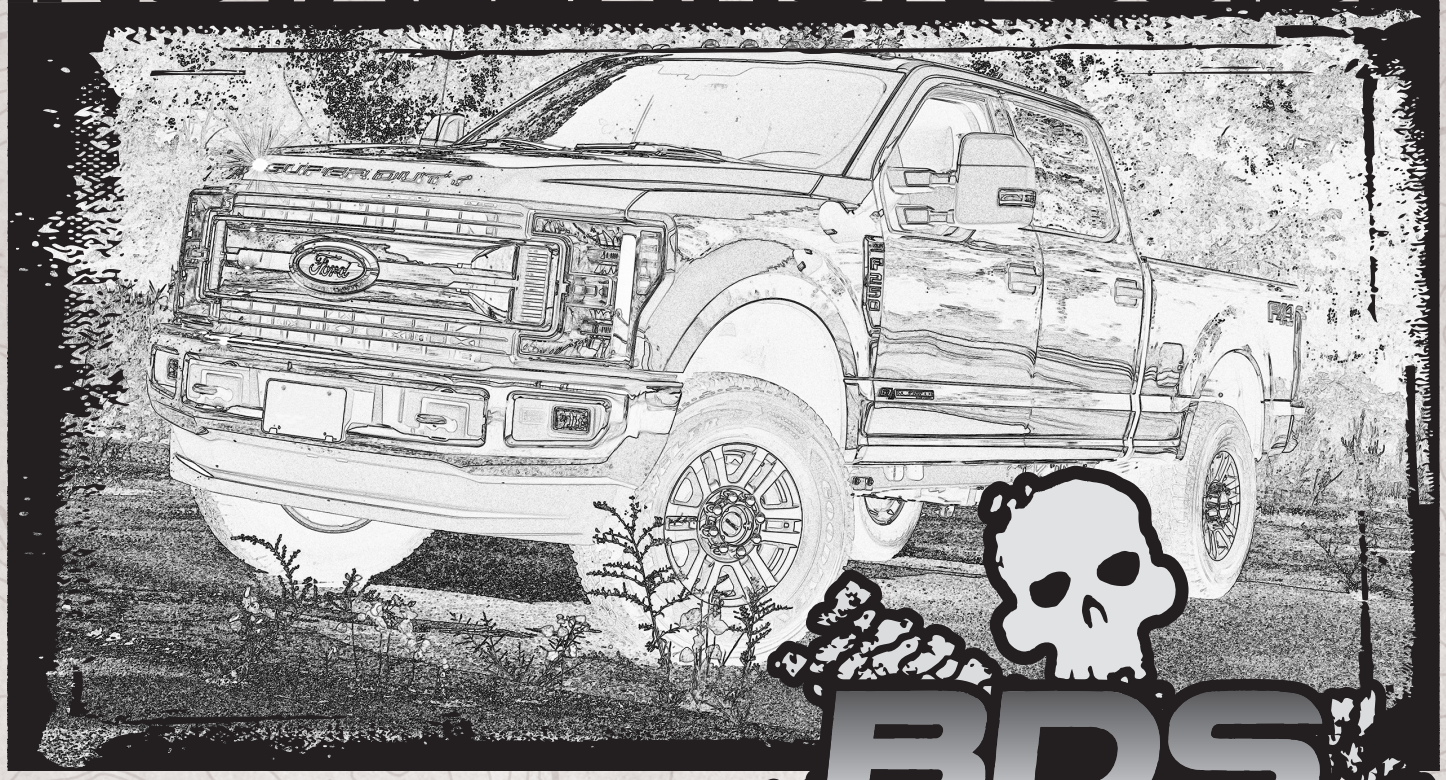
INSTALLATION GUIDE



Part#: 013205

HARDCORE LIMITED LIFETIME WARRANTY

Front Performance Spring Kit

1" Ford F250/350 4WD | 2017-2019
2" Ford F250/350 4WD | 2020-2022

Rev. 053122

491 W. Garfield Ave., Coldwater, MI 49036 • Phone: 517-279-2135
E-mail: tech-bds@ridefox.com

Read And Understand All Instructions And Warnings Prior To Installation Of System And Operation Of Vehicle.

