

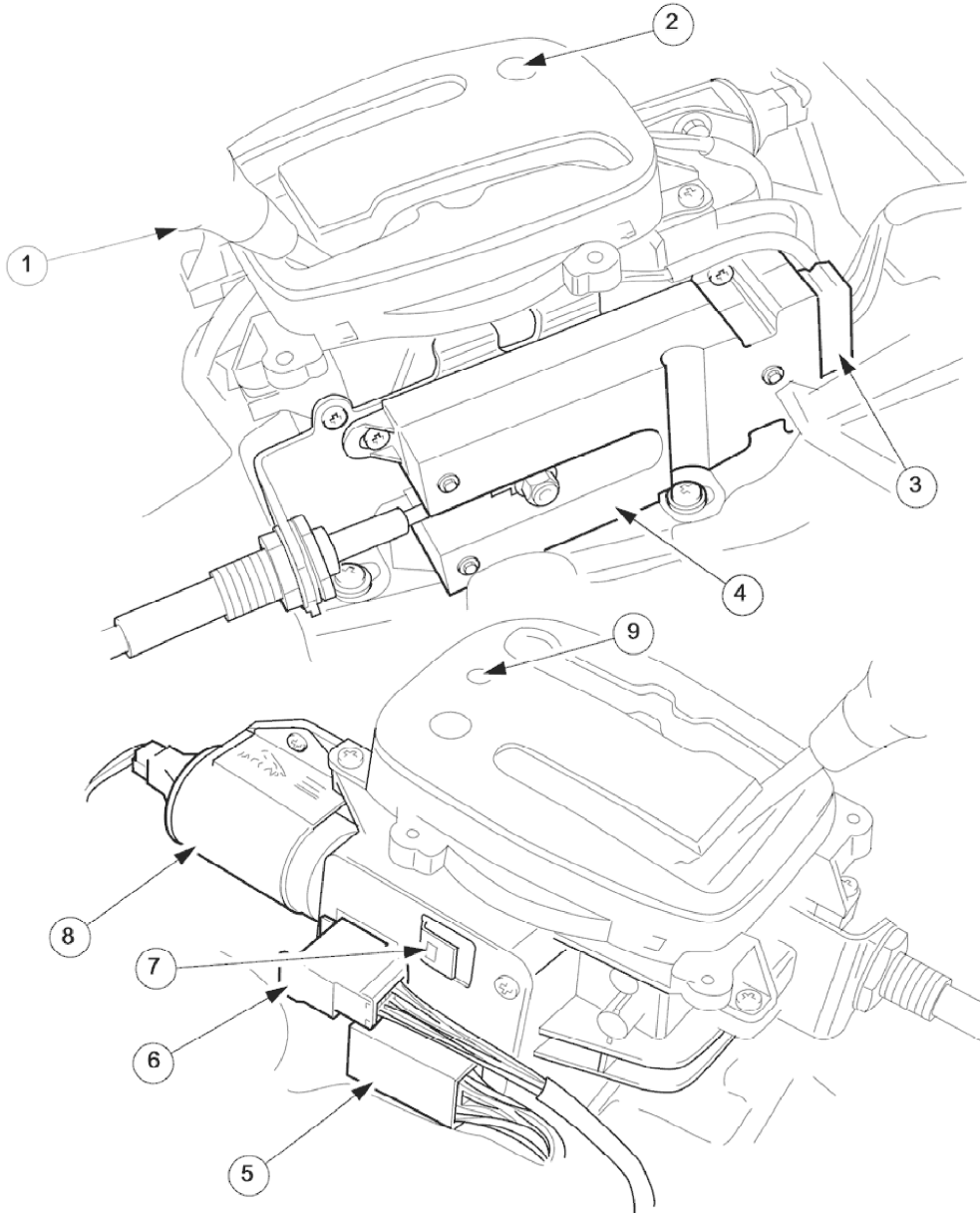
# 1999 XJ RANGE - Automatic Transmission/Transaxle External Controls - Vehicles With: Sup

## External Controls

### Introduction

Operator gearshift control is effected by:

- The selector lever
- Accelerator pedal position
- Kickdown
- The mode switch



1	Gear selector lever
2	Access blank - Gear-shift interlock solenoid
3	Connector - DLS
4	Dual Linear Switch (DLS)
5	Connector - Park position switch
6	Connector - Illumination module
7	Connector - Climate control
8	Solenoid - Gear selector
9	Security system Active LED

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## Selector lever:

Gear selector positions are:

- P Transmission mechanically locked, starting available \*
- R Reverse gear
- N Neutral gear, no power to the rear wheels (starting available)
- D Drive gear, all 5 forward gears available (see Performance Mode Pushbutton)
- 4 Upshift to 4th gear only
- 3 Upshift to 3rd gear only
- 2 Upshift to 2nd gear only

## Gearshift Interlock Manual Override\*

The interlock system which locks the selector in P and prevents the ignition key from being removed except when P is selected, may be manually overridden in the event of an emergency.

