

E46M3 OUTER CV BOOT HOUSING REBUILD KIT TDR4628CVJ

Over the years of Grand-Am racing, club racing, driver's ed events, and street driving with the E46 M3, we have found that due to the high loads on the half shafts they need to be replaced or rebuilt often. Thanks to our extensive experience in Grand-Am endurance racing, we have designed this kit to prolong their life and save frequent and costly replacing of half shafts. The problem with rebuilding E46 half shafts is that the CV Joint ("Constant Velocity Joint") closest to the wheel bearing is not serviceable because the stamped steel housing must be cut off to access the CV joint. We have designed a reusable housing to make servicing the CV Joint possible. This kit can be used on street and track cars.

Parts list for kit:

- 2 Housings (either side, left or right are the same)
- 12 Set-Screws (6 per housing)
- 2 Viton O-rings
- 8 Oetiker Clamps
- 4 Stainless Steel Breather Tubes (only for race use)



Specialty tools and supplies needed

- CV clamp pliers or Oetiker clamp pliers (photo to right)
- C-Clip pliers
- 5/64 Hex Key
- CV Joint grease



When would it be a good time to perform this work on my car?

- Whenever performing work on the rear drive line. Examples – wheel bearings, differential work, bushings, sway bar or just prepping for the race season.

Directions:

Notes:

- A. As you disassemble the CV Joints take good notes on the directions the parts point and go together.
- B. Some photos in directions are without CV Joint grease.
- C. Rebuilding CV Joints is a very messy job and we suggest having a lot of disposable rags on hand and a tray to put parts in to keep them from rolling away.

1. Mark half-shafts, Driver side (left) or passenger side (Right) as they are different.
2. Remove half-shafts from car as out lined in a E46M3 repair manual.
3. Carefully remove clamps from rubber boots and slide the boots toward center of shaft.

4. Start with the inner CV joint (“the end that mounts to the differential”), carefully remove the end cap and boot housing. Wipe as much of the grease away as you can. You may want to mark the inner and outer race and cage, that way you can reassemble in the same orientation.
5. Pull the CV Joint outer race out and turn it to one side to disassemble. This may take some wiggling and pushing to get apart.
6. Remove C-Clip on end of shaft that retains the inner CV Joint race. Remove race from shaft.
7. Now that the inner CV Joint is disassembled move to the outer CV Joint. Remove the two Oetiker clamps and rubber boot. Remove the sheet metal boot housing. You will need to cut the sheet metal boot housing off carefully with a cutoff wheel on a die-grinder, Dremel tool or sheet metal cutters. **Warning – do not cut into the outer CV Joint race. Remove and discard boot housing and O-ring.**
8. Mark the inner and outer race and cage, that way you can reassemble in the same orientation.
9. Pull out the CV Joint outer race and turn it to one side to disassemble this may take some wiggling and pushing to get apart.
10. Thoroughly clean all parts but do not mix them up. It’s suggested to clean parts separately.



11. Inspect boots for dry-root or cracks. Inspect inner and outer race, and ball-bearings for pits, scratches, and overall fatigue.
12. It is helpful if you polish the O-ring groove area of the outer CV Joint race with a piece of scuff-pad or very fine emery cloth. This will help in assembly later.
13. Assemble the outer CV Joint with grease; don’t forget the C-clip. Make sure all parts are aligned properly.



14. Install new O-ring onto outer CV Joint race

15. Remove set screws from CV Joint Housings and carefully install housing on the CV Joint. Note it is very easy to nick or cut the O-ring so take your time and make sure it stays in the groove. You may also need to tap the housing with a soft mallet. Make sure CV Joint Housing is seated.



16. Install the set screws but just until they contact the CV Joint race. Now slowly tighten the set screws so the CV Joint Housing stays centered. A cross pattern works well.



17. Install the rubber boot and new Oetiker clamps. For the small side, use the CV40 clamp. Large side use CV68 clamp. **Note** – If this is a race car see note at end of instructions before installing clamps.



18. Install the inner rubber boot and sheet metal housing on to Shaft. Assemble the inner CV Joint with grease, don't forget the C-clip and end cap. Make sure all parts are aligned properly.



19. Install the new Oetiker clamps. Small side use CV40 clamp. Large side use CV74 clamp. **Note** If this is a race car see note at end of instructions before installing clamps.

20. Install half-shaft in car

Note if your car is a 100% dedicated race car you may want to install a vent tube. This will help the boot breathe as the Joint goes through its range of motion. Just slide the supplied tube in-between the shaft and the small end of the boot then clamp. From time to time run a wire through the tube to keep it clean and working. We do not recommend this addition for street cars. The vent may let undesired contaminants and moisture into the CV joint and a street car will never see the prolonged high temperatures of a race car.

