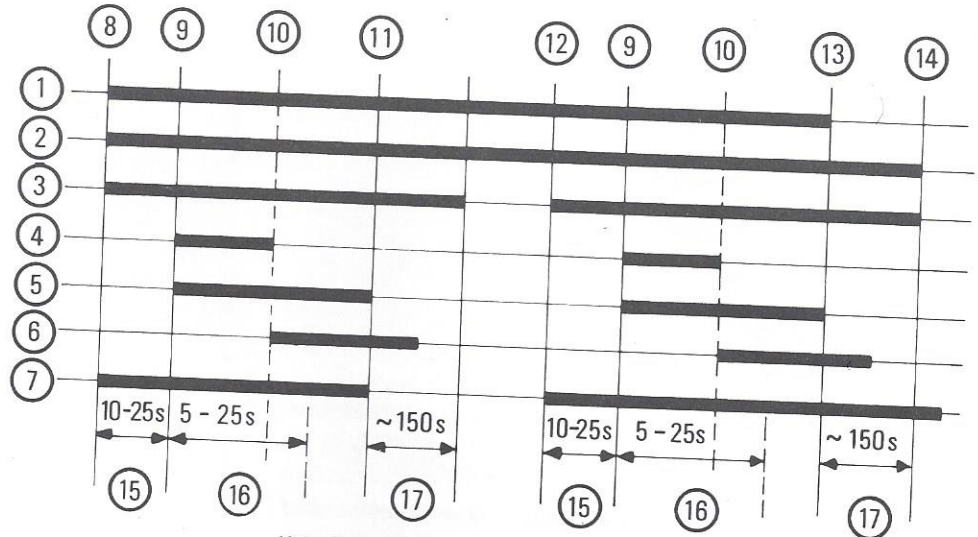


2.1 DESCRIPTION OF OPERATION

1. Light green: operation indicator, control thermostat
2. Water circulation pump, negative heater
3. Heater motor
4. Electronic ignition unit
5. Solenoid valve
6. Flame detect
7. Control thermostat
8. Switch on
9. Start
10. Combustion
11. Control pause starts
12. Control pause ends
13. Switch off
14. Heater stops
15. Initial cycle
16. Safety delay time
17. Purge cycle



Use the switch to start the Webasto heater. The operation indicator lamp (1) comes on, the heater motor (3) and coolant circulating pump (2) begin to run. After about 10 - 25 seconds solenoid valve (5) opens and fuel is sprayed into the combustion chamber. At the same time electronic ignition unit produces high voltage (8000V) and the mixture of fuel and air in the combustion chamber is ignited by the spark on the ignition electrodes. The flame is indicated by the flame detector, then the electronic ignition unit stops producing high voltage and combustion continues by itself (spark on electrodes is required only to ignite the flame). At this moment the heater is working and produces heat.

If the heater is switched off by the on/off switch, the solenoid valve interrupts fuel supply, combustion stops and indicator lamp turns off. Combustion air fan still blows air, cleaning the combustion chamber of any fumes and cooling down the combustion chamber. Coolant circulation pump pumps coolant, making a purge cycle for approximately 2 - 3 minutes, thus protecting heater against overheating.

If the heater is not switched off by the on/off switch, the control thermostat will switch off the heater when coolant temperature reaches $75^{\circ} \pm 3^{\circ} \text{C}$ ($165^{\circ} \pm 6^{\circ} \text{F}$) and turn it on at $68^{\circ} \pm 5^{\circ} \text{C}$ ($154^{\circ} \pm 9^{\circ} \text{F}$). During this time the heater (combustion) is off, the indication lamp and coolant pump are on. Combustion air fan blows air for 2 - 3 min. and then turns off.

3. PARTS OF THE HEATER

3.1 Electronic control unit (1)

Description: The electronic control unit serves to switch the heater on and off, to control the different components of the motor, the solenoid valve, the ignition spark coil, and to check the combustion.



The signals of the flame detector, the control thermostat and the overheat fuse are utilized, accordingly, for this purpose. In case the functions are defective, the control unit switches the heater automatically off.

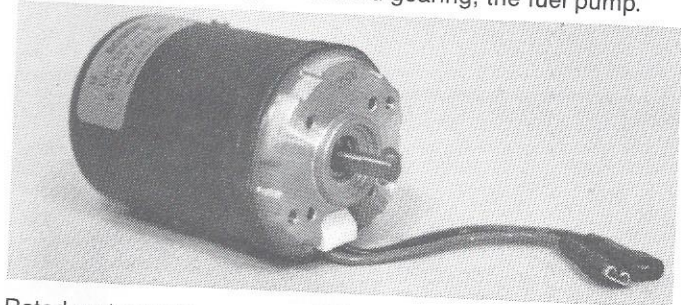
Checks: A check-up of the control unit is possible only if the incoming as well as the outgoing signals are simulated. The testing apparatus (see item 7.2) comprises all the necessary parts for a complete function test of the control unit.

A defective control unit must not be repaired but has to be completely exchanged.

Remarks: If the electronic control unit is exposed to heat impact (max. 60°C (140°F), e.g. in the mounting case), it should be moved to a cooler position (possibly by extending the wiring harness).

3.2 Motor (2)

Description: The motor, through a coupling, drives the combustion air fan, and through a toothed gearing, the fuel pump.



Rated motor r.p.m.:	DBW 2010	4500 RPM
	DBW 2020	5000 RPM
	DBW 300	5800 RPM
	DBW 350	5600 RPM

Checks: Check the mounting condition (rough running). The single parts of the motor cannot be exchanged. The cables and the drain hole must show downwards.