

# LoadLifter 5000™

**ULTIMATE**



## Installation Guide



*Ford F-150 Raptor Gen III*



**Watch the video**

Info on Table of Contents page

## **Kit 88414**

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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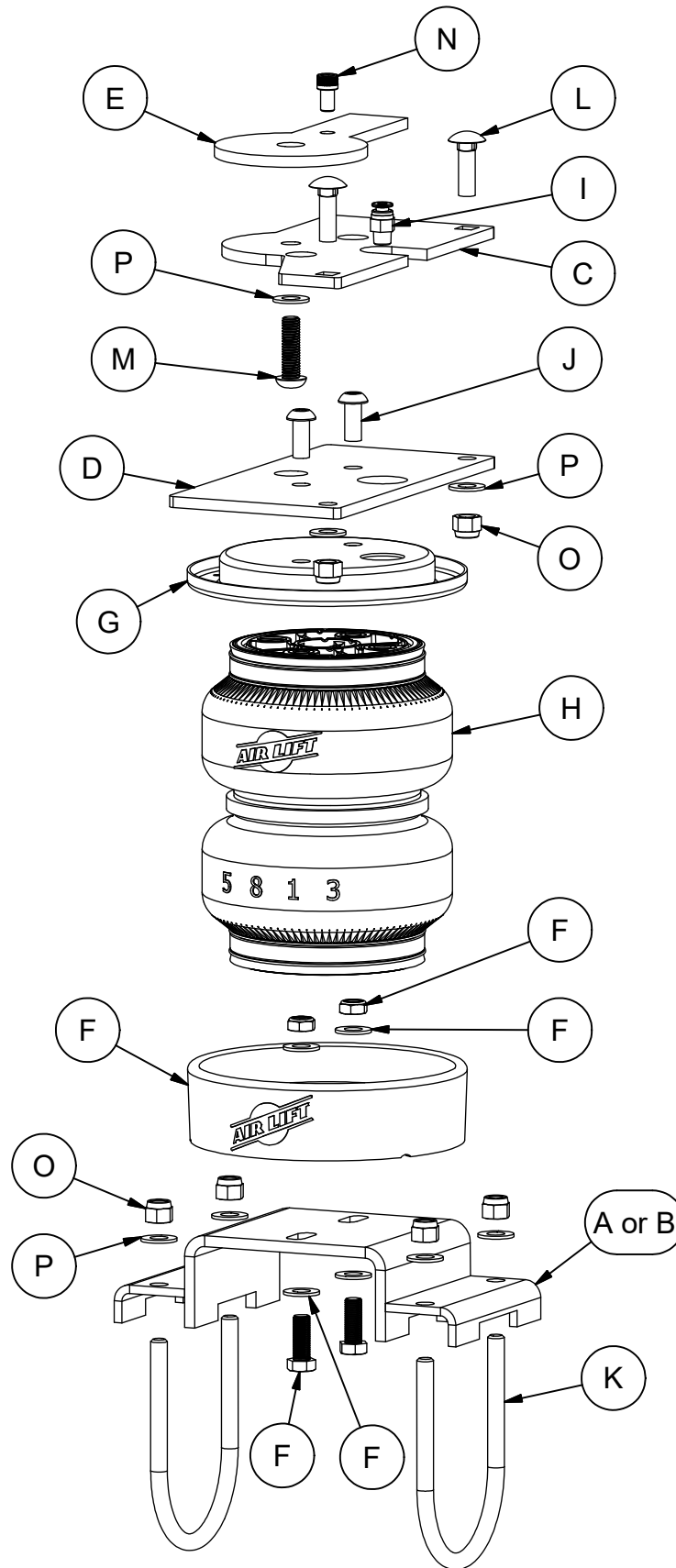
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## **Video-enhanced installation guides**

Visit [airliftcompany.com/workshop/category/install-videos](http://airliftcompany.com/workshop/category/install-videos) to access our installation video archive\*.

# System Overview



Driver's  
(left) Side

Fig. 1

# Hardware and Tools

## HARDWARE LIST

| Item | Part#  | Description .....                             | Qty |
|------|--------|---|-----|
| A    | 03058  | Right hand lower bracket .....                | 1   |
| B    | 03071  | Left hand lower bracket.....                  | 1   |
| C    | 07093  | Upper frame bracke.....                       | 2   |
| D    | 11184  | Upper air spring bracket.....                 | 2   |
| E    | 11197  | Frame adapter .....                           | 2   |
| F    | 52500  | Universal air spring cradle .....             | 1   |
| G    | 11967  | Roll plates.....                              | 2   |
| H    | 58496  | Air springs.....                              | 2   |
| I    | 21839  | Straight air fitting .....                    | 2   |
| J    | 17527  | 3/8"-24 X 3/4" Button-head cap screw .....    | 4   |
| K    | 11771  | 3/8"-16 U-bolt .....                          | 4   |
| L    | 17361  | 3/8"-16 X 1 1/4" Carriage bolt.....           | 4   |
| M    | 17366  | M10 – 1.50 X 35 Button-head cap screw .....   | 2   |
| N    | 17588  | 5/16" – 24 X 1/2" Socket-head cap screw ..... | 2   |
| O    | 18435  | 3/8" -16 Nylon lock nut.....                  | 12  |
| P    | 18444  | 3/8" Flat washer .....                        | 14  |
| Q    | 26333* | P-clamp .....                                 | 2   |
| R*   | 33107  | Heat shield kit.....                          | 1   |
| AA*  | 20086  | Air line assembly.....                        | 1   |
| BB*  | 10466  | Zip ties.....                                 | 6   |
| CC*  | 21230  | Valve cap .....                               | 2   |
| DD*  | 18411  | Star washer.....                              | 2   |
| EE*  | 21234  | Rubber washer .....                           | 2   |
| FF*  | 18501  | M8 Flat washer .....                          | 2   |
| GG*  | 21233  | 5/16" Hex nut .....                           | 4   |

