

# #013004, 5, 6, 7, & 9

## Installation Instructions

### Front Box Kit

### Ford Super Duty & Excursion



**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 FOR #013004, 013005, 013006

Part#	Qty	Description
963181012Q	4	9/16 x 3-1/8 x 10-1/2" Square U-bolt (013004, 013005 only) or
963181100H	4	9/16 x 3-1/8 x 11" Radius U-bolt (013006 only)
N96FH	8	9/16" High Nut
W96S	8	9/16" SAE Flat Washers
083401R	1	Pitman Arm (013004 only) or
083403R	1	Pitman Arm (013005, 013006 only)
01067-1	1	Track Bracket (013004 only) or
01057-1	1	Track Bracket (013005, 013006 only)
BP123401	1	Bolt Pack
403	1	Bolt Pack
01019	2	4" Link Kit
01027-1	2	Bump Stop Drop
01067-1	1	Track Bracket (013004 only) or
01057-1	1	Track Bracket (013005, 013006 only)
M02016RB	4	Large Shock Eye
65-1	4	3/4 x .134" x 1.650" Dom Sleeve

## PARTS LIST FOR #013007 & 013009

Part#	Qty	Description
583581500R	4	5/8 x 3-5/8 x 15" Round U-bolt (013007) or
583581200R	4	5/8 x 3-5/8 x 12" Round U-bolt (013009)
N58FH	8	5/8" High Nut
W58S	8	5/8" SAE Flat Washers
B381G2	1	3/8 x 1" Bolt
SBLA	1	Brake Adapters
B382G5	1	3/8 x 2" Bolt
LW38	2	3/8" Lock Washer
45313-1	1	5/8 x .109 x 1.375" Sleeve
4KB-W96	2	4" Lift Block (013007 only)

## INSTALLATION INSTRUCTIONS

**Helpful Hint:** The following installation may go easier if you remove the front bumper before you begin. The bumper is attached by four bolts. The removal will require two people. This is not necessary for installation, but will make removal of the front spring eye bolts easier.

1. Unhook the track bar at the top end where it attaches to the frame bracket. Retain fasteners for later use.
2. Raise the front of the vehicle and support with jack stands. Be sure to chock the rear tires. Remove the wheel and OE shock.
3. With a large set of pliers, bend the OE brake line mounting tab on the frame out to 45 degrees. Remove the bracket from the frame and retain the OE fastener. (Fig 1)

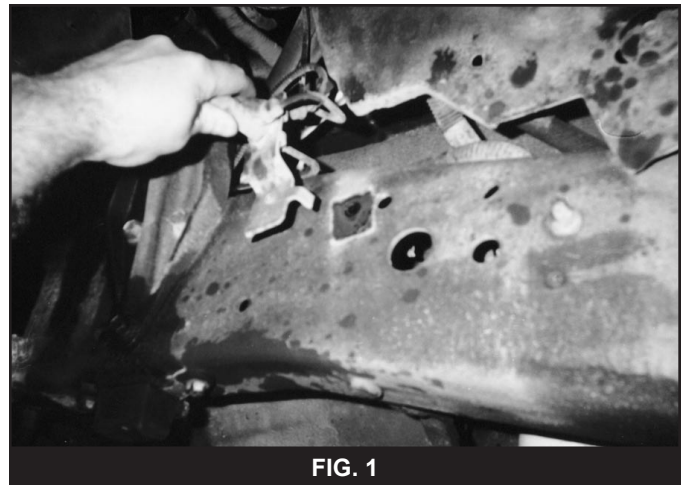


FIG. 1

4. Remove the anti-sway bar end links (Fig 2). Remove the cotter pin and castle nut from the drag link at the pitman arm. Use a tie rod puller to separate the tie rod end from the pitman arm.



FIG. 2

5. Remove the three bolts that retain the factory track bar bracket to the frame. Set the bracket off to the side and retain the factory fasteners for later use. (Fig 3)

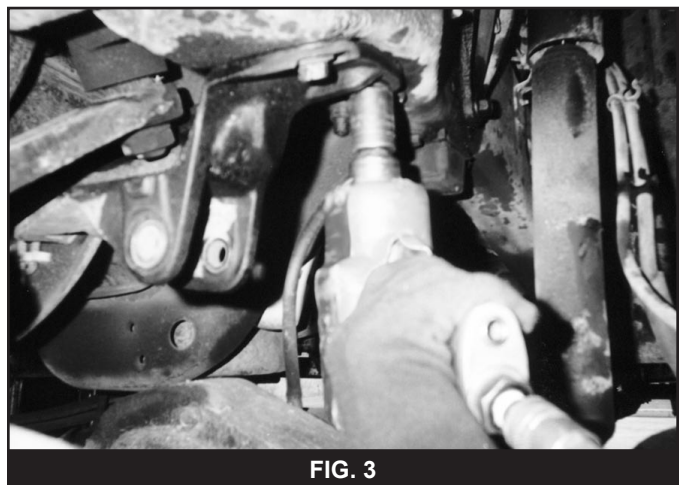


FIG. 3

6. Remove the nut and washer from the steering shaft that retain the pitman arm. Remove the pitman arm using a pitman arm puller.