THANK YOU

Your truck is about to be fitted with the best suspension system on the market today. That means you will be driving the baddest looking truck in the neighborhood, and you'll have the warranty to ensure that it stays that way for years to come. Thank you for choosing BDS Suspension!

BEFORE YOU START

BDS Suspension Co. recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

FOR YOUR SAFETY

Certain BDS Suspension products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. BDS Suspension Co. does not recommend the combined use of suspension lifts, body lifts, or other lifting devices. You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

BEFORE INSTALLATION

- Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
- Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
- Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.
- Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.
- Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
- If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
- Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.

FACTORY PROTECTION PLUS

Visit 560plus.com for more information.

TIRES AND WHEELS

35 x 12.50 R17, R18, or R20 Tire
4-1/2" Backspace Wheel

BEFORE YOU DRIVE

Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.

Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure. Longer replacement hoses, if needed can be purchased from a local parts supplier.

Perform head light check and adjustment.

Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

CONTENTS OF YOUR KIT

013205 Box Kit		
Part #	Qty	Description
03945	1	1-3" Track Bar Bracket
02019	2	Track Bar Cam
232681	2	Ford Alignment Cam

033202 Box Kit		
Part #	Qty	Description
033202R	2	Coil Springs

TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

TECH TIPS

1. The factory front track bar bolt requires 405 ft-lbs of torque to be installed properly. Be sure you have the means of removing and installing this hardware properly. It is possible to install the hardware and torque to a more modest range (200 ft-lbs or so) and take the vehicle to a shop with the means to torque the hardware properly immediately after the installation is complete.
2. As a result of the location of the long radius arm suspension, support locations are limited. Use your best judgment while supporting the vehicle with sufficient strength stands at appropriate locations. The radius arms will need to move freely during this installation. Recommended to lift the front of the vehicle from the front body mount (An extension may be needed)

INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Disconnect the front track bar from the frame mount (Fig 1).

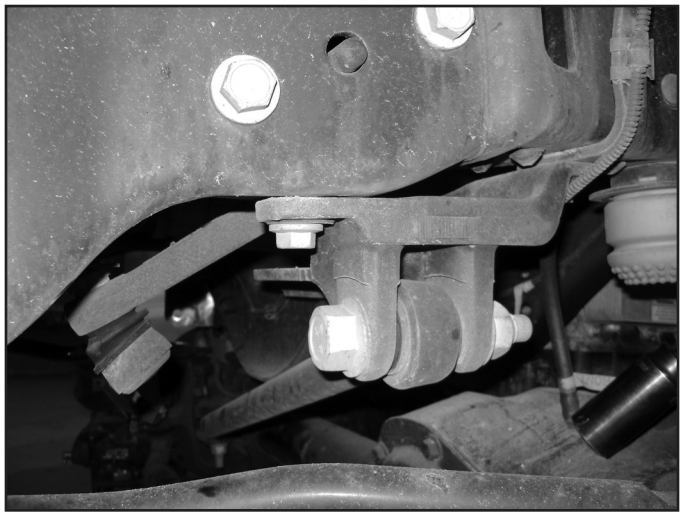
SPECIAL TOOLS

SPC #41550 or equivalent

Large Torque Wrench, ability to torque to 406 ft-lbs

30mm (1-3/16") Socket

FIGURE 1



3. Raise the front of the vehicle and support under the frame rails with jack stands.

   Note: As a result of the location of the long radius arm suspension, support locations are limited. Use your best judgment while supporting the vehicle with sufficient strength stands at appropriate locations. The radius arms will need to move freely during this installation.

4. Remove the front wheels.

5. Support the front axle with a hydraulic jack. With the axle supported this installation can be performed on both sides at the same time, but is not necessary.
6. Disconnect the sway bar links from the axle mounts. Retain hardware.
7. Remove the OE shock. Retain lower mounting hardware.
8. Disconnect the brake line bracket from the front of the coil perch (Fig 2). Retain hardware.

