



3651 N. Highway 89 • Chino Valley, AZ 86323
(928) 636-7080 • www.p-a-g.net

FORD F150 COIL SPRING LEVELING KIT INSTALLATION INSTRUCTIONS 2004-2009 2" KIT# FL221PA

⚠ WARNING

Installation of a Performance Automotive Group leveling kit may change the vehicle's handling characteristics both on- and off-road. 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

Compressed coil springs can expand quickly and cause serious personal injury. Use extreme caution when working with compressed springs.

⚠ WARNING

This kit should only be installed on a vehicle that is in good working condition. If the vehicle is suspected to have been in a collision or misused, do not install this kit. We do not recommend that any vehicle with a leveling kit installed be involved in any extreme off-road maneuvers such as jumping. Failure to observe this warning may result in serious personal injury and/or severe damage to your vehicle.

⚠ 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. Before combining a leveling kit with a suspension lift, consult an installation professional to see how this will affect the vehicle.

⚠ WARNING

The installation of larger tires may reduce the effectiveness of the Braking System.

⚠ WARNING

Always wear eye protection when operating power tools.

⚠ WARNING

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

⚠ WARNING

Accidental deployment of the air bag can result in serious personal injury or death. To avoid accidental deployment during installation of the kit, the Supplemental Restraint System (SRS, or airbag) must remain deactivated. Do not allow anyone near the airbag during installation. Refer to the factory service manual or owner's manual for the recommended procedure to disable the SRS. After you install the kit, reactivate the SRS before driving the vehicle.

⚠ 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.

Before starting installation.

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

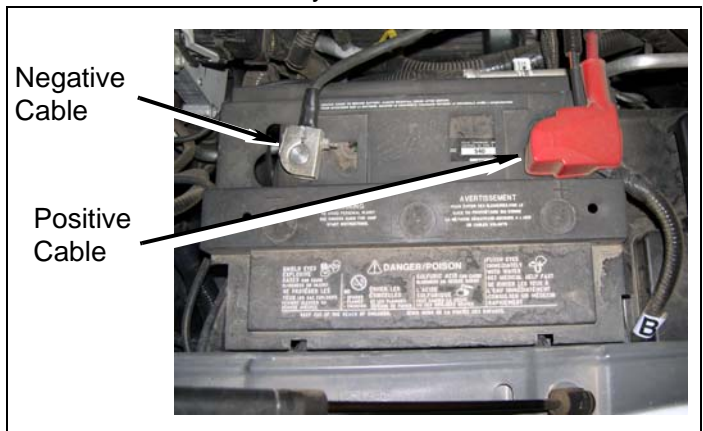
1. Carefully read all warnings and instructions completely before beginning.
2. Verify all parts have been received in this kit by checking parts list at the end of this document.

NOTE
If parts are missing from kit, be prepared to provide the following information:
1. **Name** of purchase location
2. **Bar Code** on side of box
3. **Date** above bar code
4. **Date** inside box cover
5. **Inspector #** from inside box cover

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) 636-7080
4. Special tools needed:
 - a. Coil spring compressor

WARNING
Compressed coil springs can expand quickly and cause serious personal injury. Use extreme caution when working with compressed springs.

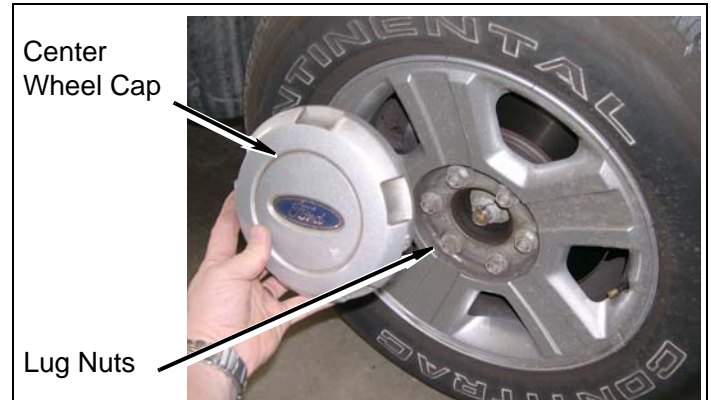
5. Park the vehicle on a clean, dry, flat, level surface and block the tires so the vehicle cannot roll in either direction.
6. Disconnect both battery cables.
 - a. Disconnect negative cable first, then positive cable from battery.



