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Part#: **013004, 013005, 013006**

Product: **6, 8" Suspension System**

Application: **1999-2004 Ford F250/350 Super Duty 4wd**

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.

PARTS LIST

Part # Qty Description

083401R	1	Pitman Arm (013004 Only)
083403R	1	Pitman Arm (013005, 013006)
963181012Q	4	9/16" x 3-1/8" x 10-1/2" Sq. U-Bolt
OR		
963181100H	4	9/16" x 3-1/8" x 11" Curved U-Bolt
W96S	8	9/16" Washer
N96FH	8	9/16" High Nut
01019	2	Front Sway Bar Link (013404 Only)
M02016RB	4	Sway Bar Link Bushing
65	4	Sway Bar Link Sleeve
01027	2	Front Bump Stop Spacer
01067	1	Track Bar Bracket (013004 Only)
01057	1	Track Bar Bracket (013005, 013006)

65077	1	1/8" x 1-1/4" Cotter Pin
403	1	Bolt Pack - Sway Bar Links
	2	12mm-1.75 x 80mm bolt
	2	12mm-1.75 prevailing torque nut
	6	7/16" USS washer
443	1	Bolt Pack - Track Bar (013004 Only)
	1	9/16"-18 x 3-1/2" bolt
	2	9/16" SAE washer
	1	9/16"-18 prevailing torque nut
441	1	Bolt Pack - Bump Stop
	4	10mm-1.5 x 110mm bolt
	4	3/8" USS washer

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 driver's side frame bracket (Fig 1). Save hardware.
3. Raise the front of the vehicle with a hydraulic jack and support with jack stands under the frame. Locate the stands just behind the front leaf spring shackles.
4. Remove the front wheels.
5. Remove the front bumper. Removing the bumper greatly improves access to the front spring bolts and speeds installation time. Front bumper mounting varies slightly from year to year. Be sure to disconnect any auxiliary lights and shrouds before attempting to remove the bumper. The main four mounting bolts are accessed in the front near the tow hooks. Depending on the year, there will be a side support on each side that must be disconnected.
6. Remove the cotter pin and castellated nut from the steering drag link at the pitman arm (Fig 1). Thread the nut back on a couple turns. Strike the pitman arm near the drag link end to dislodge the taper. Remove the nut and drag link from the pitman arm. Save nut.

