

# Installation Manual



## 10004 KIT

Ford F150 (2WD/4WD) Heavy Loads\*

*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.*



**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)*

**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.**

*Safety Warning!*

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. Please read and abide the instructions, safety recommendations and maintenance suggestions throughout this manual.

*Safety Warning!*

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.

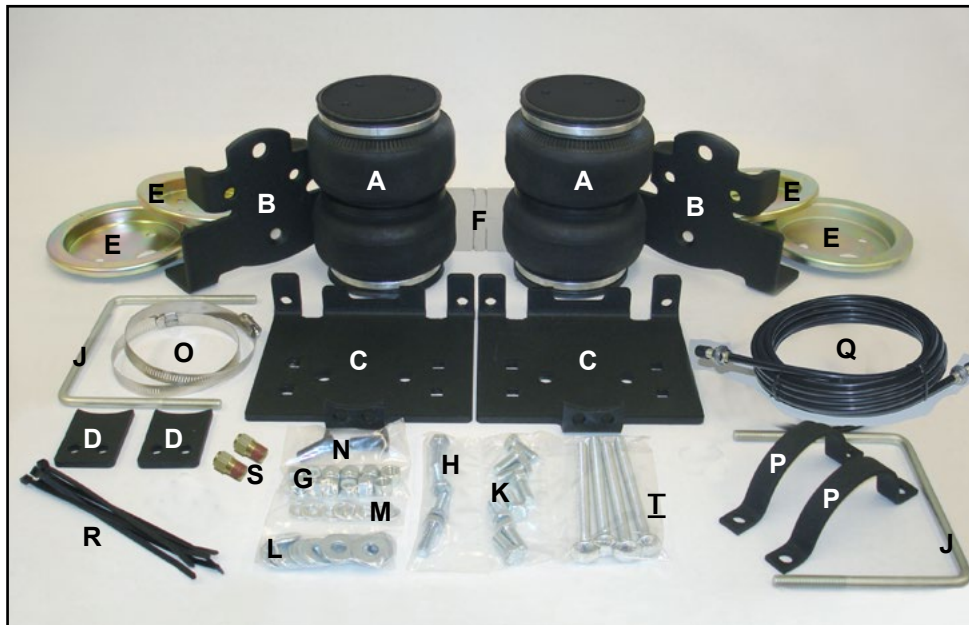
*Safety Warning!*

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.



**KIT LAYOUT**

Please make sure all the items shown in the kit layout are provided in your kit before starting the installation.



**KIT CONTENTS**

	<b>QTY</b>	<b>PART #</b>
<b>A</b> Air Spring	2	HP10000
<b>B</b> Upper Bracket (Driver Side)	1	HP0018
(Passenger Side)	1	HP0019
<b>C</b> Lower Bracket	2	HP0017
<b>D</b> 4x4 Bracket	2	HP0020
<b>E</b> Roll Plates	4	HP10054
<b>F</b> Heat Shield	1	HP0012
<b>G</b> 3/8" -16 Nylock Nut	12	HP1000
<b>H</b> 3/8" -16 x 1" Hex Head Bolt	4	C18005
<b>I</b> 3/8" -16 x 5 1/2" Carriage Bolts	4	HP1022
<b>J</b> 3/8" -16 U Bolts	2	HP1015
<b>K</b> 3/8" -24 x 7/8"	8	HP1002
<b>L</b> 3/8" Flat Washer	20	C653
<b>M</b> 3/8" Lock Washer	8	C18007
<b>N</b> 10mm x 30mm Flat Head Allen Bolt	2	HP1023
<b>O</b> Gear Clamp	2	HP1023
<b>P</b> Axel Strap	2	HP0016
<b>Q</b> Air Line/Valve Assembly	1	HP1344
<b>R</b> Tie Strap	6	C11618
<b>S</b> Air Fitting	2	HP1099

**REQUIRED TOOLS**

- Hoist or Floor Jack
- Safety Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- 7/32" Hex Allen Wrench
- 9/16" & 1/2" Wrench or Deep Socket
- Heavy Duty Drill
- 3/8" & 5/16" drill bits (very sharp)
- 3/8" Nut Driver
- 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)