**Complete the following instructions one side at a time.**

7. Place a hydraulic jack under the front axle. Remove the u-bolts that hold the leaf spring to the axle. Slowly lower the jack allowing the axle to separate from the leaf spring. **CAUTION:** Be sure not to over extend the brake lines or vent tube.
8. Remove the shackle and solid mount spring eye bolts. **Note:** These bolts are coated with loctite from the factory. You will need to remove the radiator condenser mounts one side at a time in order to remove the front spring eye bolts. Loosen the shackle to frame bolt. Do not remove, just loosen.
9. Remove the stock leaf spring and repeat for the opposite side.
10. Install the supplied drop pitman arm to the steering shaft and retain with the factory fasteners. Torque to 200 ft/lbs.
11. Install the supplied track bar bracket in the factory location. Attach using the three OE fasteners and torque to 130 ft/lbs (Fig 4).



FIG. 4

12. Remove the factory bump stops from the frame. Install the bump stop drop brackets between the OE bump stops and the frame. Use the supplied 3/8" bolts, nuts and washers to retain the drop bracket to the frame and use the OE fasteners to attach the bump stop to the drop bracket. Torque to 30 ft/lbs (Fig 5)

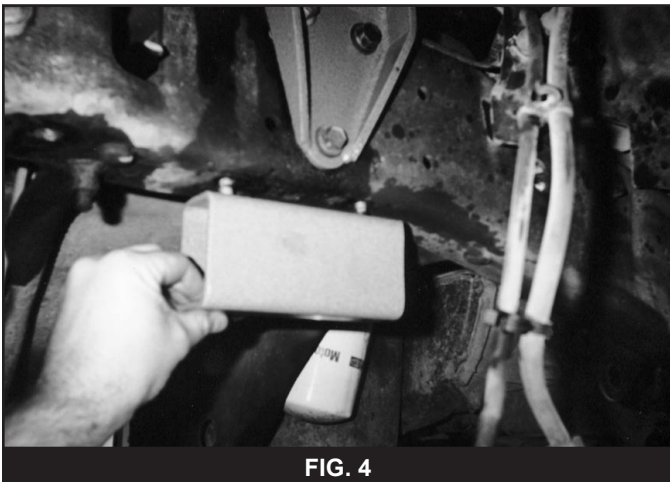


FIG. 4

13. Lower the front axle using the hydraulic jack to aid in leaf spring installation. **CAUTION:** Be sure not to over extend the brake line or vent tube.

14. Install the supplied front leaf springs #003602 (6"), or #003802 (8"). The double wrapped eye goes toward the front. Install the factory spring eye bolts in to the springs and install nuts, but do not tighten at this time.
15. Raise the front axle with the jack. Align the leaf spring center pins in the holes in the axle spring pads. Raise the axle until the springs are seated flat on the spring pads. Install the supplied front u-bolts over the springs and through the stock original u-bolt plates. Retain the u-bolts using the supplied high nuts and washers. Tighten bolts but do not torque at this time.
16. With the front axle at full droop, move the brake line mounting bracket. The bracket should rest about 2" down from it's original position and about 3" forward. Reroute brake line as needed. Use the bracket as a template and drill a new hole in the frame. Attach the bracket to the frame using the OE fastener that you remove earlier.
17. Attach the drag link to the pitman arm and retain using the factory nut. Torque to 60 ft/lbs, and then tighten until the cotter pin hole line up. DO NOT LOOSEN THE NUT TO LINE UP THE COTTER PIN. Install a new cotter pin.
18. Install the front BDS shocks at this time. If you are installing a dual shock system, do so at this time.
19. Install the front tire/wheel assembly and tighten to OE specification. Torque specifications can be found in the owner's manual.
20. Raise the vehicle to remove the jack stands and lower the vehicle on to the ground. **CAUTION:** When lowering the vehicle be sure to watch the hanging track bar so that it doesn't contact anything.
21. With the weight of the vehicle on the wheels. Tighten the u-bolts to 100-120 ft/lbs. Raise the front track bar to align it with the new drop bracket. If the track bar doesn't line up with the bracket, just turn the steering wheel. This will shift the axle and make the track bar line up easily. If installing the 6" kit attach the track bar in the upper hole on the drop bracket. If install the 8" kit attach the track bar to the lower hole. If installing box kit #013004, attach the track bar using the supplied 9/16" grade 10 bolt, nut and washers. Insert the bolt from the back side forward. If installing kit #013005, or #013006, then use the OE bolt to retain the track bar to the drop bracket. Torque OE bolt to 369 ft.lbs. or 9/16" bolt to 130 ft.lbs.
22. Bounce the front of the vehicle to allow the shackles to swing out to their intended position. Torque front spring hanger bolt to 203 ft.lbs. Spring to shackle and shackle to frame bolts to 185 ft.lbs.
23. Grease the supplied sway bar bushings and install them in to the supplied anti-sway bar links. Grease the supplied sleeves and install them in to the bushings. Install the sway bar links in place of the OE links. Use the two 12mm bolts, nuts, and washer supplied to attach the links to the frame mount. Use the OE fasteners to attach the links to sway bar. Torque all sway bar bolts to 35 ft/lbs. **Note:** On '99 & up models, it will be necessary to remove the OE bracket on top of the frame rail that originally held the top end of the sway bar links. Flip the OE bracket over and attach it to the bottom of the frame and retain using OE fasteners. Torque to 55 ft/lbs.

