

LoadLifter 5000™

ULTIMATE



Installation Guide



Ford Raptor



Watch the video

Info on Table of Contents page

Kit 88412

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.

Protect your Air Lift Purchase by Completing your Warranty Registration



Thank you for purchasing an Air Lift load support product!

Take a photo of your sales receipt and then scan the QR code to complete your online warranty registration.

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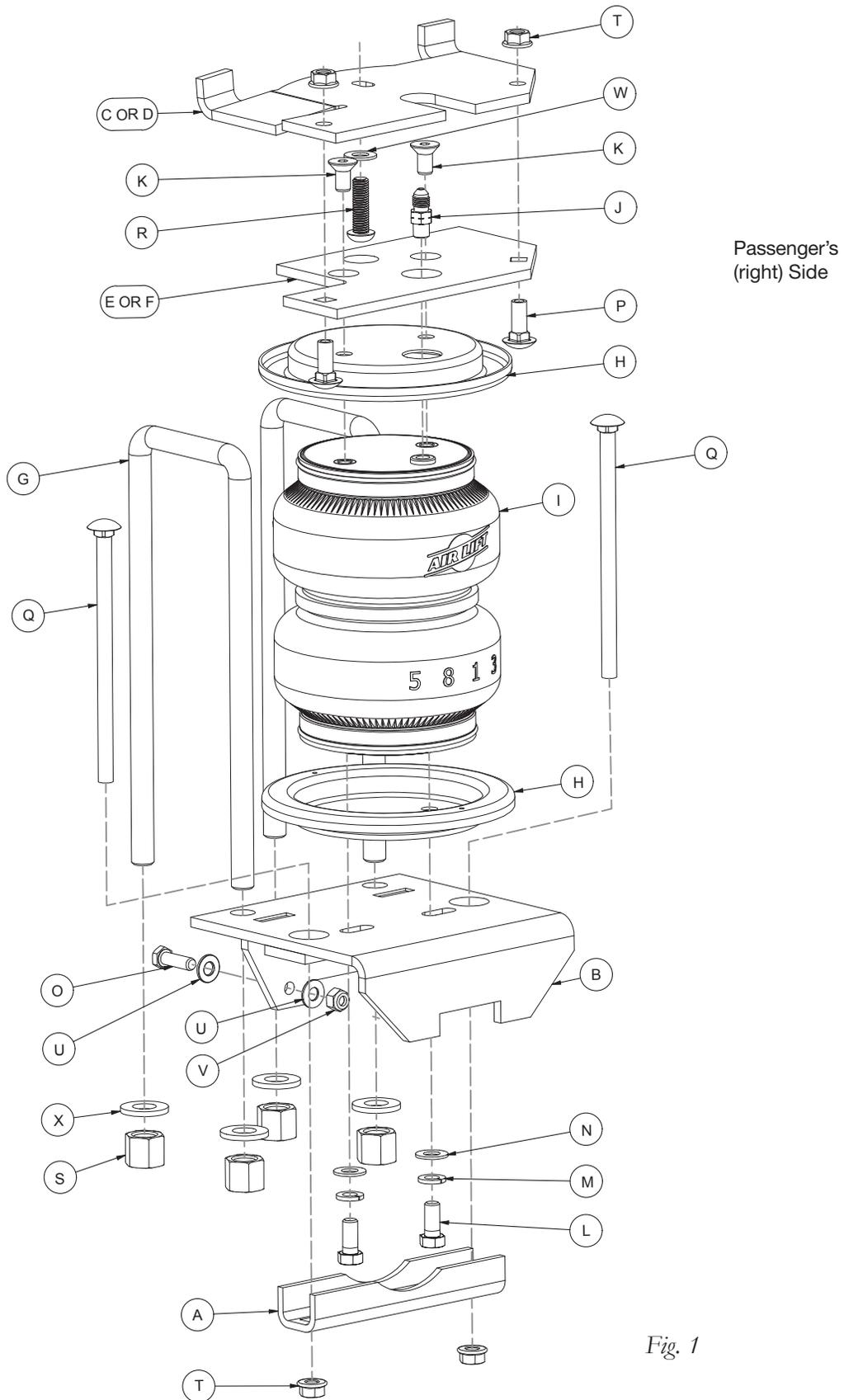
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Video-enhanced installation guides

Visit airliftcompany.com/workshop/category/install-videos to access our installation video archive*.

