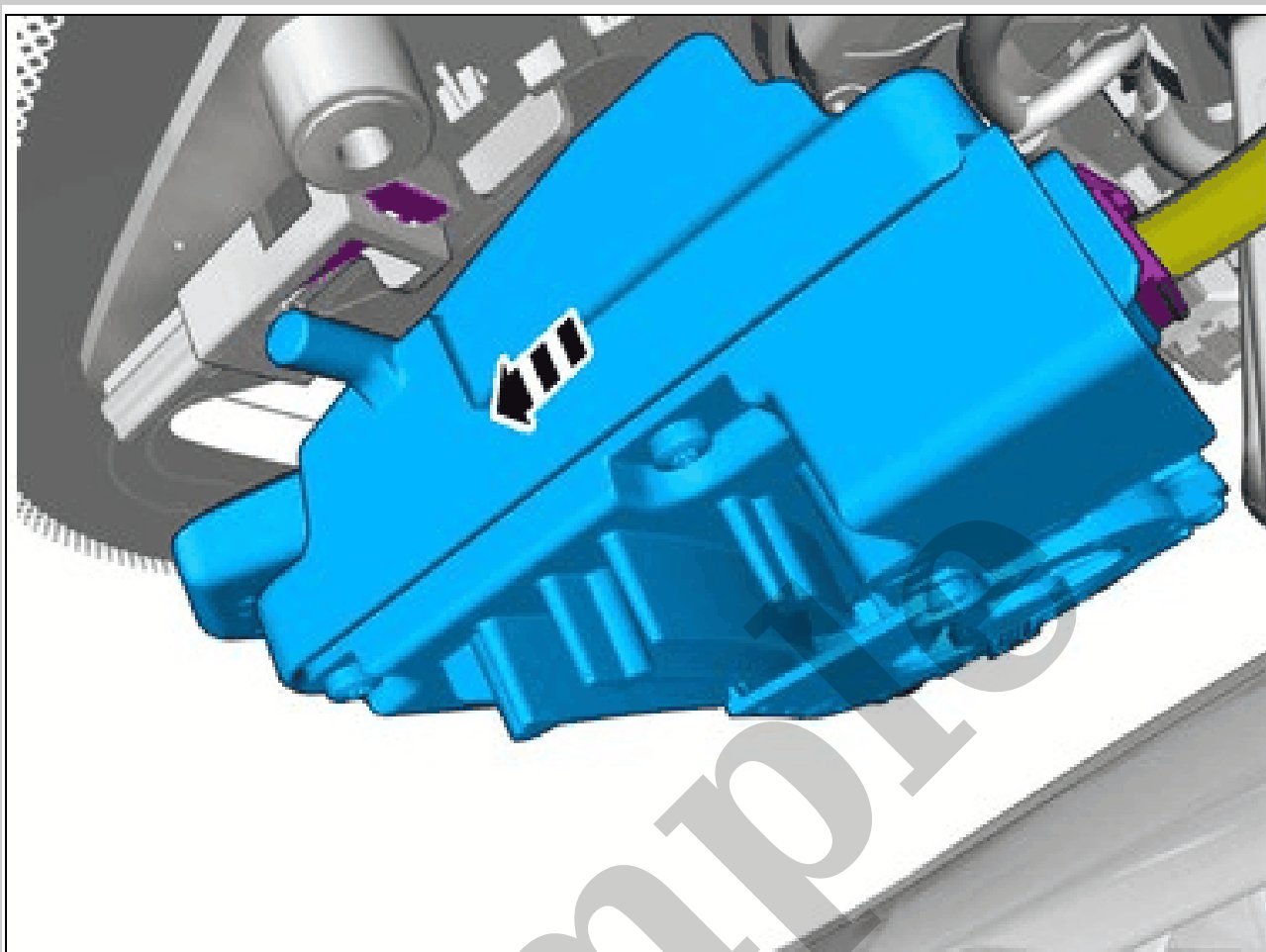


# Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

## 2012 VOLVO V40 OEM Service and Repair Workshop Manual

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