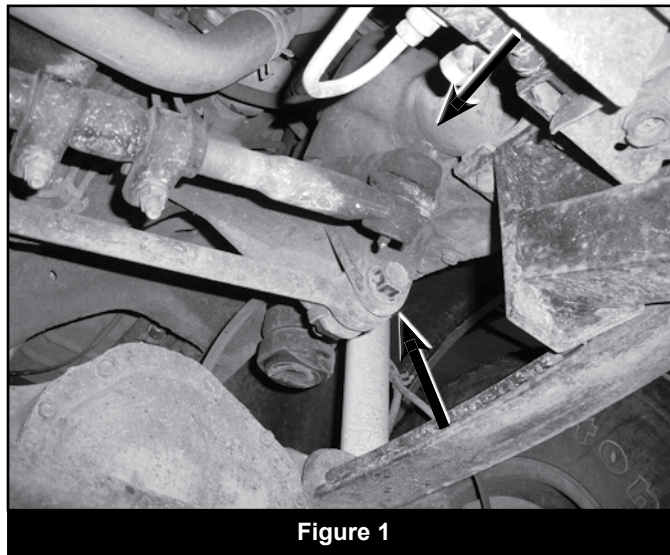
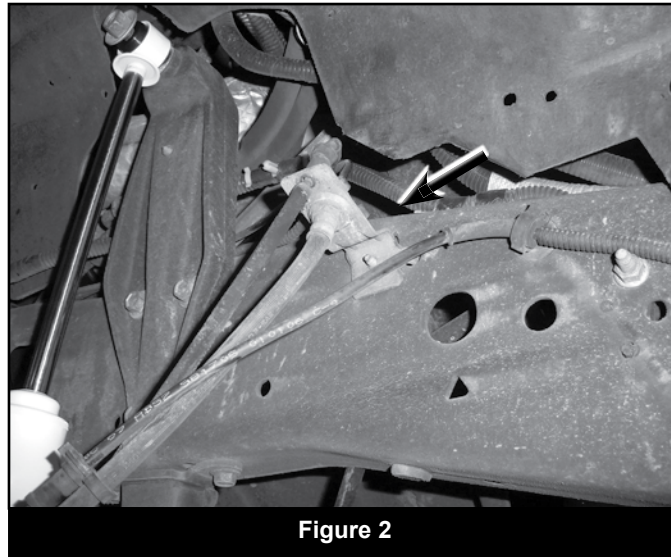
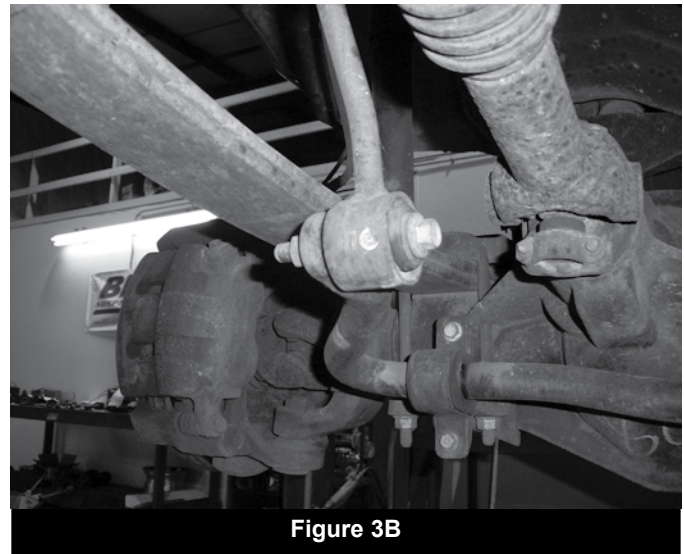
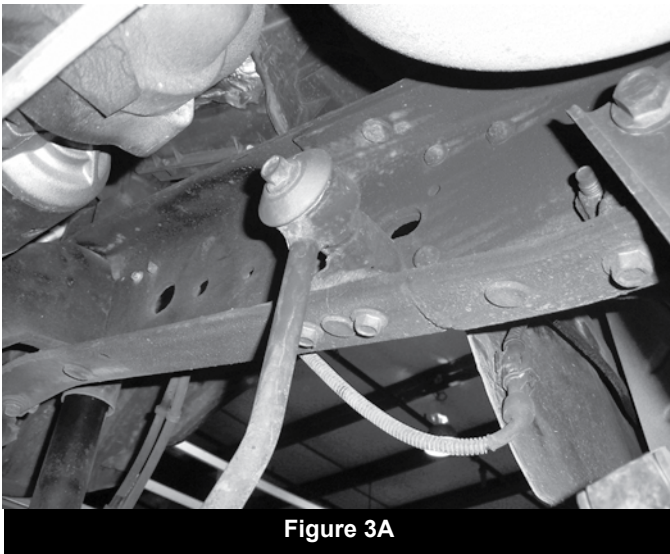


Figure 1

7. Remove the front shocks from the axle and frame mounts. Save hardware and discard shocks.
8. Locate the brake line mount bracket on the frame. Using pliers, bend the bracket down about 60 degrees away from the frame (Fig 2). After the bracket is reformed, remove the mounting bolt and remove the bracket from the frame. Save hardware.



9. Disconnect the front sway bar links from the sway bar and frame (Fig 3A,B). Remove the links from the vehicle and discard. Save hardware. Note: Some early model vehicles had sway bar link mounts below the frame. The newer style frame mount is shown in Fig 3A



10. Disconnect the front drive shaft from the front axle. Save u-joint straps and bolts.
11. Loosen but do not remove all four leaf spring mounting bolts. On the front, the A/C condenser brackets will need to be removed to gain access to the bolt (Fig 4). Remove the brackets from the core support and save along with the mounting bolts. Note: The factory uses very strong Loctite on the leaf spring bolts. In most cases heat will be needed to loosen the nuts (Fig 5). Take extra care when heating the nuts and keep a fire extinguisher near by.