Prepare to install kit

A. Front of Vehicle.

1. Front Wheels
 - a. Remove two center wheel caps from two front wheels.
 - b. Loosen five lug nuts each from two front wheels.

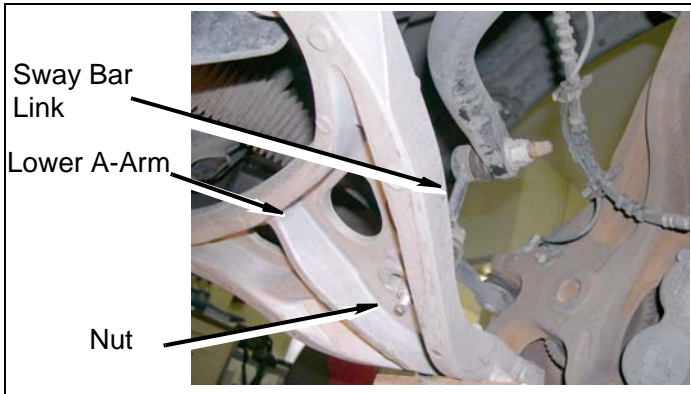


- c. Position hydraulic jack under center of axle frame crossmember. Slowly lift front tires off ground three to five inches.
- d. Position jack stands under frame just in front of transmission support cross member. Lower frame onto jack stands. Do not remove hydraulic jack and maintain some pressure on vehicle.
- e. Remove five lug nuts each from two front wheels. Remove wheels from vehicle.



2. Strut Assembly

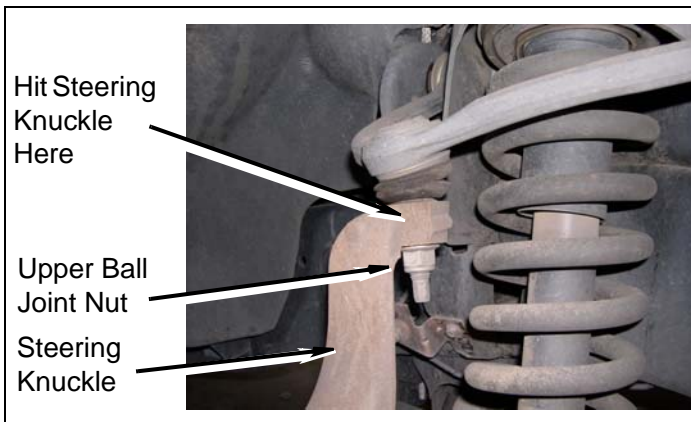
- a. **Passenger side:** Remove nut and sway bar link from lower A-arm.



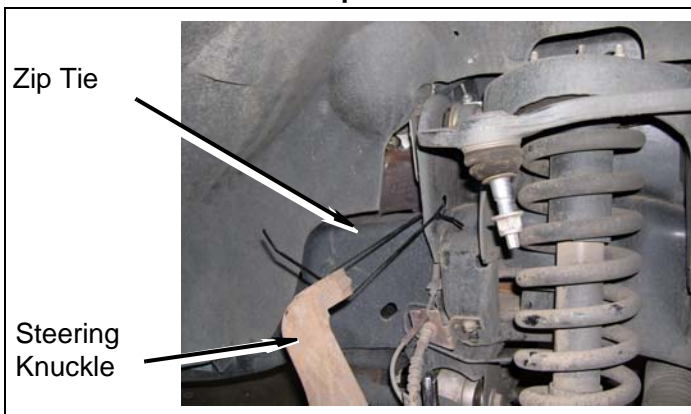
⚠NOTE

It is only necessary to remove the sway bar link on the passenger side.

