

EUROPA REAR SUSPENSION CHECKOUT

How's your rear end? Good and tight I hope. Nope? Well, put it up on the work bench and let's look at it. Maybe by the time we finish this you'll feel better and be able to hang that tail end of yours out there where you want it. First, let's take everything off and expose it all. How's it fit, anything worn? Have I gotten your attention yet? A chronic complaint of the harder driving Europa owner is excessive rear camber and not being able to locate the cause of it. Perhaps this will help.

Place a scissors jack under the hub carrier and slowly raise the wheel 'til it clears the ground. Did your camber suddenly change? Leave the hub carrier on the jack and attempt to move the wheel by hand. There are two ways to do this: 1) grab the top and bottom of the tire and attempt to create a camber change, 2) grab the front and rear of the tire and attempt to create a toe-in change. Not much force is needed to create movement if anything is worn or loose. Now, put a light where you can see the outer U-joint and try to move the tire again. After a few minutes of poking, you should be forming an opinion of your problem. If it is possible to create a toe-in and camber change by hand, you have loose or worn wheel bearings. If you cannot get a toe-in change but can get a camber movement, look further in-board as you move the wheel. Rotate the driveshaft until the driveshaft retaining pins at the differential are visible. Use them as a reference point to detect movement. Try again to move the wheel for a camber change. If the pin and/or yoke moves there are several possibilities: wear in the differential, adjustment needed in the differential bearings, or worn U-joints.

As you can see there are two areas of wear, the hub assembly and the differential. Here are some quick notes on correcting each.

HUB ASSEMBLY - Even if no wear is detectible you should tear this down for inspection at least annually, more frequently if you are a hard driver. I used to rely solely on the "wobble test" just described, feeling that if it was tight it was good; not always so! The "wobble test" should only be used for a quick diagnosis. A wheel bearing recently intent on self destruction also destroyed a stub axle and the aluminum carrier. It can be expensive. Check it. Tools necessary to disassemble the hub assembly are: 1) a two or three-jaw gear puller, 2) a $1\frac{1}{2}$ " socket, 3) 150 ft-lb torque wrench, 4) 18" breaker bar, 5) red and green 'Loc-Tite'. Things to check are: 1) rotational movement of the hub on the axle should not exceed .005" at the stud (i.e. no visible movement), 2) camber changes are caused by worn shoulders on the inner races of the bearings, worn stub axles, or loose bearings, in general. On reassembly clean everything with 'Loc-Tite' "Clean and Prime". Use red 'Loc-Tite' to secure the bearings in the housing and on the shaft. Use green 'Loc-Tite' on the splines of the axle and hub. Use a new locking tab, put red 'Loc-Tite' on the threads and torque to 150 ft-lb. Allow the 'Loc-Tite' to set.

DIFFERENTIAL ASSEMBLY - If you are really aggressive you will pull out the transaxle now to adjust the differential bearings. If not, then disconnect the driveshafts, push the two output shafts to the center of the differential assembly to take up all the slack, and attempt to move the differential left or right. Adjust the bearings accordingly. There should be no movement if they are properly adjusted. Should adjustment be necessary, loosen the locking plate on one side and carefully tap on the flanges to take up the slack, recheck and tighten the locking plate. Now with the differential securely located it is possible to check the output shafts for wear. Again, push them both in and then pull each out separately. If movement can be felt, it is over .005" and over tolerance. Shims are available, part #54D0188 (.015") and #54D0187 (.005") to compensate for this wear. These shims slip over the output shaft and into the hole that the inner U-joint yoke goes into, it is not necessary to "split the case". Use either a dial indicator or select fit to determine how many shims are needed. (.050" movement relates to $\frac{1}{2}^{\circ}$ camber).