Haynes shows you how

BMW 3-Series and Z4 (99-05) Includes 2006 325ci/330ci Coupe and Convertible models Haynes Online Manual.

1 General information

The transmission is a 5 or 6-speed unit, and is contained in a cast-alloy casing bolted to the rear of the engine.

Drive is transmitted from the crankshaft via the clutch to the input shaft, which has a splined extension to accept the clutch friction disc. The output shaft transmits the drive via the driveshaft to the rear differential.

The input shaft runs in line with the output shaft. The input shaft and output shaft gears are in constant mesh with the countershaft gear cluster. Selection of gears is achieved by sliding synchromesh hubs that lock the appropriate output shaft gears to the output shaft.

Gear selection is via a floor-mounted shift lever.

The selector mechanism causes the appropriate selector fork to move its respective synchro-sleeve along the shaft, to lock the gear pinion to the synchro-hub. Since the synchro-hubs are splined to the output shaft, this locks the pinion to the shaft, so that drive can be transmitted. To ensure that shifting can be made quickly and quietly, a synchromesh system is installed on all forward gears, consisting of balk rings and spring-loaded fingers, as well as the gear pinions and synchro-hubs. The synchromesh cones are formed on the mating faces of the balk rings and gear pinions.

The transmission is filled with oil during production, and is then considered filled for life. Refer to Chapter 1 for the alternate recommended service interval.