

DESCRIPTION AND OPERATION > ADAPTIVE > ADAPTIVE CRUISE CONTROL ACC

Fig 1: Adaptive Cruise Control Plus



Courtesy of CHRYSLER GROUP, LLC

The car can be equipped with Adaptive Cruise Control Plus (ACC +), which greatly increases the value and comfort of the cruise control, especially in congested traffic.

The system uses a radar sensor mounted in the front area of the vehicle (in the lower portion behind the front bumper) to detect objects on the trajectory of the car. If the lane ahead is clear, the system maintains the speed set. When the system detects slow traffic or a vehicle ahead at a lower speed, it will automatically adjust the speed of the car to keep a safe distance (which is set by the driver with the dedicated button on the steering wheel) by using the engine load, the transmission and the brake system of the vehicle.

The ACC works from about 30 km/h (20 mph) Detail below:

- The radar is used to identify vehicles in the lane ahead and to keep the distance between the vehicle and the vehicle ahead.
- The ACC has the full functionality between approximately 30 km/h (20 mph) and 200 km/h (100 mph);
- When the speed drops below 30 km/h (20 mph), the system is deactivated and warns the drivers that they must use the brakes to stop the car, if necessary;
- The driver can select one of four levels of distance depending on their preferences;

- When the car is equipped with a manual transmission, the driver must shift up or down to keep the engine at a correct rev value.
- The system is always coupled with the speed limiter function (speed limitation function), which informs the driver if the set speed is exceeded.

Fig 2: Adaptive Cruise Control Plus Switches



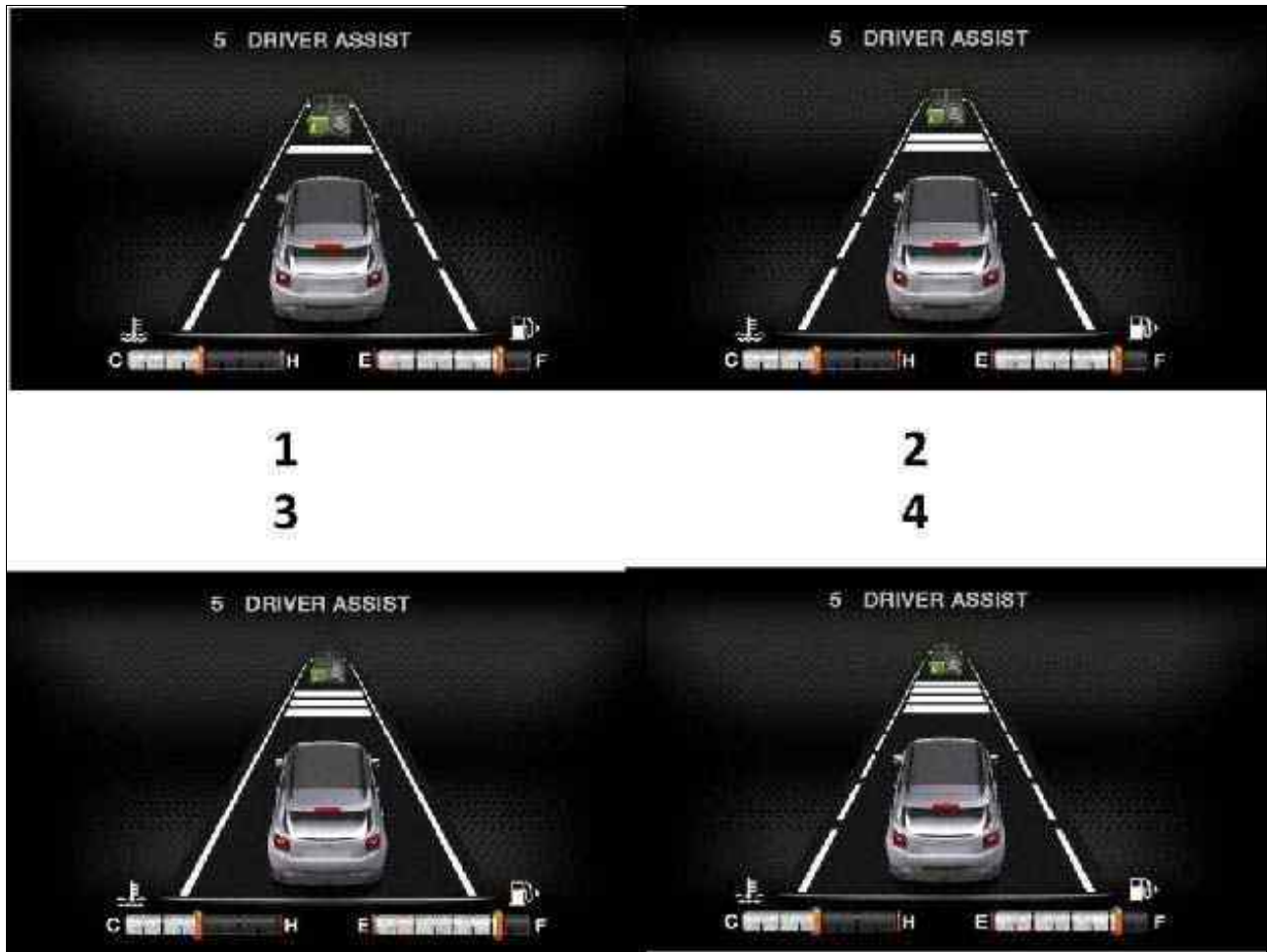
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DRIVING ASSISTANCE SYSTEM CONTROLS DRIVER INPUTS

