



LoadLIFTER 5000™

S E R I E S

Installation
Guide



2005-10 Ford Super Duty

Kits 57398 | 88398 | 89398

4WD (Single- and dual-rear wheel)

For maximum effectiveness and safety, please read these instructions completely before proceeding with installation.

IDENTIFYING THE DIFFERENCES BETWEEN KITS

Should you need to contact Air Lift customer service, you will need to know which kit you are inquiring about: standard LoadLifter 5000, LoadLifter 5000 Ultimate or LoadLifter 5000 Ultimate Plus. The kits are easily identifiable by looking at the roll plates and air lines.

- Standard **LoadLifter 5000** – Zinc-plated steel roll plates and black nylon air lines.
- LoadLifter 5000 Ultimate** – Black powder-coated roll plates and black nylon air lines.
- LoadLifter 5000 Ultimate Plus** – Stainless steel roll plates, braided stainless steel air lines, stainless steel air spring mounting hardware.

Air Lift offers two Ultimate Plus upgrade kits:

52300 - Braided stainless steel air line and fittings.

52301 - Stainless steel roll plates, air spring mounting hardware, braided stainless steel air lines and fittings.



LoadLifter 5000
silver zinc-plated steel
roll plate



LoadLifter 5000 Ultimate
black powder-coated
roll plate



LoadLifter 5000 Ultimate Plus
stainless steel
roll plate



LoadLifter 5000
nylon air line



LoadLifter 5000 Ultimate
nylon air line



LoadLifter 5000 Ultimate PLUS
braided stainless steel air line

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Hardware and Tools Lists

Common Parts Included in All 3 Kits

Item	Part#	Description	Qty
A	03998	Lower bracket cup	2
B	03999	Lower bracket main plate	2
C	07996	Upper brace	2
D	07997	Upper bracket	2
E	01531	Clamp bar	2
F	13966	Spacer	2
I	10886	L-bracket	1
J	11717	U-bolt	2
K	17107	3/8"-16 x 1" Hex-cap screw	1
L	17135	1/4"-20 x 1" Hex-cap screw	1
M	17141	3/8"-16 x 2.5" Carriage bolt	2
N	17208	1/2"-13 x 2" Hex-cap screw	2
O	17271	1/2"-13 x 3" Hex-cap screw	2
P	17361	3/8"-16 x 1 1/4" Carriage bolt	4
Q	17387	3/8"-16 x 10" Carriage bolt	4
R	17500	5/16"-18 x 3/4" Carriage bolt	2
S	18207	1/2" Thick flat washer	6
T	18419	Flat washer #12	2
U	18422	3/8"-16 Serrated flange lock nut	2
V	18425	1/4"-20 Nylon lock nut	1
X	18433	5/16" Flat washer	2
Y	18435	3/8"-16 Nylon lock nut	13
AA	18460	1/2"-13 Nylon lock nut	2
BB	18556	3/4" Flat washer	2
CC	18613	5/16"-18 Thin nylon lock nut	2
DD	26333	Modified P clamp	1
II	21234	Rubber washer	2

* not pictured in the Installation Diagram

TOOLS LIST

Description	Qty
Standard and metric open-end or box wrenches	SET
Adjustable wrench	1
Ratchet	1
Standard and metric sockets, regular and deep well	SET
5/16" drill bit (very sharp)	1
Heavy-duty drill	1
Torque wrench	1
Die grinder	1
Hacksaw	1
Standard and metric hex-key wrenches	1
Hose cutter, razor blade, or sharp knife	1
Hoist or floor jacks	1
Safety stands	2
Safety glasses	1
Air compressor or compressed air source	1
Spray bottle with dish soap/water solution	1

Unique Parts in Each Kit

LoadLIFTER 5000™ KIT 57398

Item	Part#	Description	Qty
G	11951	Roll plate (silver zinc plated)	4
H	58437	Air spring	2
Z	18444	3/8" Flat washer	18
EE	21837	Push-to-connect fitting	2
FF	17215	3/8"-24 x 3/4" Flat-head socket-cap screw	4
GG	17203	3/8"-24 x 7/8" Hex-cap screw	4
HH	18427	3/8" Lock washer	4
JJ*	10466	Zip ties	6
KK*	18411	Star washer	2
LL*	21230	Valve cap	2
MM*	21233	5/16" Hex nut	4
NN*	20086	Air line	1
OO*	18501	M8 Flat washer	2

LoadLIFTER 5000™ **ULTIMATE** KIT 88398

Item	Part#	Description	Qty
G	11967	Roll plate (black powder coat)	4
H	58496	Air spring with jounce bumper	2
Z	18444	3/8" Flat washer	18
FF	17215	3/8"-24 x 3/4" Flat-head socket-cap screw	4
GG	17203	3/8"-24 x 7/8" Hex-cap screw	4
HH	18427	3/8" Lock washer	4
EE	21837	Push-to-connect fitting	2
JJ*	10466	Zip ties	6
KK*	18411	Star washer	2
LL*	21230	Valve cap	2
MM*	21233	5/16" Hex nut	4
NN*	20086	Air line	1
OO*	18501	M8 Flat washer	2

LoadLIFTER 5000™ **ULTIMATE PLUS+** KIT 89398

Item	Part#	Description	Qty
G	11880	Roll plate (stainless steel)	4
H	58496	Air spring with jounce bumper	2
Z	18444	3/8" Flat washer	14
FF	17363	3/8"-24 x 3/4" Stain. steel flat-head socket-cap screw	4
GG	17284	3/8"-24 x 7/8" Stain. steel hex-cap screw	4
HH	18504	3/8" Stainless steel lock washer	4
EE	21815	AN-type fitting	2
JJ*	10466	Zip ties	12
KK*	18623	Stainless steel star washer	2
RR*	20987	Stainless steel braided air line	2
TT	18507	3/8" Stainless steel flat washer	4
OO*	18572	M8 Stainless steel flat washer	2
PP*	21709	Schrader valve with cap & nut	2
QQ*	21813	AN-to-PTC fitting	2
SS*	20084	Air line assembly	1

Introduction

The purpose of this publication is to assist with the installation, maintenance and troubleshooting of the standard LoadLifter 5000, LoadLifter 5000 Ultimate or LoadLifter 5000 Ultimate Plus air spring kits. All LoadLifter 5000 series kits utilize sturdy, reinforced, commercial-grade single or double, depending on the kit, convolute bellows. LoadLifter 5000 Ultimate kits add an internal jounce bumper and black powder-coated roll plates. LoadLifter 5000 Ultimate Plus kits also have an internal jounce bumper, but add stainless steel roll plates, air lines and air spring mounting hardware.

