INSTRUCTION BOOKLET

Stationary Heaters 56/57

for VW-Ghia-Karmann-Coupé

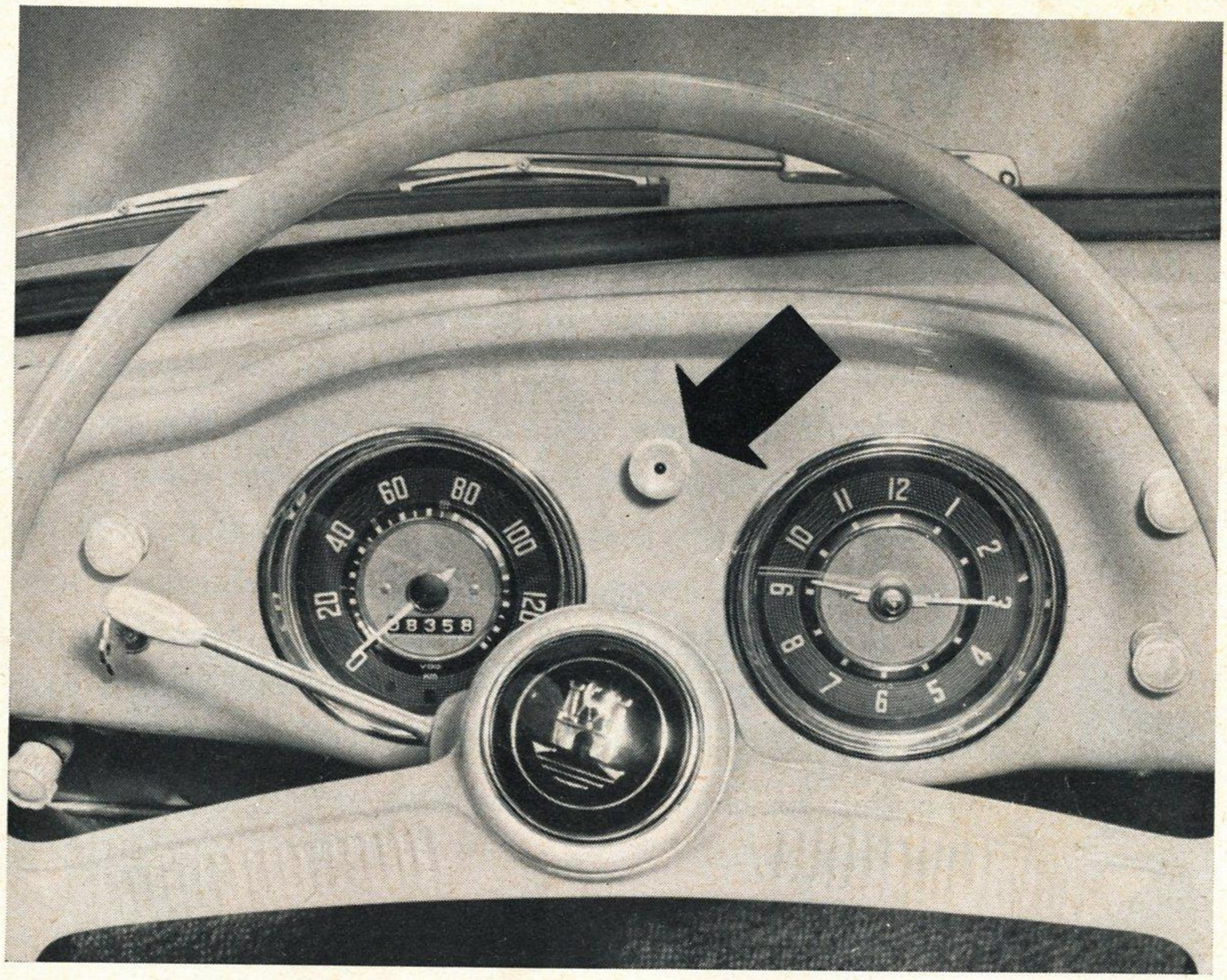
MAKE

Eberspächer

OPERATING INSTRUCTIONS

To switch on,

pull the knob. After 45 seconds, the signal lamp lights up, which is an indication that the heater is fully operating.



To switch off,

push the knob in. The heater will then automatically switch off after about 3 minutes when the signal lamp extinguishes, which is an indication that the "flushing" process has been completed.

