

Installation Manual



10153/10155 KIT

HP10153 Ford F-150 Pickup (2WD/4WD)*

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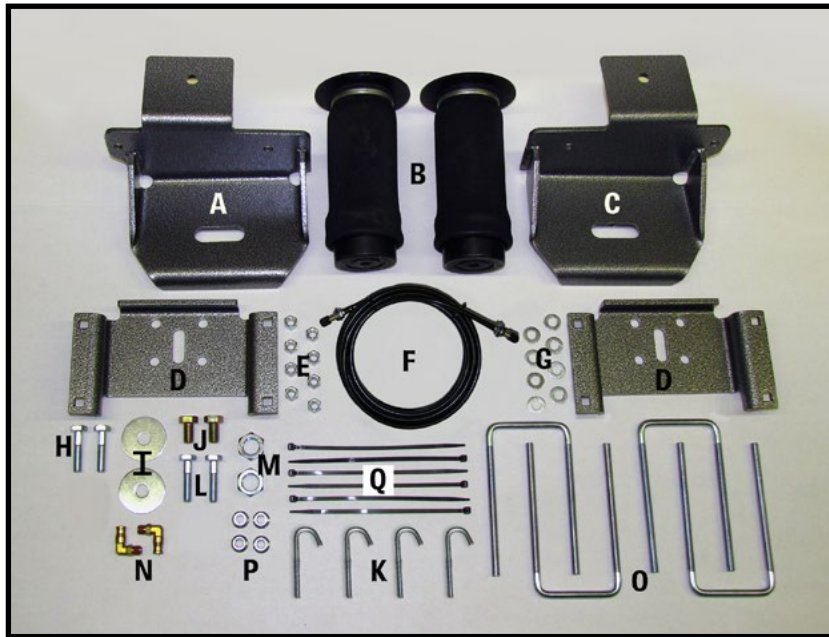
Use the most advanced air springs on the market to eliminate your vehicle's sag, sway and bottoming out. This heavy duty air suspension kit levels your truck's stance while providing added support for an overall smooth and safe ride.

* See application guide for proper fitment.

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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*



CAUTION:

This kit includes “push to connect OR barbed” airline fittings. They require the end of the airline to be round, square and cleanly cut to ensure the internal seal will not leak. The airline must only be cut with a sharp razor knife or a hose cutter.

NOTE:

Do not apply air pressure to the air spring until advised to in Step 9.

Make sure all the items shown in the photo are provided in your kit before starting the installation.

KIT CONTENTS (HP10153)

A Upper Bracket, Left (1)	HP0132
B Air Spring (2)	HP10173 (HP10153 kits) HP10001 (HP10155 kits)
C Upper Bracket, Right (1)	HP0134
D Lower Bracket (2)	HP0135
E Nut, Nyloc, 3/8" -16 (8)	HP1000
F Air Line / Valve Assembly	HP1344
G Washer, Flat, 3/8" (8)	C653
H Cap Screw, M10 -1.25 x 45mm (2)	HP1336
I Washer, Flat, 1/2" (2)	HP1010
J Cap Screw, 1/2" - 13 x 7/8" (2)	HP1077
K J-Bolt, 3/8" - 16 (4)	HP1337
L Cap Screw, M10 -1.50 x 45mm (2)	HP1341
M Nut, Jam, 3/4" (2)	HP1076
N Fitting, 90°, Swivel (2)	HP1019
O U-Bolt, 3/8" x 6.5" (4)	HP1018
P Nut, Serrated, Flange, 3/8" -16 (4)	HP1338
Q Tie Strap (6)	C11618

REQUIRED TOOLS

- 7/16", 1/2", 9/16" Open End or Box Wrenches
- 1/18" Open End Wrench
- 9/16" & 13mm Deep Well Sockets
- Heavy Duty Drill
- 5/16" Drill Bit (very sharp)
- Torque Wrench
- Cut Off Wheel or Sawzall
- Pipe Thread Sealant
- Hose Cutter, Razor Blade or sharp Knife
- Air Compressor/Compressed Air Source
- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Spray Bottle with Dish Soap and Water Solution

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

IMPORTANT:

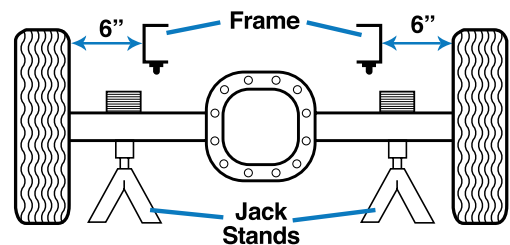
This air suspension kit will not increase the GVWR (Gross Vehicle Weight Rating), as the GVWR is determined by the axle rating. Do not exceed the maximum capacity listed by the vehicle manufacturer.