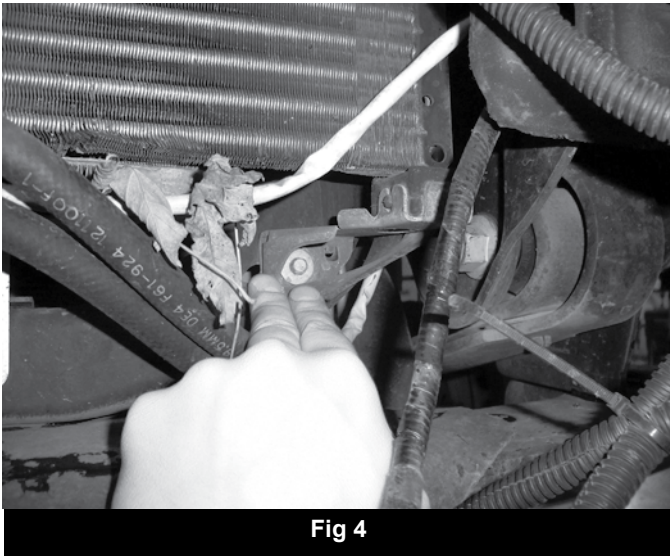


Fig 4

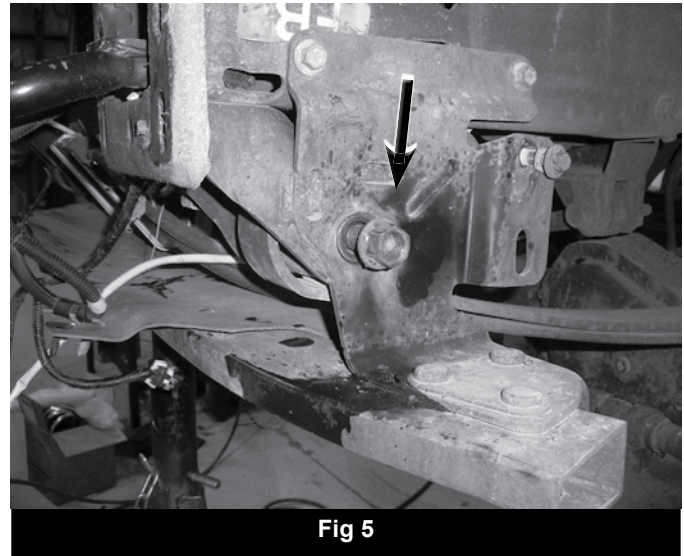


Fig 5

12. With all of the leaf spring bolts loose, support the passenger's side of the front axle with a jack. Remove the passenger's side spring u-bolts. Lower the axle away from the spring. Remove the spring bolts and remove the spring from the vehicle. Save the leaf spring bolts and discard the u-bolts.
13. Locate one of the new leaf springs. The larger spring eye will mount to the front of the vehicle. Install the new spring in the vehicle and loosely attach it to the front frame mount and rear shackle with the factory hardware. Note: Find an assistant! These springs weight approximately 100 lbs each.
14. Raise the axle to the new spring. Align the spring pin into the pin hole in the axle mount and fasten with the new 9/16" u-bolts/nuts/washers and the factory spring plates. The axle will have to be pulled forward to align the pin. It will be necessary to loosen the driver's side u-bolts to allow the axle to move forward. Snug the u-bolts just enough to keep the spring pin in place. Note: Be sure the axle is well supported at all times.
15. Repeat the leaf spring installation steps on the driver's side of the vehicle. Leave all hardware loose. The u-bolts and spring bolts will be torqued with the weight of the vehicle on the suspension at the end of the installation.
16. Remove the (3) bolts mounting the track bar bracket to the frame and front frame crossmember. The two bolts at the frame thread into a nut tab inside the frame (Fig 6). Remove the bracket from the vehicle. Save hardware.
17. Mark the relationship between the steering sector shaft and the pitman arm for reference. Remove the pitman arm nut/washer (Fig 6). Remove the pitman arm from the steering box sector shaft with an appropriate pitman arm puller. Save hardware.

