

"IKAR" SCIENCE AND RESEARCH CENTER

The development was awarded prestigious awards at
international salons:



Gold medal,
Geneva, Switzerland, 2004

Silver medal,
Brussels, Belgium, 2003

Bronze medal,
Geneva, Switzerland, 1994

IKAR

PASSPORT
AND
OPERATION MANUAL

Izhevsk

Attention! Carefully read the present passport prior to starting up the device.

1. Purpose

"IKAR" device (mod. 01m), hereinafter referred to as the device, is designed for production of activated drinking water of the highest quality with predetermined mineral composition and antioxidant properties*.

The device provides:

- ✓ correction of ion composition of mineral elements in water (Ca^{2+} , Mg^{2+} , K^+ , I^- ...);
- ✓ water contains antioxidant properties;
- ✓ additional water disinfection;
- ✓ automatic control of all basic elements.

In the device "IKAR" (mod. 01m) for pre-treatment of inlet water must necessarily:

- ✓ **Use a reverse osmosis system with a storage tank and an electric valve** (<http://ikar.udm.ru/files/pdf/dop-01m.pdf>).

With the help of this device, it eliminates all the disadvantages inherent in these systems (patents RU 2299859, 0074909, 0023302, 00145022, <https://eng.ikar.udm.ru/sb/sb43-1e.htm> , <http://ikar.udm.ru/sb/sb44-1.htm>).

It has been proven that water after reverse osmosis systems is:

- ✓ distilled (demineralized) and virtually undrinkable;
- ✓ de-ionized (oxidated) as its oxidation-reduction potential (ORP) measured relative to silver-chloride electrode is positive +200...+400 mV.

* activated water solutions with antioxidant properties - liquids transferred into unbalanced thermodynamic state with ORP revised into negative values (liquids with vortexes - localized resonance microcluster structures – http://ikar.udm.ru/c_n_aw.htm).

The use of new unique activation technologies based on patented devices and methods has made it possible to create a device of a fundamentally new generation for the preparation of drinking water of the highest quality (DWHQ) with resonant microcluster structures. Currently the device has no analogs in the world (<http://ikar.udm.ru/files/pdf/ikar-info-water.pdf>).

The device is equipped with a built-in controller, a display, an automatic dispenser-mineralizer and three flow sensors, with a two-level display system - monitoring the operation of osmosis systems (purification), activation (water ionization), mineralization (optimization of the mineral composition).

The closest analogs of drinking water obtained at the «IKAR» device (mod. 01m) are the drink "Your Health" (<http://gepatitunet.ru>, <http://ionvoda.ru>, ~400 rub/l) and the drink obtained using microhydrin (~100 rub/l).

2. Operation conditions

2.1. Standard requirements

- Relative humidity of ambient air up to 80% (at 25 °C).
- Ambient temperature +5...+32 °C.
- The device should be installed inside the living area.

2.2. Source water requirements

- Source water temperature +10...+30 °C.
- Mineralization of water in range 3...30 mg/l.
- Water flow through device in range 6...20 l/h.
- Pressure not more 6 atmospheres.

3. Technical characteristics

| | |
|--------------------------------------|-------------|
| Maximum capacity, l/day | 50 |
| Mineralizer volume, l | 0.6 |
| Changing of ORP (Δ ORP), mV* | -250...-600 |
| AC voltage, V | 100...240 |
| Power supply frequency, Hz | 47...63 |
| Maximum power consumption, Wt | 25 |
| Nett weight, kg | 3 |
| Dimensions, mm | 300×350×90 |

* see measurement of unbalanced water solutions ORP ("Agony of choice of instrument for water ORP measurement..." – <http://ikar.udm.ru/faq.htm>, <http://ikar.udm.ru/dsi-2.htm>).

4. Completeness



1



2



3



4

Pic. 1. Completeness of the device.

- | | | |
|----|------------------------------------|------------|
| 1. | Activation and mineralization unit | - 1 pc. |
| 2. | Indicating unit | - 1 pc. |
| 3. | Power adapter | - 1 pc. |
| 4. | Plastic connecting tube | - 2 meters |
| 5. | Mineral supplement * | - 1 set. |
| 6. | Passport | - 1 pc. |

* mineral supplement kit "Severyanka +" is already poured into the mineralizer.

5. Device and principle of operation

5.1. Description

Reverse osmosis system unit represents 5 staged filtration system which principle of operation is based on reverse osmosis technology. Source main water first passes through 3 primary filters (Pic. 3). At first stage primary filter (1) filters mechanical impurities. Second stage filter (2) with activated carbon removes odor and residual chlorine from water. Third stage filter with carbon cartridge (3) removes organo-chloride substances, bad tastes and odors. After passing through three stages filtered water comes into fourth stage - reverse osmosis filter (4). Diameter of filter membrane does not exceed 0.0001 microns and it infiltrates only water molecules and dissolved oxygen.