FIGURE 2

9. Free the hub vacuum line from the axle (Fig 3, 4).

FIGURE 3

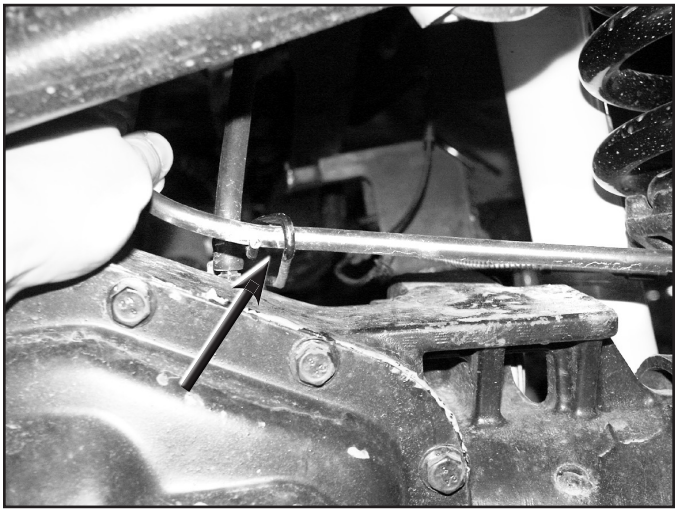
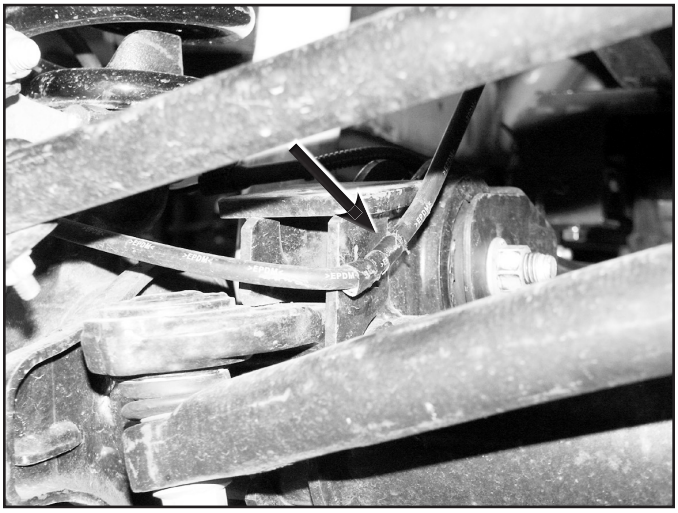


FIGURE 4



10. Lower the axle until the spring is free and remove the spring from the vehicle.

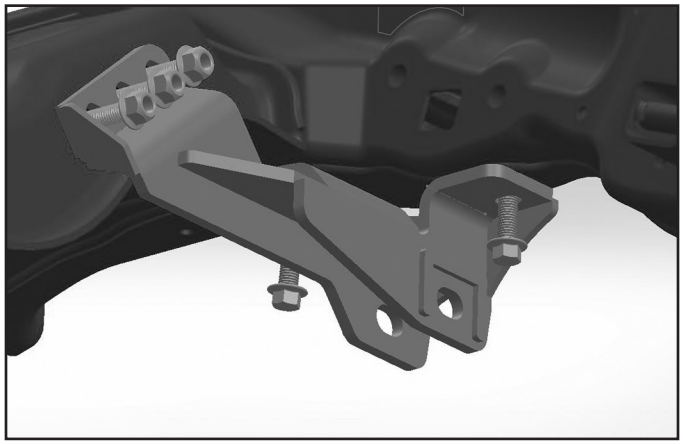
    Note: Do not over extend the brake lines.

11. Remove the five bolts mounting the track bar bracket to the frame and remove the bracket from the vehicle (Fig 5).

FIGURE 5

12. Install the new bracket in the vehicle using the five original mounting holes and hardware. Torque mounting hardware to 129 ft-lbs (Fig 6).

