1 AX4S Rebuild Procedures

Transaxle Disassembly

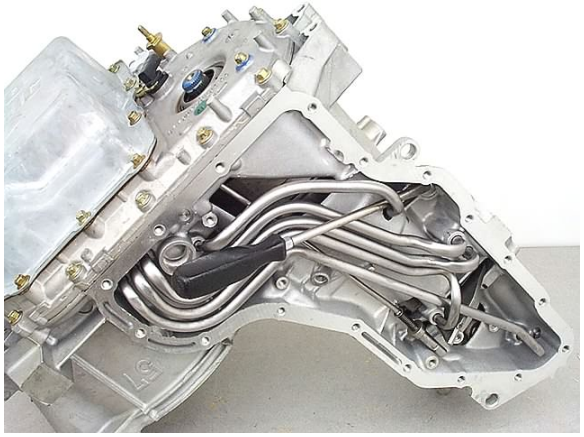
Step 1: Remove the converter, and let the transaxle drain.

Step 2: Remove the dipstick, dipstick tube and seal.

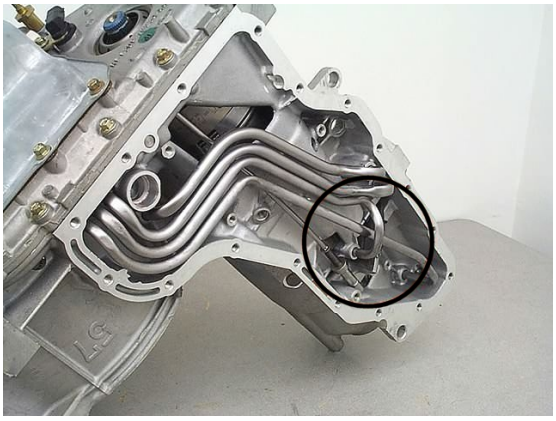
Step 3: Remove the transmission range sensor and speed sensors.

Step 4: Remove the speedometer cover and the speedometer gear and shaft assembly. Be careful not to lose the thrust bearing on top of the speedometer gear. Remove the o-ring from the speedometer cover.

Step 12: Use a screwdriver or slide hammer to pull the reverse clutch feed and rear support lube tubes out of the case.



IMPORTANT- Prior to 1992, the rear support lube and speedometer gear lube tubes did not cross. It was later determined that many lubrication failures could be prevented by re-routing the lube flow to this area of the unit. These two tubes were redesigned to accomplish this by switching functions. The new rear support lube tube crosses over the speedometer lube tube. If your unit has the earlier non-crossed tubes, they *must* be replaced with the new style crossed tubes.

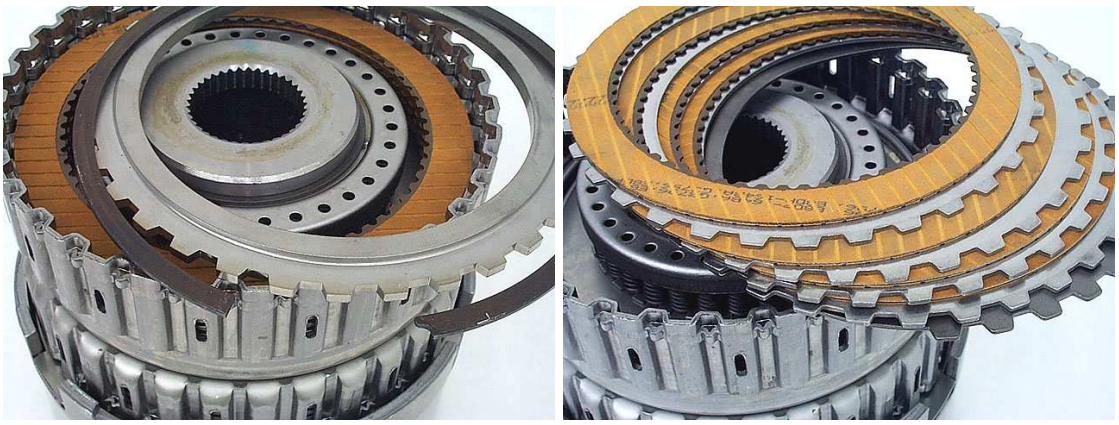


Input Drum Disassembly

Step 1: Place the assembly on the bench with the front sun gear facing up, overdrive drum facing down. Lift the front sun gear shell off of the assembly.

