

# Forced Circulation Cooling with Heat Exchanger and Centrifugal Pump for Built-in Engine OM 636

Job No.

20-3

The forced circulation cooling system with heat exchanger and centrifugal pump is delivered in the following versions:

- A Circulation cooling system with combination heat exchanger and centrifugal pump
- B Circulation cooling system with separate expansion tank and heat exchanger, and centrifugal pump

## A. Version A

The heat exchanger and the expansion tank are combined to one assembly (combination heat exchanger) (1) and are fixed to the front of the engine. The centrifugal pump (2) is mounted on the engine front support and is driven by the crankshaft and a coupling.

### Removal, Installation, Disassembly and Assembly of the Centrifugal Pump, and Removal and Installation of the V-belt

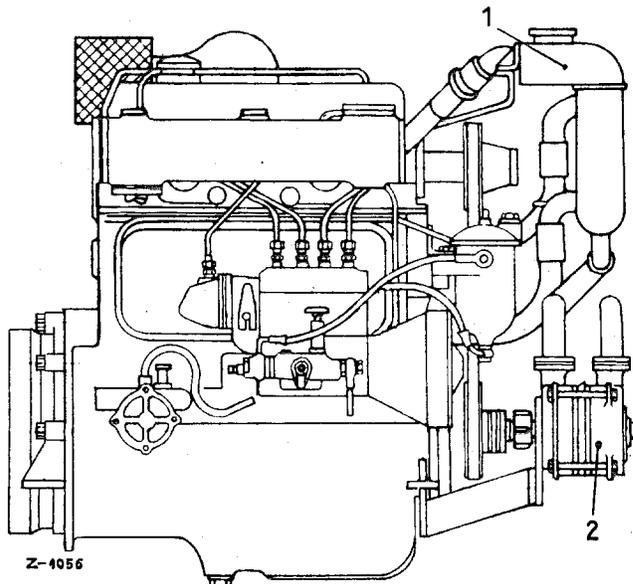


Figure 20-3/1

Engine with circulation cooling system with combination heat exchanger and centrifugal pump (UkWtKr)

- 1 Combination heat exchanger
- 2 Centrifugal pump

### a) Removal and Installation of the Centrifugal Pump

1. Drain the water of the outer cooling water circuit.
2. Unscrew the suction and discharge lines.
3. Unscrew and remove the centrifugal pump from the support.
4. The installation is done in the reverse order.

### b) Disassembly and Assembly of the Centrifugal Pump

1. Unscrew the fixing screws and nuts (7) (see Figure 20-3/2).
2. Pull the suction housing (1) with bearing bushing (8) and spacer off the shaft (see Figure 20-3/2).
3. Pull the impeller (4) off the shaft and remove the spacer (5).
4. Remove the Woodruff key (6).
5. Pull off discharge housing (2) together with bearing bushing (9) and stuffing box.
6. The assembly must be executed in the reverse order.

**Note:** If necessary, remove the old stuffing box packing and install a new one. The end play of the impeller (4) must be checked after the assembly.

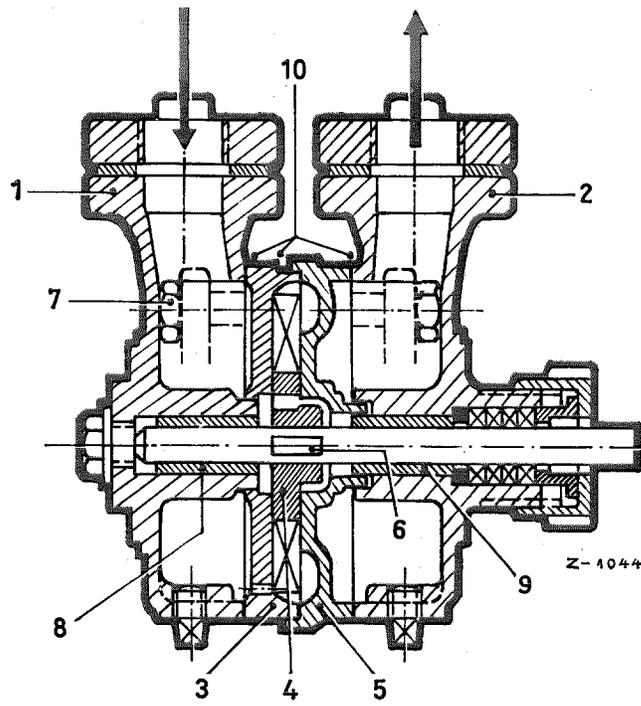


Figure 20-3/2

Centrifugal Pump Make SIHI

- |                     |                          |
|---------------------|--------------------------|
| 1 Suction housing   | 6 Woodruff key           |
| 2 Discharge housing | 7 Fixing screws and nuts |
| 3 Spacer            | 8 Bearing bushing        |
| 4 Impeller          | 9 Bearing bushing        |
| 5 Spacer            |                          |

**c) Removal and Installation of V-belt**

(between crankshaft and water pump of engine)

1. Loosen and tilt the generator (see Job No. 20-6, Paragraph 1).
2. At the coupling installed between the front end of the crankshaft and the centrifugal pump loosen the screws located at one of the coupling halves.
3. Pull out the coupling section in a radial direction and remove the V-belt.
4. The installation is done in the reverse order.
5. Adjust the tension of the V-belt (see Job No. 20-6, Paragraph 2).

**B. Version B**

The heat exchanger and the expansion tank are installed separately. The heat exchanger (1) is installed at the flywheel end, the expansion tank is arranged above the water-cooled exhaust pipe (3) (see Figure 20-3/3).

The centrifugal pump (4) is fixed to the side of the engine and is driven by a V-belt from the front end of the crankshaft. The centrifugal pump is supplied as Simplex pump or Duplex pump (for recooling and bilge pumping).