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

## TOOLS NEEDED

| Description.....   | Qty |
|--|-----|
| Standard and metric open-end or box wrenches .....               | Set |
| 9/16 ratchet wrench .....  | 1   |
| Ratchet .....  | 1   |
| Standard and metric regular and deep-well sockets .....          | Set |
| Torque wrench.....   | 1   |
| 6mm, 1/4" and 7/32" hex-key wrench (3/8" socket preferred) ..... | 1   |
| Side cutters .....   | 1   |
| Hose cutter, razor blade, or sharp knife .....                   | 1   |
| Hoist or floor jack .....  | 1   |
| Safety glasses .....   | 1   |
| Safety stands.....   | 2   |
| Air compressor or compressed air source .....                    | 1   |
| Spray bottle with dish soap/water solution.....                  | 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 MACHINE OR MINOR PERSONAL INJURY.



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



*Used to provide helpful tips to ease the installation process.*

# Install the System

## PREPARE THE VEHICLE

1. Lift the vehicle and support the frame with safety stands. Drop the axle down low enough to later set the air springs into position between the frame and axle (Fig. 2).

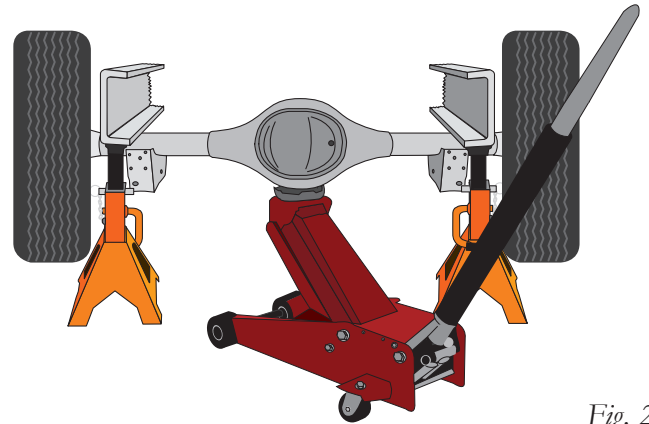


Fig. 2

2. Disconnect the wiring harness on the front side of the left- and right-side axle brackets (Fig. 3).

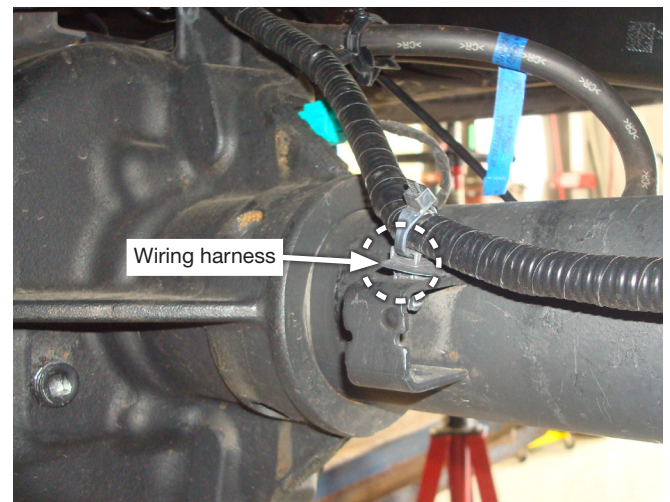


Fig. 3

3. Using a pair of side cutters or equivalent, cut the webs of the harness brackets between the connector and axle (Figs. 4 & 5) on both sides. Then, by pushing on the release lever, pull the connector's lock out flush with the control arm bracket.

