

CE

aQuator

Water Ionizer

mod. Silver; Classic

USER'S Manual



“Burbuliukas & CO”

1. GENERAL DEFINITIONS

The following definitions are used in the instruction:

- 1.1 **Water Ionizer aQuator** - is a household appliance, in which ionized or silvered water is produced by water electrolysis.
- 1.2 **Ionized water** - is acidic or alkaline water, which is simultaneously obtained in separate containers of the water ionizer.
- 1.3 **Alkaline water (catholyte)** - has a slight negative electrical charge and alkaline properties (7 ... 12 pH).
- 1.4 **Acidic water (anolyte)** - has a slight positive electrical charge and acidic properties (7 ... 2 pH).
- 1.5 **Partition** (membrane) - divides containers in two parts, is conductive to the ions but prevents water from mixing.
- 1.6 **Silvered water** - is water containing silver ions, concentration of which is measured in milligrams per liter (mg/l).
- 1.7 The appliance meets electrical safety and user safety requirements.

2. PACKAGE ITEMS

Title	Modification	
	SILVER	CLASSIC
Water Ionizer aQuator	1	1
Removable containers	2	2
Technical description and operating instructions	1	1
Holder with a round silver electrode	1	-
Packing box	1	1
Plate	1	1

3. TECHNICAL DATA

Two appliance modifications are manufactured: modification **SILVER** is used for production of ionized and silvered water, and modification **CLASSIC** is used for production of ionized water only. Their technical data is presented in the table below.

Title of parameters	Values of parameters	
	SILVER	CLASSIC
Container capacity, l	3.0	3.0
Power supply voltage, V~	110-230	110-230
AC frequency, Hz	50 - 60	50 - 60
Fuses, VP, A	5	5
Average duration of electrolysis when generating:		
- ionized water, min	5	5
- silvered water, sec	1	-
Silver electrode weight (purity 999.9), g	9.7+/-0.1	-
Power consumption when generating:		
- ionized water, W	110 - 230	110 - 230
- silvered water, W	2	-
Appliance total weight max., kg	1.2	1.2
Operating conditions		
- ambient temperature	From 5 to 40°C	From 5 to 40°C
- relative air humidity	From 80% to 25°C	From 80 to 25°C
- inlet temperature of water supply	From 10 to 25°C	From 10 to 25°C
- waterproof rating	IP54	IP54
- double and reinforced insulation		
- it must not be disposed of with common household waste		

NOTE. Using the ionizer without adhering to the manufacturer's instructions may cause a safety risk.

4. WATER

Both alkaline and acidic waters obtain and sustain absolutely different properties for particular period of time and are different than those of tap water from the mains. It leads to absolutely different ways of using alkaline and acidic water.

4.1. IONIZED ALKALINE WATER (catholyte) has a mild negative electrical load and alkaline characteristics. It is also known as living water. Alkaline water is soft, odourless and tastes like rain. This water stimulates vital energy and recovery of the body, reduces its acidity and improves health if used daily.

- Natural antioxidant.
- Natural stimulator.
- Provides alkaline to the body.
- Directly adopted.
- More oxygen.
- Lower tension of the surface.
- Reduces acidity of the body.
- Protects healthy cells.
- Strengthens immune system of the body.

4.2. IONIZED ACIDIC WATER (anolyte) has a mild positive electrical load and acidic characteristics. It is also known as dead water. Acidic water tastes sourly and has a typical acid and mild chlorine smell. Acidic water is mostly meant for external usage: disinfection of wounds, recovery of natural acidic medium of the skin, disinfection of premises and eco-friendly agriculture.

- Natural germicide.
- Strong oxidizing agent.
- Has an antiseptic, anti-allergic and contra-inflammatory characteristic.
- Destroys foreign bodies within the body as well as dead and damaged cells.
- Overcomes diseases caused by various germs.
- Destroys various plant pests, funguses and other reasons of diseases.
- Removes germs and microbes.

