

Engine 157, 276, 278 in model 231

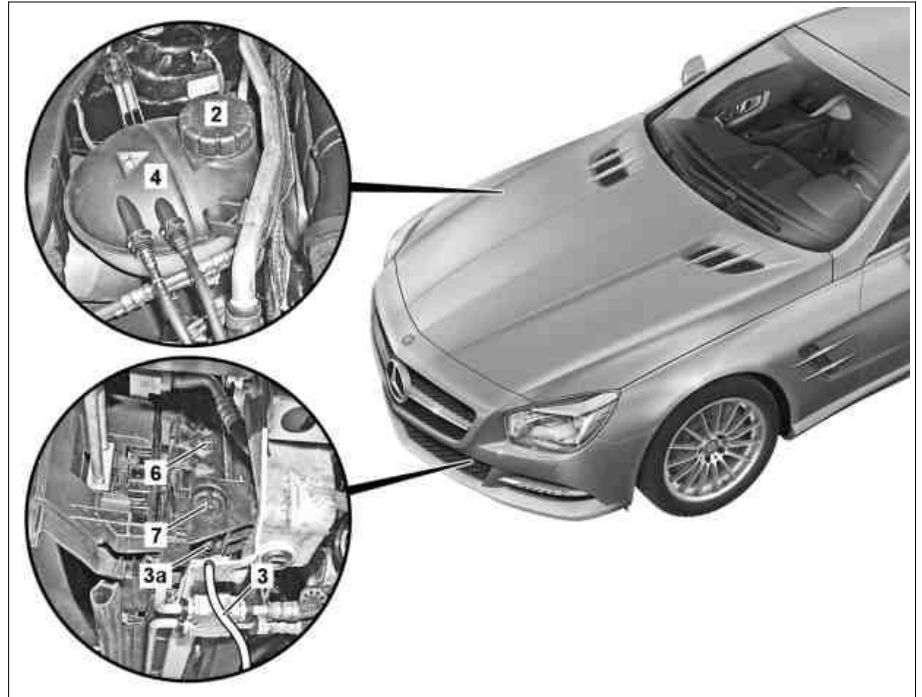
Modification notes

14.10.2016

Basic date for cooling system, added.

Operation step 13

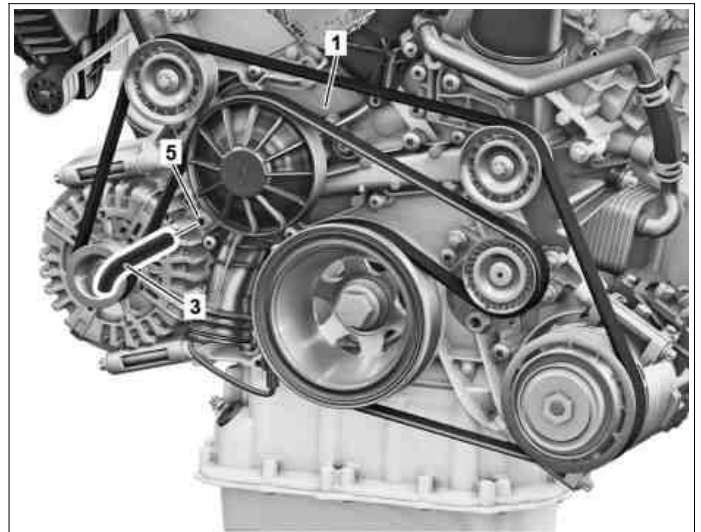
- 2 Cap
- 3 Drain hose
- 3a Fitting
- 4 Coolant expansion reservoir
- 7 Drain screw



P20.00-2474-06

Shown on engine 276

- 1 Coolant pump
- 3 Drain hose
- 5 Drain screw



P20.00-2406-11

⚠ Warning	<p>Risk of injury to skin and eyes suffering scalding from contact with hot coolantspray. Risk of poisoning from swallowing coolant.</p>	<p>Do not open cooling system unless coolant temperature is below 90 °C. Open cap slowly and release the pressure. Do not pour coolant into beverage containers. Wear protective gloves, protective clothing and safety glasses.</p>	AS20.00-Z-0001-01A
	Notes on coolant		AH20.00-N-2080-01A
	Notes on coolant level		AH20.00-P-1142-01CW
	Drain off		
1	Unscrew cap (2) on coolant expansion reservoir (4)		
2	Remove lower engine compartment paneling		AR61.20-P-1105RK