Important

Never switch the heater on again, before the signal lamp has been extinguished.

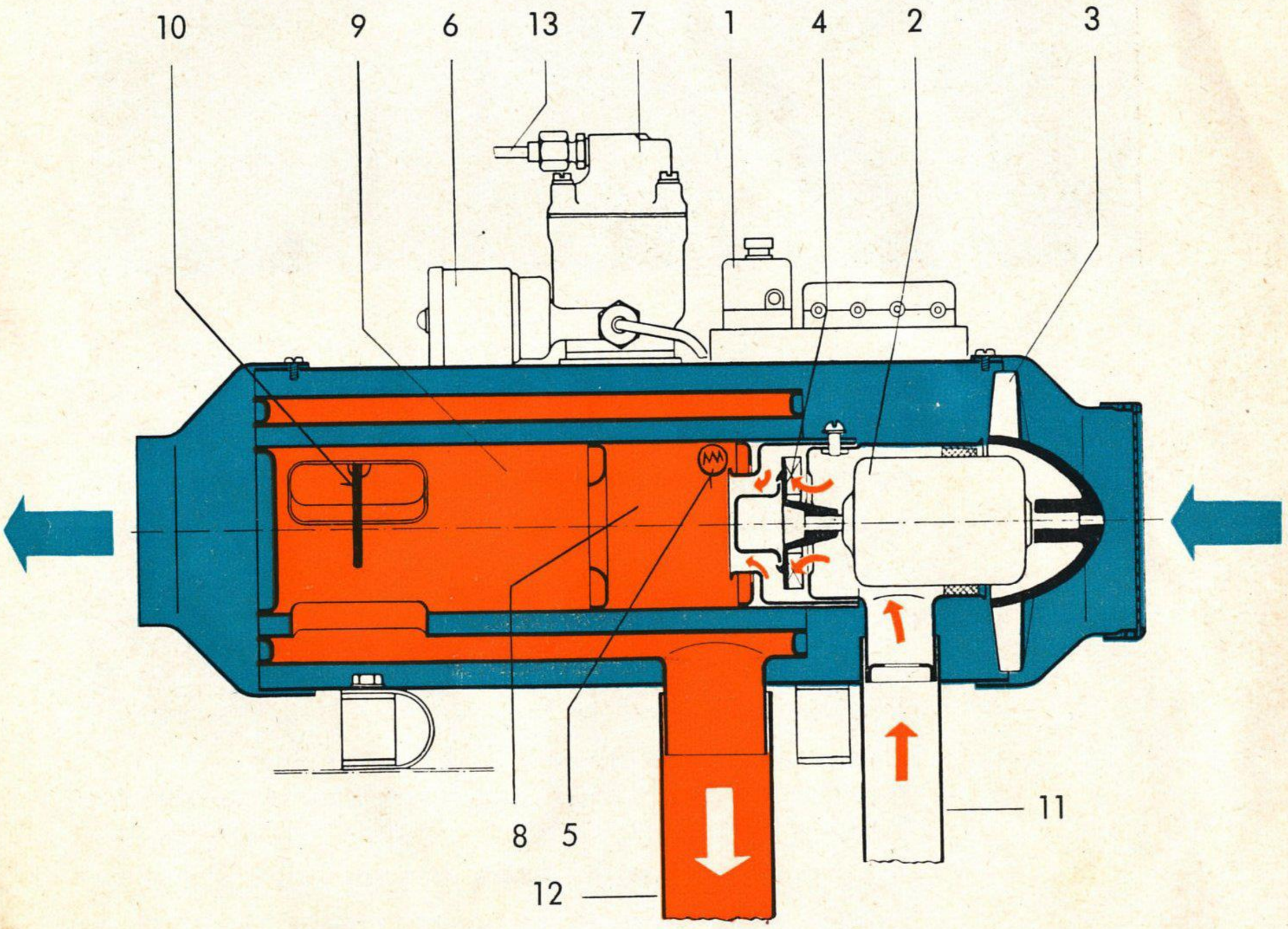
OPERATION OF HEATER

The heater is put into operation by pulling the knob in the midth of the instrument board. An electric motor, which drives the fresh air blower and the combustion air blower, receives then current through an electric pull switch. At the same time, the glow plug in the precombustion chamber and the electro-magnetic valve in the fuel governor are also supplied with current through the flame detector switch. The cylindrical combustion chamber is surrounded by the heat exchanger, permitting the air delivered by the fresh air blower to absorb heat directly from the combustion chamber wall. A tubular housing protects the system from damage and carries the accessories.

