

Installation Manual

VERSION
FRANÇAISE



AIR SUSPENSION KIT

Ford F-250, F-350 & F-450 Super Duty (2WD/4WD)*

Will not fit Cab & Chassis Models

Use the most advanced air springs on the market to eliminate your vehicle's sag, sway and bottoming out. This heavy duty air suspension kit levels your truck's stance while providing added support for an overall smooth and safe ride.

* See application guide for proper fitment.

L6537_REV9_06.18.2024

Thank you and congratulations on the purchase of an Air Suspension kit. Please read the entire manual prior to starting the installation to ensure you can complete it once started.

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.**

For safe and proper operation of the vehicle, never exceed a maximum of 100PSI in the air springs. Staying under the pressure limit will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and/or a void warranty.**

SAFETY WARNINGS!

! Please read and abide the instructions found in this manual, paying close attention to the helpful, cautionary or dangerous warning icons highlighting important safety recommendations and maintenance suggestions throughout this manual.

+ **HELPFUL INSTALL TIP**
Additional information that could potentially make the job a little easier.

! **PLEASE USE CAUTION**
Unsafe practices could result in damage to you or your vehicle, or others.

! **DANGER WARNING**
Hazards which could result in severe personal injury or death.

! 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.

! 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.

BEFORE STARTING THE INSTALLATION

- Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
 - 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.
 - 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 air line will distort the line and cause the connection to leak. The air line must be cut off squarely with the hose cutter provided in this kit, or a sharp utility knife. **Failure to do so may void the warranty.**

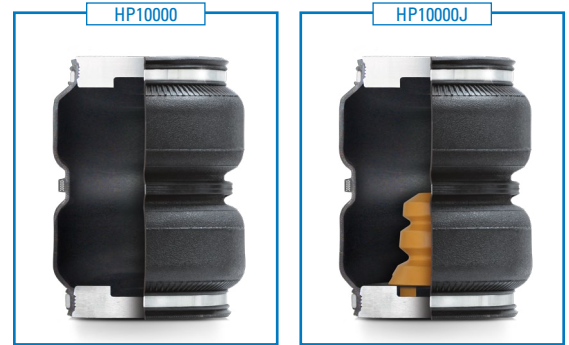
! **WARNING:** This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. **For more information go to www.P65Warnings.ca.gov**

HD KIT CONTENTS

Please confirm the items below are provided in your kit before starting the installation. Reference the kit explosion diagram on the following page for part assembly.

HEAVY DUTY KITS		QTY	PART #
A*	Double Convoluted Spring	2	HP10000

HEAVY DUTY JOUNCE BUMPER KITS		QTY	PART #
A*	Double Convoluted Spring w/ Jounce Bumper	2	HP10000J



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KIT CONTENTS		QTY	PART #
B**	Roll Plate, 4.5" Diameter	4	HP10054
C***	¼" NPT Straight Brass Fitting	2	HP1099
D	Upper Bracket	2	HP1485
E	Lower Axle Bracket	2	HP1745
F	Lower Bag Bracket	2	HP1672
G	Lock Plate, Hex Head	4	HP1748
H	Spacer, Lower Bracket	4	HP1749
I	Axle Strap	2	HP0009
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	HP1646
M	Bolt, 3/8" - 16 x 4" Carriage	4	HP1728
N	Bolt, M10 x 1.5 x 35mm Hex Head	4	HP1134
O	U-Bolt, 7" x 5.5" Square	2	HP1486
P	Washer, 3/8" Flat	24	C18006
Q	Washer, 3/8" Split Lock	4	C18007
R	Nut, 3/8" Nylon Lock	16	HP1000
S	Nut, M10 x 1.5mm Clip-On Barrel	4	HP1421
T	Heat Shield	2	HP0012
U	Worm Gear Ring Clamp	2	HP1001
V	Worm Gear Ring Clamp	2	HP1377
W	Brake Line Relocation Bracket	1	HP1858
X	5/8" Adel Clamp	1	HP1006
Y	Bolt, 5/16" - 18 x 1" Flange	1	C11819
Z	Nut, 5/16" Nylon Lock	1	C11943
AA	Washer, 5/16" Flat	1	C11944
BB	Nut, 3/8" Serrated Flange	1	HP1338

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REQUIRED TOOLS

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 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)

XD KIT CONTENTS

Please confirm the items below are provided in your kit before starting the installation. Reference the kit explosion diagram on the following page for part assembly.