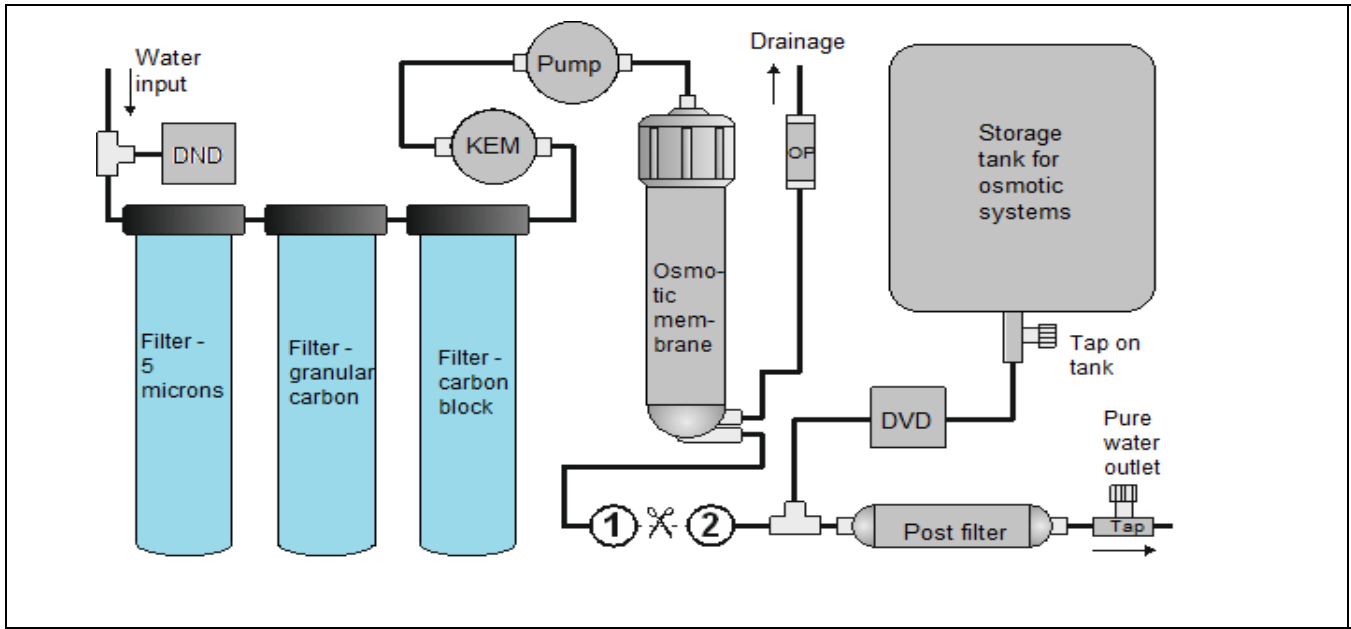
Further water treatment in device is performed in activation and mineralization unit. "Faraday cell" resonance activator of special design made of modern materials allows for activation of very fresh water, effective disinfection, improving cluster structures and shifting of ORP to negative values. As a result water obtains antioxidant properties.

When water passes through device mineralizer microelements (Ca^{2+} , Mg^{2+} , K^+ , I^-) useful for human organism are added thereto and further water comes into storage tank wherefrom it is supplied to clean water tap through pos-filter (5).

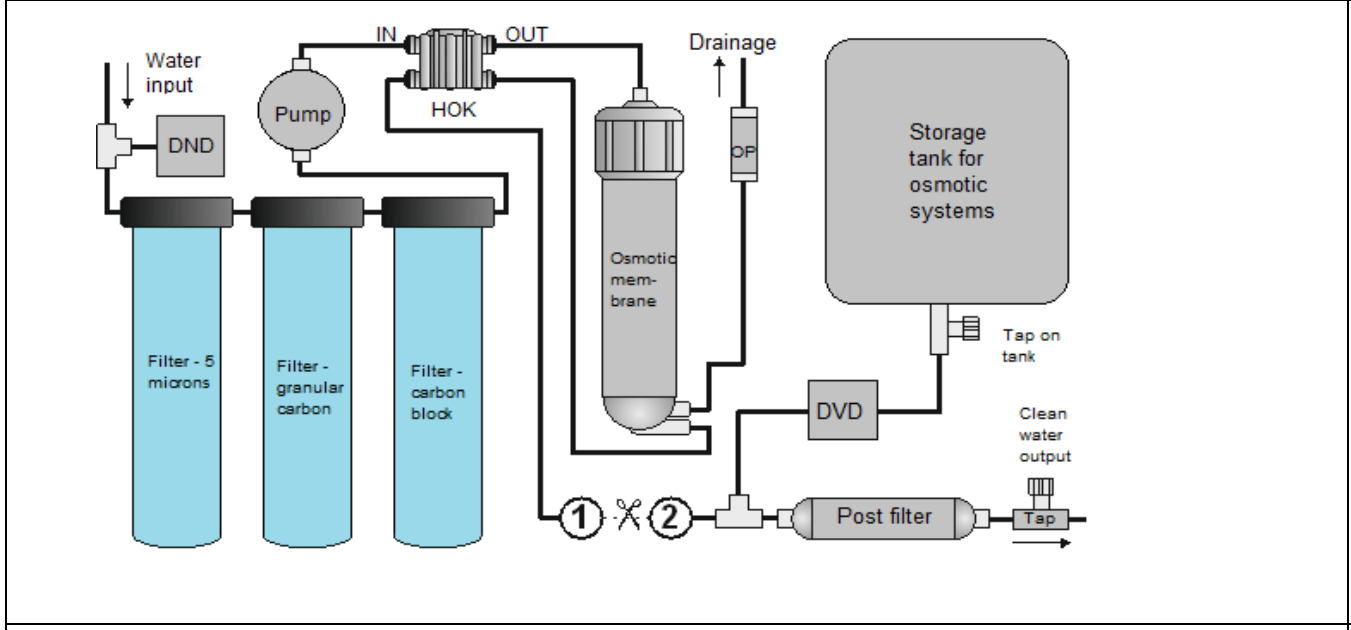
Antioxidant water filled into storage tank maintains its negative ORP for daily water intake.