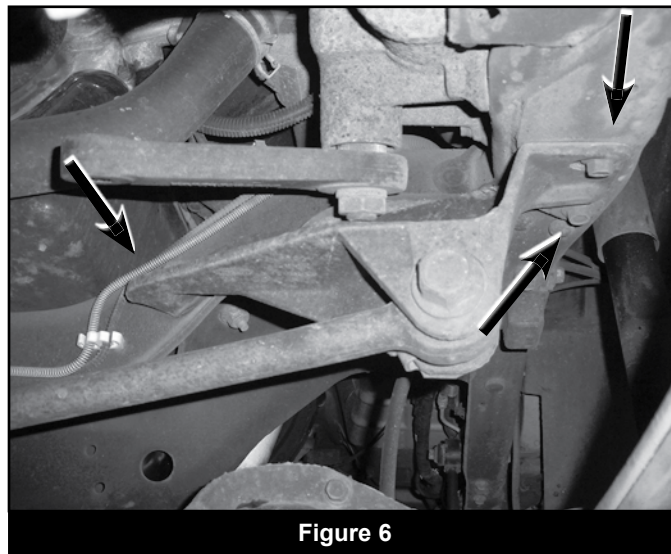


Figure 6

18. Install the new provided pitman arm (083401R or 083403R) on the steering sector shaft. Use the marks made on the factory arm as a guide. Fasten the pitman arm with the original sector shaft nut/washer. Torque nut to 185-200 ft-lbs.

19. Install the new track bar bracket (01057 or 01067) to the original bracket mount points (Fig 7). Fasten with the factory hardware. Torque bolts to 65 ft-lbs.

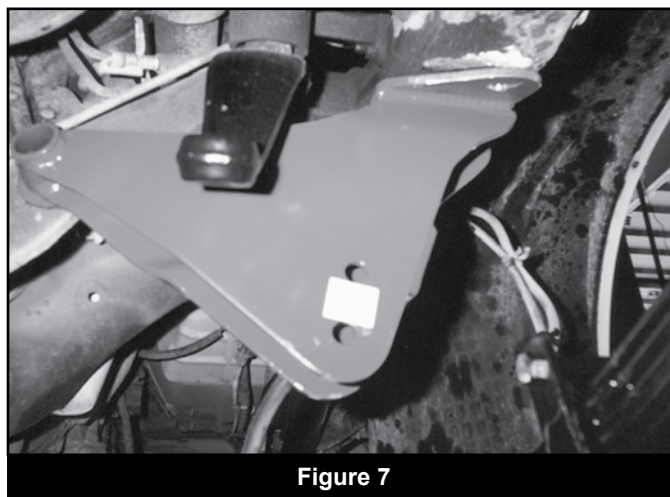


Figure 7

20. Remove the factory front bump stops from the frame rails (Fig 8). Locate the provided rectangle bump stop spacers (01027) and place between the factory bump stops and the frame rail. Align the holes in the bump stop and spacer with the original frame mounting holes and fasten with the provided 10mm x 110mm bolts and washers (BP 441) into the captive nuts in the frame (Fig 9). Use Loctite on the bolt threads and torque bolts to 30 ft-lbs.

