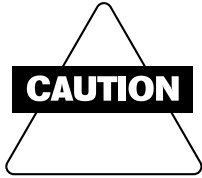
Attaching Lower Bracket



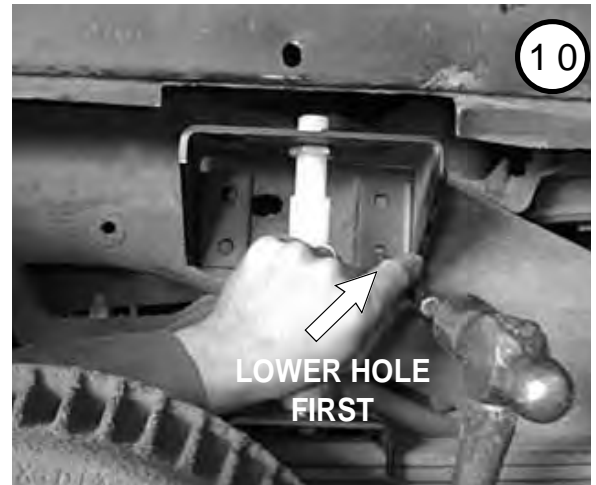
With the hook end of the lower bracket placed over the U-bolt , secure the lower bracket to the leaf spring with the provided U-bolt (E), lower clamp bar (F), flat washers (L), and locknuts (K). Torque to 20 ft/lbs.

Attaching Upper Bracket

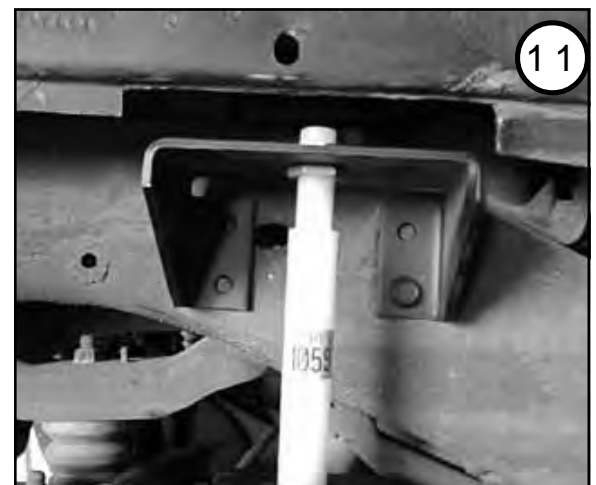
Using the upper bracket as a template, centerpunch one of the lower mounting holes and drill a 3/8" hole through the frame.



Before drilling, check the back side of the frame to see if brake lines, gas lines, or other features will have to be moved before you drill the upper bracket holes. Always check the back side of any surface to be drilled.

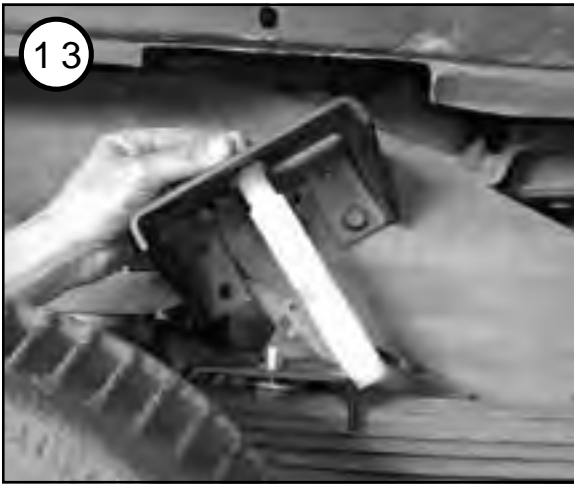


Install one of the washer head frame bolts (G) and LOOSELY attach the 3/8" oversized flat washer (N) and locknut (K).



