RIDE CONTROL
ADJUSTABLE AIR SPRING SUSPENSION

by AIR LIFT

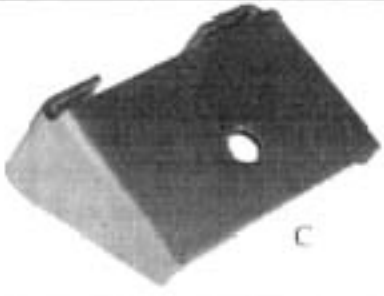
MN-359
(02712)
ECN2344

Kit No. 59527

Please read these instructions completely before proceeding with installation

Air Spring Kit Parts List

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


C


D


A


B

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


E


F


G


H


I


J


K


L


M


N

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


AA


CC


DD


EE


FF


GG


BB

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

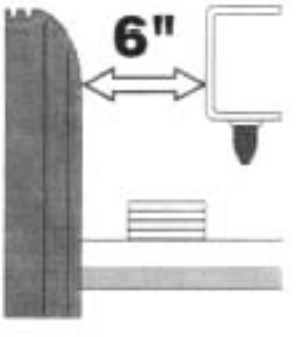
You need to determine Normal Ride Height. Normal Ride Height is the distance between the bottom edge of the wheelwell and the center of the hub with the vehicle in the "as delivered" condition. In some cases, Normal Ride Height is not perfectly level.

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 6" 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.

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.

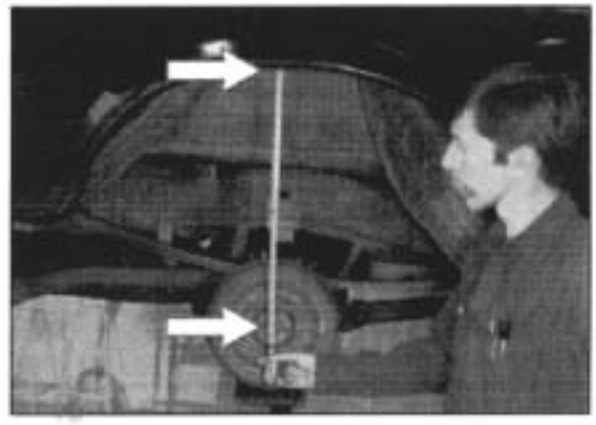
If the vehicle is raised with an axle contact hoist, place stands under the frame and lower the axle as needed . . .

or . . .

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

or . . .

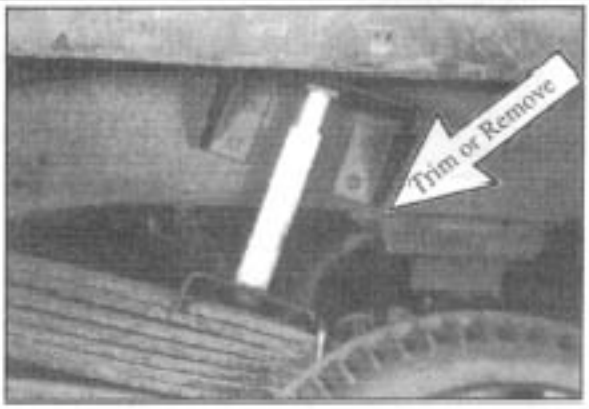
If the vehicle was raised with a jack and supported with stands on the frame, use a floor jack to raise the axle.



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.

'87-OLDER CHEVY/GMC 2WD

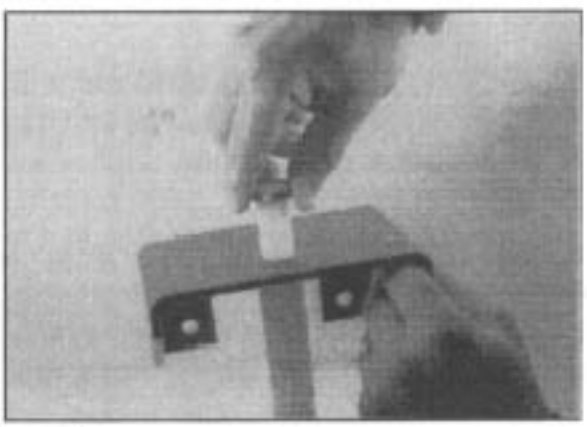
NOTE: It may be necessary to remove or trim the rubber jounce bumper bracket to provide sufficient clearance for the air spring when fully inflated.



