

# Installation Manual



## AIR SUSPENSION KIT

Ford Stripped Chassis F53 (Class A Motorhome)\*

**Will not fit** models with 10886 kg [24000 lb] or 11793 kg [26000 lb] GVRW

*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.

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**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](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.

KIT CONTENTS		QTY	PART #
<b>A</b>	Large Double Convuluted Spring	2	HP10068
<b>B</b>	Roll Plate	4	HP10069
<b>C</b>	Bracket, Upper	2	HP0044
<b>D</b>	Bracket, Lower	2	HP1834
<b>E</b>	Bracket, Spacer	4	HP1835
<b>F</b>	U-Bolt, 4 5/8" X 6 1/2" Square	4	HP1836
<b>G</b>	Bolt, 3/8" – 24 x 7/8" Hex Head	8	HP1002
<b>H</b>	Bolt, 3/8" – 16 x 1.5" Hex Head	8	C18018
<b>I</b>	Washer, 3/8" Flat	16	C653
<b>J</b>	Washer, 3/8" Thick Flat	8	HP1135
<b>K</b>	Washer, 3/8" Flat, 1.25" OD	8	HP1013
<b>L</b>	Washer, 3/8" Split Lock	8	C18007
<b>M</b>	Nut, 3/8" Nylon Lock	16	HP1000
<b>N</b>	Fitting, 90° Push-to-Connect	2	HP1245