4.3. SILVERED WATER – water having silver ions the concentration of which is measured in milligrams per liter (mg/l). Silver is non-toxic, non-irritating to tissues, tasteless and safe to drop in the eyes. It is safe and effective, even for children and pets. It can be used externally, orally or inhaled into the lungs. Unlike common antibiotics, which are proven to cause fungus and yeast infections, ionic silver does not damage the intestines, liver or kidneys. Dosage amount depends on the product strength, and the reason for use.

- Silver has an opposite electrical charge as pathogens, and since opposites attract, it has the ability to effectively attract and disable invaders and transport them out of the body.
- Destroys bacteria, viruses, germ and other pathogens.
- Use on antibacterial disinfection

5. APPLIANCE DESIGN AND OPERATING PRINCIPLE

Fig. 1 General View of Appliance

1. Bottom container
2. Handle
- 3.4. Removable container with partition
5. Mark of the bottom water level
6. Mark of the top water level
- 7.8. Electrodes for ionized water production (flat)
9. Cover
10. Cable of cover connection
11. Contact for connection of a silver electrode (mod. Silver)
12. Holder with a round silver electrode (mod. Silver)
13. Plate



- 5.1** The appliance consists of a bottom container (1), removable containers (3; 4), a cover (9) and a plate (13). (See Fig. 1.)
- 5.2** The bottom container (1) is the ionization container. It has a side-mounted handle (2). Two round removable containers (3; 4) separated by membrane are fitted in the container (1). There are two marks on the inside of the container (1): the lower (5) indicates the minimum and upper (6) – the maximum water level.
- 5.3** The cover (9) is equipped with flat electrodes (7; 8) and a round contact (11, modification Silver). These flat electrodes are used for the production of ionized water (modification Silver and Classic) and the round contact is for the connection of silver electrode (modification Silver). The cable (10) is mounted in the handle (9).
- 5.4** The cover (9) contains the appliance control scheme (see figure 2), controlled using buttons (14, 15, 16, 17, 18 and 19). Button (14) – on/off. Button (15) – stop the process. Button (16) – start the process. Buttons (17) and (18) – adjust parameters.

Fig. 2 Controlling the appliance

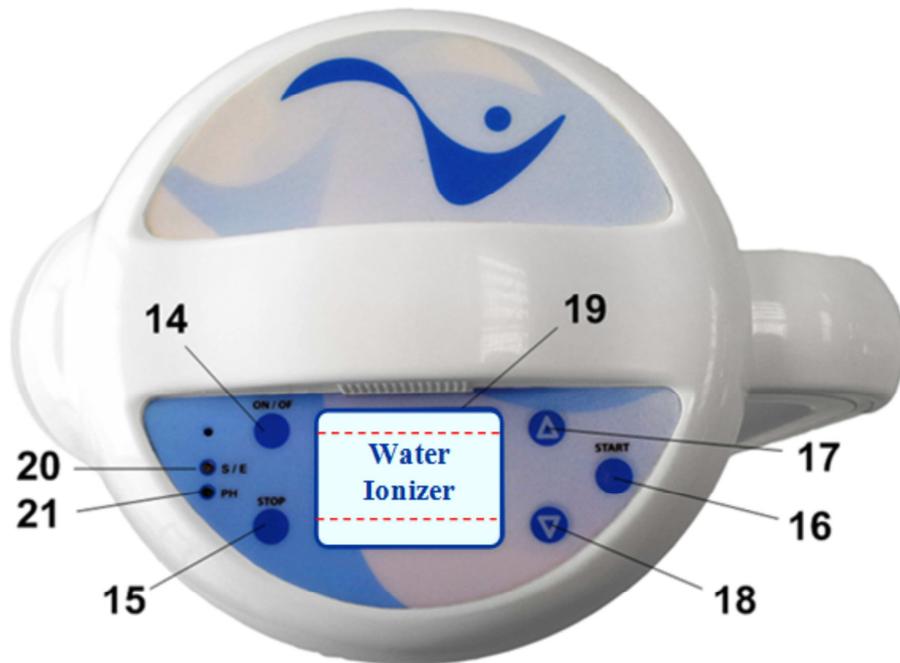


Figure 2 shows the control buttons and LED indicators. All control information is displayed on the LCD display (19). LED indicators (20 and 21) indicate the selected mode. The green LED indicator light (20) indicates the mode of producing silvered water, and the red LED indicator light (21) indicates the mode of producing ionized water. The flashing red light indicator (20) shows a fault (e.g. ionization process has been attempted when the container is empty).