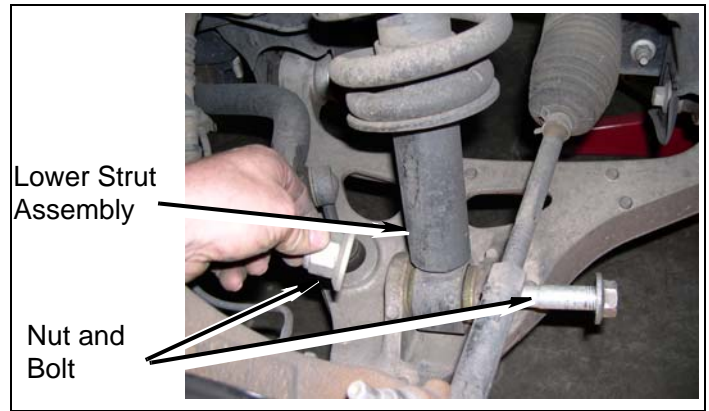
- b. Loosen but do not remove nut from steering knuckle and upper ball joint. **Do not remove nut completely.**
- c. Using a hammer, hit steering knuckle at ball joint location causing steering knuckle to come loose from tie rod.



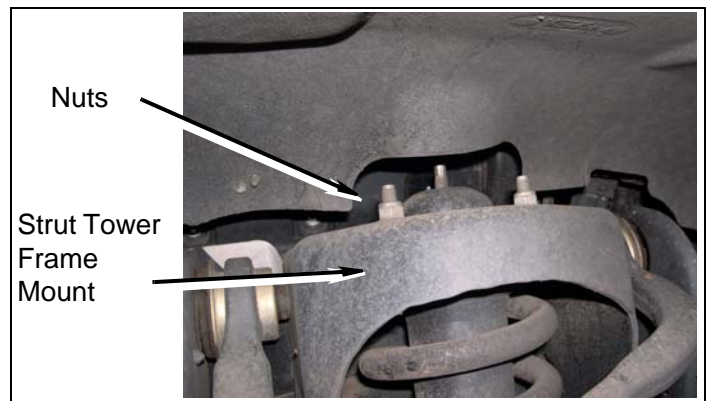
- d. Remove ball joint nut and tie steering knuckle aside with two kit **zip ties**.



- e. Remove nut and bolt from strut assembly and lower A-arm.



- f. Remove three nuts and strut assembly from strut tower frame mount.

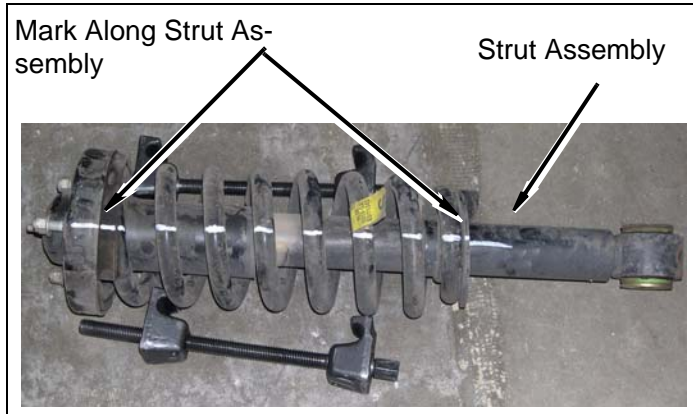


- g. Remove strut assembly from vehicle.

Install Kit

1. Strut Assembly

- a. Mark bolt plate, spring, and strut assembly from top to bottom as shown.