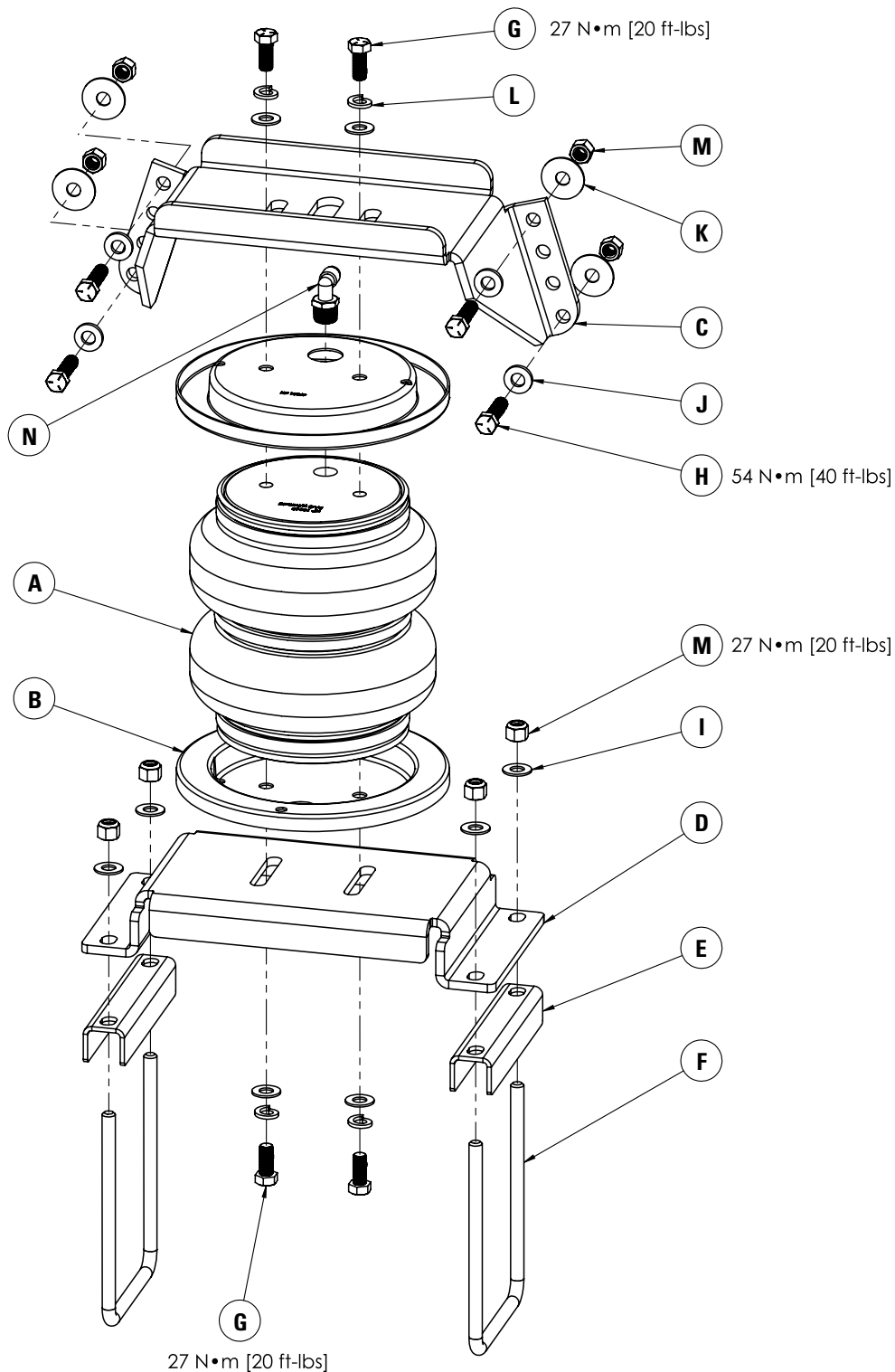


**REQUIRED TOOLS**

- 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)**



**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:**

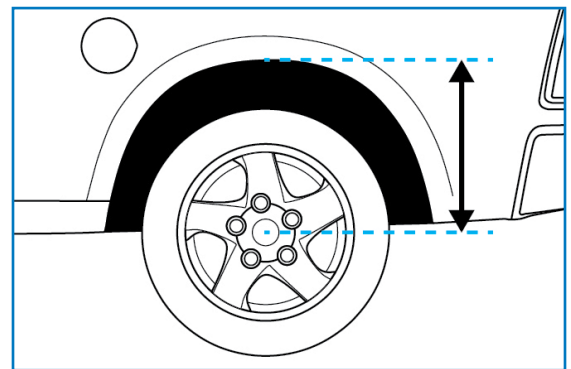
***This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon airline will distort the line and cause the connection to leak. THE AIRLINE MUST BE CUT OFF SQUARELY WITH THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE.***

**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.



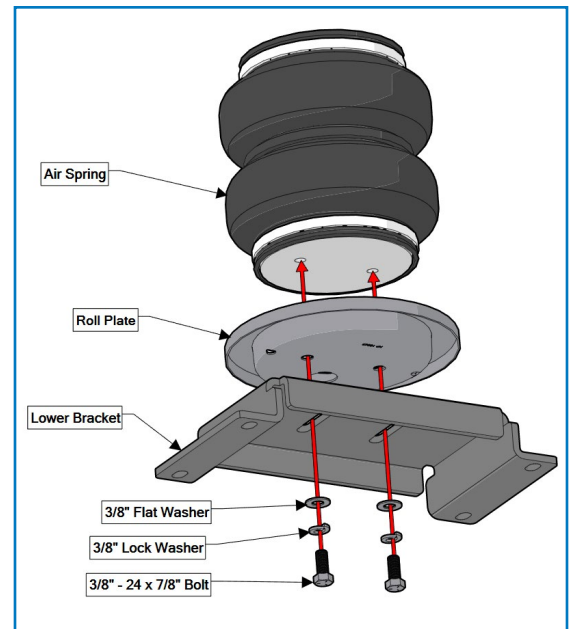
2

### 3 ATTACH LOWER BRACKETS

Place a roll plate and lower bracket on the bottom of the air spring (as shown in Figure 3).

Align all holes and attach with two 3/8" – 16 x 7/8" bolts, two 3/8" lock washers and two 3/8" flat washers.

Tighten fasteners finger tight to allow for spring alignment in later step.



3

### 4 ATTACH UPPER BRACKETS

Install a swivel fitting in 1/8" NPT port on top of the air spring.

