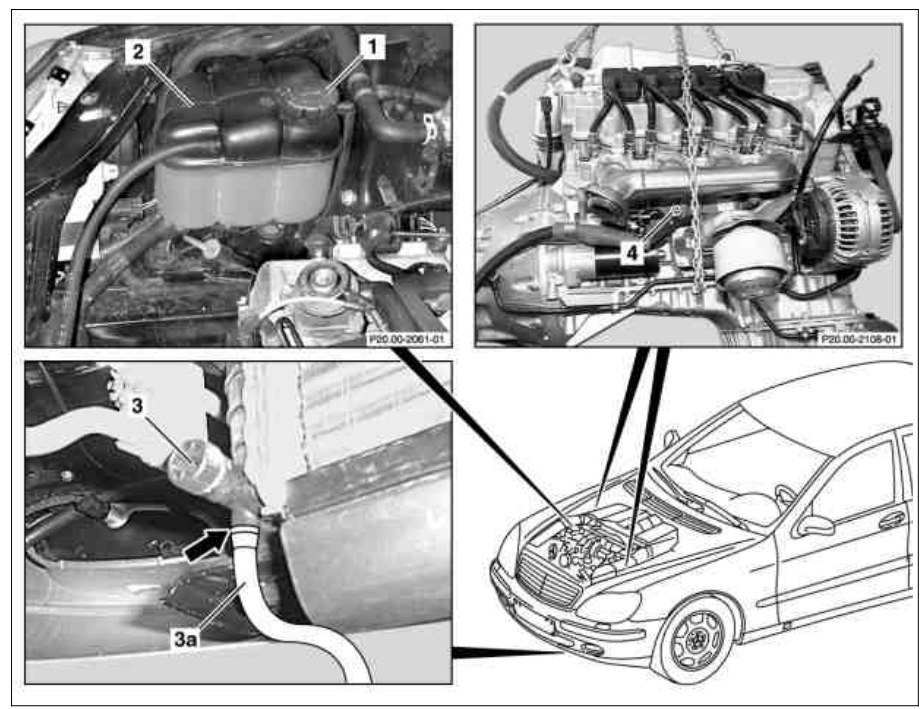


- ENGINE 113.992 in MODEL 230.474
- ENGINE 113.990 in MODELS 211.076 /276
- ENGINE 113.991 in MODELS 215.374, 220.074 /174
- ENGINE 113.963 in MODEL 230.475
- ENGINE 112.960 in MODEL 170.466
- ENGINE 112.961 in MODELS 203.065 /265
- ENGINE 113.995 in MODEL 230.472

**Shown on model 220**

- 1 Cooling system cap
- 2 Coolant compensation tank
- 3 Drain plug of radiator
- 3a Drain hose
- 4 Drain plug of crankcase












P20.00-2107-06

**Modification notes**

14.10.04	Fill coolant using vacuum method added	Step 10	
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	Drain		
⚠ <b>Danger!</b>	<p><b>Risk of injury</b> to skin and eyes caused by scalding from contact with hot coolant spray.</p> <p><b>Risk of poisoning</b> from swallowing coolant.</p>	<p>Do not open cooling system unless coolant temperature is below 90 °C. Open cap slowly and release pressure. Do not pour coolant into beverage containers.</p> <p>Wear protective gloves, protective clothing and safety glasses.</p>	AS20.00-Z-0001-01A
📖	Notes on coolant		AH20.00-N-2080-01A
1	Open engine hood	Model 170 Model 203 Model 215, 220 Model 211 Model 230	AR88.40-P-1000G AR88.40-P-1000P AR88.40-P-1000M <span style="color: red;">AR88.40-P-1000T</span> AR88.40-P-1000R
2.1	Detach ground line(s) at battery(ies)	<p>Only when draining coolant at crankcase, on the right, in models 170, 203, 215, 220, 230.</p> <p><b>i</b> Do not connect quiescent current retention device.</p> Model 170 Model 203 Model 215, 220 Model 230	AR54.10-P-0003A AR54.10-P-0003P AR54.10-P-0003I AR54.10-P-0003R
3	Open cooling system cap (1) at coolant expansion reservoir (2)	<p><b>i</b> Pay attention to different versions.</p> <p>Cooling system cap (1) with notch:            Turn cooling system cap (1) carefully to first predetent, release pressure, then unscrew cooling system cap (1).</p> <p>1-stage and 2-stage cooling system cap (1):            turn cooling system cap (1) 1/2 revolution anticlockwise, release pressure and then unscrew cooling system cap (1).</p>	
4	Remove lower engine compartment paneling	Model 170	AR61.20-P-1105A