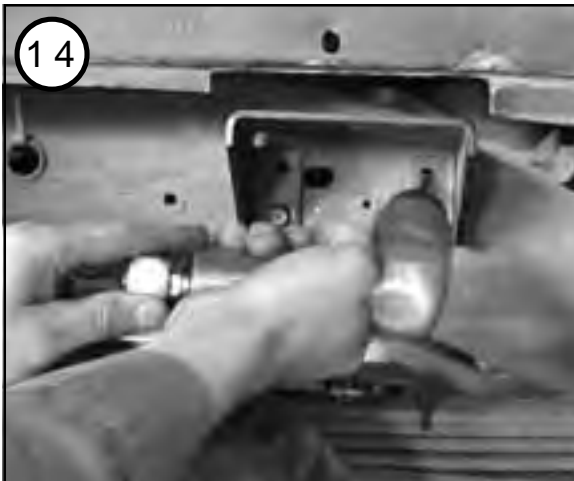
Now centerpunch and drill a 3/8" hole at the OTHER LOWER mounting hole location. DO NOT insert the mounting bolt at this time.





You can now remove the installation tool by removing the upper pal nut, loosening and removing the tool from the bottom bolt (leave in place), and slightly rotating the upper bracket to give you enough room to completely remove the tool.

Save the upper Pal nut to attach the air spring.



Rotate the upper bracket back to the original location and install the washer head frame bolt (G), 3/8" oversized flat washer (N), and lock nut (K) through the second hole you drilled. Now tighten both of the installed fasteners to 20 ft/lbs.

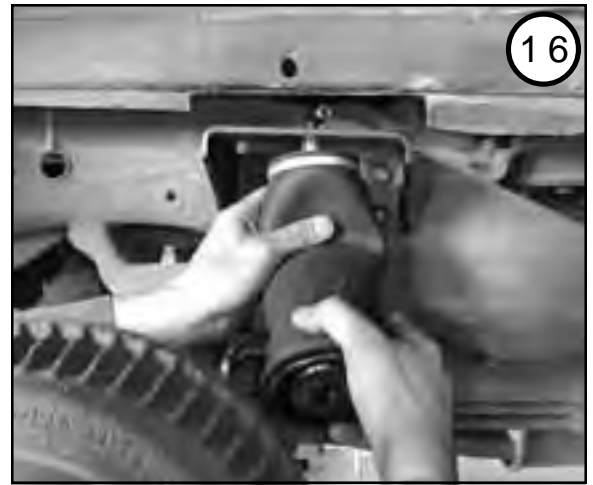
Center punch and drill the other two holes and install the fasteners.

Mounting the Air Spring

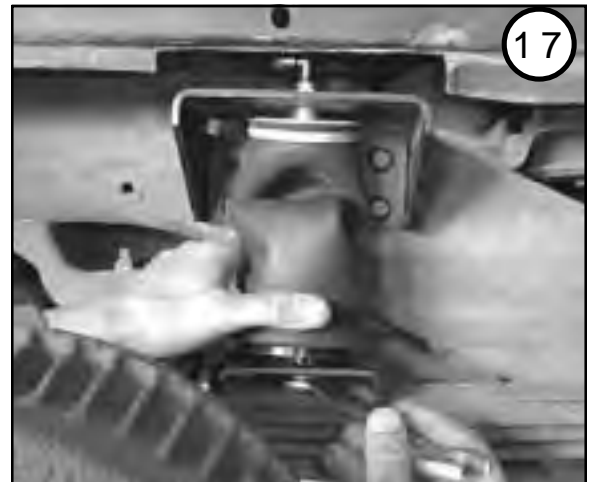


Install the air fitting (J) into the top of the air spring (D). This fitting is pre-coated with sealant. Finger-tight plus two 360° turns with an open-end wrench will seal the fitting. **Use a 7/16" open end wrench being careful to tighten on the metal hex nut only. DO NOT OVERTIGHTEN.**

