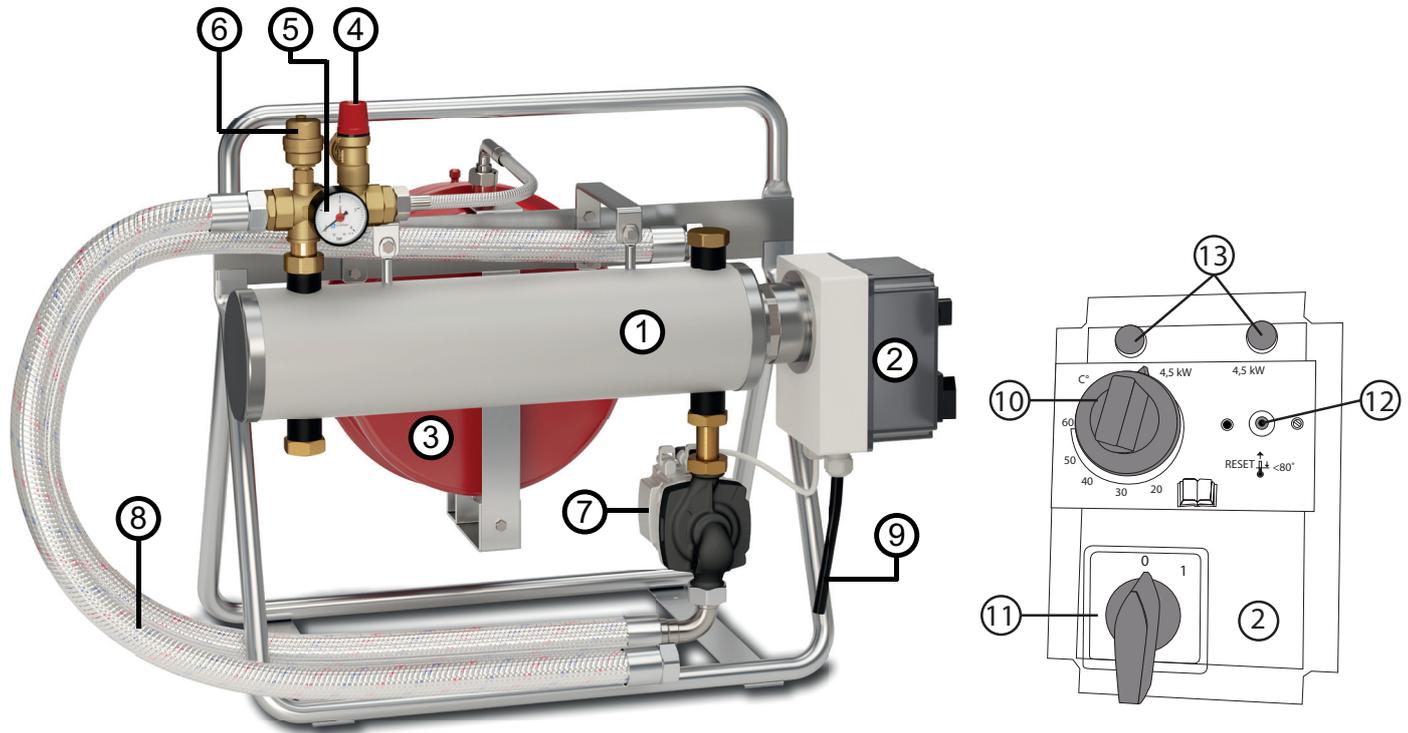


LK Electric Portable Boiler



STRUCTURE

The LK Electric Portable Boiler is a complete portable electrically-heated boiler. It is primarily meant to be used as a temporary heater, e.g. for drying concrete slabs installed with under floor heating and for heating buildings under construction installed with a under floor heating system.

The boiler has a total output capacity of 9 kW and it works in two steps of 4.5 kW.

The boiler is supplied complete with a circulation pump, an expansion tank, and auxiliary devices including a safety valve and air-bleed valve.