**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:**

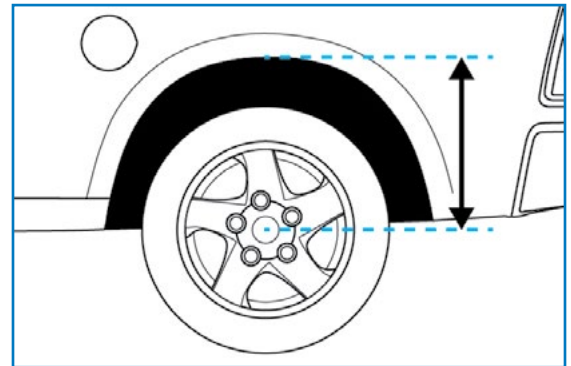
***This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon airline will distort the line and cause the connection to leak. THE AIRLINE MUST BE CUT OFF SQUARELY WITH THE NYLON HOSE CUTTER PROVIDED IN THIS KIT OR A SHARP UTILITY KNIFE.***

**1 MEASURE STOCK RIDE HEIGHT**

Park the vehicle on a level surface.

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.



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**3 REMOVE JOUNCE BUMPER**

Remove the jounce bumpers on both sides and discard.

#### 4 LOWER ROLL PLATE

Install the roll plate (with the rounded end towards the air spring) on to the bottom of the air spring. The bottom being the end without the air inlet port.

Align the two holes in the roll plate with those in the air spring (as shown in Figure 4).

Repeat on the other air spring.



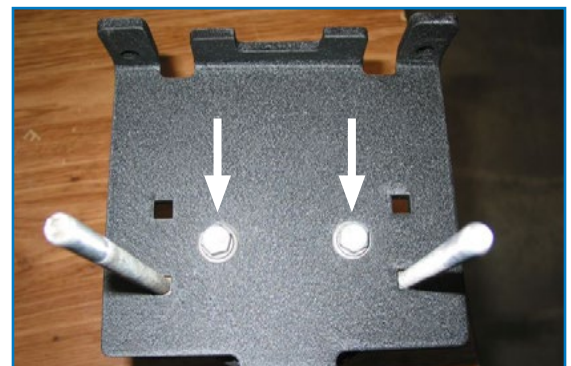
4

#### 5 LOWER BRACKET

Install the two carriage bolts supplied through the two holes in the lower mounting bracket. Position the lower mounting bracket on top of the air spring and the roll plate. Make sure the air inlet port is on the opposite end of the air spring and is positioned towards the same side as the carriage bolts.

Install the capscrews, lock and flat washers. Torque all the fasteners to 20 lbs.ft. 27 N•m, (as shown by the arrows in Figure 5).

Repeat on the other air spring.



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#### 6 INSTALL AIRLINE FITTINGS

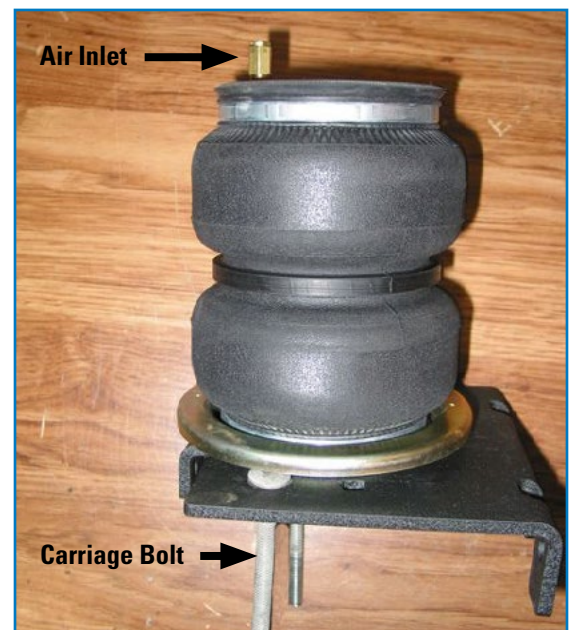
Using thread sealant to prevent air leaks, install the airline fittings provided into the top air inlet ports on the top of each air spring.

