



OBS Ford TTB50 Coil Over Kit Installation Instructions

*****Thoroughly read all of the instructions BEFORE beginning installation*****

Notes:

- Installing this suspension kit is the ideal time to rebuild your front axle with new ball joints, seals, U-joints, wheel bearings, brake rotors, pads, calipers, locking hubs, steering linkage, etc.
- DO NOT use Antiseize on hardware unless specifically instructed.
- Make sure that the core beams you are returning are completely free of gear oil so that they do not get held up in shipping for hazmat issues.
- This kit is designed to use factory beam pivot brackets. If you have drop beam pivot brackets you will need to source a set of factory pivot brackets.
- Regular tire rotations (3k-5k miles) will make your tires last the longest and this is more imperative with a TTB front suspension.
- It is important to keep the truck at normal right height so if you tow a lot or put heavy loads in the bed, we recommend installing load leveling air bags in the rear so that your truck does not squat.

Section 1: Removing your factory front suspension. This section is written for trucks that still have the factory leaf sprung TTB50 front end.

1. Park truck on flat, solid ground.
2. Disconnect the batteries.
3. Remove the front bumper.
4. Chalk the rear tires.
5. Disconnect and remove the sway bar end links.
6. Remove the factory sway bar.
7. Now it is time to lift the truck so that the frame can be supported by jack stands.
 - a. If you are using floor jacks and jack stands:
 - i. Lift the truck up by placing the floor jack under the axle. Jack it up far enough to be able to let the suspension fully droop with the wheels off.
 - ii. Place two large jack stands under the frame rails roughly 2" back from the front of the frame.
 - iii. Remove the wheels and tires
 - iv. Lower the jack back down so that the axle is hanging from the suspension and not touching the ground.
 - b. Using a two post lift:
 - i. Lift the truck off of the ground until the tires are about 4" off the ground.
 - ii. Place two large jack stands under the frame rails, roughly 2" back from the front of the frame.
 - iii. Remove wheels and tires.

8. Remove the steering linkage.
 - a. Start by removing the cotter pins from the tie rod ends at the pitman arm and both knuckles.
 - b. Loosen the castle nuts on those tie rod ends but do not fully remove the castle nuts.
 - c. There are a few ways to get the tie rod ends out of their bores but the way that we have found works best is to hit the end of the knuckles or pitman arm with a large ball peen hammer. The vibration from hitting these with a hammer will usually cause the tie rod end to fall out. This will take a few firm hits to accomplish. If the tie rod ends do not come out, you can get a tie rod end removal tool to use in conjunction with the method above.
 - d. Once the tie rod ends break free you can fully remove the castle nuts and remove the steering linkage.



- e.
9. Remove the front drive shaft.
10. Disconnect both brake lines from the brake calipers.
 - a. If you do not already have extended brake lines, disconnect the brake lines where the soft line connects to the hard line of the frame.
11. Unbolt the shocks from the axle and shock towers and remove them.
12. Now it is time to remove the u-bolts that hold the beams onto the leaf springs.
 - a. Make sure that the beams are supported and that you will be able to lower it onto something that will allow you to roll the axle out from underneath the truck.
13. With both beams unbolted from the leaf springs and the axle assembly supported, it is time to remove the bolts that connect each beam to the pivot brackets.
14. Roll the axle assembly out of the way.
15. Remove both leaf springs and the front shackles.
16. Remove the shock towers from both sides of the truck. There are four bolts holding each shock tower on.

This next step involves removing the factory rivets from the frame. This is not always an easy job, but here are some different methods that work for us.

- First method: Using a cutoff wheel, cut three vertical lines in the rivet and three

horizontal lines in the rivet. Then take an air hammer with a chisel bit and hammer off the top of the rivet. Use a flap disc (sanding disc) on a grinder to grind the rivet smooth. Then use a punch bit on the air hammer to push the rivet out.

- Second method: Use a plasma torch or oxy/acetylene torch to burn the rivets out, being careful not to remove the frame material.
 - Third method: Use a sharp punch to make a dimple in the center of the rivet and then drill the rivet out with a drill bit.
17. Remove the rear leaf spring hangers from both sides of the frame.
 18. Remove the factory bump stops.

Section 2: Installing the frame side brackets. Congratulations! The hard part of the frame side of the job is done and now it's time to install the frame brackets.

19. Using (5) M12-1.75 x 35mm bolts and locking nuts to mount each radius arm bracket to the frame. Torque these bolts to **87ft/lb**.



a.

- b. If your truck has an automatic transmission and you do not already have the four holes in the side of the frame, use the rear hole on the bottom of the frame for aligning the bracket to drill out the 4 side holes.