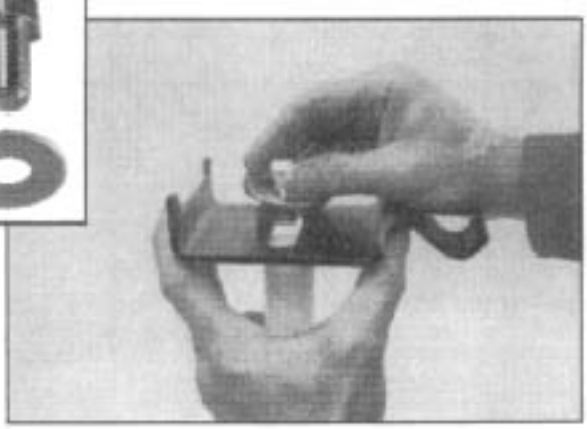
I. Assemble the Installation Tool

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



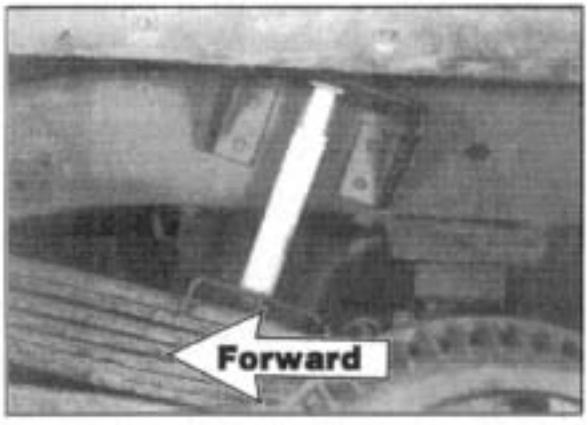
LOOSELY attach the tool (A) to the lower bracket (D) using 1/2 Flat Washer (M) and 1/2 Hex Head Cap Screw 7/8" (H). Leave loose for adjustment.

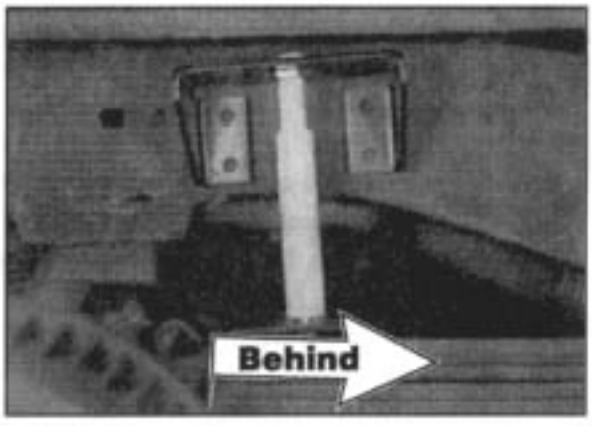


II. Deciding Where to Mount

How you install the kit will depend on the type of vehicle you have and the placement necessary to avoid brake lines, gas lines, hydraulic lines or other items that may interfere with drilling the upper bracket holes. The installation tool included in your kit will help you check for obstacles and decide the best location for your vehicle. The kit can be mounted in front of or behind the axle, even staggered on opposite sides if necessary, as long as a sufficient mounting envelope (determined by the height of the tool) is available.

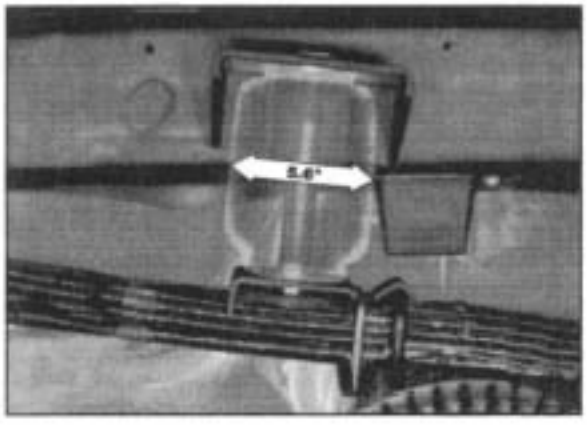
Some situations, such as vehicles with staggered shock absorbers, may require installing the air springs in front and behind the axle (staggered) on opposite sides of the vehicle.





