

January 29, 2005

From the Bench

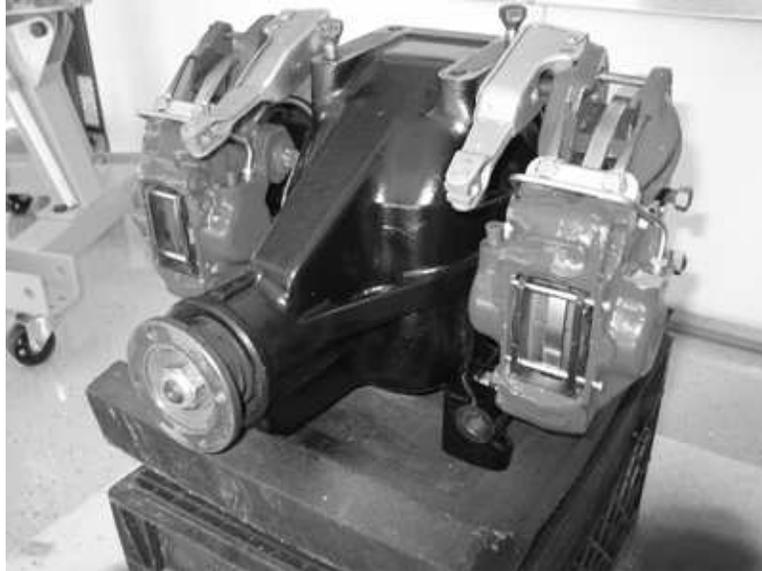
Ok, by now all of you should have your floors painted and waxed – I did tell you about the wax right?

This month I thought I'd relate a little problem I overcame when I tried to replace the front pinion seal in the Jaguar rear end that I'm refurbishing for my Daytona.

Ok, first off, anyone who has had to deal with a Jaguar rear end knows that they are leaky, greasy things, especially after 90,000 miles in the back of a road car. Refurbishing them takes a lot of time, effort, patience, the right tools along with a good copy of the service guide – my favorite, recommended by Bill Connelly at Upstate, is "The Complete Official Jaguar E" by Bentley Publishers. It's funny but I had no qualms whatsoever about pulling the output shafts out and rebuilding them but the thought of replacing the front pinion seal left me cold. Part of the problem is the fact that Jaguar uses "crush sleeves" as a spacer between the inner races of opposing bearings to make sure they are positioned right so the bearing don't wear – and of course the pinion shaft had these. The issue is that once crushed to their proper spacing, that's it. You can't make them longer and to tighten them too much more might preload the bearing too much and cause a premature failure.

The manual was pretty detailed on how to remove the yoke and replace the seal without having to fully dis-assemble the unit to replace the crush sleeve but it requires marking the pinion shaft, and nut and keeping track of how many turns off it takes so that you put it back on exactly the same number of turns. Now that sounds easy doesn't it? Now take into account that the rear member is sitting on a milk crate in my garage and is not in a car. Still don't see the problem right?

The nut locking the pinion yoke onto the shaft requires significant torque to get it moving... most commonly done by an air impact. The problem is an air impact will have the nut in your hand before you know what happened and there's this little problem of counting how many turns it was on. Fine, pull out your ½" Craftsman breaker bar, slip a 3 foot pipe over it for leverage and then pull. Oopps... pinion shaft turns! Now in a regular car you could put on the emergency brake or brace the rear wheels but what to do with a stripped third member sitting on a milk crate? I knew if I blew it off until I got it into the car I'd never change it and it would leak for the rest of my days. So how to hold the darn thing!



Refurbished Jaguar Rear End on Milk Crate – no leverage

The problem was how to hold the yoke stable while you broke the nut loose manually, and then hold the entire unit stable while you counted turns?

My solution was to take a 2'x4' piece of $\frac{3}{4}$ " plywood, drill a 2 $\frac{1}{2}$ " hole at the level of the pinion nut and to one side, and then bolt it onto the yoke like below.



To remove the nut, bolt the plywood on so the long side extends to the left, supports counter-clockwise removal of the nut. When you re-install, position it to the right, which supports clockwise installation of the nut (as shown above). It also makes a handy "tally" board to keep track of how many turns off and on you need to go (this is the patience part). Voila! Easy! This in-expensive brace kept me from knocking my rear end onto the garage floor and hurting my paint and made it simple for me to keep track of the turns.

If you also notice the "engine side" writing and holes... I've used this same piece of wood to bring my engine home from the builder. Holes were cut out and drilled per the flex plate, which then allowed me to bolt the engine to this brace and place it snugly

between the wheel wells in a pick-up bed. A padded 4x4 up front under the balancer kept the engine stable for the 40 mile ride home. Beats using an old tire!

Ok, for what it's worth once I thought this through I had the pinion seal replaced in less than 30 minutes and won't have to worry about it dripping all over my new garage floor. One problem down, now if I could just figure out how to get the Daytona out here from Albany!

Happy wrenching!!!