

Please read these instructions completely before proceeding with the installation.

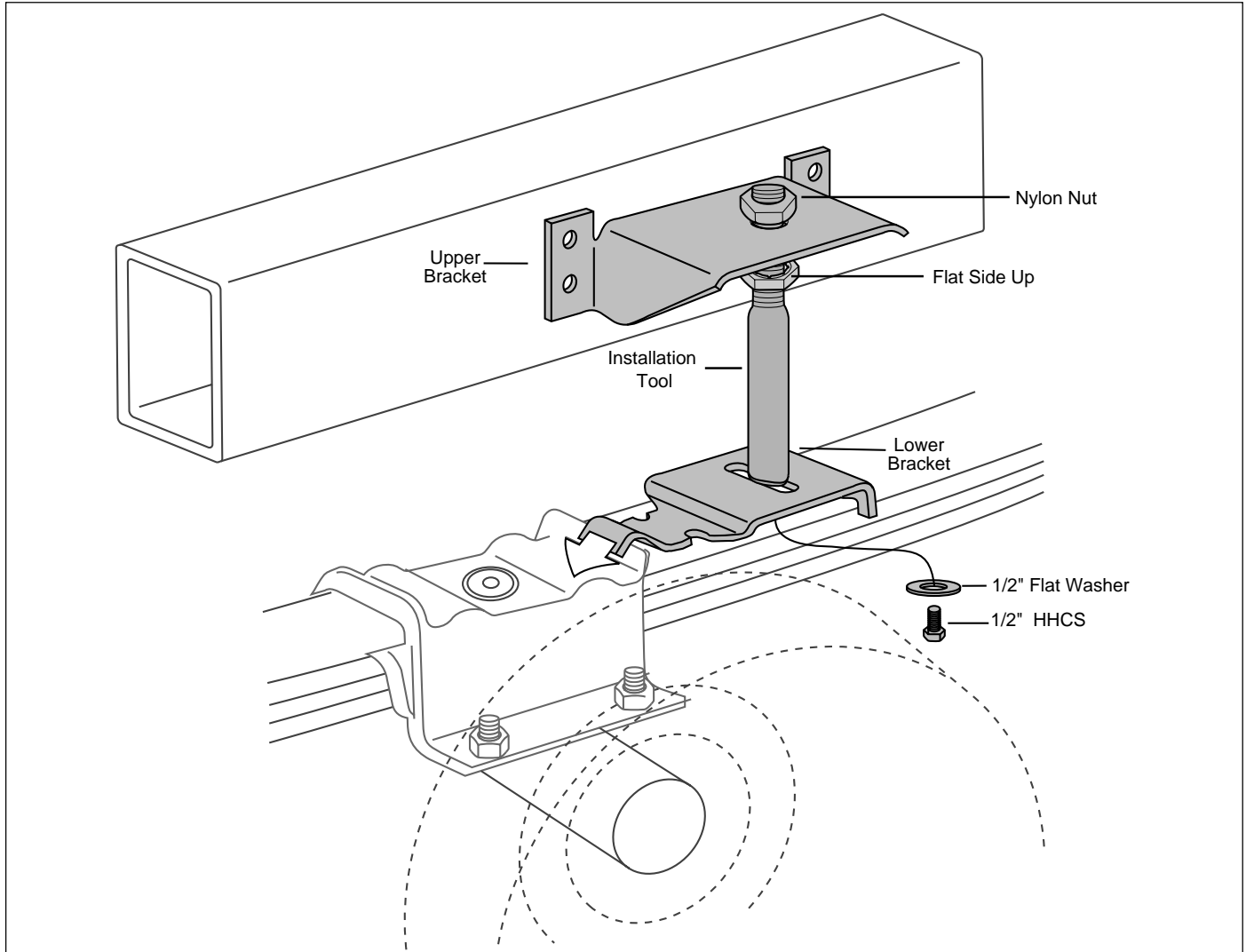


Figure 1

CAUTION: Failure to maintain correct minimum pressure (or pressure proportional to the load), bottoming out, over-extension, or rubbing against another component will void the warranty.

IMPORTANT: If your vehicle is equipped with rear air conditioning it will be necessary to move the lines up to the top of the frame to install the air spring kit.