All '87 and older Chevy/GMC 2WD Models will be staggard

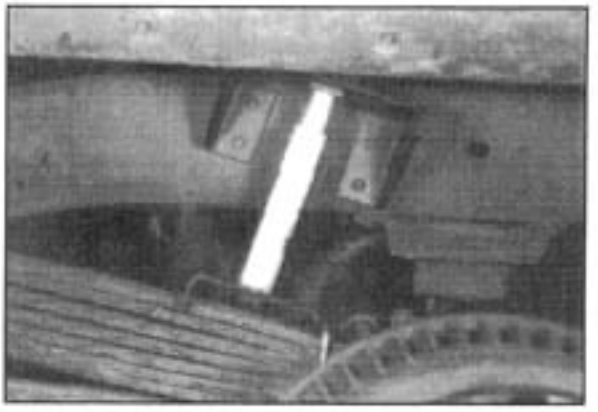
Air Spring Clearance



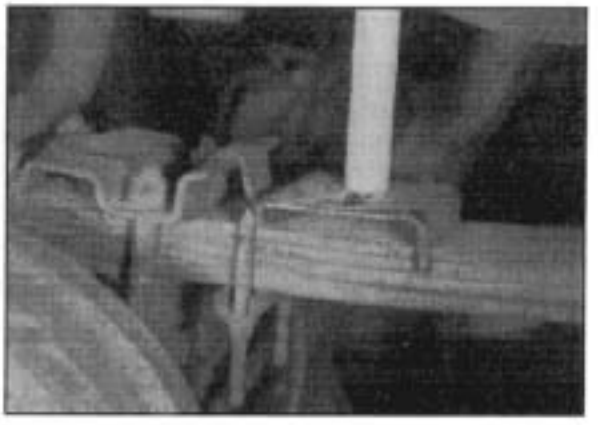
The air spring will expand to 5.6" in diameter at maximum inflation pressure. Check horizontally along the shaft of the installation tool for sufficient clearance of 2-3/4" clearance all around the tool. See "ghosted" air spring in photo. Be sure to check and adjust any fasteners coming through the frame from the inboard side.

III. Attaching Lower Bracket

Set the assembled bracket/tool unit on the leaf spring.

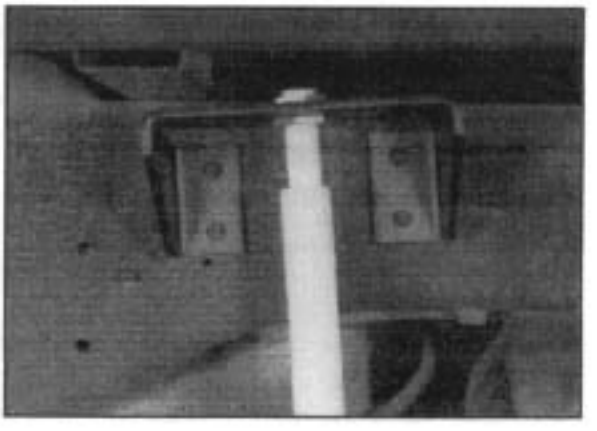


With the hook end of the lower bracket placed over the edge of the upper spring retaining plate, secure the lower bracket to the leaf spring with the provided U-bolt (E), lower clamp bar (F), flat washers (L), and locknuts (K). Torque to 20 ft/lbs. Note: The bracket will pull down flat to the leaf spring when the locknuts are tightened.



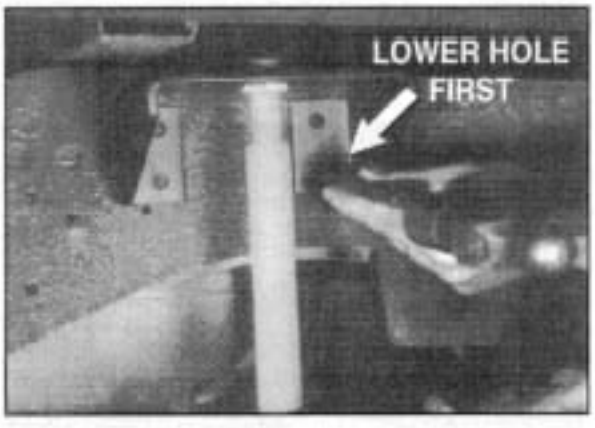
IV. Position the Upper Bracket

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.**

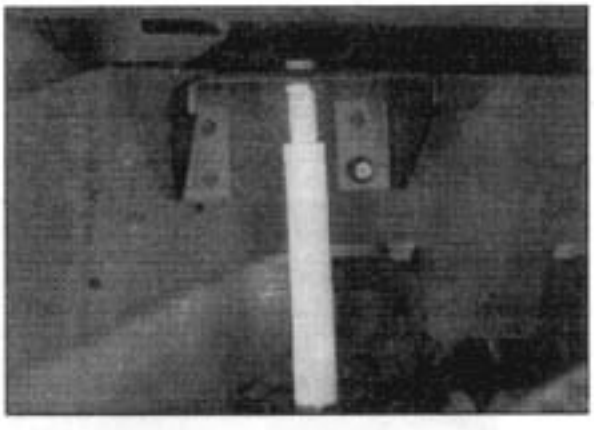


V. Mounting the Upper Bracket

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.



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



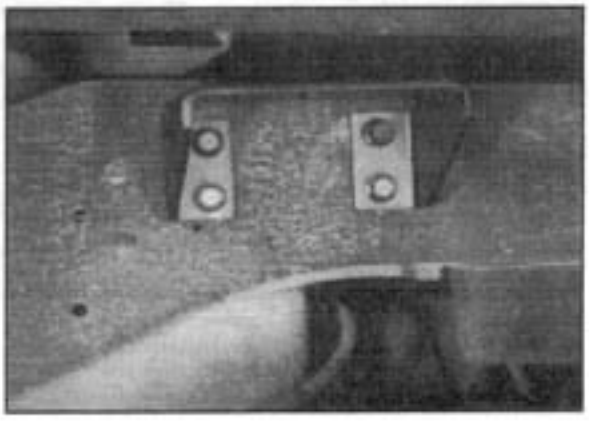
Install one of the washer head frame bolts (G) and LOOSELY attach the flat washer (L), 3/8" Oversized Flat Washer (N) and locknut (K).