		Model 203 Model 211 Model 215, 220 Model 230	AR61.20-P-1105P <b>AR61.20-P-1105T</b> AR61.20-P-1105M AR61.20-P-1105R
	<b>Drain coolant from radiator</b>		
5	Push drain hose (3a) onto engine radiator (3) drain plug (arrow), engine radiator (3) open drain plug and drain coolant	 Catch coolant with suitable vessel.	
6	Close engine radiator (3) drain plug and detach coolant (3a) drain hose at fitting (arrow)		
	<b>Drain coolant at crankcase</b>		
7.1	Slide drain hose onto crankcase drain plug (4), open crankcase drain plug (4) and drain coolant	Models 170, 203, 215, 220, 230   Catch coolant with suitable vessel.	
8.1	Detach drain hose on crankcase drain plug (4) and screw crankcase drain plug (4) tight	Model 170, 203, 215, 220, 230  	<b>*BA20.00-P-1001-02B</b>
9	Lower vehicle		
	<b>Filling</b>		
10	Pour in coolant and bleed cooling system Coolant specifications Anticorrosion/antifreeze agents (Sheet 325.0)	 Reuse clean coolant. Sheet 310.1 Sheet 325.0  	<b>AR20.00-P-1142-04A</b> <b>BB00.40-P-0310-01A</b> <b>BB00.40-P-0325-00A</b>  <b>*BF20.00-P-1001-02K</b>
 <b>BB</b>  <b>BB</b>	Notes on coolant level	Model 211, 215, 220, 230 with engine 113	<b>AH20.00-P-1142-01V</b>
	Notes on coolant level	Models 170, 203 with engine 112	AH20.00-P-1142-01P
11	Inspect cooling system for leaks		<b>AR20.00-P-1010RVK</b>
12	Install lower engine compartment paneling	Model 170 Model 203 Model 211 Model 215, 220 Model 230	AR61.20-P-1105A AR61.20-P-1105P <b>AR61.20-P-1105T</b> AR61.20-P-1105M AR61.20-P-1105R
13.1	Connect up ground line(s) at battery(ies)	Only when coolant has been drained at crankcase on the right. Model 170 Model 203 Model 215, 220 Model 230	AR54.10-P-0003A AR54.10-P-0003P AR54.10-P-0003I AR54.10-P-0003R
14.1	Perform basic programming	Only if ground line(s) on battery(ies) were disconnected. Model 170 Model 203 Model 215, 220 Model 230	AR00.19-P-0200B AR00.19-P-0200P AR00.19-P-0200M AR00.19-P-0200R
15.1	Connect up STAR DIAGNOSIS, read and erase diagnostic trouble code memory Connect up STAR DIAGNOSIS and read out fault memory	Only if ground line(s) on battery(ies) were disconnected.	<b>AD00.00-P-2000-04A</b>
 <b>AD</b>	16	Close engine hood	Model 170 Model 203 Model 215, 220 Model 211 Model 230
			AR88.40-P-1000G AR88.40-P-1000P AR88.40-P-1000M <b>AR88.40-P-1000T</b> AR88.40-P-1000R

 **Engine cooling, general**

Number	Designation	Engines
		112, 113.940/941/ 942/943/944/ 945/946/948/ 960/961/963/ 964/965/966/ 967/968/971/ 980/981/984/ 986/987/988/ 990/991/992/ 995

BA20.00-P-1001-02B	Coolant drain plug on crankcase	Nm	12
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### Cooling system

Number	Designation	Engine 113.990	Engine 113.991 in model 215	Engine 113.992/995 in model 230		
BF20.00-P-1001-02K	Cooling system	Total filling capacity Liters	≈13.2	≈14.5	≈13.0	
		Capacity of anticorrosion/antifreeze agent down to -37°C Liters	≈6.6	≈7.3	≈6.5	
		Filling capacity of anticorrosion/antifreeze down to -45°C Liters	≈7.3	≈8	≈7.3	
		Specifications for Operating Fluids	Sheet	BB00.40-P-0310-01A	BB00.40-P-0310-01A	BB00.40-P-0310-01A
			Sheet	BB00.40-P-0325-00A	BB00.40-P-0325-00A	BB00.40-P-0325-00A

### Cooling system

Number	Designation	Engine 113.963 in model 230.475	Engine 112.961 in model 203.065/265 AMG	Engine 112 in model 170		
BF20.00-P-1001-02K	Cooling system	Total filling capacity Liters	≈11.5	≈10.5	≈8	
		Capacity of anticorrosion/antifreeze agent down to -37°C Liters	≈5.8	-	≈4	
		Filling capacity of anticorrosion/antifreeze down to -45°C Liters	≈6.5	-	≈4.5	
		Specifications for Operating Fluids	Sheet	BB00.40-P-0310-01A	-	BB00.40-P-0310-01A
			Sheet	BB00.40-P-0325-00A	-	BB00.40-P-0325-00A

### Cooling system

Number	Designation	Engine 113.986/991 in Model 220	
BF20.00-P-1001-02K	Cooling system	Total filling capacity Liters	≈13.5
		Capacity of anticorrosion/antifreeze agent down to -37°C Liters	≈6.8
		Filling capacity of anticorrosion/antifreeze down to -45°C Liters	≈7.4

	Specifications for Operating Fluids	Sheet	BB00.40-P-0310-01A
		Sheet	BB00.40-P-0325-00A