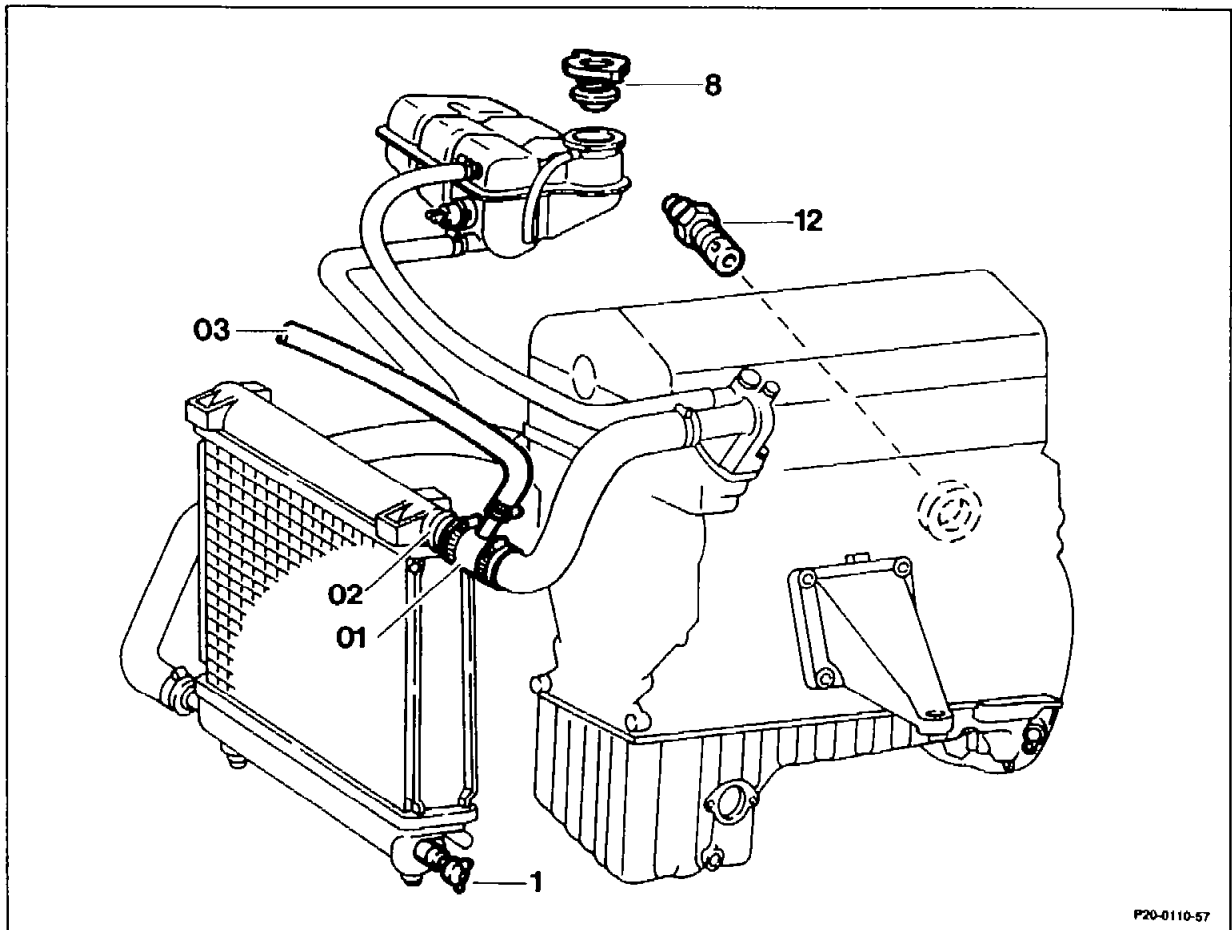


## 20-015 Cleaning, flushing cooling and heating system

Preceding work:  
 Engine compartment cladding bottom removed (01-006).  
 Coolant drained (20-010).

Operation no. of operation texts and operation values or standard  
 texts and flat rates ..... 20-1030



P20-0110-57

Coolant thermostat .....	remove and install forcibly-opened thermostat part no. 000 589 74 63 00 (step 1).
Flushing connection pipe (01) .....	install and connect tap water hose (03) (steps 2 and 3).
Cooling system .....	flush (step 4 - 20, 22).
Cooling system expansion tank .....	remove and install, flush out (step 21).
Cooling system .....	check for leaks (20-017).

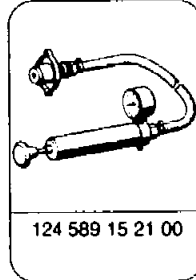
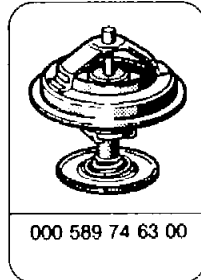
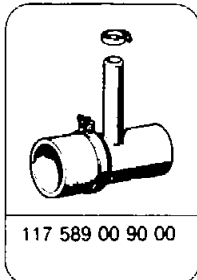
### Service products

Anticorrosion/antifreeze agent	000 989 08 25
Citric acid powder (0.5 kg)	000 989 10 25

## Commercially available tools and testers

Designation	e. g. make,	order no.
Hexagon bit for wrench on flexible shaft with worm drive	Hazet	∅ 6 mm 426-6
	42853 Remscheid	∅ 7 mm 426-7

## Special tools



## Notes

High coolant temperatures and low heating capacity may also be caused by deposits of corrosion products in the radiator and in the heat exchanger.