NOTE:

Some vehicles are equipped with a real brake proportioning valve. Check this with the manufacturer before installing the air spring kit, as it may affect braking performance.

BEFORE STARTING:

1. Ensure the application information is correct for the make, model and year of the vehicle you are installing the kit on.
2. Check the vehicle to see if it is equipped with a 5th wheel hitch. Some 5th wheel hitches require brackets to be mounted in the frame in the same locations as the air spring brackets. (If this is the case, you may need a different air spring kit. Please contact 800-663-0096.)
3. Check the clearance between the outside of the frame and the inside of the tire. A maximum of 6" is required for air spring clearance.
4. 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.



1. RAISE THE REAR AXLE

Remove any unnecessary weight from the vehicle to attain normal ride height. This is important for correct initial air spring setup and adjustment. Park the vehicle on a level concrete surface.

Record the vehicle's 'normal ride height', which is the distance between the center of the axle and the horizontal wheel well flange. Ensure both sides are the same before raising the vehicle. Raise the rear axle high 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 vehicle axle is supported by the jack stands. Ensure the normal ride height measurement recorded earlier is the same. Adjust if necessary before proceeding.

Once the rear axle is raised correctly, remove the rear wheels.



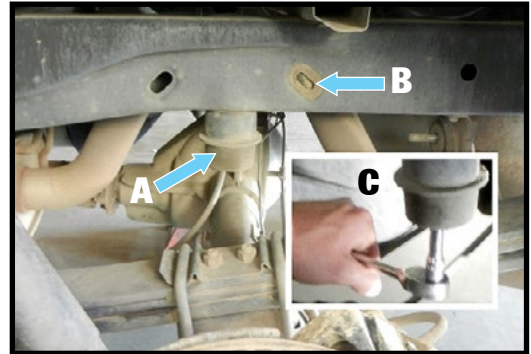
2. REMOVE THE JOUNCE BUMPER

The stock jounce bumper (A), which is attached to the frame, must be removed from the frame and have its two locating pins removed so it can later attach to the upper bracket.

If there is a plug (B) in either of the frame mounting slots, remove it, as that is where the upper bracket will be attached.

Remove the jounce bumper by unscrewing the bottom bolt, as shown in insert (C).

Remove both of the two locating pins from the top of the jounce bumper. Once a pin is removed, grind it flush to the surface of the jounce bumper, as shown in (D).

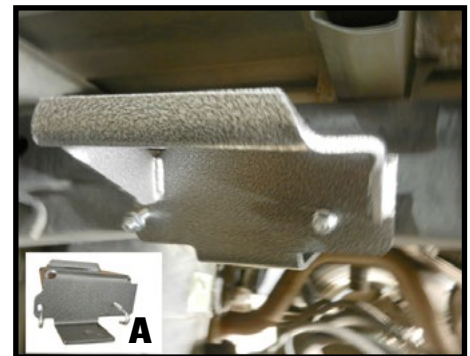


3. ATTACH THE UPPER BRACKET TO FRAME

The upper bracket is attached to the frame with the two J-bolts at the frame mounting slots, with the lower flange of the upper bracket facing inward. The back of the upper bracket is shown in insert (A).

Align the mounting bracket so its holes align with the frame mounting slots, then insert the J-bolts from the back through the mounting slots and the upper bracket mounting holes.

Loosely secure the J-bolts, using the two flat washers and nyloc nuts provided, to the upper bracket.



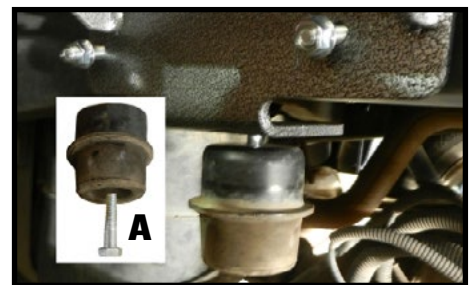
4. ATTACH JOUNCE BUMPER TO UPPER BRACKET

NOTE: THIS KIT COMES WITH BOTH M-10 X 1.25X 45MM & M10 X 1.50 X 45MM, THIS IS TO ACCOMMODATE DIFFERENT YEARS OF TRUCKS. USING THE FACTORY FASTENER FOR COMPARISON, REMOVED IN STEP 2, CHOSE THE CORRECT ONE FOR YOUR TRUCK.

The jounce bumper is attached to the upper bracket with the M-10 x 45mm bolt. The bolt is shown in insert (A).

Attach the jounce bumper to the bottom of the upper bracket with the M10 x 45mm bolt. Tighten to 25 ft-lbs, 34N-m.

