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(928) 636-3175 • www.p-a-g.net

FORD F250, F350 4WD (NON-SUPER DUTY) FRONT TRIPLE SHOCK KIT INSTALLATION INSTRUCTIONS

1987-1997 F250

1986-1987 F350 **KIT# DS45**

**SHOCKS SOLD SEPARATELY.
SEE APPLICATIONS AT END OF DOCUMENT.**

⚠ WARNING

Installation of a Performance Automotive Group suspension lift kit will change the vehicle's center of gravity and handling characteristics both on- and off-road. You must drive the vehicle safely! Extreme care must be taken to prevent vehicle rollover or loss of control, which could result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers and always make sure all vehicle occupants have their seat belts fastened.

⚠ WARNING

Before you install this kit, read and understand all instructions, warnings, cautions, and notes in this instruction sheet and in the vehicle owner's manual.

⚠ CAUTION

Proper installation of this kit requires knowledge of the factory recommended procedures for removal and installation of original equipment components. We recommend that the factory shop manual and any special tools needed to service your vehicle be on hand during the installation. Installation of this kit without proper knowledge of the factory recommended procedures may affect the performance of these components and the safety of the vehicle. We strongly recommend that a certified mechanic familiar with the installation of similar components install this kit.

⚠ WARNING

Before you install this kit, block the vehicle tires to prevent the vehicle from rolling.

⚠ WARNING

Many states and municipalities have laws restricting bumper heights and vehicle lifts. Consult state and local laws to determine if the changes you intend to make to the vehicle comply with the law.

⚠ WARNING

The installation of larger tires may reduce the effectiveness of the braking system.

⚠ WARNING

Always wear eye protection when operating power tools.

⚠ WARNING

We strongly recommend using the Performance Automotive Group shocks that were engineered to be used with this system. If you use other shocks, they must match the full extended and full collapsed lengths of the Performance Automotive Group units exactly. The use of longer or shorter shocks than recommended may cause damage to the vehicle suspension and could result in sudden loss of control of the vehicle and personal injury. Contact Performance Automotive Group for the lengths of the front and rear shocks that must be used with this suspension system.

NOTE

Performance Automotive Group recommends using the Loctite® supplied in the kit on the threads of all kit nuts and bolts unless specified otherwise in these instructions.

⚠ WARNING

DO NOT combine suspension, body, or other lift devices. Use of vehicle with combined lifts may result in unsafe and/or unexpected handling characteristics.

⚠ CAUTION

Performance Automotive Group recommends installing this kit only in the manners described in the proceeding instructions. DO NOT install this kit onto a vehicle equipped with another suspension lift kit other than the approved kits listed in the proceeding instructions.

⚠ WARNING

This kit should only be installed on a vehicle that is in good working condition. Before you install the kit, thoroughly inspect the vehicle for corrosion or deformation of the sheet metal. If the vehicle is suspected to have been in a collision or misused, do not install this kit. Off-road use of your vehicle with this kit installed may increase the stress applied to the factory components. Failure to observe this warning may result in serious personal injury and/or severe damage to your vehicle.

Before Starting Installation

NOTE
Kit parts are prefaced by the word *kit* and appear in **bold** print.

1. Carefully read all warnings and instructions completely before beginning.
2. Verify all parts have been received in this kit by checking the parts list at the end of this document.
3. **Only install this kit on the vehicle for which it is specified.** If anytime during the installation you encounter something different from what is outlined in the instructions, call technical support at (928) 636-3175.
4. Special tools needed:
 - a. Drill with 3/8" and 1/2" drill bits
 - b. Carpenter's or machinist's square
5. Park vehicle on a clean, dry, flat, level surface and block tires so vehicle cannot roll in either direction.

NOTE
Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the factory service manual. When re-assembling the vehicle it is recommended by the vehicle manufacturer that certain fasteners are replaced in order to maintain proper retention characteristics. This system may not include all replacement hardware as recommended by the factory service manual. Additional replacement hardware should be obtained prior to installation of this system to meet the requirements of the factory service manual.

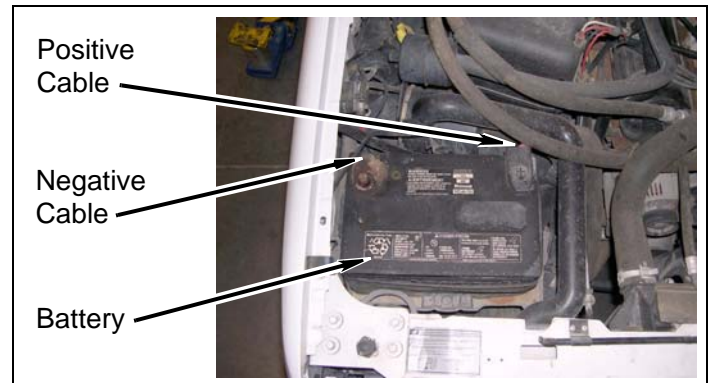
Torque Specifications

See factory service manual for torque values when re-using OE fasteners.

