BRONZE OILITE PARALEVER BEARINGS
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I installed the bronze oilite Paralever bearing in the summer of 2007, a couple of thousand miles ago. Works pretty well. Certainly a smarter concept than the dim-witted needle bearings they replaced. Like a lot of jobs, easy to do the bearings (stock or bronze) second time you do it. $119 plus shipping.

Frankly, I regard the Paralever concept as one of the great steps backwards in Western Engineering. It brings with it not being able to bathe the swing-arm with oil for the driveshaft (the older oil-filled pieces lasted forever in contrast to the frequent complaints about the Paralever driveshaft), two u-joints, ugly reaction strut, weight, complexity, vibration…). The Paralever was designed as a complex but incomplete semi-solution to correct a theoretical problem that I have never experienced myself. As if somebody at BMW all of sudden wanted to "correct" the crankshaft torque reaction, which nobody seems to notice after 10 minutes of riding a boxer.[1]

Back to the bearings[2]. Given the incessant problems with the stock needle bearings, the bronzes seem like a really good idea. Possibly they improve handling by being more precise than the needle bearings. Equally important, they can stay precise and be re-tightened to precision readily.

The bronzes are a better design than the stock bearings, fair instructions (except as noted below), and have been known to last for 150,000 miles or more. Some riddles about where to use the Locktite (the wheel-side bearing is adjustable after all, for both types).

The "pins" are machined as press-fit into the bronze inner bushing. Together with Locktite, that keeps the pin surface from becoming the bearing surface (instead of the surface between the two bronze races). But not clear how much force to use in pushing the pins into the bushing and you can easily bust the bushings with too much force, say 25 ft-lbs. But Tom Cutter says to clean up the pins to a sliding fit before assembling; but that might make the pin surface do the bearing rotation instead of the nicely ground surface between the bronze and the outer race that is far larger and intended to do the bearing work.

I am not sure of the best and/or most feasible solution to this problem, and/or as applicable to an after-market product (lots of ways BMW could re-design the Paralever to solve the paradox). Possibly the pins and races could be splined. Or the races could be screwed in (to adjust taper right) and the pins then just to provide centering. Not sure.

Another issue is phasing the u-joints. Don't trust the orientation you find when you disassemble. Until some point in early 21st century, BMW Factory didn't seem to care about phasing nor do many wrenches anytime. Not clear if BMW is sort off hush-hush about phasing in order to wallpaper over pass indiscretions in their sloppy assembly.

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[1] OK, a dry Paralever lets you get a hunk of rubber into the driveline instead of the knuckle-joint inside the transmission (that's a much better if pricier concept).

[2] Before I get back, I should also lambaste another silly "improvement": single sided swing-arms. When your design goes single-sided, you are committed to supporting the wheel with a large, easy to fail ring bearing. Surely there are other speedy ways to remove a wheel that use a nice, appropriate axle and dual-swing-arms, especially on a sanitary, driveshaft kind of bike? Hinged rear fender as on my 1961 R69s perhaps?

Also complicating phasing, some or all models have rubber bushes in the driveline that might rotate a wee bit (although that tends to be just shortly before they fail). Best to get a good flashlight and rotate the front-half of the driveshaft as you try to eyeball the u-joint. Tom says to take the swingarm off so you can also check the swingarm bearings — needs the same tools but a PIA if you have an aftermarket exhaust blocking access to the lower shock mount bolt.

You'll need a hefty breaker bar, big 12 mm Allen key (and/or cut off a piece of Allen key and drive it using a strong 12 mm impact socket (which is an assembly you'll need anyway to do the torquing), a 30 mm socket (esp if you grind off the entry taper), a folded towel and long screwdriver for positioning the front driveshaft during re-assembly, heat gun, and an IR thermometer capable of 230 F (Princess Auto and elsewhere, generally around $35). It is pretty clear when the Locktite has softened, but the IR thermometer is a real advantage easing parts to that temperature (I use it to see if my eggs are room temperature before frying and great for checking when the wine if cooled to drinking temperature but I am sure you would have many other valuable applications of this wonderful tool. worth a thread all its own.... cold air leaks on your ceiling, house radiators, etc.). Also red Locktite such as 262 or 270 or possibly also the bearing-fit-fixer Locktite.

Available from:

http://www.rubberchickenracinggarage.com/bushings.html

You can get help from Tom Cutter or possibly the manufacturer but don't expect an immediate reply (or any) from the manufacturer unless you phone him.

Also actively sold and supported by other respected sources including by Ted Porter (BeemerShop)

http://www.BeemerShop.com

and Anton Largiader

http://www.largiader.com

Note

June 2008, a biker posted a picture of his installation. It showed the left (adjustment) pin sticking out about .18 inches above the locknut. Since the distance with stock bearings is .04 inches, he wisely inquired if perhaps his left pin was not fully seated. This led to some back-and-forth with me and a poll to see what others had on their bikes. In the end, he — again wisely — decided to re-do the pin installation and it settled into place at .04. He believes that premature setting of red Locktite led him to prematurely abandon screwing the left pin in tight enough for the raised shoulder to be set fully “home” on the bearing race.