24. Check all fasteners for torque. Adjust the drag link to center the steering wheel.

**CAUTION:** You will want to test the front driveshaft rotation at full droop. You will need to clearance grind the drive shaft for smooth rotation. You may need to lengthen the front drive shaft. Be sure to test this at full droop before driving the vehicle.

Be sure to tighten all fasteners after 100 miles. Be sure to tighten the spring U-bolts again after 500 miles.

## REAR INSTALLATION #013007 & #013009

1. Raise the rear of the vehicle and install jack stands under the frame. Be sure to chock the front wheels. Remove the rear tires and wheels.
2. Remove the OE shocks.
3. Use a large set of pliers to bend the OE brake line bracket out flat where it attaches to the frame. Be sure not to kink the brake line. Drill out the OE rivet that attaches the bracket to the frame. With the rivet removed, move the bracket below the frame and allow it to hang loose. It will be reattached later after the springs are installed.
4. Remove the factory brake line bracket from the top of the pinion on the axle. Retain OE fasteners.
5. Complete this step one side at a time. Place a jack under the axle and remove the factory u-bolts. Remove the spring eye bolts and remove the factory spring. Loosen, but do not remove, the shackle to frame bolt.
6. Use the jack to lower the axle to allow for installation of replacement springs. **CAUTION:** Be sure not to over extend the brake lines or vent tube. Reroute brake line as necessary. Install new BDS spring #003609 (6"), or #003809 (8/10"). Install factory spring eye bolts and nuts, but do not tighten at this time.
7. Raise the axle with the jack. Be sure to align the leaf spring center pin with the hole in the spring mounting plate. Raise the axle until the spring sets flush on the plate. Install the supplied u-bolts and factory u-bolt plate and retain using supplied high nuts and washers. Tighten u-bolts to 60 ft/lbs using an "X" pattern.
8. Install wheels and tires. Tighten lug nuts to OE specification.
9. Raise the vehicle to remove jack stand and lower the vehicle on to the ground. Bounce the vehicle to allow the shackles to swing out to their intended position. Torque the spring to frame bolts, shackle to spring, and shackle to frame bolts to 185 ft.lbs.

10. Tighten the u-bolts to 130-150 ft/lbs using an "X" pattern.
11. Loosen the u-bolt that holds the lower shock mount in place. Rotate the lower shock mount upwards in order to install supplied BDS shocks at this time. Tighten the lower shock mount u-bolt to 35 ft.lbs.
12. Install flat brake line relocation bracket to the top of the pinion using the OE fastener and tighten. Attach the OE brake line bracket to the supplied bracket with the supplied 3/8 x 1" bolt, nut and washer.
13. Install the supplied sleeve between the OE brake line bracket and the frame rail using the supplied 3/8 x 2" bolt, nut and washer. Tighten to 25 ft/lbs.  
If the vehicle is equipped with a carrier bearing, install BDS carrier bearing lowering kit at this time.

**Recheck all fasteners for torque. Re-torque all fasteners after 100 miles. Be sure to re-torque the U-bolts after 100 miles and after 500 miles.**

**If rear drive line vibration occurs, you must adjust the carrier bearing spacer as well as the rear pinion angle using a degree wedge (sold separately). This fine tuning of the drive line angle will vary from vehicle to vehicle.**