| Bolt Size | Grade 5 (ft.-lbs.) | Grade 8 (ft.-lbs.) |
|------------------|---------------------------|---------------------------|
| 1/4"-20 | 10 | 10 |
| 1/4"-28 | 10 | 12.5 |
| 5/16"-18 | 17 | 22.5 |
| 5/16"-24 | 20 | 25 |
| 3/8"-16 | 30 | 40 |
| 3/8"-24 | 35 | 45 |
| 7/16"-14 | 50 | 65 |
| 7/16"-20 | 55 | 70 |
| 1/2"-13 | 75 | 100 |
| 1/2"-20 | 55 | 70 |
| 9/16"-12 | 105 | 135 |
| 9/16"-18 | 115 | 150 |
| 5/8"-11 | 150 | 195 |
| 5/8"-18 | 160 | 210 |
| 3/4"-16 | 175 | 225 |

Engine Compartment

1. Disconnect both battery cables. Disconnect negative cable first, then positive cable.

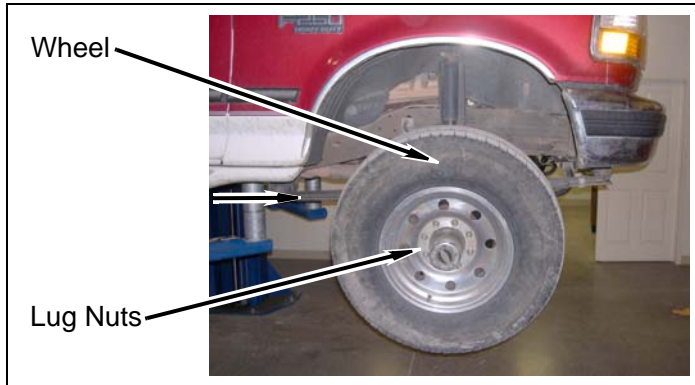


Prepare to Install Triple Shock Kit

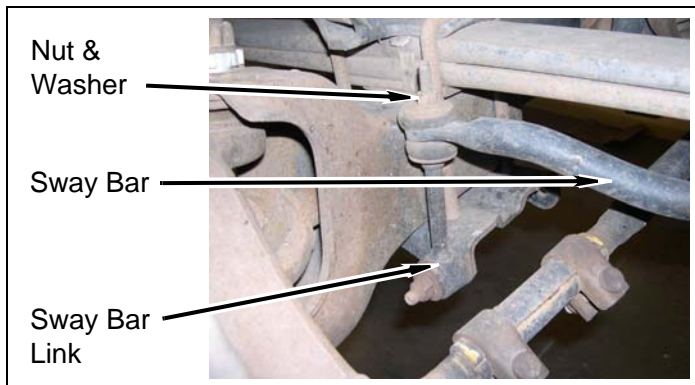
1. Loosen, but do not remove, lug nuts on each front wheel.
2. Using a hydraulic floor jack, slowly lift front of vehicle until front tires are 3-5" off ground. Position jack stands under frame. Lower vehicle onto jack stands while maintaining hydraulic jack pressure underneath front axle.

⚠ WARNING
 Use extreme caution when lifting vehicle from ground. To prevent serious personal injury, ensure the lifting device is securely placed.

3. Remove lug nuts and front wheels from vehicle.

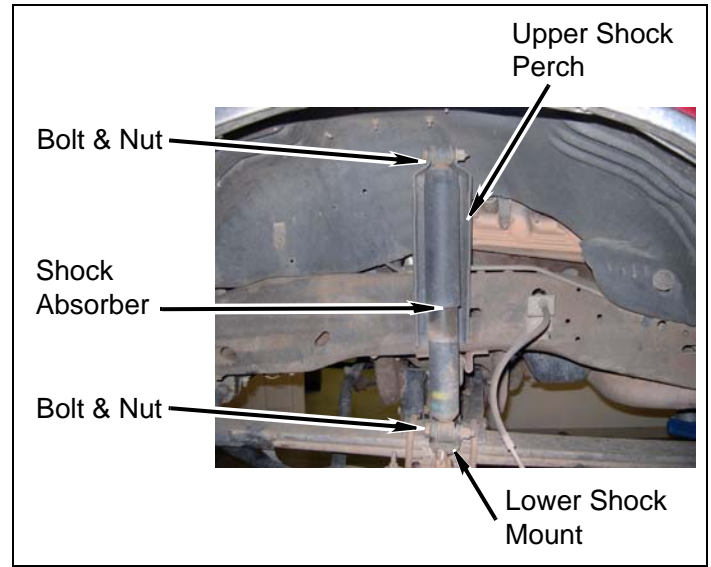


4. Front sway bar
 - a. Remove nut, washer, bushing, and sway bar from driver side sway bar link.



- b. Repeat above step on passenger side.