20. Install the shock towers and bump stop mounts using (6) M12-1.75 x 40mm bolts and locking nuts and (1) M12-1.75 x 35mm bolt. Torque these bolts to **87ft/lb**.
- 21.

Section 3: The Axle Assembly

1. Coat your new, modified beams with either paint or powder coating to prevent them from rusting.
2. Press in the new poly pivot bushings to the new beams.
3. Remove all the factory parts from your old beams following factory service manual instructions.
4. Take advantage of having everything apart and install all new ball joints, U-joints, seals, wheel bearings, brakes, etc. and paint/powder coat things nicely.

5. Install the supplied camber/caster bushing in the new beams for the upper ball joint.
6. Assemble the new beams with all the parts, except the axle shafts, you removed from your old beams.

Congratulations! All of the hard things are done and you are on the home stretch! It's time to get the beams bolted into the truck.

7. Start with positioning the passenger side beam under the truck and bolting the pivot end of the beam to the pivot bracket. Install the bolt loosely for now.
8. Position the drivers side beam under the truck and bolt the pivot end of the beam to the pivot bracket. Install the bolt loosely for now.
9. Install the radius arms to the axle brackets using the M18-2.25x110mm bolts and hand tighten the bolts.
 - a. To determine which radius arm goes on either side, look down the radius arm from the frame side end, holding the joint level with the gussets on the bottom side. The beam end on the drivers side will be angled like this: \ and passenger like this: /
10. Now it is time to connect the beams to the radius arms using the $\frac{3}{4}$ "-16x6" bolts. Before installing the bolts, apply a light coat of Anti Seize to ONLY the shank of the bolt; NOT the threads.
 - a. ***Applying Antiseize to the threads will cause it to be torqued past spec and cause failure***
11. Install the springs onto the coil over shocks and adjust the upper spring retainer so that it holds the spring in place.
 - a. Final adjustment of the upper spring retainer will happen later.
 - b. You may need to use a spring compressor to get the coil spring short enough to go on the shock.
12. Install the coilovers to the shock towers first, with the reservoir hose pointed to the rear of the truck, and then connect them to the beams.
13. Install shock reservoir brackets to the shock tower using the supplied M8 bolts and nuts.
14. Mount the reservoirs to the brackets using the supplied hose clamps.
15. Drill a 9/16" hole on either side of the frame using the picture and measurements below as a reference. This hole is for the frame side of the limit strap to bolt to.
 - a. 1 1/4" to rear and 9/16" up



b.

Now it is time to torque the radius arm bolts and shock bolts to spec. Torque specs are as follows:

- Frame side radius arm bolts (M18): **215 ft/lb**
- Beam side radius arm bolts ($\frac{3}{4}$ "): **250 ft/lb**
- Shock bolts ($\frac{5}{8}$ "): **125 ft/lbs**

16. Install the bump stops into the bump stop mounts, tighten the top nut on the bump stop and then tighten the allen head pinch screw on the nut.

17. Install your steering linkage.

18. This kit needs extended brake lines due to the increased travel of your front suspension. Install the supplied extended brake lines or reconnect your existing extended brake lines.

19. Take the frame of the truck off of jack stands and lower the truck down so that it is sitting on its own weight with the axle still on jack stands.

20. Bleed the front brakes starting with the passenger side first and then the drivers side.

21. Install your wheels and tires and torque them to spec.

22. Now you can take the truck completely off the jack stands.

- a. When you first set the truck back on its own weight the springs will not settle into place and the front of the truck will sit very tall. You need to roll the truck back a full wheel rotation and then roll the truck forward a full rotation.

23. The suspension should be settled into place and now it is time to set your ride height.

- a. To adjust the ride height you need to raise the vehicle again to take the weight off the suspension and adjust the upper spring retainer. Note that if you adjust the spring retainer down 1", the truck will raise more than 1" due to the motion ratio.

24. Go through steps 21 and 22 until the front of the truck sits the way you want it to.

25. Rough in the toe alignment.

- a. With the truck sitting on its own weight, center the steering wheel.
- b. Now adjust the steering linkage so that the wheels appear to be inline with the rear wheels.

26. Do a final check to make sure ALL HARDWARE is tight and torqued to spec!!!

27. Last but not least, take it for a test drive.

- a. Remember that the truck will not drive and handle like it should if the alignment has not been done.

Now that you have completed the install of your new coil over kit you need to have an alignment done. Here are the alignment specs that we recommend for the best handling:

- Camber: 0*
- Caster: 3-6*
- Toe: 0* Total toe in

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