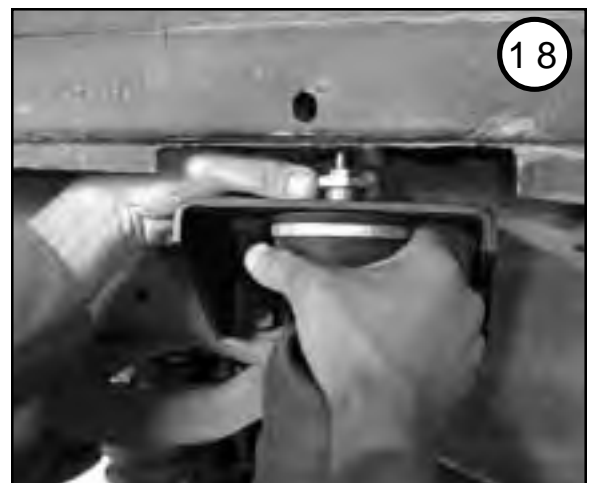
Guide upper thread post/fitting through the center mounting hole in the upper bracket.



Attach the air spring to the lower bracket. Carefully hand turn the air spring onto the lower mounting bolt (H). LEAVE LOOSE for later adjustment.



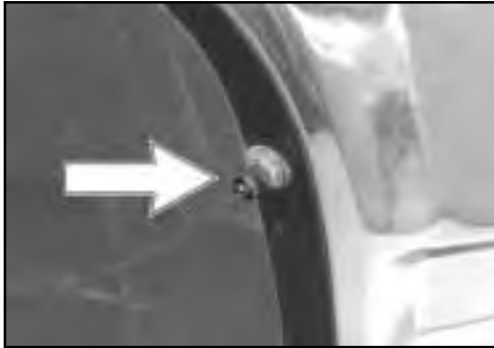
Now install the Pal Nut (I) - flange up - onto the upper threadpost of the air spring. LEAVE LOOSE for final adjustment.



Installing the Air Lines

19 Choose a convenient location for mounting the inflation valves. Make sure there is enough clearance around the valves for an air chuck. Drill a 5/16" hole to install the valves.

Popular locations for the valve are:



- The wheel well flanges



- Licence plate recess in the bumper

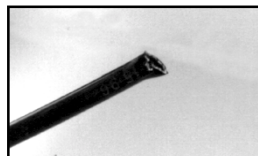


- Under the gas cap access door

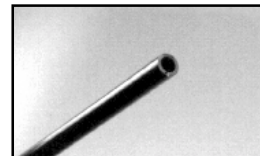


- Through the licence plate itself.

20 Cut the air line in two equal lengths.



Bad cut - flattened

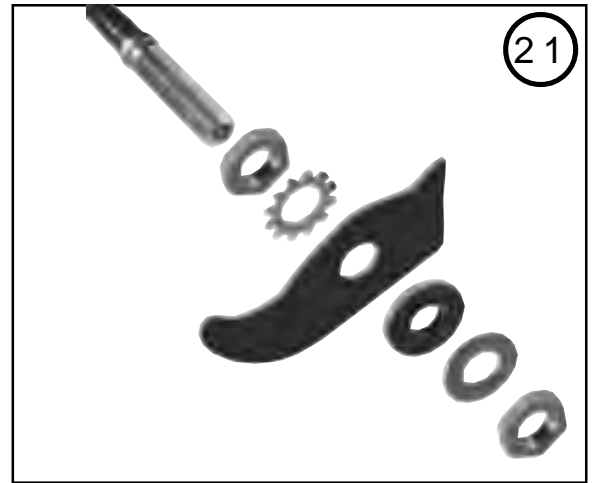


Good cut - clean and square



When cutting or trimming the air line, use a hose cutter (Air Lift P/N 10530), a razor blade or a sharp knife. 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 fitting.

Place a 5/16" nut (DD) and a star washer (FF) 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 (EE), flat washer (GG), 5/16" nut (DD) and cap (CC). There should be enough valve exposed after installation - approximately 1/2" - to easily apply a pressure gauge or an air chuck. Push the air valve through the hole and use the rubber washer (EE), flat washer (GG) and another 5/16" (DD) nut to secure it in place. Tighten the nuts to secure the assembly in place.