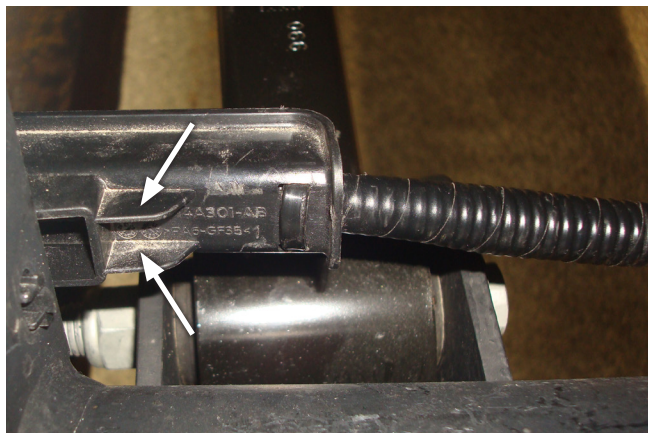


Fig. 4

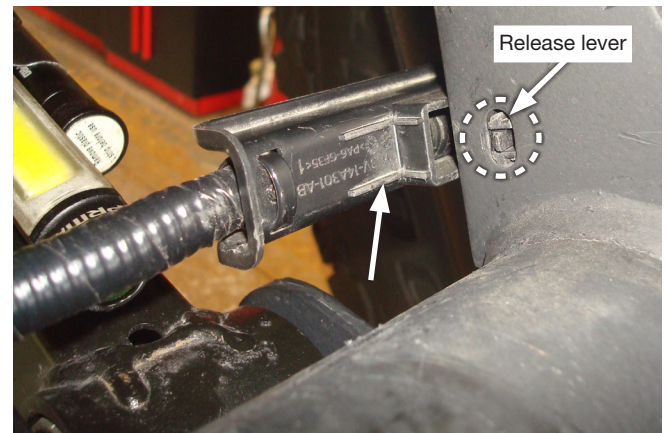


Fig. 5

4. Unbolt and remove both sides jounce bumpers and save (these will not be re-used in this application) (Figs. 6 & 7).

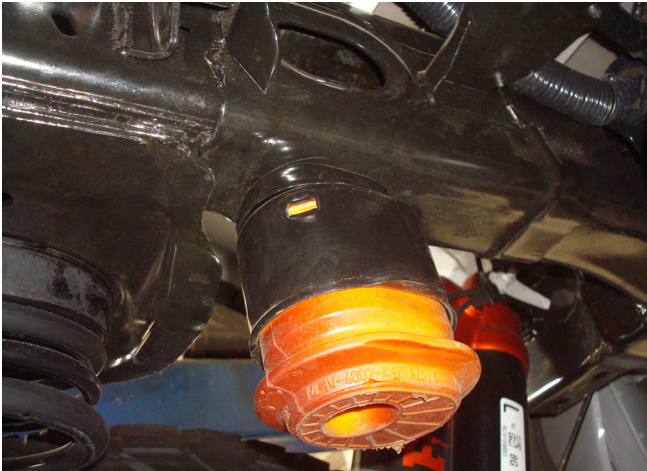


Fig. 6



Fig. 7

## ASSEMBLE THE UPPER BRACKET

1. Once assembled, the upper frame bracket (C) will be a left- and right-hand unit. Set the brackets in front of you in a mirror image (Fig. 8) and install the frame adapters (E) using the 5/16" socket-head cap screws (N). Align the brackets so the holes in the middle line up and torque the hardware to 19 lb.-ft. (25Nm).

Align the holes before tightening.

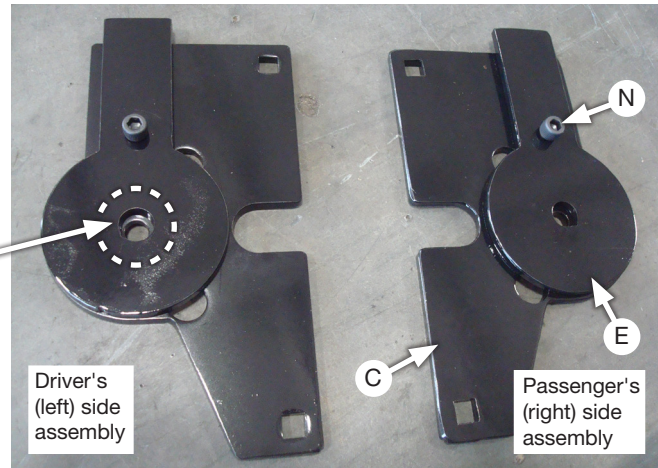


Fig. 8

2. Ensure the 5/16" socket-head cap screw indexes into the forward hole in the frame (Fig. 9), install the upper bracket assemblies under the frame (Fig. 10) with the M10 button-head cap screw (M) and 3/8" flat washer (P) using the jounce bumper mounting holes. Torque hardware to 36 lb.-ft. (50Nm). Insert the 3/8" carriage bolts (L) down through the top of the upper bracket.



Index the socket-head cap screw into the hole forward of the jounce bumper mounting hole.

Fig. 9

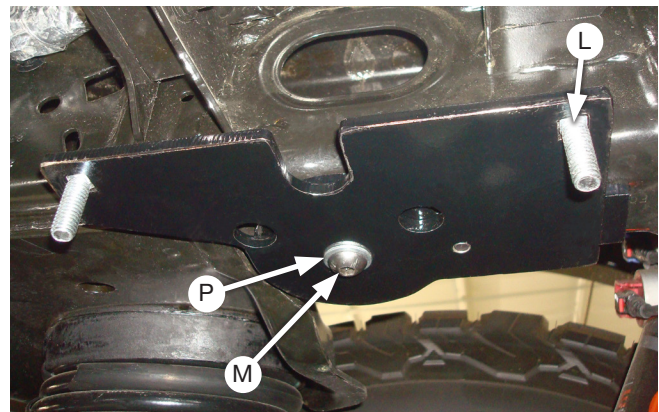


Fig. 10



## ASSEMBLE AND INSTALL THE AIR SPRING

1. Set a roll plate (G) on top of the air spring (H) and install the straight fitting (I) finger-tight. Torque the fitting one and a half turns. Set the upper air spring bracket (D) onto the air spring, making sure the large hole is aligned with the fitting. Install the bracket using the 3/8" button-head cap screws (J) and torque to no more than 20 lb.-ft. (27Nm) (Fig. 11).

