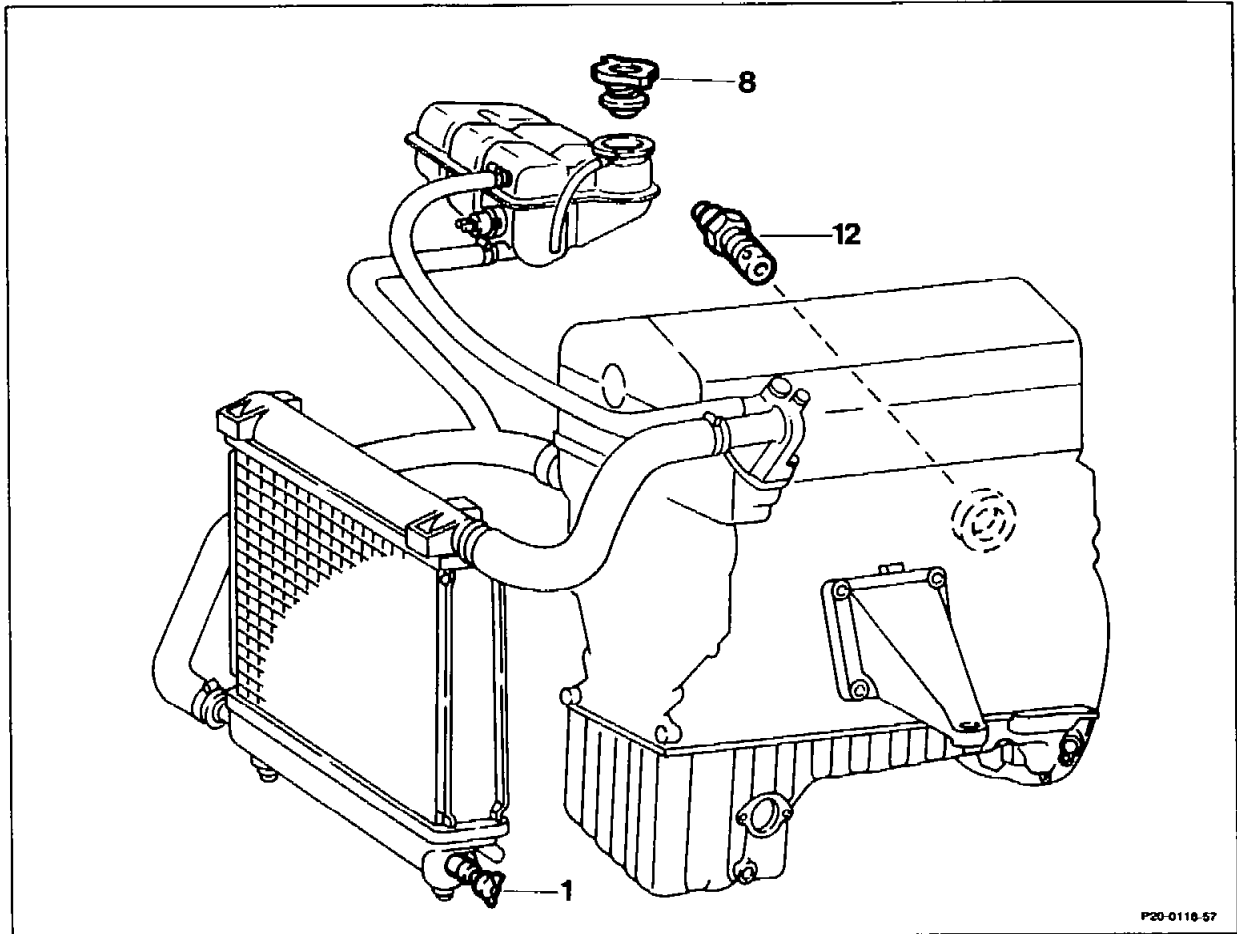



## 20-010 Draining and pouring-in coolant – Antifreeze protection table

Preceding work:  
Engine compartment cladding bottom removed (01-006).

Operation no. of operation texts and operation values or standard texts and flat rates ..... 20-1142



P20-0110-57

Heater switch .....	set to maximum heating capacity.
Cap (8) .....	take off, fit on.
	
