Installation Manual

VERSION FRANÇAISE

AIR SPRING KIT

Chevrolet Silverado 4500HD / 5500HD 2WD/4WD*
International CV Class 4/5 Trucks 2WD/4WD*

Eliminate your vehicle's sag, sway and bottoming out while providing added support for an overall smooth and safe ride with this extreme duty air suspension kit. Rated for up to 7500 lbs of load-leveling capacity+, this kit is ideally suited for those towing/hauling big loads on a regular basis.

** See application guide for proper fitment.*
+ Applications vary. Never exceed manufacturer's recommended Gross Vehicle Weight Rating

L6517_REV6_06.01.2023 ENC 1-2735

WARNING: This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. ***For more information go to www.P65Warnings.ca.gov***

IMPORTANT

This air suspension kit will not increase the GVWR (*Gross Vehicle Weight Rating*), as the GVWR is determined by the vehicle manufacturer. **Do not exceed the maximum capacity listed by the vehicle manufacturer.**

***PLEASE NOTE*: The air bag must have clearance between itself and the surrounding components to prevent any contact when bag is inflated or compressed. Trimming off excess bolt length is also required to ensure no contact with the bag or other suspension components can be made once installed.**

Safety Warnings!

- Serious personal injury or death may result from an air spring failure or accident due to improper installation or air spring pressure operation or maintenance. Please read and abide the instructions, safety recommendations and maintenance suggestions throughout this manual.