Step 2: Remove the thrust bearing that sits between the sun shell and intermediate hub. Slide the intermediate clutch hub out of the intermediate clutch. Remove the thrust bearing that sits between the intermediate hub and clutch drum.

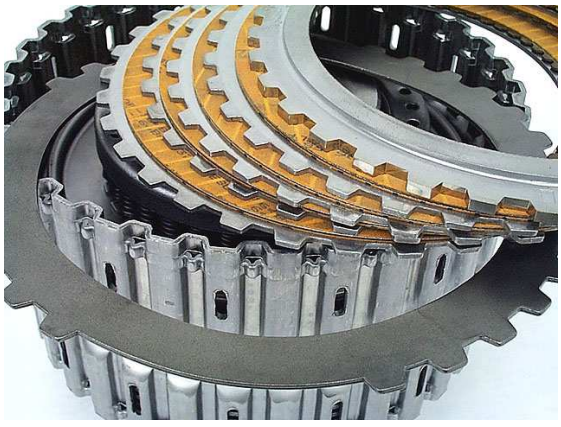
Step 3: Remove the intermediate clutch pressure plate snap ring and pressure plate. Remove the intermediate clutch pack.



Step 17: Lubricate the seals with assembly lube, and slide the piston while rotating it into the drum. You can use a feeler blade or suitable substitute to help the seal lips go into the drum without damaging them.

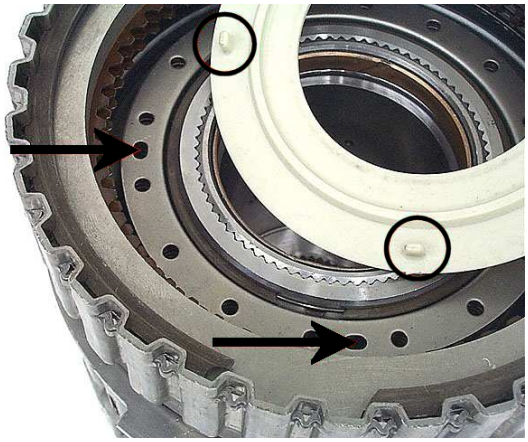
Step 18: Install the proper return spring assembly onto the intermediate clutch piston (it's the stiffest, most closely packed one of the three). Compress the spring using the 700 pump slide tool, and install the snap ring. Remove the drum from the compressor.

Step 19: Install the clutch stack in the drum, beginning with the wave plate. Then alternate steel, friction, steel, etc.. These friction plates usually have many grooves in them.



Step 38: Check the clearance between the snap ring and the pressure plate. The clearance specifications are listed by model along with the available snap ring sizes at the end of this chapter. To adjust the clearance, replace the snap ring with one of the selective rings available.

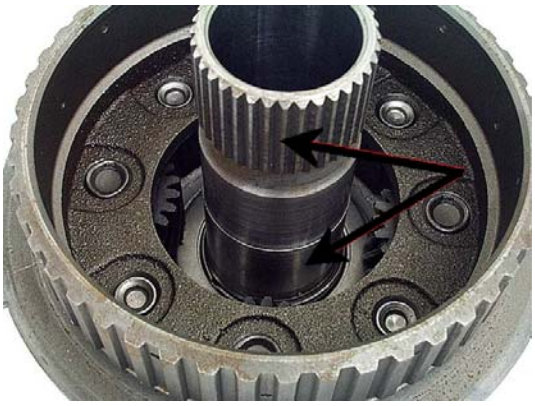
Step 39: Install the forward clutch plastic thrust washer (the larger of the two plastic washers in the drum) on top of the forward clutch return spring retainer, lining up the washer tabs with the elongated holes in the spring retainer. Coat the underside of the washer with assembly lube to hold it in place.



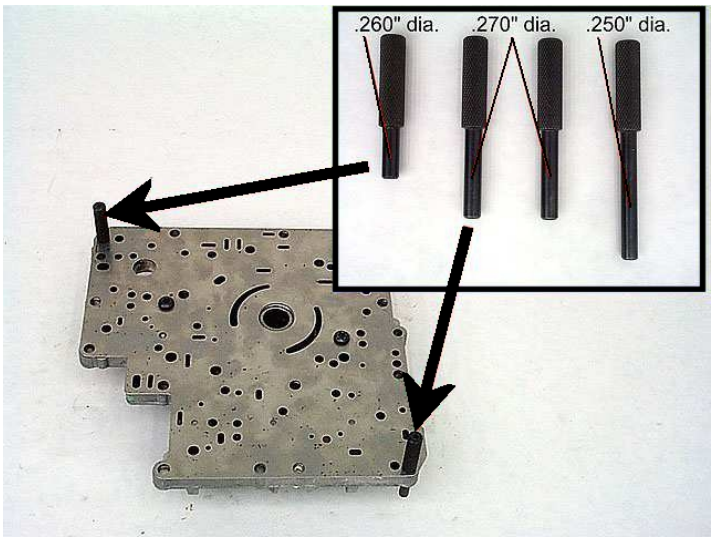
Step 4: Check the front planetary set for:

- Gear rocking or excessive endplay (should be less than 0.025"). Make sure they rotate smoothly, with no signs of roughness.
- Front bushing journal wear from the front sun gear bushing. Check the splines on top of the shaft for any wear.
- Inspect the output shaft bushing/bearing journal for any signs of wear or scoring. If found, the planet should be replaced. A new planetary assembly has a bushing rather than a bearing inside the shaft.
- Rear bushing journal wear.

  Replace or repair as necessary.

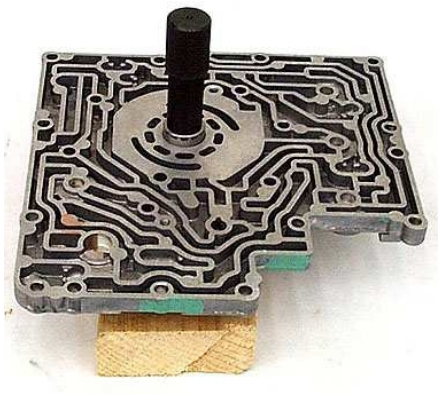


Step 23: Lay the proper pump gasket (the one with correct holes for all checkballs and the relief valve) and the separator plate on the pump body, and start the two torx bolts by hand. Use one short and one medium alignment pin inserted into the holes shown to align the gasket and separator plate with the pump body, and tighten the two torx bolts to 7 – 9 ft-lbs (9 – 12 Nm).



Remove the alignment pins. The pump assembly is now ready to be bolted to the valve body. Any final assembly of pump parts removed in this section will be covered in the valve body section.

One end of these bearings has a rounder edge than the other end. The rounder end must face toward the pump pocket, the squarer end facing the valve body. Flip the pump body over and place it on a wood block to protect the top of the pump pocket and install the new bearing from the bottom of the pump body, starting the round end of the bearing into the hole first.



Gently tap the bearing into place until it is approx. 1/16" (0.062") above flush with the pump body casting. Turn the pump over and measure the depth from the bottom of the pump pocket to the top edge of the new bearing. This distance must be 0.125". Adjust the bearing position until this depth is achieved. There will be plenty of room in the valve body bore to accommodate the small amount of bearing that sticks out from the bottom of the pump.

AX4S valve body plate:

'94-'95 3.0L Taurus/Sable - F5DZ-7Z490-C

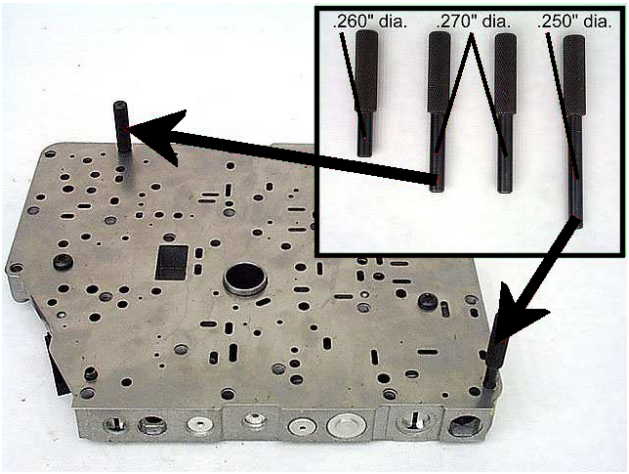
'94-'95 3.8L Taurus/Sable/Continental - F5DZ-7Z490-D

