

Installation Manual



AIR SUSPENSION KIT

Ford F-450/F-550/F-600 Commercial Cab & Chassis (2WD/4WD)*

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

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 #
A	Air Spring	2	HP10068
B	Roll Plate	4	HP10069
C	Bracket, Upper	2	HP0044
D	Bracket, Lower	2	HP0104
E	Bracket, Spacer	4	HP0028
F	U-Bolt, 4 5/8" X 6 1/2" Square	4	HP1018
G	Bolt, 3/8" - 24 X 7/8" Hex Head	8	HP1002
H	Bolt, 3/8"-16 X 1.5" Hex Head	8	C18018
I	Washer, 3/8" Flat	16	C653
J	Washer, 3/8" Thick Flat	8	HP1135
K	Washer, 3/8" Flat, 1.25" OD	8	HP1013
L	Washer, 3/8" Split Lock	8	C18007
M	Nut, 3/8" Nylon Lock	16	HP1000
N	Fitting, 90° Brass	2	HP1245



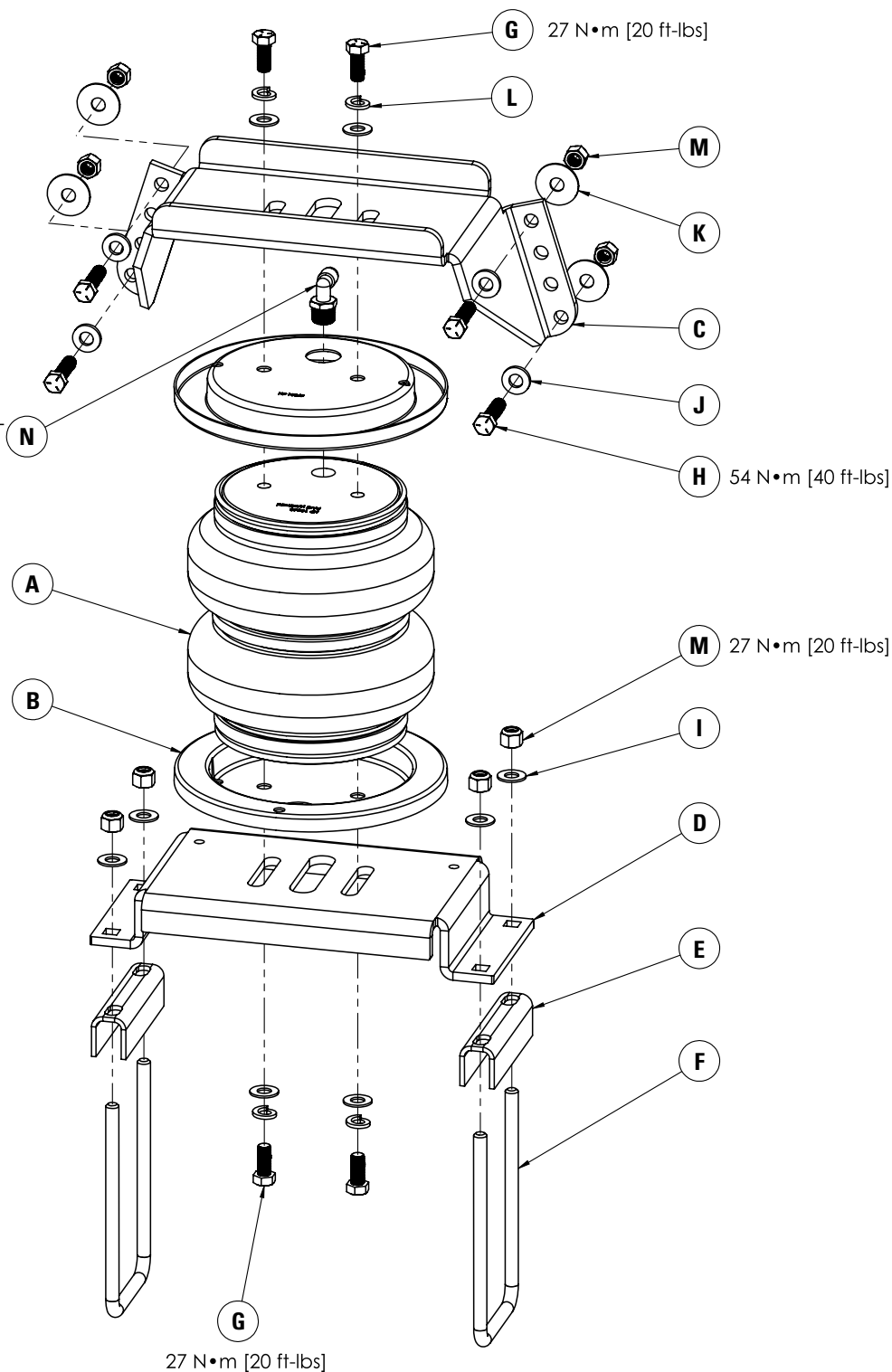
REQUIRED TOOLS

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 9/16" Crow Foot 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

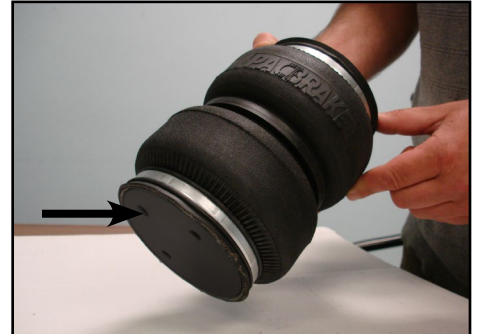
DRIVER SIDE ASSEMBLY SHOWN (Passenger side assembly is mirrored)

THREAD FITTING INTO AIR SPRING
FINGER TIGHT, PLUS AN ADDITIONAL
1.5 TURNS.
SOME FITTINGS HAVE SEALANT PRE-
APPLIED ON THREADS. IF THREADS
HAVE NO VISIBLE COATING, APPLY
THREAD SEALANT OR TEFLON TAPE.



INSTALLATION INSTRUCTIONS**1 PREASSEMBLY OF THE AIR SPRINGS ON THE LOWER BRACKET**

Locate the end of the air spring with the $\frac{1}{8}$ " NPT air port, place this side down with the air port away from you.



- 2** Place the roll plate over the end of the air spring, aligning the two mounting holes (rounded end towards the air spring). Then, place the lower mounting bracket with the flange towards you over the roll plate and air spring aligning the two mounting holes.



- 3** Using the two $\frac{3}{8}$ " NF x $\frac{7}{8}$ " capscrews, flat and lock washers, loosely fasten the assembly together. Do not tighten the capscrews fully until final adjustment is performed in step 8.

Repeat steps 1 - 3 on the other side

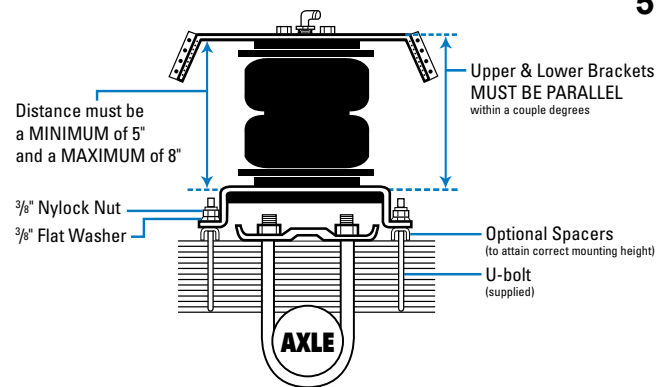
**4 INSTALLATION ON THE VEHICLE**

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

Raise the rear axle with a floor jack enough to remove both rear wheels and attain a comfortable working height. Place two jack stands under the axle as shown in the photo. Lower the floor jack until the vehicles axle is supported by the jack stands.



- 5** Place the lower air spring assembly on top of the leaf spring with the flanged side of the lower bracket facing outward. Center the lower bracket above the center of the axle tube. Place the upper bracket on top of the air spring assembly.

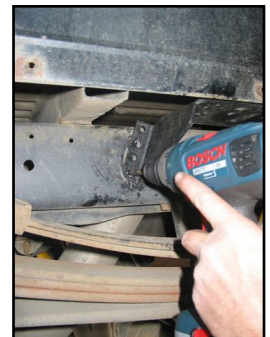
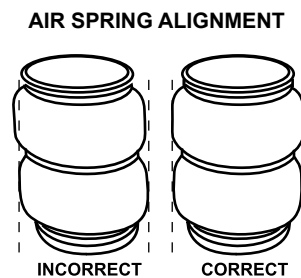


- 6** Using the 2 "C" clamps, clamp the upper bracket to the frame. If necessary, install the frame to bracket spacers. Ensure the center of the brackets are centered above the axle for correct alignment. Ensure the minimum and maximum distances (from step 5) are achieved and the brackets are parallel to each other. 4 spacer brackets are provided to attain correct mounting height if necessary, install them between the leaf spring and the lower bracket.

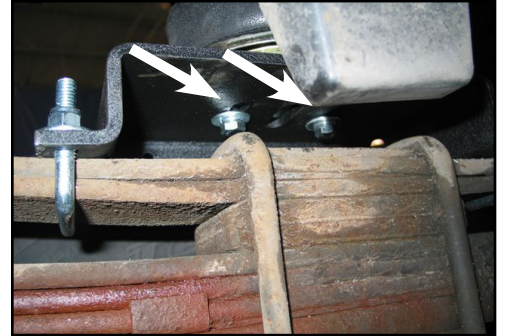
NOTE: Remove the lower air spring assembly when drilling the holes in the frame to avoid metal chips falling into the lower roll plate cavity. Install the swivel fitting into the top of the air spring. It is recommended to use teflon tape or some form of thread sealant to prevent air leaks. Finger tighten the swivel fitting and turn an extra 1.5 turns to tighten.



- 7** Once the correct position of the upper bracket is confirmed choose the 2 best mounting holes in each flange, top and bottom holes preferred. Check the inside of the frame for obstructions like electrical harnesses before drilling. Using the bracket as a template drill 4- 3/8" mounting holes. Fasten the bracket using the 3/8" x 1 1/2" fasteners, small O.D. washers under the head of the fastener and the large O.D. washers on the inside of the frame, the nylock nuts and any spacers required between the upper bracket and the frame. Torque the fasteners to 40 ft-lbs.



- 8** Reinstall the lower air spring assembly. Using the $\frac{3}{8}$ " x $\frac{7}{8}$ " capscrews, flat and lock washers loosely fasten the top of the air spring to the upper bracket. Install the correct "U" bolts around the leaf spring and through the two holes in the lower bracket. Adjust the air spring on their brackets to achieve correct alignment. Once the correct alignment is achieved, tighten the upper and lower brackets to the air spring. Torque to 20 ft-lbs.



8

- 9** Tighten the front and rear "U" bolts around the leaf spring pack. Vehicles with overload springs use the shorter "U" bolts around the overload leaf. Vehicles without overload springs use the longer "U" bolts around the entire spring pack. Use the nylock nuts and small O.D. flat washers, torque to 16 ft-lbs. Cut off the threaded portion of the "U" bolt above the nyloc nut.

Repeat steps 4 to 10 on the other side of the vehicle.

Reinstall the inner fender liner if removed. A spacer and 1/4" fastener is provided to replace the center capscrew and space the liner away from the air spring.



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).

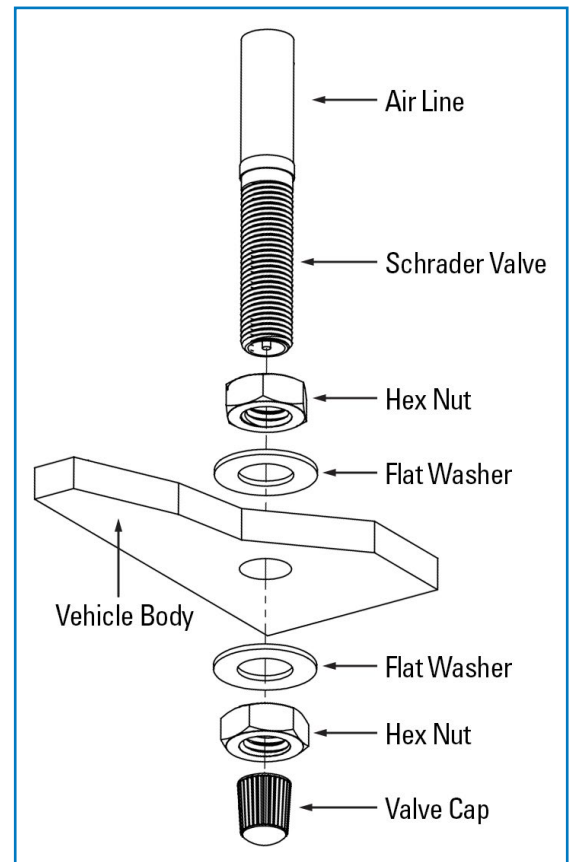
Repair as necessary and retest.

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.

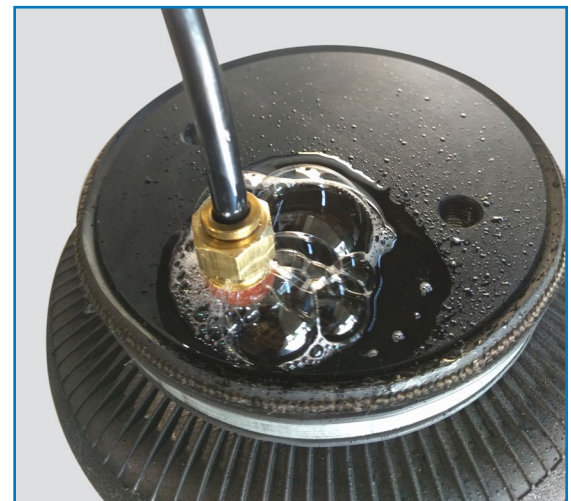
⚠ Leak must be repaired, and then retested until no leaks exist.

CONGRATULATIONS! You have completed the install

After Installation continues on the following page.



A



*Air Spring & NPT Air Fitting may differ between kits

B

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 Convuluted	HEAVY DUTY	5 PSI	100 PSI
HP10083J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10000	Double Convuluted	HEAVY DUTY	5 PSI	100 PSI
HP10000J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10068	Large Double Convuluted	HEAVY DUTY	5 PSI	100 PSI
HP10438	Double Convuluted	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.