- Inflating an unsecured air spring is dangerous. If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death. Never inflate an air spring unless it is secured to the vehicle.
- Removing and replacing air springs can be dangerous. This is only a job for a qualified service professional. Never perform air spring service procedures without proper training, tools, and equipment.

KIT CONTENTS

Reference the kit explosion diagram on the following page for part assembly.

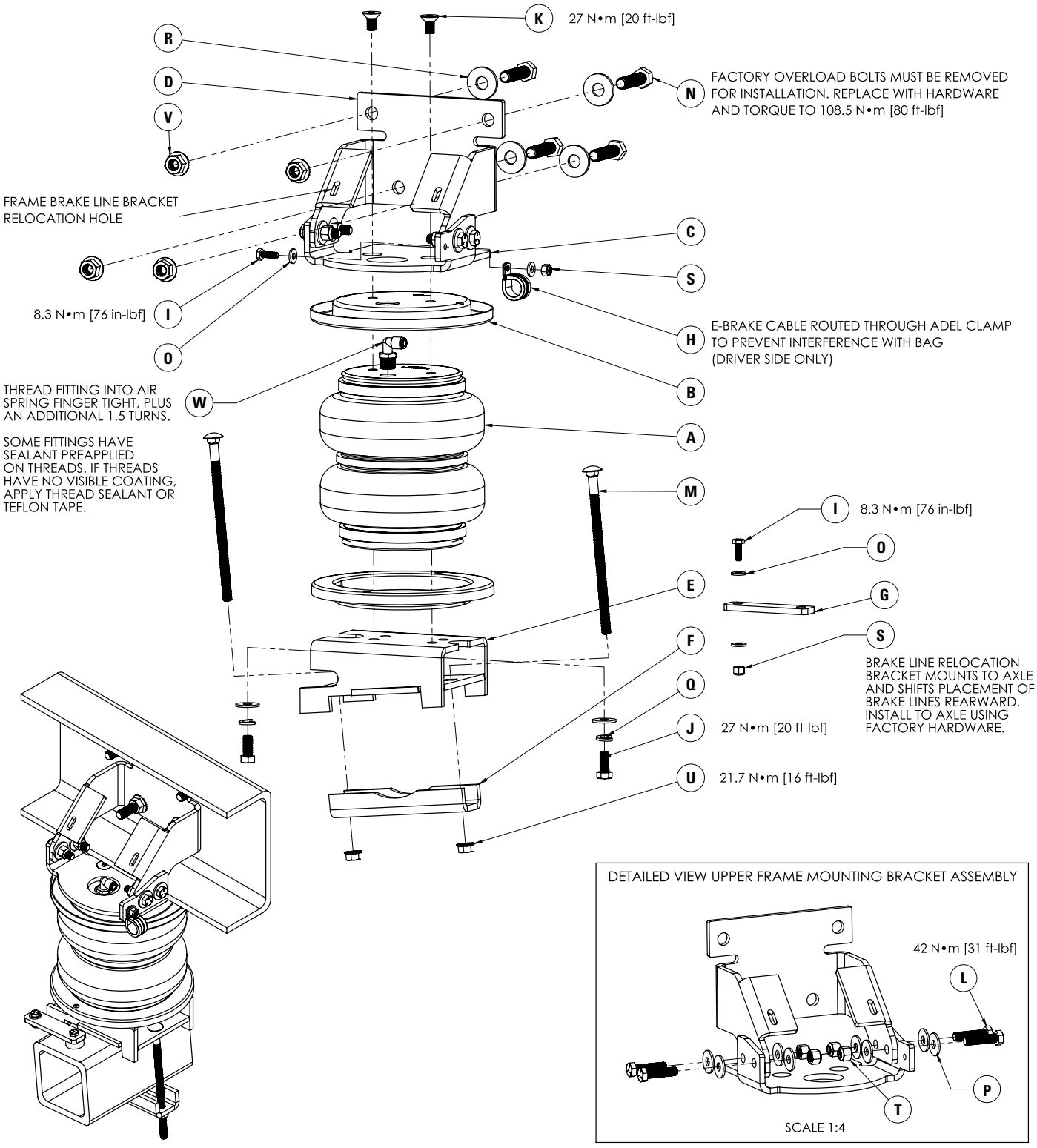
KIT CONTENTS		QTY	PART #
A	Extreme Duty Air Spring	2	HP10438
B	Roll Plate	4	HP10069
C	Bracket, Upper Frame	2	HP1661
D	Bracket, Upper Support	2	HP1660
E	Bracket, Lower	2	HP1658
F	Axle Strap	2	HP1406
G	Bracket, Brake Line Relocation	2	HP1662
H	¾" Adel Clamp	1	C10807
I	Bolt, ¼" – 20 X 0.75" Hex Head	5	C10455
J	Bolt, 3/8" – 24 X 7/8" Hex Head	4	HP1002
K	Bolt, 3/8" – 24 X 3/4" Countersunk	4	HP1008
L	Bolt, 3/8" – 16 X 1.5" Hex Head	8	C18018
M	Bolt, 3/8" – 16 X 7" Carriage	4	HP1409
N	Bolt, ½" – 13 X 2" Hex Head	8	HP1459
O	Washer, ¼" Flat	10	P02190
P	Washer, 3/8" Flat	20	C18006
Q	Washer, 3/8" Split Lock	4	C18007
R	Washer, ½" Flat	8	HP1368
S	Nut, ¼" Nylon Lock	5	HP1072
T	Nut, 3/8" Nylon Lock	8	HP1000
U	Nut, 3/8" Serrated Flange	4	HP1338
V	Nut, ½" Serrated Flange	8	HP1370
W	Fitting, 90° Brass Air	2	HP1245
X	Airline Hose Assembly *(not shown)*	1	HP1344
Y	Tie Strap *(not shown)*	6	C11618