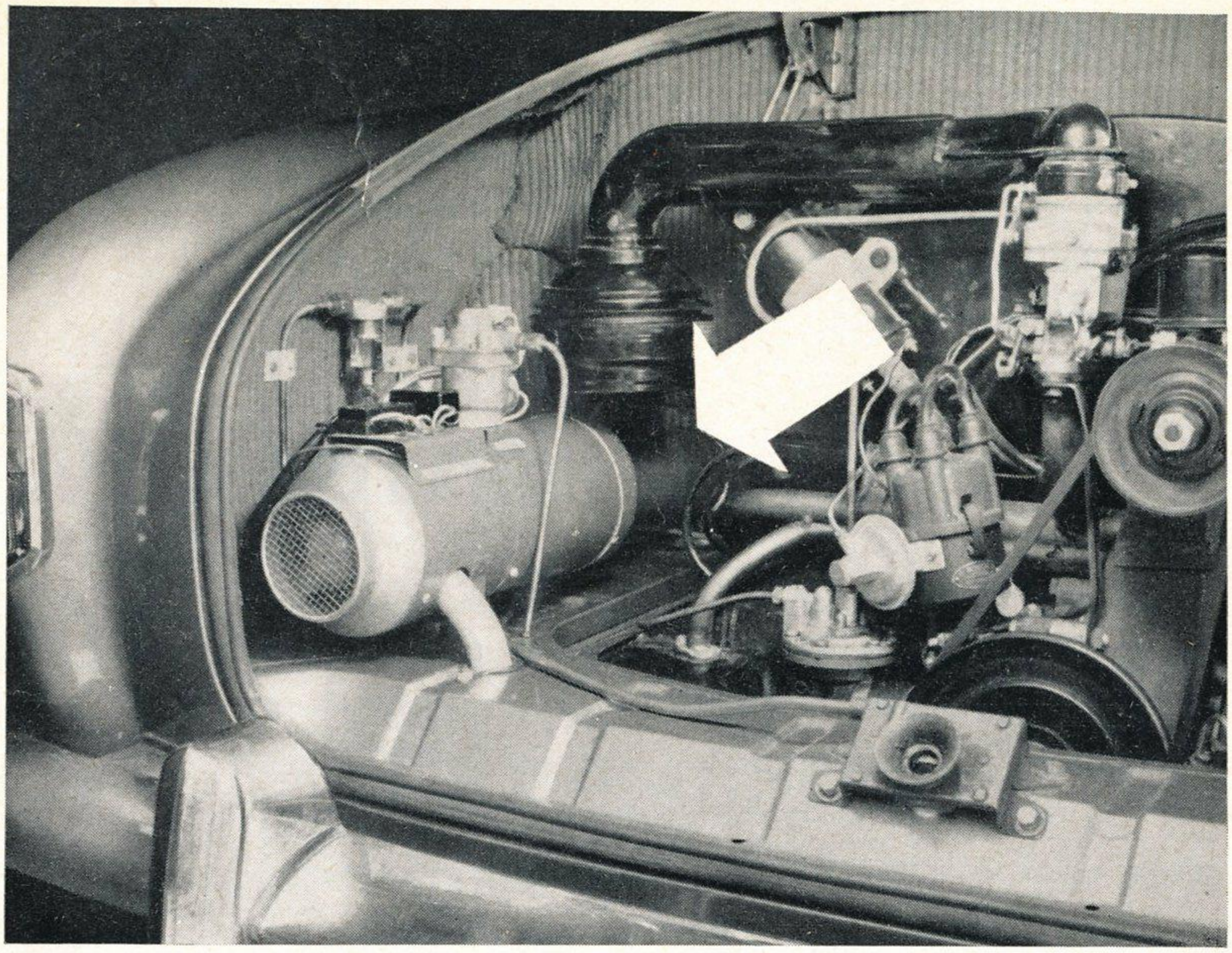
As soon as the heater is switched on, combustion air is supplied and fuel flows from the fuel pump (or tank) through the fuel governor to the combustion chamber, where the mixture is ignited by the glow plug. The flame contacts the flame-sensitive tube of the flame detector switch which extinguishes the glow plug. At this stage, the signal lamp within the pull knob lights up, indicating that the heater is fully operating. The combustion mixture is then selfigniting. Fresh air forced into the heat exchanger is warmed up to 90° C (194° F) above the outside temperature and discharged into the interior through the outlet duct.