5.5 Membrane is placed between the two removable containers (3; 4) as presented in **Fig.3**.

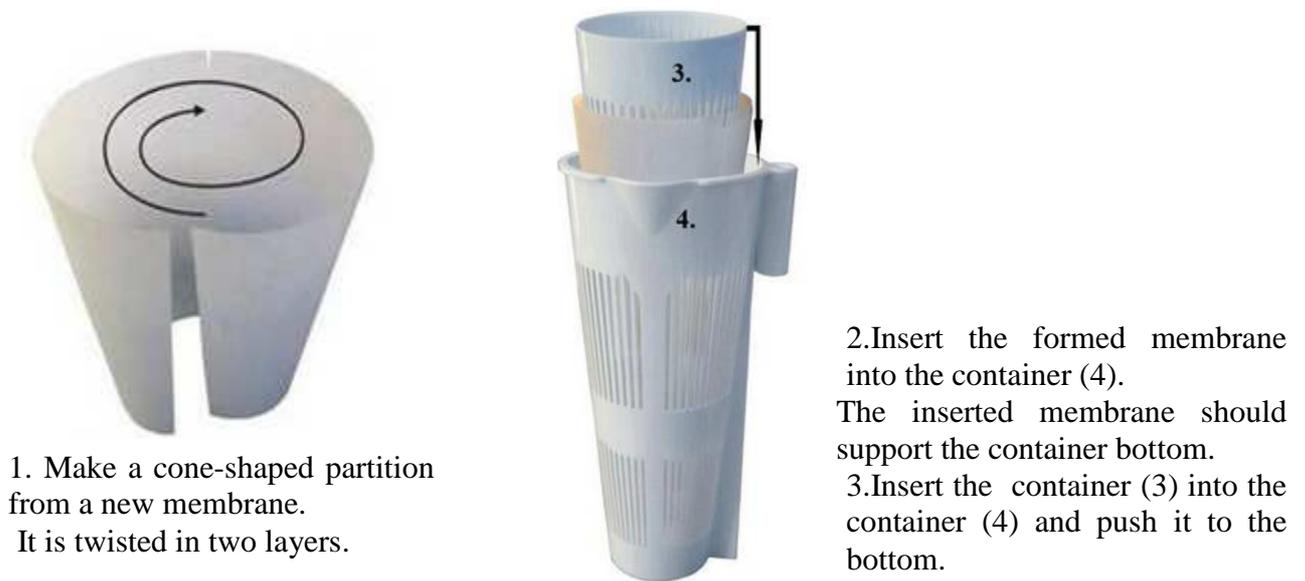


Fig. 3 Instruction for partition change

Water leaking from the appliance containers during running or after the change of the membrane does not affect the quality of produced ionized water.

5.6 Acidic water is generated at the anode (dark electrode) (8) and alkaline water - at the cathode (light color electrode) (7) during the water ionization.

5.7 The containers (3; 4) are removed when silvered water is produced (modification Silver).The appliance control scheme does not allow switching on the production modes of ionized and silvered water simultaneously.

6. PROPERTIES OF IONIZED WATER

6.1 The properties of ionized water are characterized by two values: **ORP** - oxidation-reduction potential and **pH** hydrogen ion value. **ORP** is characterized by positive or negative charges (mV) of ionized water.

pH values can vary from 0 to 14. Drinking water is neutral, it's pH is about 7.0. pH of alkaline water is 7 - 12 and pH of acidic water is from 7 to 2 .