#### 7 INSTALL UPPER BRACKET

**PLEASE NOTE: The upper mounting brackets are identified by HP0018 (for Driver Side) & HP0019 (for Passenger Side). The brackets are designed to be a tight fit on the frame. Vehicles with a thick layer of undercoating may require the brackets to be installed with a rubber mallet.**

Using the countersink fasteners supplied, install the correctly identified upper air spring mounting bracket (reference above **Note**) to the frame through the jounce bumper mounting hole (as shown in Figure 7 on following page). Ensure that the air spring mounting flange is facing towards the center of the vehicle.

Repeat on the other side.



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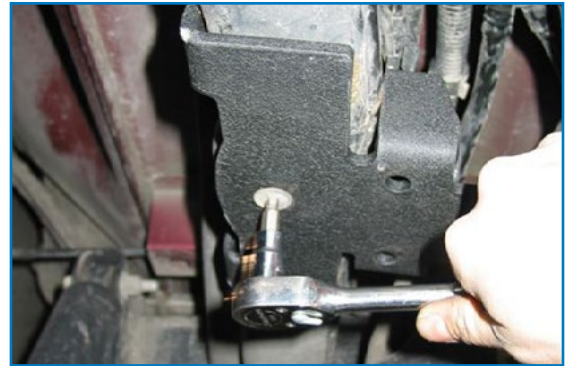
## 8 DRIVER SIDE AIR SPRING ASSEMBLY

*Install the drivers side air spring assembly first.*

Insert the air spring assembly over the axle tube with one carriage bolt on either side of the axle tube.

Align the lower bracket cutouts with the factory leaf spring U bolts (as shown in Figure 8).

Loosely install the U bolt provided around the leaf spring pack, then through the two holes in the lower air spring bracket. Do not tighten the U bolt at this time.



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## 9 UPPER ROLL PLATE

Install the upper roll plate (with the rounded side towards the top of the air spring) over the air inlet fitting. Align the two mounting holes and using the capscrews, lock and flat washers provided, secure the air spring to the upper mounting bracket (shown with an arrow in Figure 9). Torque the capscrews to 20 lbs.ft. 27 N•m.



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## 10 INSTALL AXEL STRAP

Loosely install the axle strap included in the kit to the two carriage bolts previously installed in Step 4 & 5, with the nylock nuts provided.

**NOTE: 4X4 Models Only** - Loosely install the support bracket to the lower air spring mounting bracket (as shown by the arrow in Figure 10). Install the bracket with the rounded cut out against the axle tube using the 3/8" fasteners provided.



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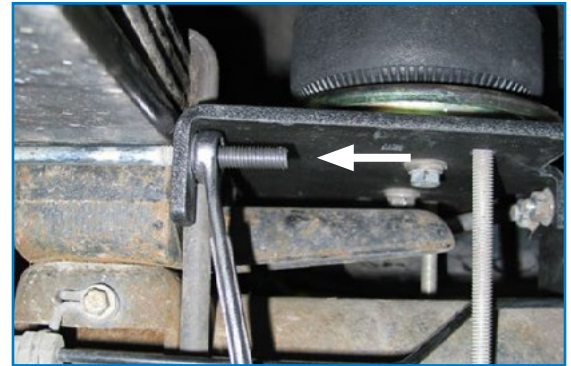


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## 11 LOWER BRACKET ALIGNMENT

Evenly tighten the U bolt around the leaf spring pack. This will align the lower bracket, torque to 30 lbs.ft. 41 N•m.

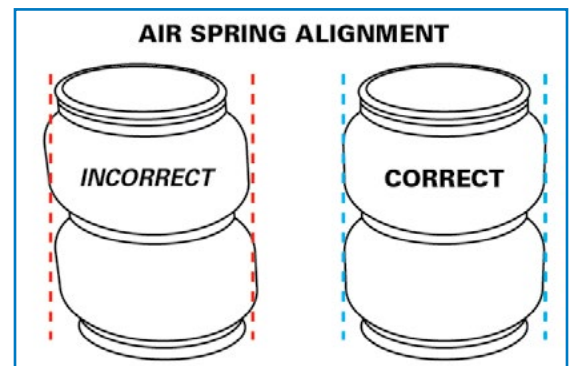
**NOTE: 4X4 Models Only - Adjust the support brackets to attain full contact against the axle tube. Torque the support bracket fasteners to 30 lbs.ft. 41 N•m.**



