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NP203/NP205 Doubler Instructions

****You'll want a big, burly pair of snap ring pliers for this job****

1. Drain the oil. There will be a lot of it left in the case even after it has been fully drained, be ready.
2. After the oil has been drained place the 203 on the input face and remove all the bolts holding the aluminum tail housing to the chain case (the part that bolts to the cast iron chain case). As you take this apart you will get a lot of needle bearings dropping out of the case but don't worry, they don't get reused.



3. Lift the housing off the chain case, a little persuasion from a hammer may be needed but the two should come apart fairly easy.

4. After the housing has been lifted off the chain case you should be able to see the differential shift fork and shaft, drive the pin that holds the fork on the shaft out, and pry the fork from the shaft.



5. The next step is to remove all the bolts holding the chain case to the range box.



6. Remove the chaincase by lifting it straight up (you might have to move around the intermediate shaft while you do this) and apart from the range box, now you have the needed 203 range box with the shaft sticking out. ***It is very important to remove the steel rod that attaches to the differential shift rail in the gear reduction box, if it falls out it could get between gears. Some of them are designed so they can not fall out which was our case but we removed it just to avoid any problems.



7. The only needle bearings you need to keep are the 15 fat needles that are in the end of the intermediate shaft (the shaft that gets replaced with the one in our Doubler kit), the 15 fat needles may fall into the case when you lift the shaft and gear assembly out of the range box.
8. Next we'll swap the gear from the stock shaft on the right to the new Doubler shaft on the left.



9. Remove the snap ring that holds the gear/retainer on the shaft, this is where you'll need the big snap ring pliers.



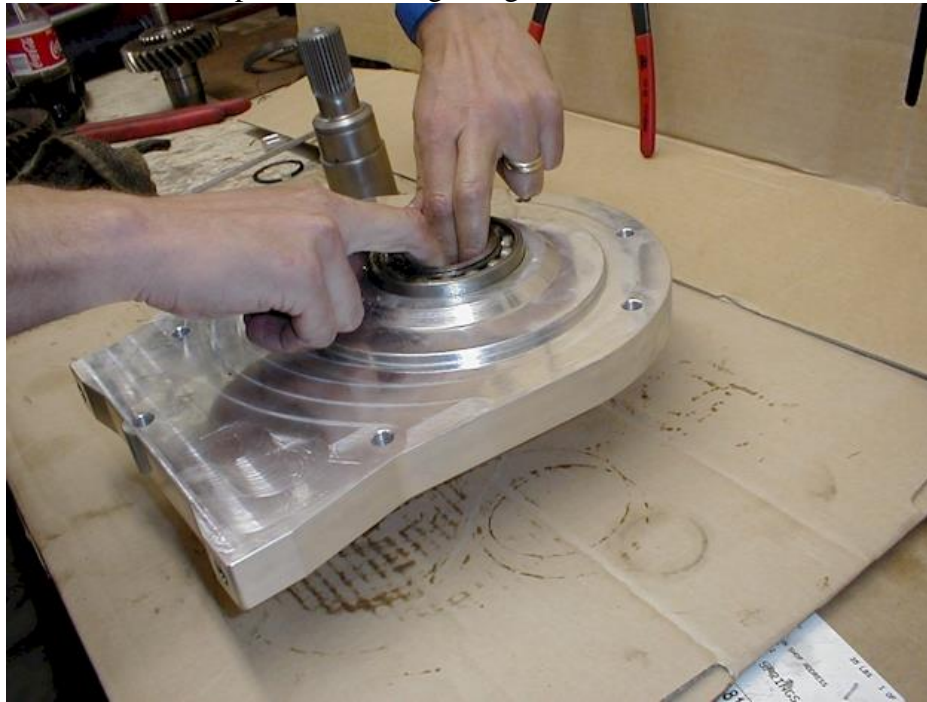
10. These are the parts you'll swap on to the new doubler shaft