XTREME DUTY KITS		QTY	PART #
A*	Double Convoluted Spring	2	HP10438

XTREME DUTY JOUNCE BUMPER KITS		QTY	PART #
A*	Double Convoluted Spring w/ Jounce Bumper	2	HP10438J



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KIT CONTENTS		QTY	PART #
B**	Roll Plate, 5.5" Diameter	4	HP10069
C***	3/8" NPT Straight Brass Fitting	2	HP1385
D	Upper Bracket	2	HP1485
E	Lower Axle Bracket	2	HP1745
F	Lower Bag Bracket	2	HP1672
G	Lock Plate, Hex Head	4	HP1748
H	Spacer, Lower Bracket	4	HP1749
I	Axle Strap	2	HP0009
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	HP1646
M	Bolt, 3/8" - 16 x 4" Carriage	4	HP1728
N	Bolt, M10 x 1.5 x 35mm Hex Head	4	HP1134
O	U-Bolt, 7" x 5.5" Square	2	HP1486
P	Washer, 3/8" Flat	24	C18006
Q	Washer, 3/8" Split Lock	4	C18007
R	Nut, 3/8" Nylon Lock	16	HP1000
S	Nut, M10 x 1.5mm Clip-On Barrel	4	HP1421
T	Heat Shield	2	HP0012
U	Worm Gear Ring Clamp	2	HP1001
V	Worm Gear Ring Clamp	2	HP1377
W	Brake Line Relocation Bracket	1	HP1858
X	5/8" Adel Clamp	1	HP1006
Y	Bolt, 5/16" - 18 x 1" Flange	1	C11819
Z	Nut, 5/16" Nylon Lock	1	C11943
AA	Washer, 5/16" Flat	1	C11944
BB	Nut, 3/8" Serrated Flange	1	HP1338

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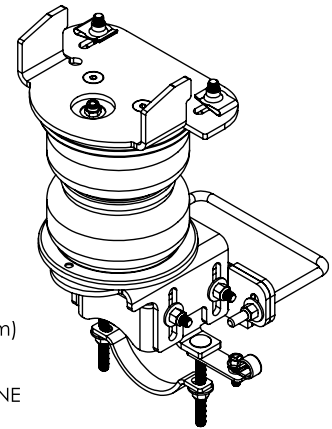
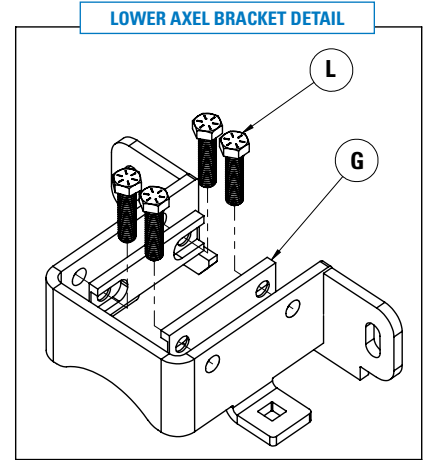
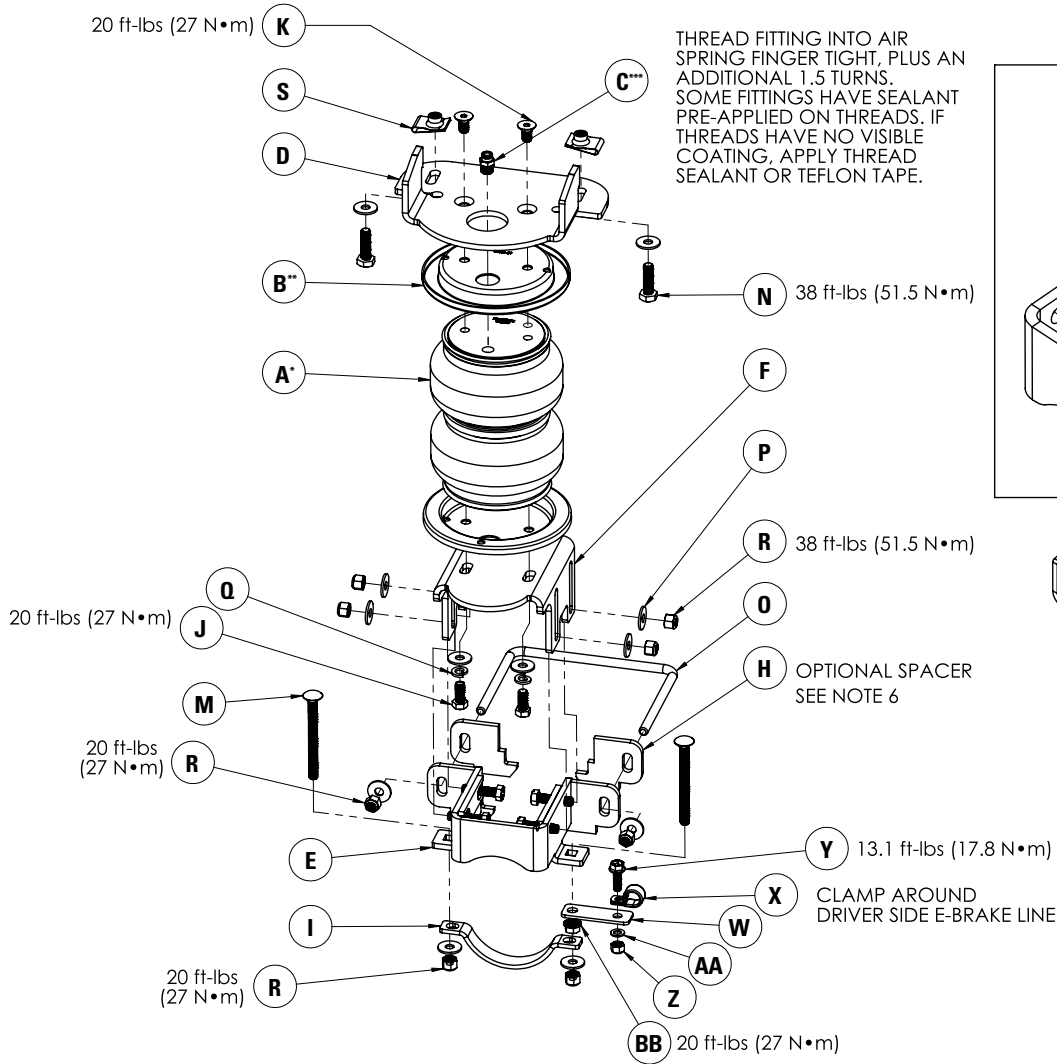