The air springs are manufactured like a tire with layers of rubber and cords that control growth. LoadLifter 5000 series kits are recommended for most 3/4- and 1-ton pickups and SUVs with leaf springs and provide up to 5,000 pounds (2,268kg) of load-leveling support with air adjustability from 5-100 PSI.

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

Air Lift Company reserves the right to make changes and improvements to its products and publications at any time.

IMPORTANT SAFETY NOTICE

The installation of this kit does not alter the gross vehicle weight rating (GVWR) or payload of the vehicle. Check the vehicle's owner's manual and do not exceed the maximum load listed for this vehicle.

Gross vehicle weight rating: The maximum allowable weight of the fully loaded vehicle (including passengers and cargo). This number — along with other weight limits, as well as tire, rim size and inflation pressure data — is shown on the vehicle's Safety Compliance Certification Label.

Payload: The combined, maximum allowable weight of cargo and passengers that the truck is designed to carry. Payload is GVWR minus the base curb weight.

NOTATION EXPLANATION

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

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



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



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



NOTE

Indicates a procedure, practice or hint which is important to highlight.

Installing the LoadLifter 5000 Series System

GETTING STARTED

1. Raise and support the vehicle by placing jack stands under the frame rails (or as wide as possible) as shown (Fig. 2).

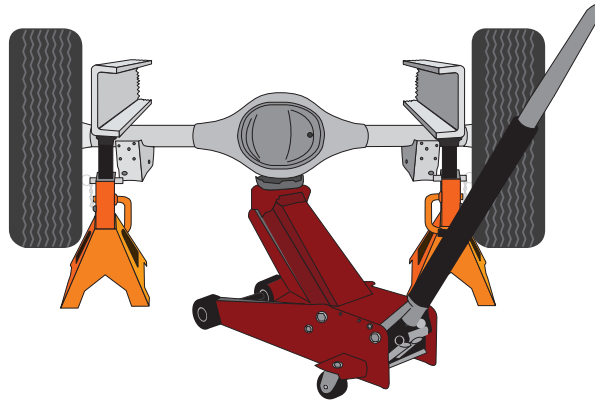


fig. 2

2. Remove the jounce bumpers from under the frame, over the axle.
3. If necessary, disconnect the wiring harness from the driver's side frame rail to gain clearance for the upper brace.
4. For all dual-rear-wheel vehicles (DRW) it will be necessary to remove the sway bar strap and bolts holding the sway bar to the axle. Retain for reinstallation.
5. If the vehicle has a fifth-wheel hitch already installed, it will be necessary to remove the 3/4" hardware that bolts the side bracket to the outside of the frame above the axle (Fig. 4).

NOTE

Some hitch models have a spacer between the bracket and the frame rail. Be sure to reinstall the spacer when attaching the upper bracket.

If the truck has emission lines running along the inside of the frame rail (Fig. 3), it will be necessary to relocate those lines as follows. Follow the directions in the section, "Attaching the Assemblies to the Frame" for reattaching these lines.

- Carefully push the line holder out of the frame above the axle. Try to minimize damage because it will be reused. It may also be helpful to remove any holders forward or rearward of the axle to aid in positioning the lines once the upper bracket has been installed (Fig. 3).
- Attach the L-bracket (I) to the back frame brace using the 1/4" bolt (L), flat washers (T) and nylon lock nut (V) (Figs. 1 & 4). This L-bracket will eventually be used to attach the previously removed emissions line. Do not attach the line holder to it at this time.

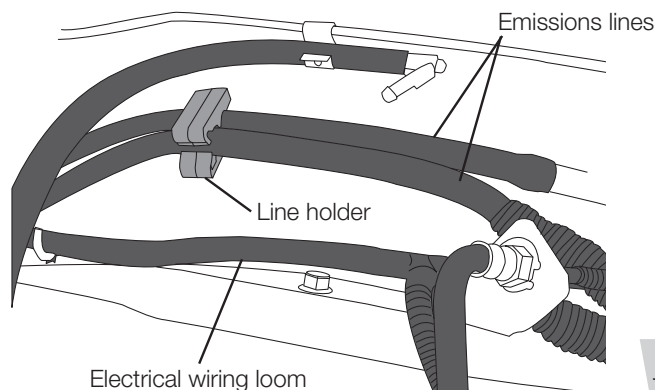
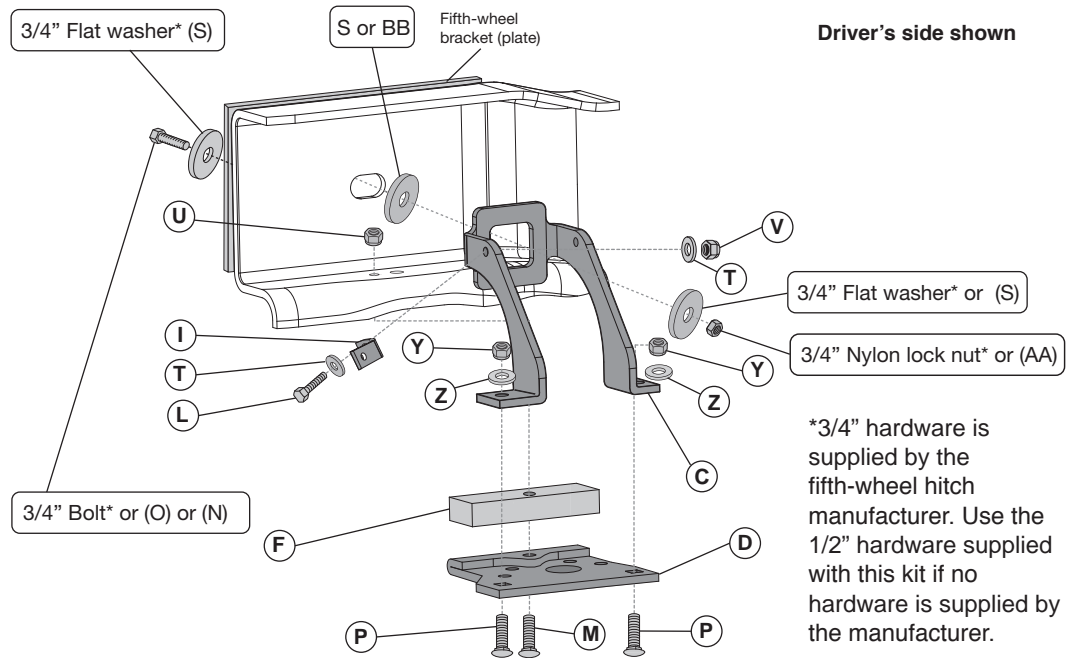


