Full Tilt Boogie (FTBR) Rear IRS Differential Mount Bushings (99-04 Cobra)

Tools Required:

- Jack and jack stands (Or a lift)
- Metric sockets 12,13,15,18,21mm, extensions, and a 12pt 12mm socket for driveshaft bolts
- T40 torx bit
- Flathead screwdriver
- Pry bar
- Tie rod puller (can be rented at most auto parts stores)
- Vice grip pliers
- Channel lock pliers and WD-40
- Lug wrench or 21mm socket
- Torque wrench
- MM or FTBR IRS differential rear mount bushing removal tool (could possibly be made with 2" ID pipe a couple spacers one to fit over the pipe and one to fit in the bushing bore, a threaded rod, a couple nuts, and a few washers)
- Blue Loctite
- An extra set of hands would help
- (Optional) Impact wrench

Note: All bolt IRS bolt and head sizes as well as torque specs are listed on the last page for reference. It is highly recommended to use blue Loctite on all bolts that have a used nylon lock nut.

Note: It is **HIGHLY** recommended that both the front and rear differential mounts are replaced, not just one or the other. If only one set is addressed, it places extra stress on the differential due to how much give the stock bushings have and can potentially do more harm than good.

This install can be done with the IRS out of the car, but I'll describe how to do it with the IRS still in the car and just by dropping the differential. Both methods work just as well. Also, keep in mind that the differential is around 65lbs, so be careful!

Install:

1. Chock the front wheels of the car

2. Raise the rear of the car with a jack and support it with a set of jackstands.

3. Loosen the rear lugs and remove the rear wheels.

4. Disconnect the catback and remove from hangers (this is where the WD40 and pliers really come in handy).

5. Mark your driveshaft position relative to the pinion and then using a 12pt 12mm socket loosen the driveshaft bolts and tie the driveshaft out of the way

6. Remove the e-clip on the ebrake cable with a flathead screwdriver.

7. With a set of vice grips, securely grab onto and pull the end of the cable and use a flathead screwdriver to unhook the cable end from the caliper. (A detailed video on how to do this is on youtube from FTBR, just look up “IRS emergency brake cable removal”).

8. Remove ebrake cables and secure them out of the way.

9. Using a 15mm, loosen and remove the bolts securing the brake caliper brackets to the spindles. Or you can use a ratcheting 12mm wrench to remove the rear calipers from the brackets and then move onto the brackets.

10. Securely tie the brake calipers out of the way so they are not hanging by the brake lines and remove rotors.

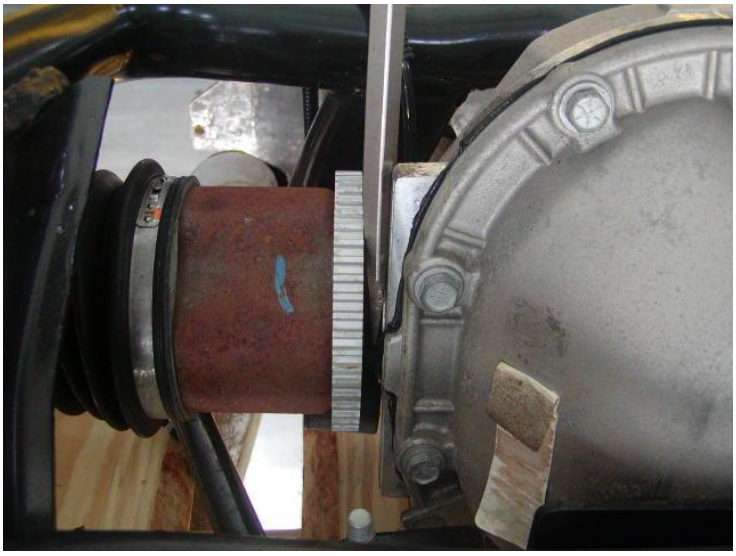
11. Remove ABS sensors from the diff housing using a T40 torx bit.