REQUIRED TOOLS

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 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)

KIT EXPLOSION DIAGRAM

DRIVER SIDE ASSEMBLY SHOWN (Passenger side assembly is mirrored)



! PLEASE NOTE:

A*	HD	HP10000	/	XD	HP10438
	HD-J	HP10000J	/	XD-J	HP10438J
B**	HD / HD-J	HP10054	/	XD / XD-J	HP10069
C***	HD / HD-J	HP1100	/	XD / XD-J	HP1245

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 REMOVE REAR WHEELS

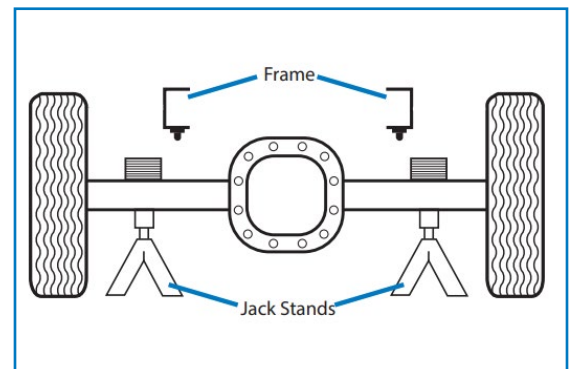
Place wheel chocks in front of and behind both front wheels.

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 (see Figure 1).

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

Remove rear wheels.



1

2 PRE-ASSEMBLE AIR SPRING

Install the NPT fitting into the port on the top of the air spring (see Figure 2).

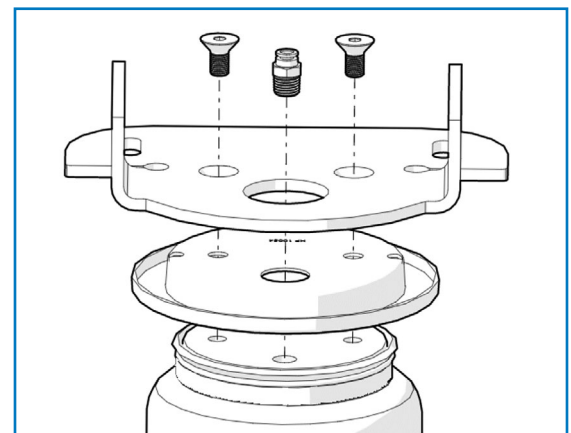
Tighten the fitting finger tight plus an additional 1.5 turns. The use of Teflon tape or thread sealant is recommended.

Set a roll plate on top of the air spring.

Insert two M10 x 1.5 x 35 mm hex bolts and two 3/8" flat washers into the slotted holes of the upper bracket (as shown in Figure 3) and place the bracket on top of the roll plate.

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

Torque countersunk bolts to 27 N•m (20 ft-lbs).



2

3 PRE-ASSEMBLE LOWER BRACKET

Assemble the lower axle bracket and lower air spring bracket (as shown in Figure 3).

Place two bolt head lock plates in position with flat sides against the inside of the lower bracket.