Route the air line along the frame to the upper bracket. Keep at least 6" of clearance between the air line and heat sources, such as the exhaust pipes. Avoid sharp bends and edges. Use the plastic tie straps (BB) 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.



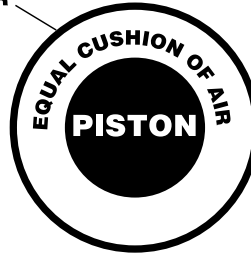
Install the air line into the air fitting. Trim the excess air line before inserting it into the swivel fitting. To properly install the air line measure 9/16" from the cut end and mark with tape. Lubricate (i.e. soap solution, silicone spray, saliva) the end of the air line and insert it into the fitting. Push and slightly turn the air line until you hear/feel it "click" into place. The front edge of the tape band should be flush with the fitting. The air line is now installed.

Aligning the Air Spring



VERY IMPORTANT - With the bottom and top of the air springs still loose, inflate the air spring to approximately 10 p.s.i.. Use the slotted adjustment in the lower bracket to correctly align the air spring between the upper and lower bracket. This can be accomplished by tapping it inboard or outboard for proper alignment. There should be a symmetrical cushion of air around the base of the air spring when correctly positioned.

FLEX MEMBER



Final Tightening Procedure



Tighten the lower end by holding the bolt with a 3/4" wrench and turning the air spring by hand. Turn the air spring - not the bolt. Hand tight is sufficient. **Do not attempt to hold the air spring with any type of tool.**



Now tighten the upper Pal nut with 1-1/16" open end wrench or a crescent wrench (10 ft/lbs.). **DO NOT OVER-TIGHTEN**

Install Other Air Spring

27

You have now completed the installation for one air spring. Complete steps 1-26 for the other side, and then return to step 29.

Inflation Decal

28

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

Checking for Leaks

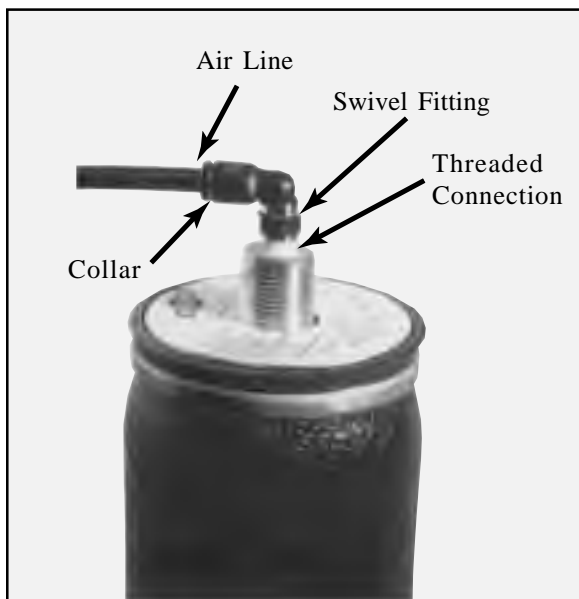
Inflate the air spring to 60 p.s.i. Spray all connections, fittings and the inflation valves with a solution of 1/3 liquid dish soap and 2/3 water to check for leaks. You should be able to spot leaks easily by looking for bubbling in the soapy water. After the test, deflate the springs to the minimum pressure required to restore the Normal Ride Height, but not less than 10 p.s.i.



Check the air pressure again after 24 hours. A 2 to 4 p.s.i. loss after initial installation is normal. Retest for leaks if the loss is more than 5 lbs.

