



Zoppas Industries

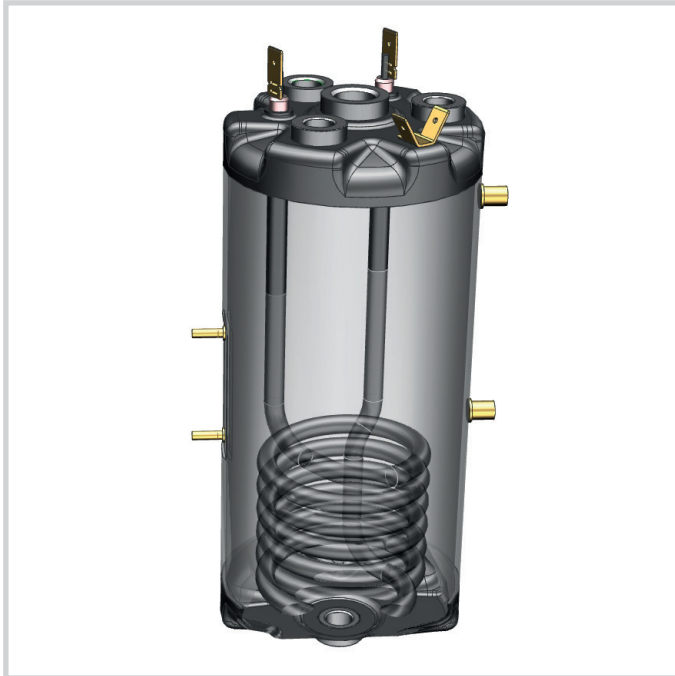
Heating Element Technologies



BOILER FOR HOT WATER AND STEAM



ZIHET Boiler Catalogue



Boilers are stainless-steel tanks equipped with heating elements for water heating. Depending on the operating temperature, boilers can produce hot water or steam. In some applications, both hot water and steam. A common application is in the production of hot water and steam on coffee machines, either for household and professional purpose, but for other applications range from steam ironing to spa equipment, from sterilizers to tumble dryers, from dishwasher to washing machines. ZIHET boilers are high performance products offering outstanding power rates in small spaces. Reliability and food compliance are keystones of the products, along with a wide array of customization options.

Technical facts of standard boilers

Voltage	230 V		
Power by capacity	0,5 lt	0,7 lt	0,9 lt
Power	600÷3000W depending on displacement		
Diameter	Ø 76,1 mm		
Overall Height	147 mm	203 mm	242 mm
Surface load	< 10 W/cm ²		
Fixing	2xM4 threaded bush		
Electrical connections	Faston		
Material	AISI 316L/1.4404 (body) Alloy 800/1.4876 (heating element)		
Compliance	2014/35/UE (LVD) 2014/68/UE (PED) art.4.3		
Food compliance	Reg. 1935/2004 Reg. 2023/2006		

Production	Water	Steam
Design pressure	12,5 bar	12,5 bar
Operating pressure	12 bar	3 bar
Operating temperature	5÷98°C	5÷130°C
Cut-off temperature	115°C	145°C



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Reliability

Heater elements of the boiler are extremely reliable, having successfully exceeded over 300.000 on/off cycles. Mechanical reliability is also synonym of long lifetime: welds are guaranteed for 500.000 high pressure cycles.

Options

Depending on the final application of the boiler, the product family ranges in a selection of different capacities and electrical power. Combination of size and power are studied to fill any potential need.

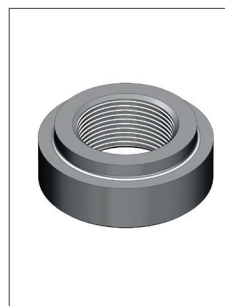


Upper lid: perimetral fittings

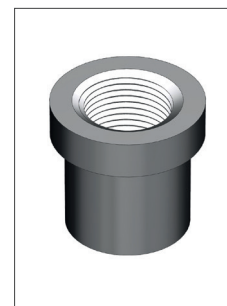
The water/steam outlet is a standard G1/4" F threaded fitting in the center of the upper lid. Peripherally to the upper lid a series of three fittings are weld in order to allow the boiler to be equipped, on request, with optional.

Perimetral threaded fittings, G1/8" F, can either be standard or special for suitable for water level probe. The configurators allows the maximum flexibility for the selection of fittings types.

