

# Installation Manual



## AIR SUSPENSION KIT

Ford Transit 150 / 250 / 350 (2WD/4WD) (SRW)\*

**Will not fit** E-Transit models, 350HD or DRW 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.

**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**

An 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.**

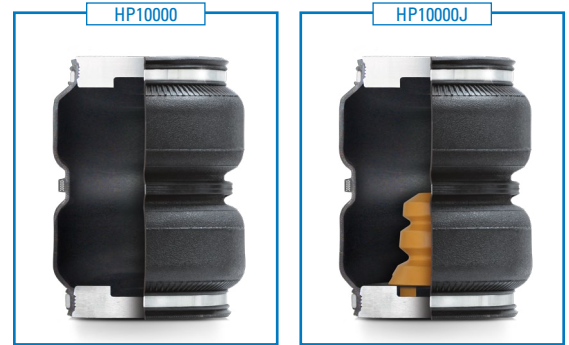
**!** **WARNING:** This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. **For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

**KIT CONTENTS**

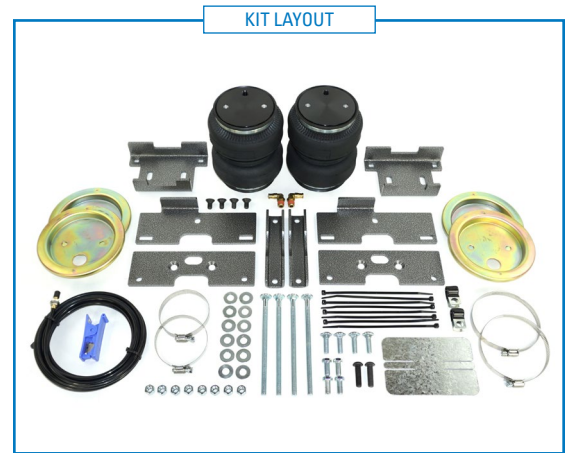
Please confirm the items below are provided in your kit before starting the installation. Reference the kit explosion diagram on the following page for part assembly.

HEAVY DUTY KITS		QTY	PART #
<b>A</b>	Double Convoluted Spring	2	HP10000

HEAVY DUTY JOUNCE BUMPER KITS		QTY	PART #
<b>B</b>	Double Convoluted Spring w/ Jounce Bumper	2	HP10000J



KIT CONTENTS		QTY	PART #
<b>C</b>	Roll Plate, 4.5" Diameter	4	HP10054
<b>D</b>	90° Swivel Fitting, 1/4" Hose To 1/4" NPT	2	HP1100
<b>E</b>	Frame Bracket	2	HP1500
<b>F</b>	Top Bracket	2	HP1501
<b>G</b>	Bottom Bracket	2	HP1502
<b>H</b>	Axle Strap	2	HP1383
<b>I</b>	Adel Clamp, 3/8"	2	HP1435
<b>J</b>	Bolt, 3/8" - 24 x 7/8" Hex Head	4	HP1002
<b>K</b>	Bolt, 3/8" - 24 x 3/4" Countersunk	4	HP1008
<b>L</b>	Bolt, 3/8" - 16 x 1.25" Carriage	4	HP1149
<b>M</b>	Bolt, 3/8" - 16 x 7" Carriage	4	HP1409
<b>N</b>	Bolt, M10 x 1.5 x 35mm Button Head	2	HP1414
<b>O</b>	Washer, 3/8" Flat	12	C18006
<b>P</b>	Nut, 3/8" Nylon Lock	8	HP1000
<b>Q</b>	Heat Shield	1	HP0012
<b>R</b>	Worm Gear Ring Clamp, 2.5" to 3.5"	2	HP1503
<b>S</b>	Worm Gear Ring Clamp, 3.5" to 4.5"	2	HP1001