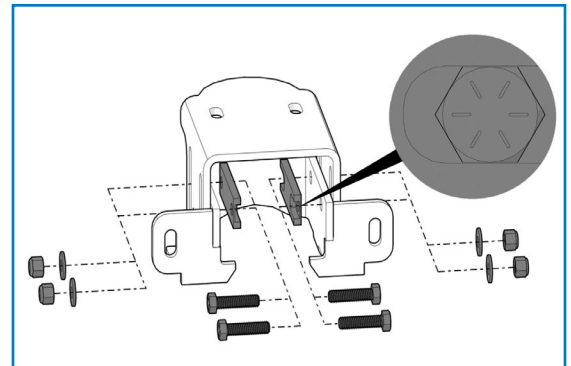
Align holes and insert four 3/8" – 16 x 1.5" hex bolts through the lock plates and the lower brackets.

Attach four 3/8" flat washers and four 3/8" nylon lock nuts onto the ends of the bolts.

Align hex heads of the bolts as per the image callout.

Hand-tighten nuts so that the bolt heads fall within the machined grooves of the lock plate, preventing rotation.

Snug up the bolts enough to prevent the brackets from freely sliding but still allow for adjustment when a small amount of force is applied.



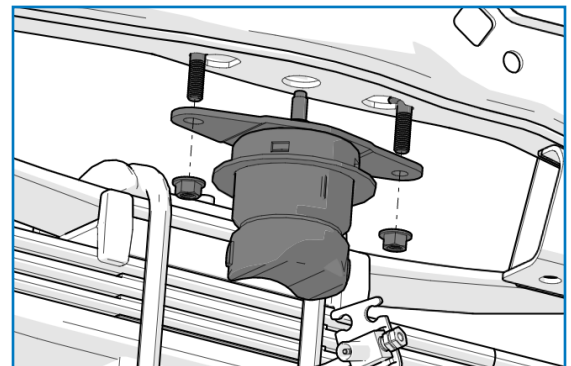
3

4 REMOVE JOUNCE BUMPER

Unbolt and remove the jounce bumper assembly from under the frame on both sides of the vehicle (as shown in Figure 4).

PLEASE NOTE: It may be necessary to use an impact tool to remove the nuts.

Remove the OEM bolts and retainer clips that attached the jounce bumper assembly to the frame and discard as they will not be reused in this installation.

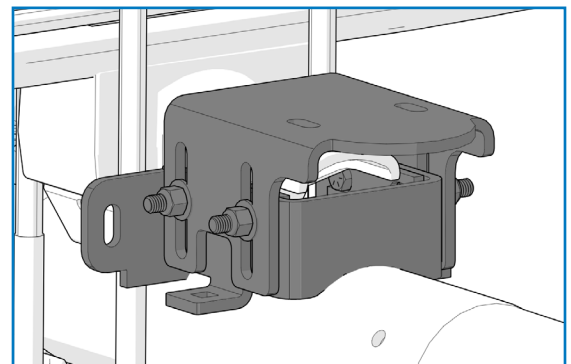


4

5 PLACE LOWER BRACKET

Twist the lower bracket assembly into position on the axle (as shown in Figure 5) with the axle bracket sitting on the axle and the air spring bracket positioned above the lift block (if equipped).

PLEASE NOTE: An ABS line on the driver's side may need to be unclipped from the fixed brake line bracket to prevent pinching between the axle and bracket.



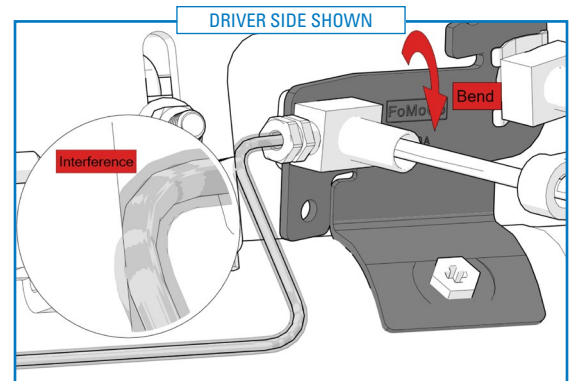
5

6 CHECK BRAKE LINES FOR INTERFERENCE

There may be interference between the lower bracket of the kit and the brake line (as seen in Figure 6).

Using caution not to pull or strain the brake lines: carefully bend the brake line bracket away from the lower air spring brackets (as shown with an arrow in Figure 6) to provide a gap between the two.

It may be necessary to unbolt the retaining bracket securing the brake line under the leaf pack to adequately bend the bracket without stressing the hard lines.