REQUIRED TOOLS

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 1-1/8" Wrench or Deep Socket
- Ratchet
- Metric & Standard Sockets
- Hose Cutter (included) or Sharp Utility Knife
- Pipe Thread Sealant
- Spray Bottle with Dish Soap/Water
- Air Compressor/Compressed Air Source (to test/fill air springs)

Please make sure all the items shown in this explosion diagram are provided in your kit before starting the installation.

DRIVER SIDE ASSEMBLY SHOWN:

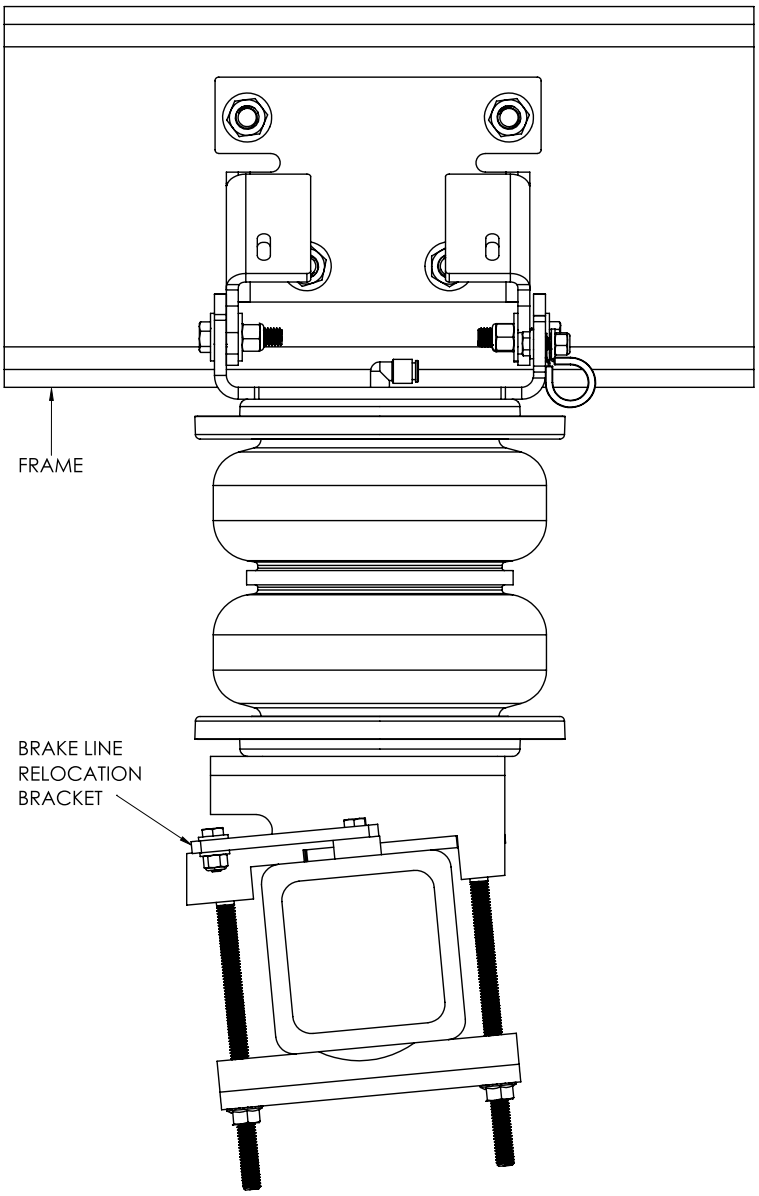


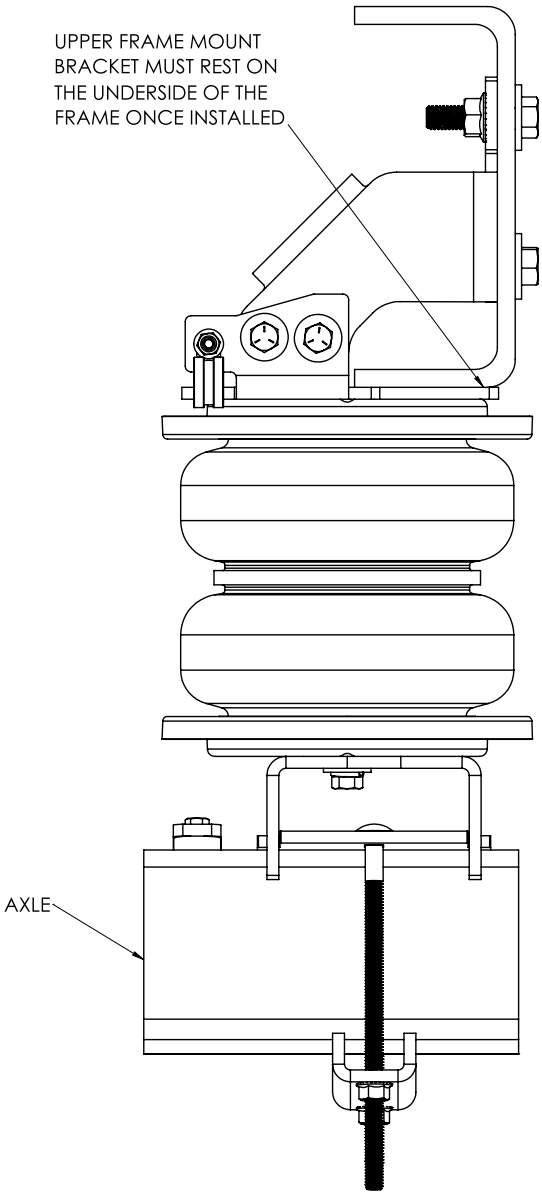
DETAILED VIEW UPPER FRAME MOUNTING BRACKET ASSEMBLY

SCALE 1:4

DRIVER SIDE ASSEMBLY SHOWN

(Assembled onto simplified frame and axle for representation)





BEFORE STARTING THE INSTALLATION:

1. Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
2. Some vehicles are equipped with a rear wheel brake proportioning valve. Check with the manufacturer before installing the air spring kit, as it may affect braking performance.
3. It is recommended to use a good quality anti-seize on all fasteners. This will reduce the chance of corrosion on the fasteners and will help facilitate removal, if required at a later date.

