

Vauxhall Cavalier/Opel

Dismantling and reassembly of the Vauxhall Cavalier 4 x 4 Transfer Box Crown Wheel and Shaft Assembly

- It is assumed the reader has removed the txb and/or read the removal section.
- There are no parts in the txb which can be replaced off the shelf.
- Any assemblies requiring replacement will usually be best served by obtaining second hand parts.
- This procedure should not be carried unless absolutely essential. i.e. not recommended.

216. If the crown wheel assembly is not at fault check note how it turns. This will aid re-assembly. (para. 220)

217. Remove the four thread locked 13mm bolts from the bearing cap (photo) at the end of the drive shaft extension. Tap the other end of the shaft to release the bearing cap. Withdraw and set aside the shaft and tapered bearing. (Check the bearing)
13mm spanner.

218. There is another tapered bearing, on the remaining shaft, inside the housing (photos) and behind the crown wheel assembly, out of view. The remaining shaft is splined into the crown wheel and into the straight side of the inner tapered bearing. The objective is to remove the shaft to release the crown wheel, the latter is then withdrawn through the opening at the front of the txb. The shaft is difficult to get started and will require driving out from the exposed end with some force.

CAUTION: Do not damage the shaft end.
Plastic/copper headed hammer or equivalent.

219. Withdraw the shaft, and the crown wheel. There remains a coned collar with a thrust washer, which can be withdrawn through the shaft opening. Note the thrust washer end faces the crown wheel. The inner tapered bearing cup, inside the txb can now be inspected, as can the double acting oil seal at the far end. Closely inspect all bearings and gear wheels removed.

220. Reassembly of the crown wheel and shaft assembly is the reverse of dismantling remembering to thread lock the four cleaned bearing cap bolts, and the following:

- Seal the thrust washer in place with grease onto the 'coned spacer, with the washer towards the crown wheel end. - to prevent displacement when driving the shaft home.
- The shaft will locate to the splined crown wheel and at the same time, it is important to engage the shaft squarely to the inner bearing surface before driving the shaft into position. The author found the task was made easier by boiling the the inner bearing in water for a few minutes before placing it onto the inner tapered cup and offering the shaft.
- The shaft should be checked to be fully home by replacing the drive shaft extension and bearing cap in position **WITHOUT** loctite fluid on the bolt threads. The shaft is fully in position when the crown wheel assembly can be turned without binding.
- When this is achieved add Loctite fluid to the four bolt threads and tighten to the final position. (Approx. 20 ft lbs)
- Re-check the crown wheel assembly moves without

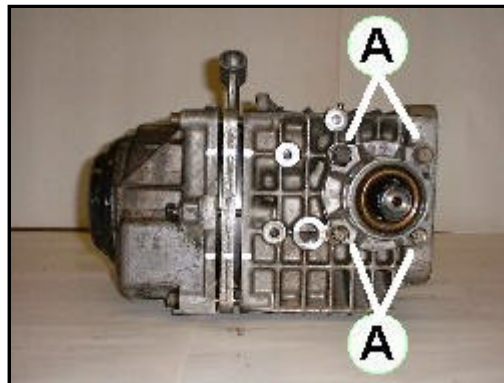


Figure 1

The bearing cap assembly.

A. Four Drive shaft bearing cap bolts

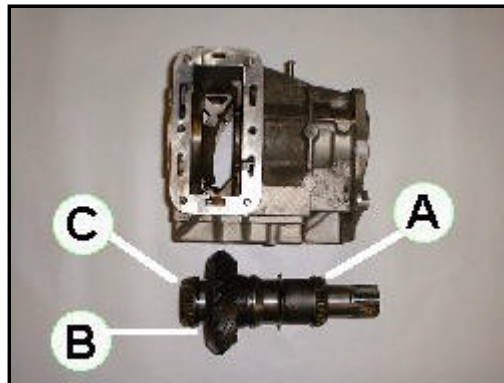


Figure 2

The inner drive shaft & bearings

A. Inner taper bearing.
B. Outer taper bearing.
C. Crown wheel.

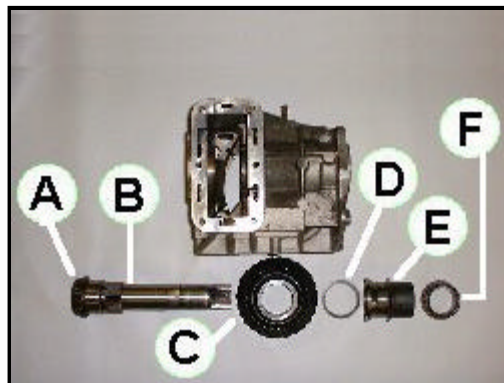


Figure 3

Crown wheel assembly - component parts.

A. Outer tapered bearing.
B. Shaft.
C. Crown wheel.
D. Thrust washer.
E. Spacer piece.
F. Inner tapered bearing.

binding and replace the crown wheel cover plate and six bolts. Note the plate has a gasket which should be sealed with 'Car Plan Instant Gasket' and the magnet which should be replaced cleaned into the 'squared' slot.

13 mm spanner, 'Loctite' thread lock fluid & Car Plan Instant Gasket.

23rd October 2001