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 as shown on page 10.

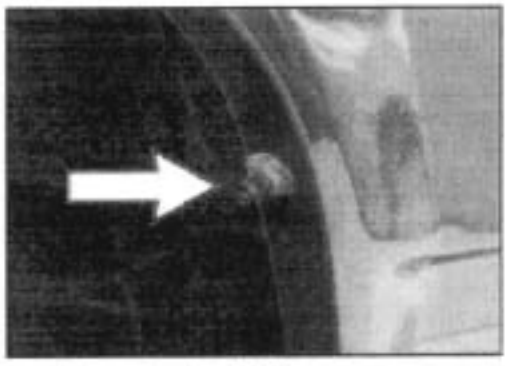
Rotate the upper bracket back to the original location and install the washer head frame bolt (G), flat washer (L), 3/8" Oversized Flat Washer (N) and lock nut (K) through the second hole you drilled. Now tighten both of the installed fasteners to 20 ft/lbs. Center punch and drill the other two holes and install the fasteners.



VI. Installing the Air Lines

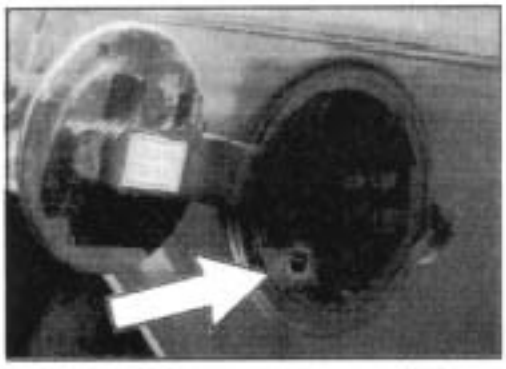
Choose a convenient location for mounting the inflation valves. Make sure there is enough clearance around the valves for an air chuck. Drill a 5/16" hole to install the valves.

Popular locations for the valve are:



- The wheel well flanges

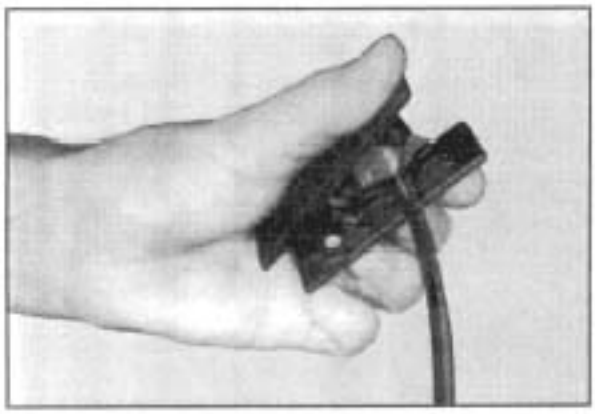
- Licence plate recess in the bumper



- Under the gas cap access door

- Through the licence plate itself.

Cut the air line in two equal lengths.



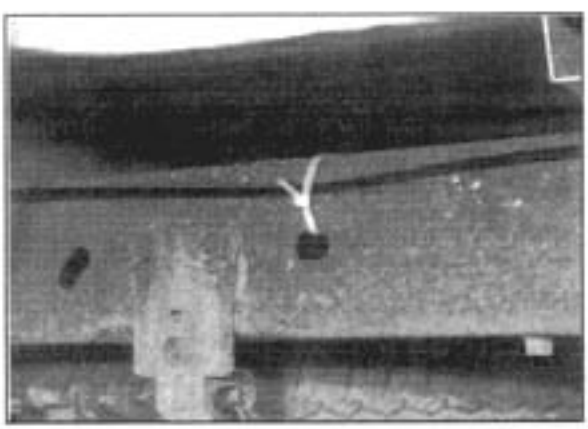
Bad cut - flattened

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.

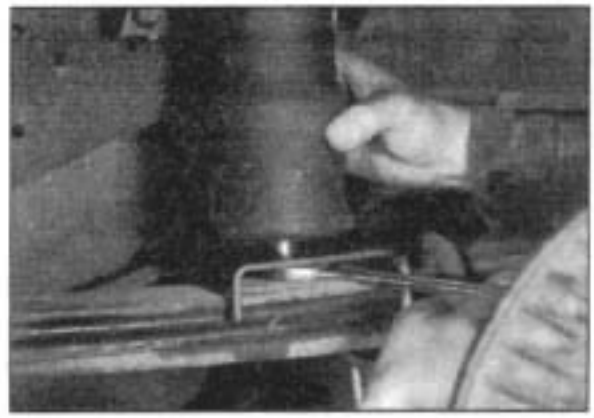
Route the air line along the frame to the upper bracket. Keep at least 6" of clearance between the air line and heat sources, such as the exhaust pipes. Avoid sharp bends and edges. Use the plastic tie straps (BB) to secure the air line to fixed, non-moving points along the chassis. Be sure that the 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.