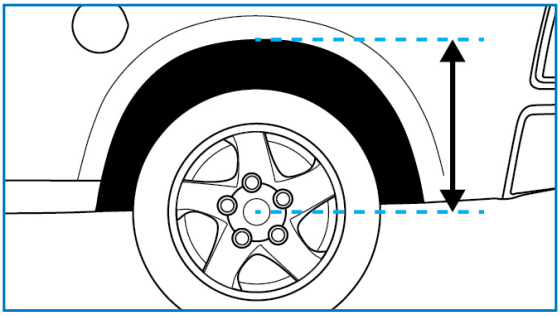
PLEASE NOTE:
This kit contains push-to-connect fittings*; using scissors or wire cutters to cut the nylon airline will distort the line and cause the connection to leak. THE AIRLINE MUST BE CUT OFF SQUARELY WITH THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE.*

1 MEASURE STOCK RIDE HEIGHT

Park the vehicle on a level surface. Remove any unnecessary weight from the vehicle to attain a Normal Ride Height. This is important for correct initial air spring set-up and adjustment.

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (as shown in Figure 1) this will give you your ride height.

Note the ride height for all four corners.



1

2 REMOVE REAR WHEELS

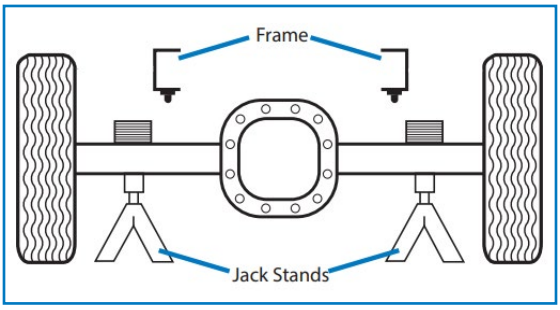
Place wheel chocks in front of and behind both front wheels.

Raise the rear of the truck high enough to remove both wheels and attain a comfortable working height.

Place two jack stands under rear axle (shown in Figure 2).

Lower the vehicle until the axle is supported by the jack stands.

Remove rear wheels.



2

3 PRE-ASSEMBLE SPRING AND FRAME BRACKET

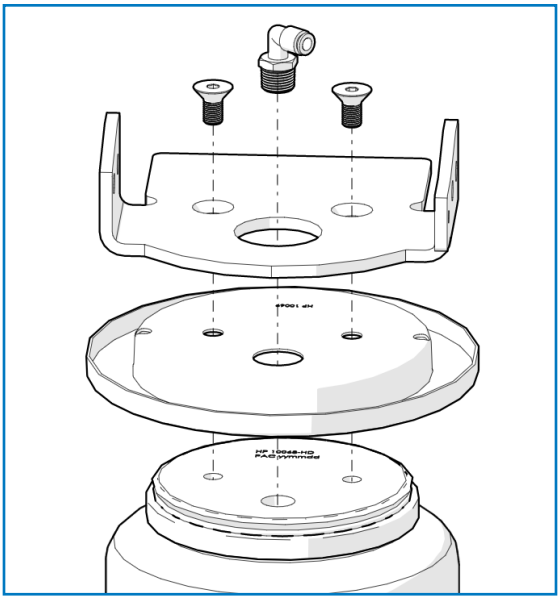
Install the air fitting into the port on the top of the air spring.

Tighten the fitting finger tight plus an additional 1.5 turns. The use of Teflon tape or thread sealant is recommended.

Set a roll plate and the upper frame bracket on the top surface of the air spring.

Ensure all holes are aligned and install two 3/8" – 24 x 3/4" countersunk bolts.

Torque bolts to 20 ft-lbs (27 N•m).



3

4 PRE-ASSEMBLE SPRINGS AND LOWER BRACKETS

Insert two 3/8" – 16 x 7" carriage bolts through the square holes in the lower bracket.

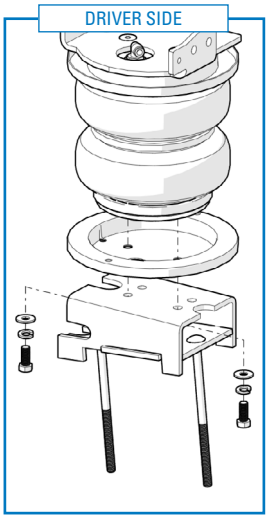
Place a roll plate on the bottom surface of the air spring, followed by the bracket with carriage bolts.

Align the holes in the air spring and roll plate with the pair of holes in the lower bracket (See Figure 4A & 4B for reference).

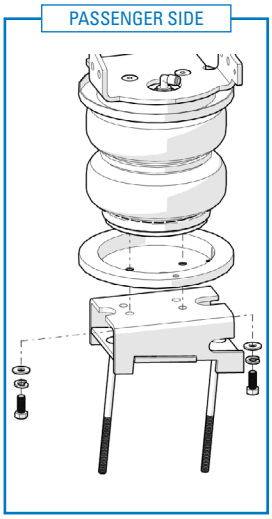
Take note of the bracket orientations as this defines which assembly is for the driver and passenger side.

