

Clutch Inspection and Maintenance (Part 2)

1. Crankshaft Main Seal: Use only a CCP reproduction, the late replacement GM seals leaked and there were some aftermarket seals with a metal press fit area (they fell out when the engine was hot). The crankshaft hub must be inspected carefully and polished where the seal mates. If there is a groove worn in the hub, you can change housings (late/early) or use a spacer to locate the seal lips in a new area. Press the new seal in completely and carefully. Place some light grease between the seal lips (extremely important if you use a Viton seal). Do not use washers on the bottom two bolts and do not use replacement bolts with thick heads – the flywheel comes very close to them. The original bolt lengths were 7 at 1-3/8 shank, 2 at 1 5/8 shank. Torque to 30 ft lbs.

2. Lubrication: The clutch disc has to slide on the splines, so lightly lube this area. Do not grease the pilot bushing; oil as noted above. Lightly lube the crankshaft hub seal area, the clutch shaft seal area, the release bearing shaft, the fingers on the fork, the face of the release bearing, the pivot and the pin where the pull rod attaches to the fork.

3. Flywheel & Clutch Installation: Use thread sealer on the flywheel bolts, clean and add sealer to the crankshaft keyway and around the hub to crankshaft line, install the reinforcement ring and torque to 40 ft lbs. Install welded hub clutch disc with “flywheel side” installed towards the flywheel. As a double check use your fingers to twist the disk on the flywheel to confirm the hub does not rub on the crankshaft. Use the special shouldered bolts with lock washers on the pressure plate. The fingers of the clutch fork go inside the bearing sleeve and be sure the small fork is fitted on the pivot.

4. Differential: As long as you are this close, make a couple of checks. Separate the transmission and check the internal splines in the differential pinion shaft by using a flashlight. This is a common wear area and if they are more than 50% missing you should consider replacement. Pull the top cover and check the fit of the pinion gear on the shaft – look for a loose gear and play in the shaft at the bearings and consider how much wear shows on the pinion gear; different ratios have different thicknesses. Make the proper preload adjustment on the pinion bearings. If you change the side sleeve o-rings and seals, make the proper side bearing preload adjustments (actually do this in the correct order)

5. Transaxle Lubricant: If you have a '64 or later transmission & differential you may want to change the gear oil while the units are out of the car, since they do not have drain plugs like the '60 – '63 models did. If you drive your car in cold weather you may want to consider synthetic lubricant to aid in shifting.

Installation Tips

1. Double check: Think back, did you torque all bolts, check the slide of the disc on the clutch shaft splines, changed the clutch shaft seal and pilot bushing (chamfer out), install the disc with the words “flywheel side” towards the flywheel, check the clutch fork installation and release bearing movement on the shaft.

2. Cut two pieces of 3/8 -16 threaded rod about 5 inches long and saw screwdriver slots in one end. Use these as guide pins and once the transaxle is mated to the engine you can remove them with a screwdriver and install bolts. Cut screwdriver slots in the ends of the mounting bolts to aid in installation (this can be done prior to removal if there is enough of the bolt end sticking out).

3. Once the transaxle is bolted up, check the movement of the clutch fork to make sure it was not displaced during installation. It is easier to add any lost gear lube to the transmission or differential at this point before installation. If you have an early model the round turn signal flashers, Corvair gas tank floats, plastic spray can lids etc., make good plugs for preventing spills from the differential.