1. ACC ON/OFF Switch
2. ACC Closer Distance Switch
3. Speed Limiter switch

Fig 3: Driving Assistance System Distance Settings



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The CC and ACC+ are activated by the mode switch on the front right side of the steering wheel. With the function ACC+ the driver can choose one of four distance settings using the switch located on the bottom right side of the steering wheel:

1. Very close 1.0 seconds
2. Close 1.3 seconds
3. Far 1.7 seconds
4. Very far 2.0 seconds

The steering wheel switch sends the driver input to the BCM over a LIN line. The BCM translates the messages and sends them to the ACC sensor on CAN-C.

The ACC sensor interprets and processes all of the inputs received. If these inputs indicate a possible collision, the ACC sensor sends messages to other modules on CAN-C. These modules perform actions

in an effort to assist the driver in the prevention of the collision and, if possible, in keeping the distance, set by the driver, from the vehicle ahead.

The following output functions are performed based on decisions made by the ACC sensor processor:

- **IPC** - Provides visual system status and warning messages
- **BCM** - Translates ACC sensor audio warning requests and sends them to the audio system controller
- **ABS module**
 - Performs braking during ACC+ to maintain the set distance
 - Perform plausibility check on torque and brake requests
 - Translates ACC sensor torque requests and sends them to the PCM
 - Translates ACC sensor gear requests and sends them to the TCM
 - Slightly raises brake hydraulic pressure to decrease brake reaction time
 - Creates brake system hydraulic pressure pulses which cause the brake pedal to jerk warning the driver of an impending collision
 - Performs braking during an FCW+ event
 - Performs braking with Advanced Brake Assist function
- **PCM** - Performs torque requests received from ACC sensor via the ABS module
- **TCM** - Performs transmission up and down shifts received from the ACC sensor via the ABS module

Network Inputs - The ACC sensor receives inputs from other modules on the vehicle, such as:

- **ABS module**
 - Vehicle speed
 - Vehicle Dynamics
- **Forward Facing Camera Module**
 - Object Classification Data
 - Object Positioning Data
- **BCM** - Steering Wheel Switch Inputs
- **PCM** - Provides expected current torque values to the ACC sensor
- **TCM** - Provides current transmission information to the ACC sensor

IMPORTANT: Driver assist systems are reactive type. While certain mitigation provided by these systems may help prevent a collision, they cannot be assumed to insure accident avoidance in all circumstance. The driver must remain alert and in control of the vehicle at all times and operate the vehicle in a safe manner consistent with road and traffic conditions.