IMPORTANT: Your air springs will last much longer if they are not the suspension limiter in either compression or extension. The air spring compresses to 2.2" and extends to 7.1". Keeping the minimum required pressure or a pressure proportional to the load will prevent bottoming out. The shock absorber is usually the limiter on extension. If this is not the case, you should consider the use of limiting straps. The maximum inflated diameter of your air spring is 4.6". You must check to see that nothing is rubbing against the air spring within this diameter.

This kit contains the new Air Lift installation tool. This tool is designed to simplify the installation of the kit for correct mounted height and alignment. The threaded section of the tool will ensure mounting of the air spring within the 4.0" to 5.0" design envelope. The air spring may be mounted anywhere within that range. It may be necessary to "flip" the upper bracket to achieve the correct design height.

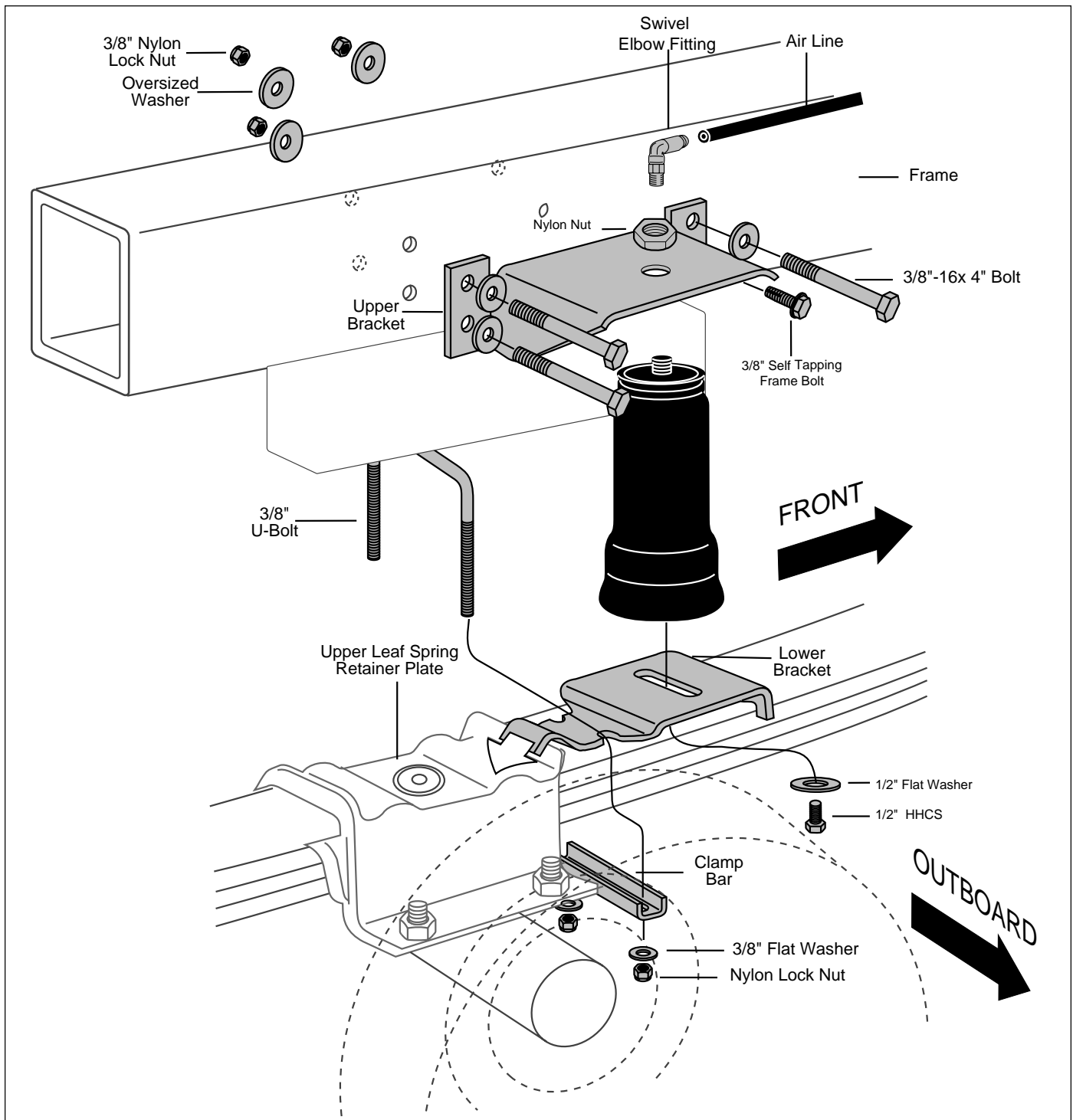
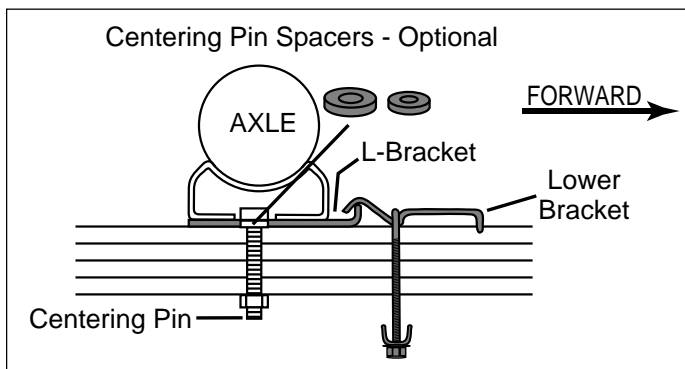


