



BlueTec Diesel Technology (Euro 4 and Euro 5)
Engine Model Designation 457.9, 541.9, 542.9,
900.9, 902.9, 924.9, 926.9

Service information brochure



Mercedes-Benz

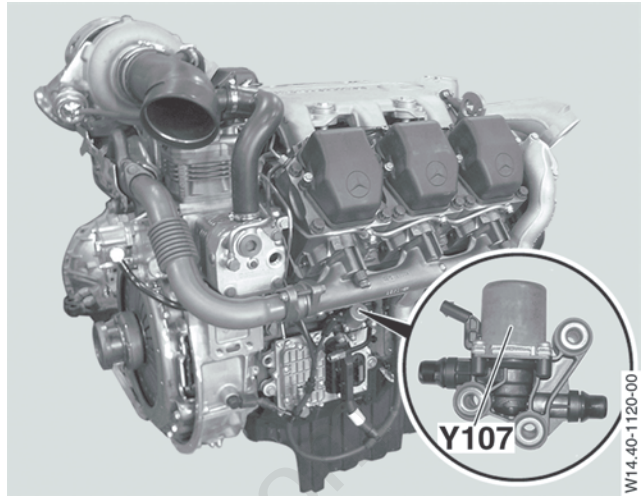
AdBlue heater, function

The AdBlue heater ensures that any AdBlue that has frozen during periods of non-operation is heated and reliquified and prevents AdBlue from freezing while driving in cold outside temperatures.

The SCR tank heater solenoid valve (Y107) is actuated by the engine control (MR) control unit (A6). Using the fill level and SCR AdBlue temperature combination sensor integrated in the AdBlue tank (3), it detects when the temperature of the tank contents is approaching the defined limit value of around 8°C.

As soon as the coolant reaches a temperature of $\geq 65^{\circ}\text{C}$, the SCR tank heater solenoid valve (Y107) receives the signal to open from the engine control (MR) control unit (A6) so that coolant is branched off from the engine coolant circuit.

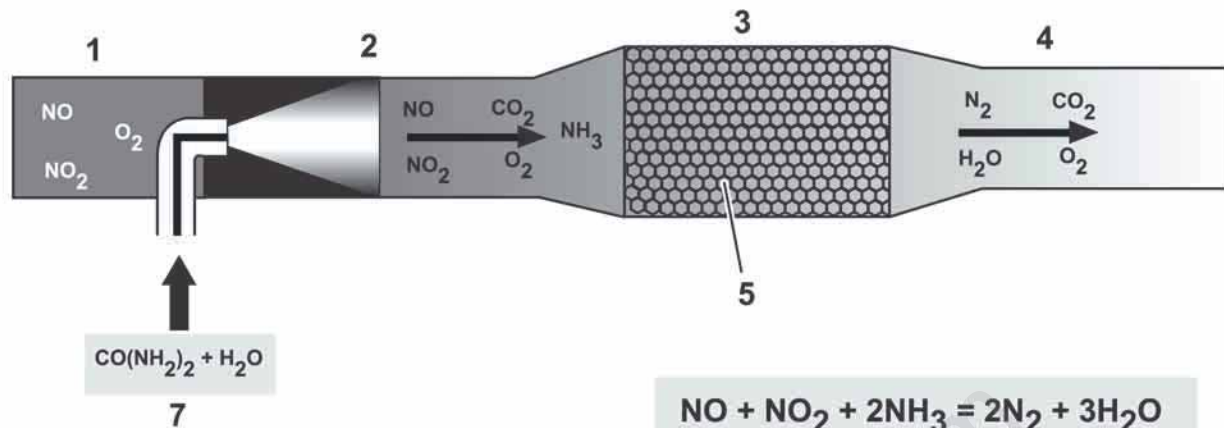
After the valve has opened, the coolant flows through the lines towards the pump module (4). The pump module (4) and the AdBlue tank (3) both have ducts for the coolant to flow directly through the components. After this the coolant flows back towards the engine.



Shown on engine 541.9

Y107 SCR tank heater solenoid valve

Muffler with reduction catalytic converter



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Design

The SCR AdBlue pressure sensor (B129) consists of a stainless steel housing with thread and an electrical connector. Located inside as a measurement element is a diaphragm made of silicon to which measuring strips are attached. These measuring strips are electrical resistors, which change their resistance as they expand (piezoresistive principle). The SCR AdBlue pressure sensor (B129) is equipped with a bore through which AdBlue can penetrate up to the diaphragm.