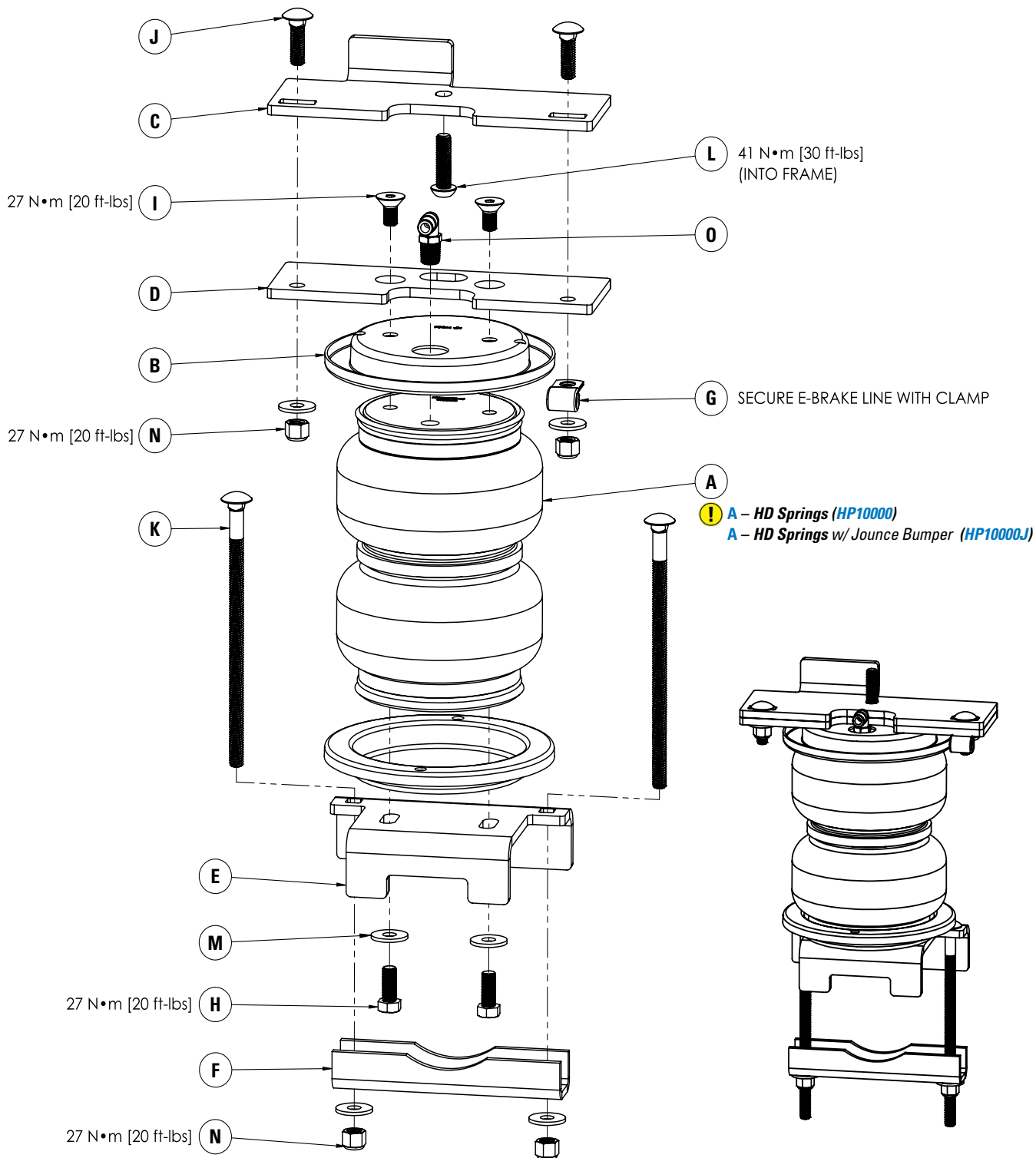


**REQUIRED TOOLS**

- 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)**



## INSTALLATION INSTRUCTIONS

### 1 MEASURE STOCK RIDE HEIGHT & CLEARANCE

Park the vehicle on a level surface and remove any unnecessary weight from the vehicle to attain a "Normal Ride Height".

Using a measuring tape, measure the distance between the center of the wheel hub and the bottom of the fender well (see Figure 1A for reference) this will give you your stock Normal Ride Height.

Note the ride height for all four tires.

