

TRANSAXLE

DESCRIPTION (See Fig. 1)

The gearbox and final drive gears are in a single unit, contained in an aluminium casing mounted forward of the engine unit.

The casing can be separated into four parts, mounting cover, gearbox casing, hypoid casing and clutch housing. The gearbox provides four forward speeds and reverse, with synchro mesh action on all forward gears. Gear change is by a floor mounted gear lever, which through a shaft actuates selector shafts and forks in the main casing. Hypoid final drive gears are employed, the shaft of the hypoid pinion being the gearbox output shaft.

Drive is transmitted from the clutch through a clutch shaft which is connected via a splined muff to the gearbox input shaft gear cluster. The two shafts are prevented from pulling apart by a stud screwed into the end of each shaft. The splined muff is retained by a circlip.

The gearbox input shaft gear cluster which is mounted uppermost in the casing is supported at the inner end on needle roller bearings and at the outer end on a ball race which is located in the casing by a circlip. A reverse wheel is splined to the outer end of the input shaft gear cluster and the assembly is secured by a nut.

Mounted below the input shaft gear cluster, and supported by taper roller bearings, is the combined gearbox output shaft and hypoid pinion. The shaft carries the driven gears and synchro hubs. The 1st, 2nd, 3rd and 4th driven gears are in constant mesh with the input shaft gear cluster, and are free to rotate on the gearbox output shaft when in the neutral position. The gears rotate on Oilite bronze bushes.

The 1st and 2nd speed synchro hub is splined to the gearbox output shaft, the 3rd and 4th synchro hub is keyed to the gearbox output shaft. A baulking ring is fitted between each gear wheel and synchro hub. A reverse wheel is splined to the outer end of the gearbox output shaft and the assembly is secured by a nut.

The axial position of the output pinion relative to the crown wheel is determined by shims between the casing and inner bearing.

The position of the gears on the gearbox output shaft is determined by washers of selective thickness between the inner bearing and 1st speed wheel, between the 2nd and 3rd speed wheels and between the 4th speed wheel and the outer bearing.

A washer of selective thickness is also interposed at this point to control the bearing preload.

Three selector shafts (1st/2nd, 3rd/4th, and a Reverse) are located below the gearbox output shaft. Pinned to the 1st/2nd and 3rd/4th selector shafts is a selector fork. The selector shafts are actuated by a main selector. An interlock plate and roller prevents the engagement of two gears at once. A reverse idler wheel is mounted on a shaft in the end cover, and is actuated by a swinging lever connected to the reverse selector shaft.

The crown wheel and differential gears are supported on taper roller bearings in steel bearing housings in the hypoid casing.

Two short differential shafts are splined and held by circlips in the differential wheels at their inner ends, and are splined to differential shaft flanges and secured by clinch nuts at their outer ends.

Certain models have the circlips deleted, the differential shaft flanges are an interference fit and are pressed on to the shaft.

Initial production of this type will be identified by paint on the clinch nut, but in later production the clinch nut will be deleted, and the differential shaft will be level with the face of the flange.

For full details of this assembly see Page 41.

The crown wheel and differential assembly is adjustable for position laterally and for pre-load of the bearings, by the inner screwed sleeves which are locked by a wire ring.

OPERATION (See Fig. 2)

Movement of the gear lever across the neutral gate will rotate the main selector and interlock plate. The interlock plate is engaged in the grooves in the outer end of the selector shafts, preventing movement of the shafts. When the finger on the main selector is in engagement with the inner slot of a selector shaft, the recess in the interlock plate will allow that selector to be moved towards the gear position.

Drive will be engaged by positively connecting the selected gear to its synchro hub. This is achieved by the sliding sleeves which are actuated by the selector forks.