

**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

Depending on model, a four- or five-speed automatic transmission may be installed, consisting of a torque converter, an epicyclic geartrain and hydraulically-operated clutches and brakes.

The torque converter provides a fluid coupling between engine and transmission, acting as a clutch, and also provides a degree of torque multiplication when accelerating.

The epicyclic geartrain provides either of the forward or reverse gear ratio, according to which of its component parts are held stationary or allowed to turn. The components of the transmission are held or released by brakes and clutches which are activated by a hydraulic control unit. A fluid pump within the transmission provides the necessary hydraulic pressure to operate the brakes and clutches.

Driver control of the transmission is by a seven-position selector lever, and a four-position switch. The transmission has a 'drive' position, and a 'hold' facility on the first three gear ratios (four-speed transmission) or gear ratios 2 to 4 (five-speed transmissions). The 'drive' position (D) provides automatic shifting throughout the range of all forward gear ratios, and is the position selected for normal driving. An automatic kickdown facility shifts the transmission down a gear if the accelerator pedal is fully depressed. The 'hold' facility is very similar, but limits the number of gear ratios available – i.e., when the selector lever is in the 3 position, only the first three ratios can be selected; in the 2 position, only the first two can be selected, and so on. The lower ratio 'hold' is useful when travelling down steep gradients, or for preventing unwanted selection of top gear on twisty roads. Three driving programs are provided for selection by the switch; 'Economy', 'Sport', and 'Manual' (four-speed transmission) or 'Winter' (five-speed transmission).

Certain models are available with Steptronic shifting where the driver is able to control shift points; moving the shift lever forward to up-shift and backward to down-shift. This is an additional feature to typical automatic transmission operation.

Due to the complexity of the automatic transmission, any repair or overhaul work must be left to a BMW dealer or specialist with the necessary special equipment for fault diagnosis and repair. The contents of the following Sections are therefore confined to supplying general information, and any service information and instructions that can be used by the owner.