Check the clearance between the outside of the frame and the inside of the rear tires (as shown in red in Figure 1B), a minimum of 5" is required for adequate air spring clearance.

### REMOVE REAR WHEELS

**+** **PLEASE NOTE:** This step is optional for this installation but will make the install easier to complete.

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 (as shown in Figure 1B).

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

Remove rear wheels.

### 2 ASSEMBLING THE AIR SPRING:

Set a roll plate on top of the air spring (as shown Figure 2A).

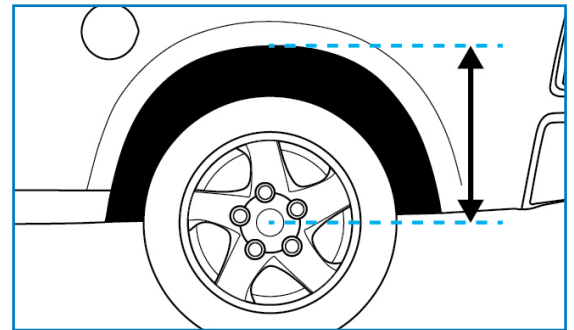
Install the 90° swivel NPT fitting into the port on top of the air spring, finger tight plus 1 ½ turns.

**!** **CAUTION:** Never back off an installed NPT air fitting. Loosening the fitting will corrupt the seal and contribute leakage and failure.

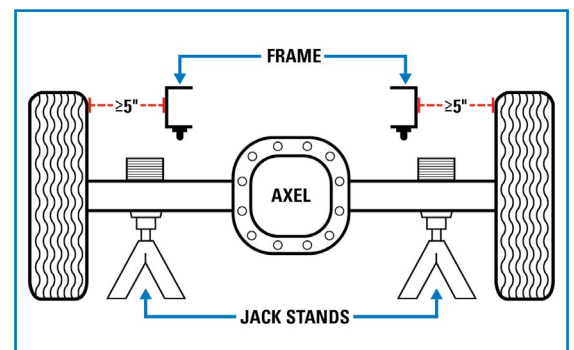
**+** Apply thread sealant to the fitting threads to prevent leaks and allow for deeper seating of the threads.

Set the top bracket on top of the air spring, and install two 3/8" – 24 x 7/8" Flat Head Socket Cap Screws (as shown in Figure 2B).

Torque to 27 N•m (20 ft-lbs).



1A



1B



2A



2B

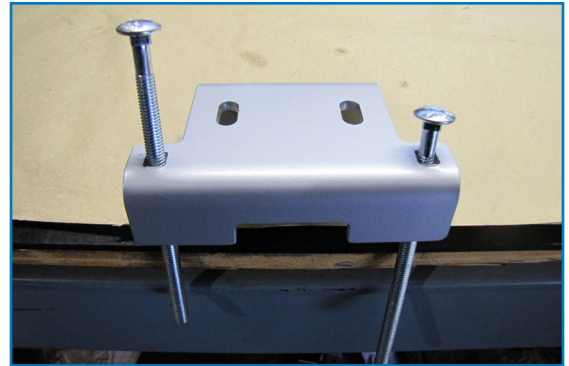
Flip the assembly upside down and set a roll plate on the bottom of the air spring.

Insert the 3/8" – 24 x 7" carriage bolts into the bottom bracket square holes, (as shown in Figure 2C).

⊕ *Carriage bolts must be installed in the bottom bracket before attaching to the air spring assembly.*

Install the lower brackets onto the air spring assembly with two 3/8" – 24 x 7/8" Hex Head Cap Screws, two 3/8" flat washers.

Leave loose at this time for adjustments.