5. Front shock absorbers
 - a. Remove lower shock bolt and nut from driver side lower shock mount.

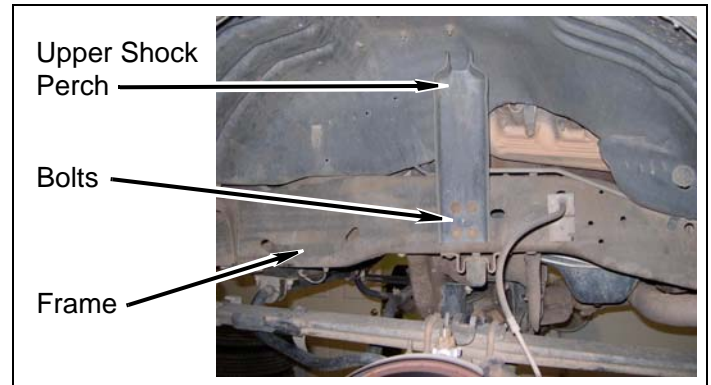


- b. Remove upper shock bolt, nut, and shock absorber from driver side upper shock perch.
 - c. Repeat above steps for passenger side front shock absorber.

Install Triple Shock Kit

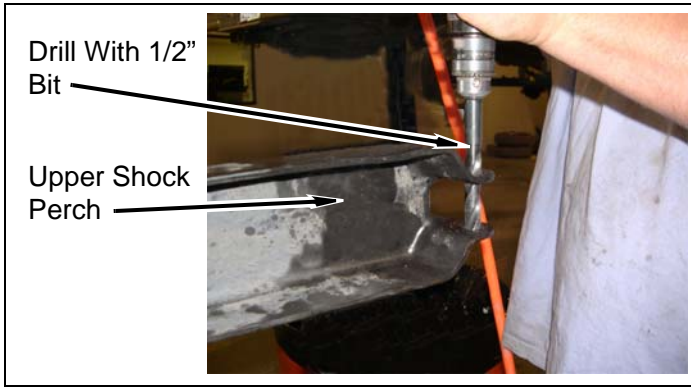
Driver side

1. Remove four bolts, four nuts, and upper shock perch from frame.

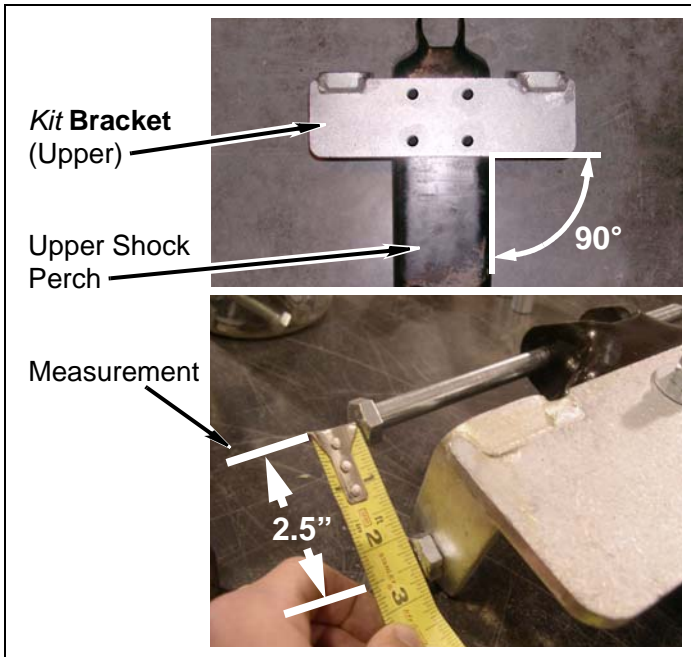


NOTE
 Some older models have the upper shock perches installed onto the frame with two bolts and two nuts.

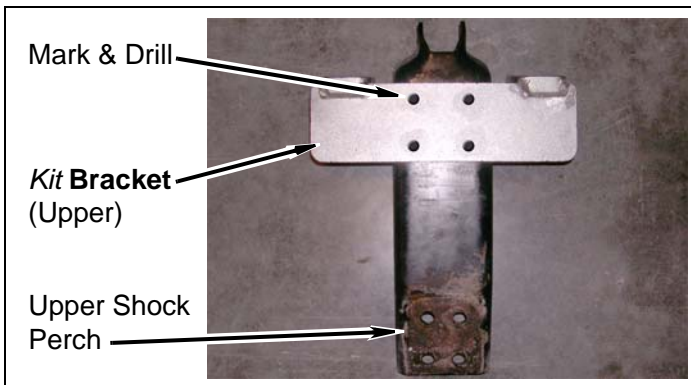
2. Drill out upper shock perch bolt hole using 1/2" drill bit.