System Overview



Hardware and Tools

Hardware List

Item	Part#	Description	Qty
A	01531	Clamp bar	2
B	03875	Lower bracket.....	2
C	07079	LH upper frame bracket	1
D	07566	RH upper frame bracket	1
E	07788	RH upper spring bracket	1
F	07799	LH upper spring bracket.....	1
G	11686	U-bolt.....	4
H	11967	Black roll plate	4
I	58496	Air spring with jounce bumper.....	2
J	21839	Straight fitting	2
K	17215	3/8"-24 x 3/4" Flat-head socket cap screw.....	4
L	17203	3/8"-24 x 7/8" Hex cap screw	4
M	18427	3/8" Split lock washer.....	4
N	18444	3/8" Flat washer.....	4
O	17103	5/16"-18 x 1" Hex cap screw	1
P	17134	3/8"-16 x 1" Carriage bolt	4
Q	17490	3/8"-16 x 6 1/2" Carriage bolt	4
R	17366	M10 X 1.5 x 35 Button-head cap screw	2
S	18203	9/16"-18 Deep nut.....	8
T	18422	3/8"-16 Serrated flange lock nut	8
U	18433	5/16" Flat washer.....	2
V	18438	5/16"-18 Nylon lock nut.....	1
W	18444	3/8" Flat washer.....	2
X	18635	9/16" Flat Washer	8
AA*	20086	Air line	1
BB*	10466	Zip tie.....	6
CC*	18501	M8 Flat washer	2
DD*	21230	Valve cap	2
EE*	21234	Rubber washer	2
FF*	18411	Stainless steel star washer	2
GG*	21233	5/16" Hex nut.....	4

* These parts are not shown in the System Overview (Fig. 1).

Tools List

Description.....	Qty
Hack saw or handheld grinder with a cut off wheel	1
Tire marker, crayon or paint.....	1
Standard and metric open-end or boxed wrenches	Set
Standard and metric regular and deep-well sockets	Set
Ratchet	1
9/16" Ratchet wrench.....	1
Torque wrench	1
Standard and metric hex-key wrench (socket preferable)	1
Hose cutter, razor blade, or sharp knife	1
Hoist and axle lift or floor jack.....	1
Tire chocks	2
Safety stands.....	3
Safety glasses	1
Air compressor or compressed air source	1
Spray bottle with dish soap/water solution.....	1
Small wire brush	1



Missing or damaged parts? Call Air Lift customer service at (800) 248-0892 for a replacement part.

Introduction

The purpose of this publication is to assist with the installation and maintenance of the LoadLifter 5000 Ultimate air spring kits. All LoadLifter 5000 Ultimate kits utilize sturdy, reinforced, commercial-grade single or double, depending on the kit, convolute bellows.

The air springs are manufactured like a tire with layers of rubber and cords that control growth. LoadLifter 5000 Ultimate kits provide up to 5,000 pounds (2,268kg) of load-leveling support with air adjustability from 5-100 PSI (.34-7BAR).

It is important to read and understand the entire installation guide before beginning installation or performing any maintenance, service or repair.

NOTATION EXPLANATION

Hazard notations appear in various locations in this publication. Information 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.



DANGER

INDICATES IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.



WARNING

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.



CAUTION

INDICATES HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN DAMAGE TO THE VEHICLE OR MINOR PERSONAL INJURY.



NOTE

Used to help emphasize areas of procedural importance and provide helpful suggestions.

Installing the System

PREPARE THE VEHICLE

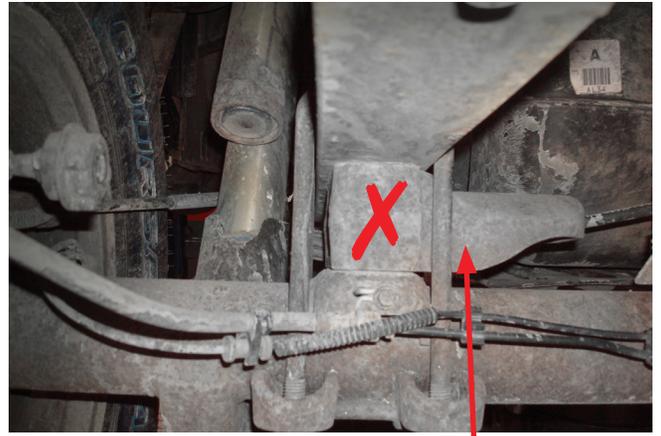


IT WILL BE NECESSARY TO MOVE THE AXLE SPACER BLOCK/JOUNCE BUMPER STRIKE PLATE FROM ONE SIDE TO THE OTHER (FIG 3). THIS PROVIDES CLEARANCE FOR THE AIR SPRING ASSEMBLY, WHICH INSTALLS BETWEEN THE AXLE AND FRAME. CARE AND SAFETY MEASURES MUST BE TAKEN TO COMPLETE THIS TASK SAFELY AND SUCCESSFULLY.

