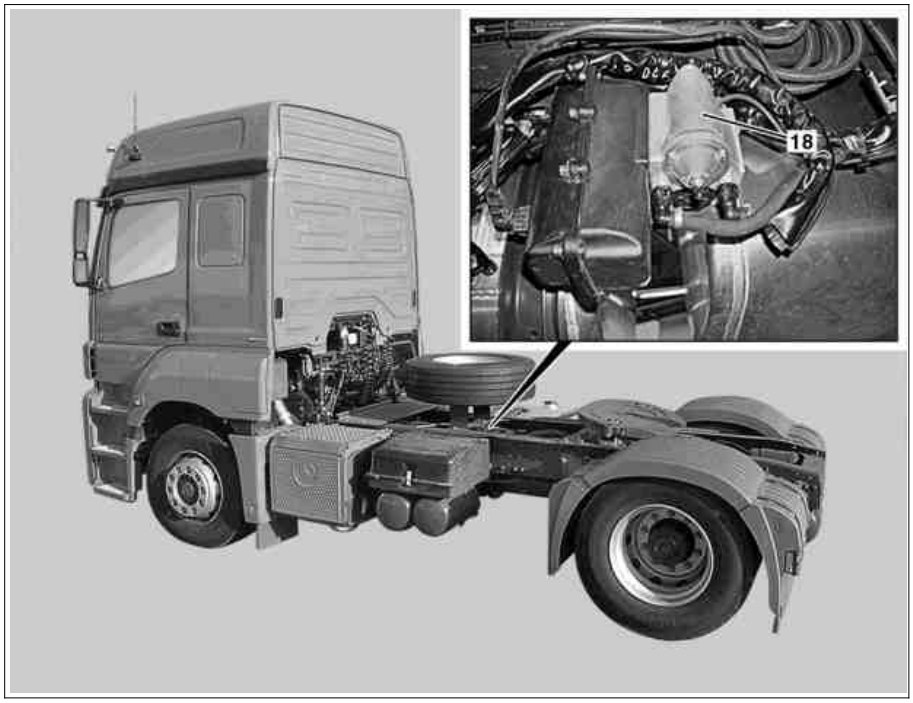
ENGINE 900.9 in MODEL 970, 972, 975, 976 with CODE (MS4) BlueTec 4
ENGINE 900.9 in MODEL 970, 972, 975, 976 with CODE (MS5) BlueTec 5
ENGINE 902.9 in MODEL 970, 972, 974, 975, 976 with CODE (MS4) BlueTec 4
ENGINE 902.9 in MODEL 970, 972, 974, 975, 976 with CODE (MS5) BlueTec 5
ENGINE 924.9 in MODEL 970, 972, 974 with CODE (MS4) BlueTec 4
ENGINE 924.9 in MODEL 970, 972, 974 with CODE (MS5) BlueTec 5
ENGINE 902.9 in MODEL 950.5 /6, 952.5 /6, 953.6, 954.5, 957 with CODE (MS4) BlueTec 4
ENGINE 902.9 in MODEL 950.5 /6, 952.5 /6, 953.6, 954.5, 957 with CODE (MS5) BlueTec 5
ENGINE 926.9 in MODEL 950.5 /6, 952.5 /6, 953.6, 954.5, 957 with CODE (MS4) BlueTec 4
ENGINE 926.9 in MODEL 950.5 /6, 952.5 /6, 953.6, 954.5, 957 with CODE (MS5) BlueTec 5

Location

Illustrated on model 950.5
18 Pump module

The pump module (18) is located on the inside of the right frame longitudinal member at the level of the AdBlue tank.



W14.40-1208-06

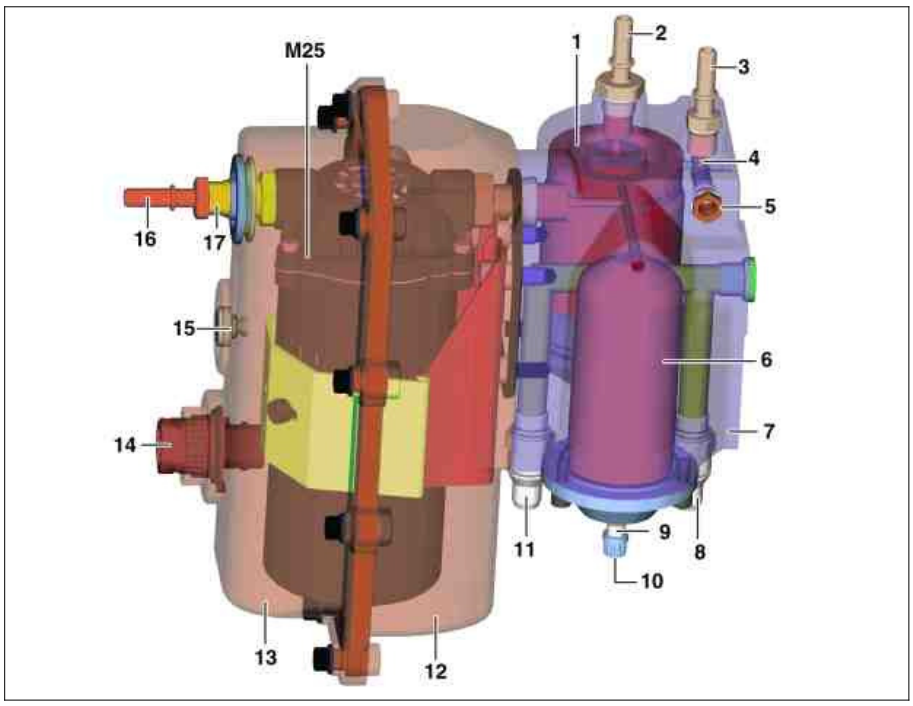
Task

The pump module (18) draws AdBlue from the AdBlue tank, filters it and pumps it to the metering device.