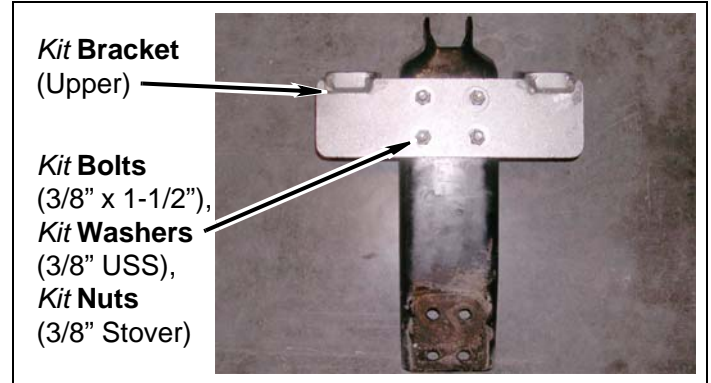
3. Position **kit bracket** (upper) onto upper shock perch. Using square, ensure **kit bracket** (upper) is square (perpendicular) to upper shock perch. Set hole-to-hole measurement to 2-1/2".



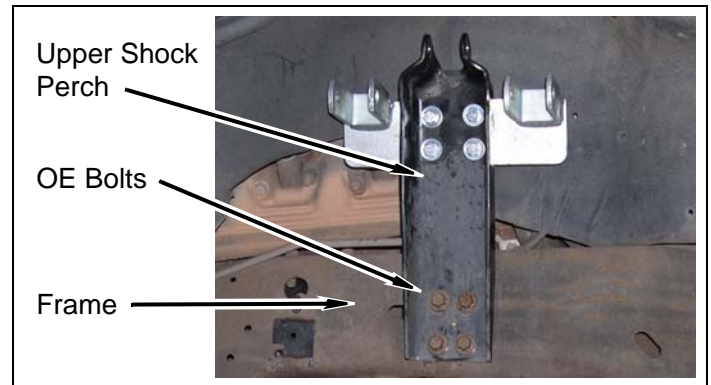
4. Mark and drill four 3/8" holes into upper shock perch corresponding into four holes in **kit bracket** (upper).



5. Install **kit bracket** (upper) onto upper shock perch with four **kit bolts** (3/8" x 1-1/2"), eight **kit washers** (3/8" USS), and four **kit nuts** (3/8" stover).



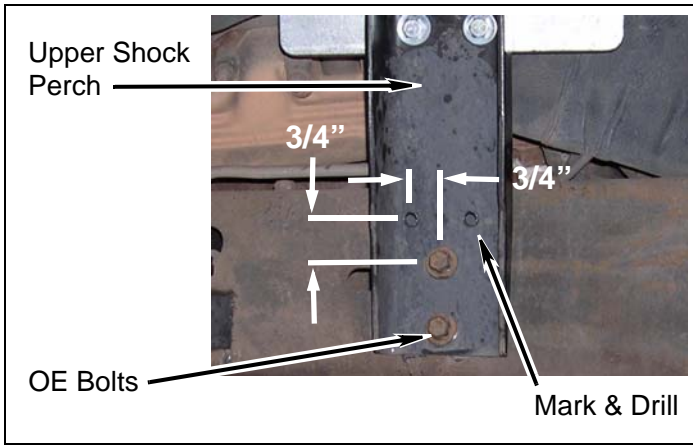
6. **Models with four OE bolts:** Upper shock perches
 - a. Install upper shock perch onto frame with four bolts and four nuts. TORQUE to specifications.



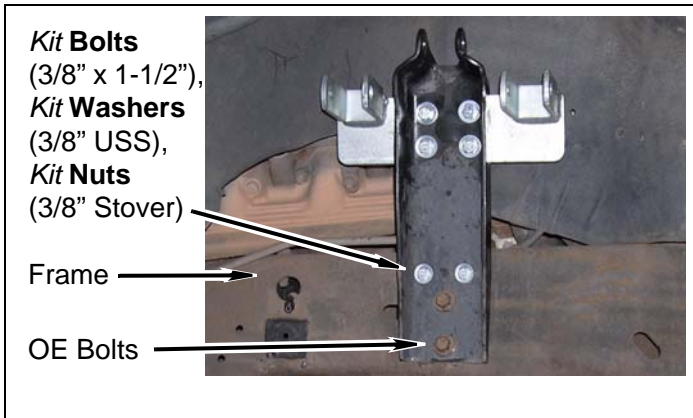
7. **Models with two OE bolts:** Upper shock perches
 - a. Install upper shock perch onto frame with two bolts and four nuts. TORQUE to specification.
 - b. Measure up 3/4" and left 3/4" from upper bolt location. Mark and drill 3/8" hole into upper shock perch and frame.