	Open cap only when coolant temperatures below 90 °C.
Drain plug (1) .....	open, close, 1.5 – 2 Nm, drain coolant (step 2).
Drain plug (12) and drain connection .....	open, close, 30 Nm, drain coolant (steps 3, 4).
Old coolant .....	flush out.
Coolant .....	pour in up to marking on expansion tank (10) (step 6).
Engine .....	run until coolant thermostat opens, approx. 90 – 100 °C (step 7).
Coolant level .....	check (step 8).
Cooling system .....	check for leaks (20-017).

**Total capacities of cooling system with heating system and mixing ratio of anticorrosion/antifreeze agent<sup>1)</sup> and water<sup>2)</sup> in liters**

Model	Engine	Total capacity of cooling system with heating system	Mixing ratio anti-corrosion/antifreeze agent/water for antifreeze prot. down to	
			-37 °C (50 % by vol.)	-45 °C (55 % by vol.)
124	601	8.5 9 <sup>3)</sup>	4.25/4.25 4.5/4.5	4.75/3.75 5/4
	602, 603.91	9 9.5 <sup>3)</sup>	4.5/4.5 4.25/4.25	5/4 5.25/4.25
	602.96	8	3.5/4.5	4.5/3.5
126	603.96/97	10	4.5/5.5	5.5/4.5
140	603.97	10	4.5/5.5	5.4/4.5
201	601.911	8.5	4.25/4.25	4.75/3.75
	602.911, 602.96	8	3.5/4.5	4.5/3.5
202	601	8	3.5/4.5	4.5/3.5

1) See Service Product Specifications sheet 325.1 and 325.2

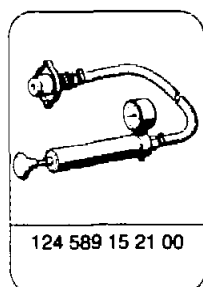
2) See Service Product Specifications sheet 310

3) With air conditioning/automatic climate control

**Tightening torques**

	Nm
Radiator drain plug	1.5 – 2
Crankcase drain plug	30
Drain connection (engines 602 and 603 only)	30

**Special tool**



**Commercially available tools and testers**

Designation	e. g. make, order no.
Antifreeze protection tester Duo-Check 7182	SUN Elektrik Deutschland GmbH Auf der Hulb 5 40822 Mettmann No. 010357



### **Disposing of coolants**

Observe legal requirements and local waste water regulations.

Refer to the Environmental Protection Catalog issued by MBVD/PWU for workshops located in Germany.

### **Anticorrosion/Antifreeze protection**

The anticorrosion/antifreeze agent performs the following tasks:

- adequate corrosion and cavitation protection for all components
- antifreeze protection
- increasing the boiling point so that the coolant does not evaporate so rapidly. Ejection of coolant is avoided at high coolant temperatures.

The concentration of 50 % offers antifreeze protection down to approx. – 37 °C.

A higher concentration is only recommended for even lower ambient temperatures.

A concentration of 55 % by vol. of anticorrosion/antifreeze agent offers antifreeze protection down to approx. – 45 °C.

More than 55 % by vol. of anticorrosion/antifreeze agent reduces the antifreeze protection and impairs the heat dissipation.

Use only approved anticorrosion/antifreeze agents (see Specifications for Service Products Sheet 325.0).

### **Operational monitoring of coolant**

Check the coolant for resistance to low temperatures at the start of the cold season of the year.

In countries with high outside temperatures, check the anticorrosion/antifreeze agent concentration once a year.

The anticorrosion protection in the coolant is reduced over the period of operation. The coolant then has a sharply corrosive effect.

The maximum permissible period of use of the specified coolant in car engines is **3 years**.



## Draining

- 1 Set heating switch to maximum heating capacity.
- 2 Open cap on expansion tank in stages, allow system pressure to escape and remove cap.



Open cap only when coolant temperature is below 90 °C.

- 3 Open drain plug on the radiator.