After the jounce bumper is securely bolted to the upper bracket, tighten the 3/8" serrated flange nuts on the J-bolts to 16 ft-lbs, 22N-m. After the nuts are securely tightened, remove the end of each J-bolt flush to the nut, as shown in (B).



5. ASSEMBLE THE AIR SPRING AND BRACKETS

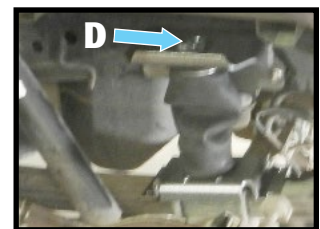
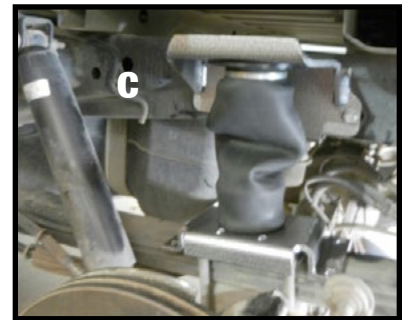
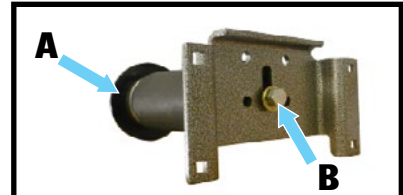
NOTE: Prepare the air spring by ensuring that it is collapsed with the rubber part of the bag folded over the bottom end cap. (Only applicable to the Ford F¹⁵⁰ 2010-15, kit HP¹⁰¹⁵⁵)

The air spring is loosely connected to the lower bracket, and then the air spring and lower bracket are positioned between the upper bracket and the leaf spring. The air spring is then loosely attached to the upper bracket.

Attach the air spring (A) to the lower bracket, as shown, using the 1/2" flat washer and the 1/2" -13 x 7/8" cap screw (B). Leave loose for later adjustment.

Set the lower bracket on the leaf spring above the axle, as shown in (C), making sure the downward flange on the lower bracket is facing outward. Set the top of the air spring onto the upper bracket, as shown. Position the air spring and lower bracket so the air spring is pointing approximately straight up.

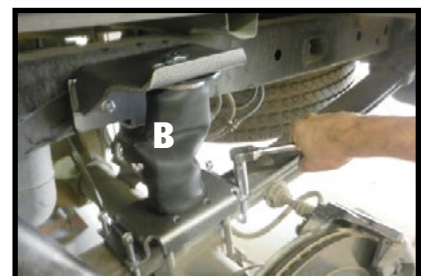
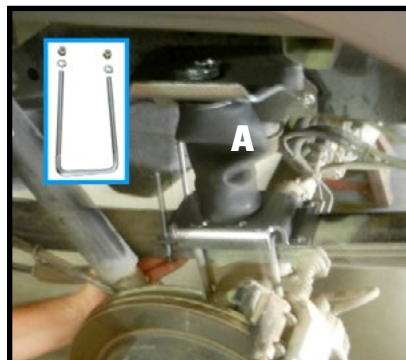
Attach the air spring to the upper bracket, using the 3/4" nut (D), leaving loose for later adjustment.



6. SECURE THE LOWER BRACKET

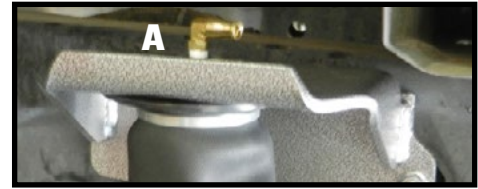
Attach each U-bolt to the lower bracket, as shown in (A). Push the U-Bolt through the two holes on the outer flange of the lower bracket, secure with the 3/8" flat washer and nyloc nut. When installing the U-bolts, take care not to pinch any brake lines or wiring harnesses between the U-bolt and the frame.

Tighten each nyloc nut, as shown in (B), leaving loose for later adjustment.



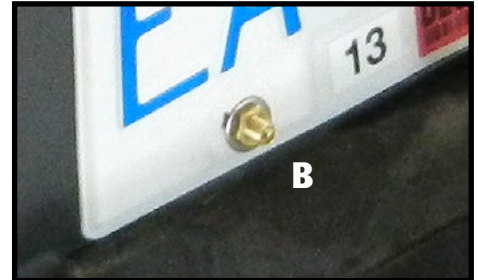
7. INSTALL THE AIR LINE FITTING

Install the 90° air line fitting into the top of the air spring (A). Use thread sealant.