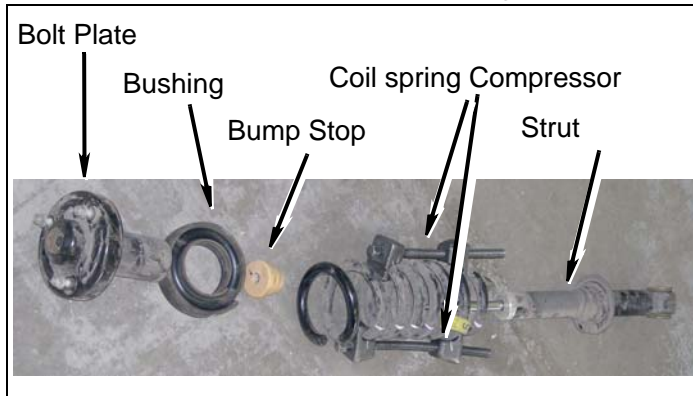


2. Coil Spring.

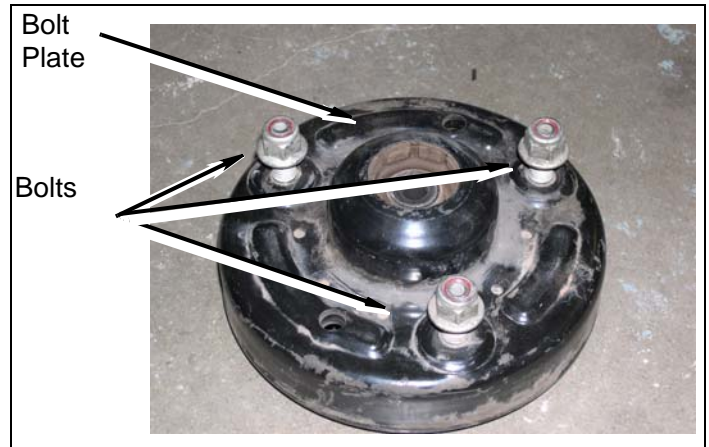
NOTE
A coil spring compressor is required for the following steps. Note position of coil spring for installation later in these instructions.

WARNING
Compressed coil springs can expand quickly and cause serious personal injury. Use extreme caution when working with compressed springs. **DO NOT attempt to remove the spring from the strut assembly without a Coil Spring Compressor.**

- a. Compress coil spring far enough to allow movement/twisting of bolt plate. Coil Spring Compressor is required to perform this step
- b. Remove nut, washer, bolt plate, bushing, and strut from compressed coil spring.

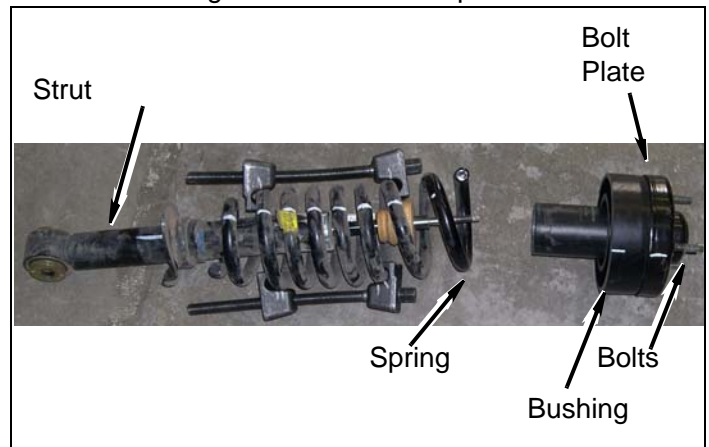


- c. With bolt plate on a hard flat surface, knock out three bolts.



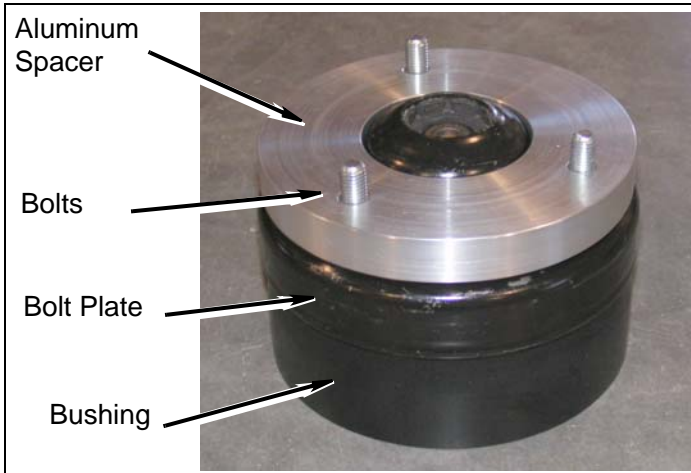
3. Leveling Kit Spacers

- a. Position three kit **bolts**, (10mm x 40mm) in bolt plate.
- b. Position kit **urethane bushing** on spring, aligning spring end with recess in bushing. Mark bushing using mark from spring as a guide.
- c. Install bolt plate, with three kit **bolts**, kit **urethane bushing**, and compressed spring on strut. Align marks on all components.