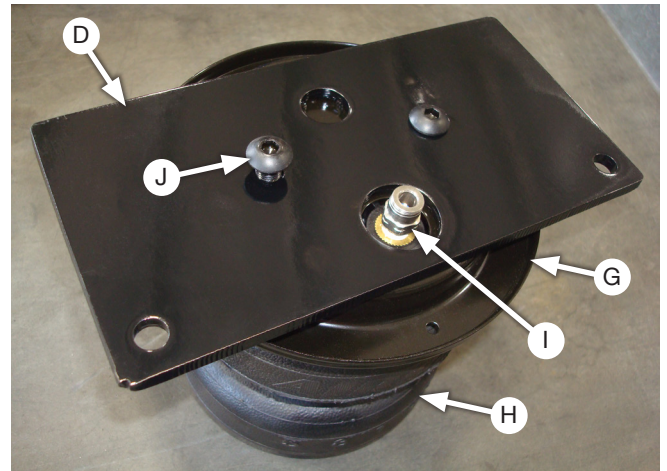


Fig. 11

2. If not already done so, drop the axle down low enough to set the air spring assemblies into position under the upper bracket previously installed using the carriage bolts to align the brackets (Fig. 12). Cap carriage bolts with 3/8" flat washers (P) and 3/8" nylon lock nuts (O). Torque the hardware to 31 lb.-ft. (42Nm).



Fig. 12

## ASSEMBLE AND INSTALL THE CRADLE/LOWER BRACKETS

- Using the hardware in the universal cradle kit (52500), insert the 3/8" hex cap screws through the 3/8" flat washers, the lower brackets (A & B), and through the cradles (F) (Fig. 13).

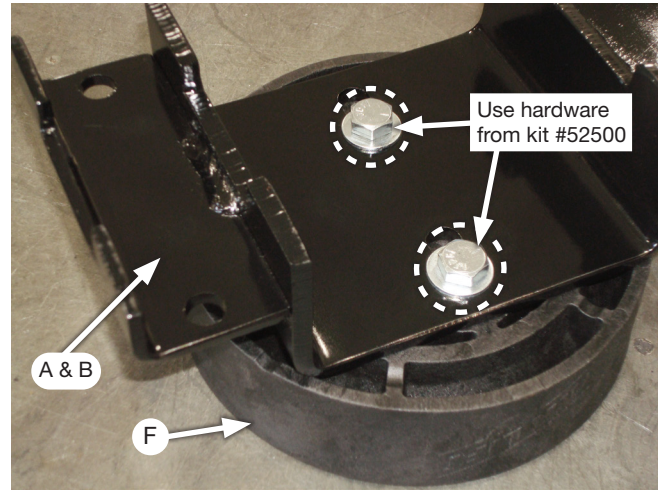


Fig. 13

- Flip the assemblies over and cap the 3/8" bolt with a 3/8" flat washer and thin nylon lock nut (Fig. 14).



Fig. 14

- This will be your left (driver's side) lower bracket assembly for the lower bracket with equal legs. Push the cradle all the way back into the slot (Fig. 15) and torque the lower bracket hardware to 15 lb.-ft. (20Nm).
- The lower bracket with the unequal legs will be your right (passenger's side) lower bracket. It will be important that the cradle be pushed back into the slot in the correct position to properly align it when it is installed on the axle. With the long leg shown in Figure 15 to your right, torque the hardware with the cradle all the way back in the slot of the lower bracket.

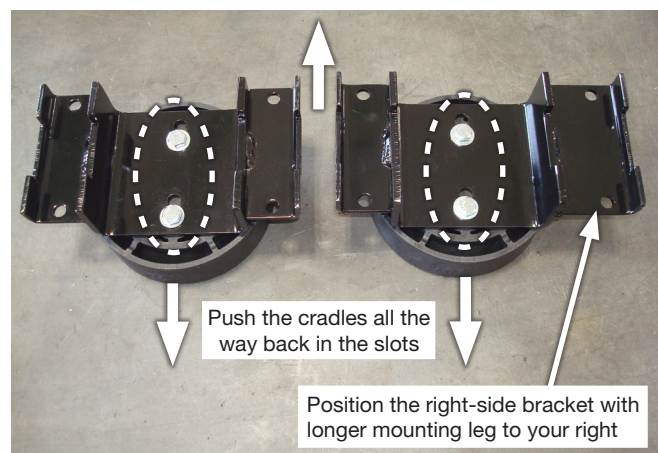


Fig. 15

- Slide a U-bolt (K) under the axle in between the lower control arm brackets on both sides and point the U-bolt upwards (Figs. 16 & 17).

**NOTE** *On the passenger side, it may be necessary to pull the hard brake line out of the holder on the backside. Once the U-bolt is in place, snap the line back into the holder.*

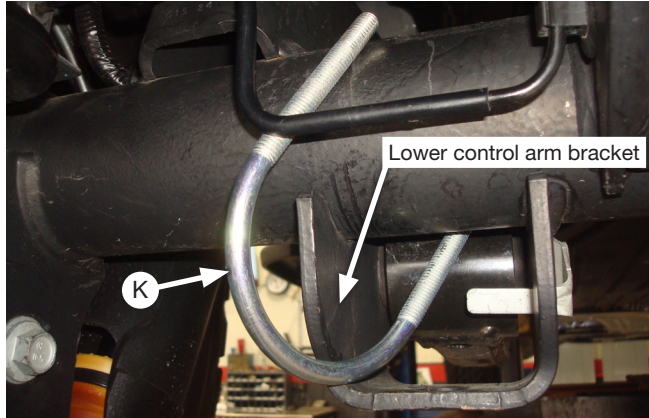


Fig. 16



Fig. 17

- With the axle still hanging down, set the left (driver's) side assembly onto the axle, making sure the cradle is offset to the back of the vehicle (Fig. 18). Insert the outboard side U-bolt into the mounting leg of the bracket.