6.2 Alkaline water (catholyte) - is soft, odourless, tastes like rainwater. Its ORP values are negative, pH fluctuates from 7 to 12 (the higher the number, the more alkaline water).

6.3 Acidic water (anolyte) - has a sour taste water with characteristic acid and weak chlorine odour. Its ORP values are positive, pH fluctuates from 7 to 2 (the lower the number, the more acidic water). It has bactericidal properties.

6.4 Ionized water should be stored in tightly closed containers protected from direct sunlight. It is not recommended to store in a refrigerator.

6.5 Table 1 and table 2 present the dependence of pH and ORP values. These pH and ORP values have been obtained by analyzing water in ICP-MS Measurement Laboratory on Faculty of Chemistry in Warsaw University. Values in tables are showed taking into account the errors of measurements. ORP values are given relatively to calomel electrode. Research report is stored in the enterprise. Working time depend on salt content. Appliance will let you choose pH values with (17) and (18) buttons by 0.2 unit. Water was tested with pH 7,4.

Table 1 when there is a dark electrode in a small removable container

Test. No.	Alkaline water (pH)	Alkaline water (ORP)	Acid water (pH)	Acid water (ORP)
1	8,00	-133	6,92	690
2	8,20	-163	5,88	723
3	8,40	-194	4,84	757
4	8,60	-224	3,80	790
5	8,80	-281	2,82	842
6	9,00	-472	2,46	985
7	9,20	-788	2,02	1134

Table 2 when there is a light electrode in a small removable container

Test. No.	Alkaline water (pH)	Alkaline water (ORP)	Acid water (pH)	Acid water (ORP)
1	9,00	-445	7,00	20
2	9,20	-493	6,98	49
3	9,40	-537	6,95	74
4	9,60	-584	6,93	100
5	9,80	-628	6,91	126
6	10,00	-674	6,89	151
7	10,20	-725	6,87	180
8	10,40	-769	6,84	206
9	10,60	-815	6,82	232
10	10,80	-859	6,80	257
11	11,00	-889	6,75	300
12	11,20	-902	6,67	361
13	11,40	-915	6,34	604

It is essential to know that a negative oxidation - reduction potential acquired by ionized alkaline water lasts a relatively short period of time. Keeping the alkaline ionized water in a closed container from which water is continuously used, after 24 to 36 hours the negative ORP value becomes practically zero or slightly positive. (These water pH values - 8.5 to 9.5 – last a much longer period of time: 4-7 days).

Therefore, **ionized alkaline water should be used as fresher as possible**, or at least it should be used within 12 hours from its production.

You can find ionized alkaline water in the shops. But this water do not have negative ORP, which describes water as natural antioxidant.