Figure 2



Inset A

NOTE: This drawing represents a typical flip axle installation. Your vehicle may look slightly different due to lowering method.

1. Determine the Ride Height. This is defined as the distance between the bottom edge of the fenderwell to the center point of the wheel with the vehicle at the desired height (without a load). Measurements should be taken before beginning the installation. The distance from the bottom edge of the fenderwell to the center point of the wheel should be recorded. All of our kits are designed to be installed and operate at normal ride height.

2. Measure the ride height distance. Enter the measurement below:

Ride Height: _____ inches

3. After measuring and recording the ride height, jack up rear of vehicle or raise on hoist. Raise axle or lower frame until the leaf spring is at ride height (unloaded condition).

4. Measure the distance between the tire and outside of frame rail (Figure 3). *You must have a minimum of 5" to provide clearance for the air spring when fully inflated.*

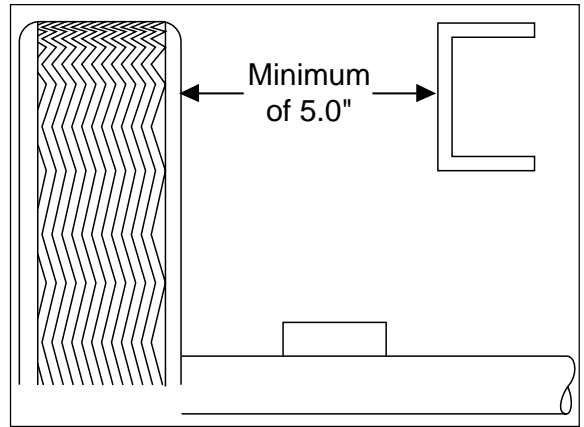


Figure 3

IMPORTANT: This kit is designed to fit most '95 and newer Chevy Astro vans and GMC Safari vans with multi leaf steel springs that have been lowered. 59111 is a side mount kit – between the frame and tire. Due to the wide variety of lowering kits on the market, Air Lift cannot guarantee that this kit will fit every vehicle. You may need to modify the upper bracket, or even weld it, depending on the type of kit the vehicle was lowered with or optional equipment present. This will not void the warranty. The sleeve must be mounted between 4" and 5" tall. There must be at least 6.5" from the top of the leaf to the bottom of the bed to achieve this (Figure 4).

5. Remove rear wheels.

6. Loosely attach the upper and lower brackets to the installation tool using the 1/2" flat washer, 1/2" bolt, and nylon nut (Figure 1). It is important that the hook of the lower bracket hooks over the U-bolt, spring retainer, etc. so that the bracket is secure in place (Figure 5).