FIGURE 6



13. Trasfer the upper coil isolators to the new springs. Install the new coil springs and index correctly in the coil perch.
14. Grease and install sleeves and bushings into the shocks.
15. BDS (Silver / non-Fox) shocks will require the lower mount to be modified. The sharp, non-formed edge will need to be ground to match the formed profile. Grind this and coat with paint. (Fig 7a, 7b)

FIGURE 7A

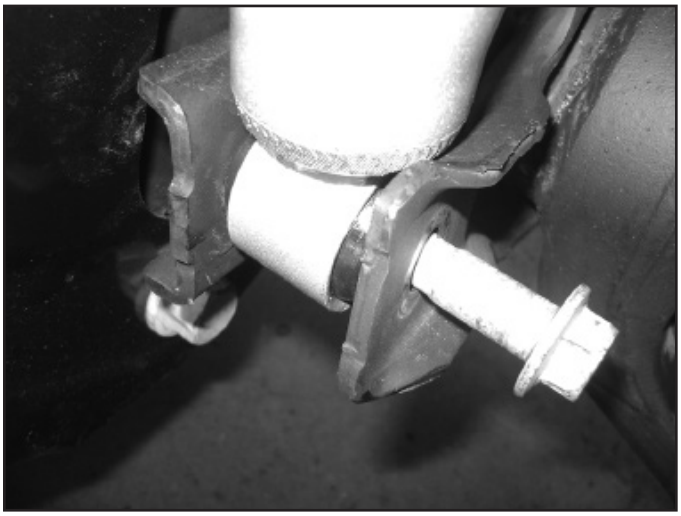
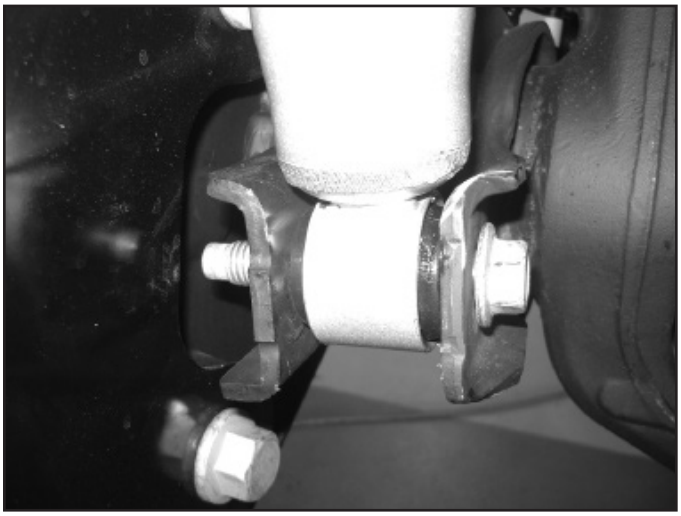


FIGURE 7B



16. Compress the coils slightly by using a hydraulic jack on the axle. Install new shocks with factory lower hardware and stem washers, bushings, and 1/2" fine thread nut on the upper mount. Tighten the upper mount until the bushings begin to swell. Tighten lower mount to 50 ft-lbs.
17. Reattach all brake, ABS and vacuum lines to the original locations with the OE mounting hardware.
18. Reattach the sway bar links to the axle with the OE hardware and tighten securely.

ALIGNMENT CAM INSTALLATION

19. Remove the cotter pin from the upper ball joint.
20. Loosen the upper ball joint stud until the nut is level with the top of the stud. Strike the axle "ear" near the upper ball joint to release the ball joint to sleeve taper (Fig 8a).

    Note: The top of the stud can also be struck using a soft blow hammer to aid in loosening the taper. Take care not to damage the stud/nut threads.

FIGURE 8A

21. Remove the OE ball joint sleeve from the axle using the appropriate removal tool (SPC #41550 or equivalent) (Fig 8b).

