

- ☐ *KDH - 9*
- ☐ *KDH - 12*
- ☐ *KDH - 15*
- ☐ *KDH - 18*
- ☐ *KDH - 21*
- ☐ *KDH - 24*

Electric Instantaneous Water Heater

Luxus

Operating And Installation Instructions

Please, read and follow the installation and operating instructions carefully, to ensure the long life and reliable operation of this appliance.

The manufacturer may make minor changes in the appliance if necessary. They will not be exposed in the operating instruction, so long as the main features of the heater remain the same.

KOSPEL S.A. 75-136 KOSZALIN UL. OLCHOWA 1

Description

One must not install this appliance in a place exposed to the danger of frost or explosion.

KDH Luxus water heater is designed to heat water instantly at such places as home, a workshop, a restaurant, a laboratory etc. It is a multi-point heater – it can supply hot water to a number of taps, e.g. at a sink, a shower or a bath.

The outlet water temperature depends on the rate of flow and a power of heating coils. The greater flow, the lower temperature of water. Opening the hot water tap switches the heater on, which in effect provides heated water in accordance with the following technical specifications.

The heater consists of:

- insulated heating coils that assure maximum safety;
- materials resistant to corrosion and chemically inactive (copper, brass, and stainless steel).

Technical data

KDH Luxus water heater			9	12	15	18	21	24
Rated Power		kW	9	12	15	18	21	24
Power Consumption at Characteristics I	I Heating step	kW	3	4	5	6	7	8
	II Heating step	kW	6	8	10	12	14	16
Power Consumption at Characteristics II	I Heating step	kW	6	8	10	12	14	16
	II Heating step	kW	9	12	15	18	21	24
Rated voltage			400V 3~					
Rated current		A	3 x 13,0	3 x 17,3	3 x 21,7	3 x 26,0	3 x 30,3	3 x 34,6
Supply Water Pressure		MPa	0,15 ÷ 0,6					
Operating Point	I Heating step	l/min	1,8	2,3	2,9	3,5	4,1	4,7
	II Heating step	l/min	2,8	3,7	4,6	5,5	6,4	7,3
Efficiency at Δt=30°C		l/min	4,3	5,8	7,2	8,7	10,1	11,6
Overall dimensions		mm	228 x 450 x 140					
Weight		kg	~5,7					
Fuse rated current		A	16	20	25	32	40	
Connecting Wires Section*		mm²	4 x 1,5	4 x 2,5		4 x 4		4 x 6
Water inlet and outer section			G 1/2"					

* Terminal clamps are large enough for wires with a section up to 16mm²

Installation

Fig.1 Electric connection

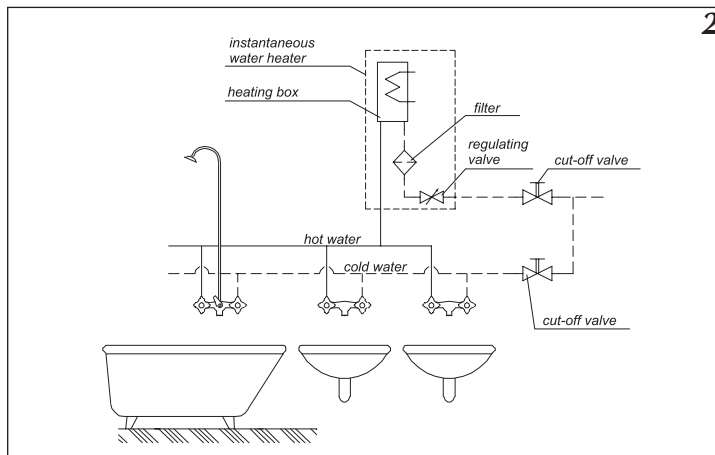
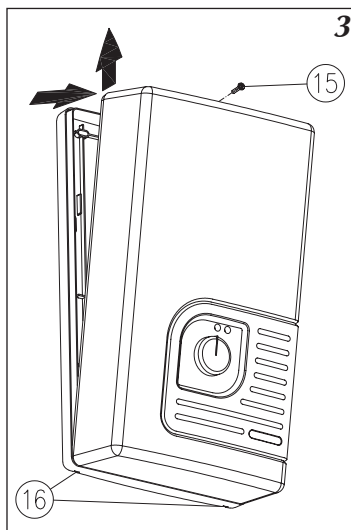
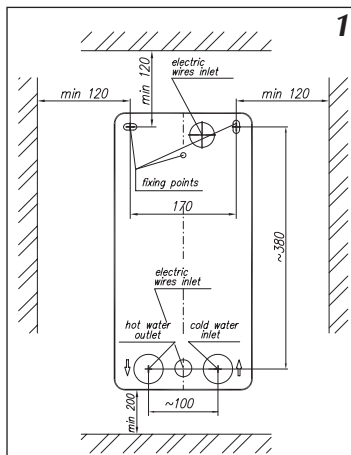
Fig.2 Water connection.