Fig 4: Speed Limiter Button



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SPEED LIMITER - This device allows the speed of the vehicle to be limited to values which can be set by the driver. The maximum speed can be set both with car stationary and in motion. The minimum speed that can be set is 30 km/h.

When the device is active, the car speed depends on the pressure at the accelerator pedal, until the set speed limit is reached. If necessary (in the event of overtaking for example), the programmed speed limit can be exceeded by fully depressing the accelerator pedal.

By gradually reducing the pressure on the accelerator pedal, the function will be reactivated as soon as the car speed drops below the set speed.

If the electronic Cruise Control has been activated previously, the S.L. button must be pressed twice. The first press deactivates the Cruise Control function, the second press activates the Speed Limiter.

DESCRIPTION AND OPERATION > CONVENTIONAL > SPEED CONTROL

The function of speed control allows you to drive at a constant speed without pressing the accelerator pedal. The function is managed by the Powertrain Control Module (PCM), which receives commands from the speed control buttons on the steering wheel. The function is activated by pressing the speed control switch which then stores a speed. Increase the speed with the (SET +) button or decrease the speed with (SET -) button. The speed remains stored and can be restored at any moment by pressing the RES (resume) button. The function is deactivated by pressing the DELETE key.

The function also automatically switches off:

- Pressing the brake pedal
- Pressing the clutch pedal
- Switching off the engine

In these cases, the speed reached remains stored and will be set again to that speed by pressing the RES. A activated system is indicated by a light on the instrument panel, connected via the CAN network to the engine management.