Design

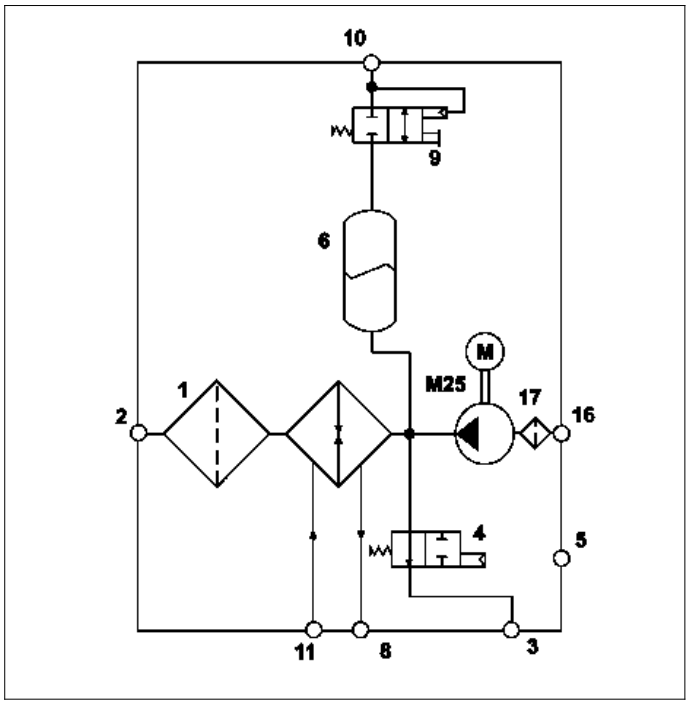
1 Pressure filter
2 Line fitting for AdBlue (feed line)
3 Line fitting for AdBlue (return line)
4 Pneumatic switching valve
5 Connection (compressed air)
6 Pressure reservoir
7 Pressure filter and pressure reservoir housing
8 Line fitting for coolant (outlet)
9 Pressure reservoir filling valve
10 Filler connection for pressure reservoir
11 Line fitting for coolant (inlet)
12 Pump housing
13 Housing cover
14 Electrical connector
15 Cover vent membrane
16 AdBlue line fitting (intake)
17 Intake filter (in intake fitting)

M25 SCR AdBlue pump



W14.40-1032-76

The pump module consists of a splash protected plastic housing - the pump housing (12) and a bolted-on aluminum block - the pressure filter and pressure reservoir housing (7). The SCR AdBlue pump (M25) is located in the pump housing (12) - an electrical three-chamber diaphragm pump.
The pressure filter and pressure reservoir housing (7) also contains a pneumatic switching valve (4) in addition to the pressure filter (1) and the pressure reservoir (6). It also contains connections for the coolant lines and a duct to allow for the passage of the coolant.



W14.40-1031-12

Function

When the SCR AdBlue pump (M25) receives the cut-in signal, it draws the AdBlue from the AdBlue tank. The AdBlue is prefiltered via the intake filter (17), integrated in the AdBlue line fitting (16), which has a mesh width of 100 µm.
The pump brings the AdBlue up to the operating pressure of around 6 bar and pumps it on to the pressure filter and pressure reservoir housing (7). In order to eliminate any finer remaining dirt particles, the AdBlue passes through the integral pressure filter (1) with a mesh width 30 µm, before being pumped on towards the metering device.

In principle, the pressure reservoir (6) is a rubber storage blister filled with gas, which compensates for pressure fluctuations and reduces the cut-in frequency of the SCR AdBlue pump (M25). It has a volume of approx. 0.13 l. It is filled with nitrogen (N_2) ex-works. It can be refilled with oil and grease free air.

Ventilation
The pneumatic switching valve (4) and the AdBlue line fitting (3) are used to automatically vent the pump module during operation or start-up. The pneumatic switching valve (4) is closed when it is filled with compressed air.
As a general rule. the SCR AdBlue pump (M25) does not run "empty", as it cuts out when the fill level sensor in the AdBlue tank falls below a certain threshold. It can run empty for a short time if the AdBlue in the tank is "swilling back and forth". However, if the SCR AdBlue pump runs empty for longer than M2510 s, this is detected by the engine control (MR) control unit and automatic ventilation is initiated.

AdBlue pressure reduction
To prevent frozen AdBlue from damaging the pump module, after the ignition is switched off, the AdBlue pressure inside the pump module and in the line section between pump module and metering device is reduced. The pressure is reduced simultaneously by ventilating the compressed air diverted unit. As a consequence, the pneumatic switching valve (4) opens and thus enables the return of the AdBlue to the AdBlue tank.

Heating
Coolant flows through a duct in the pressure filter and pressure reservoir housing (7) to warm up and defrost the AdBlue. Control of the coolant supply is temperature dependent via a valve located at the engine and controlled by the MR control unit.