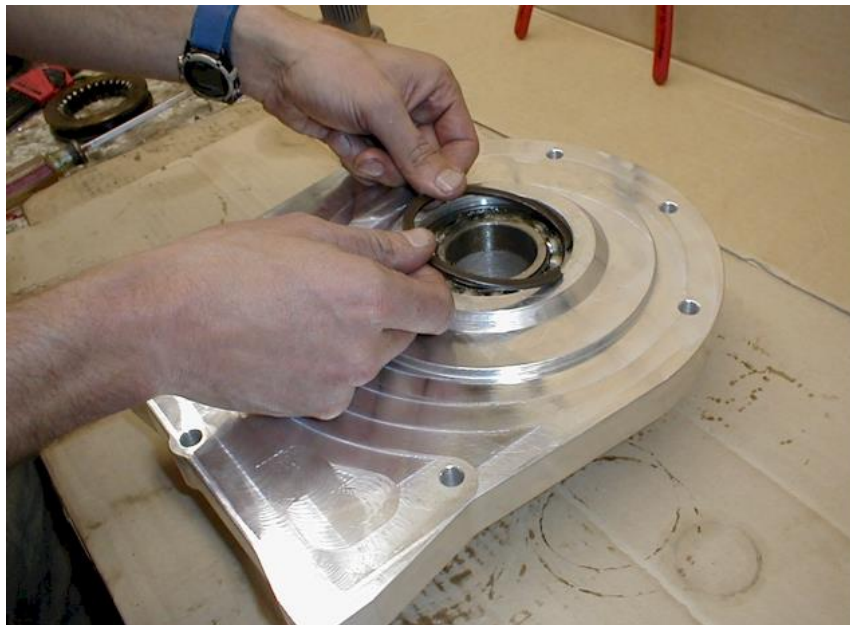
11. Remove the snap ring that holds the bearing into the retainer



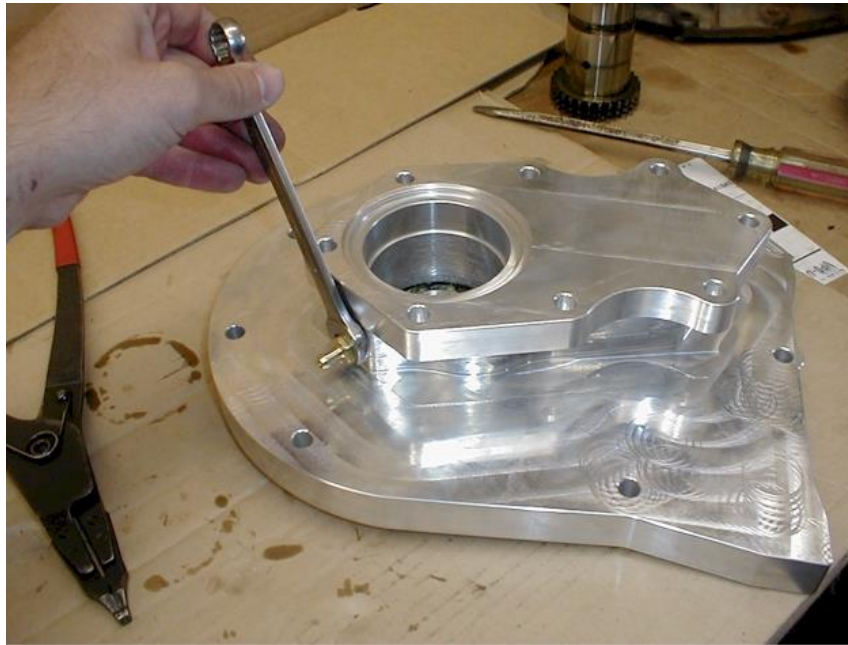
12. Remove the bearing from the original retainer and install it into the Doubler adapter, the bearing can go either direction.



