Final Drive Ring Gear Oil Seal Replacement

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Disclaimer: I am not a professional mechanic. I do, from time to time, attempt procedures and activities which I probably shouldn't, but where's the fun in that? My comfort level in smacking around my bike may be greater than yours - if so, seek professional help. Nuff said.

The final drive case (two pieces) houses a ring and pinion gear set. Both the ring gear and the pinion gear have an associated oil seal to keep the precious fluids from leaking out. My ring gear oil seal forsook its duties, so I read the procedure in the Clymer three times, and dove in. The Clymer describes a jig used to hold the FD unit during repairs, which although handy I'm sure, you can prolly do without (I did....).

Read through this completely before tearing things apart. Be sure it makes sense to you! Also, this is a great time to lube the rear splines!

Tools:

- The Usual Stuff (sockets, torque wrench, wrenches, drivers);
- Hammer and assorted pieces of wood (drifts);
- Half-expended roll of duct tape (diameter= 4-1/2 inches +/-);
- Nice clean work area/bench with good lighting;
- Cleaning compounds and cleanliness preservation items (plastic bags);
- 3-4 favorite CDs.

1. Remove the FD unit as described by others (see K-tech articles!).
2. Remove brake disc from FD unit (two hex (allen) bolts).
3. Mark the FD case halves across the seam, so that when you re-assemble, you can align the case halves properly. Remove FD case bolts (eight, wheel-side).
4. Separate FD case halves (ring gear is fit to wheel-side final drive case) using a plastic hammer to loosen; bag the part you will not be working on (outer FD case and pinion gear) for cleanliness.
5. Use heat gun (as recommended) to heat FD case for about five minutes (don't heat the ring gear assembly, just the case/cover), then tap out ring gear (bearing will go with it); the oil seal will be left behind in FD case.
6. This is a fine time to examine the teeth on the ring and pinion gears.
7. Take the ring gear/bearing assembly and bag it, then chill it in the freezer - it needs to shrink a little so that it will fit back in the FD case half during re-assembly.
8. !Keep track of the shim that goes between the ring gear and the FD case half!
9. Tap out old oil seal from the FD case half with a hammer and a drift - get a good

idea how it sets in the FD case BEFORE you knock it out.
10.Clean FD case thoroughly.
11.Put a little oil around the edge of the new oil seal where it fits in the drive case. Tap in new oil seal (lovingly, it's spendy) with a hammer and a drift. You can get the BMW special drift tool, or use what I did - a roll of half used duct tape! It's kinda soft (to prevent damage to the seal), and about the right size. You may have to adjust your roll to get the correct diameter - it will be pretty obvious when things are apart. Basically, you will want the drift to be able to seat the new oil seal from the inside of the case.
12.When the seal is seated, get the ring gear from the freezer. Place the ring gear assembly, gear-down, on a pair of 2x4s on-edge, to hold the bearing off of any surface, and then placed the FD case over that.
13.Tap the FD cover (with the new oil seal installed) onto the ring gear assembly (with a drift!) - if it wiggles, check the 2x4 supports - nail 'em down if need be. ! Make sure you have the shim in place between the ring gear and the case!
14.Put on a new FD cover gasket (it's a lot cheaper than the oil seal).
15.Tap the two FD covers together (using a drift), taking care as always to make sure that the case is well-supported in several places, and won't wiggle when you apply the drift. Make sure the FD case halves are aligned properly.
16.Put on the brake disc, put the FD unit back on the bike, put in fresh oil, and if there are no leaks, pat yourself on the back.
17.Ride test.....