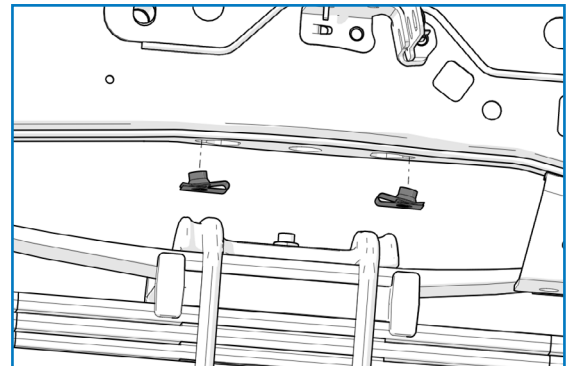


6

7 INSTALL CLIP-ON BARREL NUTS

Install the clip-on barrel nuts in the holes previously occupied by the jounce bumper hardware.

Orient the nuts (as shown in Figure 7) with the threaded portion towards the inside of the frame and the open ends of the clips facing away from each other.



7

8 INSTALL AIR SPRING ASSEMBLY

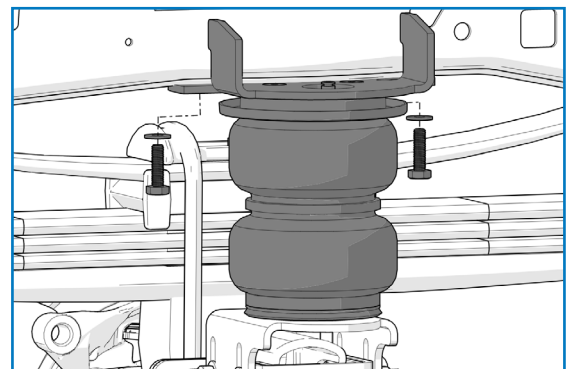
PLEASE NOTE: It may be necessary to raise the frame of the truck a few inches to allow more clearance to install the air spring assemblies.

Set the air spring assembly in position (as shown in Figure 8).

Secure the upper bracket to the frame by threading the M10 x 1.5" x 35mm hex bolts and two 3/8" flat washers into the previously installed barrel nuts.

Ensure the upper bracket sits flat against the bottom of the frame with the two vertical flanges resting against the inner surface of the frame.

Torque the hex bolts to 51.5 N•m (38 ft-lbs).



8

9 ATTACH AIR SPRING LOWER BRACKET

Raise the frame of the truck a few inches to provide more clearance to attach the air spring assemblies.

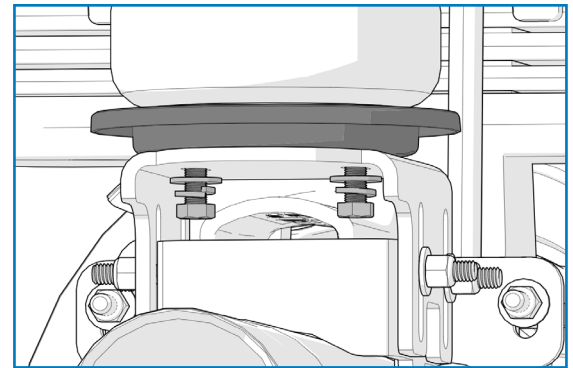
Pull the lower bracket assembly to extend it as much as possible.

Insert a roll plate between the air spring and the air spring bracket (as shown in Figure 9A).

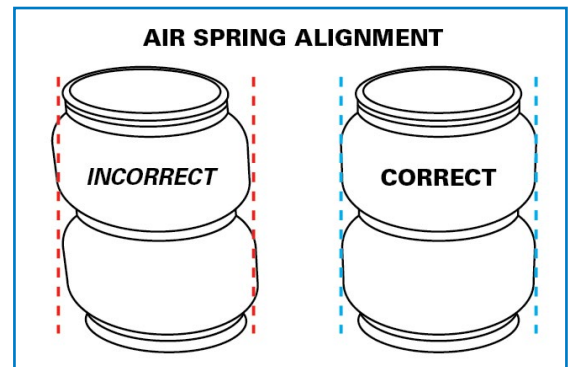
Align the holes in the bracket, roll plate and air spring, and secure the assembly with two 3/8" – 24 x 7/8" hex bolts, two 3/8" flat washers and two 3/8" split lock washers as shown.

Hold the lower axle bracket roughly in its final installed position and adjust the two bolts in the slotted holes of the lower air bag bracket to align the air spring as vertical as possible (see Figure 9B for reference).

When positioned, tighten the two hex head bolts to 27 N•m (20 ft-lbs).