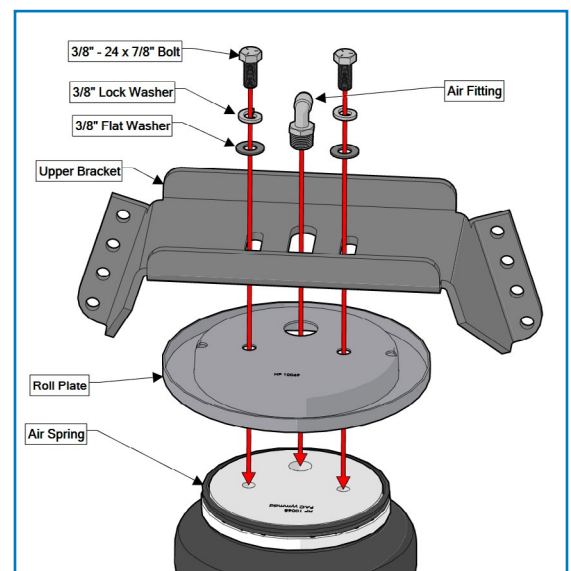
Thread fitting into air spring finger tight, plus an additional 1.5 turns.

**+** *Some fittings have thread sealant pre-applied on threads, If threads have no visible coating, apply thread sealant or Teflon tape.*

Place a roll plate and upper bracket on the top of the air spring (as shown in Figure 4).

Align all holes and attach with two 3/8" – 16 x 7/8" bolts, two 3/8" lock washers and two 3/8" flat washers.

Tighten fasteners finger tight to allow for spring alignment in later step.



4

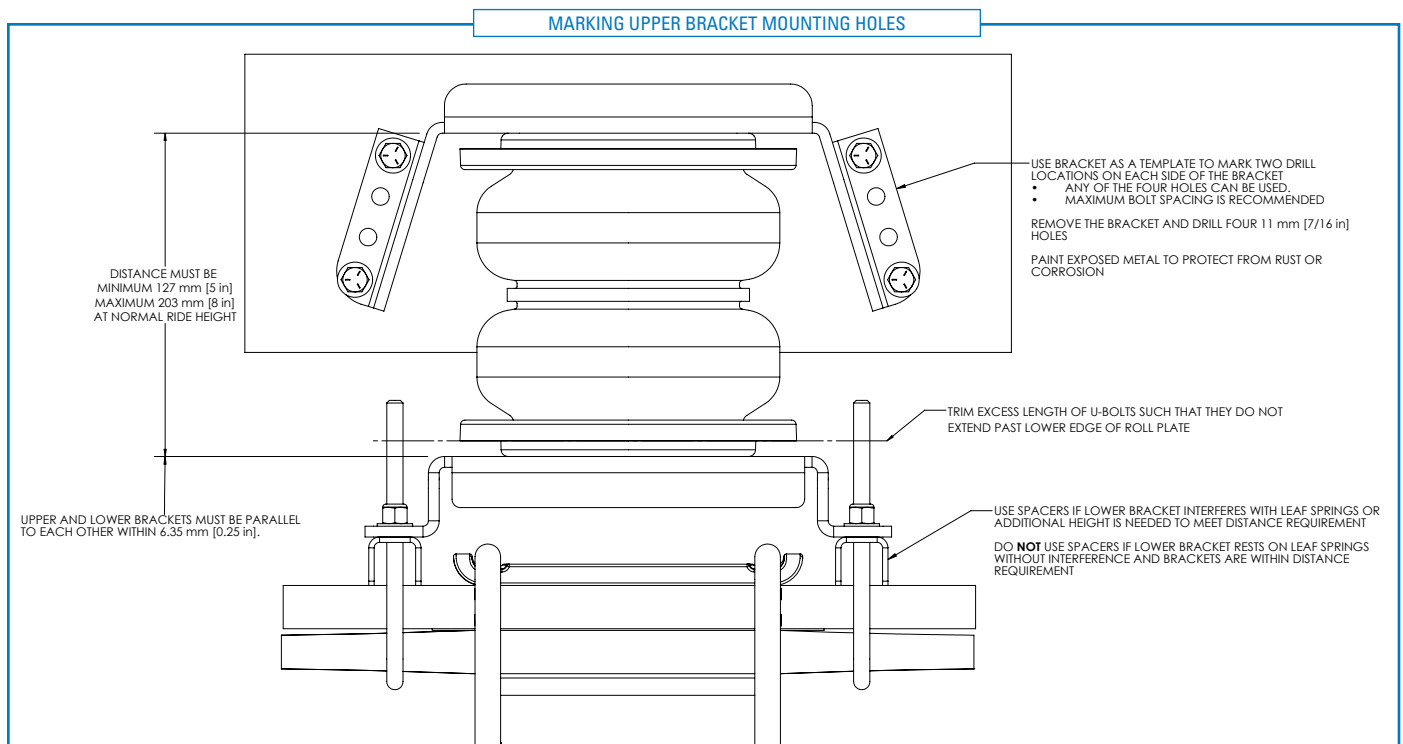
### 5 MARKING UPPER BRACKET MOUNTING HOLES

**!** **PLEASE NOTE:** These steps are important for correct kit setup.

- Ensure there is no unnecessary weight in the vehicle to attain normal ride height.
- Also ensure the rear suspension is fully supporting the vehicle weight.