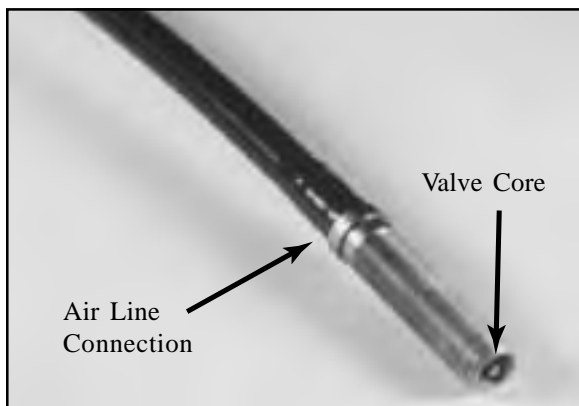


Fixing Leaks



Swivel Fitting

1. **Air Line Connection**
Deflate the spring and remove the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1/2" off the end of the air line. Be sure the cut is clean and square. Reinsert the air line into the push-to-connect fitting.
2. **Threaded Connection**
Tighten 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, then use a wrench for an additional two turns.



Inflation Valve

1. **Valve Core**
Tighten the valve core with a valve core tool.
2. **Air Line Connection**
When removing air line from a barbed type fitting, **DO NOT CUT IT OFF** as this will usually nick the barb and render the fitting useless. Cut air line off a few inches in front of the fitting and use a pair of pliers or vise-grips to pull/twist the air line off the fitting.

Maintenance and Operation

MINIMUM AIR PRESSURE

10 psi

MAXIMUM AIR PRESSURE

100 psi

Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, overextension, or rubbing against another component will void the warranty.

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 100 p.s.i.
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 sleeve. (See page 16.)
4. When increasing load, always adjust the air pressure to maintain the Normal Ride Height.
5. **IMPORTANT:** For your safety and to prevent possible 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 100 p.s.i., this pressure may represent too great a load on some vehicles. Check your vehicle owners manual and do not exceed the maximum load listed for your vehicle.
6. Always add air to springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.
7. **Should it become necessary to raise the vehicle by the frame, make sure the system is at minimum pressure (10 p.s.i.) to reduce the tension on the suspension/brake components. Check to see that the sleeve rolls back down over the bottom piston after the vehicle is lowered. If the sleeve fails to roll back down over the piston, add air pressure until the sleeve 'pops' back over the piston (do not exceed 100 p.s.i.).**

Troubleshooting Guide

1. Problems maintaining air pressure

WITHOUT ON-BOARD COMPRESSOR



Leak test the air line connections and threaded connection of the elbow into the air spring. See page 14 to repair.



Leak test the inflation valve for leaks at the air line connection or dirt or debris in the valve core. See page 14 for repair.



Inspect air lines to be sure it is not pinched. Tie straps may be too tight. Loosen or replace strap. Replace leaking components.



Inspect air line for holes and cracks. Replace as needed.



A kink or fold in the air line. Re-route as needed.



Product Use Information

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 time 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. 1). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

If the vehicle has a rough and harsh ride it may be due to either too much pressure or not enough (fig. 2). 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. 3). Tuning out these problems usually requires an increase in pressure.



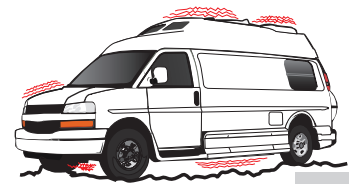
Bad headlight aim

fig. 1



Sway and body roll

fig. 2

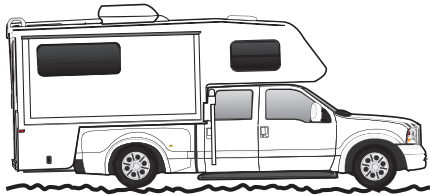


Rough ride

fig. 3

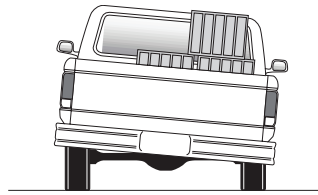
Guidelines for adding air:

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. 4).
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. 5). As much as a 50 PSI difference is not uncommon.

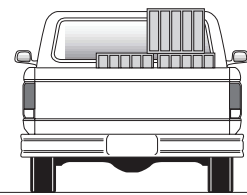


Bottoming out

fig. 4



Unlevel



Level

fig. 5