Secure with two 3/8"-16 x 7/8" hex head bolts, two 3/8" flat washers and two 3/8" lock washers

Torque bolts to 20 ft-lbs (27 N•m).



4A



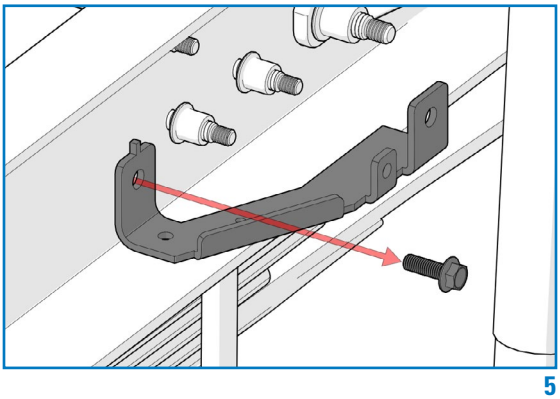
4B

5 UNBOLT FRAME BRAKE LINE BRACKETS

Remove the bolt securing the upper brake line bracket to the frame.

Gently pull the brake lines away from the frame to allow clearance for upper bracket installation. ***(Brake lines omitted for clarity)***

Repeat on opposite side of vehicle.



5

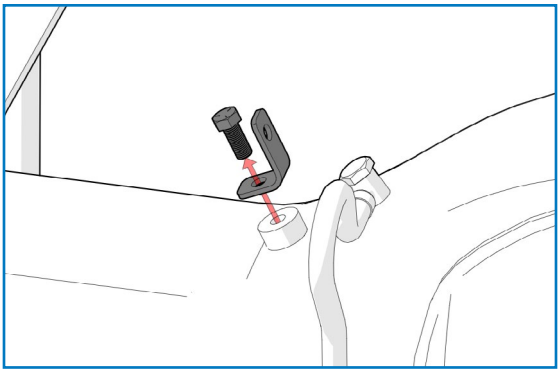
6 RELOCATE AXLE BRAKE LINES

Remove the bolt securing the brake lines to the axle and gently pull the brake lines rearward and away from the mounting hole.

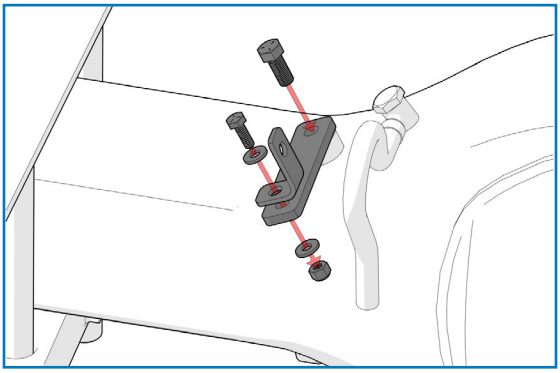
Secure the brake line relocation bracket to the axle as shown using the previously removed bolt. ***(Brake lines omitted for clarity)***

Attach the axle brake line bracket to the brake line relocation bracket using a ¼" – 20 x 0.75" bolt, two ¼" flat washers and a ¼" nylon lock nut. Torque hardware to 76 in-lbs (8.6 N•m).

Repeat on opposite side of vehicle.



6A



6B

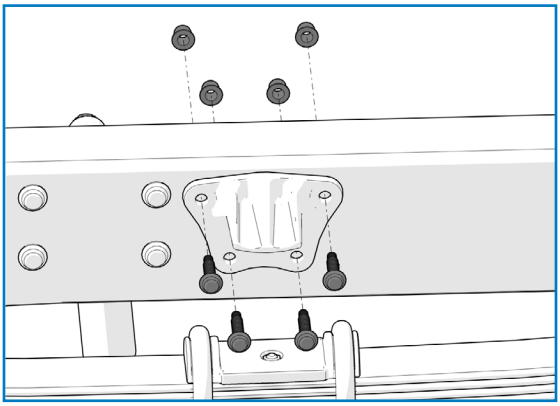
7 REMOVE FACTORY STRIKE BLOCK BOLTS

Remove the four bolts and retaining nuts securing the factory strike block to the frame.

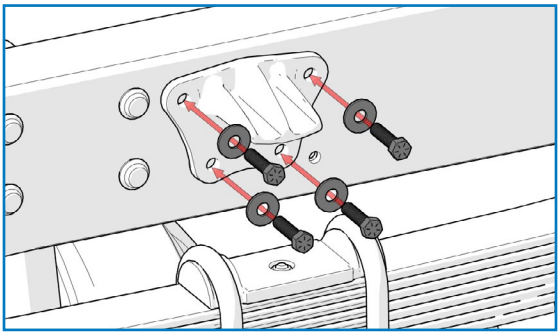
As each bolt is removed, replace it with a ½" – 13 x 2" bolt and ½" flat washer (as shown in Figures 7A & 7B).