Refer to the diagram (Figure 5) on the following page for assembly installation requirements.

*...Step continues on the following page*



5

Place the air spring assembly on top of the leaf spring with the lower bracket centered above the axle tube. Install the spacer brackets if needed.

Position the upper bracket such that the mounting height requirement is achieved and it is parallel to the lower bracket.

**+** *Using clamps to clamp the upper bracket to the frame can help hold it in place for finer adjustment and positioning.*

When the correct position is attained, choose the best two mounting holes on each side of the bracket and mark the centers. Maximum hole spacing is recommended.

## 6 DRILL UPPER BRACKET MOUNTING HOLES

Remove the air spring assembly from the vehicle and drill four 11mm [7/16" holes] through the frame in the marked locations

**!** *Use caution when drilling to not damage any wiring, fuel lines or other vehicle components behind the drill location.*

After drilling, paint the exposed metal to protect from rust or corrosion

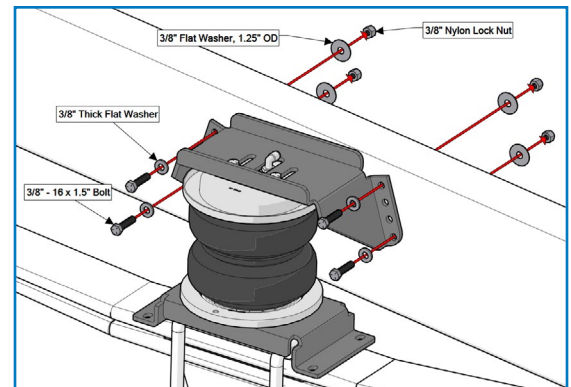
7

## 7 SECURE UPPER BRACKET

Place the air spring assembly back in the vehicle.

Secure the upper bracket to the frame using four 3/8" – 16 x 1.5" bolts, 3/8" thick flat washers, large OD washers and nylon lock nuts as shown in Figure 7.

Torque all bolts to 54 N•m [40 ft-lbs]



7

## 8 SECURE LOWER BRACKET

Attach the lower bracket (and spacer brackets if used) to the leaf spring with two U-bolts, four 3/8" flat washers and four 3/8" nylon lock nuts (as shown in Figure 8A).

Leave the fasteners loose at this time.

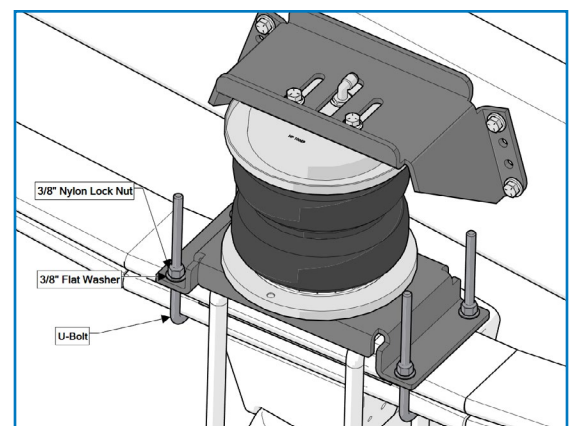
Position the air spring to achieve the best vertical alignment (as per Figure 8B).

When spring is aligned, torque the upper and lower air spring bolts to 27 N•m [20 ft-lbs].