FIGURE 8B

22. Install the new sleeve with the arrow on the top of the sleeve pointing toward the front of the vehicle. Using the old sleeve, pound down on the new sleeve to seat it on the ball joint taper. Make sure that the flat of the sleeve is flush with the flat of the axle (Fig 9).

FIGURE 9

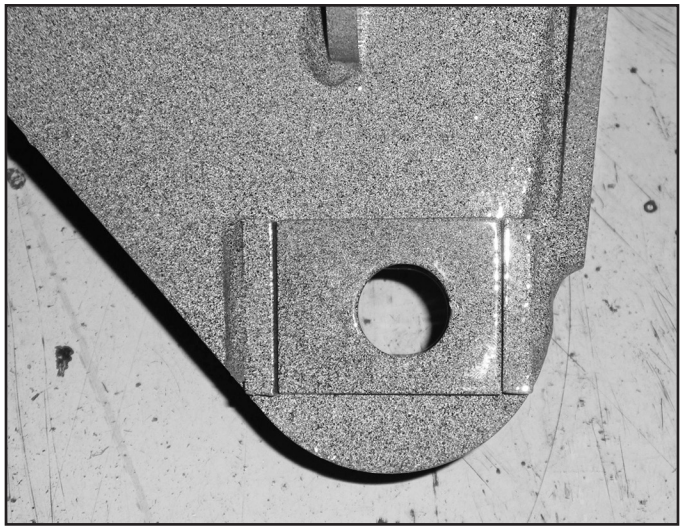
23. Install and torque the OE ball joint nut to 69 ft-lbs. Install the cotter pin. Note: Do not loosen the nut to install the cotter pin (Fig 10).

FIGURE 10

24. Install the wheels and lower the vehicle to the ground.
25. Reattach the track bar with the OE hardware. Turn the steering wheels to aid in aligning the track bar in the bracket. Torque hardware to 406 ft-lbs.

    If installing on 2017-2019 Super Duty, offset the holes in the cams closer to the passenger's side (Fig 11). If installing on 2020+ Super Duty, offset the holes in the cams closer to the driver's side (Fig 11)

FIGURE 11 (DRIVER SIDE INSTALLATION SHOWN)



26. Check all hardware for proper torque.
27. Adjust steering wheel.
28. Check hardware after 500 miles.

WE WANT TO SEE YOUR RIDE!

Grab photos of your BDS-equipped truck in action and send them in for a chance to be featured. Send it in to our Bad Ass Rides customer gallery at bds-suspension.com/bar and post them on the BDS Fan Page on Facebook at facebook.com/BDSSuspensions. Don't forget about your BDS swag! BDS offers t-shirts, hoodies, decals and more available on the BDS website or through your local BDS distributor.

TIME TO HAVE SOME FUN

Thank you for choosing BDS Suspension.

For questions, technical support and warranty issues relating to this BDS Suspension product, please contact your distributor/installer before contacting BDS Suspension directly.

#033202

Installation Instructions

Ford Escape

2” Suspension System

READ AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS PRIOR TO INSTALLATION OF SYSTEM AND OPERATION OF VEHICLE.

SAFETY WARNING

BDS Suspension Co. recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

PRODUCT SAFETY WARNING

Certain BDS Suspension products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. BDS Suspension Co. does not recommend the combined use of suspension lifts, body lifts, or other lifting devices.

You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

PRE-INSTALLATION NOTES

1. Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
2. Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
3. Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.
4. Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.
5. Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
6. If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
7. Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.

POST-INSTALLATION WARNINGS

1. Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.
2. Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure. Longer replacement hoses, if needed can be purchased from a local parts supplier.
3. Perform head light check and adjustment.
4. Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

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rev. 1/18/2006

FRONT INSTALLATION

1. Safely raise the front of vehicle and support with jack stands for safety.
2. Remove the wheels.

Perform front installation on one side of the vehicle at a time.