1. With the vehicle on a hoist, block one tire in the front and rear with chocks then lift the frame slightly to take some pressure off the leaf springs (Fig. 2). Put a safety stand under the front of the differential to keep it from rotating.
2. Mark the back side of each jounce bumper strike plate/axle spacer for ease of reinstallation (Fig. 3).



Fig. 2



Back view of driver's (left) side differential showing jounce bumper strike plate/spacer block with mark for reference as stated in step #2

Fig. 3



DO NOT RUSH THROUGH THESE NEXT STEPS. USE ALL NECESSARY SAFETY PRECAUTIONS.

- Remove the stock U-bolts on both driver's (left) and passenger's (right) sides and discard. Lower the axle assembly or raise the frame up slowly, far enough to remove the jounce bumper strike plate/spacer blocks from between the leaf spring and axle. Move the driver's (left) side to the passenger's (right) side and the passenger's (right) to the driver's (left) side and install back between the leaf spring and axle (Fig. 4). Ensure that the mark on the back of the jounce bumper strike plate/axle spacer faces the rear. The strike plate should face the wheel, leaving the space between the frame and axle open. Drop the frame or raise the axle assembly slowly just far enough to hold the jounce bumper strike plate/spacer blocks into position.

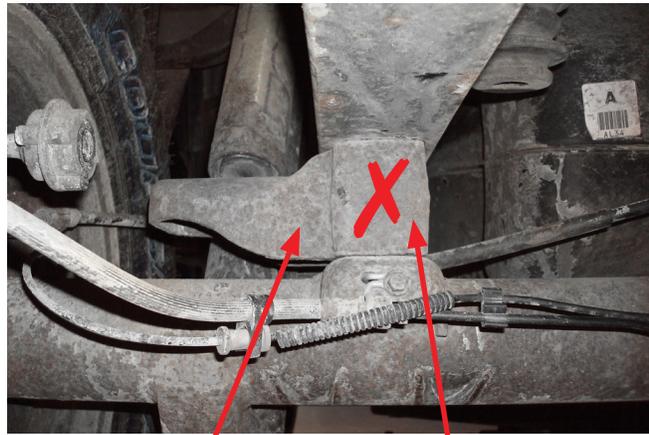


Fig. 4

Back view of driver's (left) side differential showing jounce bumper strike plate/spacer block with mark for reference as stated in step #2



If the jounce bumper strike plate/spacer block is not positioned correctly, the pinion angle will be incorrect and may cause vibration while operating.

- Pull the jounce bumper out of the cup and unbolt the cup from the frame (Fig. 5).



Using a wire brush, brush the rust off the bolt protruding through the weld nut on the frame. As much as possible, reach into the hole on the inside of the frame rail, above where the jounce bumper cup is bolted. Use penetrating fluid on these bolts before attempting to remove.



Fig. 5

- Remove the driver's (left) side ABS line off the ABS/brake line junction bolted to the axle (Fig. 6) and zip tie (BB) the ABS line to the axle vent tube.

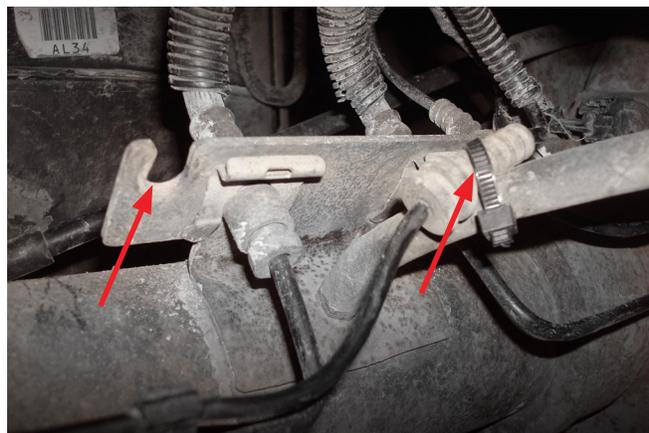


Fig. 6

6. Mark the location noted in Fig. 7 and cut the end of the bracket off using a hack saw or grinder with a cut off wheel. This will make room for the lower bracket.