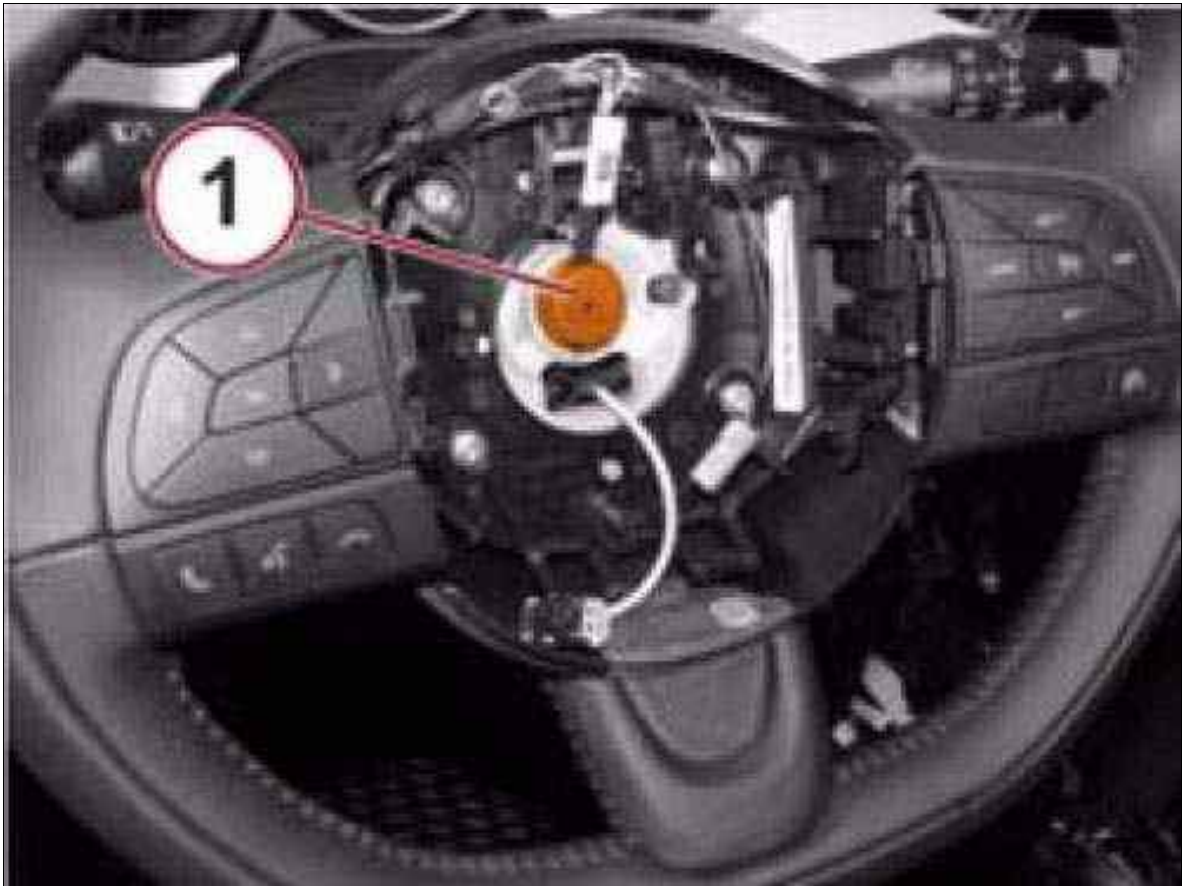
SPEED LIMITER FUNCTION

The Speed Limiter function allows you to limit the speed of the vehicle to customer programmable values. The speed limiter button is located on the steering wheel below the speed control buttons. The maximum programmable speed is 30 km/h.