STRUT REMOVAL

3. Remove the nut retaining the sway bar end link to the strut and remove the link from the strut (Fig 1). **Note: Will be reattached after installation is completed on both sides of the vehicle.**

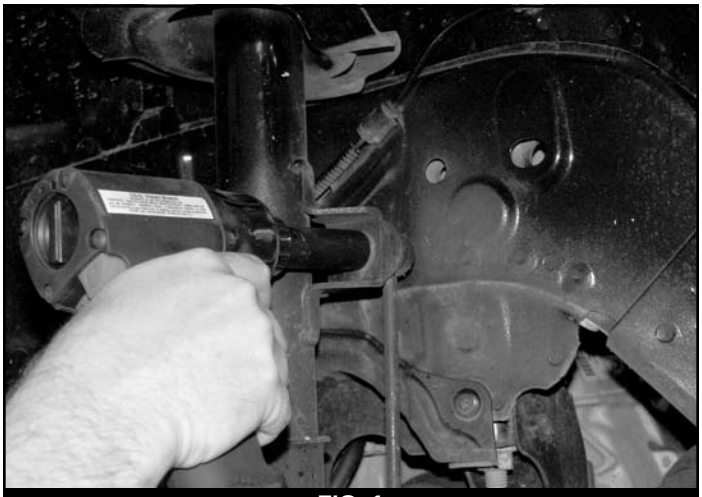

FIG. 1

4. Remove the brake line retaining clip from the strut and remove the brake line (Fig 2).

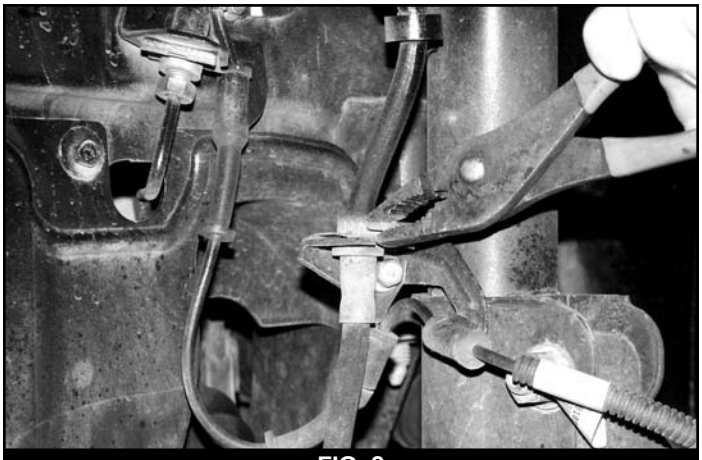

FIG. 2

5. Remove the bolt retaining the ABS sensor wire to the strut and remove the wire from the strut (Fig 3).

FIG. 3

6. Remove the bolt retaining the ABS sensor wire bracket to the body.
7. Support the lower control arm with a floor jack. Remove the two strut-to-knuckle mounting bolts (Fig 4).

FIG. 4

8. From inside the engine compartment, remove the four upper strut mounting nuts (Fig 5). Lower the floor jack and remove the strut assembly from the vehicle. **Note: Do not loosen the large strut rod nut at this time.** Take care not to over extend the CV half shafts.

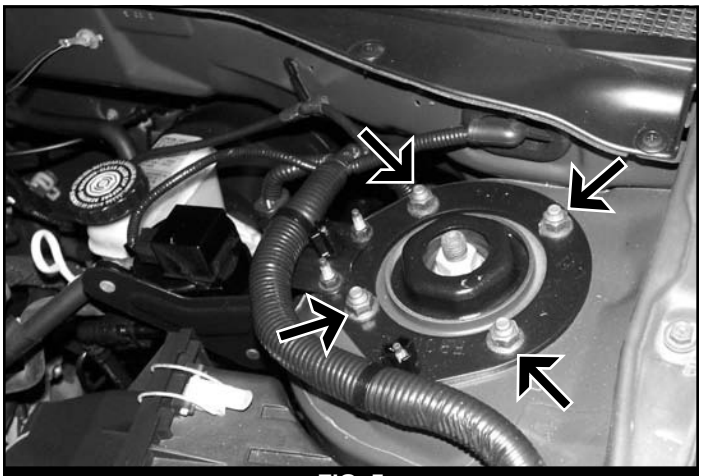

FIG. 5

STRUT DISASSEMBLY/ASSEMBLY

Caution: Coil spring is under extreme pressure. Improper removal/installation of coil spring could result in serious injury or death. Use only a high-quality spring compressor and carefully read and follow the manufacturer's instructions.