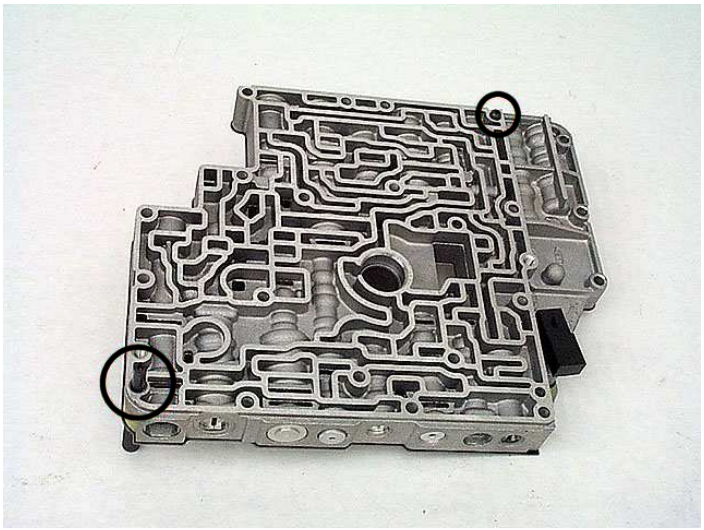
'94-'95 3.2L Taurus SHO - F5DZ-7Z490-B

'95 3.0L Windstar F58Z-7Z490-B

'95 3.8L Windstar F58Z-7Z490-A

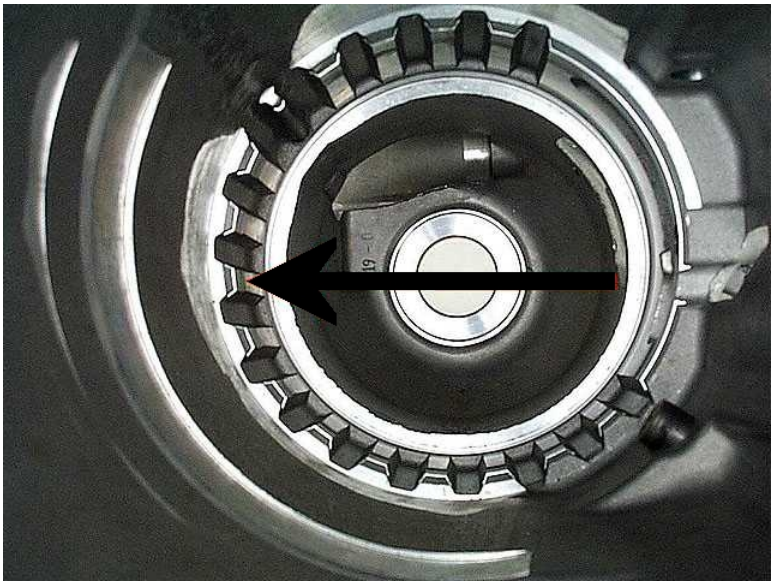
Step 11: Install the alignment pins into the valve body as shown (one of the valve body plate alignment pins needs to be changed). Holding the pins in place, flip the valve body over.





Step 7: Scuff the servo cover bores lightly with scotchbrite.

Step 8: Check for worn or damaged final drive lugs in the case. Replace as necessary.

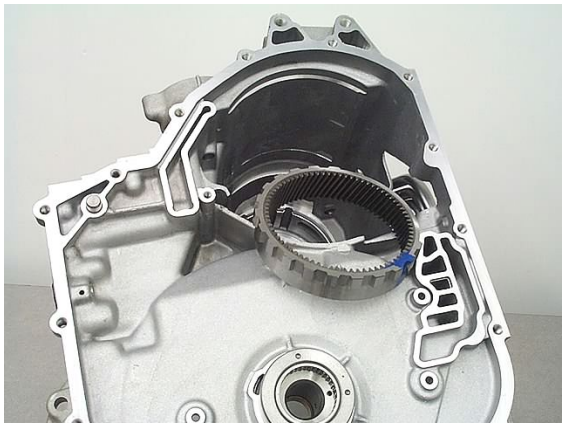


Step 9: Clean the case thoroughly, blowing or picking any debris or silicone out of the bolt holes.

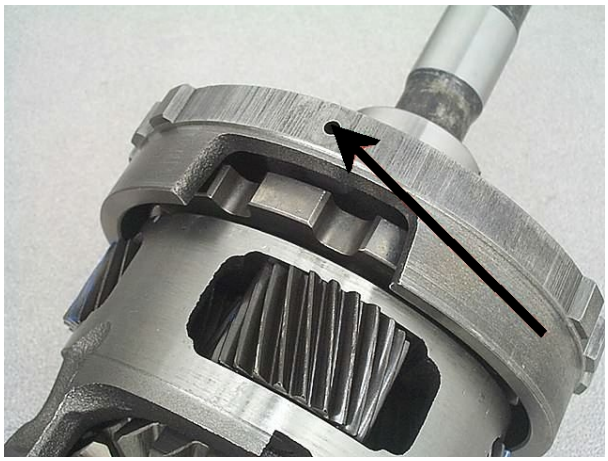
Step 22: Clean the chain cover thoroughly, blowing or picking any debris or silicone out of the bolt holes.