SWITCH, SPEED CONTROL > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

1. Remove the air bag. Refer to AIR BAG, DRIVER, REMOVAL AND INSTALLATION .

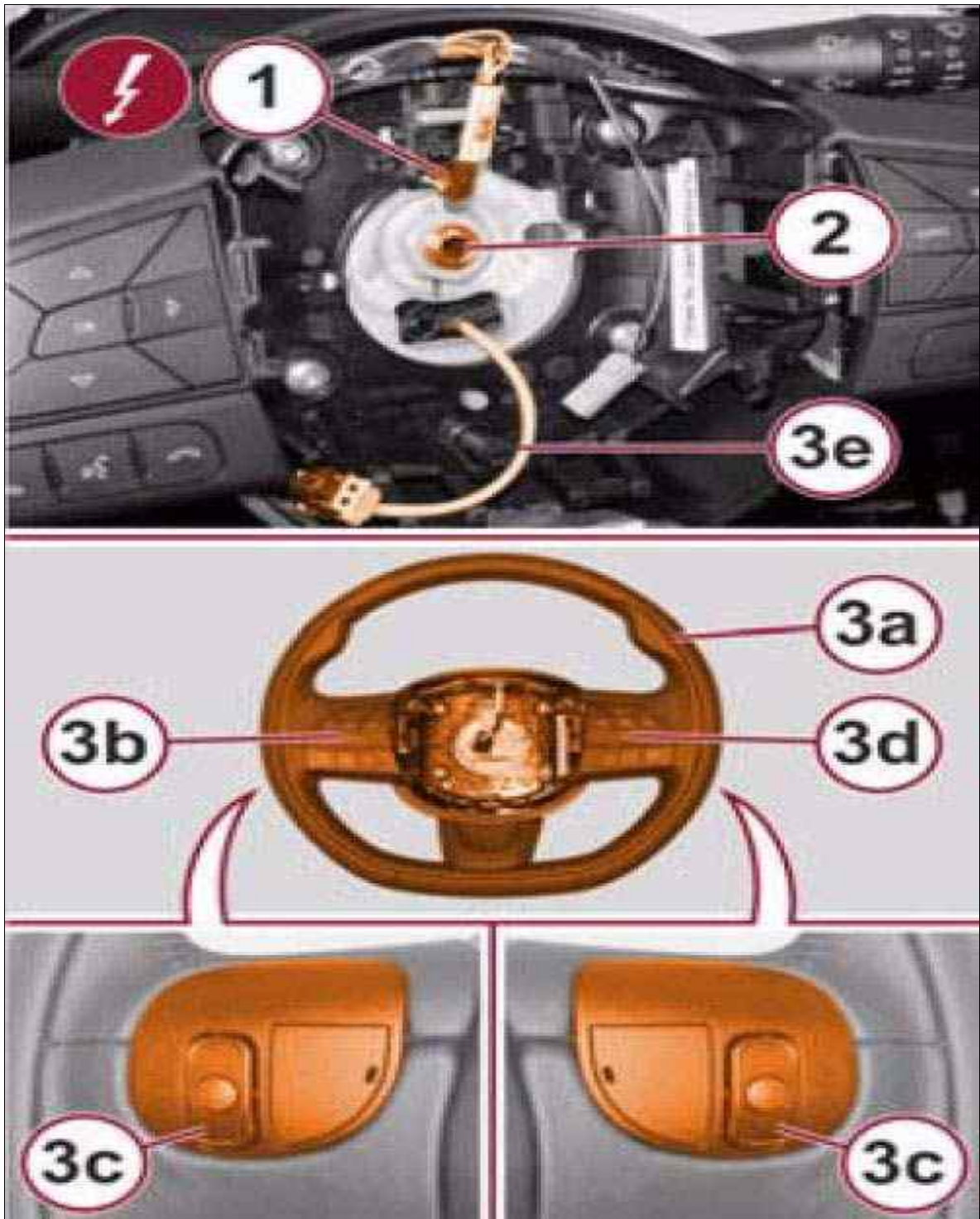
Fig 1: Nut Cover



Courtesy of CHRYSLER GROUP, LLC

2. Release the cover (1) for the nut on the hub.

Fig 2: Airbag Module, Steering Wheel, Nut, Controls & Connector



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3. Disconnect the electrical connection (1) for the steering column stalk.
4. Remove the steering wheel retaining nut (2).
5. Remove the steering wheel (3a) including the upper (3b) and lower (3c) steering wheel controls and cruise control system controls (3d), releasing the wiring for the airbag module (3e).