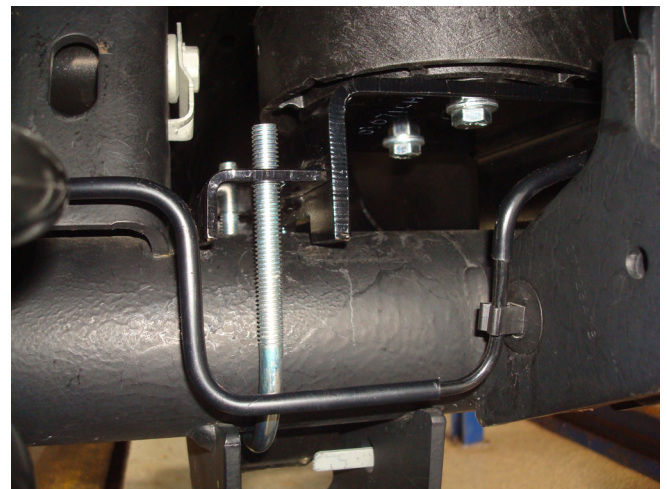


Fig. 18

**NOTE** *The inside leg of the lower bracket will straddle the pan hard (lateral bar) inside leg of the axle bracket (Fig. 19).*

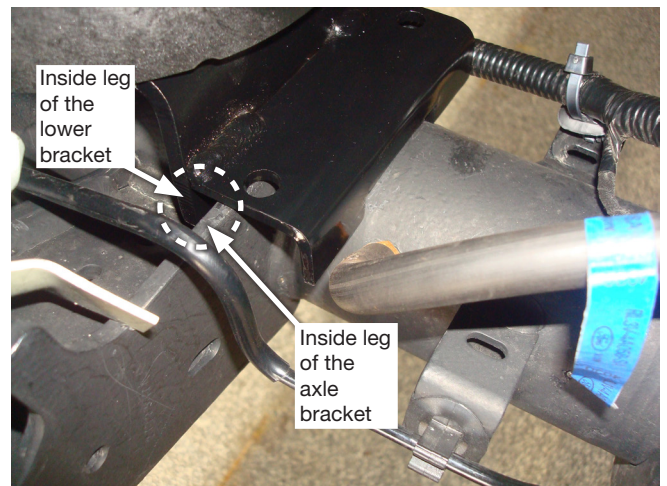
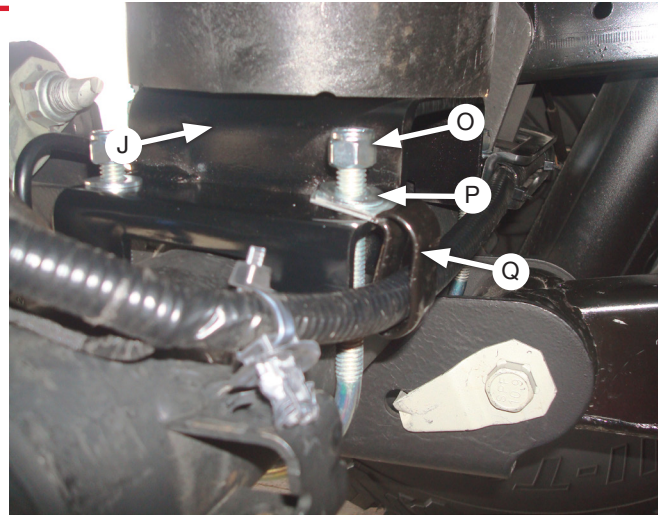
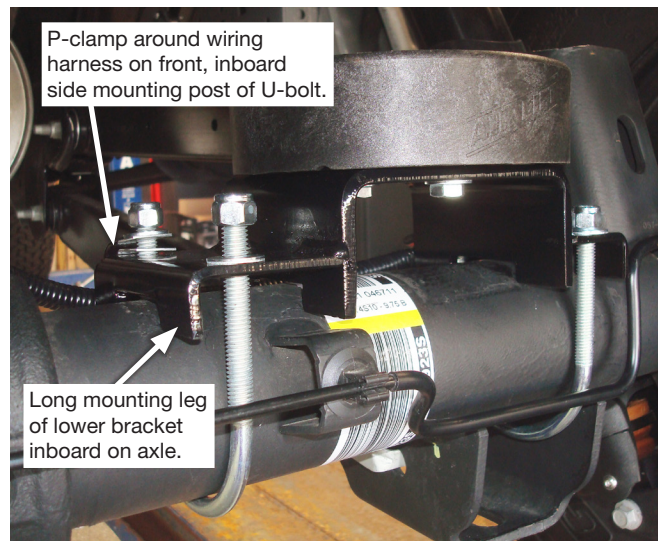


Fig. 19

7. Insert the inside U-bolt (K) into the inboard lower bracket mounting holes. Install a P-clamp (Q) around the front wiring harness (Fig. 20) and then over the inside front U-bolt. Cap all four posts of the U-bolts with 3/8" flat washers (P) and 3/8" nylon lock nuts (O). Draw the hardware down, but leave it loose enough for the bracket to still move on the axle.