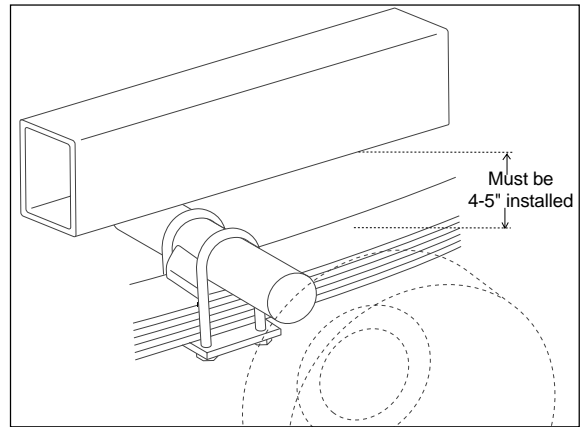


Figure 4

If you have a flip axle conversion proceed with step a, if not go to step b.

a. Flip Axle Kits:

- (1) Support frame and drop rear axle all the way until axle is hanging. If the shocks stop the axle from hanging remove lower shock bolts.
- (2) Remove leaf spring retaining U-bolts on one side and, with a floor jack, raise axle to clear leaf spring centering pin in leaf stack. A spacer is provided to accommodate the increased thickness caused by the L-bracket (parts pack 33772).
- (3) Clamp the leaf spring together with a C-clamp so leaf center pin can be removed.

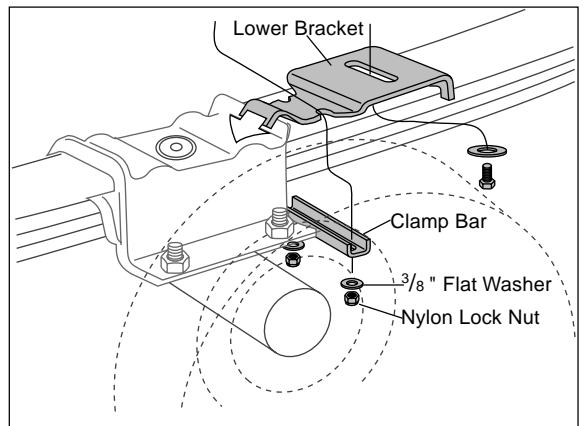


Figure 5

- (4) Remove centering pin and install one spacer per pin. Reinstall pin (Inset A). If nut does not have full thread contact, replace centering pin. Set L-bracket on leaf with the pin through the slot. Make sure that the post part of the "L" is facing forward.
- (5) Drop the axle back down, and reinstalled U-bolts. Slightly tighten U-bolts so that L-bracket can be adjusted later.
- (6) Install lower bracket on other side in same manner.

b. Non Flip Axle Kits:

- (1) Set the preassembled bracket/tool unit on the leaf spring forward of the axle.
- (2) 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, flat washers, and lock nuts. Torque to 16 ft-lbs.

NOTE: On some conversions, it may be necessary to trim the seat bolts protruding down from the floorboard in the area of the assembly mounts.

7. The upper bracket can be mounted right side up or upside down to attain correct design height (Figure 1).

NOTE: If used, adjust L-bracket so upper bracket clears the notch, bolts, or anything else that may interfere with the upper bracket installation.

8. Using the slot in the lower bracket, push the upper bracket against the frame rail. Use the nuts on the threaded portion of the installation tool to adjust the upper bracket so that the flanges of the upper bracket are flat against the frame rail and all four mounting holes are on the flat middle section of the frame rail. The mounting holes must be at least $\frac{3}{4}$ " from the rounded edges of the frame rail. It is also necessary to allow at least $1\frac{5}{8}$ " above the upper bracket for air fitting clearance. The brackets can be mounted anywhere within the threaded range of the installation tool (Figure 1).

9. Using the upper bracket as a template, follow the specific directions below for passenger and driver sides.

a. Passenger Side:

- (1) Centerpunch and drill a $\frac{3}{8}$ " hole through the *forward upper* mounting hole. Insert the $\frac{3}{8}$ " x 4" frame bolt/flat washers/locknut and leave loose. Note: On exhaust side of vehicle it may be necessary to move or trim stock heat shield to gain access to mounting bolts.
- (2) Next centerpunch and drill through the *rear upper* mounting hole. Do not insert the bolt.
- (3) The installation tool can now be removed by removing the upper nylon 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.

- (4) Rotate the upper bracket back to the original location and install the frame bolt, flat washer, and lock nut through the second hole that was drilled. Now tighten both of the installed fasteners to 20 ft–lbs. Centerpunch and drill a third $\frac{3}{8}$ " hole through the *rear lower* mounting hole and insert $\frac{3}{8}$ "-16 x 4" bolt, flat washers and lock nut (Tighten to 20 ft–lbs).
- (5) As shown in Figure 6, a self tapping frame bolt is required in the *forward lower* mounting hole. Drill a $\frac{5}{16}$ " hole, (no larger) insert and tighten the self tapper (15 ft–lbs). Do not overtighten.
- (6) Assemble the tool with the remaining bracket as shown in Figure 1 and attach lower bracket in the same manner as step 3.

