

Choose carefully capacity (in liters) of the water boiler. At lowered capacity in liters, the water can boil and at elevated water does not reach the desired temperature. Before purchasing the boiler think over the number of consumers and volume of consumption of hot water. When calculating the engine capacity of the boiler it is necessary to consider that average per person daily consumption, considering taking a shower is about 30-50 liters of hot water. A seller or a company representative will help you to choose appropriate displacement of boiler. For more information please visit our homepage www.skamet.ee.

Dear customer.

You have purchased a quality water boiler, which will delight you for many years. This installation and operation manual was compiled in order to provide you more information. Initially, check that delivered to you boiler has not been damaged. At detection of damages during the shipping, contact the shipping company who delivered water boiler, or consult with the seller who sold you the boiler.

Functionality

The manufacturer confirms that the boilers meet the requirements of the CE marking, and their production complies with EN 15332:2007. The boilers are intended to heat water from the external heat source. Boilers of ferrous metal are not intended as a source of drinking water. Have also to be considered that the water can be rusty hue in the boilers of ferrous metal. The manufacturer is not responsible for unauthorized changes made by user of the boiler, and is not responsible for damages resulting from such actions. Scheduled maintenance required for normal operation, is also a part of functionality.

General information

In summer time the use of central heating system for heating the water is impractical and inefficient, since consumption of energy and fuel, and wear of equipment unreasonably overvalued compared to winter time, when the total volume of heated water is incomparably larger. Manufactured by us boilers connect to any water heating systems (stoves, cookers, sauna stoves, etc.)

Standard boilers are volumetric and water heats thro the so-called natural circulation through water heating exchanger when during the operation of the heater the circulation of water occurs (hot water rises up and cold presses down). Besides the standard boiler we also produce the two-system boilers: the two-body or with register (coil).

A pipe connection for connecting a tubular electric heating element (an electric heater) can be ordered for installation on our boilers. To use an external heat source for permanent year-round hot water consumption is reasonably and quite economical. Even when stoking ovens, cookers, etc. the preheated water enters into the boiler and electric heater switches off and water heating occurs from the heat exchanger. At the termination of the stoking the water heating comes from an external source of electricity (an electric heater). All of the boilers are necessary to be earthed. When should I install an external heat source? The answer is simple: when there is not enough of hot water.

A lot of consumers due to summer outages remain without hot water. Also in old houses, where hot water did not exist at all. For efficient use of hot water boiler the installation of it is necessary to make as close as possible to the place of consumption. For horizontal boilers - this distance is not more than 120 cm from the heat source, for vertical boilers - ranging from 180 cm. Hot water should reach the faucet maximum after four seconds. Between consumption and boiler in pipes remains hot water, which eventually cools, so the closer boiler is to the place of consumption of hot water, the less are the losses.

The information about standard boilers

We manufacture boilers both under pressure and open pass type. Sealed boilers that connect to the system and work under pressure - vertical or horizontal: for horizontal boilers (Pic. 1) provided brackets (two), can be obtained furthermore, for fixing the boiler to the wall. Brackets are attached to the boiler with the supplied bolts with a strong tightening and installation on an equable distance, taking into account the center of gravity. On the sidewise of established boiler is located $\frac{1}{2}$ inch nipple (hot water outlet), and below $\frac{3}{4}$ inch nipple (inlet of hot water from the heater) and in the bottom of the boiler $\frac{3}{4}$ inch nipple (tap of cold water to the heater) and $\frac{1}{2}$ inch nipple (supply of cold water from the track) . The horizontal boilers can be attached to the wall (connecting pipe in the right or left position) to the ceiling or with the installation on the floor (as Pic.1).

On the vertical boilers (Fig. 2) mountings are welded to the body. $\frac{1}{2}$ inch nipples at the bottom (for supply cold water from the track) and on the top (for hot water drainage) and two $\frac{3}{4}$ inch nipples on the left or right for connection it to the heater (you can get information from the seller).