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## 12 AIR SPRING ALIGNMENT

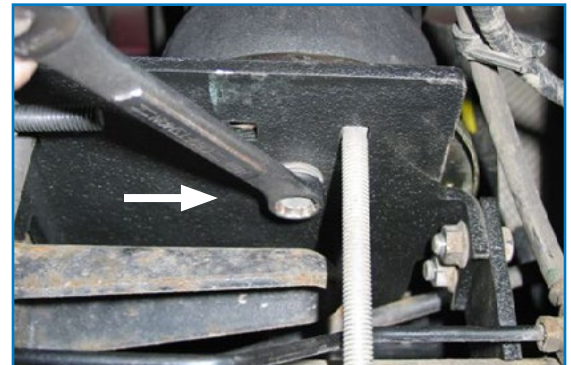
(Using Figure 12 as reference) check the alignment from the top to the bottom of the air spring. If necessary, loosen the capscrews on the mounting bracket and adjust the air spring to achieve the best possible correct alignment (as shown in Figure 12).



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## 13 TIGHTEN AXEL STRAP

Evenly tighten the axle strap bracket nuts to 30 lbs.ft. 41 N•m (shown in Figure 13).



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## 14 PASSENGER SIDE AIR SPRING ASSEMBLY

**Repeat Steps 8-13 for the Passenger side of the vehicle.**

## 15 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 15). Each hose clamp holds a tab against exhaust pipe.



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## 16 INSTALL AIR LINE

**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

Provided in air spring kit are two fill valves. The most common place to install is in place of license plate fasteners. Alternatively, two 5/16" holes can be drilled in a convenient location.

Cut air line assembly into two equal lengths with hose cutter.

Install one air line, route the nylon air line to an air spring fitting and cut the hose. 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 airlines using the tie-straps, away from moving items and heat sources.

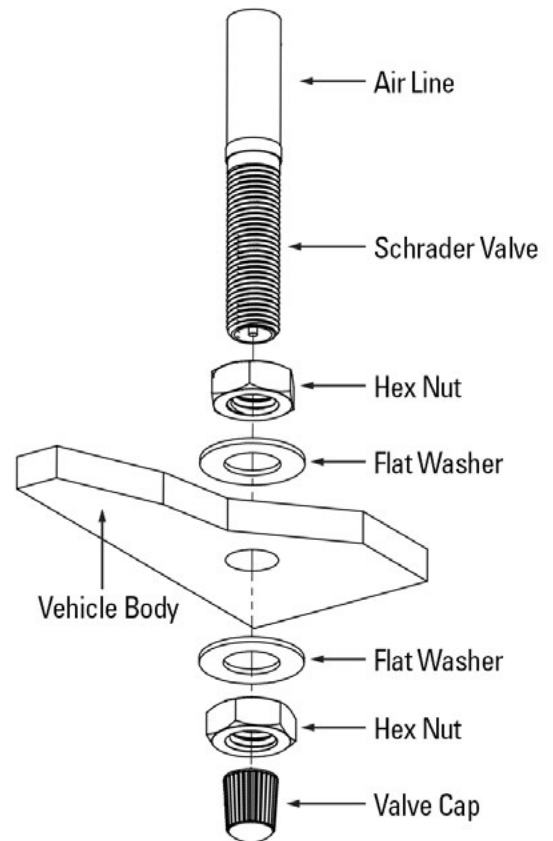
Place a 5/16" nut on the air valve. Leave enough of the inflation valve in front of the nut to extend through the hole, install a flat washer, and 5/16" nut and cap (reference Figure 16 for assembly). There should be enough valve exposed after installation—approximately 1/2"—to easily apply a pressure gauge or an air chuck.

**If an in-cab inflation kit is being installed, follow the instructions provided with that kit now.**

## 17 CHECK SYSTEM FOR LEAKS

Inflate both air springs to 90 psi and 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 17). 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.



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## 18 AFTER COMPLETING THE INSTALLATION

### PLEASE REMEMBER:

Install wheels and torque fasteners to manufacturer's specifications.

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

For safe and proper operation, never operate the vehicle under minimum of 10 psi or over maximum of 100 psi in air springs. Staying within pressure limit will ensure maximum air spring life. Failure in doing so may result in a void warranty (see **Note** below).

**NOTE: Do not exceed maximum vehicle payload. Failure to do so may result in failure of the air suspension kit and/or damage to your vehicle.**

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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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