fig. 3

SIDE BRACE INSTALLATION


fig. 4

1. Set the upper brace (C) into the driver's and passenger's side frame (Fig. 4).

No Fifth-wheel Hitch Plate

If there is no fifth-wheel hitch or a hitch that does not have a plate running alongside the full length of the frame (these will have an L-bracket forward and behind the axle leaving the middle frame open) use the 1/2"-13 x 2" hex cap screw (N) with a flat washer (S) through the slot in the side of the frame, then through another flat washer (S) and finally through the upper brace. Cap with a flat washer (S) and a 1/2"-13 nylon lock nut (AA) (Fig 4). Leave loose at this time.

OR

Fifth-wheel Hitch Using Frame Slot

If there is an aftermarket fifth-wheel hitch that has a bracket (plate) running alongside the frame and it used the slot to secure the bracket to the frame with existing hardware, install the existing hardware previously removed in the "Getting Started" section from the fifth-wheel installation for securing the brace (Fig. 4). Make sure to install the large 3/4" flat washer (BB) between the brace and the frame (Figs. 1 & 4). Do not tighten at this time.

OR

Fifth-wheel Hitch Plate Not Using Frame Slot

If the truck has an aftermarket fifth-wheel hitch that has a bracket (plate) running alongside the frame and it does not have any attaching hardware on the side where the slot in the frame is, it will be necessary to drill a 1/2" hole through the plate using the slot in the frame as a template.

NOTE

It may be necessary to mark and remove the bracket (plate) from the side of the frame in order to drill the hole correctly. Re-attach once the hole is drilled.

2. Insert a 1/2"-13 x 3" hex cap screw (O) with a flat washer (S) through the fifth-wheel plate previously drilled, the frame, then through another flat washer (S) and finally the upper brace. Cap with a flat washer (S) and a 1/2"-13 nylon lock nut (AA) (Fig. 4). Leave loose at this time.

AIR SPRING AND BRACKET ASSEMBLY

1. Set a roll plate (G) over the top and bottom of the air spring (H) (Fig. 1).

NOTE

The radiused (rounded) edge of the roll plate (G) will be toward the air spring so that the air spring is seated inside both roll plates.

2. Install the swivel elbow fitting (EE) into the top of the air spring finger tight. Tighten the swivel fitting 1-1/2 turns.
3. Insert a 5/16"-18 x 3/4" carriage bolt (R) through the square hole in the lower bracket cup (A). Make sure to insert the carriage bolt on the flanged side of the bracket. Set the assembly onto the lower bracket main plate (B) making sure the lower bracket cup (A) is on the flanged side of the bracket (Fig. 5).

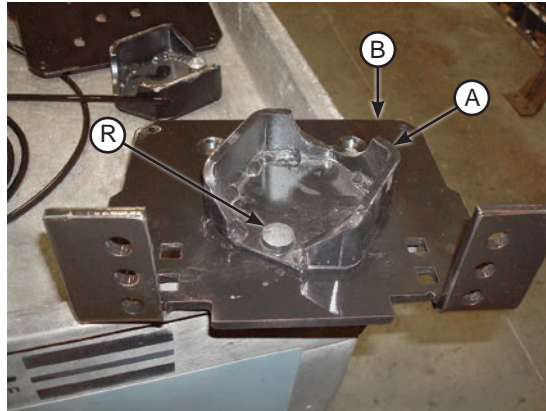


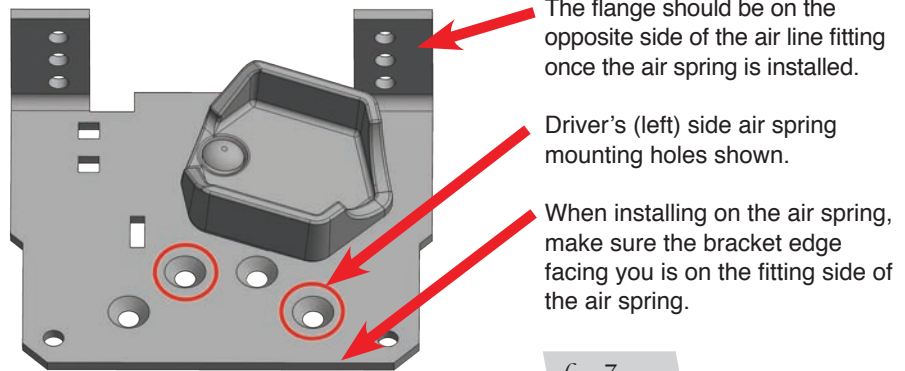
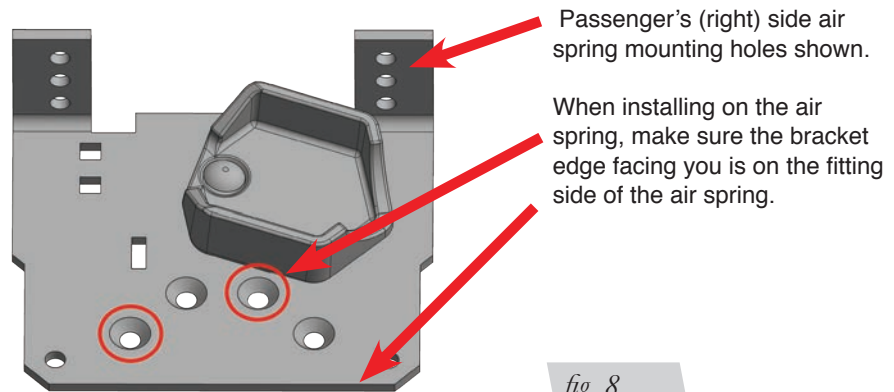
fig. 5

4. Flip the assembly over and cap the 5/16" carriage bolt with a 5/16" flat washer (X) and 5/16" nylon lock nut (CC) (Fig. 6). Tighten the nut only tight enough so that the cup still swivels on the lower bracket main plate (Fig. 6).