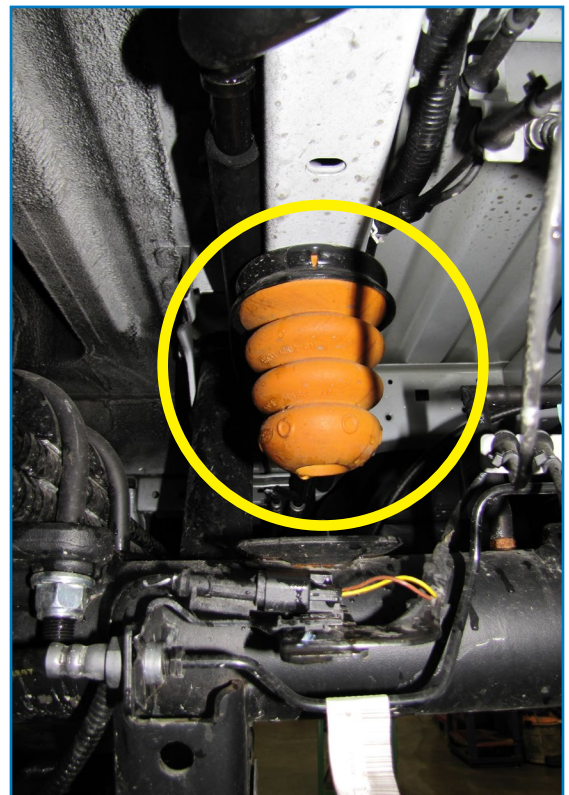
2C

### 3 PREP WORK:

Unbolt and remove the stock jounce bumpers from under the frame rails on both sides (see Figure 3A).

Insert two 3/8" – 16 X 1.25" carriage bolts through the frame bracket.

The head of the bolts should be on the flange side of the bracket (as shown in Figure 3B).



3A



3B

#### 4 INSTALLING THE AIR SPRING ASSEMBLIES:

Install the upper frame bracket assembly onto the underside of the frame using the M10 - 1.50 x 35 Button Head Screws making sure the flange on the bracket is on the inside of the frame rail and pointing up (as shown in Figure 4A).

Torque screws to 41 N•m (30 ft-lbs).

Lower the axle or raise the body to obtain enough clearance between the axle and the frame so that the air spring assemblies may be put into position.

Install both drivers and passengers side assemblies, making sure that the carriage bolt on the bottom bracket towards the rear of the vehicle is sitting between the brake/ABS lines and the axle (see Figure 4B).

**+** *The air fitting on the assemblies face the outboard (tire side) of the vehicle also the lower bracket will be nested over the jounce bumper strike plate.*

Raise the axle or lower the body of the vehicle making sure that the carriage bolts previously installed in the frame bracket nests into the holes of the air spring top bracket.

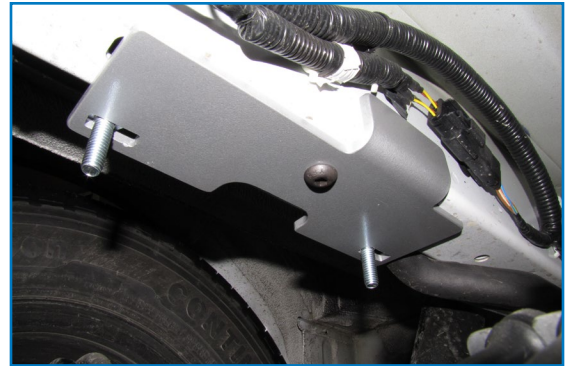
**On the rearward carriage bolts only**, it will be necessary to install the cable clamps on both sides of the assemblies (see Figure 4C).

Cap all the carriage bolts with 3/8" washers and nylon lock nuts.

Leave them loose at this time.

Set the axle strap over the long carriage bolts hanging down under the axle with two 3/8" flat washers and 3/8" nyloc nuts.

Leave loose at this time.



4A



4B



4C

## 5 ADJUSTING THE AIR SPRING ASSEMBLIES

The air spring top bracket is slotted so that the air spring can be adjusted to the front or back, adjust the air spring so that it is sitting vertically straight (as shown in Figure 5).

Torque the upper hardware to 27 N•m (20 ft-lbs).