3	Push drain hose (3) onto fitting (3a)		
4	Open drain screw (7), drain coolant and catch it in a suitable reservoir	Observe regulations to dispose of coolant.	
5	Empty low-temperature water circuit	Engine 157, 278 in model 231 To do this switch on ignition for 5 seconds. Repeat this procedure twice after a waiting time of about 30 s in order to empty the low-temperature water circuit.	
6	Loosen drain screw (5) on coolant pump (1)	Engine 276 in model 231	
7	Push drain hose (3) onto drain screw (5)	Engine 276 in model 231	
8	Open drain screw (5), drain coolant and catch it in a suitable reservoir	Engine 276 in model 231	
	Pour in		
9	Tighten drain screw (5)	Engine 276 in model 231 Drain screw on coolant pump	*BA20.10-P-1008-01AA
10	Detach drain hose (3) from drain screw (5)		
11	Close drain screw (7)		
12	Detach drain hose (3) from fitting (3a)		
13	Pour in coolant and ventilate engine cooling system	Re-use clean coolant. Engine 157 in model 231Cooling system Engine 276 in model 231Cooling system Engine 278 in model 231Cooling system Cooler vacuum filling device Test cap	AR20.00-P-1142-04A *BF20.00-P-1001-02FA *BF20.00-P-1001-02BA *BF20.00-P-1001-02EA *285589002100 *210589009100
14	Bleed low-temperature water circuit	To do this switch on ignition for 5 seconds. Repeat this procedure twice after a waiting time of about 30 s in order to fill the low-temperature water circuit and to bleed it.	
15	Check engine cooling system for leaktightness		AR20.00-P-1010RK
Warning	Risk of accident from vehicle starting off by itself when engine running. Risk of injury (bruises and burns) resulting from working on the engine while it is being started or when it is running.	Secure vehicle to prevent it from starting off by itself. Wear closed and snug-fitting work clothes. Do not touch hot or rotating parts.	AS00.00-Z-0005-01A
16	Perform an engine test run and check engine cooling system for proper operation		
17	Install lower engine compartment paneling		AR61.20-P-1105RK

Coolant pump, coolant thermostat

Number	Designation	Engine 276		
BA20.10-P-1008-01AA	Drain screw on coolant pump	Stage 1	Nm	6
		Stage 2	∠°	90


Cooling system

Number	Designation			Engine 276 in model 231	
BF20.00-P-1001-02BA	Cooling system	Workshop replacement amount	Main circuit	I	≈ 10,8
			Low-temperature circuit	I	≈ 1,9
	Antifreeze/water	Up to -37°C	%	50/50	
		As of -38 °C	%	55/45	
		Specifications for Operating Fluids, sheet		BB00.40-P-0310-01A	
		Specifications for Operating Fluids, sheet		BB00.40-P-0325-00A	
		Specifications for Operating Fluids, sheet		BB00.40-P-0326-00A	

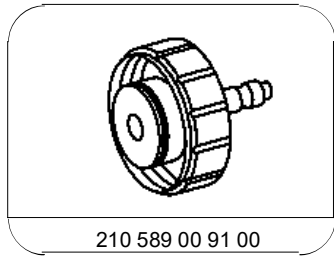
Cooling system

Number	Designation			Engine 278 in model 231	
BF20.00-P-1001-02EA	Cooling system	Workshop replacement quantity	Main circuit	Liter	≈ 12,3

		Low temperature circuit	Liter	≈ 2,2
	Antifreeze/water	Up to -37 °C	%	50/50
		As of -38 °C	%	55/45
		Sheet		BB00.40-P-0310-01 A
		Sheet		BB00.40-P-0325-00 A
		Sheet		BB00.40-P-0326-00 A

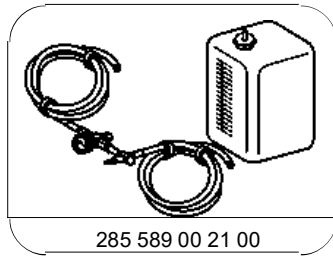
 Cooling system

Number	Designation			Engine 157 in model 231	
BF20.00-P-1001-02FA	Cooling system	Workshop change quantity	Main circuit	Liter	≈ 8
			Low-temperature circuit	Liter	≈ 2
		Antifreeze/water	Up to -37 °C	%	50/50
			As of -38 °C	%	55/45
			Sheet		BB00.40-P-0310-01 A
			Sheet		BB00.40-P-0325-00 A
			Sheet		BB00.40-P-0326-00 A



210 589 00 91 00

Test cap



285 589 00 21 00

Cooler vacuum filling device