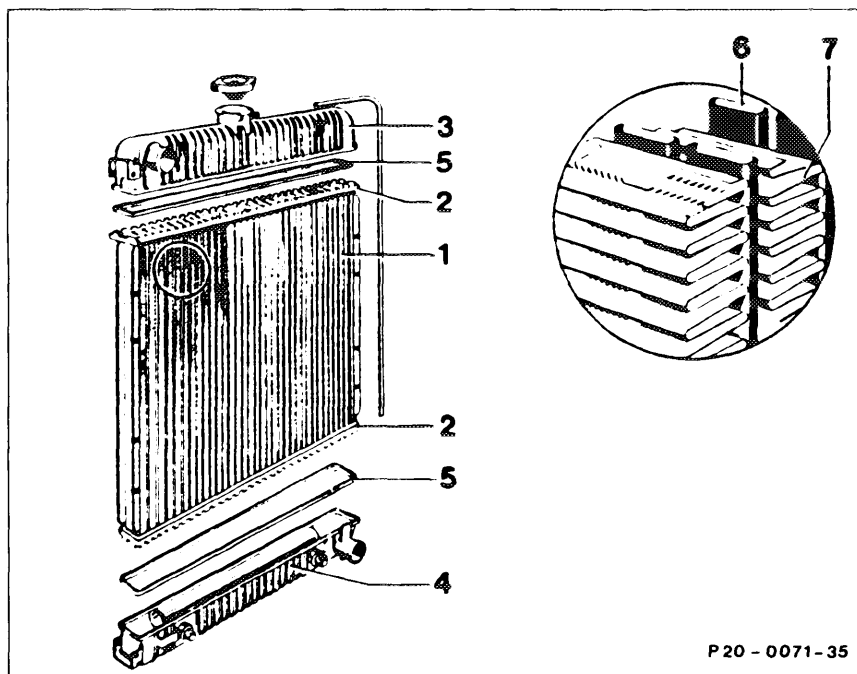


20-425 Repairing radiator

Preceding work:
Radiator removed (20-420)



Radiator honeycomb (1)	check for signs of damage.
Radiator	clean and seal hose connections and oil cooler line (steps 1 - 4).
Radiator	pressure test with tester 124 589 15 21 00 and 605 589 00 25 00 in water bath, mark leak point, reduce pressure and blow-dry radiator with compressed air (steps 5 - 10).
Top and bottom water tanks (3, 4)	check for leaks.
Gasket (5)	check for leaks.
Radiator	seal leak point with repair kit radiator sealant 123 989 00 20 (steps 11 - 15).

⚠ Warning
Note safety instructions!

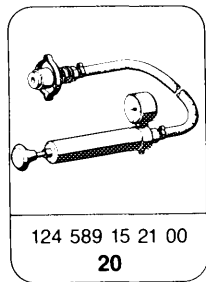
Radiator	pressure-test at 1.4 bar gauge pressure in water bath, check for leaks (steps 16 – 17).
Radiator	install (20-420).
Cooling system	check for leaks (20-017).

Sealant

Repair kit radiator sealing

123 989 00 20

Special tools



Commercial tool

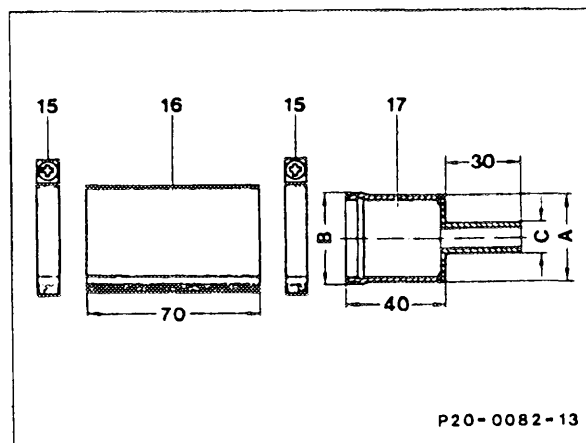
7 mm wrench insert with flexible shaft for hose clips with worm drive

e. g. Hazet,
D-5630 Remscheid
Order No. 426-7

Shop-made tool

Cap for top hose connection:

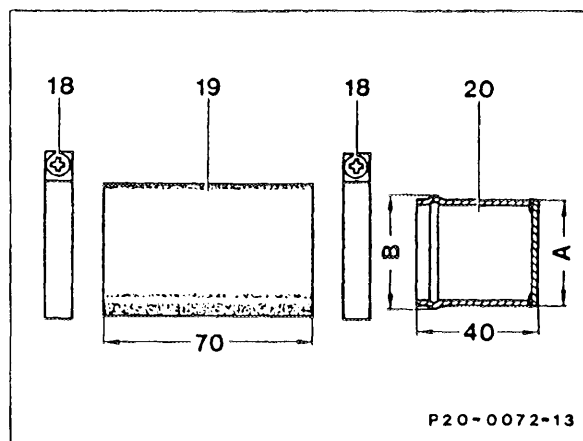
- 15 2 clips L 36–46, Part No. 916026 036000
- 16 Piece of hose, Part No. 201 501 38 82
- 17 Reducer made from two tubes
- A 35 mm dia.
- B 39 mm dia.
- C 12 mm dia.



Shop-made tool

Cap for bottom hose connection:

- 18 2 clips L 36–46, Part No. 916026 036000
- 19 Piece of hose, Part No. 201 501 38 82
- 20 Cap from a tube
- A 35 mm dia.
- B 39 mm dia.



Designation	Use
Priming liquid	Preparation of base
Undiluted sealant	For properly sealing accessible points
Diluted sealant	For sealing difficult-to-reach points (e. g. sides of cooling tubes)

Sealant and priming liquid have a storage life of approx. 1 year provided they are always sealed airtight after use.