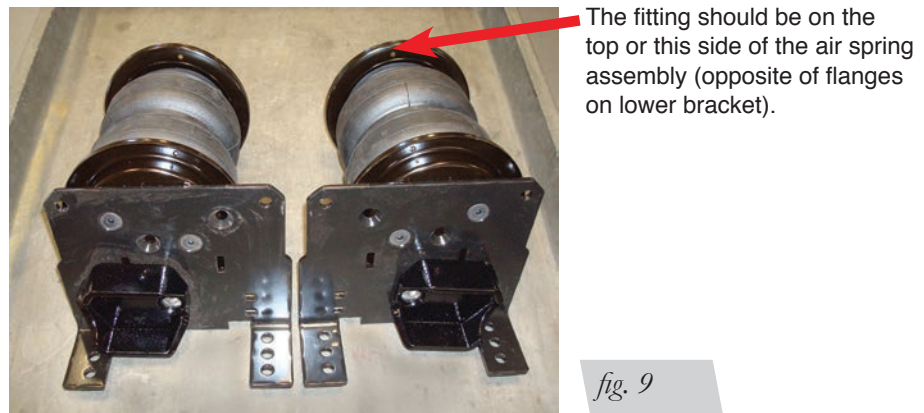


fig. 6

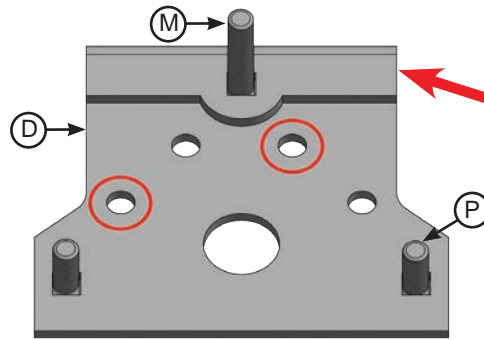
- The lower bracket (B) has two sets of air spring mounting holes. Using the corresponding holes in the lower bracket designated (Figs. 7 & 8), attach the air spring to the brackets using the 3/8"-24 x 3/4" flat-head socket cap screw (FF). Torque mounting screws to no more than 20 lb.-ft. (27Nm).


fig. 7

fig. 8

- Figure 9 shows the driver's (left) and passenger's (right) side assemblies.


fig. 9

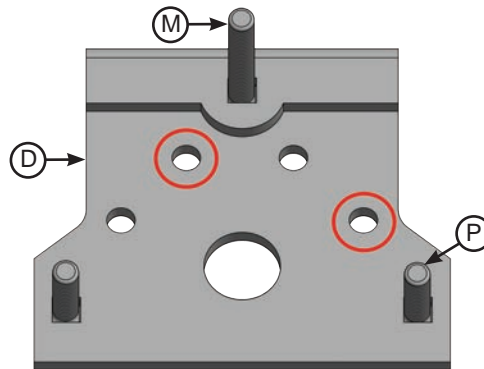
- Set the lower bracket assemblies aside. Insert two 3/8"-16 x 1.25" carriage bolts (P) through the two square holes in both upper brackets (D) (Figs. 10 & 11). Also install one 3/8"-16 x 2.5" carriage bolt (M) through the remaining hole. The head of this carriage bolt will be hidden once the upper bracket is mounted to the air springs.



Driver's (left) side installation mounting holes noted.

The flange on bracket should be up when inserting the carriage bolts.

fig. 10



Passenger's (right) side installation mounting holes noted.

fig. 11

- Make sure the roll plates (G) are on top of both air spring assemblies previously assembled. Set the driver's side (left) upper bracket onto the driver's (left) side air spring assembly using the holes in the upper bracket designated (Figs. 10 & 12) and attach to the air spring with two 3/8" flat washers (Z or TT), lock washers (HH) and 3/8"-24 x 7/8" hex cap screws (GG). Torque the hardware to no more than 20 lb.-ft. (27 Nm).
- Set the spacer (F) over the long carriage bolt with the wide side facing out (Fig. 12). Repeat the process for passenger's (right) side assembly (Fig. 13).

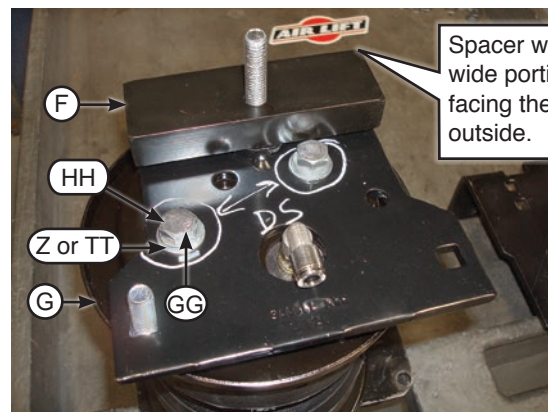


fig. 12 Driver's (left) side upper bracket installed on the air spring assembly.

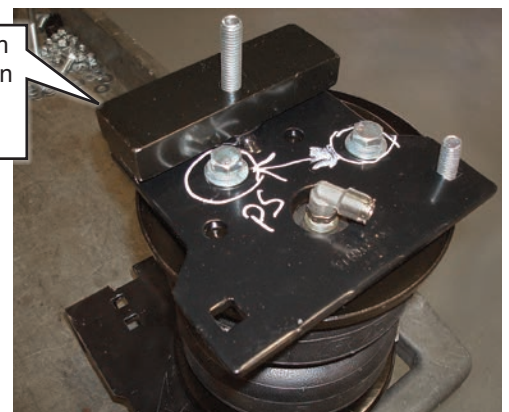


fig. 13

NOTE

One of the 3/8"-16 x 1.25" carriage bolts (P) will not be covered by the roll plate and may fall out. If so, retain for use in the "Attaching the Assemblies to the Frame" section later in this installation guide.

10. Figure 14 shows the finished assemblies.

Driver's
(left) side



Passenger's
(right) side

fig. 14

ATTACHING THE ASSEMBLIES TO THE FRAME

1. Drop the axle or raise the frame up to make room for the assemblies to be put into position.
2. Set the driver's (left) side assembly onto the jounce bumper strike plate (Fig. 15). Raise the axle up just enough to insert the long carriage bolt (M) that is installed in the upper bracket (Figs. 10 & 11) through the existing jounce bumper hole in the bottom of the frame. At the same time, line up the upper brace previously installed onto the remaining two carriage bolts (P) in the upper bracket. Do this just enough for the carriage bolt to hold the assembly into position on the jounce bumper strike plate.