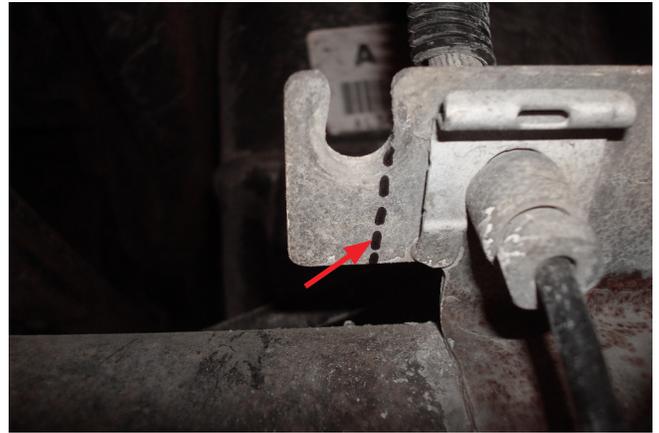


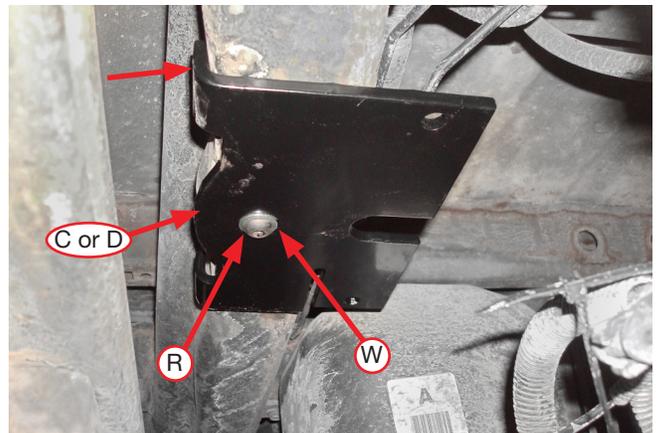
Fig. 7

7. Install a zip tie around the ABS/brake lines as shown in Fig. 8.



Fig. 8

8. Remove the emergency brake line bracket from the axle on the front, passenger's (right) side and discard the bolt. Let the bracket hang at this time.
9. Install the upper frame brackets (C & D) onto the frame using the M10 bolt (R) and flat washer (W) (Fig. 9). Push the brackets against the frame and torque the mounting hardware to (38 lb.-ft.) 52Nm.



Driver's (left) side upper frame bracket and hardware shown

Fig. 9

10. Set a lower bracket (B) onto the passenger's (right) side axle (Fig. 10) and insert the 5/16" hex cap screw (O) through a 5/16" flat washer (U) through the lower bracket, from the leaf spring side of the bracket, to the inside (toward the center of the vehicle). Push the bolt up against the bracket.

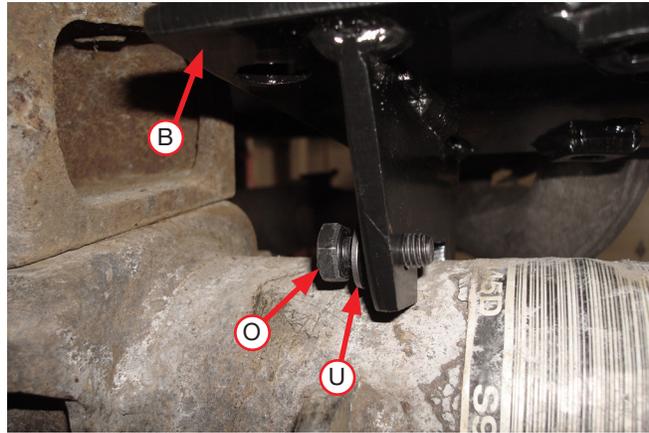


Fig. 10

11. Set the other lower bracket onto the driver's (left) side. Position both lower brackets so they are up against the leaf spring and jounce bumper strike plate/axle spacer assembly. Set the U-bolts (G) into position forward and rearward of the axle. Ensure inside legs of both U-bolts go through the holes in the lower bracket (Fig. 11).

NOTE *It may be necessary to trim the ABS/brake line bracket previously modified if the lower bracket does not fit into position without interference.*

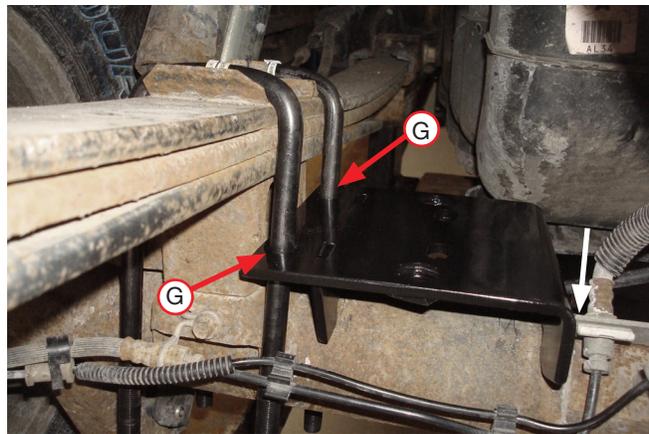


Fig. 11

12. Once the lower brackets are in position and the U-bolts are in place, install the passenger's (right) emergency brake cable bracket onto the bolt previously installed (Fig. 12) making sure the "tab" on the bracket indexes in the space between the lower bracket and axle. Cap with a flat washer (U) and nylon lock nut (V). Leave loose at this time.

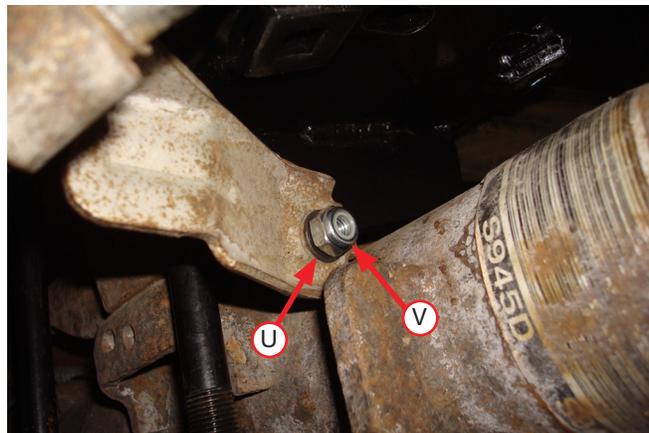


Fig. 12

13. Insert the carriage bolts (Q) down through the holes in the upper bracket (Fig. 13), making sure the rear carriage bolts go between the hard brake lines and the axle (Fig. 14). Turn the heads of the carriage bolts so they index into the square holes in the bracket.

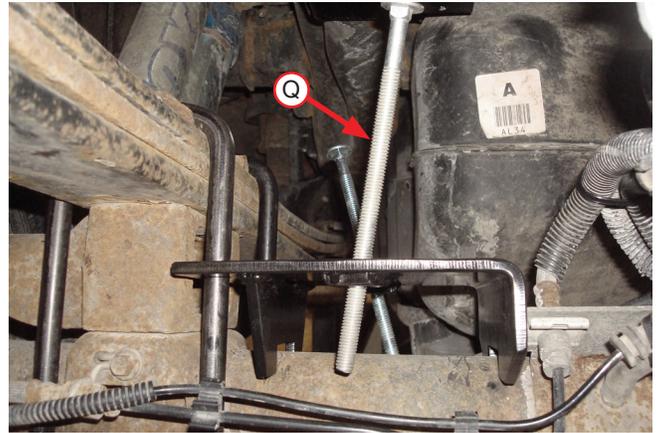


Fig. 13

14. Raise the axle assembly or lower the body all the way so that the leaf spring is supporting the vehicle. Set the lower axle/spring retainer over the U-bolts and cap with 9/16" flat washers (X) and 9/16" deep nuts (S). Tighten finger-tight only at this time.

NOTE

Make sure the lower axle/spring retainer aligns with the wear marks on the axle before torquing U-bolts.

15. Install the lower clamp bar (A) over the carriage bolts previously installed and cap with 3/8" serrated flange lock nuts (T). Tighten finger-tight only at this time (Fig. 14).

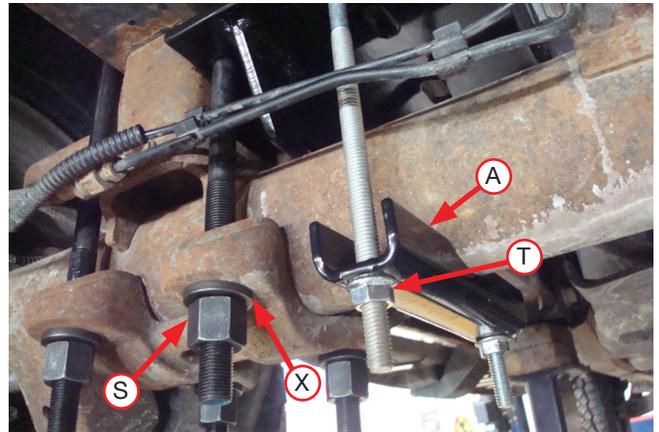


Fig. 14

16. In a criss-cross pattern, evenly torque the U-bolts to 90 lb.-ft. (122Nm). Once all the U-bolts have been torqued, torque the 3/8" lower bracket axle clamp hardware to 16 lb.-ft. (22Nm). On the passenger's (right) side, securely tighten the emergency brake cable bracket hardware previously installed.