Installation and initial start-up of the appliance should be carried out by a professional.

Fig.3 Case removing

- [8] - case
- [15] - fixing screw
- [16] - catches

Cut off power and water supply before any installation work.



Recommendations

- if there is a non-return valve installed on a supply pipe, there is also an obligation to install a safety valve between a heater and a non-return valve,
- inlet and outlet pipes should not be made of plastic,
- for economic reasons the heater should be installed in the vicinity of the most frequently used tap,
- flow regulating valve should be installed before an each water outlet (fig.2) for the greater comfort of use,
- appliance can be connected only to a mains with a cold water
- Install an extra valve and a filter on the inlet pipe.
- the heater works with taps and mixers without thermostat.

Assembly

1. Mark the following points using the supplied wall mounting templet (fig.1):
 - holes for fixing hooks;
 - water connections;
 - electric supply cable.

Fig.4 Water connection

[17] - water inlet - cold water
[18] - water outlet - hot water
[19] - flow regulating valve
[U] - gasket

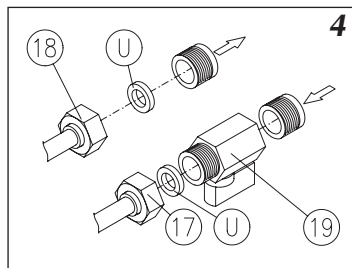


Fig.5 Electrical connection

[F] - tripolar circuit - breaker

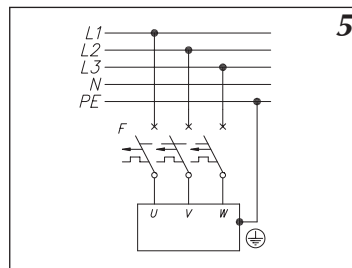
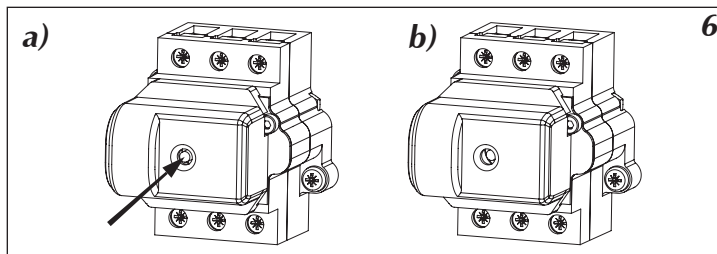


Fig.6 Safety temperature limiter WT3

a) - to switch it on
b) - limiter "on"



Electric installation should be equipped with safety (power- - differential) circuit breaker and other devices which will ensure disconnecting the heater from the source of power (intervals between all their poles should not be less than 3 mm).

6. Connect electric supply wires according fig.5. Connect wires to electric terminal XP or after dismantling electric terminal with wires, directly to temperature limiter [3]
7. Remove rubber plugs from cold and hot water fittings.
8. Insert a flow regulating valve [19] between the heater and cold water inlet (fig.4).
9. Connect the heater to the water system with the fittings [17] and [18] (fig.4).
10. Flood the heater by letting cold water in (allow mains pressure gets to the appliance) and check connection for leaks.
11. Check the installation according to Venting section
12. Make sure that the WT3 [3] safety temperature limiter (fig.6) is at a working position (the knob should be pushed in).
13. Perform regulation according to Regulation section
14. Place the case into two bottom catches [16], screw up the case with fixing screw [15].
15. Make sure that there is no access to live parts through the holes at the back plate.