9A



9B

10 CHECK LOWER BRACKET FLANGES FOR CONTACT

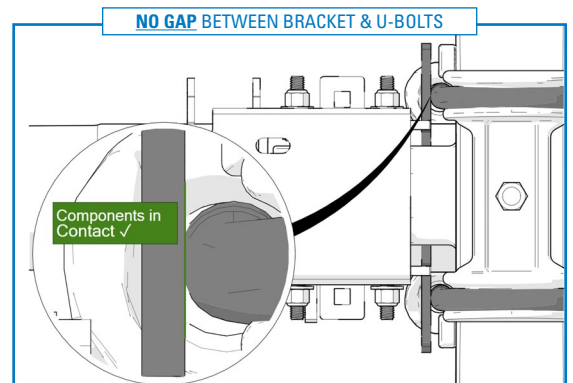
Ensure lower axle bracket is fully resting on the vehicle axle and push the air spring assembly towards the leaf pack.

At its furthest position, observe bracket flanges for contact with the leaf spring U-bolts.

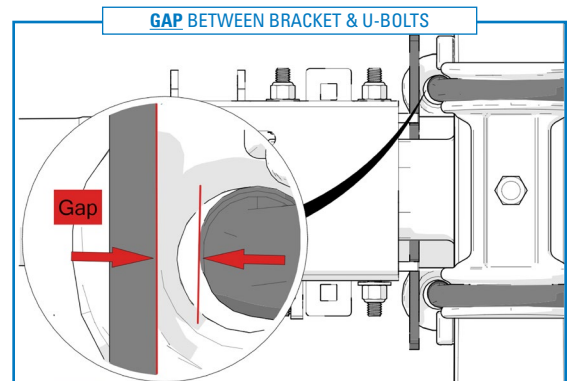
! IMPORTANT INSTALL NOTE:

- If the lower axle bracket is in contact with the leaf spring U-bolts (as shown in Figure 10A) spacers are **NOT REQUIRED**.
Omit Step 11 and proceed to Step 12 on the following page.
- If there is **ANY GAP** between the lower axle bracket and the leaf spring U-bolts (as shown in Figure 10B), **spacers must be installed** as per Step 11 on the following page.

PLEASE NOTE: In some vehicles, the lower bracket may contact the E-brake hanger on the driver's side when the spacers are installed. If contact occurs, remove the E-brake hanger from the vehicle. A relocation bracket will be installed in a later step.



10A



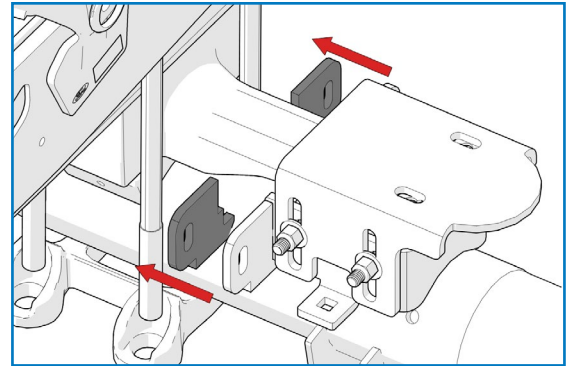
10B

11 INSTALL SPACERS

Place the two spacers provided in between the lower bracket flanges and leaf pack U-bolts (as shown in Figure 11).

Align spacers with flanges, ensuring edges and slot holes align.

Hold spacers in position while completing the next step.



11

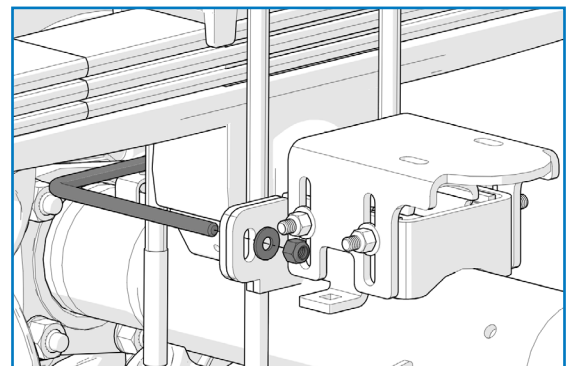
12 SECURE U-BOLT

Insert the square U-bolt around the leaf pack and through the slot holes on the spacers (if present) and lower axle bracket flanges.

PLEASE NOTE: Figure 12 shows installation when spacers are present

Secure the U-bolt using two 3/8" flat washers & two 3/8" nylon lock nuts.

Do not fully tighten yet.



12

13 ATTACH AXLE STRAP

Insert a 3/8" – 16 x 5" carriage bolt into each of the square holes on the lower axle bracket.