NOTE

U-bolts must be retorqued after 100 miles.

ASSEMBLE THE AIR SPRINGS

1. Set a roll plate (H) onto the top of the air springs (I) and install the fittings (J) into the top of the air spring finger-tight. Tighten the fitting an additional 1 1/2 turns (Fig. 15).

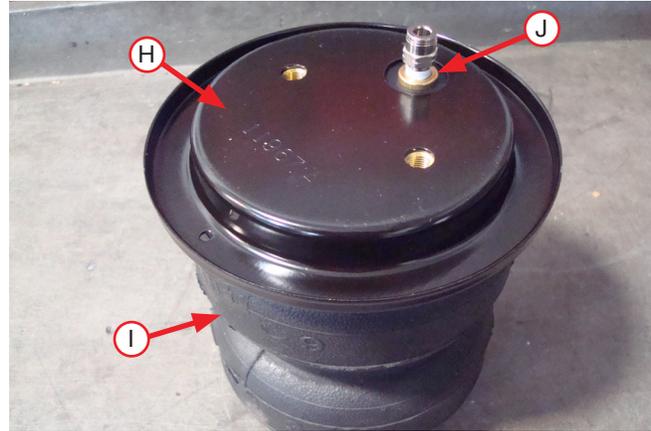


Fig. 15

2. Insert a 3/8" carriage bolt (P) into the square hole of the right-hand upper spring bracket (E) on the opposite side of the tapered holes as shown in Fig. 16. Set the bracket onto the air spring assembly and install with two flat head screws (K). Torque the screws to no more than 20 lb.-ft. (27Nm).

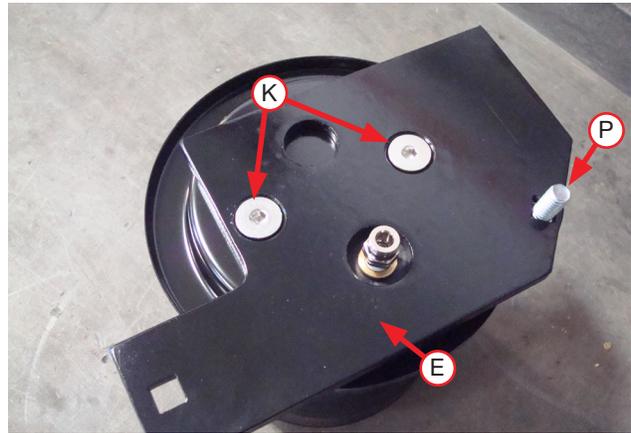


Fig. 16

3. Set the left-hand upper spring bracket (F) onto the remaining air spring and attach with two flat-head screws (K). Fig. 17 shows a picture of both left- and right-hand assemblies ready to be installed.



Fig. 17

INSTALL THE ASSEMBLIES

1. Lower the axle assembly or raise the frame once again, just far enough so that the air spring assemblies can be put in place between the upper and lower bracket. Set the left- and right-hand assemblies on the lower brackets (Fig. 18).



Fig. 18

2. While lifting up on the assemblies, insert two 3/8" carriage bolts (P) up through the air spring bracket and frame bracket (Fig. 19).

NOTE

The passenger's (right) side already has one of the 3/8" carriage bolts installed.

3. Cap with the 3/8" serrated flange lock nuts (T). Torque hardware on both sides to 31 lb.-ft. (42Nm).

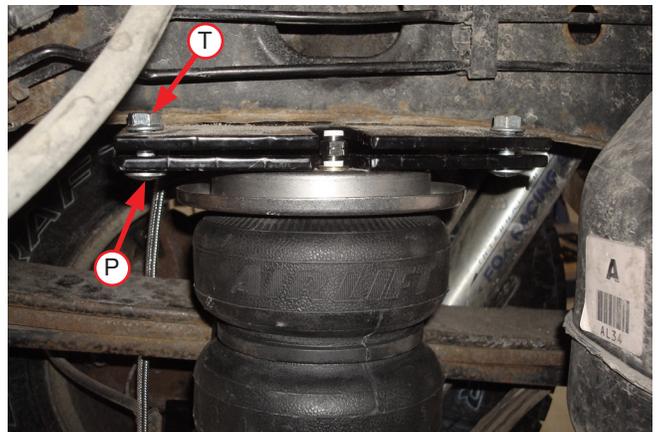


Fig. 19

4. Set a roll plate (H) onto the lower bracket below the air spring assembly (Fig. 20). Align the holes in the air spring/roll plate/lower bracket as much as possible. Raise the axle assembly up or lower the frame just far enough so that the air spring sits on the lower bracket (Fig. 21).