Connection to the under floor heating manifold/ heating system is simple, using steel-reinforced flexible hoses.

The boiler is factory wired and complete with a 3-phase 400 V electric plug.

Temperature regulation is controlled by the boiler's operating thermostat.

LK Electric Portable Boiler comprises of:

1. Electrically-heated boiler, 9 kW
2. Control box
3. Expansion tank, 12 litres
4. Safety valve, 1.5 bar
5. Pressure gauge
6. Automatic air-bleed valve
7. Circulation pump, Grundfos UPM3 Auto 15-70
8. Steel-reinforced connection hose 1", length 1.0 m
9. Cable with 3-phase coupling connector, length 1.0 m
10. Operating thermostat, 0-60 °C
11. Multipolar main switch
12. Trip switch, overheating protection, under the middle plastic screw with the red O-ring.
13. Power amplification indication



INSTALLATION

The boiler should be placed indoors/under a roof and fully protected from rain. The integrated safety package including automatic air-bleed valve, safety valve and connecting hoses, must be installed as shown in the product diagram (see above). Relevant building standards and hot water installation standards must be adhered to. The safety valve's outlet's functioning must be ensured in the appropriate manner; refer to current hot water installation standards. No thermometer is included in the standard kit. However, a thermometer should be mounted on the pipe after the boiler. The heating system must be arranged so that there is always a flow through the electrical cartridge. Check to see that one or more of the heating loops are always open.

SWITCHING ON

Before switching on, check to see that the heating system is filled with water, air-bled and that the system's operating pressure is sufficient. Check to see that the circulation pump is running by listening to and testing the various pump speed settings.

THERMOSTAT OPERATION

Temperature regulation is via the boiler's operational thermostat (constant output temperature). The thermostat can be set up to a maximum of 60 °C. Monitor the output temperature by means of a thermometer and compare it to the set temperature.

OVERHEATING PROTECTION



Note!
Resetting is possible after the boiler has cooled down to approx. 65 °C.

The boiler is provided with built in overheating protection, which cuts off the power at approx. 80 °C and at temperatures < -5 °C. To reset the overheating protection function, press the RESET-button (12) under the middle plastic screw with the red O-ring. Press the button hard with

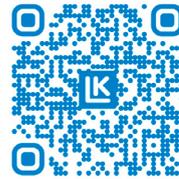
a blunt chisel e.g. TX10 or H2.5 when resetting. In the event of a repeated overheating, determine the cause of the fault and fix it before restarting.

BEFORE RESTARTING THE BOILER

- Check that the pump can rotate by turning the rotor with a screwdriver in the center hole of the pump.
- Check that the overheating protection is not tripped. Press the RESET-button (12) under the middle plastic screw with the red O-ring.
- Check that the boiler is water-filled and well vented.

CIRCULATION PUMP

For setting up the circulation pump, see separate instruction "Grundfos UPM3 Auto 15/70". Note that the pump is advantageously set to work with constant pressure and that this must be set manually according to separate instructions.



QR code for assembly instruction UPM3

ALARM CODES

In the event of an operating problem then a fault code will be displayed as below.

Fault codes circulation pump

Display	Indication	Operation	Action
Red LED, Yellow LED #5	Blocked rotor	False start was 1.33 s.	Wait or release rotor/impeller*
Red LED, Yellow LED #4	Too low voltage	Only one warning, the pump operates as normal	Check the voltage to the pump
Red LED, Yellow LED #3	Electric fault	Pump stops because of low voltage or serious fault	Check voltage to pump / Replace pump/impeller

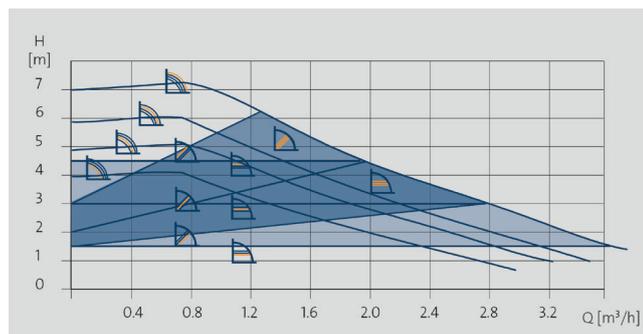
*Release impeller using screwdriver PH2. Break the voltage to the pump. Insert the screwdriver into the center hole of the drive side, press the screwdriver in about 5 mm, then rotate forward /backward until the impeller loosens.