VII. Mounting the Air Spring

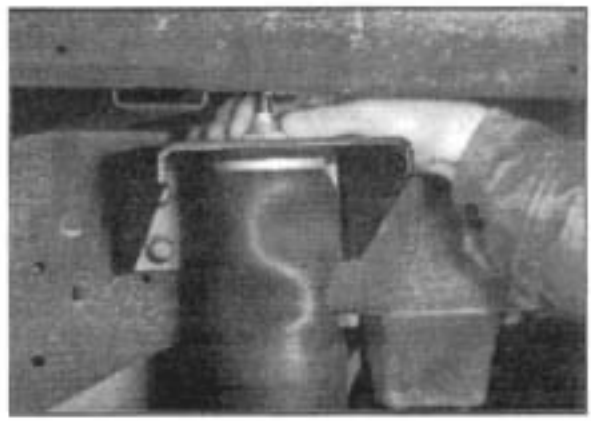
Install the air fitting (J) into the top of the air spring (B). This fitting is pre-coated with sealant. Finger-tight plus two 360° turns with an open-end wrench will seal the fitting. **Use a 7/16" open end wrench being careful to tighten on the metal hex nut only**. DO NOT OVERTIGHTEN.

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.

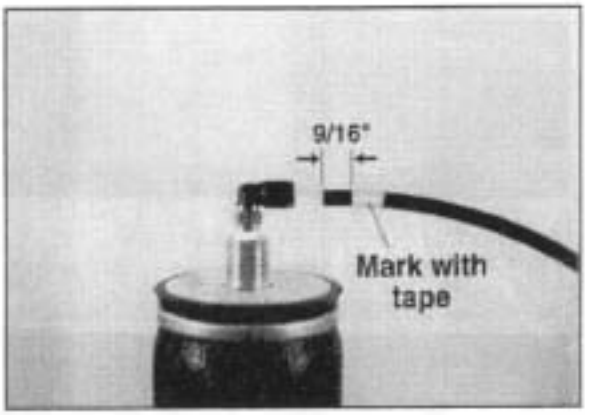


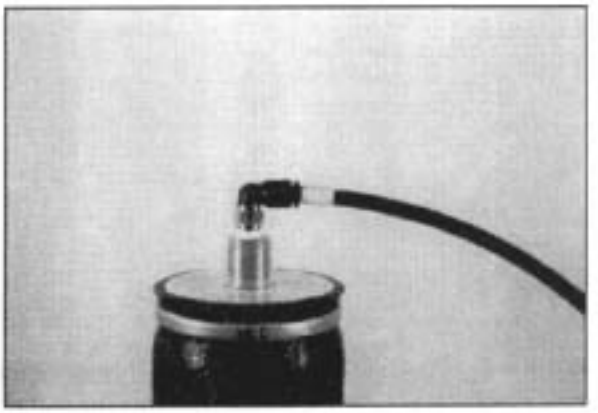
Guide upper thread post/fitting through the center mounting hole in the upper bracket.

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



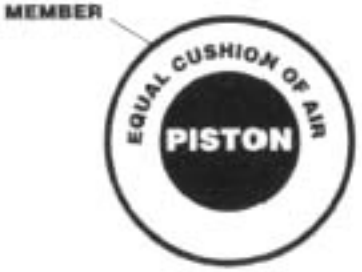
Install the air line into the air fitting. Trim the excess air line before inserting it into the swivel fitting. To properly install the air line measure 9/16" from the cut end and mark with tape. Lubricate (i.e. soap solution, silicone spray, saliva) the end of the air line and insert it into the fitting. 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.





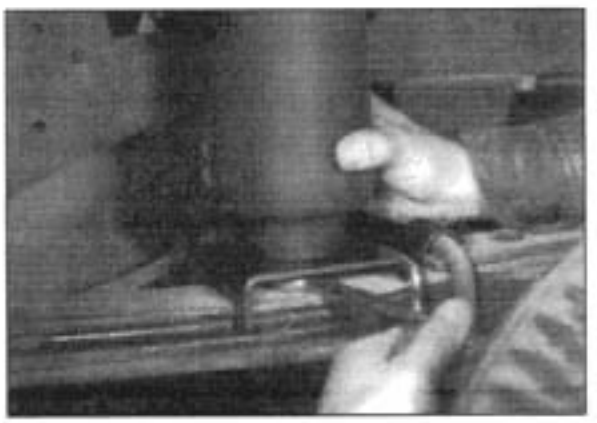
VIII. Aligning the Air Spring

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.