Fig 3: Cover, Screw, Module, Wiring, Retainers & Connector

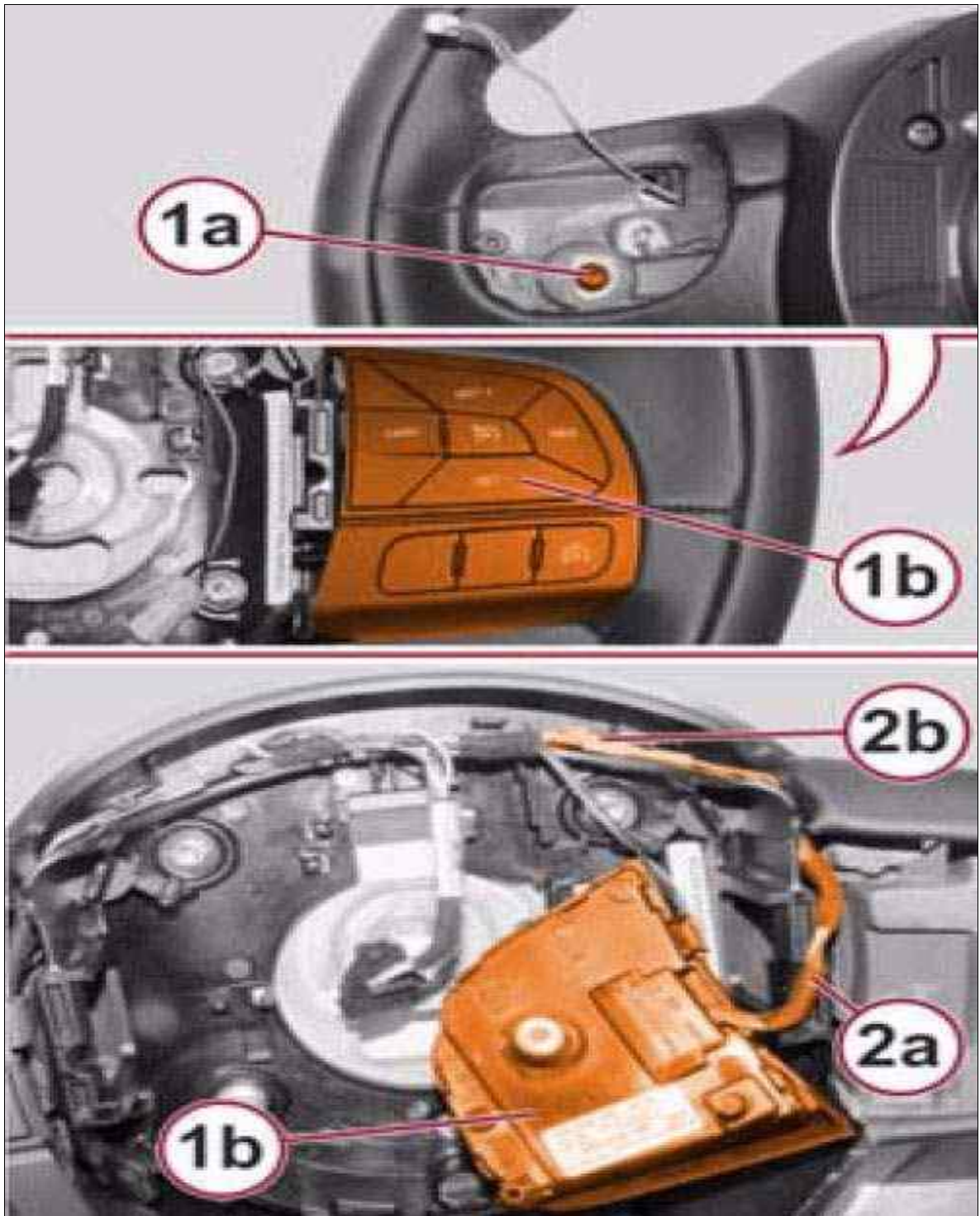


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6. Use a suitable tool to pry up the cover (1a) and undo the screw underneath (1b).
7. Raise the module (2a) release the wiring (2b) from the retainers (2c) and disconnect the electrical connection (2d).

Keep the module for the lower radio control.