7. PRODUCTION OF IONIZED WATER (MODIFICATIONS SILVER AND CLASSIC)

- 7.1. Remove the appliance cover (9) by holding the bottom container with one hand and pushing the handle up with the other hand.
 - 7.2. According to one's needs insert the removable containers (3; 4) into the selected part of the bottom container (1). The **ionized alkaline water** is always produced at the cathode (light electrode), and the ionized **acidic water** is always produced at the anode (dark electrode).
 - 7.3. Pour cold water from a tap: at first into the removable containers (3; 4) and then - into the bottom container (1) up to the bottom mark (5).
 - 7.4. Put the cover (9) on the bottom container (1) so that the required electrode would enter into the removable containers (3; 4) according to one's needs. The cover and container handles should make a complete handle.
 - 7.5. Insert the corded plug (10) into the mains socket. Press the button (14). The LCD display (19) will show the message 'Water ionizer'. After 4 seconds the message 'Ionization process' should appear with the question: 'Is the dark electrode placed into the inner container?' below. If the dark electrode has been placed into the inner container, select 'Yes' by pressing the button (17)▲. Then the appliance will let you choose from pH values between 8.0 pH and 9.2 pH. If the light electrode has been placed into the inner container, select 'No' by pressing the button (18)▼. Then the appliance will let you choose from pH values between 9.0 pH and 11.4 pH. If you select the wrong regime, you will not be able to produce alkaline or acidic water of the required pH.
 - 7.6. Once you have selected the required pH value, press the START button (16). The red LED indicator (21) lights up. The appliance starts running. The required time is determined by the appliance itself: after it has finished the appliance will switch off automatically with an audible signal. The red light LED indicator (21) goes out.
- Note.** An audible signal is given after the appliance running time has passed.
- 7.7. Pull the plug with a cord (14) from the mains socket, take off the cover (10). Put the appliance electrodes on the plate (13), pour out the ionized water from the removable containers (3; 4) and then from the bottom container into tightly closed containers.
 - 7.8. Freshly made alkaline water is turbid and sometimes foamy (depending on the running time of the appliance). After pouring out the alkaline water into the container, sediments and foam precipitate on the bottom, the water becomes clear and suitable for consumption.
 - 7.9. Freshly made acidic water has a slight acid and chlorine smell and a sour taste (depending on the running time of the appliance).
 - 7.10. Water may be heated up to 40 degrees during the running of the appliance.
 - 7.11. Wash the removable containers (3; 4) and the container (1) with water.

DO NOT use water to wash the cover (9).



7.12. Clean the light electrode with a soft cloth moistened with 9% vinegar. The dark electrode does not require cleaning.

7.13. Dry the container (1), the cover (9) and removable containers (3; 4) without removing the membrane. After the appliance has fully dried, assemble and store it in a dry place.

Removable containers (3 and 4) should be dried in an upright, vertical position (NOT upside-down).

Notes:

1. **Strictly follow the sequence of operations on using the device**
2. Use tap water for preparation ionized water.
3. It is recommended to pour out (do not use) the produced ionized water after the first use in a new appliance or after the change of the membrane. **The membrane is made from a special material suitable for electrolysis. Do not use other materials than those specified by the manufacturer.**
4. After taking the removable containers (3; 4) out of the container (1) the membrane may slightly leak through the bottom of the containers. It does not affect the production of ionized water. If the leak is more significant - the membrane must be changed.
5. Anode electrode (the dark) is produced by using rare inert metals (ruthenium and iridium) oxide mixtures on the titanium base. These electrodes have good electrochemical and physical-mechanical properties. Their longevity or life span is very high.

Anodes made from any other metal (except only for ruthenium, iridium and platinum) are not suitable for water ionizers as the emission of gases takes place in an acidic medium during the electrolytic. **Cl⁻** ions contained in the solution are soluble. In this way metal, from which the electrode is made, complex ions, from which Cr and Ni ions or their compounds are very harmful to human health, enter the acidic water.

The dark electrode must be replaced in case of damage of the electrode's covering layer.

8. PROPERTIES OF SILVERED WATER

- 8.1 Silvered water** is characterized by bactericidal properties.
- 8.2** The impact of silvered water depends on the concentration of silver ions: the higher the concentration, the stronger the impact and the sooner it starts.
- 8.3** Silvered water preserves its bactericidal properties for several months.
- 8.4** Silvered water is produced from drinking water. Filtered, spring water or water from water supply network settled for several hours is recommended.
- 8.5** Silvered water of low concentration is entirely clear, tasteless and odourless. It should be kept in an opaque container. If silvered water is boiled, silver sediments precipitate out and water loses the acquired properties.
- 8.6** If silvered water is consumed constantly, its concentration should not exceed 0.01 mg/l.(see Table 3.)

