

Model T Rear Rebuild by Brett Ritter

Due to the damage on my axle from a wheel run loose years ago and some old school patchwork of dimpling the taper, my 27T needed to have one replaced.

With great help from my dad, we were able to tackle this. It looks simpler than it is, but the results were well worth the effort.

Before starting this project, I ordered the Videos form the National Club and the books from Chaffins. (Hats off to Dave from Chaffins, for being a wellspring of knowledge and his patient guidance)



As we opened the rear end and torque tube, we were confused when we saw large chunks of soft metal in the oil we drained. Later we learned that these were parts of the babbitt bushings that the axle gears ride on. When we looked further, we saw damage from the babbitt spacer bushings crumbling and working their way through the entire rear. we decided to do a complete overhaul and rebuild the spring.

Not being able to stop myself, I decided to convert everything to modern bearings, bushings and seals. After disassembly, I took the reared pieces to be cooked at the transmission shop and ordered in the needed parts.

Once I got the parts in and the rear end housing returned, I realized that the built-up grease and oil in the tubes of the rear were still there, so we made a tool of a flapper on a ½ inch dowel to clean the inside of them. It worked well and was a fast solution. Then we painted all of the housing pieces and torque tube with a first coat of paint.



We also disassembled, blasted and slip painted and rebuilt the rear spring while we had it out.

Once everything was prepped, we followed the book and videos. If possible, take a laptop to the shop so you can refer to the videos from time to time, it was very useful.

We rebuilt the torque tube first replacing the U joint, the driveshaft, pinion gear and bronze bushing.

**Drive Shaft Spool And
Bearing Assembly (1921-27)
Open Spool, (Exchange)**



We installed the modern bearing kit into the spool that joins the driveshaft to the rear end housing and put the new pinion gear in place. Then installed the new U Joint. (One thing we learned is that the new U Joint retaining pin that you get is longer than stock. We ended up taking a bit off of it so it didn't hit the inside once it was peened over.)

Then we set that assembly aside and started on the rear end.

The new bearing kits were easy to install and came with O ring seals to replace the leather or rubber cups to keep the rear from leaking.

We pressed the new axle gears on the new 1/16th" longer axles with our hydraulic press. (We did not have luck using the method shown in the video with the babbitt plate.)

We set the spider gears back in place and fastened the new ring gear to the carrier assembly. And then put the axles in the housing and put the assembly together. The assembly was a bit tight when we test fitted without the rear end housing gasket as recommended, so we sanded the bronze spacer between the axles down a bit until we got the desired fit.



Now it was time to attach the torque tube to the rear end. Interestingly, each time we would join the torque tube to the rear end, they would both lock up. Then we would separate them and both would turn freely. Finally, after calls to Dave at Chaffins we came across the issue. The allen bolt that holds upper bearing stop that comes with the torque tube bearing kit was locking against the housing when the gears pushed together. We made our own replacement on the lathe and used regular set screws and the issue cleared up immediately. Dave said that different year housings have different inner diameters and ours was one of the tighter ones.

To set the Pinion Gear depth we removed the right side of the rear end housing so we could measure the gear mesh side to side and depth. The side to side lash was loose, and the pinion gear depth was shallow. Since we didn't have any thinner shimming/gaskets to use to join the rear to the torque tube, we removed the pinion gear and lathed a few thousandths off of the torque tube bearing carrier so it set the pinion gear deeper. This also took up the lash to bring us right into spec.



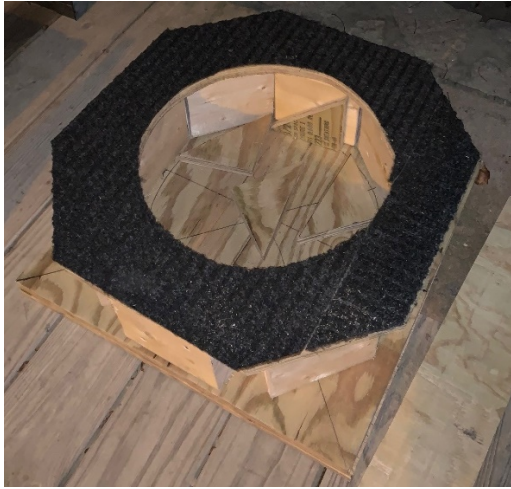
We did final assembly, safety wired, torqued and painted the entire unit as one piece and hung it back in place with our refreshed rear spring.

Then I learned the lesson that I should have installed the radius rods before attaching the torque tube to the rear end housing, having to pop them apart leaving the 6 spool bolts threaded in a few threads and then reassembling.



Of course, as we were putting all of the finishing touches I realized that I was about to install a damaged hub on the new axle. So, I ordered in a new hub from Lang's, watched a video on how to make a wood wheel spoke press and installed a new hub. I was amazed how well the press worked. It was astonishing!

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After putting everything together, we took it for a for a shake down run and it felt good. Once we let it sit for a few days we had a few oil drops under the rear, but that has stopped as the paper gasket has swelled. We put just over 100 miles on it and checked everything out again and I'm happy with the results. It all seems just right. And a nice side note, rebuilding the rear spring fixed a little body tilt that we had and made the ride smoother. I guess the slip paint does the work!

With this, we now have replaced every part of the rotating assembly except the transmission and flywheel. The Engine Dennis rebuilt for us runs great and with the new disc brakes I think we have a tour ready T!



**Note from the
editor:
Special thanks to
Brett Ritter
for submitting this
article**

If anyone is interested in doing this project and has questions, I'll be glad to answer what I can. I am by no means an expert, but I'll share what little I know.