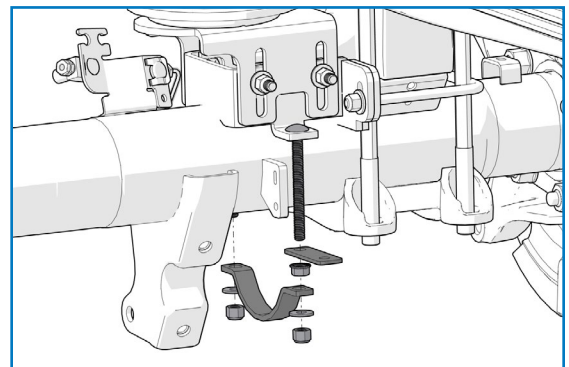
If the E-Brake hanger was removed in Step 10, install the brake line relocation bracket and secure with a 3/8" serrated flange nut (as shown in Figure 13).

Torque the flange nut to 27 N•m (20 ft-lbs).

Attach the axle strap to the carriage bolts (as shown in Figure 13) using two 3/8" flat washers and two 3/8" nylon lock nuts.

Tighten the two nylon lock nuts on the axle strap to 27 N•m (20 ft-lbs).

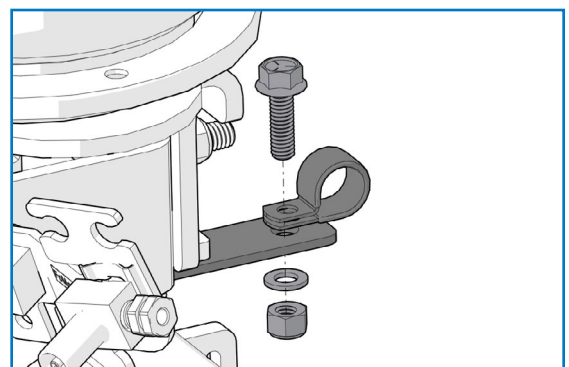
Tighten the two nylon lock nuts securing the U-Bolt to 27 N•m (20 ft-lbs).



13

14 Secure the E-brake line to the relocation bracket using the 5/8" adel clamp, 5/16" – 18 x 1" flange bolt, 5/16" washer & 5/16" nylon lock nut.

Torque flange nut to 17.8 N•m (13.1 ft-lbs).



14

15 SET AIR SPRING BRACKET HEIGHT

For vehicles **WITH** a lift block:

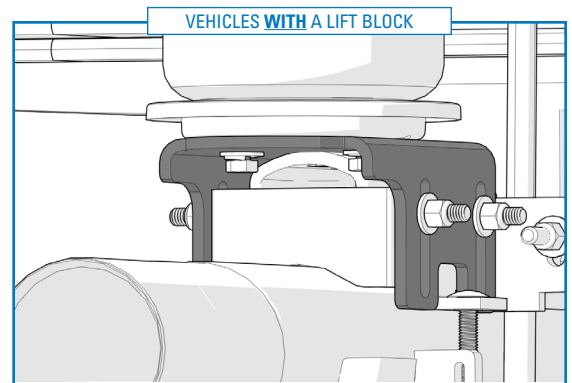
Lower the air spring bracket until it just touches the lift block (shown in Figure 15A).

Torque the four hex bolts to 51.5 N•m (38 ft-lbs) to lock this height.

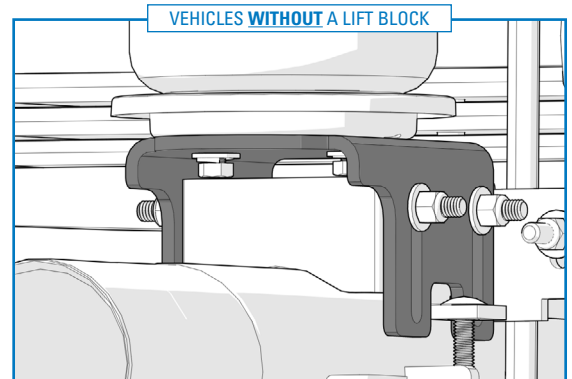
For vehicles **WITHOUT** a lift block:

Lower the air spring bracket to the lowest possible position (shown in Figure 15B) that does not result in interference with other components.

Torque the four hex bolts to 51.5 N•m (38 ft-lbs).



15A



15B

16 INSTALL HEAT SHIELD

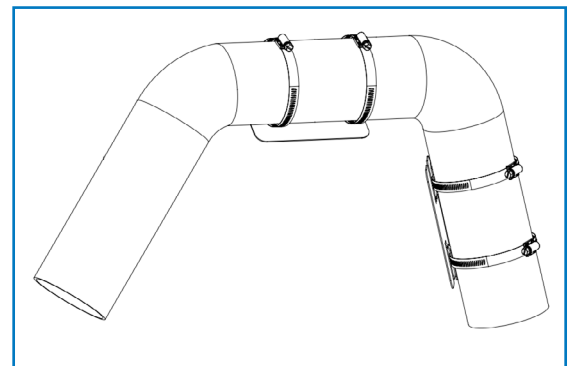
On the passenger side of the vehicle, the exhaust pipe bends around the axle near the air spring assembly.