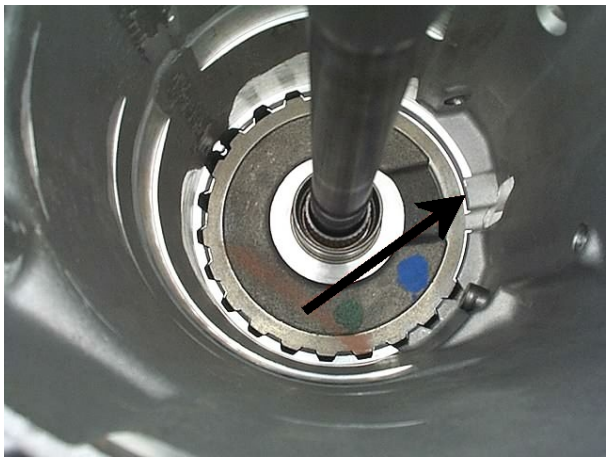
Step 23: Install a new axle seal into the chain cover bore, using a non-hardening sealer on the OD of the seal. An old AXOD/AX4S overdrive servo cover makes a great driver to install the axle seal with.

Step 2: Install the final drive ring gear into the case, with the external case lugs facing up. If necessary, you can use a hammer handle to tap down on the ring gear, to seat it in the case.

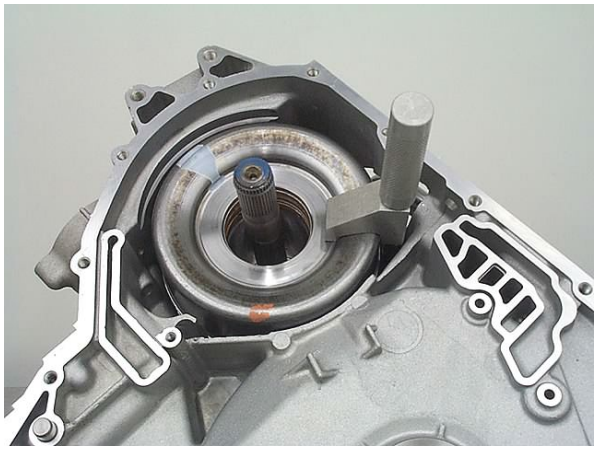


Step 3: Install the differential and rear planet support into the case, aligning the lube hole in the support with the lube hole in the case. Install the rear planet support snap ring in the case.

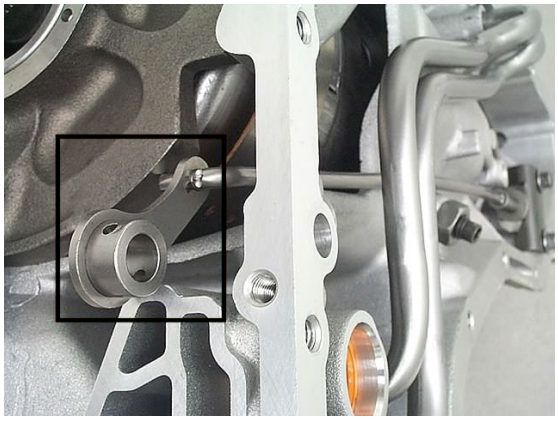




Step 10: Mount the clutch loading tool onto the clutch assembly, and use it to lower the clutch assembly into the transaxle. Make sure you have the assembly seated all the way down before you remove the loading tool. If you don't have the proper loading tool, you can use a coat hanger or piece of *very* stiff wire to engage two sun gear shell holes to lower the drum assembly into the case with, but we would HIGHLY recommend getting the correct tool for this procedure.



Step 20: Hook the park rod into the rod lever, and install the park rod into the case, guiding the bullet end of the park rod through the park pawl guide. With the park rod in place, the bushing on the lever should face toward the bottom of the case.



Step 21: Slide the manual shaft into the top of the case. Put the rooster comb into place, with the bushing part of the rooster comb facing the top of the case, and slide the manual shaft through it. Continue sliding the manual shaft through the case, and through the park rod lever (bushing part of lever facing the bottom of the case), into the bottom of the case.