Open pass boiler on legs (Fig. 3). Two $\frac{3}{4}$ inch sidewise nipples (on the left or on the right) of the boiler destined for connecting to the heater and one $\frac{1}{2}$ inch nipple located on the bottom of the boiler destined for water outlet from the boiler. It is possible to order extra nipples (with male thread) or coupling (female screw).

In boilers of ferrous metal during first months of operation is possible outlet of brown water that is caused by poor quality of water or muddy system, which eventually stops. If the process continues is necessary to install a clearing filter on the cold water. Not worth to use chemical cleaners for cleaning the boiler.

The constitution of water boiler

The boiler made of high quality sheet metal air pressure 4 bars tested, which corresponds to 6,5 bar of water. The boiler is targeted at prolonged use under not more than 3,5 bar water pressure in the trunk. At elevated pressure, have to be installed a pressure regulator. Thickness of metal of ferrous boilers is - 3 mm and stainless steel - 2 mm. The boiler equipped with two connecting pipes $\frac{1}{2}$ " : one for connecting cold water and the other for hot water outlet and two connecting pipes $\frac{3}{4}$ " for connection to inlet and outlet of the heat source (see Pic 1, 2 and 3).

At hourly heating the temperature increases by 30-50 °C, depending on volume of the boiler and capacity of the heating element.

It is necessary to know that the vertical boiler of the same size and capacity of the heater is on 15% efficient.

The features of stainless steel boiler

Stainless steel boilers are made of 2 mm quality sheet metal. All boilers are necessary to be earthed. For sealed stainless steel boilers, grounding performs through bolted connection on the boiler, which is connected to the grounding mat of the house or electrical system (grounding mat resistance not more than 10 ohms). This work have to be executed by a qualified technician who after installation checks the correctness of grounding (difference of voltage potential must not exceed 2 (two) volts). Keep in mind that zero cleat of electrical panel is not grounding mat! In the event of default of given condition consumer loses the right for a warranty. Manufactured sealed boilers of stainless steel are provided with a protective anode (the letter "A" on Pic. 1 and 2). Protective anode must be checked at least once a year, more often if necessary, and replace if magnesium anode layer is absent. Anodes are available in all large stores of building materials. The optimal water temperature in the boiler is 55-75 ° C, since at temperatures above 80 ° C occurs an intensive scale formation. Hot water consumption depends on the water temperature: at 40 degrees water consumption per person is on average 30-50 liters, at 60 degrees water consumption is 18-30 liters. Using stainless steel boilers first connection to the boiler must be made of stainless steel. If you have questions about the operating, you can get advice from the seller or manufacturer.

Critical information

!!! Incorrectly installed boiler can cause a dangerous situation.

Please read carefully the manual of the boiler before its installation and operation. Please keep in mind that in addition to manual should be considered the following:

- The person establishing the boiler must be appropriately qualified and licensed;
 - Boiler must be grounded. Grounding must be performed by a qualified electrician, with subsequent verification;
 - The safety valve is installed on the boiler;
 - The safety valve must be serviceable. Ensure that the valve is not over tightened;
 - Installation the boiler to the wall must withstand 3 times load of filled with water boiler;
- To produce connecting of the boiler use the scheme below (see Pic 1, 2 and 3).

Installation of the boiler

Installation of the boiler executes by the person having the license and / or relevant qualifications. Boiler is designed for connection to a central water system or low pressure hydrophore system. To avoid heat losses the boiler installs as close as possible to the place of consumption. Open pass boiler is filled with water manually and cannot be used without water.

!!! Manufacturer and seller are not responsible for defects or malfunctions due to improper installation of the boiler and ignoring the requirements of this manual.

!!! Boiler installs in a room where the temperature does not drop below 0 °C. If the temperature in the boiler installation room drops below 0 °C, it is necessary to drain the water from the system.