9. Mount the coil spring in the coil spring compressor and compress the coil spring until all pressure is relieved from the top mounting plate.
10. Remove the top mounting plate by removing the large lock nut. Hold the shock rod with an Allen wrench to prevent it from turning. Remove all of the parts from the top of shock and lay them in order for reinstallation. Inspect shock and replace as necessary.
11. Slowly release the pressure from the OE coil spring and remove it from the spring compressor.
12. Apply Loctite to the strut rod threads and the female threads on the provided strut extension.
13. Holding the strut rod (as close to the threads as possible) in a soft-jaw vice or with non-marring pliers, install the extension on the end of the strut and tighten securely.
14. Mount the new spring in the spring compressor and compress it until shock assembly can be reinstalled. Ensure that all OE mounting parts are installed and in the correct order. Apply Loctite to the extension threads and fasten with OE nut. Tighten the OE strut rod nut to manufacturer's specifications.

FIG. 6

15. Ensure that the coil spring is turned so that the end is resting in the lowest part of the spring seat. Slowly release the coil spring compressor.

STRUT INSTALLATION

16. Install the strut into the upper mount and retain with the four OE nuts. Do not tighten.
17. Install the tab washer on the provide strut eccentric bolt as explained in the provide instructions. (Fig 6)
18. Mount the strut to the steering knuckle with the OE bolt and nut in the lower strut hole and the alignment eccentric bolt and nut in the upper hole. Torque OE hardware to manufacturer's specifications and new eccentric to 55 ft-lbs.
19. Install the provided brake line relocation bracket to the original mounting hole for the ABS wire on the body with the OE bolt.
20. Install the ABS wire to the relocation bracket with a 1/4" nut and washer and tighten securely (Fig 7).

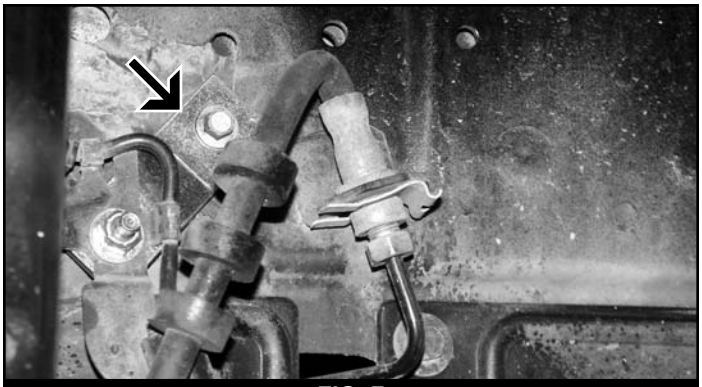

FIG. 7

21. Install the ABS wire retaining clip to the strut with the OE bolt and tighten securely. Install the brake line to the strut with the OE retaining clip.
22. Install the brake line in the strut bracket and retain with the OE clip.
23. Repeat installation procedure on opposite side of the vehicle.
24. Install the sway bar end link to the strut with the OE nut and tighten securely.
25. Torque the upper strut mounting nuts to the manufacturer's specifications.
26. Install the wheels and lower the vehicle to the ground.

REAR INSTALLATION

27. Safely raise the rear of vehicle and support with jack stands for safety.
28. Remove the wheels.

COIL SPRING REMOVAL/INSTALLATION

29. Support the hub assembly with a floor jack. Remove the shock from the lower mount.
30. Remove the retaining clip holding the brake line to the body and remove the brake line (Fig 8). On the driver's side it will be necessary to remove the brake line bracket at the wheel knuckle as well.