12. Remove cotter pins and remove tie rod end nuts using a 15mm.

13. Remove the tie rods from the knuckles using a tie rod puller.

14. Remove the upper and lower control arm to knuckle bolts and let the halfshaft sit on the lower control arm.

15. Use a pry bar (or large flathead) and carefully pry between the diff housing and halfshaft to pop it out of the differential.



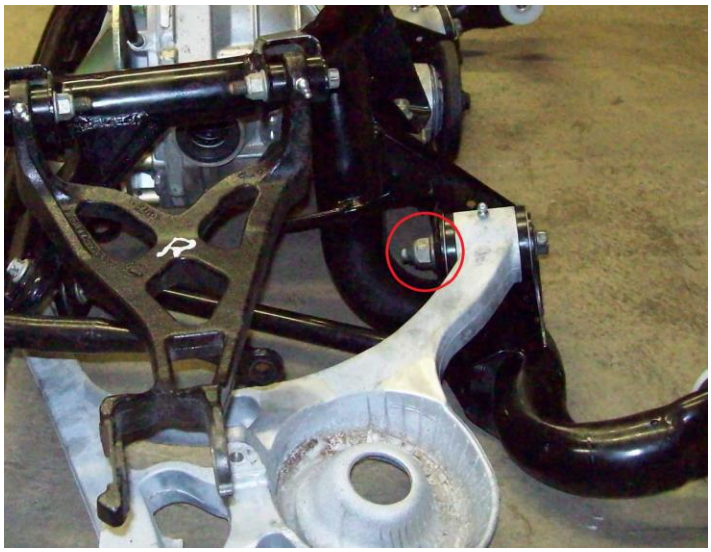
16. Once loose, carefully slide the halfshaft and knuckle assemblies out and place them off to the side. Try not to let them drag on the axle seals. An extra hand helps here.

17. Place a jack under the differential and jack up enough to support it slightly.

18. Remove the two 15mm rear diff cover to diff mount bolts.

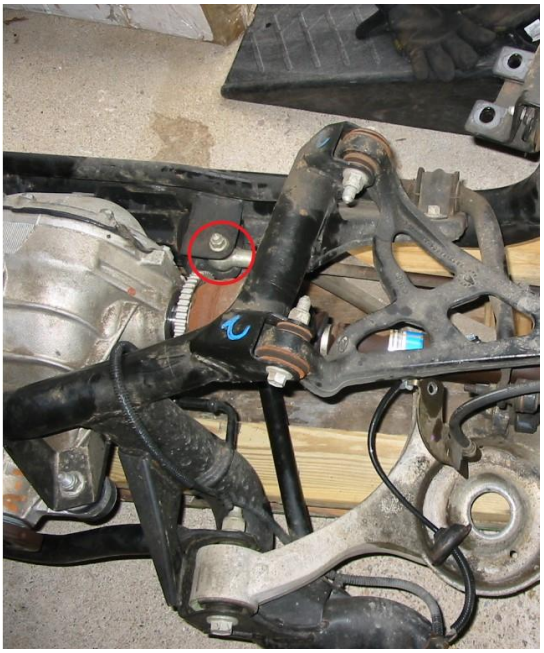
19. Remove the two front 15mm differential mount bolts.

20. Loosen the two 21mm nuts holding the IRS crossmember (torque brace) to the subframe and slide it off the bolts.



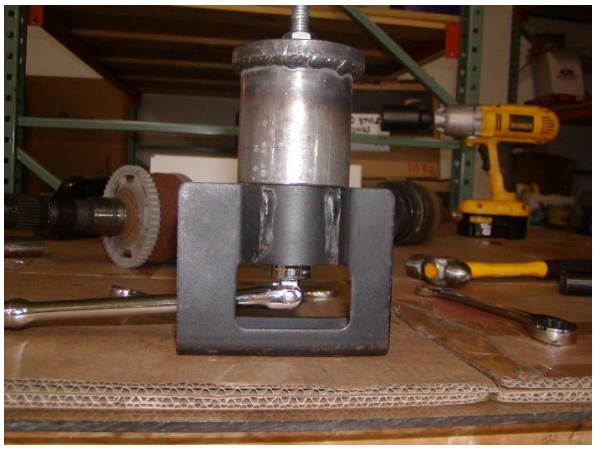
21. This should free up the differential enough to be removed from the bottom. Carefully lower the rear of differential and remove the differential from the IRS. A second set of hands really helps here. Be careful not to spill diff fluid out the axle holes. It would be a good time to replace diff fluid while it's out.