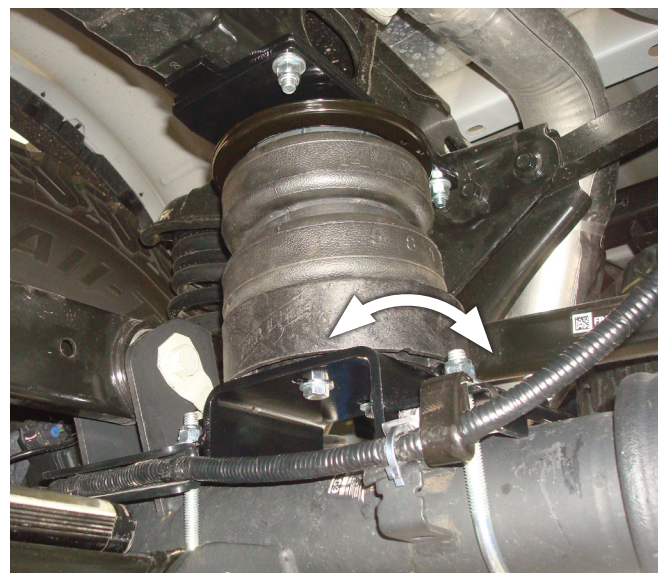

*Fig. 20*

8. Set the right (passenger's) side lower bracket assembly over the axle with the cradle offset to the back of the vehicle, ensuring the long leg of the mounting bracket is inboard (Fig. 21). Install the P-clamp to the front wiring harness and all the hardware typical of steps 6 and 7, ensuring the bracket is slightly loose fitting to the axle.


*Fig. 21*

9. Raise the axle all the way up so the air springs sit in the cradles. Rotate the lower bracket forward and back on the axle to align the lower cradle with the air spring and upper bracket (as best as possible). This alignment does not have to be perfect since the cradle will center the air spring when the suspension moves up and down. Torque all the U-bolts evenly to 16 lb.-ft. (22Nm) (Fig. 22).

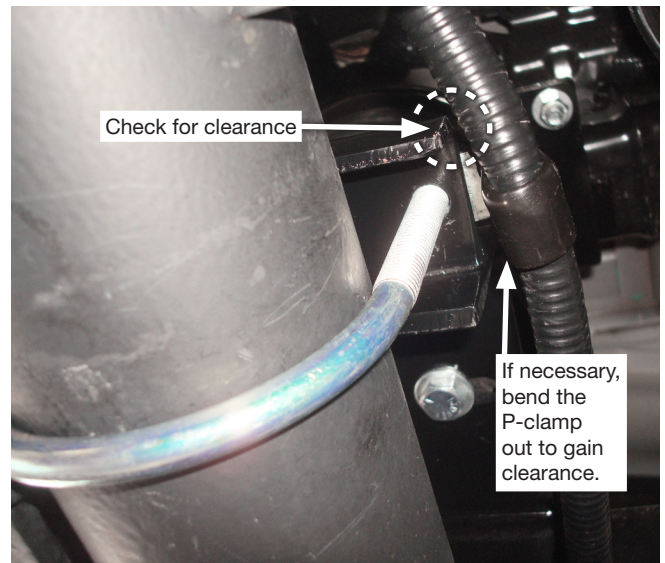
10. Remove safety stands and jack.



Rotate the lower bracket forward and back on the axle (as shown above) to align the lower cradle with the air spring and upper bracket.

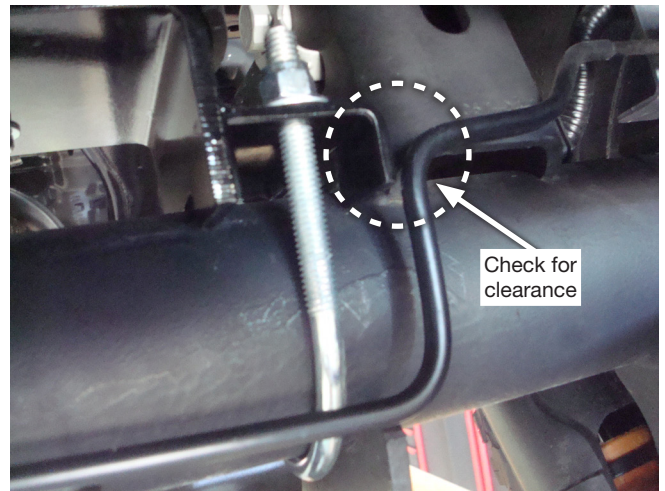
*Fig. 22*

11. Check the wiring harness to axle bracket clearance on the front side of the axle where the P-clamps were installed. If the harness touches the bracket on either side, bend the P-clamp out to gain clearance (Fig. 23).



*Fig. 23*

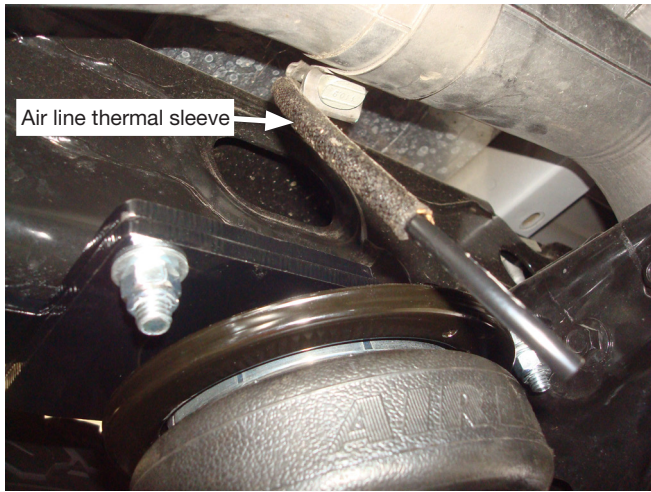
12. Check the hard brake line clearance to the lower bracket mounting leg and adjust the line, if necessary, so as not to rub the bracket (Fig. 24).