Table 3

Appliance running time (sec.)	Concentration of silvered water, mg/l	Appliance running time (min.)	Concentration of silvered water, mg/l
1 sec.	0,011	5 min.	0,51
2 sec.	0,025	10 min.	1,17
5 sec.	0,056	15 min.	1,95
10 sec.	0,115	30 min.	4,50
30 sec.	0,175	60 min.	9,52
60 sec.	0,339	90 min.	14,90
		120 min.	20,90
		150 min.	26,30
		180 min.	31,30
		200 min.	35,00

9. PRODUCTION OF SILVERED WATER (MODIFICATION SILVER)

- 9.1 Remove the appliance cover (9) by holding the bottom container with left hand and pushing the handle up with the right hand.
- 9.2 Fit the holder with the round silver electrode (12) on the contact (11) located on the cover (9).
- 9.3 Take out the removable containers (3; 4).
- 9.4 Pour water into the bottom container (1) up to the bottom mark (5).
- 9.5 Put the cover (9) on the bottom container (1). The cover and container handles should make a complete handle.
- 9.6 Insert the corded plug (10) into the mains socket. Press the button (14). The LCD display (19) will show the message “Water ionizer”. After 4 seconds the message ‘SILVERING PROCESS’. Select the silvering process duration: ‘1 s’ should appear. By pressing buttons (17) and (18) select the appliance run time according to **Table3**. There is no need to press the buttons repeatedly: press and hold until the numbers reach the required value. Then press the START button (16). The green LED indicator (20) lights up and the green progress bar on the display will show the progress of the silvering process. After the set time has finished the appliance will switch off automatically with an audible signal. The green light LED indicator (20) goes out. If you would like to stop the appliance earlier, press the STOP button.
- 9.7 **Attention! The appliance running time up to 1 minute is set in seconds and from 2 up to 60 minutes - in minutes.**
- 9.8 Unplug the plug with a cord (10) from the mains socket, take off the cover (9) .Put the appliance electrodes on the plate (13). Pour out the silvered water into an opaque container.
- 9.9 Clean the silver electrode (12) and the light electrode (7) carefully with a soft cloth. If the electrodes are heavy contaminated, clean them with a soft cloth moistened in 9% vinegar. Dark-colored fouling on the silver electrode does not affect the silvered water quality.
- 9.10 Wash the container (1) with water. **DO NOT use water to wash the cover (9).**
- 9.11 Dry the container (1) and the cover (9). After the parts have fully dried assemble the appliance and store it in a dry place.
- 9.12 During the production of silvered water for a longer time dark spots appear at the bottom of the container (1). They are caused by silver sediments. These spots do not affect the quality of ionized and silvered water and further operation of the appliance.

10. SAFETY REQUIREMENTS

10.1 The appliance can be connected to the electric network only when the bottom container (1) and removable containers (3; 4) are filled with water and the cover (9) is on.

10.2 It is forbidden:

1. To take the cover (9) off the bottom container (1) when the appliance is plugged to the mains.
2. To run the appliance near the open flame and sparkling appliances.
3. To switch on the appliance for a longer time than that specified in the instructions.
4. To disassemble the appliance!
5. To keep cover (9) **upside-down** after using.
6. To use water for washing the cover (9).

Keep the appliance away from children and do not leave it unattended.

11. TROUBLESHOOTING

No.	Breakdown signs	Possible reason	Solution
1.	The appliance does not switch on, the indicators do not light on, electrolysis is not running	No power supply voltage Appliance is broken	Check for power supply voltage Contact the manufacturer or its representative
2.	Ionization is weak: water of lower concentration is produced during the set time	Contaminated membrane The light electrode is contaminated	Change the membrane. Clean the electrode with vinegar
3.	The message 'Cover is open' is constantly displayed	The cover was closed wrongly The inner container magnet is lost	Close the cover rightly Insert the missing magnet
4.	The message 'Silvered water' is constantly displayed	The inner container magnet is lost The magnetic sensor switch for the 'Silvered water' is out of order	Insert the missing magnet Contact the manufacturer or its representative

12. WARRANTIES

- 12.1 The warranties are valid for 24 months from the date of sale if the user has not violated the requirements of this instruction.
- 12.2 The defective appliance has to be delivered to the store where it was purchased or to the manufacturer during the warranty period.
- 12.3 The warranty is not applied if the appliance is damaged mechanically or it has been used without adhering to the instructions.

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Warranties information:

Date of sales

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Signature

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