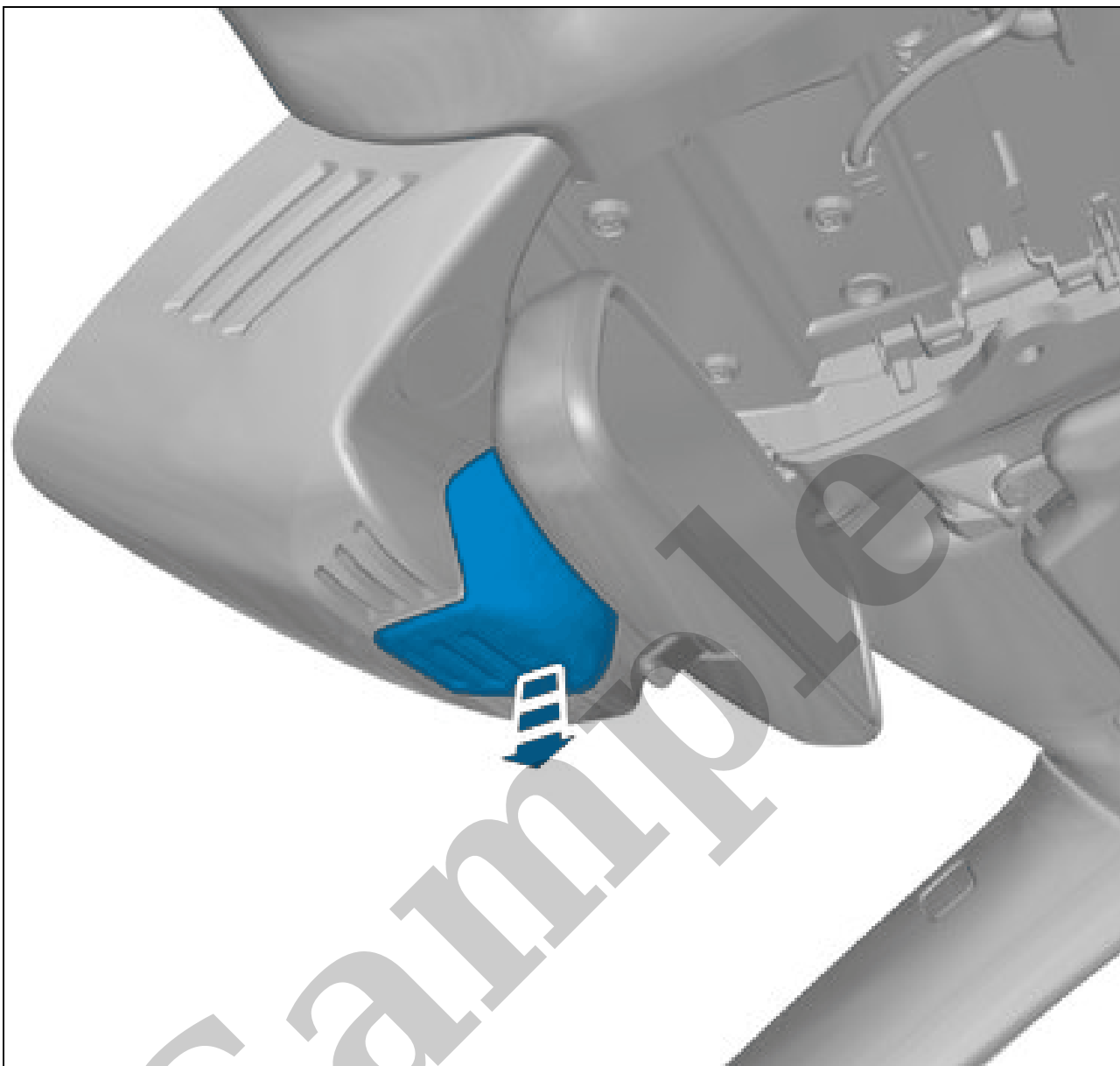
**CAUTION:** Do not touch the camera lens.

**NOTE:** Clips might come off when removing component.

Remove the marked part.