Discard the removed hardware.

Repeat process on opposite side.



7A



7B

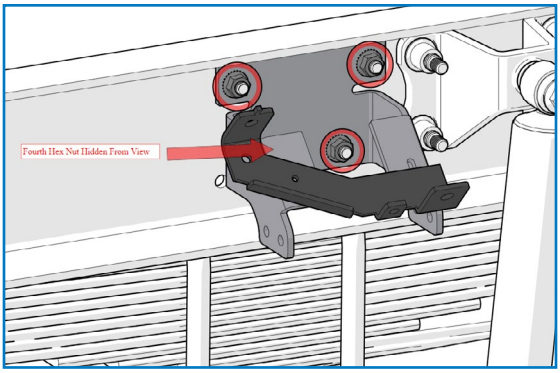
8 INSTALL FRAME SUPPORT BRACKET

Install the upper support bracket into the vehicle (as shown in Figure 8 on the following page) by placing the bracket onto the previously inserted strike block bolts.

Ensure the upper brake line bracket sits above the installed bracket and no brake lines are pinched or under the frame support bracket. ***(Brake lines omitted for clarity)***

Secure the bracket with four ½" serrated nuts. Thread the nuts until they contact the bracket. Do NOT fully tighten at this time.

Repeat on opposite side of vehicle.



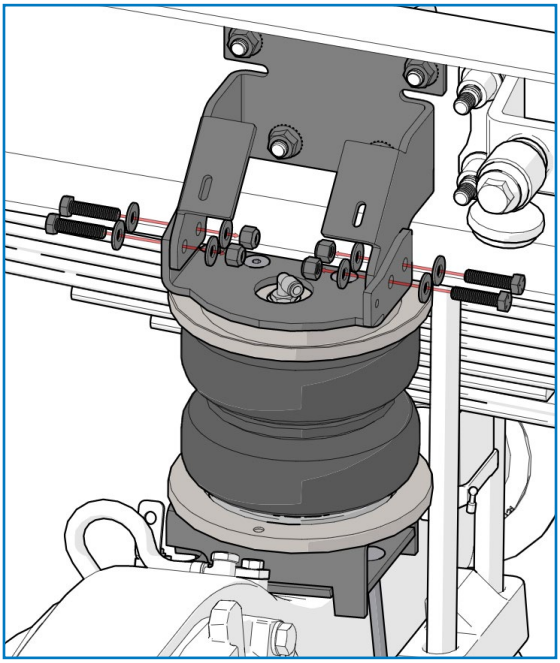
8

9 INSTALL SPRING ASSEMBLY

Place the previously assembled air spring in the vehicle (as shown in Figure 9).

Secure the spring assembly to the frame support bracket with four 3/8" – 16 x 1.5" bolts, eight 3/8" flat washers and four 3/8" nylon lock nuts. Do NOT fully tighten at this time.

Repeat process on opposite side.



9

10 TORQUE SPRING INSTALLATION HARDWARE

Adjust the spring assembly to place the upper frame bracket plate flat against the underside of the vehicle frame.

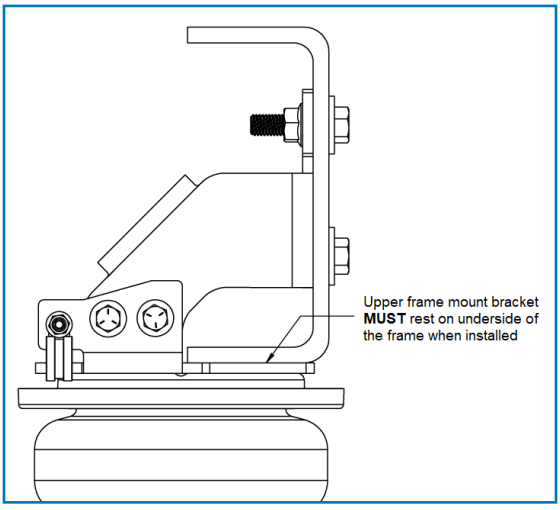
It may be necessary to raise the axle or lower the vehicle frame to achieve the required placement.

NOTE: The upper frame bracket MUST rest flat against the underside of the vehicle frame (as shown in Figure 10) before torquing any hardware. Not resting the bracket flat may result in kit failure or vehicle damage during use.

When proper bracket placement is achieved, torque hardware as follows:

- Torque the four ½" – 13 x 2" bolts to 80 ft-lbs (108.5 N•m).
- Torque the four 3/8" – 16 x 1.5" bolts to 31 ft-lbs (42 N•m).

Repeat installation process on opposite side.