Special sensors, located in the device give information about functioning of device by means of indication: green light - normal condition; red light - deviation from normal condition (pos.11, 12, 13 fig.4A). By means of keyboard and display it is possible to monitor and control device operation modes.

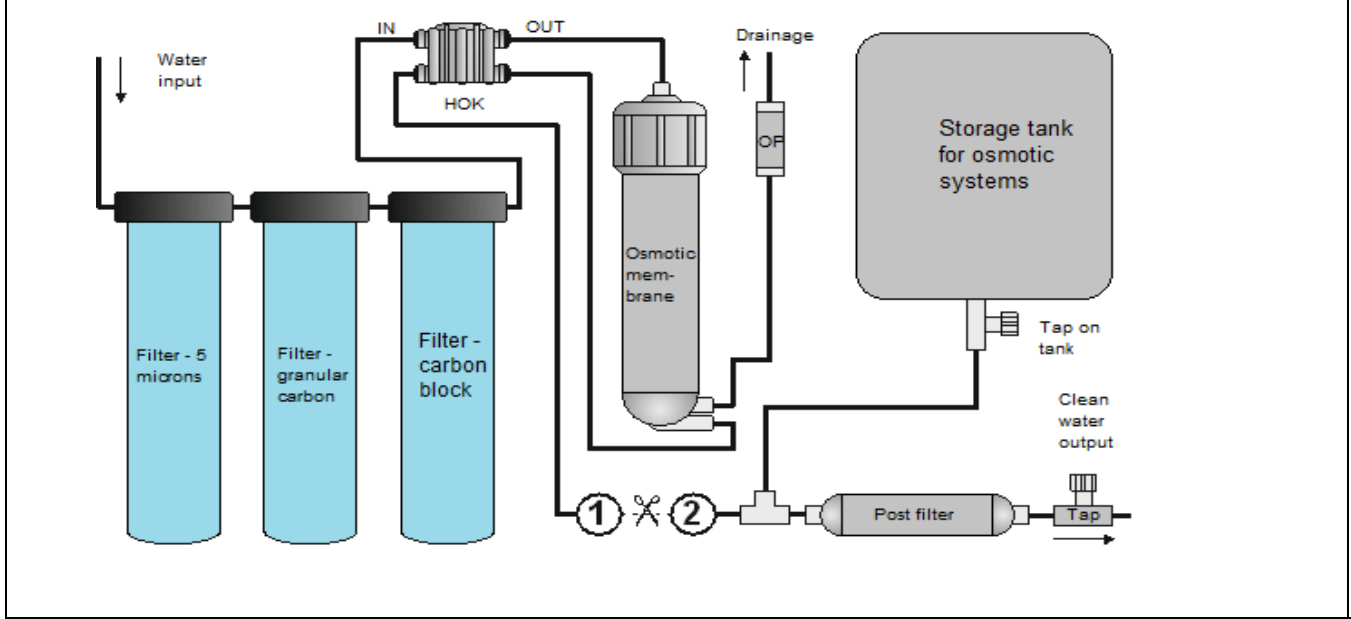
Device is running in automatic mode 24 hours a day. For this purpose water supply tap and tank valve shall be open and device power supply cables shall be connected to network. When device is running normally all indicators under the tap shall be of green light. Short time red light is acceptable when it is related to transient processes in device operation. All errors are displayed in menu "Condition" (see it. 5.2.). The activation block is activated only after changing the inscription "Start xxxxx" to "Tank set".



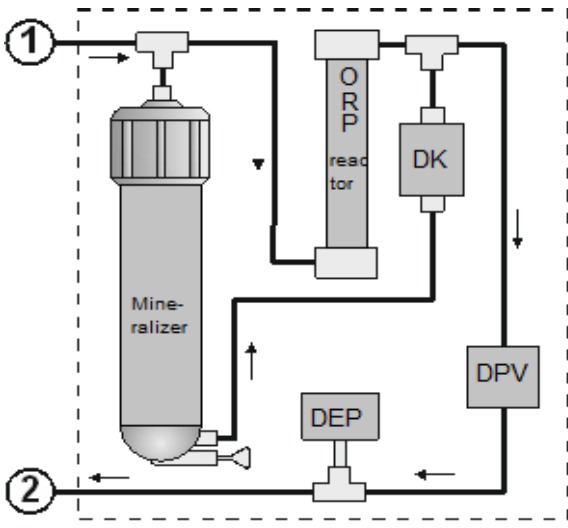
Pic. 2a. Block diagram of the connection to osmosis with a pump and solenoid valve.



Pic.2b. The block diagram of the connection to the osmosis with a pump and 4-way valve.



Pic. 2c. Block diagram of the connection to osmosis without a pump and solenoid valve.