Fig. 20



Fig. 21

5. Insert a 3/8" hex cap screw (L) through a split lock washer (M) and flat washer (N) then attach the air spring to the lower bracket by inserting the assembly up through the slot in the lower bracket (Fig. 22). Push the air spring so that the hardware is to the back of the slot and tighten the hardware securely.



A 9/16" ratchet wrench works well in tightening this hardware.

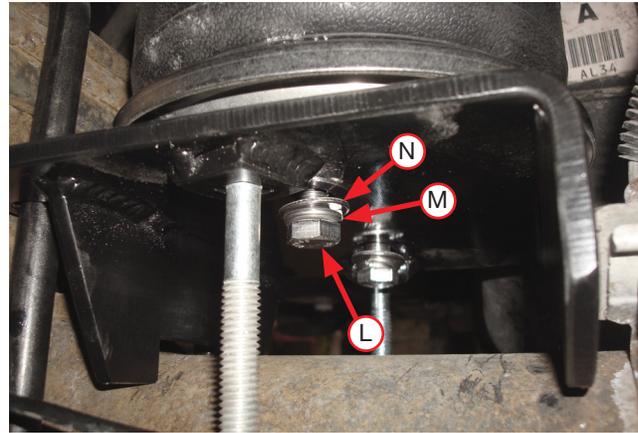


Fig. 22

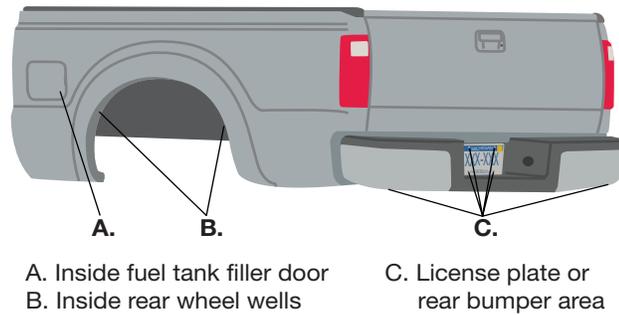
6. Raise the axle assembly or lower the frame of the vehicle. Remove the safety stands and wheel chocks.
7. Make sure there is enough clearance between the carriage bolt and the brake line. Pull the line away if it is hitting on the carriage bolt (Fig. 23).



Fig. 23

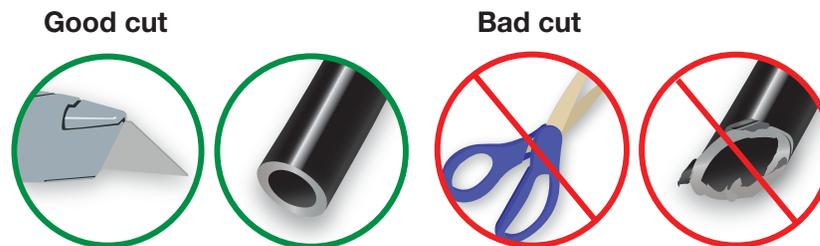
Installing the Air Lines

1. Choose the locations for the Schrader valves and drill a 5/16" (8mm) hole, if necessary.



KEEP AT LEAST 6" (152MM) OF CLEARANCE BETWEEN ALL AIR LINES AND THE EXHAUST SYSTEM. AVOID SHARP BENDS AND EDGES.

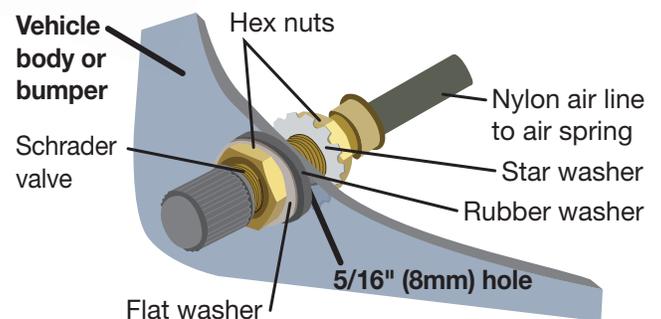
2. Make clean, square cuts with a razor blade or hose cutter when cutting the air line. Do not use scissors or wire cutters.



3. Use zip ties to secure the air line to fixed points along the chassis. Do not pinch or kink the air line. Leave at least 2" (51mm) of slack in the air line to allow for any movement that might pull on the air line. The minimum bend radius for the air line is 1" (25mm).
4. Before installing the air line into the passenger's (right) air spring fitting, install the air line heat shield over the air line. Once the air line is pushed into the fitting, push the heat shield as far onto the fitting as you can.