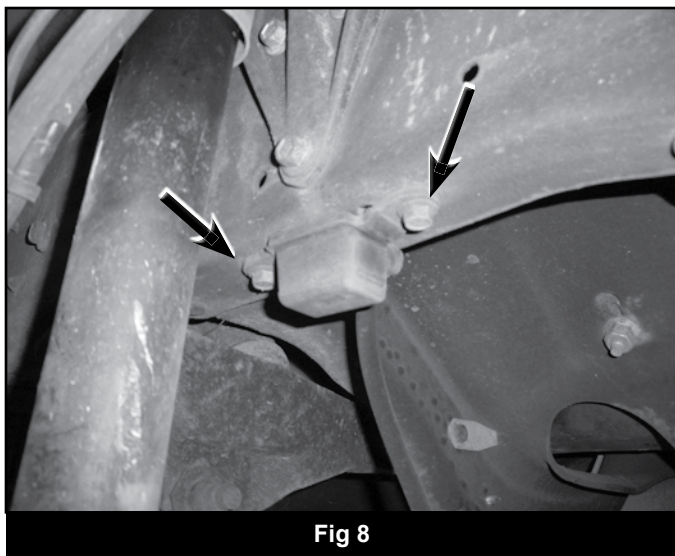


Fig 8

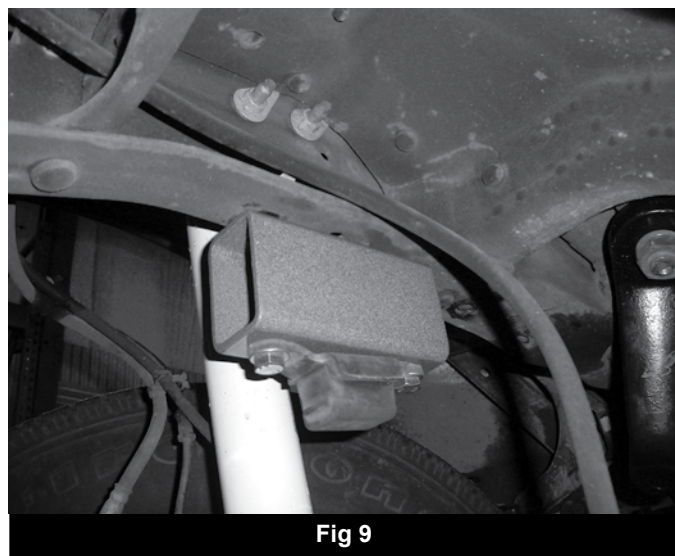


Fig 9

21. Install the new provided shocks to the factory axle/frame mounts with the original hardware. The body end of the shock mounts to the axle. Torque the upper and lower shock mount hardware to 70 ft-lbs
22. Attach the steering drag link to the new pitman arm with the original castellated nut and new cotter pin. Torque nut to 65 ft-lbs. Note: Do not loosen the nut to align the cotter pin, only tighten.
23. Some early model trucks had sway bar link frame mounts that are positioned below the frame from the factory. For all late model trucks the mounts are positioned inside the frame. Remove the two bolts and the mounts from the inside of the frame rails and reinstall on the bottom of the frame with the original bolts (Fig 10). Install the mounts so the small ID of the link mounting hole is toward the inside of the vehicle. Torque the link mount bolts to 35 ft-lbs. Early model style mounts do not require modification.
24. Locate the new provided front sway bar links (01019), bushings (M02016RB) and sleeves (65). Lightly grease and install the bushings and sleeves into the new link ends. Attach the new links to the frame mount with the original hardware and a 7/16" USS washer (BP 403) against the bushings face. The links are offset and will mount in the same position as the originals. Attach the new sway bar links to the inside face of the sway bar with the provided 12mm x 80mm bolts, nuts and 7/16" USS washers (BP 403). Torque link hardware to 60 ft-lbs.



Fig 10

25. Locate the original brake line bracket mounting hole on the frame. Measure down 3" and forward 2" from the original mounting hole and drill a new bracket mounting hole. Check the inside of the frame for wires/hoses before drilling. Carefully reform the brake lines to reposition the mount bracket. Bend the alignment tab on the bracket flat and reattach the bracket to the frame with the original bolt. Torque bolt to 15 ft-lbs.
26. With the axle hanging at full suspension droop, check the front driveshaft length. Also, check for driveshaft joint clearance at both ends. The driveshaft may need to be clearance ground and/or lengthened depending on the lift and how the vehicle is equipped.
27. Install the wheels and lower the vehicle to the ground. Torque the lug nuts to 165 ft-lbs.
28. Bounce the front of the vehicle to help settle the suspension.
29. Install the driver's side end of the factory track bar into the new frame mount bracket. Early model vehicles (pre 2/28/99 - Kit #013004) with small 9/16" track bar ends use the provided new 9/16" hardware (BP 443) Torque 9/16" hardware to 129 ft-lbs. Later model trucks (Kit #013005, 013006) use factory 20mm hardware and torque the hardware to 405 ft-lbs. For 6" kits use the upper track bar hole, 8" use the lower. Note: Turn the steering wheel to shift the vehicle side to side in order to align the track bar in the bracket.
30. Torque the front leaf spring u-bolts to 100 ft-lbs. Torque the front leaf spring hanger bolts to 200 ft-lbs and the shackle bolts to 180 ft-lbs.
31. After the front spring hardware is properly tightened, reinstall the A/C condenser support brackets with the original hardware. Tighten bolt to approximately 5 ft-lbs.
32. Reinstall the front bumper with the original hardware. Be sure to replace any shrouds/wire that were removed. Adjust bumper to the desired location and tighten all mounting hardware securely.
33. Check all hardware for proper torque.
34. Check hardware after 500 miles.
35. The steering wheel will need to be re-centered.
36. Adjust headlights.

NOTICE TO DEALER/INSTALLER

These instructions, the warning card, and included decals must be given to the owner of this BDS Suspension product.

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

Sold/Installed by: