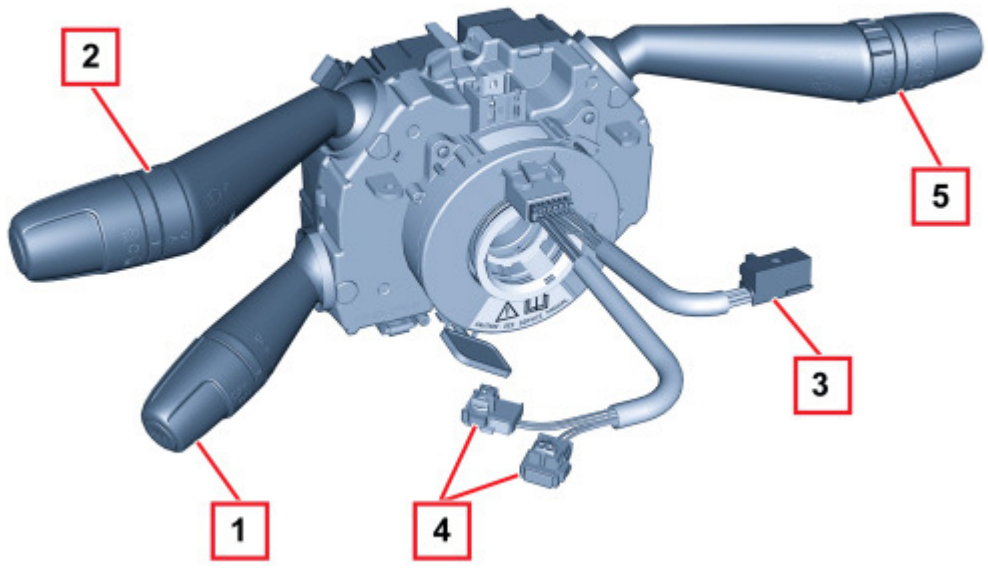
INTRODUCTION - CRUISE CONTROL

OPERATION

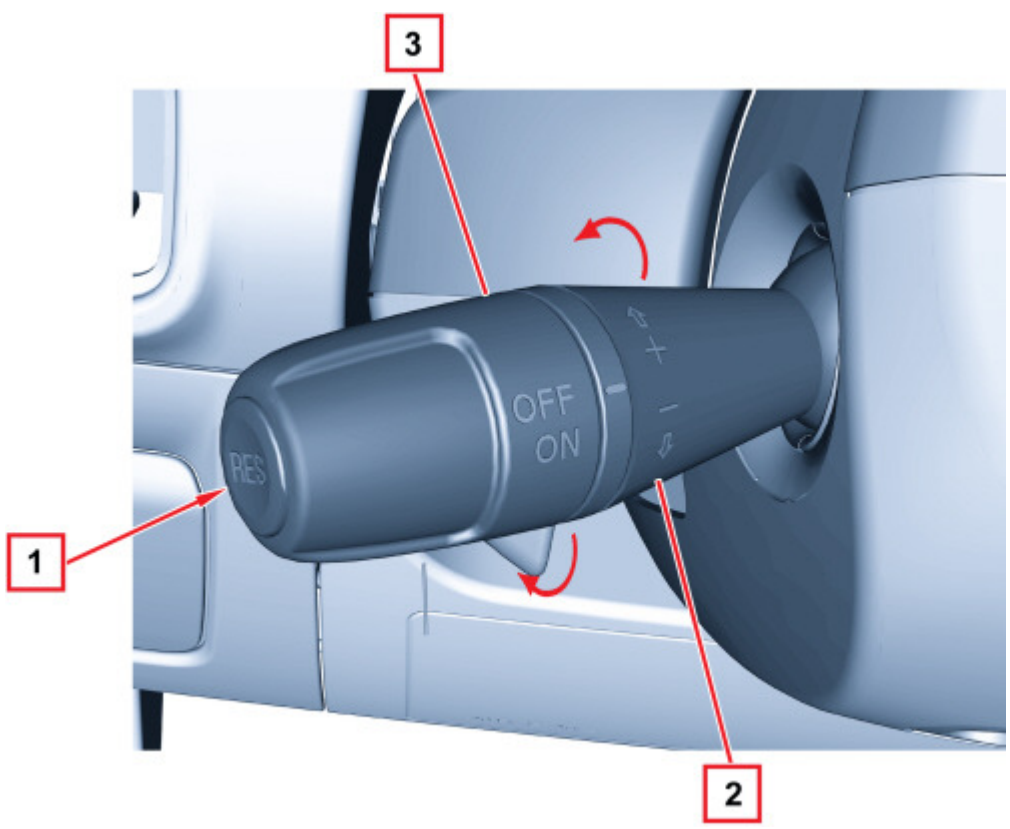
Systems for the control of petrol engines with a motorized throttle and diesel engines with electronic control of the injection time offer Cruise Control as a function, i.e. a system that automatically maintains a cruising speed set by the driver.
The Cruise Control system control is integrated in the steering column switch unit like the exterior lights, direction indicators and the windscreen wiper.
The location of the Cruise Control system control is illustrated in the diagram.



1 - Cruise Control lever
2 - Lever for exterior lights and direction indicators
3 - Horn connector and controls on the steering wheel
4 - Air Bag connectors
5 - Lever for windscreen washing and wiping functions

The third lever for the steering column switch unit incorporates the Cruise Control system controls, namely:

- the ring nut switch for activating/deactivating the system;
- the lever with the vehicle speed increase/decrease memorizing function;
- the Resume button that calls up a saved speed.



1 - Resume button recalls a stored speed
2 - Ring nut with the vehicle speed increase/decrease memorizing function
3 - Ring nut switch (ON: Cruise activated; OFF: Cruise deactivated)
The electronic system is managed by the engine management control unit.

It automatically maintains the cruising speed set by the user through the direct electronic management of the engine.

Memorizing the speed selected

To activate the operation of the Cruise Control:

- operate the ring nut switch to the ON position;
- let the vehicle reach the desired speed; it should be remembered that the Cruise Control can only be activated for speeds above 40 km/h. It is advisable to engage fourth gear or higher where the road conditions allow the speed set to be maintained safely.
- push the steering column switch unit lever upwards to increase the speed, the lever returns automatically (unstable).
- release the accelerator pedal and let the system work directly;
- the warning light in the instrument panel should come on constantly with the signal coming from the engine management control unit, via the CAN, indicating the Cruise Control operating status. The warning light going out indicates that the system is deactivated.

Variation in the speed memorized

If you wish to alter the vehicle speed memorized it is necessary to:

Speed increase:

- push the lever upwards: this produces an acceleration ramp at a constant, programmable gradient;
- when the lever is released (automatic return), the system maintains and memorizes the new speed reached by the vehicle.

Decreasing the speed:

- push the lever downwards: having achieved the reduction in the vehicle speed in relation to the speed set previously using the Cruise Control, release the lever and the system will maintain the new vehicle speed.

The Cruise Control can operate in the entire permitted engine speed range.

Resume button function

This function makes it possible, by pressing the button, to return the vehicle to the last speed value memorized if the Cruise Control has been switched off in certain circumstances (for example, by operating the clutch or braking).

Deactivation of the cruise control

The Cruise Control is deactivated by the user by:

- operating the ring nut switch to the OFF position;
- switching the engine off;
- operating the clutch pedal or brake pedal (in such cases, the last speed achieved is stored and can be recalled by pressing the Resume button);
- having the vehicle speed below the minimum permitted (about 40 km/h) or above the maximum permitted;

If the lever is operated without using the clutch, consistency between the engine rpm and the vehicle speed starts to fail; in all cases, pressing the Resume button allows the system to be reactivated.

Activating the accelerator with the Cruise Control activated: by pressing the accelerator (for example to overtake) the Cruise Control system allows a temporary increase in the speed of the vehicle because it is momentarily deactivated, but as soon as the accelerator pedal is no longer pressed, the system reactivates the speed setting memorized.

The recognition of the gear engaged is carried out by comparing the vehicle speed with the engine speed with the clutch engaged.

(B) The Cruise Control is automatically deactivated if:

- the acceleration is above the calibrated limit (e.g. steep descent);
- the deceleration is above a calibrated limit (e.g. the gear selector lever is operated without using the clutch);

The system turns off automatically when the signals used by the Cruise Control software are incorrect because of component defects:

- vehicle speed sensor;
- accelerator pedal potentiometer;
- brake switch plausibility;
- clutch switch plausibility;
- Cruise control switch plausibility and Resume button;
- Cruise switch plausibility and speed increase or decrease lever positions.