!!! When installing the boiler on the ceiling, attic or over living quarters should be possible to the emergency drain of water (through the branch pipes). All hydro connections

perform under current regulations of the country.

!!! The boiler must be protected with a safety valve. To avoid damage of the spring mechanism, do not over tighten the valve.

Connecting of the boiler

Pic. 1 - Scheme of connecting horizontal boiler. Pic. 2 - Scheme of connecting vertical boiler. Pic. 3 - Scheme of connecting open pass boiler.

The system operates as follows: (4) cold water enters the boiler from the head pipe. The water from the boiler supplies via pipe (2) to the heater where it heats and supplies back into the boiler through the pipe (1). Occurs a "so-called the natural circulation" of water through the heating element. While circulating the water in the boiler heats and through the pipe (3) feeds to a mixer S), where it mixes with cold water from the water-main and supplies to the faucet or shower device.

This scheme is for connecting the boiler under pressure. At boiling of water in the boiler the excessive pressure (steam) discharged through the safety valve (K).

Using open pass boiler (Pic. 3) the water adds to the boiler by scoop or through a hose. Through the pipes (2) and (1) occurs the circulation of water through the heater, while warming up. At the bottom of the boiler is welded connection pipe ½" for faucet or hose through which if necessary can be drain the water from the boiler.

For reliable operation of the boiler connection pipes to the heater have to be with a diameter ¾". To avoid hydraulic shocks boiler installs within 3 m from the heater. Using stainless-steel boiler first connections to the boiler have to be made of stainless steel (clutches, etc.) NB! Due to the fact that lately actively uses electrical appliances there is a risk of electro corrosion, so the boiler must be grounded. Grounding makes by wire section not less than 1,5 mm and grounds the body of the boiler to the grounding mat by electrical bolted connection. **Should be noted that zero cleat of the electrical panel is not grounding mat!**

Maintenance of boiler

Manufacturer assumes that the boiler maintenance provides by knowledgeable expert. Washing of the boiler is done at least once a year. Is also necessary flushing of heat source of water heating, frequency of which depends on the quality of water, volume of the boiler and the heat source device, but on average at least once a year. If problems occur, implement flushing immediately.

Data of the boilers

The table below shows the data of standard boilers:

- 1 - Name;
- 2 - Horizontal boiler (rim-fortification);
- 3 - Vertical boiler;
- 4 - Open pass boiler on legs;
- 5 - Boiler volume (liters);
- 6 - Ferrous boiler weight (kg) / metal thickness (mm);
- 7 - Stainless steel boiler weight (kg) / metal thickness (mm);
- 8 - Length or height of boiler (for open pass boiler with legs) (mm);
- 9 - Outer diameter of boiler (mm).