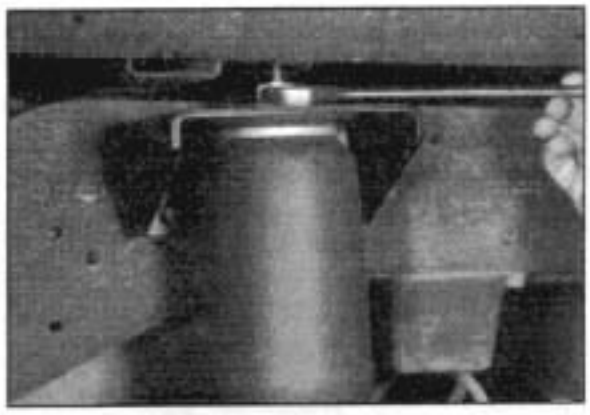


IX. Final Tightening Procedure

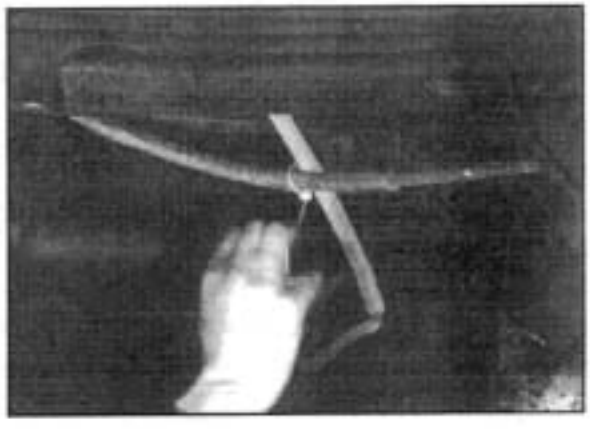
Tighten the lower end by holding the bolt with a 3/4" wrench and turning the air spring by hand. Turn the air spring - not the bolt. Hand tight is sufficient. **Do not attempt to hold the air spring with any type of tool.**



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



Driver Side-It may be necessary to secure the emergency brake cable away from the air spring to prevent it from rubbing. Use the provided tie straps (BB).



X. Install Other Air Spring

You have now completed the installation for one air spring. Complete steps I - IX for the other side, and then return to step XI.

XI. Inflation Decal

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.

XII. Checking for Leaks

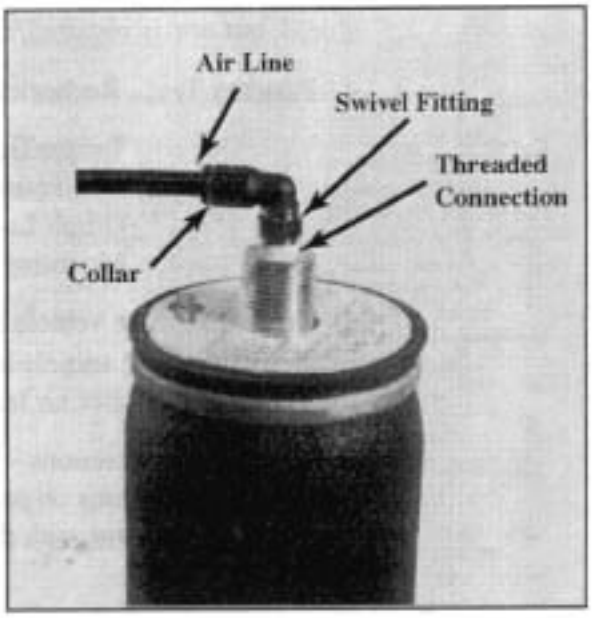
Inflate the air spring to 60 p.s.i. Spray all connections, fittings and the inflation valves with a solution of 1/3 liquid dish soap and 2/3 water to check for leaks. You should be able to spot leaks easily by looking for bubbling in the soapy water. After the test, deflate the springs to the minimum 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.

XIII. Fixing Leaks

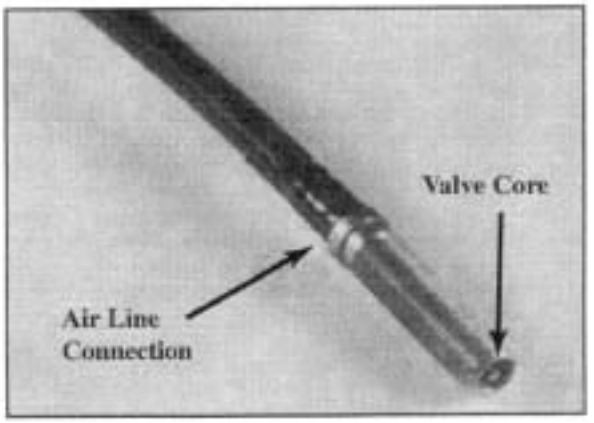
Swivel Fitting

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.