Pic. 2g. The block diagram of the installation "IKAR" (mod.01m)

- CS** - conductivity sensor
- WFS** - water flow sensor
- HPS** - high pressure sensor
- LPS** - low pressure sensor
- WSV** - 4 way shut-off valve
- ISV** - input solenoid valve
- FL** - flow limiter
- MSV** - metering solenoid valve
- 1** - reactor inlet
- 2** - reactor outlet



Pic.2 e. Extras. set number 2 for osmosis processing.



Pic.2e. Add. kit number 2 for the completion of osmosis.

Additional kits are not included and must be purchased separately.



Pic. 3. Appearance of the unit and reverse osmosis unit:

- | | |
|--|---|
| <p>1 - primary filter No. 1 (polypropylene), 2 - filter No. 2 (granular coal), 3 - filter No. 3 (briquette coal), 4 - filter No. 4 (reverse osmosis membrane), 5 - filter No. 5 (coal post-filter), 6 - storage tank, 7 - clean water tap outlet, 8 - low pressure relay, 9 - outlet to drainage, 10 - main water inlet,</p> | <p>11 - inlet mineralizer fitting, 12 - mineralizer casing cover, 13 - mineralizer casing, 14 - mineralizer casing blind, 15 - activation and mineralization unit, 16 - power adapter connection, 17 - pH reactor connection (purchased separately), 18 - indicating unit connection, 19 - ORP reactor output (Ⓜ), 20 - ORP reactor input (Ⓛ), 21 - high pressure relay and outlet in storage tank.</p> |
|--|---|

5.2. Setup menu

"Main" menu

--Information--
Full tank

Displays the installation process.

Table No. 1.

| | |
|-------------------------------------|--|
| Tank full | - there was a filling of the storage tank, the installation went into standby mode. |
| Tank kit | - there was a withdrawal of water from the storage tank, the installation switched to the water intake mode. |
| Start xxxx | - the process of the installation transition from standby mode to operation mode, where xxxx is the number for diagnostics. |
| Replace additive | - salinity of the prepared water below the selected threshold |
| Replace filter | - the reverse osmosis membrane is contaminated. |
| Replace ORP reactor | - activation of the prepared water below the threshold. |
| Short circuit in the reactor | - reactor closure or strong mineralization. |
| Breakage in the reactor | - no contact in the reactor or no water. |
| Short circuit in the valve | - short circuit of wires or valve coil. |
| Break in valve | - no contact or open valve coil. |
| High mineral | - soured in open position valve stem. |

When the user uses any other menu item and does not use any key for more than 3 minutes in "**Full tank**" mode the device will automatically transit to "**-- Information --**" menu and turn off LED and display backlighting (if "**Energy saving**" is "**On**").

Condition
OK

Shows device stored errors condition. If there are no errors "**OK**" is indicated, otherwise - last stored errors (see table No.1). Using "**Selection**" key you can scroll all errors (around a circle). Errors are automatically reset when the device is started.

Parameters
Water

Enables enter into "**Water**" menu in order to control device parameters in "DWHQ" mode.

Language
Russian

Enables changing output language.

Accessories
None

Enables changing the type of used accessory (connected to connector Pic.3. Pos.18).

Indicators sound
On

Switching on and off audio signal informing about messages (critical).

Energy saving
On

Switching on and off energy saving function (extension of LED and display backlight service life).

Displ. contrast
-|||||||.....+

Display contrast adjustment.

Service mode

Service menu enter
(only for maintenance department personnel).

"Water" menu

Running hours
0

of the unit operation.

It contains information on the number of **minutes** the unit has been operating in the mode of preparing drinking water of the highest quality since the beginning

Mineral. (μSm)
100

You can choose the level of mineralization of prepared water (\sim water electrical conductivity). The device allows for water preparation with customized mineralization level. (**attention** – *preparation of water with customized mineralization level is performed only when the device is filling the tank and when mineral supplement is available in mineralizer reservoir*). When mineralization level of water sent to the tank is reduced lower than selected limit (decreasing of solution concentration in mineralizer) the device will beep and change the color of mineralization indicator from green to red.

Using "**Selection**" key you can choose required mineralization value ($\sim \mu\text{Sm}$): **50...500**;

"**Off**" - this mode can be used if you do not want to use mineral additives, or if you want to get osmotic ionized water, the "Mineralization" indicator will go out and the readings of the DEP sensor will be ignored (Pic. 2g).

Filter control
50

Control of reverse osmosis system membrane contamination is set.

When increasing membrane contamination above selected level the device will beep and change the colour of "**Osmosis**" indicator from green to red.

Using "**Selection**" key you can choose membrane contamination level ($\sim \mu\text{Sm}$): **30...70**;

"**Off**" - ignoring of membrane contamination level, "**Osmosis**" indicator goes out (Not recommended).

ORP power
100 %

Using "**Selection**" key you can set the level of prepared water activation ($\sim \Delta\text{ORP}$):

25%, 50%, 75%, 100% - activation's level;

"**Off**" – ignoring of water activation sensor, "**Activation**" indicator goes out and ORP reactor is switched off.

pH Power
Off

Using "Selection" key you can increase pH level of prepared water ($\sim \Delta\text{pH}$):

10% ... 100% - pH level;

"Off" - ignorance of water pH level sensor and pH reactor is switched off. (**«pH» reactor is purchased separately**).

Exit

Back to "Main" menu.

