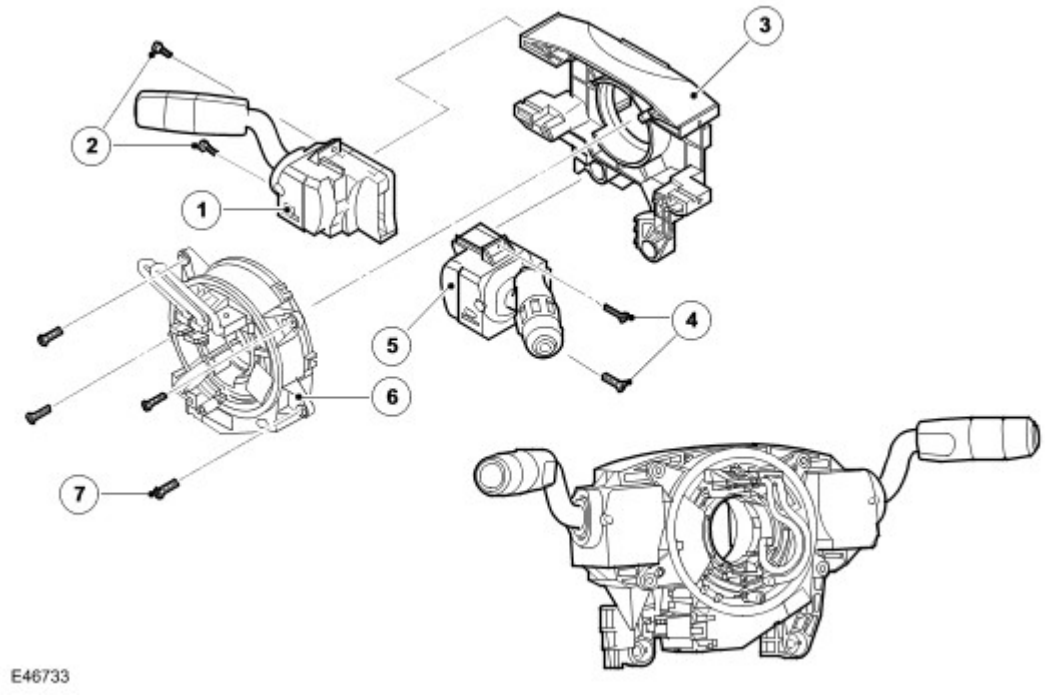
Published : Apr 21, 2004

Steering Column Switches

The steering column switches comprise the steering column multifunction switch and the ignition switch. Both switches are located on the steering column assembly.

STEERING COLUMN MULTIFUNCTION SWITCH

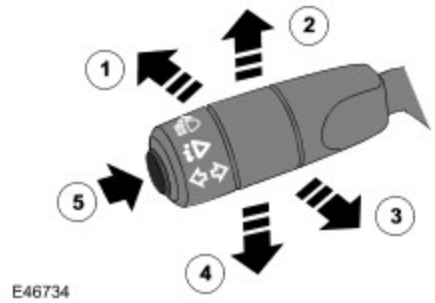


Item	Part Number	Description
1	-	Turn signal indicator switch assembly
2	-	Screw (2 off)
3	-	Case
4	-	Screw (2 off)
5	-	Windshield wiper switch assembly
6	-	Clockspring
7	-	Screw (4 off)

The steering column multifunction switch comprises a case which houses a turn signal indicator switch assembly, a windshield wiper switch assembly and a clockspring. The multifunction switch is located behind the steering wheel and is secured with two screws at the top to the steering column assembly and two screws at the bottom to the column lock housing.

The clockspring is located in the front of the case and retained with four screws. The clockspring engages in slots in the steering wheel boss and turns with the rotation of the steering wheel. The clockspring incorporates a tang which cancels the turn signal indicators when the steering wheel is rotated. For additional information, refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System)

Turn Signal Indicator Switch Assembly



Item	Part Number	Description
1	-	High beam
2	-	Right hand indicator
3	-	Headlamp flash
4	-	Left hand indicator
5	-	Computer function button

The turn signal indicator switch assembly is located in the left hand side of the case and is retained in the case with two screws. The switch is connected to the main harness via a connector on the back of the switch. The switch controls the following functions:

- Left / right turn signal operation
- High / low beam operation
- Headlamp flash
- Computer function selection (if fitted).

Turn Signal Indicators

The turn signal indicators are operated by pushing the switch up for right hand indicators and down for left hand indicators. The switch has a detent position which locks the switch in the selected position until it is moved to the central off position. The switch also has a 'lane change' function which allows the switch to be operated without moving through the detent for use when changing lane on motorways or when overtaking. When released from the 'lane change' position, the switch is automatically returned to the central off position. The left and right hand turn signal indicator switch positions are connected on separate wires to the Central Junction Box (CJB) and the switch. When a switch position selection is made, a circuit is completed from the CJB to ground, via the selected switch position. The CJB detects the completed circuit and operates the selected turn signal indicator until the switch is moved to the central off position. The turn signal indicators can be cancelled either manually by the driver or automatically when the steering wheel is rotated to the straight ahead position.

High/Low Beam and Headlamp Flash

High beam is operated by pushing the switch forwards. The switch is latched in this position and the high beam is active until the switch is manually pulled rearwards. The headlamp flash function is operated by pulling the switch rearwards. The switch contacts complete a circuit and the headlamps are activated for as long as the switch is operated. The switch is non-latching in this position and the headlamp flash is switched off when the switch is released and it returns to its off position. The high beam and headlamp flash positions are connected on separate wires to the CJB and ground. When a switch selection is made, a circuit is completed from the CJB to ground via the switch contacts.

Computer Function Button (if fitted)

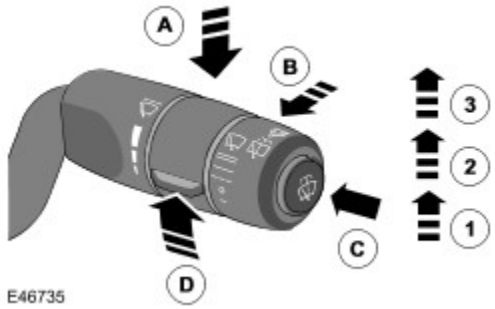
This button is only fitted to vehicles with a high specification instrument cluster. The computer function button is located on the end of the switch stalk. The button is a momentary switch and allows the driver to select the following information in the instrument cluster message center:

- Trip distance
- Distance on fuel remaining in the fuel tank
- Fuel tank remaining quantity
- Average fuel consumption
- Vehicle life fuel consumption
- Average speed

- Instantaneous fuel consumption.

The button is connected to the instrument cluster and ground. When the button is pressed the circuit is completed and the instrument cluster displays the next trip computer information. Repeated presses of the button selects each display in the message center in turn. For additional information, refer to Information and Message Center (413-08 Information and Message Center)

Windshield Wiper Switch Assembly



Item	Part Number	Description
1	-	Intermittent position
2	-	Slow speed
3	-	Fast speed
A	-	Flick wipe
B	-	Rear wash/wipe
C	-	Wash wipe
D	-	Intermittent delay (6 positions)

The windshield wiper switch assembly is located on the right hand side of the case and is retained in the case with two screws. The switch is connected to the main harness via a connector at the back of the switch. The switch controls the following functions:

- Windshield wiper intermittent, slow and fast speed
- Windshield wiper flick wipe
- Windshield wash/wipe
- Rear wash/wipe
- Intermittent delay selection.

For additional information, refer to Wipers and Washers (501-16 Wipers and Washers)

Windshield Wiper Switch Operation

The windshield wiper functions are operated by moving the switch up or down. Flick wipe is selected by pushing the switch down. The switch is non-latching in this position and wiper operation is stopped when the switch is released and it returns to the off position. The flick wipe switch contact is connected on a single wire to the CJB and ground. This is the same connection to the CJB as the fast speed wipe. When the switch is operated the circuit is completed between the CJB and ground. The CJB detects the completed circuit and operates the wipers for as long as the switch contact is made.

Intermittent is selected by pushing the wiper switch up, to the detent position, the wipers operate at the delay period selected on the rotary switch on the wiper stalk. The wipers remain in the intermittent mode until the wiper switch is moved to the off or slow/fast speed positions. The intermittent switch contact is connected between the CJB and ground. When the switch is moved to the intermittent position the circuit is completed. The CJB detects the completed circuit and operates the wipers in the intermittent delay selected for as long as the switch contact is made.

The intermittent delay period is selected using a rotary control on the wiper switch stalk. The rotary control allows the

driver to select six delay periods to suit the prevailing weather conditions. The rotary control is connected on three wires to the CJB and a single wire to ground. The six positions each use a different combination of the three wires. The CJB detects, via the three wires, which selection has been made and operates the wipers with the appropriate delay.

Slow speed operation is selected by pushing the wiper switch up, to the second detent position. The wipers operate at slow speed until the wiper switch is moved to the off, intermittent or fast speed positions. The slow speed switch contact is connected between the CJB and ground. When the switch is moved to the slow speed position the circuit is completed. The CJB detects the completed circuit and operates the wipers at slow speed for as long as the switch contact is made.

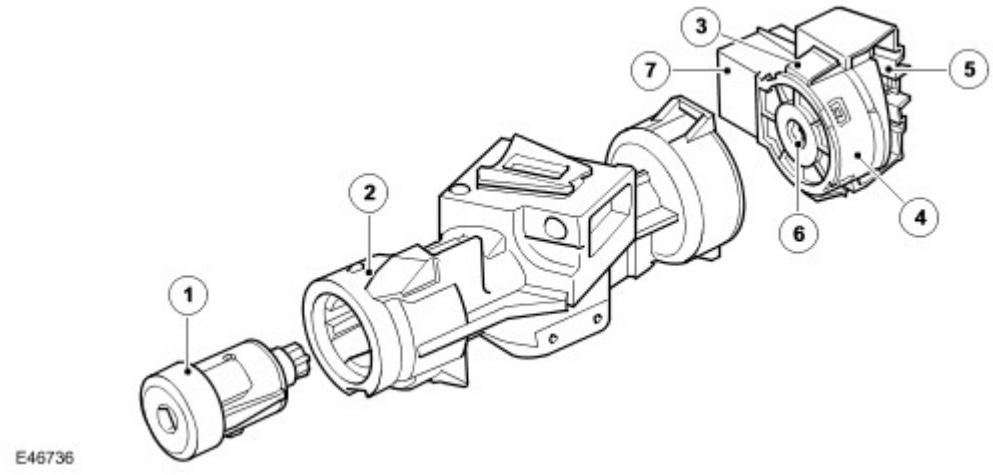
Fast speed operation is selected by pushing the wiper switch up, to the third detent position. The wipers operate at fast speed until the wiper switch is moved to the off, intermittent or slow speed positions. The fast speed switch contact is connected between the CJB and ground. When the switch is moved to the fast speed position the circuit is completed. The CJB detects the completed circuit and operates the wipers at fast speed for as long as the switch contact is made.

Rear Wash/Wipe Switch Operation

The rear wash/wipe functions are operated by moving the switch rearwards. Rear wipe is selected by moving the wiper switch rearwards to the first detent position. The rear wiper switch is connected between the CJB and ground. When the switch is moved to the rear wiper position the circuit is completed. The CJB detects the completed circuit and operates the rear wiper for as long as the switch contact is made.

The rear washer is selected by moving the wiper switch rearwards to the second, non-latching position. When the switch is moved to this position a circuit is completed between the CJB and ground. The CJB detects the completed circuit and operates the rear washer for as long as the switch contact is made.

IGNITION SWITCH



Item	Part Number	Description
1	-	Key barrel
2	-	Column lock
3	-	Locking tab
4	-	Ignition switch
5	-	Harness connector
6	-	Drive shaft location
7	-	Key interlock solenoid

The ignition switch is located in the left hand end of the steering column lock assembly. The switch is held in the column lock casting with two locking tabs which engage in slots in the column lock casting.

The switch has a slot which provides for the location of the drive shaft which passes through the column lock. This shaft is rotated by the driver when the ignition key is turned in the key barrel. This rotation turns a drum inside the ignition switch which moves two electrical contacts to select the required ignition position. A spring loaded ball locates in a seat for each of the three ignition switch positions, allowing the driver to feel when the required position is reached.

On vehicles with automatic transmission. a solenoid is located on the side of the ignition switch. The solenoid, which is controlled on a single wire from the transfer box control module, prevents the key from being removed from the key barrel if the transmission selector lever is not in the PARK (P) position. The transfer box receives the transmission position status via a message transmitted from the transmission control module on the CAN bus.

The solenoid, when energised, moves a pin which prevents the ignition switch returning fully to the '0' off position. This prevents the key being removed until the transmission is in the PARK position.