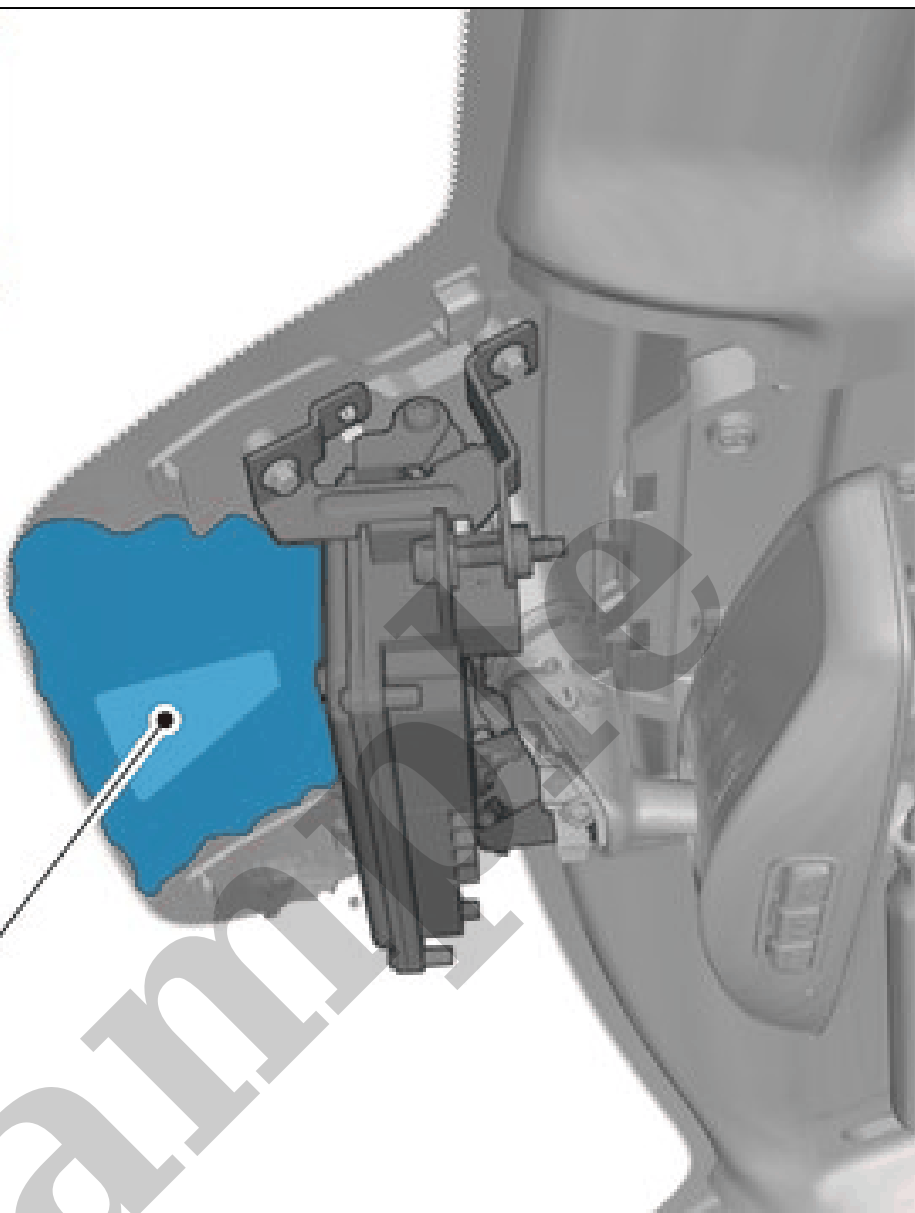
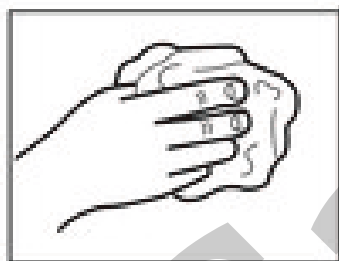
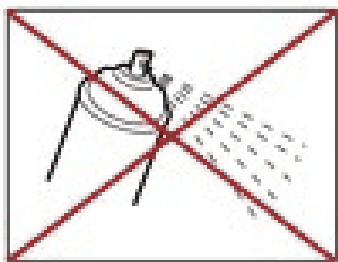
#### **CLEANING**

**CAUTION:** Make sure to clean your hands before the following step.



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Remove the marked part.