DESCRIPTION

The heater consists of three concentric cylinders, which eliminate a contamination of fresh air with combustion fumes. The combustion chamber is sealed off by a safety ring to the blower side.



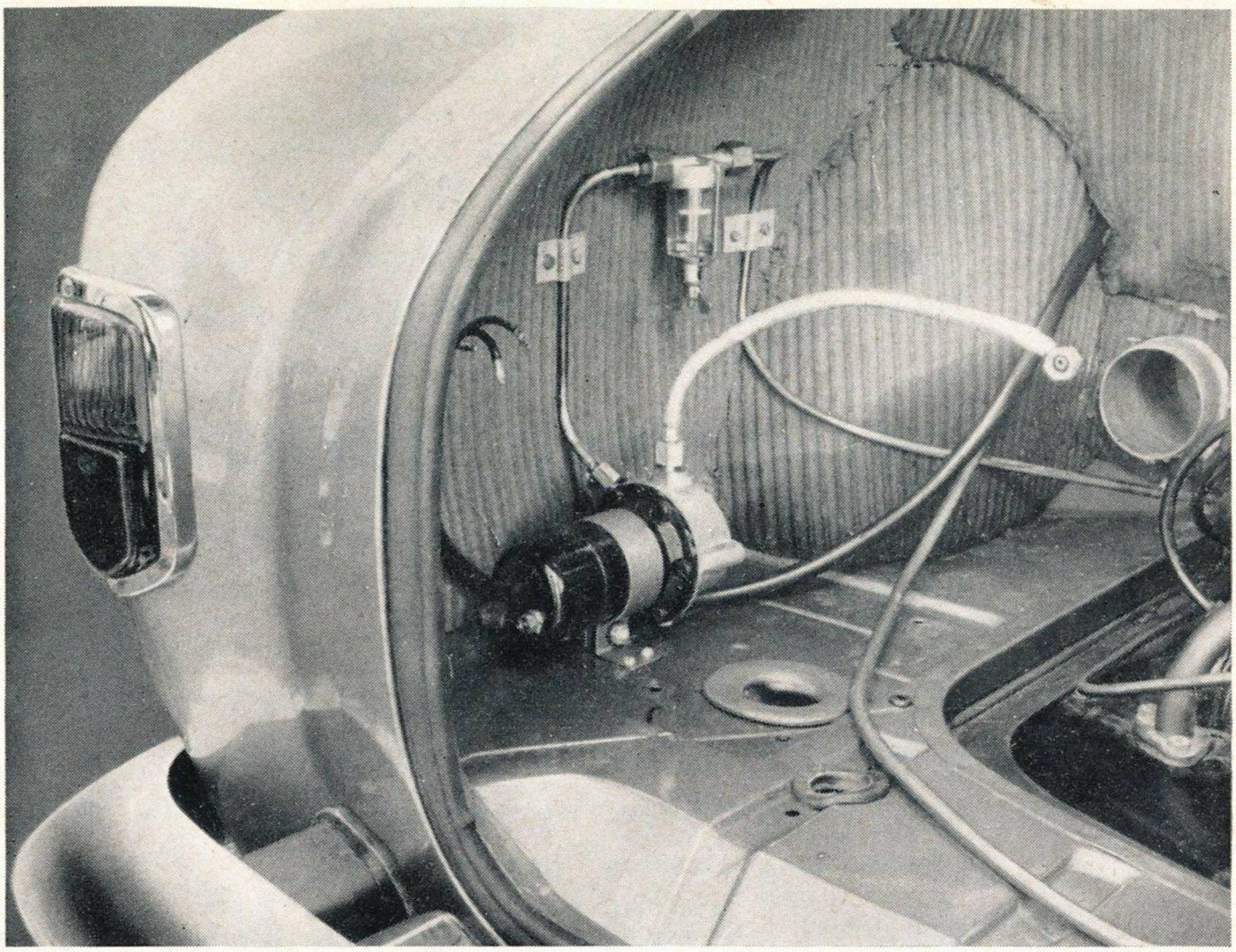
1 - Fuse box
2 - Electric motor
3 - Fresh air blower
4 - Combustion air blower
5 - Glow plug
6 - Electro-magnetic valve
7 - Fuel governor
8 - Combustion chamber
9 - Heat exchanger
10 - Thermo switsch
11 - Combustion air intake pipe
12 - exhaust pipe
13 - Fuel feed line