2. Bring to the place where the heater is to be situated, three-phase installation, in accordance with proper standards.
3. Bring water pipes to the marked places, keeping in mind that the cold water inlet is on the right-hand side (G1/2"), the hot water outlet is on the left hand side (G1/2"). Figure 2 shows where the heater should be incorporated in the water system.
4. Remove the case (fig.3); undo the fixing screw [15]; take the case out of bottom catches [16]
5. Fix the heater on the fixing hooks after inserting the supply wire through the hole [5a] or through the hole with removed plug [5], (fig.10).
6. Connect electric supply wires ac-

Venting

The recommended maintenance needs to be done each time after a decay of water.

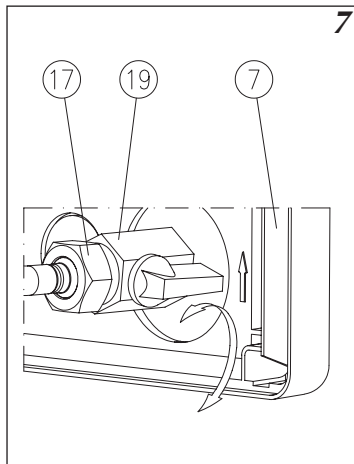
If you do not vent the water installation, the heater can be damaged.

1. Cut off electric supply.
2. Turn the hot water tap on for the period of venting the installation (about 15-30 seconds).
3. Switch power supply on.

Regulation

Fig.7 Regulation

- [7] - back plate
[17] - water inlet coupling
[19] - flow regulating valve



By regulation we understand setting optimal temperature of water, by limiting the rate of flow.

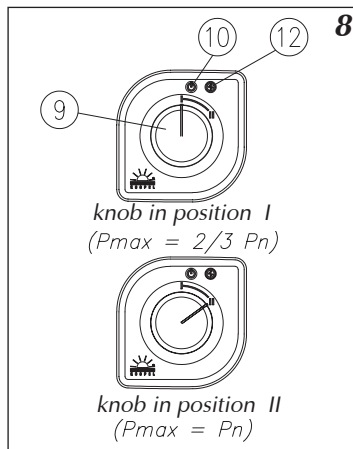
To reach this purpose do the following:

- shut off electric supplies;
- undo the fixing screw [15]; take the case out of bottom catches [16],
- take the case off;
- set with a tap valve maximum flow of hot water;
- using the flow regulating valve [19] set optimum flow (for instance a flow that switches on max. power of the heater)
- shut flow with the tap;
- Place the case into two bottom catches [16], screw up the case with fixing screw [15],
- switch power supplies on.

Operating

Fig.8 KDH work indicators

- [9] - knob
- [10] - power supply (green)
- [12] - heating on (red)



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This heater switches on automatically right after reaching appropriate rate of flow. When the rate of flow rises the second step switches on. A user may set the heater on work at lower temperature range by turning the knob on the case in position I (fig.8, then it works according to characteristics I - 2/3 of nominal power). Turning the knob in position II, sets the heater at work at higher temperature range (work according to characteristics II).

There are two indicators on the case:

- green - power supply "on",
- red - heating "on".

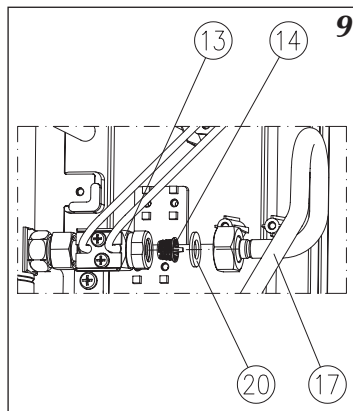
Maintenance

Fig.9 Filter cleaning

- [13] - orifice
- [14] - filter
- [17] - inlet fitting – cold water
- [20] - gasket

It is recommended to clean the filter after water installation maintenance, or if there are intensive impurities in water, or after an each year of operation.

No filter [14] on water inlet (fig.9) may damage the heater.