5. Install the Schrader valve in the chosen location.

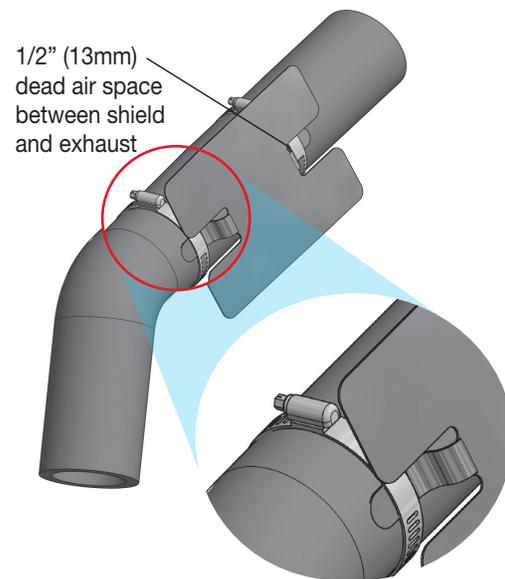


INSTALLING THE HEAT SHIELD

1. Install the heat shield above the air spring assembly on the inside pipe as shown in the photo.



2. Bend the heat shield up so that it is between the pipe and the air line (as shown in the photo).



Finished Installation

The images show the finished installation of both sides.

NOTE *Misalignment of the lower and upper air spring brackets are normal for this installation.*



Driver's (left) side behind the axle view.



Driver's (left) side inside above the axle assembly view.



Passenger's (right) forward axle view.



Passenger's (right) inside above the axle view.

Congratulations!

You are now the proud owner of an Air Lift air suspension system. Enjoy!

Before Operating

INSTALLATION CHECKLIST

- ❑ **Clearance test** — Inflate the air springs to 40-60 PSI (2.8-4.1BAR) and make sure there is at least 1/2" (13mm) clearance from anything that might rub against each sleeve. Be sure to check the tire, brakes, frame, shock absorbers and brake cables.
- ❑ **Leak test before road test** — Inflate the air springs to 40-60 PSI (2.8-4.1BAR) and check all connections for leaks. 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" (152mm) for air springs and air lines. If a heat shield was included in the kit, install it. If there is no heat shield, but one is required, call Air Lift customer service at (800) 248-0892.
- ❑ **Fastener test** — After 500 miles (800km), recheck all bolts for proper torque.
- ❑ **Road test** — The vehicle should be road tested after the initial tests. Inflate the air springs to recommended driving pressures. Drive the vehicle 10 miles (16km) and recheck for clearance, loose fasteners and air leaks.
- ❑ **Operating instructions** — If professionally installed, the installer should review the operating instructions with the owner. Be sure to provide the owner with all of the paperwork that came with the kit.

MAINTENANCE AND USE GUIDELINES

1. Check air pressure weekly.
2. Always maintain normal ride height. Never inflate beyond 100 PSI (7BAR).
3. If the system develops an air leak, use a soapy water solution to check all air line connections and the inflation valve core before deflating and removing the air spring.
4. Upon successful completion of the installation, follow these pressure requirements for the air springs.



**Minimum Recommended
Air Pressure**



Maximum Air Pressure



FOR SAFETY AND TO PREVENT POSSIBLE DAMAGE TO THE VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR) OR PAYLOAD RATING, AS INDICATED BY THE VEHICLE MANUFACTURER.

ALTHOUGH THE AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 100 PSI (7BAR), THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON LOAD AND GROSS VEHICLE WEIGHT RATING.

Limited Warranty and Return Policy

Air Lift Company provides a Limited Lifetime Warranty* to the original purchaser of its load support products, from the date of original purchase, that the products will be free from defects in workmanship and materials when used on cars and trucks as specified by Air Lift Company and under normal operating conditions, subject to the requirements and exclusions set forth in the full Limited Warranty and Return Policy.

*Full Limited Warranty and Return Policy are available at www.airliftcompany.com/warranty and are subject to change.

WARRANTY REGISTRATION & CLAIMS

- To register your warranty, please visit <https://www.airliftcompany.com/support/warranty/register/>
- To submit a warranty claim, please visit <https://www.airliftcompany.com/support/warranty/submit-claim/>



Thank you for purchasing Air Lift Products!

Need Help?

Contact Air Lift Company Customer Service at (800) 248-0892
or email service@airliftcompany.com.

For calls outside the U.S. or Canada, dial +1 (517) 322-2144.



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