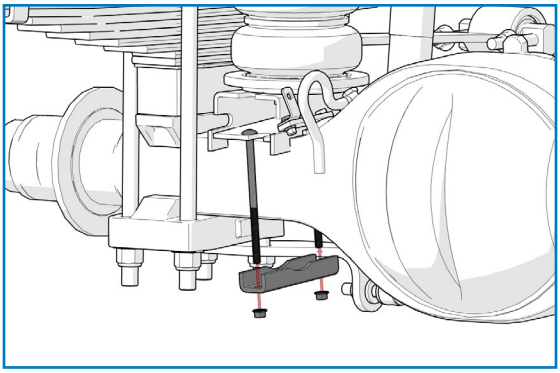
10

11 INSTALL AXLE STRAP

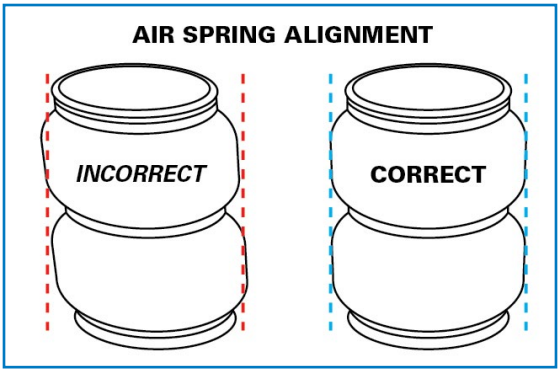
Secure the spring assembly to the vehicle axle with an axle strap and two 3/8" serrated flange nuts (see Figure 11A on following page).

Adjust the lower bracket on the axle to achieve the proper spring alignment (as per Figure 11B on the following page).

Torque the serrated flange nuts to 16 ft-lbs (21.7 N•m).



11A



11B

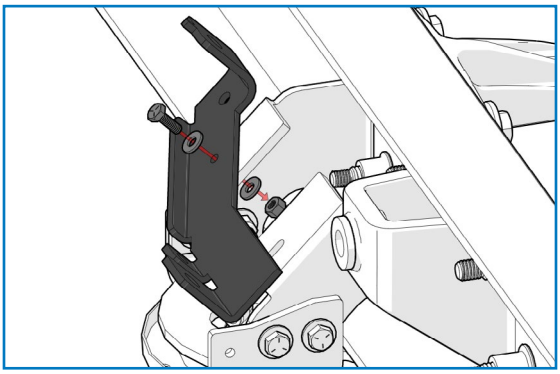
12 SECURE UPPER BRAKE LINE BRACKET

Attach the upper brake line bracket to the frame support bracket (as shown in Figure 12).

Secure the bracket using a ¼" – 20 x .75" bolt, two ¼" flat washers and a ¼" nylon lock nut.

Torque hardware to 76 in-lbs (8.6 N•m).

Repeat process on opposite side.



12

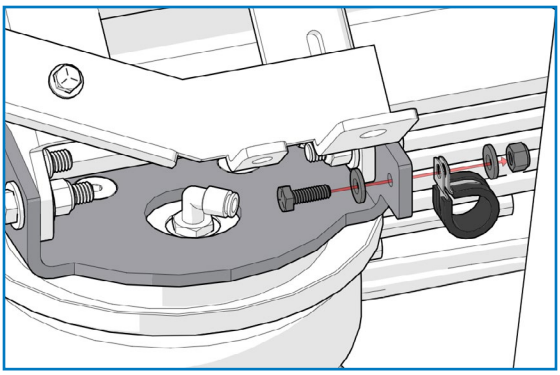
13 SECURE EMERGENCY BRAKE LINE

On the driver's side of the vehicle, the E-brake cable must be relocated to prevent interference with the air spring.

Attach the E-brake cable to the upper bracket using an adel clamp (as shown in Figure 13).

Secure the cable and clamp using a ¼" – 20 x .75" bolt, two ¼" flat washers and a ¼" nylon lock nut.

Torque hardware to 76 in-lbs (8.6 N•m).



13

14 INSTALL AIR LINE

***PLEASE NOTE: This kit contains push-to-connect fittings**; using scissors or wire cutters to cut the nylon airline will distort the line and cause the connection to leak. THE AIRLINE MUST BE CUT OFF SQUARELY WITH THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE*

Provided in air spring kit are two fill valves. The most common place to install is in place of license plate fasteners. Alternatively, two 5/16" holes can be drilled in a convenient location.