Fuel, mixed with air sucked in by the blower, ignites in the precombustion chamber and is fully burned in the combustion chamber. The exhaust products are discharged into the atmosphere through an exhaust pipe. Fresh air delivered by the fresh air blower to the outer and inner annular spaces absorbs heat directly from the combustion chamber walls and is then emitted into the vehicle interior via a control valve in the outlet duct.

The **glow plug** is for starting the heater only, it is supplied with current through the **flame detector switch.** The flame detector switch interrups the supply of current to the glow plug as soon as its flame-sensitive tube is heated up by the flame.

In the **precombustion chamber,** the fuel is mixed with the combustion air and ignited. The complete combustion



takes place in the **main chamber.** The tubular housing carries the **fuel governor** which is connected to an electric fuel pump or to the tap below the fuel tank by a fuel line.

A filter provided with an inspection glass is installed within the fuel pipe between the fuel tank and the fuel pump of the heater. Please clean this filter if contamination is to be seen.

The **fuel governor** consists of a float system and a jet. It assures a continued flow of fuel. The fuel is metered by the electro-magnetic valve of the fuel governor. An overheat switch is attached to the housing. The safety switch, which is also susceptible to the temperature in the outer annular space around the combustion chamber, stops the heater through this overheat switch at a temperature of about 150° C/320° F. To put the heater into operation

again after the cause of overheating has been eliminated, the 8 amp. fuse should be replaced.

The **signal lamp** in the driver's cab indicates a proper working of the heater. It lights up approx. 45 seconds after the heater has been switched on and extinguishes approx. 2½ or 3 minutes after the heater has been switched off.

SPECIAL POINTS TO BE OBSERVED

The blower motor continues to operate after the heater has been switched off in order to cool down the heater and to free the combustion chamber from exhaust products. Only when this process is completed, the flame detector switch returns to "cold" and the circuit is interrupted. The signal lamp extinguishes only upon completion of the cooling and "flushing" process.

Only then it is permitted to switch on the heater again Special care should be taken to assure that during the cooling and "flushing" process the heater is not switched on. Fuel would be pumped into the combustion chamber without any combustion taking place, as the glow plug is not supplied with current during that period.

Even if the combustion chamber should be leaky, it is impossible for the combustion fumes to mix with the fresh air, as the combustion operates at a pressure less than that in the heat exchanger.

MAINTENANCE

After about 500 hours of operation, the glow plug should be removed in order to see whether or not the condition of the glow filament makes a replacement advisable. Additionally, the combustion air intake and exhaust pipes should occasionally be checked for cleanliness and the electrical connections for tightness.

TROUBLE CHECKING

Symptom	Cause	Remedy
Insufficient heat output	Jet in fuel governor clogged up	Clean the jet
No ignition	Glow plug defective	Check and, if necessary, replace glow plug
	Battery voltage not less than 5,5 Volt	
	Jet clogged up	Clean the jet
	One or more fuses blown out	Replace blown out fuses
Heater stops working	Jet clogged up	Clean the jet
	Intake pipe clogged up	Clean the intake pipe
	Exhaust pipe clogged up	Clean the exhaust pipe
	Loose cable connections	Check cable connections and tighten, if found necessary
	Through-way filter full of water	Emply the filter
Fuel pump operates at higher frequency (fast clicking)	Vapor locks in fuel line	Bleed the fuel line
Heater does not switch off	Flame detector switch mal-adjusted	Turn adjusting screw at flame detector switch somewhat clockwise

TECHNICAL DATA

Heat output	1750 Kcal/h (6,965 Btu/hr)
Fuel	Gasoline
Fuel consumption	0.27 1/h (0.57 U. S. pint/hr)
Power input	20 watts
Voltage	6 Volts
Heat transfer	90° C (194° F)
Fresh air induction rate	Approx. 180 kg/hr
Weight of heater system	5.5 kg

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