6. Safety precautions

- 6.1. Installation, use and maintenance must be carried out in strict accordance with the requirements of this passport. The manufacturer is not responsible for incidents related to improper installation, use or maintenance, performed in violation of the requirements.
- 6.2. If you are not familiar with plumbing appliances, consult with a professional plumber, or use his services.
- 6.3. Do not use the unit for the purpose of obtaining drinking water from unknown sources without its analysis and consultation with experts.
- 6.4. Do not install the unit on the hot water line.
- 6.5. Do not install the unit in too wet (more than 80% at 25 °C) rooms to avoid corrosion of metal parts and electrical contacts of the unit.
- 6.6. It is prohibited to store and transport the unit at temperatures below 0 °C without removing water from it.
- 6.7. Cartridge filters and membranes should be regularly replaced in accordance with the passport for your reverse osmosis system.
- 6.8. Turn off the power supply, water supply, and drain the water from all parts, if the installation is not used for a long time (more than 7 days) or its operation is terminated.
- 6.9. Do not blow air from storage tank.

All changes made to the menu are remembered automatically 10 seconds after the last key pressed.

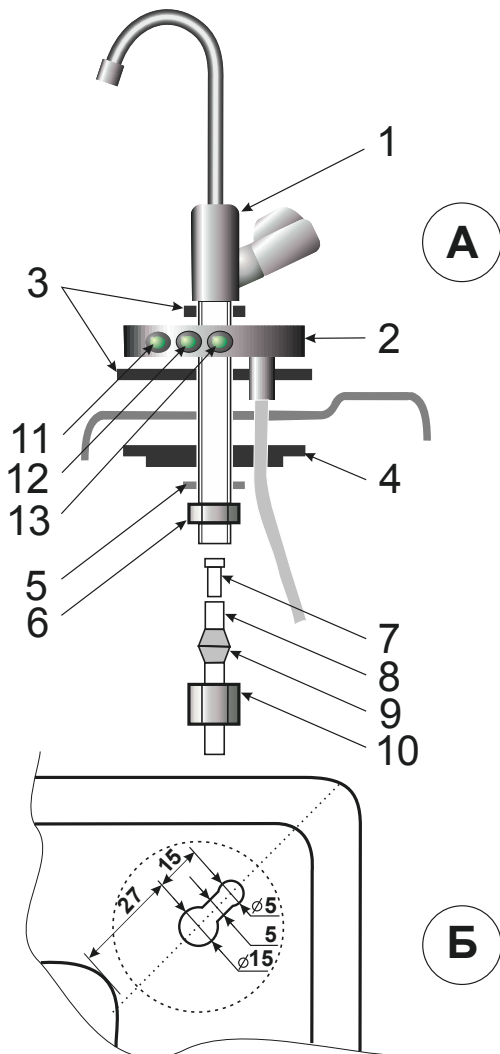
7. Unpacking

- 7.1. Unpacking the unit from the shipping container should be started, keeping it at least 4 hours at room temperature.
- 7.2. Remove all parts of the unit from the container, check the completeness of the unit.

8. Installation

Installation of indicating unit under clean water tap (in case of stainless steel wash-basin).

Mark and drill two holes, remove partition between them as shown in figure 4B. Grind edges and remove metallic chips. Install the tap according to Pic. 4A.



Pic 4. Tap installation.

- 1 – clean water tap,
- 2 – indicating unit,
- 3 – rubber gaskets,
- 4 – mounting disc,
- 5 – washer,
- 6 – nut,
- 7 – bushing,
- 8 – connecting tube,
- 9 – compression bushing,
- 10 – coupling nut,
- 11 – "osmosis" indicator,
- 12 – "activation" indicator,
- 13 – "mineralization" indicator.

Assembly of device

- 8.1.** Install the activation and mineralization unit near the reverse osmotic system unit.
- 8.2.** Take a plastic tube from the kit and with a sharp knife cut off the corresponding lengths of 2 tubes (see Pic. 3, Pos. 19-20) for the appropriate type of connection (see Pic. 2) and attach them.
- 8.3.** Connect the display unit connector (Pic. 1, Pos. 2) to the activation unit connector (Pic. 3, Pos. 18).
- 8.4.** Connect the power adapter (Pic. 1, Pos. 3) to the activation block connector (Pic. 3, Pos. 16).

9. Preparation for work

- 9.1.** Disconnect activation unit and reverse osmosis system (hereinafter ROS) from the electrical network.
- 9.2.** Close ROS water tap, open clean water tap and close storage tank valve.
- 9.3.** Disconnect tube from the fitting in mineralizer flask cover (Pic.3, Pos.11) and direct it into small reservoir.
- 9.4.** Connect ROS power cable to electrical network.
- 9.5.** Open ROS water tap. After several minutes water will pour out of the tube.
- 9.6.** Wait a few minutes and disconnect ROS power cable from electrical network.
- 9.7.** Connect the tube (see p. 9.3) to mineralizer flask cover fitting.
- 9.8.** Connect power supply unit of activation unit and ROS power cable to electrical network.
- 9.9.** After 30 minutes (time to flush the system) open storage tank valve, close clean water tap. Before the first use of the system drain water from the tank by opening clean water tap (the first priming).
- 9.10.** Check system tightness.

Notes:

1. During operation of the device, a slight sound is possible (presence of air in the system).
2. During the first set or after a long break in work (several days), after taking water through the tap, the indicators may glow red.
3. Disconnect and connect the reverse osmosis system to the mains only if it has a power cord (the system includes an electric pump).