Warranty terms

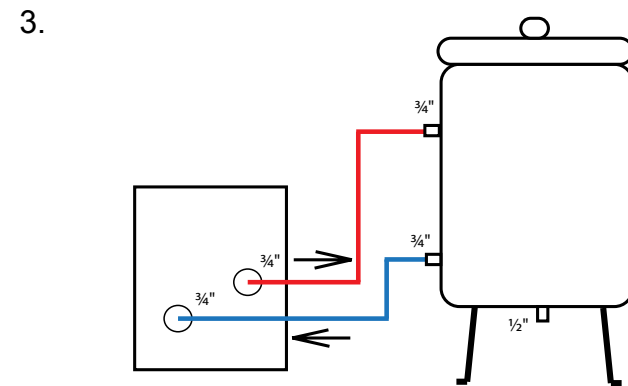
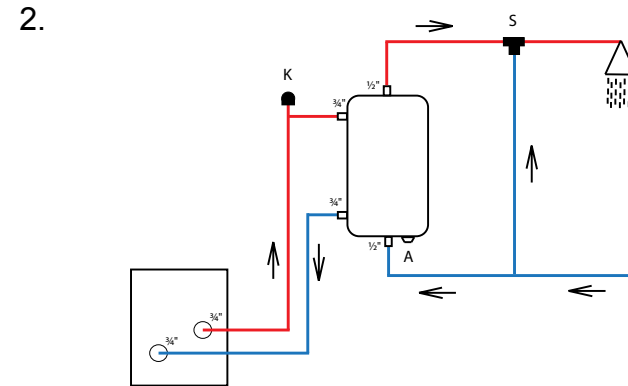
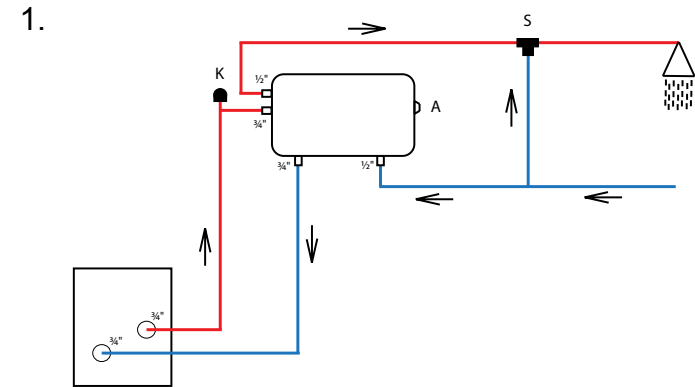
The manufacturer undertakes within 24 months from the date of sale from the factory or in a store for free repair or replace a broken boiler, if the user followed the requirements described in this manual for installation and use. The warranty is valid provided that the boiler is used properly and factory construction has not been changed. The claim is accepted if there is a check with the date of sale. Warranty is lost, if the defect is caused by:

- use of defective equipment (faucets, etc.);
- under the influence of chemical and electrochemical forces;
- under the influence of external forces;
- under a pressure in the network over 4.5 bar and the lack of pressure regulator;
- At water pollution, resulting the failure of safety valve (we recommend to use purifier with chilled water).

!! When making a claim the boiler must be left in operating position until the arrival of our specialist. The warranty becomes void if boiler is dismantled.

1	2	3	4	5	6	7	8	9
B-80 H	x			80	33 / 3	20 / 2	570	450
B-80 V		x		80	33 / 3	20 / 2	570	
BO-80			x	80	33 / 3	20 / 2	820	
B-110 H	x			110	40 / 3	24 / 2	680	
B-100 V		x		110	40 / 3	24 / 2	680	
BO-110			x	110	40 / 3	24 / 2	930	
B-130 H	x			130	45 / 3	27 / 2	860	
B-130 V		x		130	45 / 3	27 / 2	860	
BO-130			x	130	45 / 3	27 / 2	1110	
B-150 H	x			150	50 / 3	30 / 2	960	
B-150 V		x		150	50 / 3	30 / 2	960	
BO-150			x	150	50 / 3	30 / 2	1210	

1	2	3	4	5	6	7	8	9
B-80 H(40)	x			80	33 / 3	20 / 2	635	400
B-80 V H(40)		x		80	33 / 3	20 / 2	635	
BO-80 H(40)			x	80	33 / 3	20 / 2	885	
B-110 H H(40)	x			110	40 / 3	24 / 2	875	
B-100 V H(40)		x		110	40 / 3	24 / 2	875	
BO-110 H(40)			x	110	40 / 3	24 / 2	1125	
B-130 H H(40)	x			130	45 / 3	27 / 2	1035	
B-130 V H(40)		x		130	45 / 3	27 / 2	1035	
BO-130 H(40)			x	130	45 / 3	27 / 2	1285	
B-150 H H(40)	x			150	50 / 3	30 / 2	1195	
B-150 V H(40)		x		150	50 / 3	30 / 2	1195	
BO-150 H(40)			x	150	50 / 3	30 / 2	1445	



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