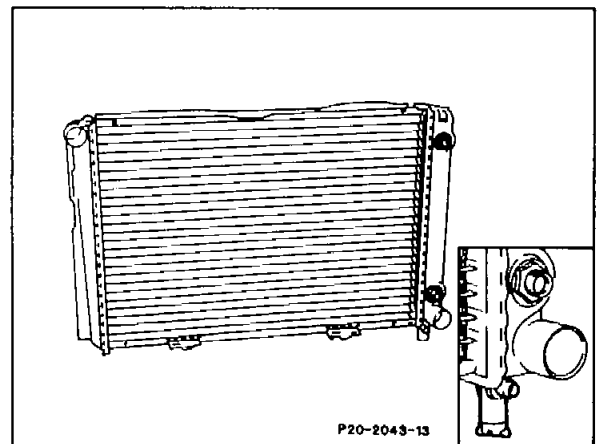
### Note

An appropriate extension hose can be fitted to the drain connection for collecting the coolant.

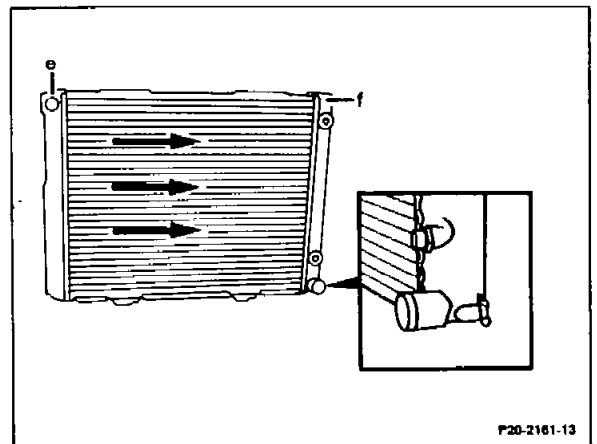
### Installation Instruction

Tightening torque 1.5 – 2 Nm.

Drain plug on models without air conditioning

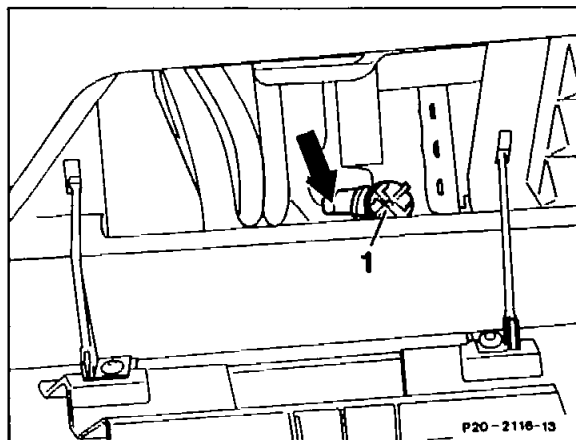


Drain plug on models with air conditioning



On models with air conditioning, open flap for towing lug at front right of under-bumper moulding.

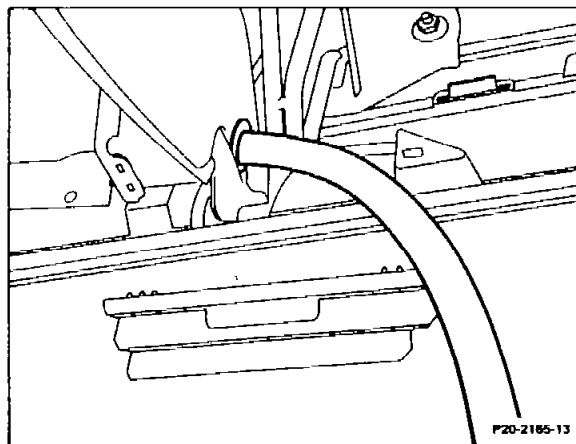
- 1 Drain plug on models with air conditioning



**Note**

On models with air conditioning, the plug below the righthand wheelhouse at the noise encapsulation should be removed. An extension hose can be fitted onto the drain connection of the radiator through this opening.