10. Maintenance

The production of drinking water of the highest quality requires regular replacement of filter cartridges and mineral supplement. Indicating unit (see Pic .4A) indicates the necessity of such replacement, when the relevant indicator changes its light from green to steady red:

- position 11 - replacement of reverse osmosis membrane;
- position 12 - regeneration or replacement of reactor;
- position 13 - priming of new mineral supplement;

Frequency of replacement of "Severyanka +" mineral supplement of composition No. 4:

- when the level of mineralization «100» ~ 3500 liters
(Service life of mineralizer depends on the type of used mineral supplement, selected level of mineralization and water temperature.)

10.1. Replacement of mineral supplement

Perform works in sections 9.1 and 9.2., Then close the clean water tap. Disconnect the pipe from the fitting in the cap of the mineralizer flask (Pic. 3, Pos.11) and pour the entire contents of the mineralizer flask into any container.

Rinse the mineralizer flask inside and rinse thoroughly with distilled (or deionized) water.

Next, you need to pour the mineral additive ("Severyanka +" composition No. 4) in the amount of 600 ml into the body of the mineralizer to the very top (so that there is no air bubble). Tighten the cap tightly (Pic. 3, Pos.12) and perform the work in paragraph 9.

10.2. Entering diagnostic mode

Disconnect power adapter (Pic.1, Pos. 3) from electric network, press and hold "Menu" button, connect power adapter to electric network. Release the button when logo disappears.

The following menu will appear: "**D1.0 F9.0**" where digits after **D** – type of device, and digits after **F** - firmware version. Further when device is running in tank priming mode four groups of digits will appear which shall be recorded (or photographed) with 5 seconds interval during several minutes. Then these data shall be transferred to customer service when any problems with device operation occur. Other parameters can be viewed by pressing the "**Select**" key (number of additional parameters group that is the digit followed by # symbol).

11. Troubleshooting

| Trouble | Possible cause | Troubleshooting method | Remark |
|---|--|--|--|
| Milky water is coming out from clean water tap | Air in the system | | Air in the system - normal case when starting up the system. In case of normal usage it will disappear during 1-2 weeks. |
| Water is not coming into storage tank or is coming slowly | Low pressure in supply main | Eliminate | Water supply rate into storage tank (after membrane) shall be at least 100 ml/min. |
| | Cartridges of 1, 2, 3 prefiltering stages are plugged | Clean or replace cartridges | Cartridges may be quickly contaminated due to volley of mud into water pipeline or very dirty inlet water. |
| | Osmotic membrane is plugged. | Replace | Membrane may be quickly contaminated if hard water is used. |
| Little water is coming from storage tank | Low gage pressure in storage tank | Increase pressure | Normal pressure in empty tank shall be 0.4-0.5 atm. |
| Leakages | Fittings are not tightened | Tighten connections | |
| Water tastes or smells unpleasantly | Coal post-filter service life expired | Replace | |
| | Preservative residuals in storage tank | Drain <u>all</u> water from tank and refill it | |
| | Minimum water intake specified in passport is not provided | Drain <u>all</u> water from tank, follow article 9 and refill it | Water may stagnate and obtain unpleasant taste and smell |
| Indicators are out | Indicator cable plug bad contact | Disconnect and reconnect indicator cable | |
| Pressure relay clicks constantly | Inlet filters service life is expired or insufficient pressure in water supply network | Replace inlet filters and check pressure in insufficient pressure water supply network | |
| The low value of the shift ORP | The display “ Start xxxx ” is long on the display. | Replace filters and reverse osmosis membrane. | Due to the increased water conductivity at the inlet of the reactor. |

12. Manufacturer warranty

- 12.1.** The warranty period is 1 year from the date of purchase of the unit or 18,000 liters, whichever comes first.
- 12.2.** The unit is intended for domestic use with a daily water consumption of not more than 50 liters. Otherwise, the service life of the reactor of the activation unit will be significantly reduced.
- 12.3.** The manufacturer guarantees the operation of the installation if the consumer observes the specified operating conditions, safety measures and maintenance.
- 12.4.** Consumables: mineral supplement is not covered by the warranty; changing consumables during operation is the responsibility of the consumer.
- 12.5.** In the event of installation failures during the warranty period due to the manufacturer's fault, the installation should be returned to the manufacturer for warranty repairs along with this passport.
- 12.6.** If the installation was damaged by the consumer as a result of a violation of the rules of operation, the repair is made at the expense of the consumer.
- 12.7.** If there are any problems with the installation, unplug it, turn off the water supply and contact your local service dealer or manufacturer.
- 12.8.** The consumer has the right to refuse the goods at any time prior to its transfer, and after the transfer of the goods - within seven days.

Notes: The manufacturer reserves the right to make modifications of the device which are not specified in this passport and do not affect the functionality of the device.

13. Acceptance certificate

Device "IKAR" (mod.01m) serial № _____ corresponds to technical conditions 28.29.12-001-09377433-2017 and recognized as serviceable.