Should the configuration contain one of more fittings for water level probe, the probe itself can be selected in the following steps.



G 1/8" F perimetral fitting

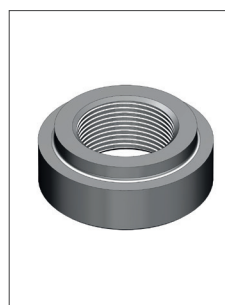


G 1/8" F perimetral fitting for water level probe

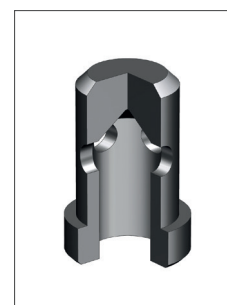
Lower lid: perimetral fittings

The inlet of water can also be customized up on the need. In particular, beside a standard G1/8" F threaded fitting, a G1/8" F with water spreader is available.

The water spreader prevents the cold water from being injected directly toward the heating element, therefore avoiding sudden gas formation.



G 1/8" F lower fitting

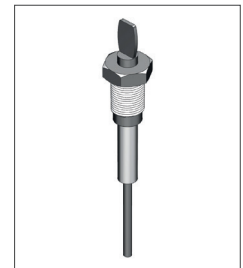


G 1/8" F lower fitting with water spreader

Water level probes

The water level probe is the electrical device that opens and closes in response to liquid level sensed inside the boiler. During normal operating condition, the probe is screwed up on the upper lid with the tip positioned precisely at the level that will start the refilling of the boiler or/and at the level that protects the heater element from running dry.

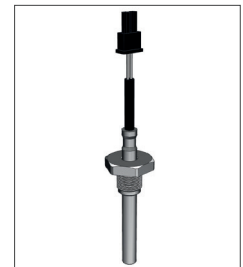
The user can option up to two probes, for single-probe or multi-probe applications. While the first provides information as water level is low, the second can be used to stop the refill. Probes are provided of the same length (147mm), bundled in a separated plastic bag. The user will decide which one to use as “refill-stop probe” by cutting the excess of the chosen one. Herewith suggested lengths for each boiler capacity:



Water level probe

NTC sensor

NTC sensors is a resistor with negative temperature coefficient, specifically encapsulated to comply with working conditions of the boiler. It also provides excellent long-term stability and short response time in high-temperature applications such in the coffee machines.



NTC sensor

Insulation

A proper insulation is essential to save energy, as it works as a barrier to heat losses. The ignition of the heater element results from a temperature drop that can be thwarted by an effective insulating wrapping.

Melamine is a material commonly used as insulation for pipes and ductwork as well as the core of the insulating wrapping of the boiler. Foamed melamine is ennobled by a TNT outer layer that allows to wear the coat around the boiler body by mean of a Velcro strip. As for flame resistance, the TNT insulation is compliant with DIN 4102 – UNI9177 B1 - Class 1.



Melamine + TNT
Insulating coat

Dummy plug

Boiler fittings are not capped by default. Should the user prefer to cap fittings, a set of plugs are available as optional. Standard plugs are G1/4” and G1/8”, in a set of combination that can match any possible choice.

Caps are bundled in a separated plastic bag.



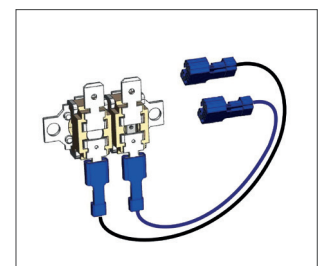
Dummy plug set

Safety thermostat (manual reset)

It is the device that senses the temperature of the boiler body and opens the circuit, automatically disconnecting power, when the working temperature exceeds the designed set point.

The cut-off thermostat is therefore a safety device available as option, with proper set point temperatures that comply with the production of hot water of steam.

Optional thermostat includes the cables connection to the power terminals of the boiler. Both phases of the heater are protected by the thermostat.