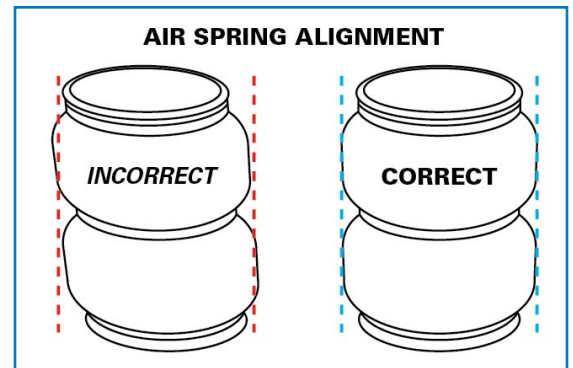
Once the lower bracket is parallel to the upper bracket, the axle strap on the lower bracket can be torqued evenly to 27 N•m (20 ft-lbs).

- ⊕ *It may be necessary to pull the brake line away from the carriage bolt slightly on the right hand side to gain clearance so the line will not rub on the bolt.*

Once the upper and lower brackets are tight, you will need to tighten the lower air spring mounting hardware on the lower brackets.

Slide the bellows along the slots of the lower bracket for the final alignment of the air spring.

Torque the lower mounting hardware to 27 N•m (20 ft-lbs).



5

## 6 ADJUSTING ABS LINE

- ⚠ *On the driver side behind the axle, the ABS line may need to be adjusted so that it will not rub on the lower bracket.*

To do this pull the line out of the holder and rotate it 180° then push it back into the holder.

This will change the position of the line so that it will not come in contact with the lower bracket.

## 7 INSTALL HEAT SHIELD

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

Attach the heat shield to the exhaust pipe on passenger side using two ring clamps (shown in Figure 7).

Each hose clamp holds a tab against exhaust pipe.



7



**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.

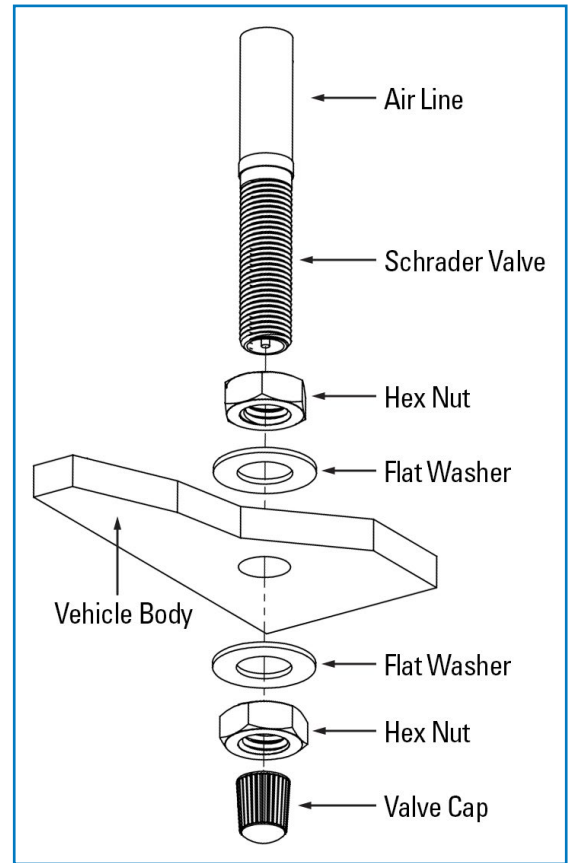
**CHECK SYSTEM FOR LEAKS**

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).

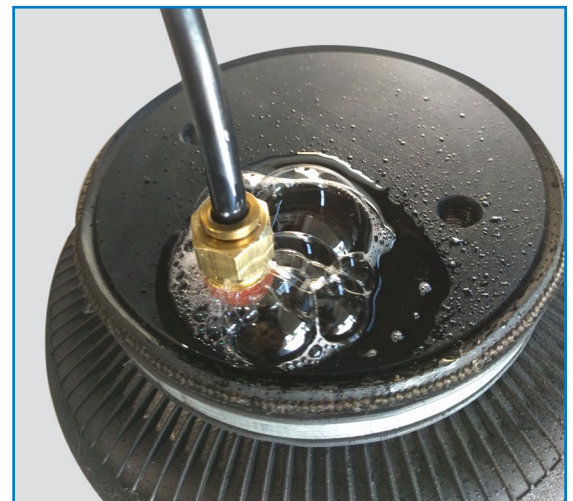
**Repair as necessary and retest.**

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.**

**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.**