If the preceding steps have not resolved the problem, call Air Lift Technical Service at 1-800-248-0892 for assistance.

XIV. Checklist

You can protect your warranty on this product and prevent unnecessary wear by ensuring the following checks have been made:

Section I - Installation (To be completed by the installer).

_____ 1. Clearance Test - Inflate the air springs to 60 p.s.i. and ensure there is at least 1/2" clearance around each sleeve from anything that might rub against them. Be sure to check the tire, brake drum, frame, shock absorbers and brake cables.

_____ 2. Leak Test Before Road Test - Inflate the air springs to 60 p.s.i., check all connections for leaks with a soapy water solution. See page 13 of the manual for tips on how to spot leaks. All leaks must be eliminated before the vehicle is road tested.

_____ 3. Heat Test - Be sure there is sufficient clearance from heat sources - at least 6" for air springs and air lines. If a heat shield was included in the kit - install it. If there was no heat shield, but one is required, call 1-800-248-0892.

_____ 4. Fastener Test - Recheck all bolts for proper torque.

Torque Guide:	
3/8" Frame Bolts	20 ft.-lbs.
U-bolt Lock Nuts	20 ft.-lbs.
Mounting bolt/pal nut for air spring	10 ft.-lbs.

_____ 5. Road Test - The vehicle should be road tested after the preceding tests. Inflate the springs to 10 p.s.i. or until vehicle is level. Drive the vehicle 10 miles and recheck for clearance, loose fasteners and/or air leaks.

_____ 6. Operating Instructions - If professionally installed, the installer should review the operating instructions on page 18 with the owner. Be sure to provide the owner with all of the paperwork that came with the kit.

Section II - Post Installation Checklist (TO BE COMPLETED BY OWNER)

_____ 1. Overnight Leakdown Test - Recheck air pressure after vehicle has been used for 24 hours. If pressure has dropped more than 5 p.s.i., you have a leak that must be fixed. Either fix the leak yourself (see page 13) or return to the installer for service.

_____ 2. Air Pressure Requirements - I understand that the air pressure requirements of my air spring system are as follows:

Minimum _____ Maximum _____

I also understand that I must inflate the air springs until the Normal Ride Height measurement that was recorded on page 2 has been restored. Regardless of load, the air pressure should always be adjusted so that the Normal Ride Height is maintained at all times.

_____ 3. 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.

Maintenance and Operations

MINIMUM AIR PRESSURE	MAXIMUM AIR PRESSURE
10 psi	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 13.)

4. When increasing load, always adjust the air pressure to maintain the Normal Ride Height.

5. It will be helpful to increase the tire inflation when you load your vehicle beyond its normal operating weight. We recommend a 2 p.s.i. increase above normal (not to exceed tire manufacturer maximum) for each 100 lbs. of added load on the axle.

6. **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.

7. Always add air to springs in small quantities, checking the pressure frequently. Sleeves require less air volume than a tire and inflate quickly.

8. **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.).**

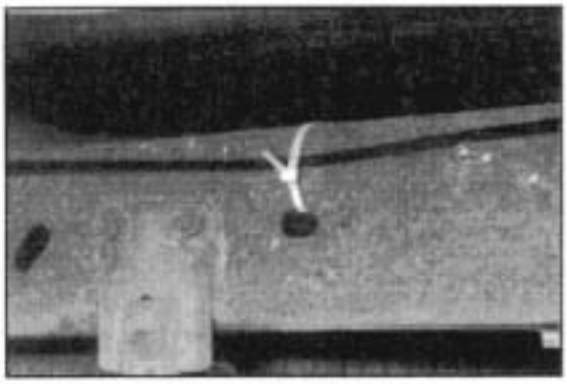
Troubleshooting Guide

1. Problems maintaining air pressure

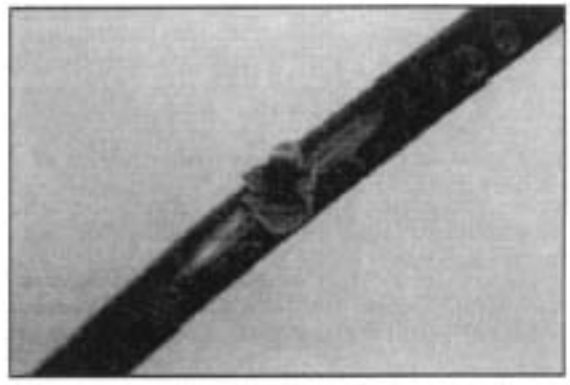
WITHOUT ON-BOARD COMPRESSOR

Leak test the air line connections and threaded connection of the elbow into the air spring. See page 13 to repair.