1. With the parking brake applied
2. Remove the access blank using a suitable Torx bit
3. Insert a small screwdriver into the vacated hole
4. Push the screwdriver downwards, gently, and hold whilst simultaneously moving the selector from P towards R , but do not engage R until the tool has been removed
5. An audible warning may be heard when operation 4 is carried out
6. With the selector in N and the access blank replaced, the vehicle may be started

## Range Selection

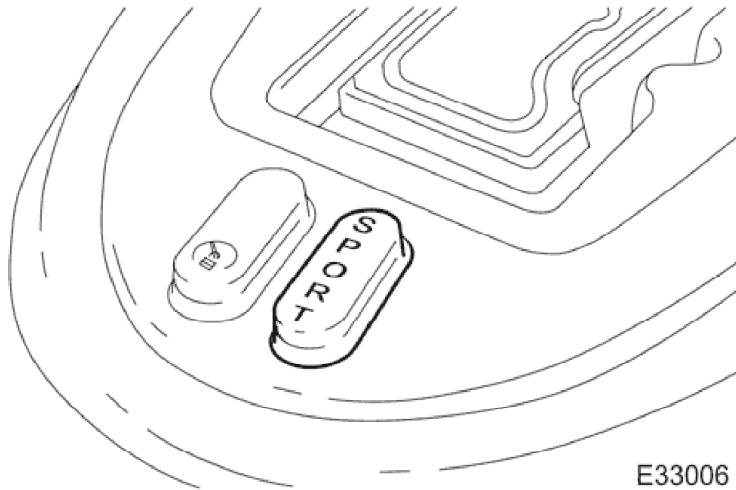
- The selector lever transmits operator demand to the transmission and TCM by means of a cable and Dual-Linear Switch (DLS).
- The lever operates the transmission assembly selector shaft, only for P R N D , by means of a cable. Movement of the lever across the gate to 4, 3 and 2 positions disengages the cable from the selector lever and engages the DLS which controls gear selection electronically.

## Gear selector module:

- Provides illumination of the decal relevant to the gear selected. This information is provided by CAN from the TCM.
- Illuminates the security system Active LED on the gear selector surround, in response to an output from the BPM.

## Transmission Switches

### Performance Mode Pushbutton



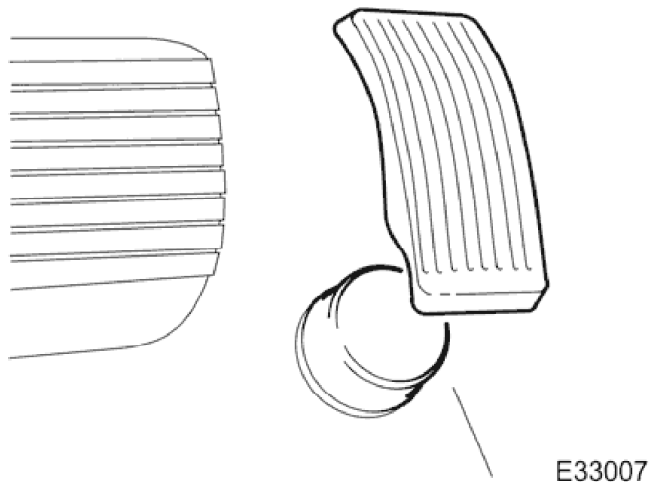
The performance mode pushbutton:

- Is mounted on the 'J' gate surround.
- This 'push-on push-off' switch selects Normal or Sport mode ( push-on for Sport)
- Is illuminated when Sport mode is selected.
- Is hard-wired to the transmission control module.

With 'Normal' selected the transmission will start off in 2 nd gear with kickdown to 1 st being available.

'Sport' mode allows 1 st gear engagement from rest and modifies values in the TCM shift point calculations to provide higher upshift speeds and enhanced availability of downshifts.

### Kickdown Switch



The kickdown switch:

- Is floor mounted under the accelerator pedal.
- Is operated by pressing the pedal beyond the full throttle position.
- Provides maximum acceleration on driver demand, by signalling the TCM to select the lowest gear to give maximum wheel torque.

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## Gear selector interlock solenoid:

- Prevents the gear selector lever from being moved from P , unless the ignition switch is in position II, and the brake pedal is depressed.
- Is controlled by an output from the BPM

## Park position switch:

- Is hard-wired to the BPM
- Detects when the gear selector lever is moved to the Park position

## Dual-Linear Switch (DLS)

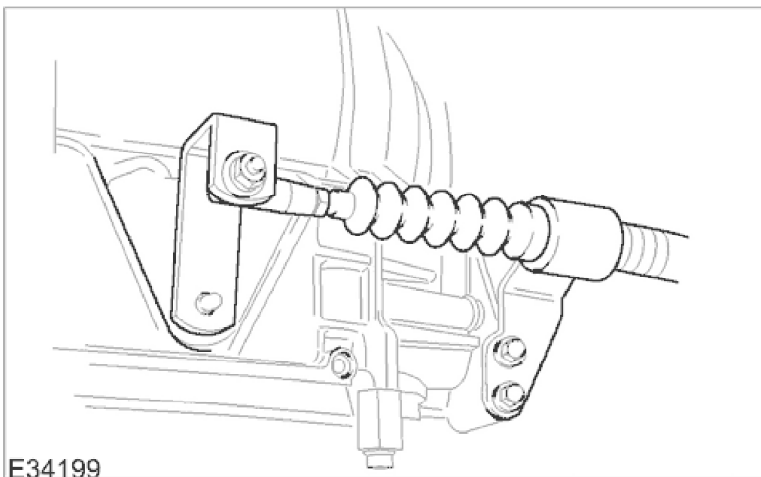
The TCM detects gear selection by means of a switch fitted to the 'J' gate; the DLS contains two multi-track slider switches, of which the upper controls P R N D and the lower 4 3 2 .

Output from the DLS is changed as the selector lever is moved, thus indicating selected gear position. The parallel signal is input to the TCM by 4 discrete logic wires W0, W1, W2 and W3. The particular sequence, or gray code, will indicate which shift position is selected, as shown in the following table where 0 = low and 1 = high:

## Gray code

Selector Position	W3	W2	W1	W0
P	0	1	1	1
R	1	1	1	0
N	1	1	0	1
D	0	1	0	0
4	1	0	0	0
3	0	0	1	0
2	0	0	0	1

## Transmission Unit Gear Selector



The gear selector at the transmission unit:

- Is connected to the operator's selector module by cable
- Operates the selector valve, at the electro-hydraulic control unit