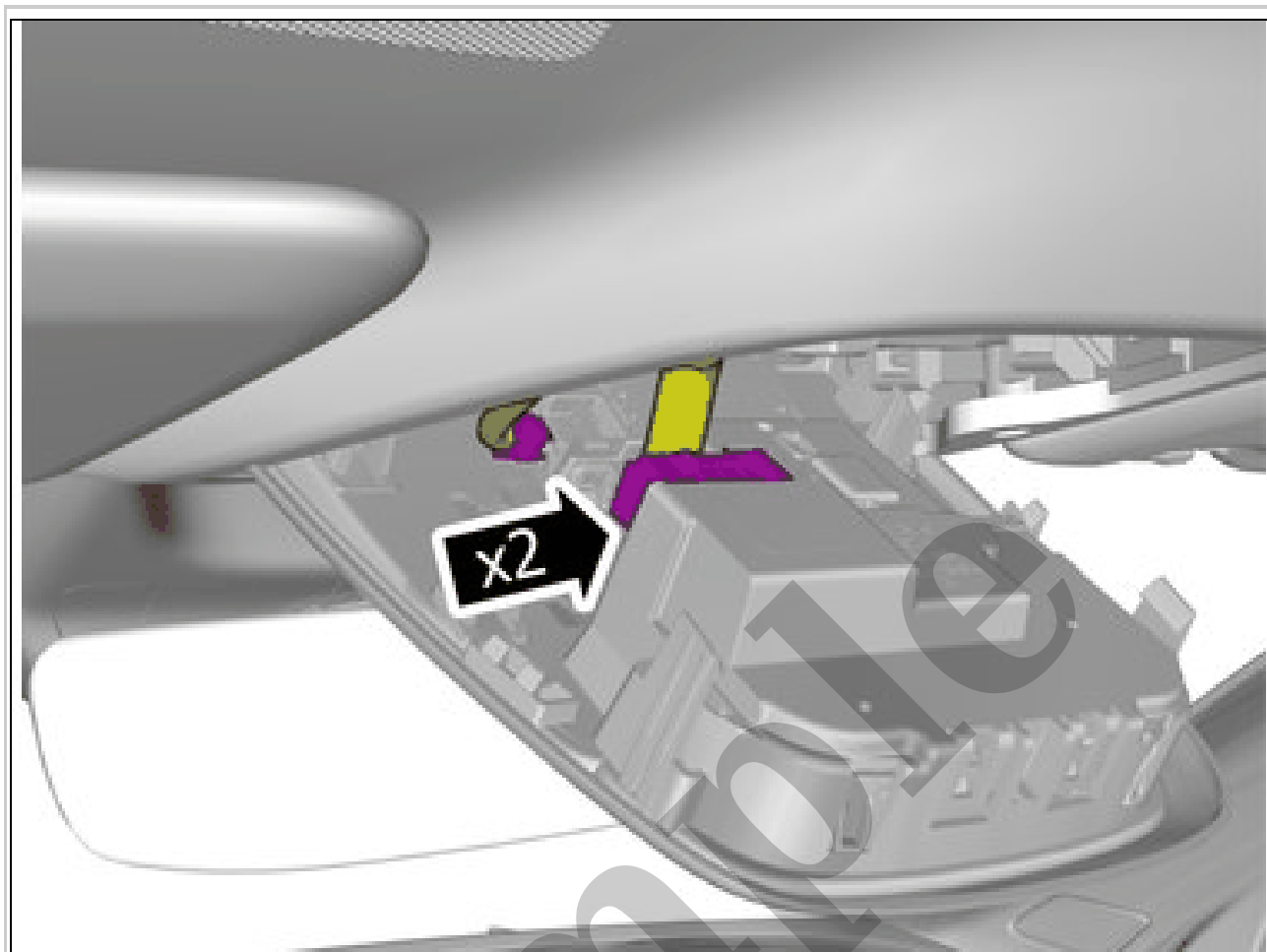


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**CAUTION:** *Use lint free cloth.*

Clean the marked area.