⚠ CAUTION

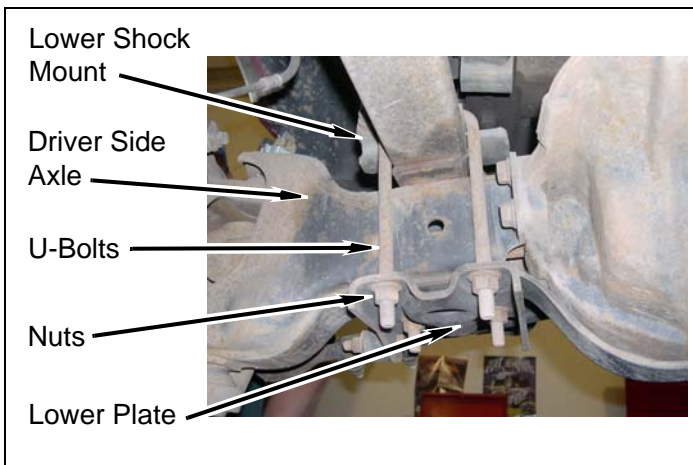
Before drilling, check for fuel and brake lines and/or wiring harnesses behind the area to be drilled.



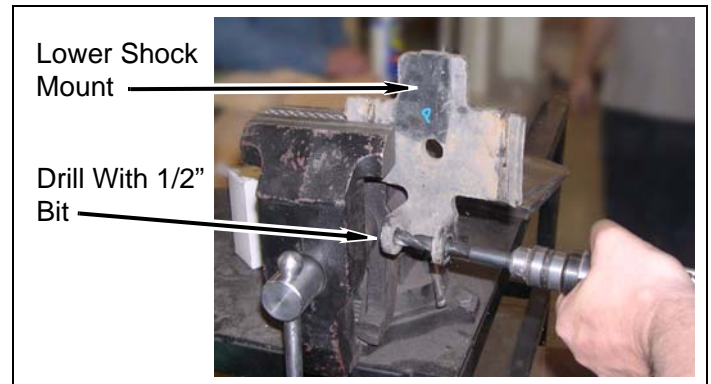
- c. Measure up 3/4" and right 3/4" from upper bolt location. Mark and drill 3/8" hole into upper shock perch and frame.
- d. Install two **kit bolts** (3/8" x 1-1/2"), four **kit washers** (3/8" USS), and two **kit nuts** (3/8" stover) into two drilled locations.



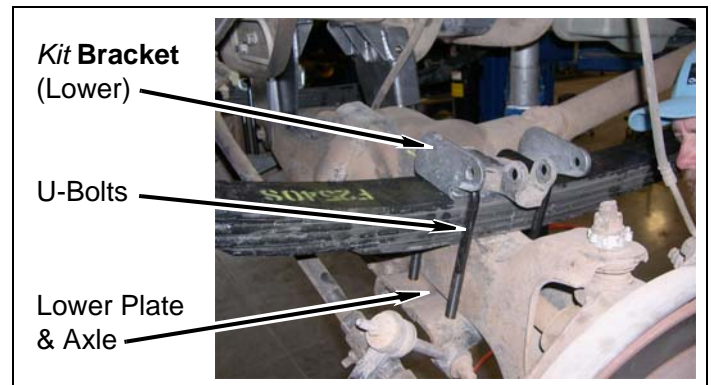
8. Using hydraulic floor jack, support driver side axle and remove four nuts, four washers, lower plate, lower shock mount, and two u-bolts from front leaf spring and front axle.



9. Drill out lower shock mount bolt hole using 1/2" drill bit.



10. Install lower shock mount and **kit bracket** (lower) onto leaf spring and axle with lower plate, two u-bolts, four washers, and four nuts. **DO NOT TIGHTEN.**

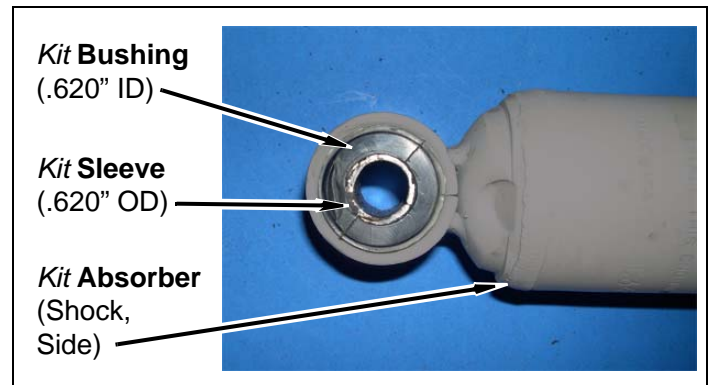


11. Shock absorbers

NOTE

DO NOT USE front OE shock absorbers when installing this kit.