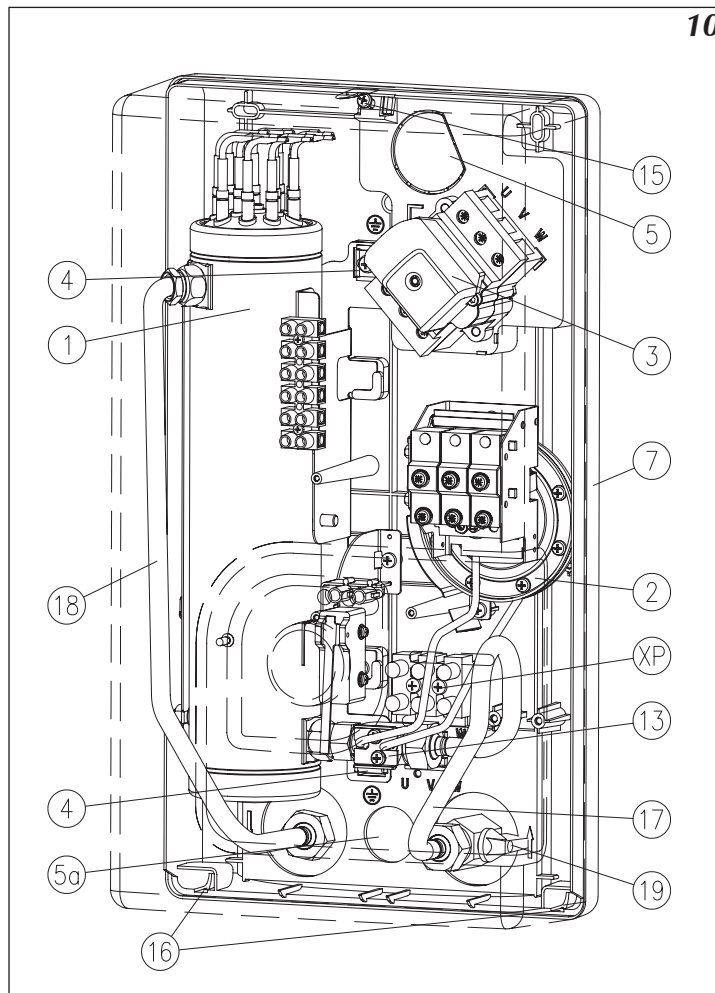


1. **Shut off power supplies and cold water supplies.**
2. Remove the case (fig.3): undo fixing screw, take the case off the catches [16] and unplug the socket [6] of water heater.
3. Undo the inlet fitting [17] from the orifice [13] - on the cold water side (hold the orifice with spanner 22).
4. Take the filter [14] off the inlet fitting.
5. Remove impurities from the filter [14].
6. Fix the filter [14] back.
7. Do up the inlet fitting [17] to orifice [13]
8. Open the cut-off valve on cold water supply pipe - check connections for leaks.
9. Fix the case, fix the case on catches [16], fix the top screw[15].
10. Vent the water installation according to directions in Venting section

Any interference inside the safety temperature limiter may cause an irreversible damage to the water heater.

Fig.10 Construction

- [1] - heating box
- [2] - differential pressure switch
- [3] - WT3 safety temperature limiter
- [4] - protection wire terminal
- [5] - plugged hole for electric wires
- [5a] - hole for electric wires
- [7] - back plate
- [13] - orifice
- [15] - fixing screws
- [16] - catches
- [17] - inlet pipe - cold water
- [18] - outlet pipe - hot water
- [19] - flow regulating valve
- [XP] - electric terminal



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This heater has two safety devices that protect this appliance from damage or failure:

- safety temperature limiter WT3, that goes off (shuts off power supply) when the temperature in the heating compartment [1] goes over 100°C. After going the safety temperature limiter off, operation of the appliance is not possible.

The safety temperature limiter does not work as electric protection of the heater.

In case, the heater forces another electric appliance to be off for its high power intake, you need to install a priority switch. A current relay should be installed in a distribution board into a wire connected to the terminal marked "V" at WT3 [3]. While the first heating coil is being switched on, the current that passes through the coil causes the electric relay to work, and the extra circuit is opened.