Extension hose fitted on (with air conditioning)

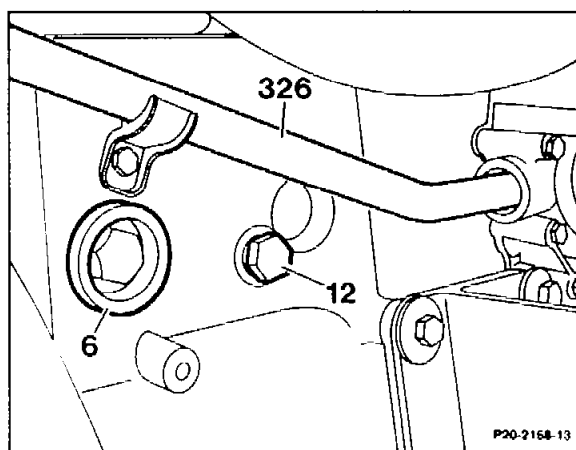


- 4 Unscrew drain plug (12) on crankcase.

**Installation Instruction**

Tightening torque 30 Nm.

Engine 601  
12 Drain plug on crankcase

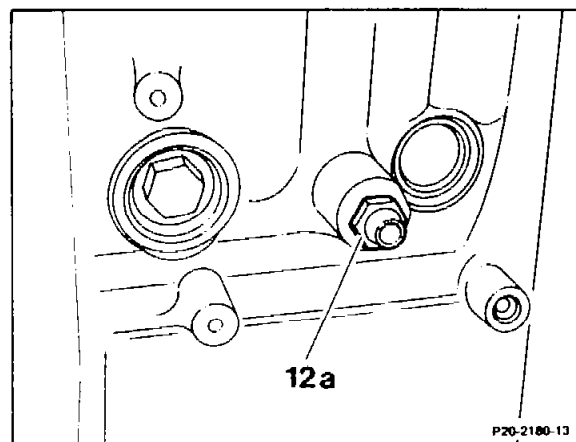


**Note**

Engines 602 and 603 have a drain connection (12a) in place of the drain plug. A hose can be fitted onto this drain connection for draining.

**Installation instruction**

Tightening torque 30 Nm.

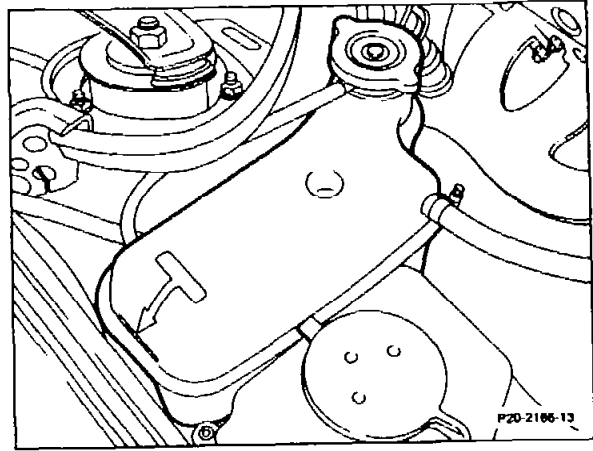


## Filling in coolant

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- 5 Flush out old coolant.
- 6 Slowly pour in coolant up to the marking (arrow) on the expansion tank.

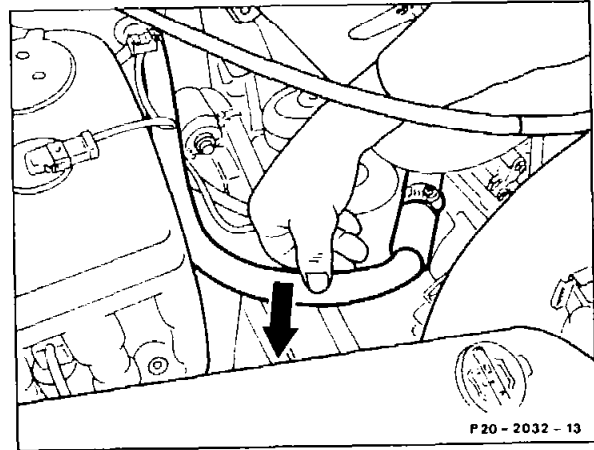
Marking on expansion tank



### Note

The filler hose can be pressed down (arrow) when pouring in the coolant to ensure that it flows more quickly from the expansion tank into the radiator and engine.

- 7 Run engine until the coolant thermostat opens (coolant temperature approx. 90 – 100 °C).



### Note

Close filler connection at expansion tank from a coolant temperature of approx. 60 – 70 °C.

- 8 Check coolant level; top up to the specified marking, if necessary.
- 9 Check cooling system for leaks (20-017).