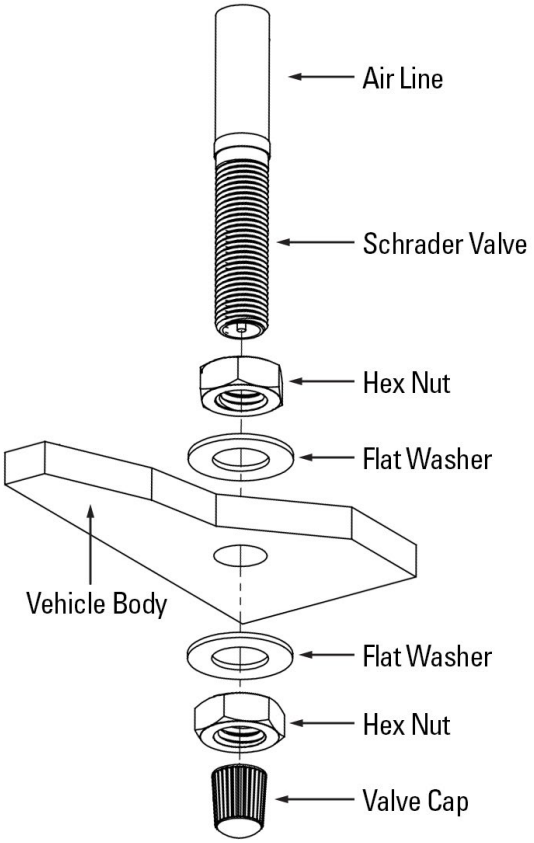
Cut air line assembly into two equal lengths with hose cutter.

Install one air line, route the nylon air line to an air spring fitting and cut the hose. Moisten the end of the air line prior to inserting it into the fitting and push it in until it stops.

Repeat with the other fill valve.

Secure airlines using the tie-straps, away from moving items and heat sources.

Place a 5⁄16" nut on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole, install a flat washer, and 5⁄16" nut and cap (reference Figure 14 for assembly). There should be enough valve exposed after installation—approximately ½"—to easily apply a pressure gauge or an air chuck.



14

If an in-cab inflation kit is being installed, follow the instructions provided with that kit now.

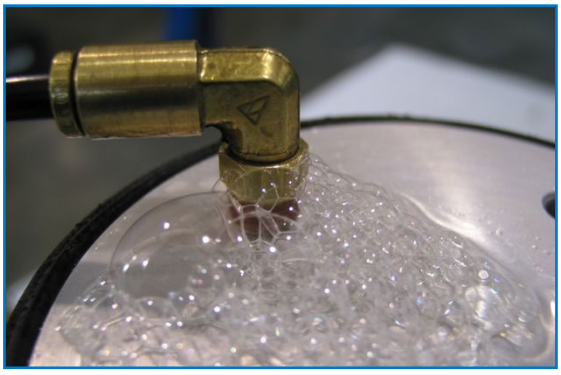
15 CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi and then use a mixture of dish soap and water on all air line connections to detect any air leaks. Large, expanding bubbles indicate a leak (as shown in Figure 15).

Repair as necessary and retest.

Inflate air springs to a predetermined value and on following day recheck pressure. If one or both of air springs have lost pressure, an air leak is present.

Leak must be repaired, and then retested until no leaks exist.



15

16 AFTER COMPLETING THE INSTALLATION

PLEASE REMEMBER:

Install wheels and torque fasteners to manufacturer's specifications.

Re-torque all fasteners after first 500 miles of driving.

For safe and proper operation, never operate the vehicle under minimum of 10 psi or over maximum of 100 psi in air springs. Staying within pressure limit will ensure maximum air spring life. Failure in doing so may result in a void warranty.

⚠ ***Do not exceed maximum vehicle payload. Failure to do so my result in failure of the air suspension kit and/or damage to your vehicle.***

Thank you again, and congratulations on the installation of the air suspension kit.

OPTIONAL ACCESSORIES

Optional dual needle air gauges are available to monitor pressure in each spring from vehicle cab, as well as a full line of air compressors, air tanks, and solenoids built to work with and control your air spring system.

OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum pressure requirements. Never operate your vehicle with less than 10 psi in air spring and never inflate air springs over 100 psi. Damage to air springs will result.

Check air pressure in air springs daily for first couple of days to ensure a leak has not developed. Air springs are designed to maintain the vehicles stock ride height with a load. Do not use the air springs as a means to lift vehicle with no load. This will result in a harsh ride.

SERVICING YOUR VEHICLE WITH AIR SUSPENSION

When lifting the vehicle with a floor jack or hoist on the frame, never allow the air spring to limit the travel of the axle. Try to always jack the vehicle on the axle. Suspending the axle with the air spring limiting the axle travel will damage the air spring and void the air spring warranty.

WARRANTY

The owner's warranty will be void if air springs are run with less than the minimum of 10 psi. See additional warranty for details.