



HIGH RANGE

The high range gears should be used for all normal driving, including off-road driving across dry level terrain.

NOTE: If the gear lever is moved from drive to a lower gear while the vehicle is moving at speed, the selected gear will be engaged only when the road speed is reduced to an acceptable level. This prevents the possibility of the engine from over-revving.

LOW RANGE

Low range gears should be selected in any situation where low speed maneuvering is necessary, extreme off-road condition driving is required or hill descent control (HDC) is required. Selection is made via the HI/LO lever situated on the vehicle's center console.

TORQUE CONVERTER LOCK UP

At vehicle pull away and during gear changes, the torque converter will allow a certain amount of slip to occur between the crankshaft drive plate and the input shaft of the gearbox. Incorporated into the design of the automatic transmission system used on Discovery Series II is a lock-up feature, where the TCM will activate the torque converter lock-up solenoid. Discovery Series II will lock the torque converter in all gears, whereas on pre 1999 Range Rover this can only be activated in third and fourth gears. When activated, the torque converter lock-up clutch will be engaged and no slip will be allowed. Direct drive through the torque converter will be provided in this condition.

The torque converter can be locked and unlocked during driving to improve driveability, fuel consumption and gear changing. The torque converter will not be locked until the transmission has calculated that the oil temperature has reached a predetermined temperature. This is calculated from the engine coolant temperature via a software timer within the TCM, as the transmission itself has no temperature sensor. The length of this timer depends on several variables, including the engine coolant temperature during cranking, but is approximately:

<i>Engine ambient temperature</i>	<i>Time taken for oil to warm up</i>
77°F (25°C)	0 minutes
32°F (0°C)	7 minutes
-13°F (-25°C)	12 minutes

When low range is engaged, the torque converter is used to improve the vehicle's off-road capabilities. One example of this is locking the torque converter at 0% throttle. This improves engine braking while negotiating steep gradients. This feature will be active only while there is no danger of stalling the engine.

MODE SELECT

In addition to providing drive, and electronically controlling the gear changes throughout the conventional gear selection range in both high and low ranges, the automatic transmission system featured on Discovery Series II also incorporates a mode select facility. This feature enables the driver to select the gear change strategy that most suits the current driving conditions. The mode switch, situated adjacent to the rear of the automatic selector gate, can be used to select a Sport mode when in high range, and Manual mode when low range is selected.