QCD representative _____

Stamp here

Date of sale _____



S&RC "Ikar"
426075, Izhevsk, a/ya 1619
ikar@udm.ru, <https://eng.ikar.udm.ru/>

14. Warranty repair

| Date of receipt | Date of issue | Description of repair | Printing service center |
|-----------------|---------------|-----------------------|-------------------------|
| | | | |
| | | | |
| | | | |
| | | | |

Attachment

Antioxidant water solutions properties

Medics consider oxidation-reduction potential (ORP) of solutions the most important indicator of their biological activity. Water and solutions based thereof obtained in devices "IKAR" with negative ORP are electron-donor relatively to mediums with positive ORP. Such water as electron-donor is an antioxidant which explains its biostimulating effect on body tissues. Water with parameters $\Delta\text{ORP} \sim -(200...400)$ mV stimulates physiological regeneration processes, particularly DNA synthesis of dodecadactylon mucosa cells, has immunocorrective effect, enhances detoxifying function of liver, stabilizes permeability of cell membranes and normalizes their energy potential. Ordinary drinking water with ORP $\sim (250...450)$ mV is electron-acceptive relatively to the cells and tissues of organism consisting of 80-90% of the water. As a result biological structures of organism undergo oxidative damage and aging.

During activation water, while maintaining complete biocompatibility (without any chemical additives) turns into effective antioxidant. It is reminder that vitamins E, C, PP, K and series of other vital substances being a part of food stuff are the most important antioxidants.

Oxidation-reduction reactions play a crucial role in exchange of substances and energy. In various diseases or harmful external effects on a living organism the imbalance of oxidation-reduction processes occurs.

Activation of oxidation processes in organisms tissues are traced in case of avitaminosis, harmful action of exogenous chemical agents (alcohol, nicotine poisoning, etc.) and physical factors (cold, fever, radiation injury, etc.), chronic emotional stress, cardiovascular diseases and other pathological processes and aging.

Numerous experiments on animals in laboratories, on farms, drinking of antioxidant water by volunteers showed that the activation of protective forces of an organism, decreasing of susceptibility to cold-related and infectious diseases occurs.

Note that attempts to obtain biologically active water simply by addition of chemical substances do not lead to similar results.

Numerous studies have shown the absence of toxicity and mutagenicity in antioxidant water.

Activation allows not only to disinfect source water, but also to obtain water with bactericidal and biostimulating properties.

Antioxidant water is a powerful stimulant of biological processes, obtain high extracting and dissolving properties. For example, propolis is dissolved in activated water heated to 40-50 °C during 4 hours, while under normal conditions it is dissolved only by alcohol during 24 hours.

Activated water is an immune stimulator and stimulates processes of physiological and reparative regeneration of tissues, normalizes metabolism, improve circulatory processes in tissues, stimulates tissue respiration, improves reliability of antioxidant protection of liver and myocardium, enhances detoxifying function of liver.

This water is easily absorbed by organism, in case of regular use human needs less food and as a result, gets rid of excess weight.

Use of this water improves metabolism, excretion of toxins and chemicals not absorbed by organism and leads to activation of all human organism systems, primarily activation of immune system work.

It is effective for the prevention of geriatric diseases, hypertension, atherosclerosis, diabetes and others.

It is effective in cosmetics, prevents the appearance of wrinkles by softening the skin and give it healthy appearance, when rinsing hair makes it shining and reduce hair loss.

The effectiveness of phytopreparations is significantly rising when using this water.

Activated water has a strong extracting properties reaching maximum at 70 °C, therefore herbal extracts infused with such water contain much more useful and necessary for treatment substances.

As a result the efficiency of their use is much higher.

The effectiveness of therapeutic baths and aromatherapy with the use of activated water increases.

Physiological sufficiency of drinking water is characterized first by ORP and its mineral composition, which must meet biological needs of human organism. In international and national documents of major industrialized countries minimum rates are established only for hardness of water. This parameter is expressed either directly by the value of total hardness, or in form of minimum concentrations of divalent calcium and magnesium. WHO guideline includes instruction on minimum level of total mineralization of drinking water - 100 mg/l, and optimum level of mineralization is 200...500 mg/l.

"Severyanka" composition (<http://www.severyanka.org/>) was designed and certified in Saint-Petersburg specifically for soft water in this region which can be used to normalize water for drinking and cooking by ions of calcium and magnesium. The composition is used by adding it to drinking water in accordance with instruction.