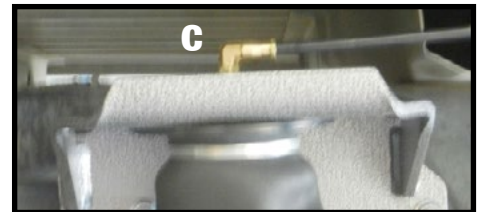
8. INSTALL THE AIR LINE

Provided in the basic air spring kit are two fill valves, the most common place to install them is to replace the license plate fasteners with the fill valves (A). Alternately two holes can be drilled in a convenient location. Install one airline provided, route the nylon hose to an air spring fitting, cut the hose and connect to the air spring fitting. Repeat with the other fill valve. Secure airlines with the tie-straps provided away from moving items and heat sources.



If an in cab inflation kit is being installed follow instructions provided with it.

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 A SHARP RAZOR KNIFE. Moisten the end of the airline prior to inserting it into the fitting and push it in until it stops.



After the air line is cut, insert one end into the air line fitting, as shown in (C), and the other into the fill valve. Moisten the end of the air line with liquid soap prior to inserting it, and then push it in until it stops.

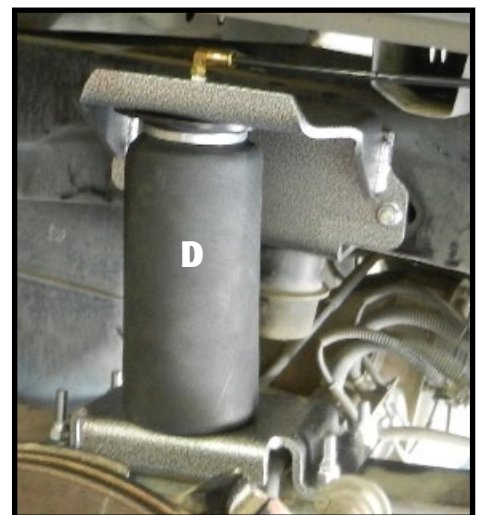
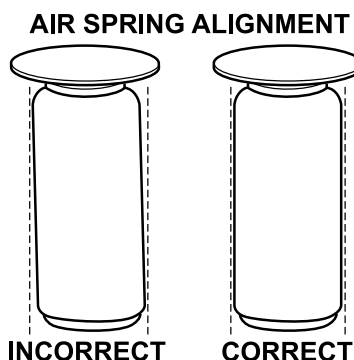
IMPORTANT!

Double check all the fasteners are torques to specification

9. ALIGN THE AIR SPRING

The lower end of the air spring must be positioned directly below its upper end to ensure equal contact on the lower bracket. Apply enough air pressure, approximately 5 PSI, to inflate the air spring to its natural shape.

Then, adjust the lower end of the air spring by tapping it inward or outward so it is aligned correctly (straight up, not skewed), as shown in (D) and in the diagram. There should be a symmetrical cushion of air at the base of the air spring when it is correctly aligned.



10. TIGHTEN CONNECTIONS TO BRACKETS

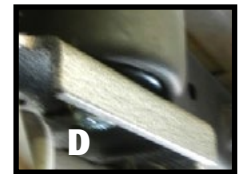
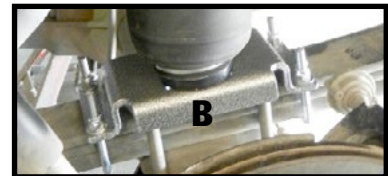
Tighten the connections from the air spring to the upper bracket and the lower bracket to the leaf spring.

Tighten the 3/4" nut (A) at the upper mounting bracket to 25 ft-lbs, 33N·m.

Tighten the four nyloc nuts holding the two U-bolts to the lower bracket to 16 ft-lbs, 27N·m. The nuts properly tightened are shown in (B).

Trim off the ends the four nyloc nuts holding the two U-bolts to the lower bracket, like as shown in (C).

Tighten the bolt (D) holding the air spring to the lower bracket to 20 ft-lbs, 27N·m.



REPEAT STEPS 2 – 10 ON THE OTHER SIDE OF THE VEHICLE.

11. DO A LEAK CHECK

Inflate both the air springs to 90 PSI, then use a dish soap and water mixture on all air line connections to detect any air leaks. Repair as necessary and retest.

Inflate the air springs to a predetermined value, and on the following day recheck the pressure. If one or both the air springs have lost pressure, a leak is present. The leak must be repaired, and then retested until no leaks exist.



12. AFTER THE INSTALLATION IS COMPLETED:

Install the wheels, torquing the fasteners to the manufacturer's specifications.

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

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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

To be eligible for warranty, the owner must submit their warranty card or register online within 30 days of the purchase date.

NOTE: The owner's warranty will be void if air springs are run with less than the minimum of 10 psi.

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