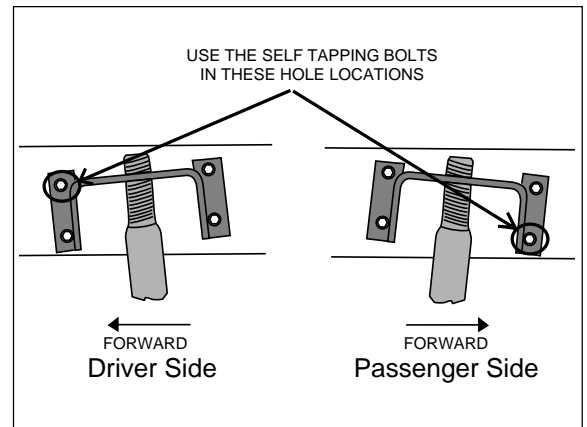


Figure 6

b. Driver Side Installation:

- (1) Centerpunch and drill a $\frac{3}{8}$ " hole through the *forward lower* mounting hole. Insert the $\frac{3}{8}$ " x 4" frame bolt/flat washers/locknut and leave loose.
- (2) Next centerpunch and drill through the *rear lower* mounting hole. Do not insert the bolt.
- (3) The installation tool can now be taken out 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.
- (4) Rotate the upper bracket back to the original location and install the frame bolt, flat washer, and lock nut through the second hole you drilled. Now tighten both of the installed fasteners to 20 ft–lbs. Centerpunch and drill a third $\frac{3}{8}$ " hole through the *rear upper* mounting hole and insert $\frac{3}{8}$ "-16 x 4" bolt, flat washers and lock nut (Tighten to 20 ft–lbs).
- (5) As shown in Figure 6, a self tapping frame bolt is required in the *forward upper* mounting hole. Drill a $\frac{5}{16}$ " hole, no larger, and insert and tighten the self tapper (15 ft–lbs). *Do not overtighten.*

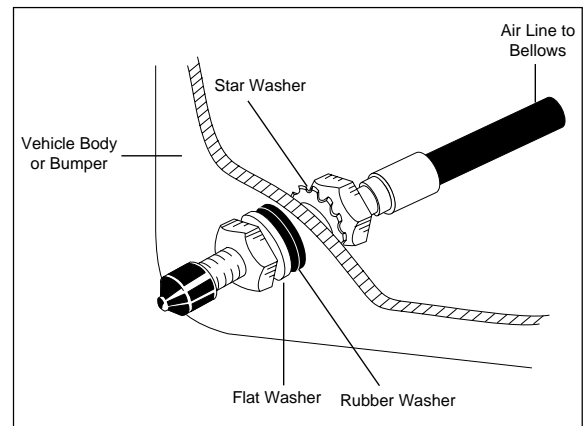


Figure 7

10. Install the precoated air fitting into the thread post of the air spring, finger tight plus two turns. *Do not overtighten.* Carefully thread the bottom of the air spring onto the bolt in the lower bracket. *Leave loose* for the final adjustment. Insert the top of the air spring through the slot in the upper bracket and attach with a nylon nut (Figure 2).

IMPORTANT: *Do not tighten the nylon nut at this time.*

11. Use a standard tube cutter, a razor blade, or very sharp knife to cut the air line. A clean square cut will ensure against leaks. Cut the air line in two equal lengths. Drill $\frac{5}{16}$ " hole for the inflation valve and mount in a convenient location to adjust air pressure as illustrated. Rubber washer on outside is for weather seal (Figures 7 & 8).

CAUTION: *Leave sufficient air line slack to prevent any strain on the valve stem during normal axle motions.*

