

## Engine Cooling System

Job No.
---------

20-5
------

See also Job No. 50-0

*Change: Vent hole in cap screw.*

### Repair of Water Pump

Repair procedures of the water pump for models 180 a, 180 b, 190 SL, 220 a, 219, 220 S and 220 SE is substantially the same as for model 190.

However, the following details for the individual models should be observed:

On model 190 SL the hub on the water pump shaft which holds the pulley and the fan has 4 threaded bores instead of 3 like the other models. If a water pump housing of models 180 a, 180 b, 220 a, 219 and 220 S is used for model 190 SL, the threaded union (10) (refer to Fig. 01-4/42) should be screwed out, while the bore is closed with a screw plug M 16 × 1.5 DIN 906-4 D. On model 190 SL the by-pass line is not connected to the water pump housing but to the distributor pipe (also refer to Job No. 01-4, Section E).

The water pumps for model 220 a were provided with an integrally cast pulley and hub up to engine end No. 5509040. If such a pulley is replaced, a pulley part No. 1802050710 together with a hub part No. 1802020014, may be used. To provide a tight fit of the hub on the water pump shaft, an oversize of 0.015 mm to 0.035 mm is required. The pulley and the fan are attached to the hub by means of 3 hexagon screws M 8 × 18 DIN 933-8 G and 3 spring washers B 8 DIN 137.

For models 180 a, 190, 190 SL, 219 and 220 S water pumps having a capacity of 3.25 kg/s were used exclusively up to the recent past, while for some time by now water pumps are mounted, in which the capacity has been increased to 4 kg/s by means of a larger impeller and a correspondingly larger water pump housing.

The water pump of larger capacity is available as intermediate version and a final version.

The intermediate version has **no** threaded union at the cooling water inlet connection, because the by-pass line of this pump type is connected to the distributor pipe. The final version, on the other hand, is again provided with a threaded union at the cooling water inlet connection to connect the by-pass line.

The following table provides data concerning the application of the new water pumps.

Model	Intermediate Version without threaded union with housing part No. 127 200 00 01 installed as from engine end No.	Final Version with threaded union with housing part No. 127 200 01 01 installed as from engine end No.
180 a 190 219 219 220 S 220 S 220 SE 190 SL	85 03385 85 04453 N 85 01891 Z 85 00402 N 85 03621 Z 85 01371  Part No. 121 200 04 01 installed as from engine end No. 85 01223	85 14557 85 14502 N 85 06539 Z 85 01566 N 85 13025 Z 85 05292 as from 1 <sup>st</sup> engine Part No. 121 200 09 01 <sup>1)</sup> installed as from engine end No. 85 02544

<sup>1)</sup> The water pump with part number 121 200 09 01, is provided with a screw plug M 16 × 1.5, DIN 906-4 D instead of a threaded union, because the by-pass line of model 190 SL is connected to the distributor pipe.

Models 180 b and 190 b are provided only with water pumps of a capacity of 4 kg/s. On these models the by-pass line is connected to the distributor pipe. The part No. of these pumps without housing is 127 200 00 20, with housing 621 200 01 01.

The repair procedures of water pumps of 4 kg/s capacity is done in the same manner as that of water pumps of 3.25 kg/s capacity (refer to type 190).

Water pumps of 4 kg/s capacity can also be subsequently installed in older engines of the above models and on model 220 a. However, the intermediate version 127 200 00 01 (on model 190 SL 121 200 04 01) should be used-up during repairs for engines provided with this version as a standard part, while the previous version 180 200 10 01 may be used-up only for models 180 a, 220 a and 219.

### Venting of Water Pump

The vent hole in cap screw (14) (Fig. 20-5/1) has been enlarged to prevent oil losses as a result of insufficient venting of water pump housing. The present standard-type cap screw with a larger vent hole has part No. 127 997 00 30; it can also be added subsequently. If no new cap screw is available, the axial hole of the formerly used cap screw can be drilled from 3 to 6 mm dia. and the cross bore at the hexagon from 1.5 to 2 mm dia.

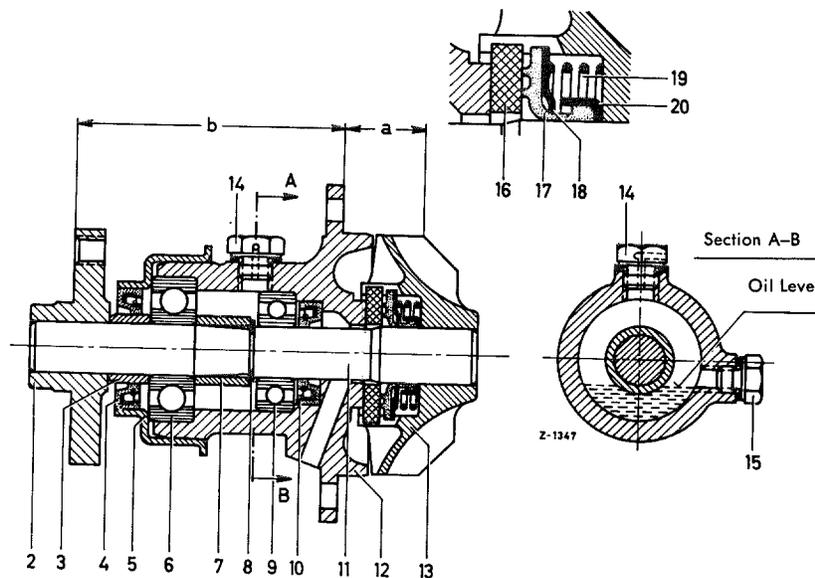


Fig. 20-5/1

- |                       |                             |
|-----------------------|-----------------------------|
| 2 Hub                 | 12 Bearing housing          |
| 3 Intermediate ring   | 13 Impeller                 |
| 4 Sealing ring        | 14 Cap screw with vent hole |
| 5 Sealing ring holder | 15 Oil level control plug   |
| 6 Ring groove bearing | 16 Slip ring                |
| 7 Spacer sleeve       | 17 Sealing ring             |
| 8 Lock washer         | 18 Slip ring cage           |
| 9 Ring groove bearing | 19 Pressure spring          |
| 10 Sealing ring       | 20 Cap                      |
| 11 Water pump shaft   |                             |