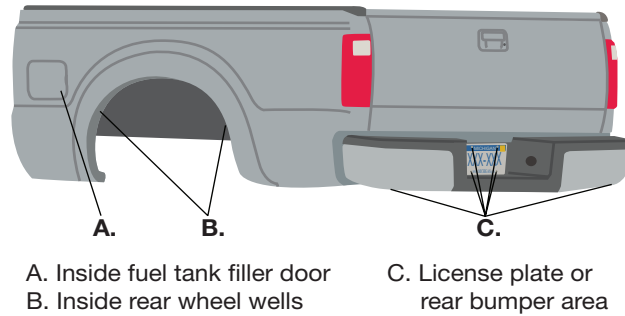
*Fig. 24*

# Install the Air Lines

1. Insert the air line thermal sleeve over the right (passenger's) side air line before inserting into the fitting on the air spring. Secure the air line away from the exhaust.



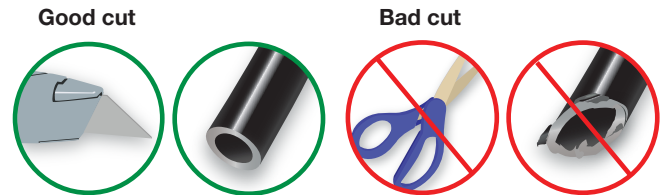
2. Choose the locations for the Schrader valves and drill a 5/16" (8mm) hole, if necessary.



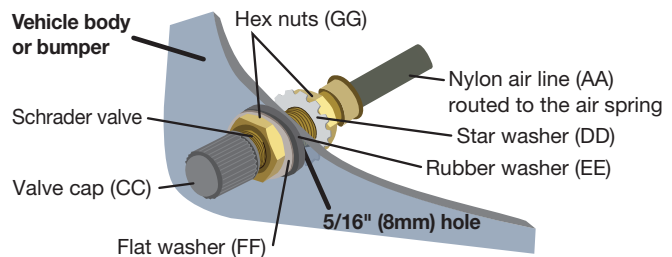
## CAUTION

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

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



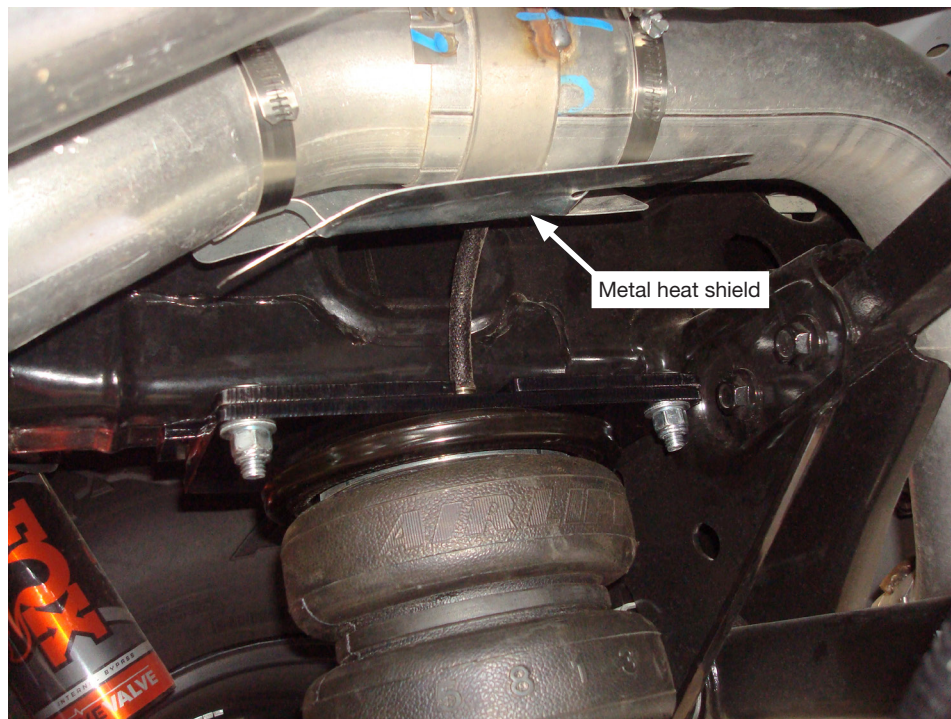
4. Use zip ties (BB) to secure the air line to fixed points along the chassis. Do not pinch or kink the air line. Leave at least 2" (51mm) of slack in the air line to allow for any movement that might pull on the air line. The minimum bend radius for the air line is 1" (25mm).