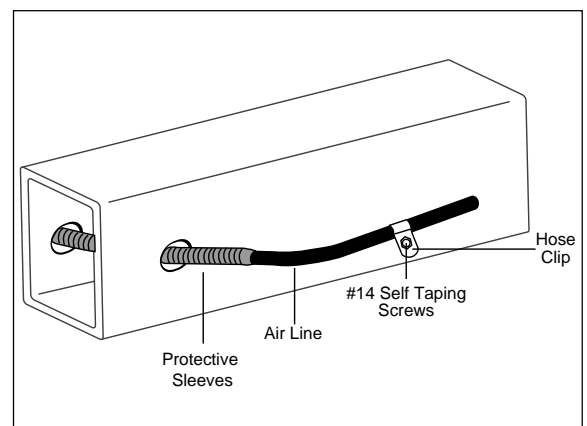


Figure 8

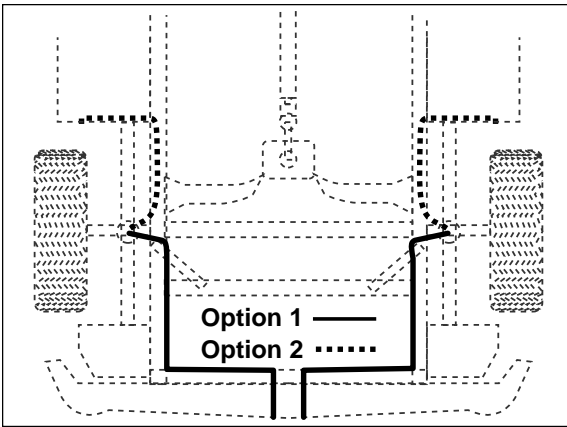


Figure 9

12. Route air line along frame from the inflation valve location to the air springs (Figure 9). Use the provided clips and self tapping screws to attach to the outside of the frame rail and the air line sleeves to protect the air line when routing through existing holes in the frame. *It is not necessary to drill a hole for this type of self tapping screw. Simply drive the screw through the frame section.* Attach air line to chassis with the provided plastic straps where possible.

CAUTION: To prevent the air line from melting, keep it at least 12 " from the exhaust system.

13. Cut off excess air line squarely. Install the air line into the fitting. This is a push to connect fitting. Push and slightly turn the cut end of the air line into the fitting as far as it will go. There is a definite "click" that can be heard and or felt when the air line is seated. The air line should go in $\frac{9}{16}$ ". It is now installed.

14. **VERY IMPORTANT:** With the bottom and top of the air spring still loose, inflate the air spring to approximately 10 p.s.i. By using the slotted adjustment in the lower bracket align the air spring so that there is a symmetrical cushion of air around the lower base. This can be accomplished by pressing all around the air spring to feel an air gap between rubber and piston. Adjust by tapping it inboard or outboard for proper alignment (Figure 10).

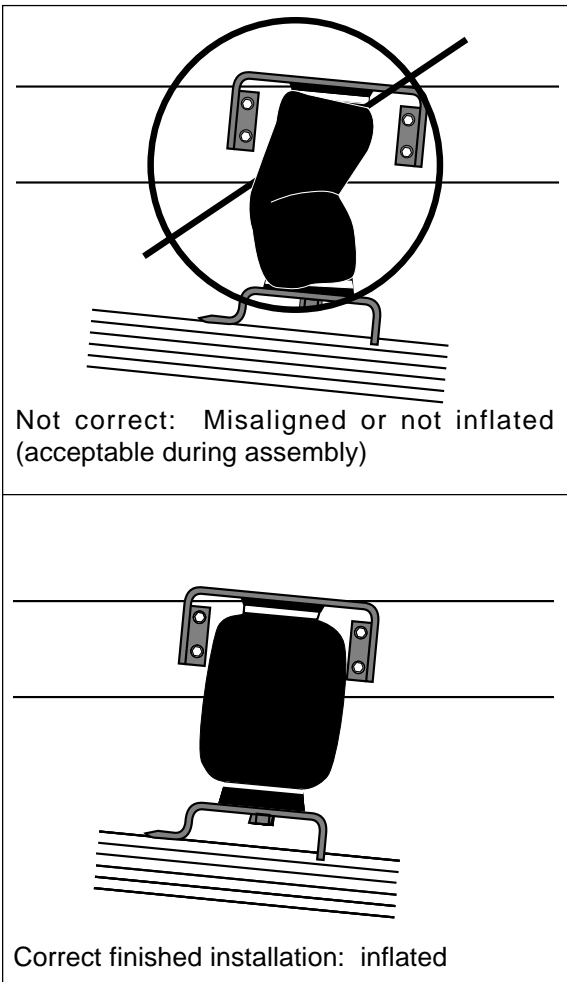
15. Tighten the lower end by holding the Bolt with a 1 $\frac{1}{8}$ " wrench and turning the air spring by hand. Use no tools, hand tight is sufficient. It may be necessary to let some of the air out of the air spring in order to turn it.