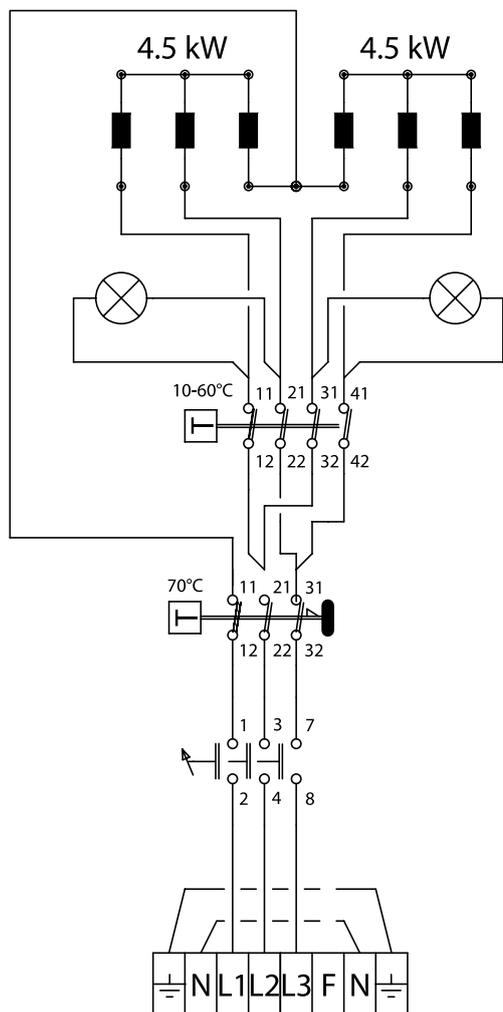
SAFETY VALVE

The safety valve must be tested at start-up and then at set intervals 2-3 times per year. **CAUTION:** Take care when testing as the out-flowing water/steam can cause scald injuries.

PUMP GRAPH



ELECTRIC CONNECTION DIAGRAM



TECHNICAL DATA

Article no.	241 84 64
Output	9 kW in two stages at 4.5 kW
Voltage	3 N~ 400V AC, connection via 3-phase electric plug Boiler must be protected using 3 x 16 A fuses (max. current 13.5 A)
Electrical cartridge	9 kW/6-tube 400 V, stainless steel SS2353, connection 2"
Pump	Grundfos UPM3 Auto 15-70 1 phase 230V AC (factory fitted to control box)
Protection class	IP 44
Input power circulator	5-52 W
Operating thermostat	Max 60 °C
Safety thermostat	80 °C
Expansion tank	12 litres
Safety valve	1,5 bar
Max. glycol solution	30%
Boiler volume	2,8 litres
PS max. pressure for boiler jacket	1,5 bar
Dimensions (L x W x H)	710 x 430 x 650 mm
Weight	23 kg

Condensing boiler	No
Low-temperature boiler	No
B1 boiler	No
Cogeneration space heater	No
Rated heat output	$P_{\text{märk}}$ 9 kW
Useful heat output	$P_{\text{märk}}$ 9 kW
Energy class	D
Seasonal space heating energy efficiency	η_s 36%
Useful efficiency	η_s 39.4%
Auxiliary electricity consumption	On standby P_{SB} 0.025 kW
Standing loss	P_{stby} 0.101 kW

RECYCLING

The boiler should be recycled after dismantling. Insulation is removed and sorted as insulation. The boiler body and stand should be sorted as scrap steel. Electronics and electronic components should be sorted as electrical scrap.



English