**Use:** H Cleaner, 1161436



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Connect the connectors.

sensor, front. The auxiliary interior motion sensor, front, sends out ultrasonic waves directed towards the Interior Motion Sensor (IMS).

### **AUXILIARY INTERIOR MOTION SENSOR > AUXILIARY INTERIOR MOTION SENSOR (7/322, 7/327) [2018-2022] > DIAGNOSTIC INFORMATION**

The auxiliary interior motion sensor does not have a built-in diagnostic system.

### **AUXILIARY INTERIOR MOTION SENSOR > AUXILIARY INTERIOR MOTION SENSOR (7/322, 7/327) [2018-2022] > CONNECTION AND COMMUNICATION**

The auxiliary interior motion sensor is only connected by power supply and ground to the vehicle. The auxiliary interior motion sensors communicate with each other on a private LIN network.

### **BACKREST LOCK INDICATION SWITCH > BACKREST LOCK INDICATION SWITCH (3/368 - 3/369) [2018-2022] > DESCRIPTION**

The backrest lock indication switch is used to detect if the rear seat backrest is in an upright and locked position. The switch is open in that position. When the mechanical backrest release handle is pressed to manually fold a backrest, the switch is closed. The switch remains closed if the backrest is pushed forward and the handle is released.

### **BACKREST LOCK INDICATION SWITCH > BACKREST LOCK INDICATION SWITCH (3/368 - 3/369) [2018-2022] > DIAGNOSTIC INFORMATION**

The backrest lock indication switch does not have a built-in diagnostic system. The Central Electronic Module (CEM) monitors the backrest lock indication switch and stores readable parameters.

### **BACKREST LOCK INDICATION SWITCH > BACKREST LOCK INDICATION SWITCH (3/368 - 3/369) [2018-2022] > CONNECTION AND COMMUNICATION**

The backrest lock indication switch is directly connected to the Central Electronic Module (CEM).

### **BATTERY BACKED-UP SOUNDER > BATTERY BACKED-UP SOUNDER (BBS) (4/220) [2018-2022] > DESCRIPTION**

The Battery Backed-up Sounder (BBS) is used as a sound source for the alarm. The Battery Backed-up Sounder (BBS) generates an audible signal if the power supply or ground is cut or the communication with the Central Electronic Module (CEM) fails when the alarm function is activated. The Battery Backed-up Sounder (BBS) contains an internal battery which is charged when the vehicle's engine is running. The Battery Backed-up Sounder (BBS) is equipped with an inclination sensor. The inclination sensor is a 3D-accelorometer and sends an activation signal if a valid inclination is detected.

### **BATTERY BACKED-UP SOUNDER > BATTERY BACKED-UP SOUNDER (BBS) (4/220) [2018-2022] > VARIANTS**

## **CONVERTER, POWER OUTLET PASSENGER COMPARTMENT > CONVERTER, POWER OUTLET PASSENGER COMPARTMENT (26/17) [2018-2022] > CONNECTION AND COMMUNICATION**

The converter, power outlet passenger compartment, is connected to a relay that is controlled by the Central Electronic Module (CEM).

## **DRIVER DOOR MODULE > DRIVER DOOR MODULE (DDM) (4/213) [2018-2022] > DESCRIPTION**

The Driver Door Module (DDM) controls the operation of the lock, window and rear view mirror on the driver's door. The control module also controls a variety of lights that are activated upon entering or exiting the vehicle and the turn signals in the driver's side rear view mirror.

The operational commands to the control module come from the lock switch, door handle, the Driver door switch cluster DDS and the Central Electronic Module (CEM). The Driver Door Module (DDM) and the Passenger Door Module (PDM) are physically identical; the only difference between them is the software.

## **DRIVER DOOR MODULE > DRIVER DOOR MODULE (DDM) (4/213) [2018-2022] > DIAGNOSTIC INFORMATION**

The Driver Door Module (DDM) has a built-in diagnostic system, which continuously monitors the control module and the input and output signals.

## **DRIVER DOOR MODULE > DRIVER DOOR MODULE (DDM) (4/213) [2018-2022] > CONNECTION AND COMMUNICATION**

- The Driver Door Module (DDM) is a CAN domain slave.
- The Driver Door Module (DDM) is a LIN master.