16. If L-bracket was used for the lower bracket to hook over, then retighten U-bolts to 115 ft–lbs. Tighten lower bracket U-bolts to 16 ft–lbs.

17. Now tighten the upper nylon nut (4 ft–lbs). Do not overtighten.

18. Inflate to 30 p.s.i. Check all fittings and inflation valve core for leaks with a liquid solution of $\frac{1}{5}$ dish soap to $\frac{4}{5}$ water. Check once again to be sure you have clearance all around the air spring at its fully inflated diameter (4.6").

19. 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 p.s.i. retest for leaks with soapy/water solution. Please read and follow the Maintenance and Operating tips. Check to see that the sleeve rolls back down over the bottom piston after the vehicle is lowered (Figure 10).



Not correct: Misaligned or not inflated (acceptable during assembly)

Correct finished installation: inflated

Figure 10

MAINTENANCE AND OPERATIONS

MINIMUM AIR PRESSURE	MAXIMUM AIR PRESSURE
10 p.s.i.	100 p.s.i.
<i>Failure to maintain correct minimum pressure (or pressure proportional to load), bottoming out, over-extension, or rubbing against another component will void the warranty.</i>	

MAINTENANCE:

1. Check pressure weekly.
2. Always maintain at least 10 p.s.i. air pressure to prevent chafing.
3. If you develop an air leak in the system, use a liquid solution of $\frac{1}{4}$ dish soap to $\frac{4}{5}$ water to check all air line connections and the inflation valve core before removing sleeve.

OPERATING TIPS:

1. Inflate your air springs to 60 p.s.i. before adding the payload. After vehicle is loaded, adjust your air pressure to level the vehicle and for ride comfort.
2. When you are carrying a payload it will be helpful to increase the tire inflation pressure in proportion to any overload condition. We recommend a 2 p.s.i. increase above normal (not to exceed tire manufacturer maximum) for each 100 lbs total overload on the axle.

NOTE:

1. **IMPORTANT:** For your safety and to prevent possible damage to your vehicle, do not exceed maximum load recommended by the vehicle manufacturer. Although your air springs are rated at maximum inflation pressure of 100 p.s.i., the air pressure actually needed is dependant upon your load and Gross Vehicle Weight Rating (GVWR), which may be less than 100 p.s.i. Check your vehicle owner's manual and do not exceed maximum loads listed for your vehicle. When inflating your Air Lift air spring, add pressure in small quantities, checking pressure frequently during inflation. The sleeves require much less air volume than a tire and therefore inflate much quicker.
2. *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 suspension/brake components. Check to see that the sleeve rolls back down over the bottom piston after the vehicle is lowered (Figure 9). If sleeve fails to roll back down over the piston, add air pressure until sleeve "pops" back over piston (do not exceed 100 p.s.i.).*



Thank you for purchasing Air Lift Products

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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

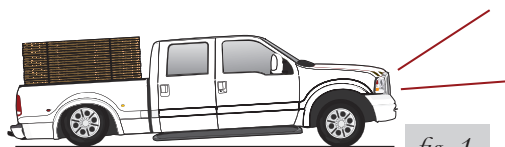
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (fig. 1). Raise the air pressure to correct either of these problems and level the vehicle.

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.



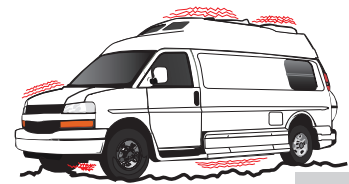
Bad headlight aim

fig. 1



Sway and body roll

fig. 2

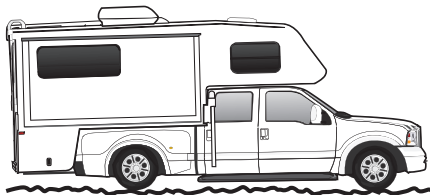


Rough ride

fig. 3

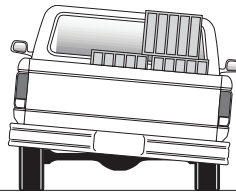
Guidelines for adding air:

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.

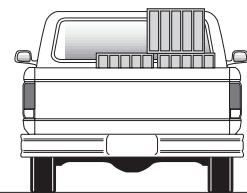


Bottoming out

fig. 4



Unlevel



Level

fig. 5

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.)

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