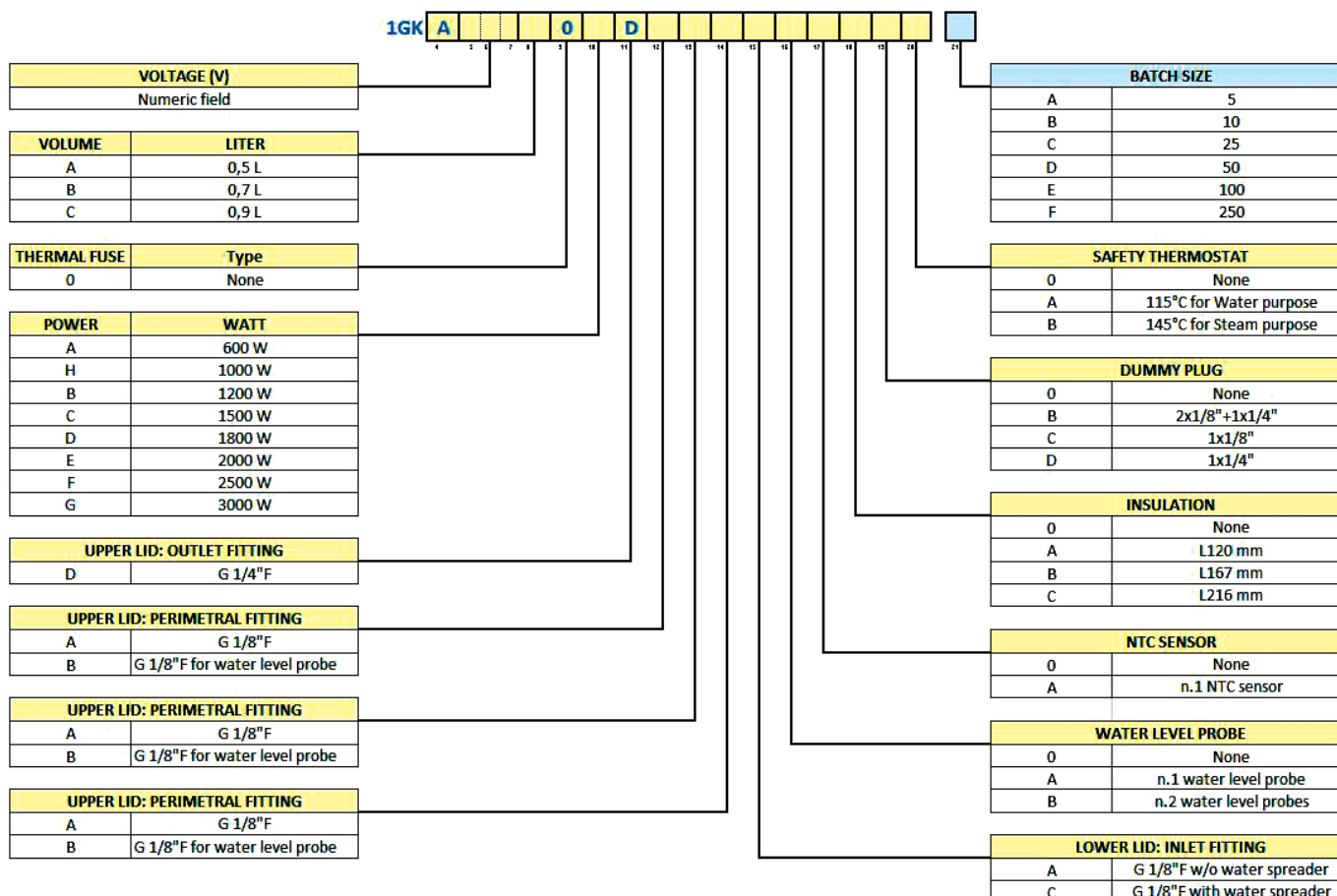
Manual reset
cut-off thermostat



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Configuration

Each configured Boiler has a unique 20 characters code that embeds all selected options. Note that in order to allow the configuration to be quoted the 21st character is necessary.



Example code: 1GK A 2 3 0 B 0 C D A A B C 0 A B C B D

The code refers to a Boiler for 230V 50Hz supply, 0,7 liters of capacity, with standard fittings on both the upper lid and fitting with water spreader on the lower lid, NTC sensor, melamine insulation, 1/8" dummy plug and a 145°C cut off thermostat, whose quote is required for a 50pcs delivery batch.

List of possible configuration

Below a list of possible configured boilers with default options. For further configurations, such as boilers with double water level probe, dummy plugs or with different perimetral fittings combination, please refer to BoPlam configurator.





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