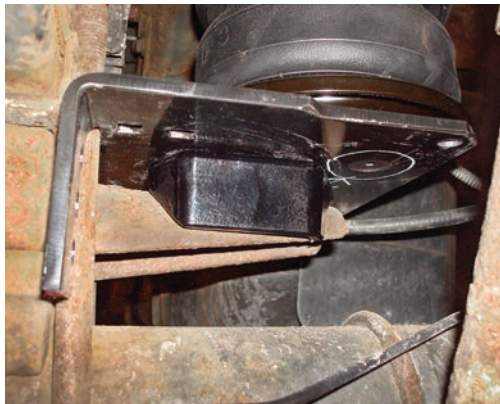


fig. 15



fig. 15b

3. Set the passenger's (right) side assembly into position on the axle the same way the left side was positioned (Fig. 15b).

4. Raise the axle or lower the frame down so that the thick spacer (F) on the upper bracket is parallel to and contacts the frame (on both sides) (Fig. 16).



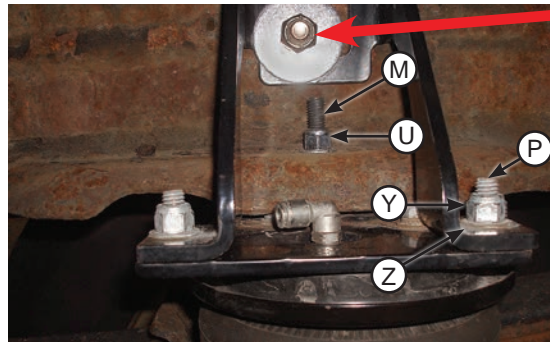
The spacer must be parallel to the frame with the wide portion facing out toward the wheel.

fig. 16

5. Install the 3/8"-16 serrated lock nut (U) on the carriage bolt (M) that went through the existing jounce bumper hole and torque to 35 lb.-ft. (47Nm) on both sides (Fig. 17).

CAUTION

BE SURE NOT TO PINCH THE PREVIOUSLY MOVED WIRING OR LINES INSIDE THE LEFT FRAME RAIL.



Torque both sides to 44 lb.-ft. (60Nm).

fig. 17

6. Cap the brace/upper bracket carriage bolts (P) with two 3/8" flat washers (Z) and two nylon lock nuts (Y) and torque both to 35 lb.-ft. (47Nm) on both sides (Fig. 17).
7. With the spacers (F) on the upper brackets tight to the bottom of the frame and the braces tight to the upper bracket, tighten the 1/2" or 3/4" hardware previously installed, that hold the braces to the frame. Torque both sides to 44 lb.-ft. (60Nm) (Fig. 17).
8. If equipped with the emissions line previously loosened from the frame, insert the line holder post into the L-bracket (I) attached to the front or back leg of the upper left brace (C) (Fig. 18). It may be necessary to move the line holder post forward or back on the lines to line up correctly with the L-bracket hole. Reattach any line holders removed forward or behind the axle, if possible, that were removed to aid in positioning the upper brace.

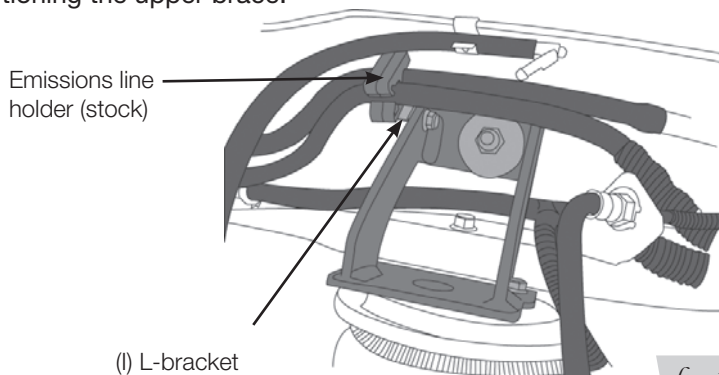


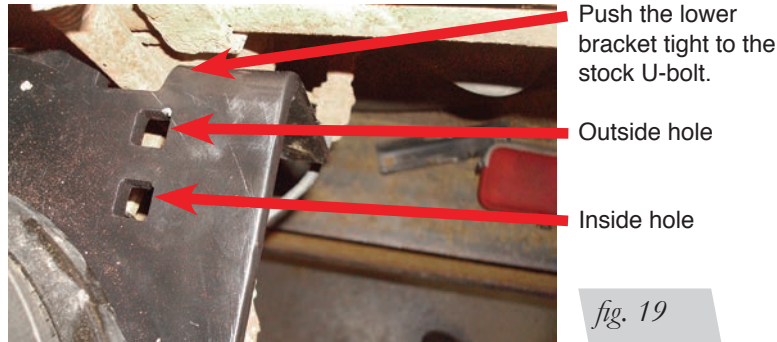
fig. 18

ATTACHING THE LOWER BRACKET

NOTE

The way the lower bracket is attached depends on the truck model. See Fig. 19 to determine which holes to use for inserting the carriage bolts.

1. Push the lower bracket up against the stock U-bolts so that the legs of the lower bracket are locked into position around the stock U-bolts (Fig. 19). It may be necessary to rotate the lower bracket cup on the jounce bumper strike plate in order to do this.

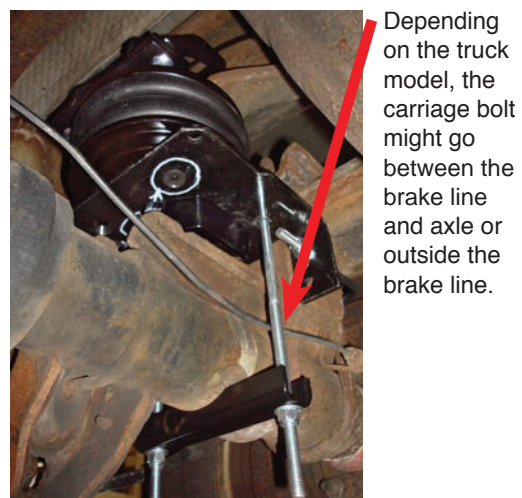
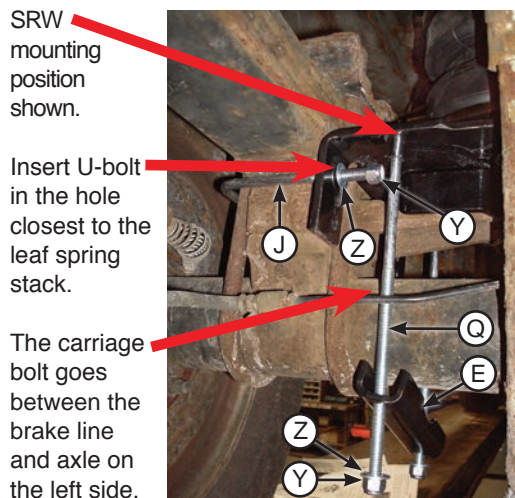


2. If installing this kit on a single-rear-wheel (SRW) vehicle, use the inside position square holes in the lower bracket to insert the long 3/8"-16 x 10" carriage bolts (Q) through (Fig. 19). If installing this kit on a dual-rear-wheel (DRW) vehicle, use the outside set of holes to insert the carriage bolts through.