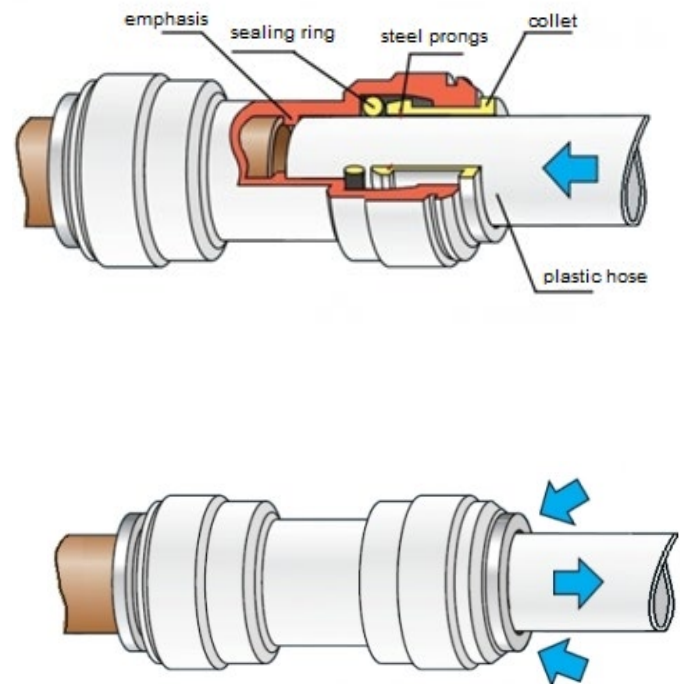
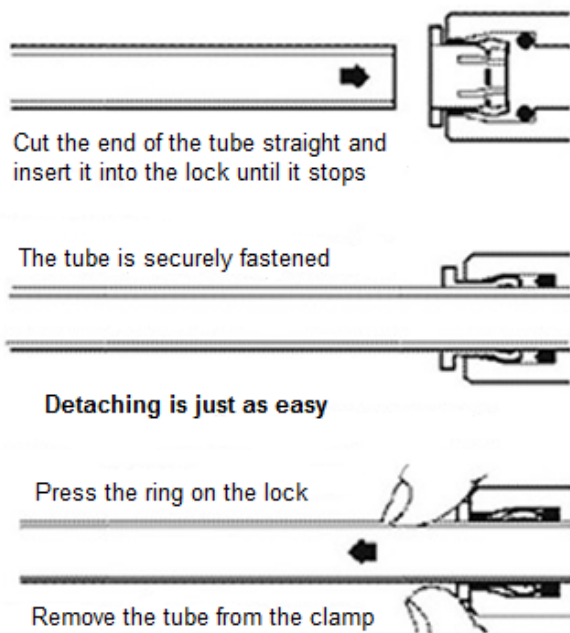
"IKAR" devices provide you with decontaminated, disinfected, activated drinking water. Using dispenser integrated into the devices, you can add thereto any mineral supplements (based on experts recommendations) which are missing in your region, facilitating thereby their absorption by your organism.

WISH YOU GOOD HEALTH!

Your guidebook – "MIS-RT" magazine.

<https://eng.ikar.udm.ru/mis-rt.htm>

FLEXIBLE TUBES CONNECTIO



Note: 2 types of fittings (quick-release plastic connections) may be used in the device:

- 1) **JACO-type**, coupling nut connection. Prior to connecting the special bushing is inserted into the tube. When nut is tightened it presses the tube fixing and sealing connection.
- 2) **JG-type**, connection without nut. Tube is fixed in fitting with mechanical clamp and rubber ring inside fitting seals connection.

Connecting tube to fitting. Insert tube in fitting to the stop. Tube is fixed with mechanical clamp. Apply additional force for sealing of connection. In this case tube will move approximately for 5-6 mm more and will be tightly pressed by fitting rubber ring. Slightly pull the tube out from fitting for checking connection.

Disconnecting tube from fitting. Ensure tube is depressurized. Press (symmetrically) mechanical clamp ring to fitting base. It will release the tube. Pull the tube out holding and symmetrically pressing the ring.

Attention! Tube end connected to fitting shall not be scratched or dented.

"Severyanka+" mineral supplement composition No.4.

Currently "Severyanka+" is the best balanced mineral supplement. If you did not manage to find it in markets of your city you can order it directly by LLC "Eco-project" (<http://www.severyanka.org/>).

"Severyanka+" mineral supplement

By physicochemical parameters composition No.4 shall meet standards specified in table No.1.

Table No.1.

| Ion concentration in water | | | |
|----------------------------|-------------------------|-----------------------|--------------------------|
| Ca^{2+} | Mg^{2+} | K^{+} | I^{-} |
| 75-85 g/dm ³ | 17-22 g/dm ³ | 4-6 g/dm ³ | 80-120 g/dm ³ |

Supplement is used as follows:

- at home; in preschool institutions and schools
- in the process of water treatment at industrial production of drinking water, beverages and food.

Transportation and storage rules:

- Transportation of supplement is performed in transport package by any transportation mode in accordance with shipping rules applicable for definite mode of transport.
- Transportation and storage of supplement is performed at temperature from -30 to 30 °C, no light admission.
- Guaranteed storage life of supplement - 18 months.

*Translated by Shironosova O. E.
Found a mistake?
Write me: shironosova.pr@gmail.com*

"IKAR" SCIENCE AND RESEARCH CENTER

Devices and environmental safety systems for home, office and hospital

https://eng.ikar.udm.ru/avk_com.htm



(mod.01os)

"IKAR" is a universal device for the preparation of drinking water with a given mineral composition and antioxidant properties, and for obtaining on its basis: detergent, disinfectant and sterilizing solutions.

Device modifications:



(mod.01m)

mod. 01os – to obtain activated drinking water of the highest quality with a given mineral composition and antioxidant properties, the device is equipped with a built-in controller and three flow sensors with a two-level display system - monitoring the operation of osmosis systems (purification), activation (water ionization), mineralization (optimization of mineral composition).



(mod.04)

mod. 04 – universal device for obtaining activated liquids with negative redox potential (drinking water, beverages, saline, blood) based on non-contact and contact activation of liquids for use in everyday life and various fields of national economy (medicine, agriculture, industry, oil production)



(mod. 2000)

mod. 2000 – mini-factory for obtaining the highest quality of drinking water, washing, disinfecting and sterilizing solutions, disinfecting water in swimming pools.