## **DRIVER DOOR SWITCH CLUSTER DDS > DRIVER DOOR SWITCH CLUSTER DDS (4/195) [2018-2022] > DESCRIPTION**

The driver door switch cluster DDS is used to control different functions in the vehicle, such as opening and closing windows. The response time for the switches is a maximum of 100 milliseconds.

## **DRIVER DOOR SWITCH CLUSTER DDS > DRIVER DOOR SWITCH CLUSTER DDS (4/195) [2018-2022] > DIAGNOSTIC INFORMATION**

The driver door switch cluster DDS has a simplified built-in diagnostic system, which can monitor a limited amount of errors. All diagnostic data is sent to the diagnostic tool via the Driver Door Module (DDM). Diagnostic data can include error information, part numbers, calibration results and parameters.

The Interior Motion Sensor (IMS) sends out ultrasound into the passenger compartment. The soundwaves are reflected back to the sensor by the interior of the vehicle. If the Interior Motion Sensor (IMS) detects changes in the reflections, an alarm is triggered. The Interior Motion Sensor (IMS) is sensitive to air turbulence and therefore all windows and the roof hatch must be closed for optimal sensor performance.

## **INTERIOR MOTION SENSOR > INTERIOR MOTION SENSOR (IMS) (4/237) [2018-2022] > DIAGNOSTIC INFORMATION**

The Interior Motion Sensor (IMS) performs a diagnostic test when activated. The Central Electronic Module (CEM) monitors the Interior Motion Sensor (IMS) and sets DTCs and readable parameters.

## **INTERIOR MOTION SENSOR > INTERIOR MOTION SENSOR (IMS) (4/237) [2018-2022] > CONNECTION AND COMMUNICATION**

The Interior Motion Sensor (IMS) is a LIN slave and communicates with the Central Electronic Module (CEM).

## **MEMORY SWITCH PERSONAL SETTINGS > MEMORY SWITCH PERSONAL SETTINGS (3/335) [2018-2022] > DESCRIPTION**

The memory switch personal settings is used to save ergonomic settings. It consists of four buttons and embedded LED lights. The switch is positioned in the front side doors by the inner door handle.

## **MEMORY SWITCH PERSONAL SETTINGS > MEMORY SWITCH PERSONAL SETTINGS (3/335) [2018-2022] > DIAGNOSTIC INFORMATION**

The memory switch personal settings does not have a built-in diagnostic system. The respective front door module, either the Passenger Door Module (PDM) or the Driver Door Module (DDM) monitors the sensor and sets DTCs and readable parameter values.

## **MEMORY SWITCH PERSONAL SETTINGS > MEMORY SWITCH PERSONAL SETTINGS (3/335) [2018-2022] > CONNECTION AND COMMUNICATION**

The memory switch personal settings is directly connected to the respective front door modules, either the Passenger Door Module (PDM) or the Driver Door Module (DDM).

## **NOX REDUCTION CATALYTIC CONVERTER > NOX REDUCTION CATALYTIC CONVERTER [2018-2020 | 2021-2022, B4204T18; B4204T47] > DESCRIPTION**

The NOx reduction catalytic converter is a mechanical component that is used to reduce the amount of NOx particles in the exhaust gas. This is done in a chemical reaction between the NOx particles, injected urea solution and a catalytic washcoat inside the catalytic converter.



## **POWER OUTLET, PASSENGER COMPARTMENT > POWER OUTLET, PASSENGER COMPARTMENT (17/44) [2018-2022] > DESCRIPTION**

The power outlet, passenger compartment is a transformer that converts the 12 V power supplied to a high frequency modulated voltage. The outlet allows use of certain household appliances inside the vehicle.

## **POWER OUTLET, PASSENGER COMPARTMENT > POWER OUTLET, PASSENGER COMPARTMENT (17/44) [2018-2022] > VARIANTS**

- 115 V, 60 Hz.
- 230 V, 50 Hz.

## **POWER OUTLET, PASSENGER COMPARTMENT > POWER OUTLET, PASSENGER COMPARTMENT (17/44) [2018-2022] > DIAGNOSTIC INFORMATION**

The power outlet, passenger compartment has a simplified built-in diagnostic system, which can monitor a limited amount of errors. The Engine Control Module (ECM) also monitors the component, sets DTCs and stores readable parameters.