CAUTION

THE CARRIAGE BOLT WILL GO BETWEEN THE HARD BRAKE LINE AND THE AXLE ON THE DRIVER'S (LEFT) SIDE (FIG. 20). DEPENDING ON THE MODEL OF THE TRUCK, THE BRAKE LINE MAY GO IN BETWEEN OR BEHIND THE HARD BRAKE LINE ON THE PASSENGER'S (RIGHT) SIDE OF THE AXLE (FIG. 21).

3. Position the U-bolt (J) around the leaf spring assembly and insert it in the hole closest to the leaf spring stack (Fig. 21). The lower bracket flanges must be locked on the front and rear of the stock U-bolts holding the leaf springs to the axle.
4. Cap the U-bolts with two 3/8" flat washers (Z) and two 3/8"-16 nylon lock nuts (Y) and evenly tighten only enough to draw the bracket up against the stock U-bolt at this time (Figs. 20 & 21). Make sure the lower bracket rests against the stock U-bolts.



5. Set the clamp bar (E) over the carriage bolts previously installed that go below the axle and cap with two 3/8" flat washers (Z) and two 3/8"-16 nylon lock nuts (Y) (Figs. 20 & 21).

NOTE

If the vehicle has a sway bar under the axle and the carriage bolt (Q) interferes, invert the carriage bolt.

6. Tighten the axle clamp hardware evenly until it touches the axle. Torque the axle clamp bar bolts to 16 lb.-ft. (22Nm). Trim the 3/8"-16 x 10" carriage bolts below the nylon lock nuts if necessary. Repeat for the opposite side.
7. Torque the leaf spring U-bolt to 10 lb.-ft. (13Nm). Once tight, the upper and lower brackets will not be parallel and may look like they are out of alignment. This condition is acceptable because of the way the lower bracket and upper bracket mounts are designed. Some variance from one unit to another is considered normal. Repeat for the opposite side.



CAUTION

IF NECESSARY, SLIGHTLY BEND THE HARD BRAKE LINES AWAY FROM THE CARRIAGE BOLT (Q) TO OBTAIN CLEARANCE.

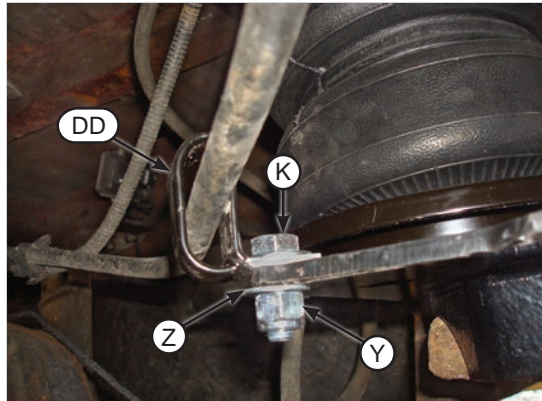
8. Raise the axle up all the way (if not already done so) and remove the jack stands or equivalent used during the installation.
9. Once the lower bracket hardware is tight, snug the lower mounting plate/swivel cup bracket mounting hardware with an open-end wrench (Fig. 22).



fig. 22

FINISHING THE INSTALLATION

1. Place the modified P clamp (DD) around the emergency brake cable. Attach the clamp to the lower bracket with the 3/8"-16 x 1" hex cap screw (K), two flat washers (Z) and nylon lock nut (Y). Torque the bolt to 31 lb.-ft. (42Nm) (Fig. 23).



Secure the emergency brake cable away from the air spring with the modified P clamp (DD).

fig. 23

CAUTION

FAILURE TO SECURE EMERGENCY BRAKE CABLE MAY CAUSE FAILURE OF THE AIR SPRING.

2. For DRW vehicles, in order to install the sway bar and sway bar retaining straps back onto the axle, it will be necessary to slot the retaining straps (Fig. 24). Reattach the sway bar once this is done.

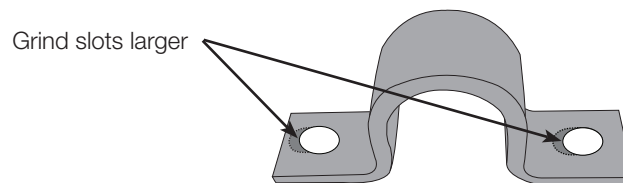
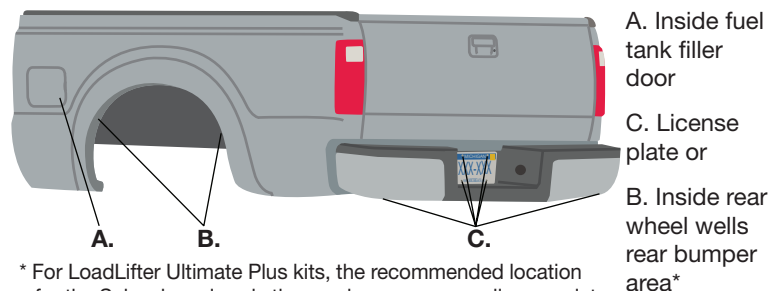


fig. 24

Installing the Air Lines

Air lines are routed from the air springs to Schrader valves. LoadLifter 5000 series air lines come in two styles: nylon and braided stainless steel. Begin by choosing locations for the Schrader valves and drill a 5/16" (8mm) hole, if necessary (Fig. 25).



* For LoadLifter Ultimate Plus kits, the recommended location for the Schrader valves is the rear bumper area or license plate.

fig. 25

CAUTION

KEEP AT LEAST 6" (150MM) OF CLEARANCE BETWEEN ALL AIR LINES AND THE EXHAUST SYSTEM. AVOID SHARP BENDS AND EDGES.