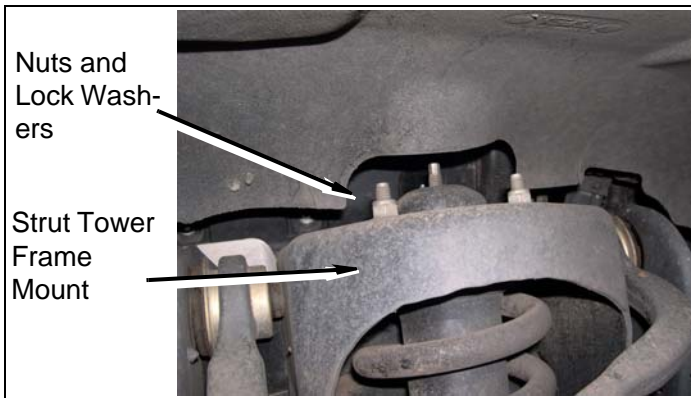


- d. Install washer and nut on strut assembly.
- e. Remove spring compressors from spring allowing spring to seat in urethane bushing. Ensure marks remain aligned on strut, spring, bushing, and bolt plate.

f. Position kit **aluminum spacer** on bolt plate.



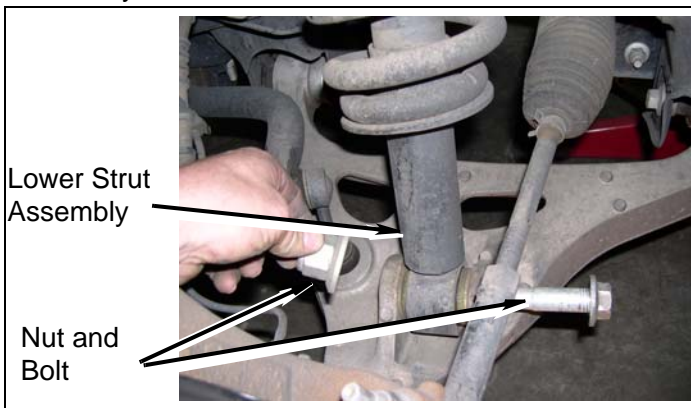
g. Install strut assembly in upper strut tower frame mount placing three kit **lock washers** and kit **nuts** on bolts.



NOTE

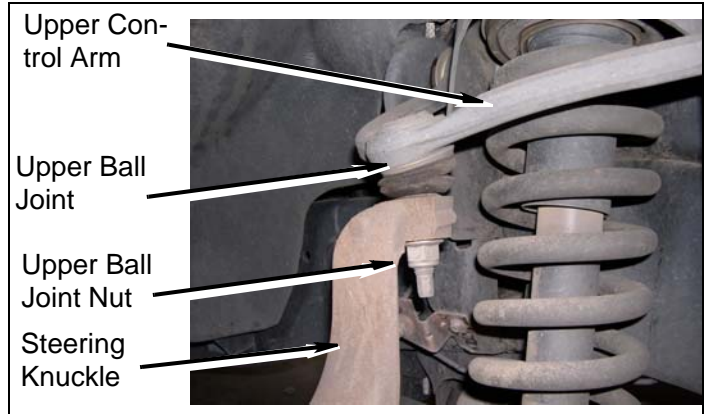
Performance Automotive Group recommends using Loctite® supplied in the kit for all mounting hardware.

h. Using a floor jack and block of wood under lower A-arm, lift A-arm high enough to slide lower strut assembly into mounting bracket. Install factory bolt and nut in lower strut assembly.



i. Remove zip tie strap while holding spindle.

j. Pull down on upper control arm sliding upper ball joint into steering knuckle. Install upper ball joint nut.



NOTE

Keeping pressure on lower A-arm, with the jack, will help in the installation of the ball joint.

k. **Driver side:** Perform installation of driver side leveling kit following the same procedure as the passenger side.

l. Install sway bar link and nut in passenger side lower A-arm.