Fig.11 Electric installation

E1 - heating box [1]
 BV - differential pressure switch [2]
 Q4 - power limiter
 F1 - WT3 safety temperature limiter [3]
 XG - heating box terminal

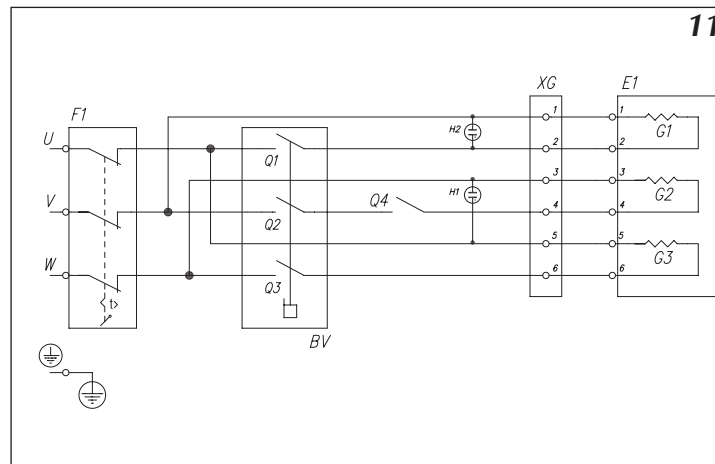
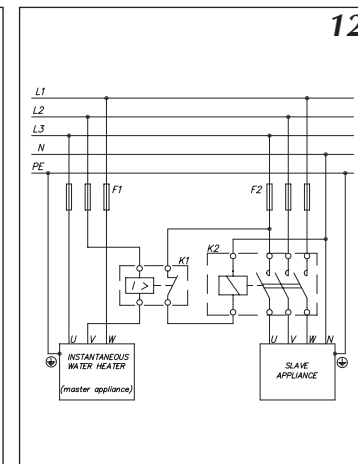


Fig.12 Example electric connections with a priority switch

K1 - priority switch
 K2 - contactor
 F1, F2 - fuses of the appliances



Example preferential switches: ABB STOTZ:

for 9..15kW - E452-5.7 6,7 ÷ 30A;

for 18..24kW - E451-15 18 ÷ 55A.

Alternatively, you may use a specially reconstructed differential pressure switch. To find out more, please contact any of our authorised services.

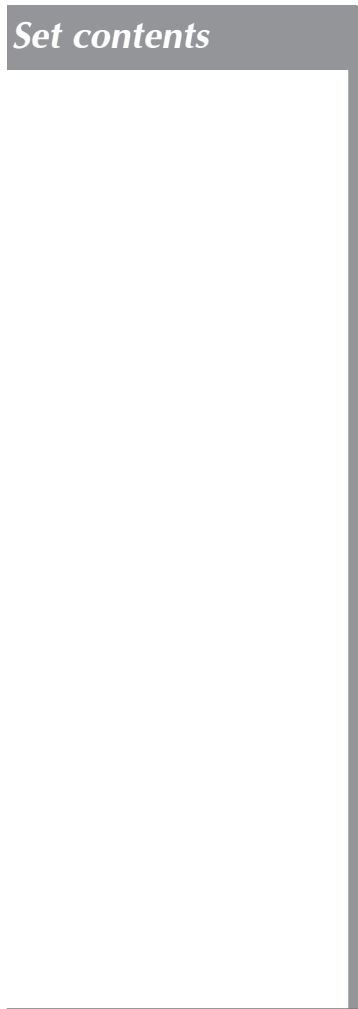
Faults

Cut off power supplies before taking the case off.

If you notice any of the following signs of faulty work, check if:

- the indicators on the case are
 - see if the plug [6] is connected properly to the socket,
 - there might be a failure of power supplies off
- if the heating is weak or it does not heat up at all:
 - there might be a failure on power supplies,
 - the rate of flow through the heater is not sufficient (filter blocked with impurities or incorrect setting of the flow regulating valve).

Repairing the above is not covered by the guarantee. If the heater breaks down (and it is caused by none of the above reasons) you need to contact an authorised service to have it repaired.



Water heater KDH Luxus

Gaskets

Fixing hooks

Templet

Installation and operating instruction

1 piece

2 pieces

2 sets

1 piece

1 piece



electric
water heaters

electric
boilers.