1. Cut the air line in half. Make clean, square cuts with a razor blade or hose cutter (Fig. 26). Do not use scissors or wire cutters.

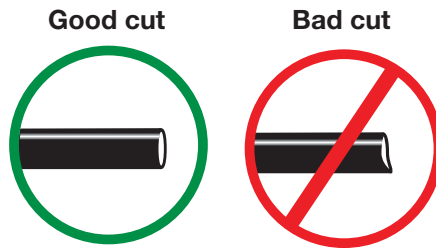


fig. 26

2. Use zip ties to secure the air line to fixed points along the chassis. Do not pinch or kink the air line. The minimum bend radius for the air line is 1" (25mm). Leave at least 2" (50mm) of slack in the air line to allow for any movement that might pull on the air line.
3. Install the Schrader valve in the chosen location (Fig. 27).

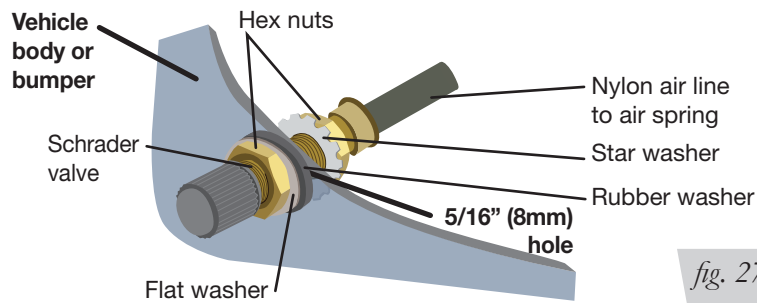


fig. 27

INSTALLING THE HEAT SHIELD

1. Attach the metal heat shield to the exhaust where it is closest to the air spring. Slide the air line thermal sleeve over the air line and place it where the air line is closest to the exhaust (Fig. 28).

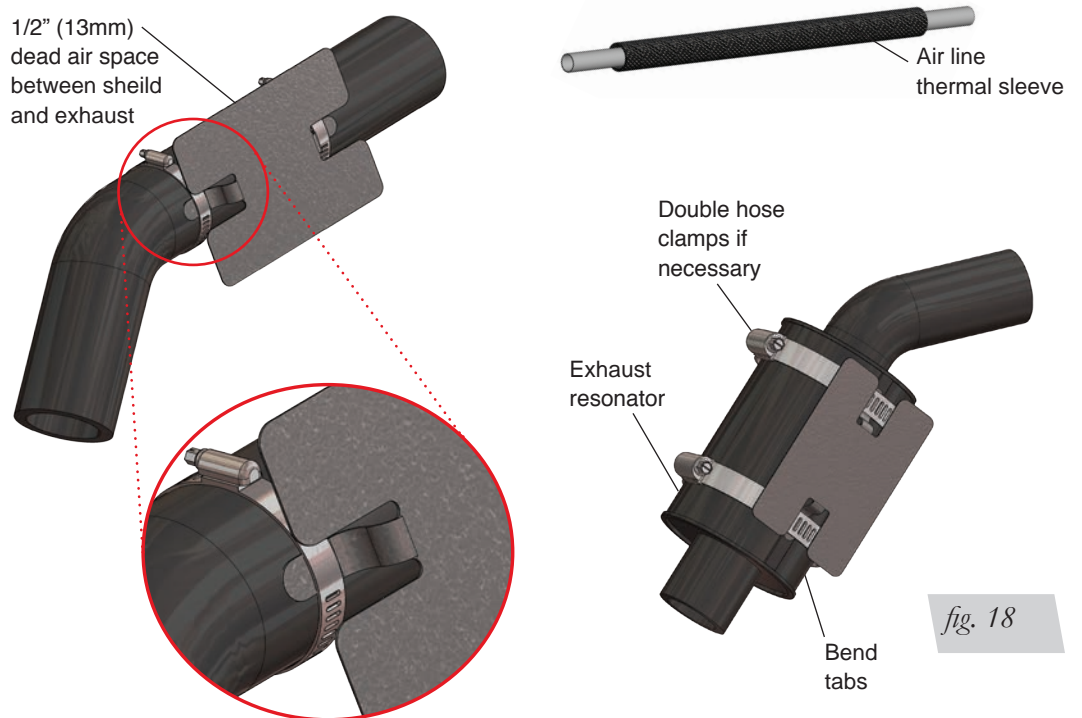


fig. 18

Finished Installation Photos

1. The following images show the finished installation of both sides (Figs. 29, 30, 31 & 32).



Driver's (left) side view from the rear.



Inside view of the driver's (left) side.



Inside view of the passenger's (right) side.



View of the passenger's (right) side from the rear.

Before Operating

CHECKING FOR LEAKS

1. Inflate the air spring to 30 PSI (2.1BAR).
2. Spray all connections and the inflation valves with a solution of liquid dish soap and water. Spot leaks easily by looking for bubbles in the soapy water.
3. After the test, deflate the springs to the minimum pressure required to restore the system to normal ride height. Do not deflate to lower than 5 PSI (.34BAR).
4. Check the air pressure again after 24 hours. A 2-4 PSI (.14-.28BAR) loss after initial installation is normal. Retest for leaks if the loss is more than 5 PSI (.34BAR).

FIXING LEAKS

1. If there is a problem with the swivel fitting:
 - a. Check the air line connection by deflating the spring and removing the line by pulling the collar against the fitting and pulling firmly on the air line. Trim 1" (25.4mm) off the end of the air line. Be sure the cut is clean and square (see Fig. 26). Reinsert the air line into the push-to-connect fitting.
 - b. Check the threaded connection by tightening the swivel fitting another half 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 and then use a wrench for an additional two turns.
2. If there is a problem with the inflation valve:
 - a. Check the valve core by tightening it with a valve core tool.
 - b. Check the air line by removing the air line from the barbed fitting. Cut the air line off a few inches in front of the fitting and use a pair of pliers or vice grips to pull/twist the air line off of the fitting.



CAUTION

DO NOT CUT OFF THE AIR LINE OFF AT THE FITTING BECAUSE THIS COULD NICK THE BARB AND RENDER THE FITTING USELESS.

INSTALLATION CHECKLIST

- Clearance test** — Inflate the air springs to 40-50 PSI (2.8-3.4BAR) 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 40-50 PSI (2.8-3.4BAR) 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.
- Fastener test** — Recheck all bolts for proper torque.
- Road test** — The vehicle should be road tested after the preceding tests. Inflate the springs to recommended driving pressures. Drive the vehicle 10 miles (16.1km) 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.