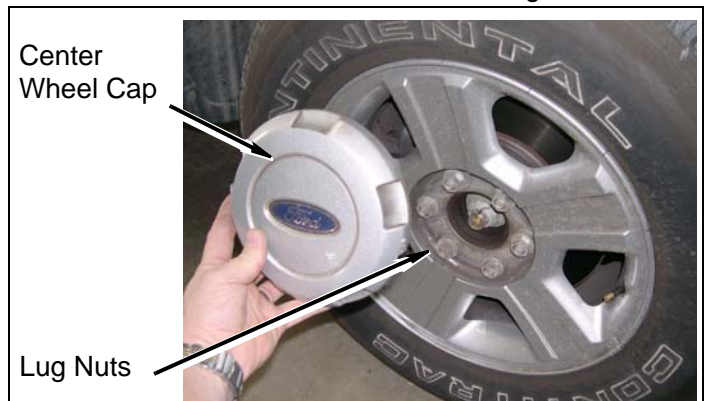
NOTE

Performance Automotive Group recommends using Loctite® supplied in the kit for all mounting hardware.

m. Check all mounting nuts and bolts for tightness prior to next step.

4. Front Wheels

a. Install two front wheels with five lug nuts each.

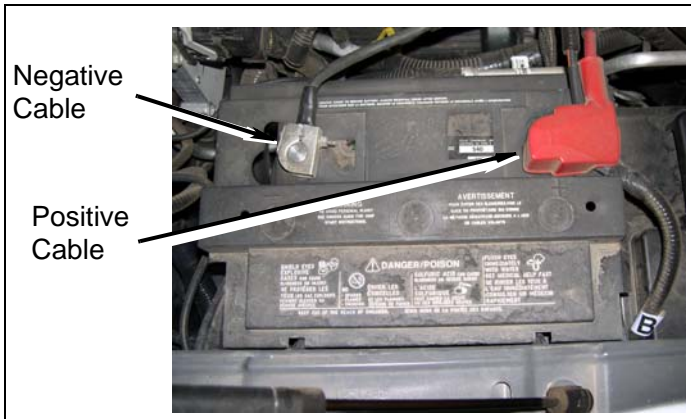


b. Using a hydraulic jack, slowly lift front of vehicle so that front tires are three to five inches off of ground. Remove jack stands from frame. Lower vehicle to ground and tighten ten lug nuts to 95 ft.-lbs.

- c. Install two center wheel caps on two front wheels.

5. Battery Cables

- a. Connect positive cable first, then negative cable to battery.



- e. Test drive vehicle in all gears and 4 wheel drive ranges. Pay close attention to all vehicle systems. Check all hardware again in 500 miles and as part of your regular maintenance schedule.
- f. Have a certified shop perform a front end alignment on the vehicle.

⚠CAUTION

Performance Automotive Group does not recommend any particular wheel and tire combinations for use with its leveling kits and cannot assume responsibility for the customer's choice of wheels and tires. Reference 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 with 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 his 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.

Finish the kit.

- 1. Check Vehicle.

⚠CAUTION

Re-torque all fasteners after 500 miles and after off road use. All coil spring lift components should be visually inspected and fasteners re-torqued during routine vehicle servicing.

- a. Check all mounting hardware to ensure it is properly tightened.
- b. Start vehicle and check the steering in both directions to ensure that there is no bind. Check all steering connections. Ensure that the steering gear box has no interference and is in proper working condition.
- c. Check the operation of the brakes and the parking brake. Check brake lines for adequate travel. Ensure brake lines do not touch any surfaces, moving or otherwise. If necessary, adjust brake lines and or brake line bracketery to eliminate all contact.
- d. Check clutch operation. Check both shift levers' operation. Ensure that there is proper engagement in all gears and 4 wheel drive ranges.

Parts List

<u>Qty</u>	<u>Description</u>
6	Bolt , 10 x 40 mm
6	Nut , 10 mm
2	Spacer , Urethane
2	Spacer , Aluminum
4	Tie , Zip
6	Washer , 10 mm Lock