- a. Install **kit bushings** (.620" ID) into four ends of two **kit absorbers** (shock, side).

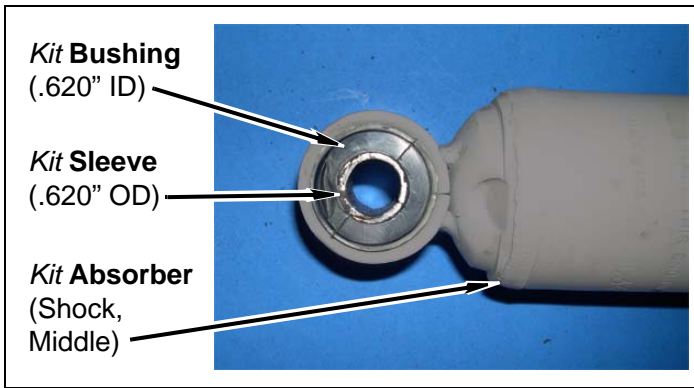


- b. Install four **kit sleeves** (.620" OD) into four **kit bushings** (.620" ID).

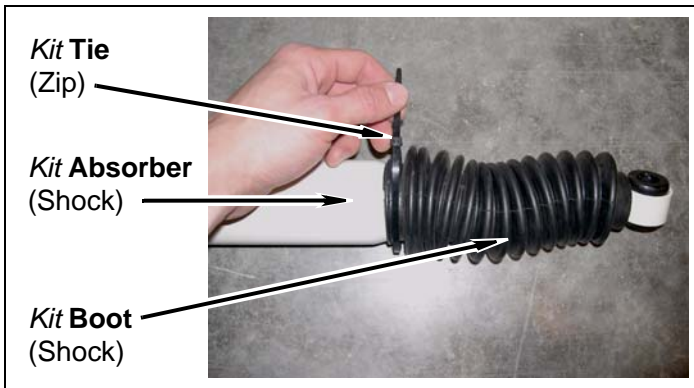
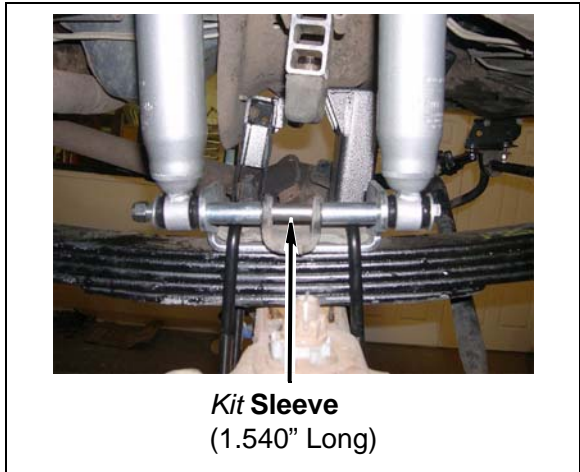
- c. Install two **kit bushing** (.620" ID) into two ends of **kit absorber** (shock, middle).

NOTE
Ensure longer **kit absorber** (shock, middle) is mounted in the middle (OE) location.

NOTE
If not installing **kit absorber** (shock, middle), install **kit sleeve** (1.540" long) onto **kit bolt** (1/2" x 11"), **kit bracket** (lower), and lower shock plate, in place of **kit absorber** (shock, middle).