POST-INSTALLATION CHECKLIST

- Overnight leak down test** — Recheck air pressure after the vehicle has been used for 24 hours. If the pressure has dropped more than 5 PSI (.34BAR), then there is a leak that must be fixed. Either fix the leak yourself or return to the installer for service.
- Air pressure requirements** — It is important to understand the air pressure requirements of the air spring system. Regardless of load, the air pressure should always be adjusted to maintain adequate ride height at all times while driving.
- Thirty-day or 500-mile (805km) test** — Recheck the air spring system after 30 days or 500 miles (805km), 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.

Product Use, Maintenance and Servicing

Minimum Recommended Pressure	Maximum Air Pressure
5 PSI (.34BAR)	100 PSI (6.9BAR)

MAINTENANCE GUIDELINES

NOTE

By following the steps below, vehicle owners will obtain the longest life and best results from their air springs.

1. Check air pressure weekly.
2. Always maintain normal ride height. Never inflate beyond 100 PSI (6.9BAR).
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.



CAUTION

FOR SAFETY AND TO PREVENT POSSIBLE DAMAGE TO THE VEHICLE, DO NOT EXCEED MAXIMUM GROSS VEHICLE WEIGHT RATING (GVWR), AS INDICATED BY THE VEHICLE MANUFACTURER. ALTHOUGH THE AIR SPRINGS ARE RATED AT A MAXIMUM INFLATION PRESSURE OF 100 PSI (6.9BAR), THE AIR PRESSURE ACTUALLY NEEDED IS DEPENDENT ON LOAD AND GROSS VEHICLE WEIGHT RATING .

4. Loaded vehicles require at least 25 PSI (1.7BAR). A “loaded vehicle” refers to a vehicle with a heavy bed load, a trailer or both. Never exceed GVWR, regardless of air spring, air pressure or other load assist. The springs in this kit will support approximately 40 pounds (18kg) of load (combined on both springs) for each 1 PSI (.07BAR) of pressure. The required air pressure will vary depending on the state of the original suspension. Operating the vehicle below the minimum air spring pressure will void the Air Lift warranty.
5. When increasing load, always adjust air pressure to maintain normal ride height. Increase or decrease pressure from the system as necessary to attain normal ride height for optimal ride and handling. Remember that loads carried behind the axle (including tongue loads) require more leveling force (pressure) than those carried directly over the axle.
6. Always add air to springs in small quantities, checking the pressure frequently.
7. Should it be necessary to raise the vehicle by the frame, make sure the system is at minimum pressure (5 PSI [.34BAR]) to reduce the tension on the suspension/ brake components. Use of on-board leveling systems do not require deflation or disconnection.
8. Periodically check the air spring system fasteners for tightness. Also, check the air springs for any signs of rubbing. Realign if necessary.
9. On occasion, give the air springs a hard spray with a garden hose to remove mud, sand, gravel or other debris.

TUNING THE AIR PRESSURE

Pressure determination comes down to three things — level vehicle, ride comfort and stability.

1. Level vehicle

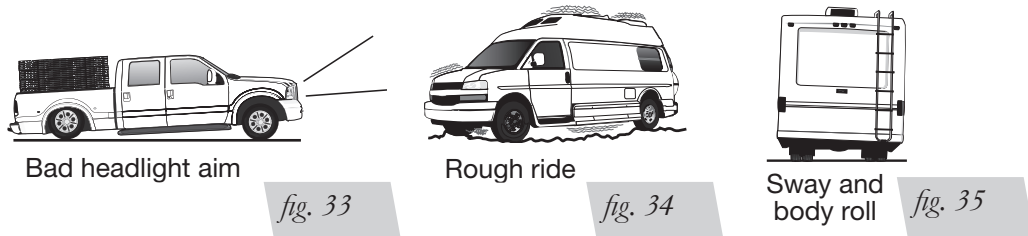
If the vehicle's headlights are shining into the trees or the vehicle is leaning to one side, then it is not level (Fig. 33). Raise the air pressure to correct either of these problems and level the vehicle.

2. Ride comfort

If the vehicle has a rough or harsh ride it may be due to either too much pressure or not enough (Fig. 34). Try different pressures to determine the best ride comfort.

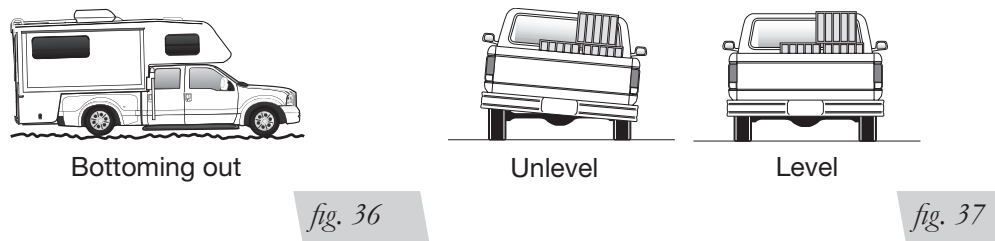
3. Stability

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. 35). Tuning out these problems usually requires an increase in pressure.



GUIDELINES FOR ADDING AIR

1. Start with the vehicle level or slightly above.
2. When in doubt, always add air.
3. If the front of the vehicle dives while braking, increase the pressure in the front air bags, if equipped.
4. If it is ever suspected that the air bags have bottomed out, increase the pressure (Fig. 36).
5. Adjust the pressure up and down to find the best ride.
6. If the vehicle rocks and rolls, adjust the air pressure to reduce movement.
7. 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. 37). As much as a 50 PSI (3.5BAR) difference is not uncommon.





Troubleshooting Guide

PROBLEM	CAUSE	SOLUTION
System won't maintain pressure overnight.	Improperly installed air line, air line has holes or cracks.	Leak test the air line connections, the threaded connection into the air spring, and all fittings in the control system.
Air spring or air line leak.	Fitting seal or air line is compromised.	Check to make sure air lines are seated in connectors. Inspect fittings with soapy water. Trim hose or re-seal fitting. Ensure lines are cut straight.
Corner won't raise or air leak develops.	Look for a kink or fold in the air line.	Replace any air line that has been kinked.

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 times and how much pressure will they need?

The recommended minimum air pressure is 5 PSI (.34BAR), Ultimate and Ultimate Plus can safely be run at zero air pressure unladen (no load).

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.