Two heat shields are supplied to provide increased protection from the heat.

Bend tabs on the heat shields so the required ½" of dead space exists between the heat shield and exhaust when attached.

Attach the heat shields to the exhaust pipe using two ring clamps (as shown in Figure 16).

Each hose clamp holds a tab against exhaust pipe.



16

INSTALL AIR LINE

Two fill valves are provided in this kit. The most common place to install them is in place of the license plate fasteners. Alternatively, two 5/16" holes can be drilled in a location of your choosing.

Cut the air line assembly into two equal lengths with the hose cutter provided in this kit or a sharp utility knife.

! **PLEASE NOTE:** *This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with a hose cutter or a sharp utility knife.*

Install one air line at a time starting at the fill valve location. 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 A for assembly). There should be enough valve exposed after installation – approximately 1/2" – to easily apply a pressure gauge or an air chuck.

Route the air line back to the NPT fitting on the air spring, then cut the hose to length. 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 the air lines using the provided tie-straps, away from any moving items and heat sources.

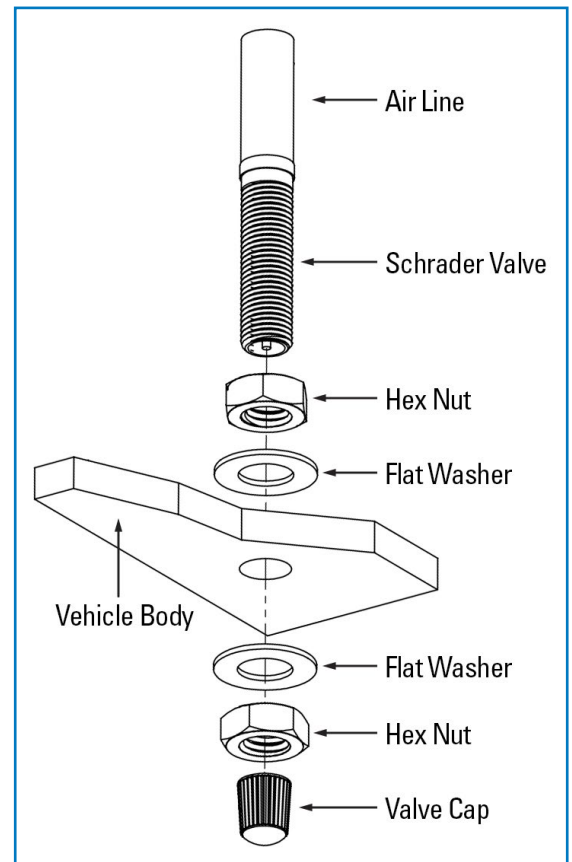
CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi (60 psi for in-coil bags), 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 B).

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.**



A



*Air Spring & NPT Air Fitting may differ between kits

B

CONGRATULATIONS! You have completed the install

After Installation continues on the following page.

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Thank you again, and congratulations on the installation of your Air Suspension kit.

AFTER COMPLETING THE INSTALLATION

- The air spring must have clearance between itself and the surrounding components to prevent any contact when spring is inflated or compressed. Trimming off excess bolt length may also be required to ensure no contact with the spring or other suspension components can be made once installed.
- If removed, re-install the wheels and torque fasteners to the manufacturer’s specifications. Re-torque all fasteners after the first 500 miles of driving.

OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum recommended pressure requirements:

PART #	SPRING STYLE	SPRING TYPE	MIN PSI	MAX PSI
HP10189	In-Coil	STANDARD DUTY	5 PSI	70 PSI
HP10560		STANDARD DUTY		
HP10001	Sleeve Style	STANDARD DUTY	10 PSI	100 PSI
HP10173		STANDARD DUTY		
HP10199		STANDARD DUTY		
HP10083	Single Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10083J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10000	Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10000J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10068	Large Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10438	Double Convoluted	EXTREME DUTY	5 PSI	100 PSI
HP10438J		EXTREME DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI

** Springs with a jounce bumper can be run at zero PSI when vehicle is unloaded only*

For safe and proper operation, never operate the vehicle over the maximum listed PSI in the air springs. Staying under the pressure limit will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and/or a void warranty.**

! It is recommended to check the air pressure in your air springs daily for first couple of days to ensure a leak has not developed.

Air springs are designed to maintain the vehicle’s 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

See additional warranty included with this kit for details.