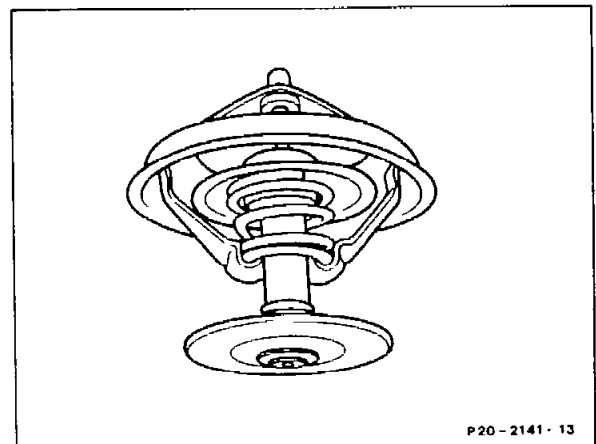
The deposits are recognizable as a jelly-like mass or, when the radiator is empty and dry, from a grey layer on the cooler connection pipes.

In this case, the cooling and heating system can be cleaned with a 10 % citric acid solution.

Radiators which have cooling pipes which are fully or partially clogged, must be renewed.

## Procedure for flushing operation

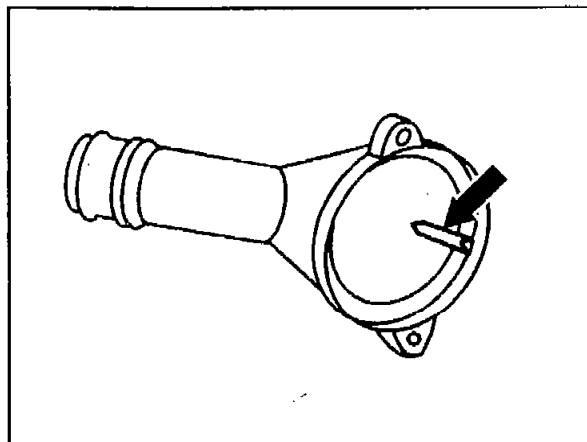
- 1 Remove coolant thermostat and install forcibly-opened thermostat 000 589 74 63 00 with sealing ring.





Remove the locating lug (arrow) on a cap of the coolant thermostat.

2 Replace radiator (20-420).



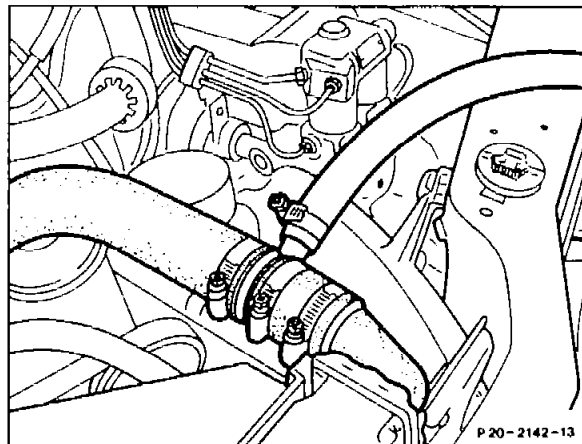
P20-6369-13

3 Connect flushing connection pipe part no. 117 589 00 90 00 with connection hose between radiator and coolant hose.

4 Connect a tap water hose to the flushing connection pipe.

5 Open cap of expansion tank.

6 Set heater to "warm".



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#### Models with auxillary heater

7 If automatic heating control is fitted, set the temperature selectors to "Max" or, if automatic climate control is fitted, press the "Defrost" button so that the circulation pump is switched on when the engine is running.

8 Open bleeder valve of the auxillary heater.

9 Flush cooling and heating system with flowing water for approx. 5 minutes with the engine running (approx. 2500 rpm) so that the remaining coolant is flushed out.



During the flushing operation, the cooling system must always be completely filled. Adjust feed quantity accordingly. All drain plugs open.

10 Allow flushing water in the radiator and crankcase to drain out fully. Screw in drain plugs at radiator and crankcase.

11 Dissolve 1 kg citric acid powder (0.5 kg, part no. 000 989 16 25) in 5 liters of water in a suitable vessel.

12 Pour cleaning solution into the coolant expansion tank and top up with water as far as the marking on the expansion tank and top up with water.

13 Close bleeder screw of auxiliary heater.

14 Close cap of expansion tank.

15 Run engine for **15 minutes** at approx. 2500 rpm and blip throttle. The solution must flow through the heat exchanger (step 6).

16 Following this, drain cleaning solution.



Empty the cleaning solution (citric acid mixture) into a standard workshop oil and water separator.

17 Open the bleeder screw of the auxiliary heater.

18 Flush cooling and heating system for approx. **5 minutes** with flowing water with engine running (2500 rpm). The water must flow through the heat exchanger (see steps 6 and 9).

19 Remove flushing connection pipe and connect coolant hose to the radiator.



20 Install normal coolant thermostat with new seal.

21 Screw coolant drain plugs into radiator and crankcase.

22 Remove coolant expansion tank, flush out once again separately, and install.



Install modified coolant expansion tank with silica element.

#### Coolant expansion tank (with silica element)

Engine	Model	Part no.
602.91	124	124 500 17 49
602.96 (Turbo)		124 500 18 49
603.91		124 500 17 49
603.96 (Turbo)		124 500 18 49

23 If car fitted with auxiliary heater, connect plastic hose to bleeder valve and open valve.

24 Pour in fresh anticorrosion/antifreeze agent (20-010).

25 Check cooling system for leaks (20-017).