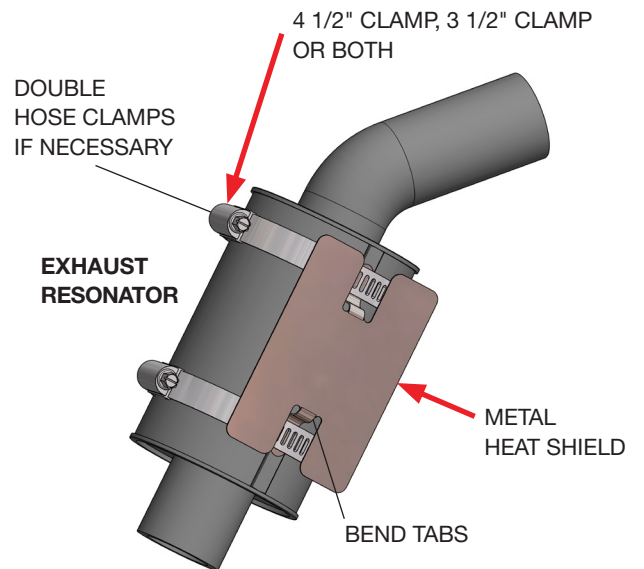
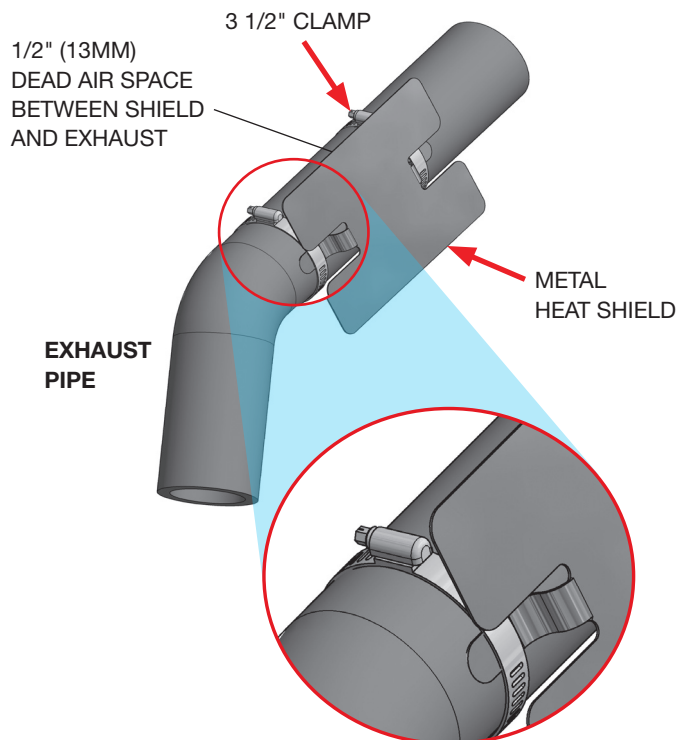
5. Install the Schrader valve in the chosen location.

## INSTALL THE HEAT SHIELD

1. Position the metal heat shield above the air spring on the outside exhaust tube, ensuring it protects the top of the air spring and air line. Again, ensure the air line is secure and does not rub the exhaust pipe or metal heat shield.

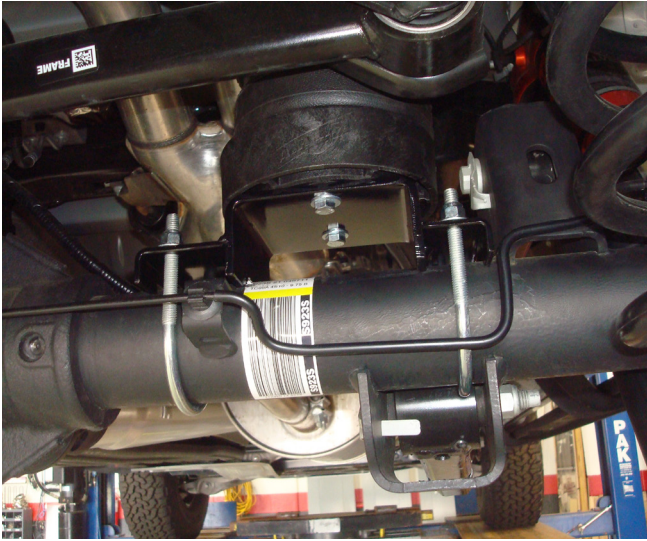


2. Attach the metal heat shield to the exhaust pipe or exhaust resonator using the hose clamps.



# Finished Installation

The images show the finished installation of both sides.



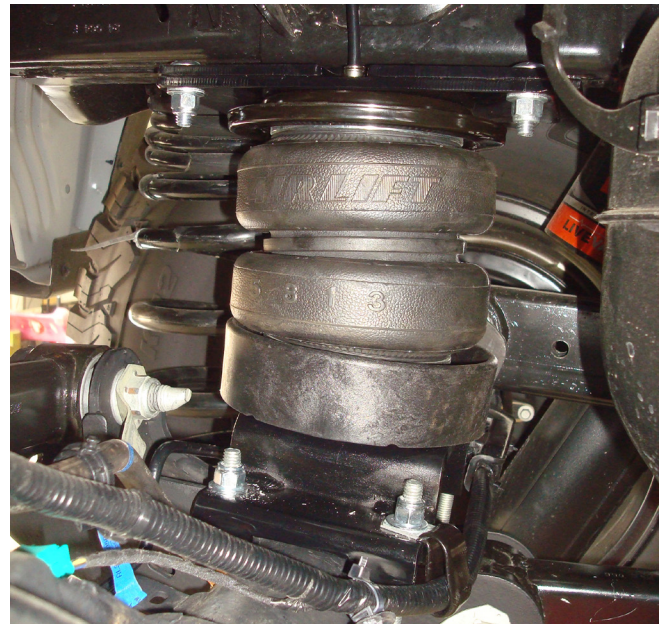
Back view of right (passenger's) side



Back view of left (driver's) side



Forward, inside view of right (passenger's) side



Inside view of left (driver's) side

## 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 air spring. 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**



### CAUTION

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](http://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](mailto:service@airliftcompany.com).

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



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