13. Install the original snap ring into Doubler adapter.



14. Install breather fitting



15. Apply grease to outside of doubler shaft and inside of low gear



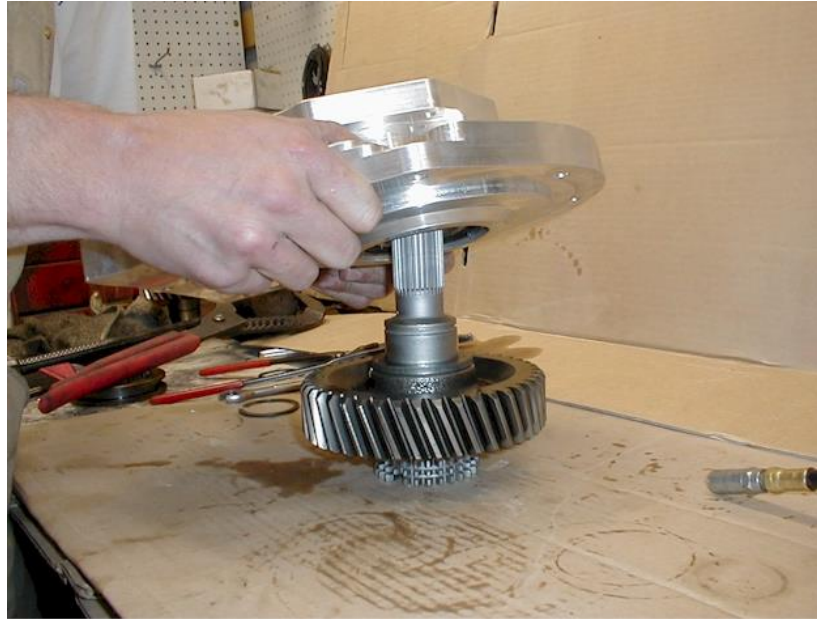
16. Place low gear on Doubler shaft, note that the clutch teeth are face down, next to the clutch teeth on the Doubler shaft.



17. Install retaining pin if you'd like (it keeps the thrust washer from spinning but that doesn't really accomplish anything, so don't feel bad if you lost it) and install thrust washer over the Doubler shaft.



18. Install doubler adapter over shaft assembly. You may need to heat up the bearing, this is a precise fit.



19. Install big snap ring on to doubler shaft. This can be difficult, be patient!

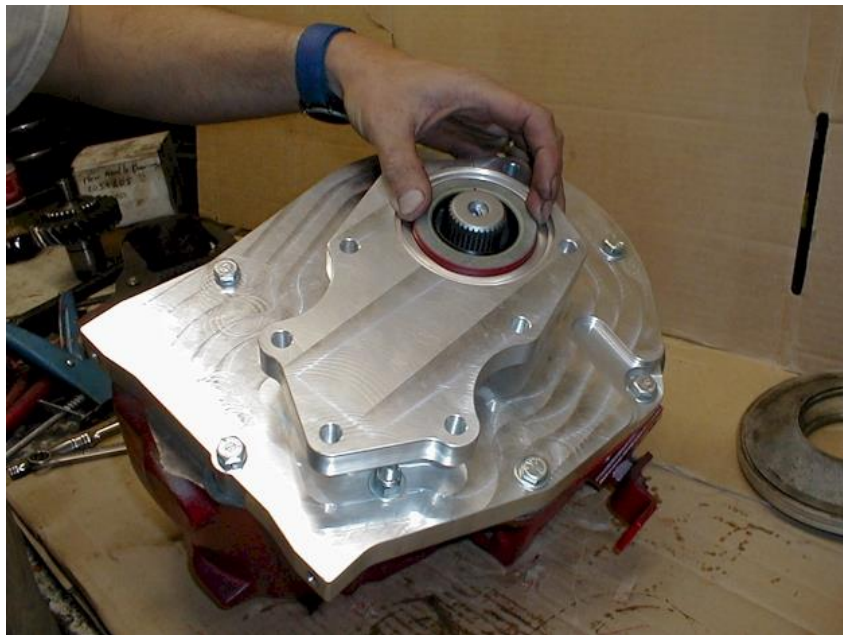


20. Your assembled gear/shaft/adaptor should look like this:



21. **If you're using a GM/Dodge figure 8 style NP205:** Install seal into Doubler adapter, the spring goes towards the NP203. Seal must be 1/2" below **gasket** surface and no more than 5/8", be careful not to damage seal.

If you're using a GM or Ford round pattern NP205: The only seal necessary is the one in the factory bearing/seal retainer.



22. Install the 15 fat needle bearings into the pocket in the Doubler shaft, use grease to hold the needles in place.



23. Place the doubler adapter on a flat surface as pictured above (gear side up), you may need to prop the adapter up above the ground a bit with a piece of wood etc. Install a gasket (with or without RTV at your discretion) and drop the range box on top of the gear/shaft. Installing it in this manner is important because if a needle gets out of place, the two pieces just won't slide together. If you have the range box at the bottom and install the doubler on top of it, if a needle falls out it will fall into the case and there's no way for you to know if that happened or not.
24. Bolt the case halves together with the bolts and nuts from the hardware kit. Install the studs into the front face of the NP205 with a dab of Loctite. Generally it's best to install the 203 gearbox and 205 into the vehicle separately so bolt the 203 up to the trans adapter and then mate the 205 to the Doubler adapter.