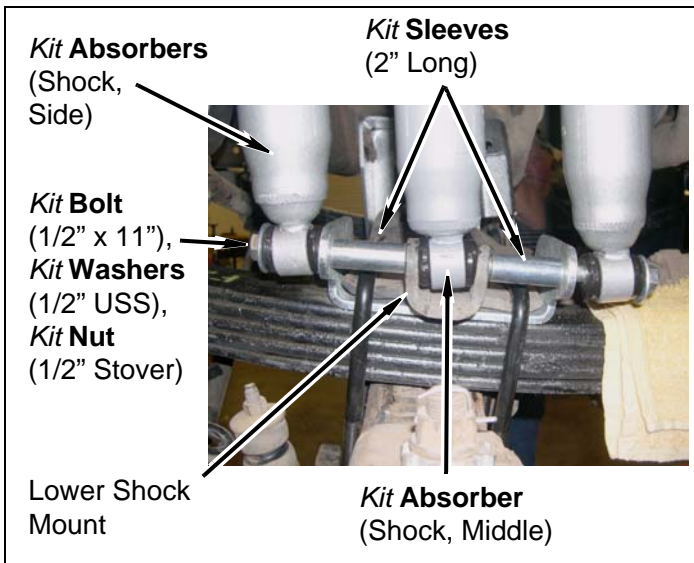
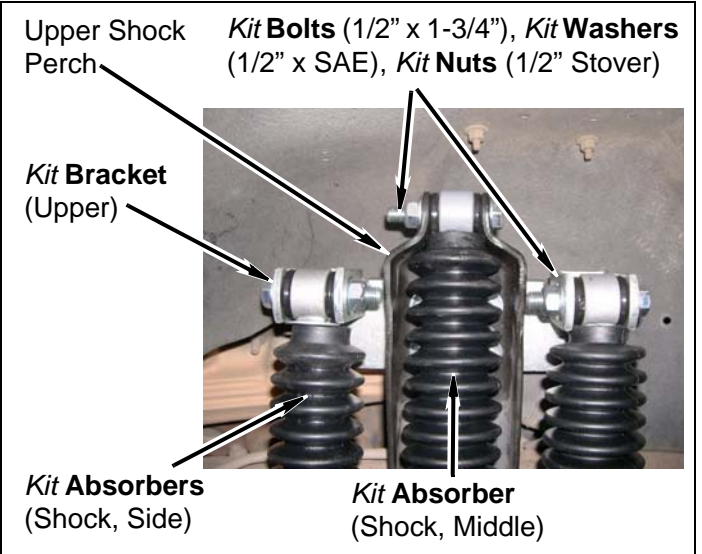


- d. Install two **kit sleeve** (.620" OD) into two **kit bushings** (.620" ID) of **kit absorber** (shock, middle).
- e. Install three **kit boots** (shock) onto three **kit absorbers** (shock) with three **kit ties** (zip).



- g. Install **kit absorber** (shock, middle) onto upper shock perch with **kit bolt** (1/2" x 1-3/4"), two **kit washers** (1/2" SAE), and **kit nut** (1/2" stover).

- f. Install **kit bolt** (1/2" x 11"), two **kit absorbers** (shock, side), **kit absorber** (shock, middle), two **kit sleeves** (2" long), two **kit washers** (1/2" USS), and **kit nut** (1/2" stover) onto lower shock mount and **kit bracket** (lower). DO NOT TIGHTEN.

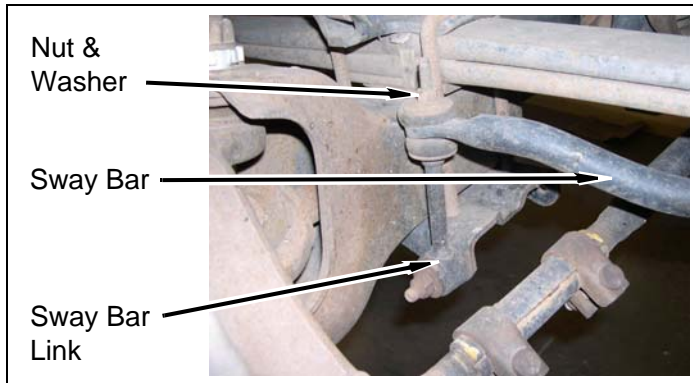


- h. Install two **kit absorbers** (shock, side) onto **kit bracket** (upper) with two **kit bolts** (1/2" x 1-3/4"), four **kit washers** (1/2" SAE), and two **kit nuts** (1/2" stover).

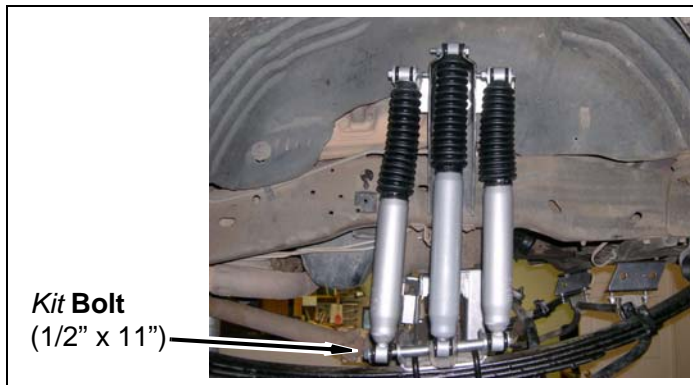
- i. Remove hydraulic jack from under driver side axle.

Passenger Side

1. Repeat steps above for passenger side.
2. Install sway bar onto two sway bar links with two nuts, washers, bushings, and hardware.