FIG. 8

31. Remove the upper and lower control arm-to-knuckle ball joint nuts (Fig 9). Strike the knuckle with a hammer near the ball joints to dislodge them from the knuckle or use a pickle fork. **Note: If replacing the**

OE upper control arms with BDS 123159 Adjustable upper control arms, remove the inside upper control arm mounting bolt and remove the arm from the vehicle.

FIG. 9

32. Lower the floor jack until the spring can be removed from the vehicle.
33. Make sure the lower spring seat is clean. Check the upper rubber isolator for wear and replace as necessary. Mount the upper rubber isolator on the new BDS spring (Fig 10). Mount the spring in the vehicle and turn it so it is in the lowest part of the spring seat.

FIG. 10

34. Raise the floor jack and install the control arm ball joints into the knuckle. Fasten the ball joints with the OE nuts and torque to OE specifications. **Note: If installing new BDS upper control arms, adjust the arms to the same length as the OE (approximately 20 1/2" from the center of the ball joint to the center of the bushing.)**
35. From inside the rear of the vehicle, remove the rear plastic panels to access the upper shock mount. The panels are held in place by retain clips and one finger screw at the rear (Fig 11). Remove the screw and carefully pull the panel free from the body (Fig 12).

FIG. 11

FIG. 12

36. Install the new BDS shocks to the upper mounts with the provided hardware and lower mounts with the OE hardware and torque to OE specifications. **Note: In some instances the OE upper control arm will contact the shock at maximum droop. In this case, the lower control arms can be raised with a jack or the shock can be installed on the lower mount with the vehicle on the ground.**
37. Install the brake lines back to there original locations with the OE hardware.
38. Install the wheels and lower the vehicle to the ground.

POST-INSTALLATION CHECKS

39. Check all fasteners for proper torque.
40. The vehicle will need to have an alignment.
41. Align headlights.
42. Check all fasteners after 500 miles.

READ AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS PRIOR TO INSTALLATION OF SYSTEM AND OPERATION OF VEHICLE.

INSTALLATION INSTRUCTIONS

1. Park the vehicle on a flat, clean surface and block the rear wheels for safety.
2. Raise the front of the vehicle and support with jack stands under the frame.
3. Remove the front wheels.
4. Remove the upper strut bolt but do not loosen the lower strut bolt.
5. Install the tab washer on the alignment cam with the bolt head arrow pointing away from the washer handle and the washer tab pointing from the bolt head so the washer tab is nestled in the space between the bolt head and the cam lobe (see figure).
6. Insert the alignment cam through the strut/spindle assembly in the same direction that the upper bolt was installed. Install the lock nut and torque to proper spec (12mm cams: 55 ft-lbs, 14mm cams: 95 ft-lbs).
7. Install the wheels and lower vehicle to the ground.
8. When alignment is performed, the cam bolt and OE lower strut bolt are loosened and the cam turned to achieve the proper camber angle. This kit will provided ±2º of adjustment. If more adjustment is needed, another kit can be installed in the place of the lower strut bolt to achieve an additional ±2º of adjustment.

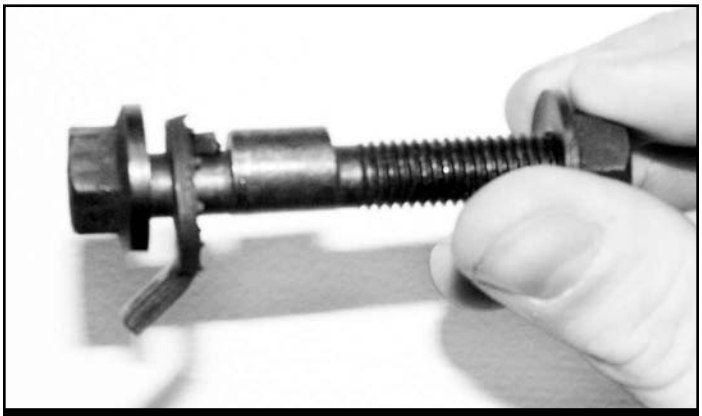

FIG. 1

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