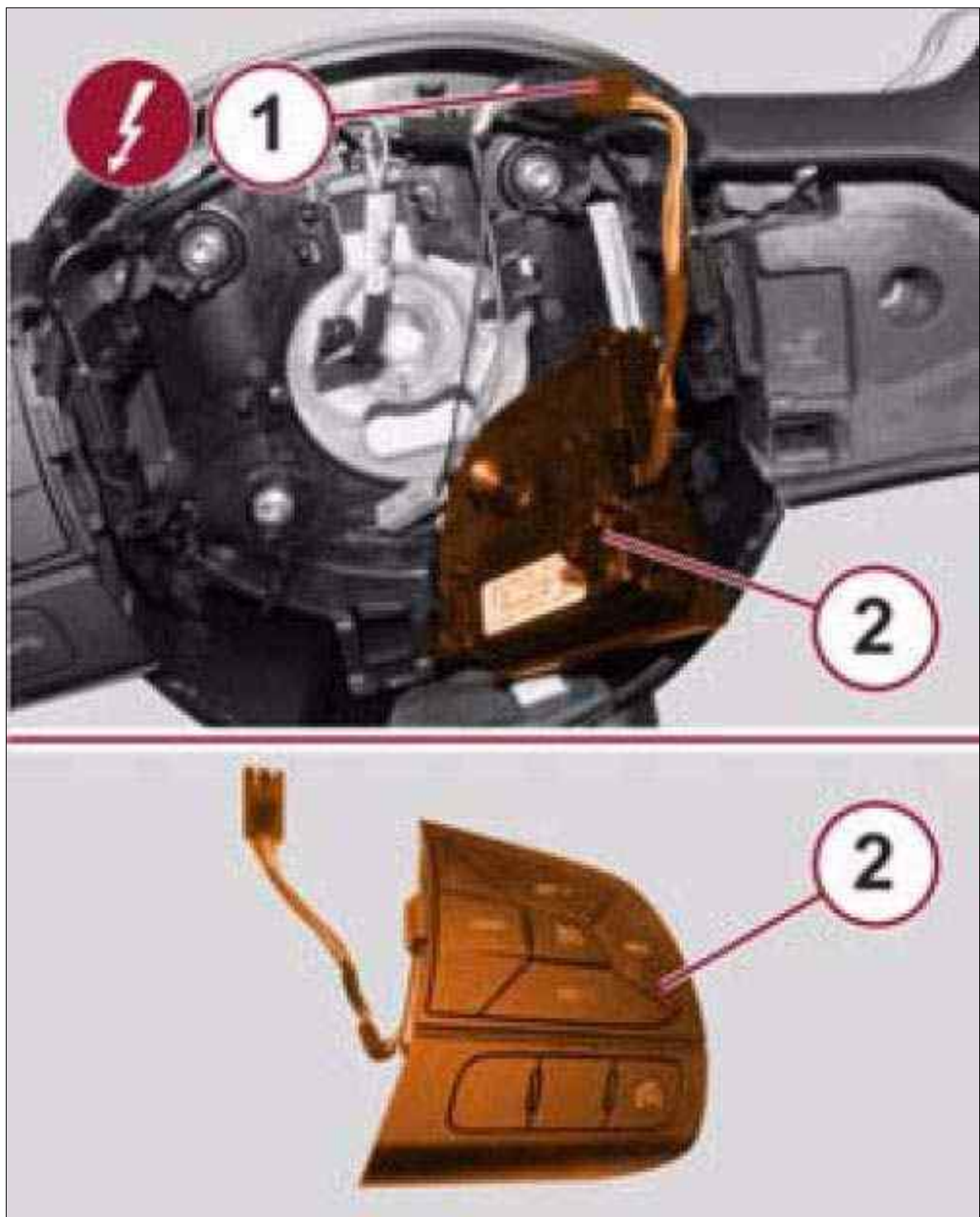
Fig 4: Module, Screw, Wiring & Connector



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8. Remove the screw (1a) and raise the module (1b).
9. Release the wiring (2a) from the retainers and the electrical connection (2b) from its housing.

Fig 5: Speed Control Switch & Connector



Courtesy of CHRYSLER GROUP, LLC

10. Disconnect the electrical connection (1).



NOTE:

Operate in the same way to remove the upper and lower radio control modules on the opposite side of the steering wheel.

SWITCH, SPEED CONTROL > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

1. Check that the steering wheel is not damaged.
2. If removed, refit the cruise control and radio control modules on the steering wheel, operating as follows:
3. Position the wiring on the steering wheel and engage it with the retainers.
4. Connect the electrical connection then insert it in its housing.
5. Fit the cruise control module and upper radio control module on the steering wheel in position, then tighten the screw.
6. Connect the electrical connection for the lower radio control module and secure the wiring to the retainers.
7. Position the lower radio control module in its housing and tighten the screw.
8. Fit the cover in position.
9. Move the steering wheel closer and connect the electrical connection for the steering column stalk unit.
10. Position the steering wheel in its housing, fitting the centering pin.
11. Tighten the steering wheel fixing nut to torque. 45-55 nM
12. Fit the cover for the nut on the hub.
13. Install the air bag. Refer to AIR BAG, DRIVER, REMOVAL AND INSTALLATION .