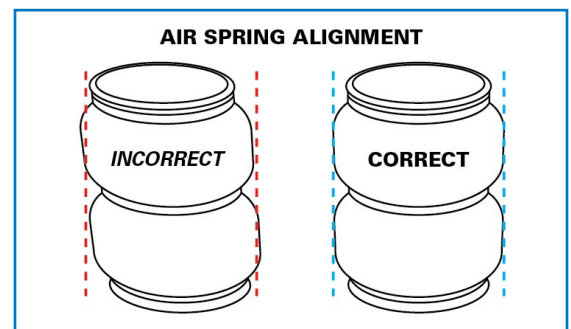
Secure the lower bracket by tightening the nuts on the U-bolts to 27 N•m [20 ft-lbs].

When fasteners are tight trim the excess U-bolt length such that it does not extend above the lower edge of the roll plate.

**⚠ WARNING: Failure to trim U-bolts can result in air bag puncture during operation and may void your warranty.**



8A



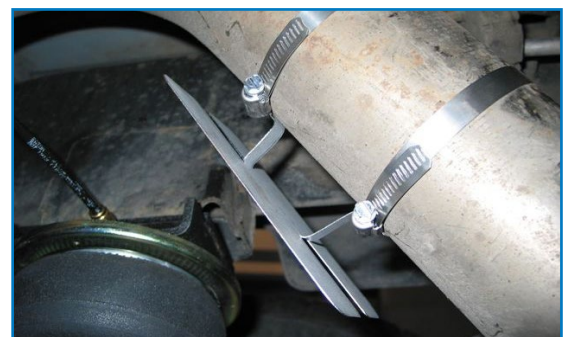
8B

## 9 INSTALL HEAT SHIELD

Bend tabs on the heat shield so the required 1/2" 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 9).

Each hose clamp holds a tab against exhaust pipe.



9



## 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.

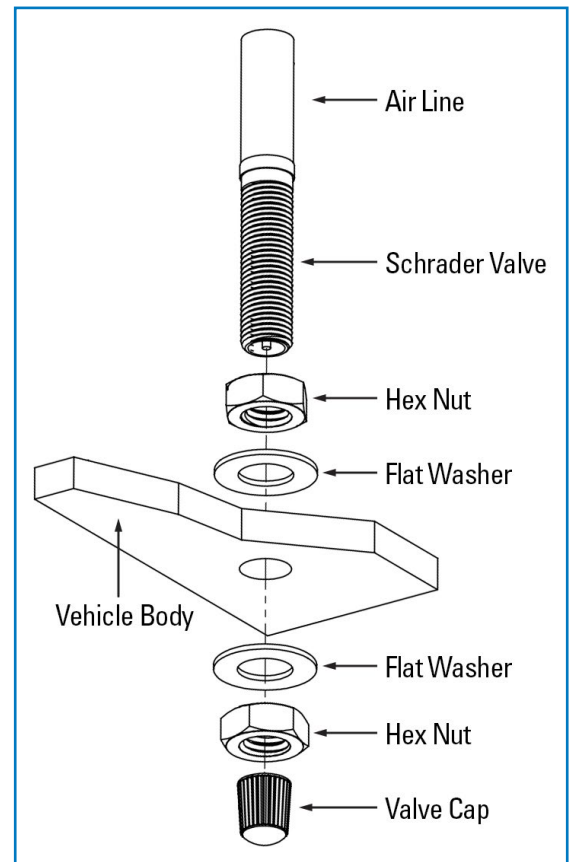
## CHECK SYSTEM FOR LEAKS

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).

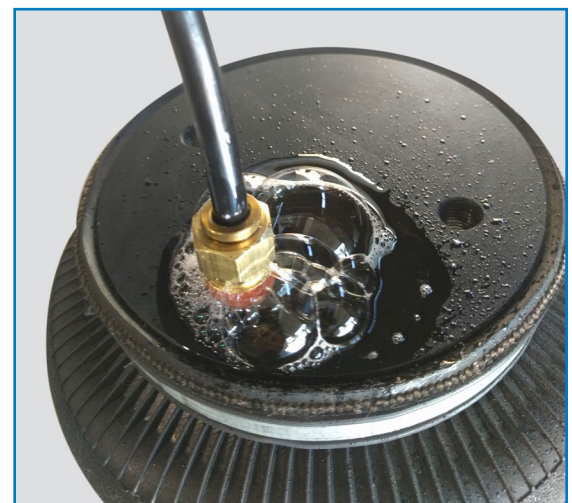
**Repair as necessary and retest.**

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.**