Priming liquid which has become cloudy should no longer be used.

The following parts or points in the coolant circuit can be sealed with the sealant:

- a) Plastic water tanks (3 and 4).
- b) Heavy metal water tanks (holes up to 1.5 mm diameter).
- c) Light and heavy metal cooling tubes (6).
- d) Tube plate (2).
- e) Beaded collar (connecting point between radiator honeycomb and water tank).
- f) Heat exchanger of heating system.

Fractured or cracked fastening straps or cracks at the connection fittings cannot be repaired.

Brazing or soldering on heavy metal radiators with plastic water tanks may only be performed on the honeycomb (1) at a distance of at least 20 mm from the water tank otherwise the high brazing/soldering temperature will damage the gasket (5) and the water tank (3 and 4). Leaks which are located closer to the water tank should be repaired only with sealant.

The radiator does not have to be removed from the vehicle for sealing. In this case, it is sufficient to drain the coolant and to pressure-test the cooling system with the tester (approx. 1.4 bar gauge pressure) after sealing.

Caution!

Light alloy radiators with plastic water tanks cannot be repaired by brazing/soldering.

Sealant is available in diluted and undiluted form in order to seal leaks of different accessibility at the radiator (e. g. more difficult in the honeycomb than at the water tank).

The various sealant versions and the priming liquid are combined in a repair kit Part No. 123 989 00 20.

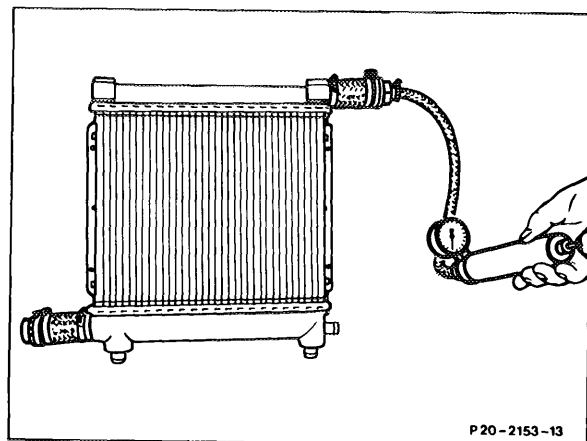
⚠ Warning

The priming liquid is easily combustible (note safety instructions, Hazard Class A 1).

Acetic acid is released until the sealant has completely cured. For this reason, avoid contact with skin. Clean affected areas immediately with water and soap. Rinse out eyes with water. Consult a doctor if necessary.

Sealing

- 1 If the leakage point cannot be properly located with the radiator installed, remove radiator (20-420).
- 2 Clean radiator.
- 3 Seal hose connections with the shop-made caps.
- 4 Seal connections of the transmission oil cooler with plastic caps or plugs from old oil cooler lines. Cut off the oil cooler lines just behind the nipple and solder on.
- 5 Connect testers 124 589 15 21 00, 605 589 00 25 00 to the radiator.
- 6 Place radiator in a water bath.
- 7 Pressurize radiator with the tester and check location of rising air bubbles.
- 8 Mark leakage points.
- 9 Remove radiator and reduce pressure.



10 Blow-dry radiator with compressed air.

11 Clean leakage point and area around it with a commercial cleaning agent (e. g. tri or white spirit).

It is not necessary to remove any paint. The radiator should then be blown-dry at the affected point with compressed air.

There must not be any dust or grease residues present on the surface.

12 Apply a very thin and even coat of priming liquid with a brush.

Apply the priming liquid at and around the point to be sealed. Pour the quantity of priming liquid required for the repair in a separate vessel to avoid polluting the entire can of priming liquid.

 **Warning**

Note safety instructions!

13 Allow priming liquid to dry for approximately 10 minutes at room temperature.

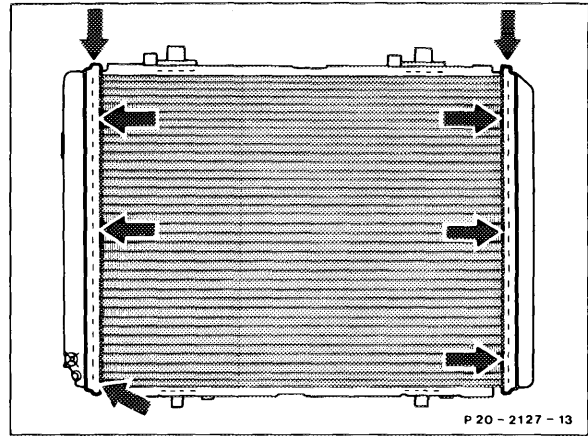
14 Apply diluted or undiluted sealant according to accessibility. Use brush, spatula or the like for spreading the sealant.

Caution!

During application and spreading sealant, ensure that no air is trapped.

Using the same method as for cleaning and priming, apply the sealant not only at the point to be sealed but also around it. If there are several leak points at the beaded collar (arrows) it is recommended to seal the beaded collar completely around its circumference.

Seal leaks in the honeycomb from both sides.



After completing the sealing procedure, close tube immediately. Acetic acid is released until the sealant has completely cured. Avoid contact with skin. Clean affected areas immediately with water and soap. Rinse out eyes with water. Contact a doctor if necessary.

15 Leave radiator upright or face-down for at least 3 hours for the sealant to dry. Depending on the quantity of sealant applied and the size of the point treated, it may take up to 24 hours for the sealant to cure to form a permanent elastic joint at room temperature.

16 Pressure-test radiator for approx. 5 minutes in a water bath at 1.4 bar gauge pressure.

If any leaks remain, repeat sealing operation starting at step 8.

17 Remove testers and plugs.

18 Install radiator (20-420).

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