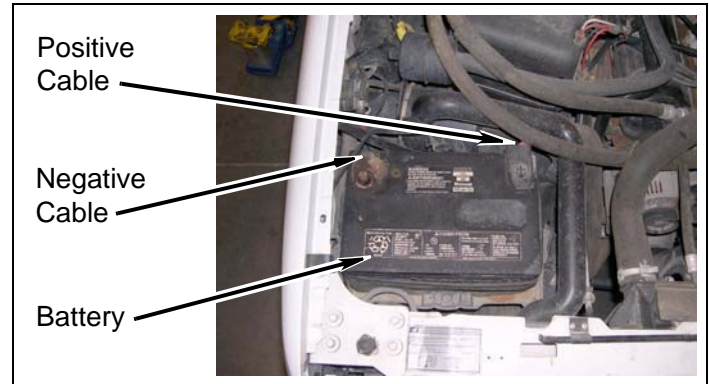
3. Install front wheels onto vehicle with lug nuts. Snug, but DO NOT TORQUE.
4. Using hydraulic floor jack, raise front of vehicle and remove jack stands from beneath frame. Lower vehicle onto ground.
5. TORQUE lug nuts to specification.
6. TORQUE four front u-bolts to specification.
7. TIGHTEN two *kit bolts* (1/2" x 11").



After Completing Installation

Engine Compartment

1. Connect both battery cables. Connect positive cable first, then negative cable.



Miscellaneous

1. Apply *kit label* (warning) onto dashboard in plain sight of all vehicle occupants.
2. Check all fasteners to ensure they are tight.
3. Ensure all wires, hoses, cables, etc. are properly connected and there is ample slack.

Dynamic Vehicle Check

1. Check steering and suspension in all positions to ensure that there is no bind and adequate clearance between all moving, fixed, and heated members. Check operation of clutch, brake system, and parking brake. Check operation of transmission and transfer case. Ensure there is full engagement in all gears and 4WD ranges. Check battery connections and electrical component operations. Test-drive vehicle.

⚠ WARNING

Retorque all fasteners after 500 miles and after off road use. All suspension lift components should be visually inspected and fasteners retorqued during routine vehicle servicing.

⚠CAUTION

Performance Automotive Group does not recommend any particular wheel and tire combinations for use with its suspension lifts and cannot assume responsibility for the customer's choice of wheels and tires. Refer to your owner's manual for recommended tire sizes and warnings related to the use of oversized tires. Larger wheel and tire combinations increase stress and wear on steering and suspension components, which leads to increased maintenance and higher risk for component failure. Larger wheel and tire combinations also alter speedometer calibration, braking effectiveness, center of gravity, and handling characteristics. Consult an experienced local off road shop to find what wheel and tire combinations work best with your vehicle.

NOTE

All warranty information, instruction sheets, and other documents regarding the installation of this product must be retained by the vehicle owner. Information contained in the instructions and on the warranty card will be required for any warranty claims. The vehicle owner needs to understand the modifications made to the vehicle and how they affect vehicle handling and performance. Failure to provide the customer with this information can result in damage to the vehicle and severe personal injury.

Kit Parts List**Qty. Description**

| | |
|----------|--|
| 2 | Bracket (lower) |
| 2 | Bracket (upper) |
| 1 | Instruction sheet |
| 1 | Label (logo) |
| 1 | Label (warning) |
| 1 | <u>DS45BAGA (Hardware bag)</u> |
| 2 | Bolt (1/2" x 11") |
| 6 | Bolt (1/2" x 2-3/4") |
| 12 | Bolt (3/8" x 1-1/2") |
| 8 | Nut (1/2" stover) |
| 12 | Nut (3/8" stover) |
| 8 | Sleeve (.620" OD x .505" ID x 1.480" L) |
| 4 | Sleeve (.812" OD x .572" ID x 2.000" L) |
| 2 | Sleeve (.875" OD x .563" ID x 1.540" L) |
| 12 | Washer (1/2" SAE) |
| 4 | Washer (1/2" USS) |
| 24 | Washer (3/8" SAE) |

NOTE

Depending on the vehicle configuration (automatic or manual transmission, 2WD or 4WD, cab length, bed length, etc.), some parts may not be used.

DS45 Multiple Shock Applications

| Model | Year | Suspension Lift? | Shock Location | TM Shocks Part Number | Quantity Required |
|--------------|-------------|-------------------------|-----------------------|------------------------------|--------------------------|
| F250 | 87-97 | No | Middle | 72450 | 2 |
| | | | Sides | 72410 | 4 |
| F250 | 87-97 | Yes (4" TM Lift) | Middle | 72510 | 2 |
| | | | Sides | 72450 | 4 |
| F350 | 86-87 | No | All | 72450 | 6 |
| F350 | 86-87 | Yes (4" TM Lift) | All | 72510 | 6 |