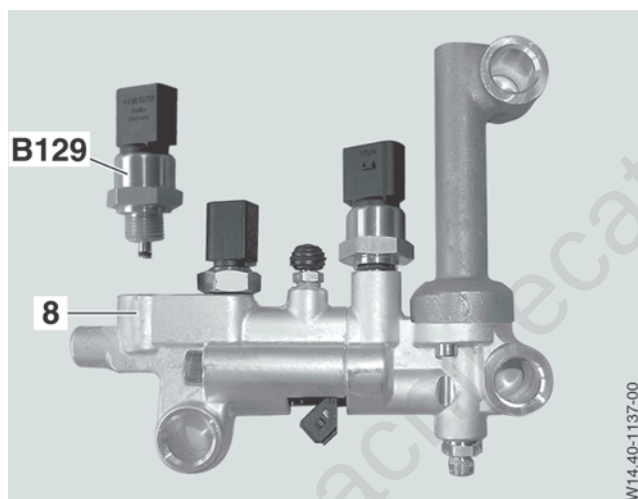
The SCR AdBlue pressure sensor (B129) is an active sensor, i.e. it is supplied with voltage.

Function

The AdBlue pressure present at the SCR AdBlue pressure sensor (B129) presses against the diaphragm inside the sensor. This expands to the rear, which in turn induces a change in the electrical resistance of the measurement strips attached to it. As the pressure changes the diaphragm and the measurement strips attached to it are expanded to a lesser or greater degree.

The values of the changing electrical resistance are sent in defined intervals as an analog signal to the engine control (MR) control unit.

Using the resistance values, the engine control (MR) control unit calculates the associated pressure.



8 Metering device
B129 SCR AdBlue pressure sensor

Exhaust manifold

An additional heat shield (1) has been installed on the exhaust manifold to protect the AdBlue injection line.

The AdBlue injection line (2) is attached to this heat shield (1) with a clip (arrow).

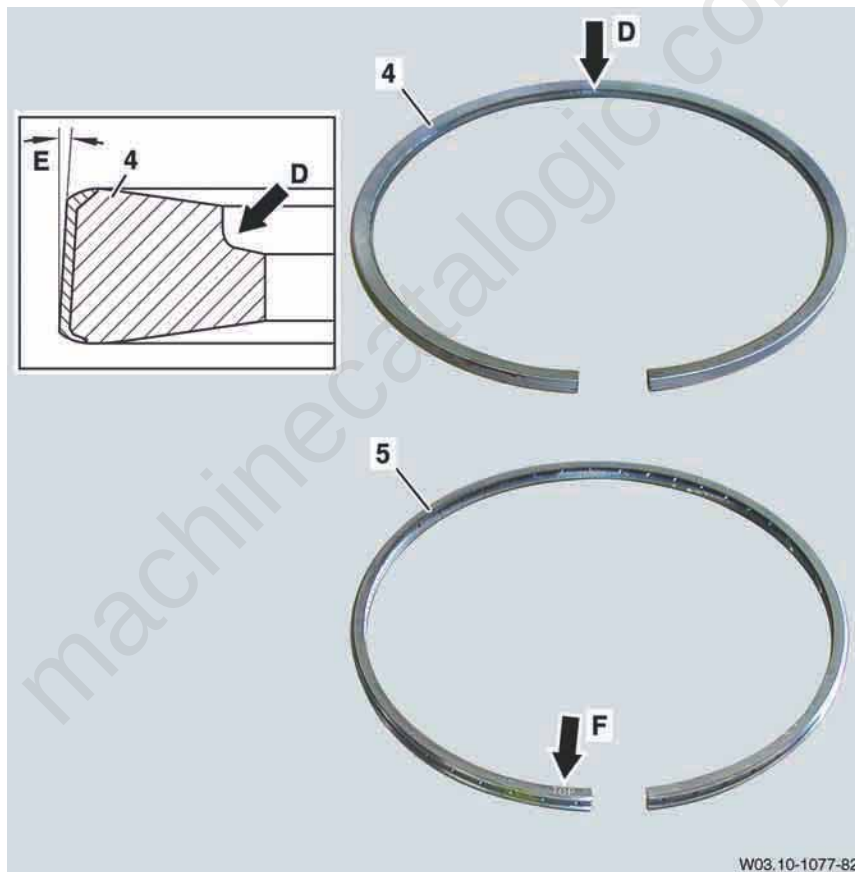


- 1 Heat shield
- 2 AdBlue injection line

Piston rings

On engines 924.9 and 926.9, a higher piston ring (4) is used in groove 1 (keystone ring with interior angle). In addition, the trapezoid angle (E) has been changed and an interior angle (arrow D) added. The coating and shape of the piston ring have been changed on the piston ring (5) in groove 3 (bevel-edged ring with spring expander).

Due to the change in piston ring shape (beveled), the installation position marking "TOP" (arrow F) must be observed when installing the piston ring (5) into the piston. This change improves the scraping effect and optimizes engine oil consumption. The piston ring in groove 2 (taper-faced ring with interior angle) has not been changed.



4 Piston ring

5 Piston ring

D Interior angle

E Trapezoid angle

F "TOP" marking

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