## **POWER OUTLET, PASSENGER COMPARTMENT > POWER OUTLET, PASSENGER COMPARTMENT (17/44) [2018-2022] > CONNECTION AND COMMUNICATION**

The power outlet, passenger compartment is directly connected to the Engine Control Module (ECM).

## **RAIN AND LIGHT SENSOR RLSM > RAIN AND LIGHT SENSOR RLSM (4/162) [2018-2022] > DESCRIPTION**

The rain and light sensor RLSM detects water on the windshield via optic measurement. An infrared light beam of known intensity illuminates part of the windshield. The intensity of the reflected light beam is measured and compared to the transmitted intensity. When there is water on the surface of the windshield, the light beam is slightly deflected and loses some of its intensity. If the light beam is not reflected in its entirety, the sensor interprets this as there being water on the windshield, and the windshield wipers are activated.

The rain and light sensor RLSM transmits information to the Central Electronic Module (CEM) about the outside light conditions, the amount of rain on the windshield, and sudden splashes on the windshield. The information is used by the Central Electronic Module (CEM) to request an appropriate windshield wiper speed.

## **RAIN AND LIGHT SENSOR RLSM > RAIN AND LIGHT SENSOR RLSM (4/162) [2018-2022] > DIAGNOSTIC INFORMATION**

The seat module right SMR has a simplified built-in diagnostic system, which monitors a limited number of errors. All diagnostic data is sent to the diagnostic tool via the Climate Control Module (CCM). The Climate Control Module (CCM) sets DTCs and has readable parameters for the seat module right SMR.

## **SEAT MODULE RIGHT SMR > SEAT MODULE RIGHT SMR (4/277) [2018-2022] > CONNECTION AND COMMUNICATION**

The seat module right SMR is a LIN slave connected to the Climate Control Module (CCM).

## **SIDE OBSTACLE DETECTION CONTROL MODULE LEFT > SIDE OBSTACLE DETECTION CONTROL MODULE LEFT (SODL) (4/126) [2018-2022] > DESCRIPTION**

The Side Obstacle Detection Control Module Left (SODL) is used to identify objects on the side and behind the vehicle. The control module measures the angle and speed of the object relative to the vehicle. The control module uses radar with a range of 70 m behind the vehicle and 30 m out from the side of the vehicle.

The Side Obstacle Detection Control Module Left (SODL) and Side Obstacle Detection Control Module Right (SODR) are the same hardware, but they have different software. Each control module is designated to be on respective side of the vehicle.

## **SIDE OBSTACLE DETECTION CONTROL MODULE LEFT > SIDE OBSTACLE DETECTION CONTROL MODULE LEFT (SODL) (4/126) [2018-2022] > DIAGNOSTIC INFORMATION**

The Side Obstacle Detection Control Module Left (SODL) has a built-in diagnostic system, which continuously monitors itself and the input and output signals.

## **SIDE OBSTACLE DETECTION CONTROL MODULE LEFT > SIDE OBSTACLE DETECTION CONTROL MODULE LEFT (SODL) (4/126) [2018-2022] > CONNECTION AND COMMUNICATION**

Side Obstacle Detection Control Module Left (SODL) is CAN slave and communicates with the:

- Side Obstacle Detection Control Module Right (SODR).
- Activity Safety Domain Master (ASDM).

## **SIDE OBSTACLE DETECTION CONTROL MODULE RIGHT > SIDE OBSTACLE DETECTION CONTROL MODULE RIGHT (SODR) (4/127) [2018-2022] > DESCRIPTION**

The Side Obstacle Detection Control Module Right (SODR) is used to identify objects on the side and behind the vehicle. The control module measures the speed and angle of the object relative to the vehicle. The control module uses radar with a range of 70 m behind the vehicle and 30 m out from the side of the vehicle.

The Side Obstacle Detection Control Module Left (SODL) and Side Obstacle Detection Control Module Right (SODR) are the same hardware, but they have different software. Each control module is designated to be on respective side of the vehicle.