22. Remove the 13mm driver side rear tie rod bolt holding it to the frame.



23. Once the driver side tie rod is out of the way you will have access to the 18mm bolt that holds the diff mount to the IRS subframe. Remove this bolt and then slide the diff mount towards the front of the car to remove it.

24. With the diff mount removed, use the diff mount bushing removal tool remove the stock rubber bushing.



25. It is recommended to freeze the delrin bushings overnight to help them slide in easier. If extra force is needed, you may use a press if you have access to one like I did. Or if you flip the shell from in the bushing removal kit upside down and use a deep socket and extension, with the threaded rod/bolt and thick washer it can be used to slide the bushings in. The same can be done with the aluminum inner sleeve.

26. If running the Ford Racing differential cover, you will need to check clearance and may have to shave down the bushing and diff mount slightly to have about an 1/8” clearance.

27. Once the bushings are in, your install is finished and the differential can be installed the same way it came out. (Torque specs below)

Note: The diff mount should be oriented with the bend on the top when installed

IRS Torque specs:

Location	*Bolt Size*	*Head Size*	*Torque*
Rear subframe to rear bracket bolts	12 x 1.75 x 110mm	18mm	76 ft-lbs
Subframe rear bracket-to-body bolts	12 x 1.75 x 35mm	15mm	59 ft-lbs
Front subframe to body bolts 12mm bolts	12 x 1.75 x 110mm	18mm	76 ft-lbs
Front subframe to body bolts for FTBR Grade 8 9/16" bolts	9/16" x 4 1/2"	13/16"	145 ft-lbs
Front subframe to body bolts for Ford 14mm replacement bolts	14 x 2 x 110mm	18mm	131 ft-lbs
Driveshaft to pinion flange bolts (apply blue Loctite)	12 x 1.75 x 25mm	12 point 12mm	83 ft-lbs
Halfshaft nuts (to rear hub)	24 x 2	36mm	240-250 ft-lbs
Lower control arm and bushing to subframe bolts	16 x 2 x 120mm	21mm	184 ft-lbs
Lower control arm to knuckle	12 x 1.75 x 90mm		85 ft-lbs
Upper control arm and bushing to subframe	12 x 1.75 x 70mm	15mm	66 ft-lbs
Upper control arm bushing to knuckle nut			66 ft-lbs
Rear diff mount to diff housing bolts	12 x 1.75 x 60mm	15mm	76 ft-lbs
Caliper bracket bolts	12 x 1.75 x 34mm	15mm	76 ft-lbs
Rear caliper to caliper bracket bolts	8 x 1.0 x 22mm	12mm	25 ft-lbs
Brake line to rear brake caliper bolt (Banjo bolt)		10mm	30 ft-lbs
Front diff housing to subframe	12 x 1.75 x 95mm	15mm	59 ft-lbs
Rear diff support to subframe	12 x 1.75 x 85mm	18mm	85 ft-lbs
Shock to lower arm and bushing bolt	14 x 2 x 120mm	21mm	98 ft-lbs
Toe link to subframe	10 x 1.5 x 80mm	13mm	35 ft-lbs
Toe link to control arm nut	10 x 1.5 x 80mm	13mm	35 ft-lbs
Wheel lug nuts	1/2" - 20	21mm	95 ft-lbs
Swaybar mount to subframe	10 x 1.5 x 25mm	13mm	35 ft-lbs
ABS sensor to diff housing	5/16"-18 x 1.125"	T-40 Torx	17 ft-lbs