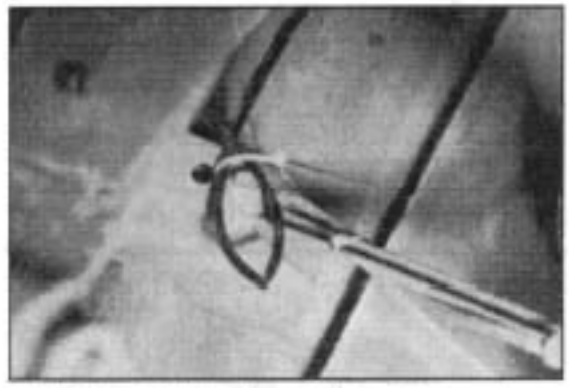
Leak test the inflation valve for leaks at the air line connection or dirt or debris in the valve core. See page 13 for repair.



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.

You have now tested for all of the most probable leak conditions that can be easily fixed. At this point the problem is probably a damaged air spring - either a factory defect or an operating problem. We suggest that you return the vehicle to your installer. If self-installed or you are the professional installer, please call Air Lift at 1-800-248-0892 for assistance or a replacement air spring.

Notes

You may find this space useful for recording information about your system (i.e. weekly pressure readings). also record any information from your installer or Air Lift technical assistance personnel.

Thank you for purchasing Air Lift Products

Mailing Address:
AIR LIFT COMPANY
P.O. Box 80167
Lansing, MI 48908-0167

Street Address:
AIR LIFT COMPANY
2727 Snow Road
Lansing MI 48917

Local Phone: (517) 322-2144
Fax: (517) 322-0240

FOR TECHNICAL ASSISTANCE CALL 1-800-248-0892

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*

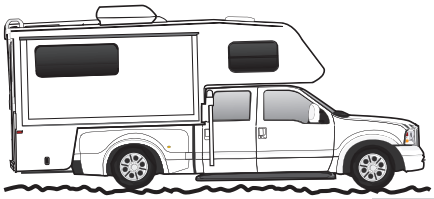
Rough ride *fig. 3*

Continued on pg. 2

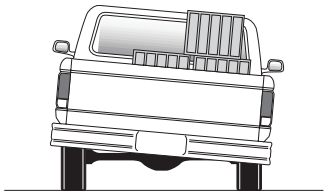
Continued from pg. 1

Guidelines for adding air:

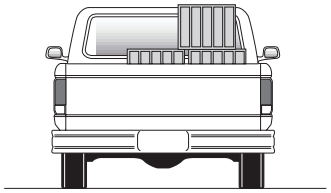
1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. For motorhomes, start with 50-100 PSI in the rear because it can be safely assumed that it is heavily loaded.
4. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
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*

Warranty and Returns Policy

Air Lift Company warrants its products, for the time periods listed below, to the original retail purchaser against manufacturing defects when used on catalog-listed applications on cars, vans, light trucks and motorhomes under normal operating conditions for as long as Air Lift manufactures the product. The warranty does not apply to products that have been improperly applied, improperly installed, used in racing or off-road applications, used for commercial purposes, or which have not been maintained in accordance with installation instructions furnished with all products. The consumer will be responsible for removing (labor charges) the defective product from the vehicle and returning it, transportation costs prepaid, to the dealer from which it was purchased or to Air Lift Company for verification.

Air Lift will repair or replace, at its option, defective products or components. A minimum $10.00 shipping and handling charge will apply to all warranty claims. Before returning any defective product, you must call Air Lift at (800) 248-0892 in the U.S. and Canada (elsewhere, (517) 322-2144) for a Returned Materials Authorization (RMA) number. Returns to Air Lift can be sent to: Air Lift Company • 2727 Snow Road • Lansing, MI • 48917.

Product failures resulting from abnormal use or misuse are excluded from this warranty. The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages is not covered. The consumer is responsible for installation/reinstallation (labor charges) of the product. Air Lift Company reserves the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights and you may also have other rights that vary from state-to-state. Some states do not allow limitations on how long an implied warranty lasts or allow the exclusion or limitation of incidental or consequential damages. The above limitation or exclusion may not apply to you. There are no warranties, expressed or implied including any implied warranties of merchantability and fitness, which extend beyond this warranty period. There are no warranties that extend beyond the description on the face hereof. Seller disclaims the implied warranty of merchantability. (Dated proof of purchase required.)

Air Lift 1000	**Lifetime Limited**	**Load Controller (I)**	**2 Year Limited**
RideControl	**Lifetime Limited**	**Load Controller (II)**	**2 Year Limited**
SlamAir	**Lifetime Limited**	**SmartAir**	**2 Year Limited**
LoadLifter 5000*	**Lifetime Limited**	**Wireless AIR**	**2 Year Limited**
EasyStreet Systems	**1 Year Limited**	**Other Accessories**	**2 Year Limited**

**formerly SuperDuty*

Thank you for purchasing Air Lift products! For technical support, please call (800) 248-0892.

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