ELECTRIC BALL VALVE ACTUATOR GIDROLOCK WINNER

INSTALLATION AND OPERATING INSTRUCTIONS

Purpose and principle of operation of the electric ball valve actuator GIDROLOCK WINNER

The GIDROLOCK WINNER electric ball valve actuator ensures the safety of water supply and heating systems. In the event of a leak, the device turns off the water supply, and also notifies of an emergency with the help of a sound and light signals. When water gets on the electrodes of the wired WSP sensor, the water supply is automatically shut off, the corresponding sound and light signals are issued. The GIDROLOCK WINNER device consists of a ball valve and an electric actuator for controlling the ball valve (Photo 1).

Useful features & benefits

For reliable operation of the water leakage prevention system, the following functions are implemented in the GIDROLOCK WINNER electric ball valve actuator:

• **Reliable control of water leaks.** Electric actuator GIDROLOCK WINNER works with wired sensors WSP and WSP2 (Photo 2).

• **Self-cleaning function.** During the operation of equipment, problems often arise with the deposition of salts and dirt in pipes and ball valves, the so-called scaling. Once a month, the electric actuator performs a "cranking" of the ball valve (Photo 4), provided that the electric ball valve actuator is in the open state.

• **10 years of autonomous operation.** Fully autonomous operation. Estimated operating time of the GIDROLOCK WINNER electric ball valve actuator on 4 built-in batteries (AA 3000 mAh Lithium type) in standby mode is up to 10 years (Photo 3). It is possible to connect an external +12V power unit (not included, purchased separately, see "Connecting the GIDROLOCK WINNER device to an external power unit" on page 8).

• **Wide range of supply voltage.** The supply voltage to the electric ball valve actuator can range from 6V to 12V. Absolutely safe voltage for humans when used in domestic water supply systems.

• **Automatic control of the charge level of built-in batteries.** When the voltage of the built-in batteries drops below a certain level, a corresponding warning sound signaling is triggered - 10 sound signals with an interval of 30 minutes (it works with the autonomous operation of the electric actuator only).

• **Built-in remote control of the ball valve position.** Leaving the apartment, you can shut off (open) remotely the water supply using a conventional wired switch (Photo 23, page 7), located, for example, in the corridor.

• **Possibility of manual control of the ball valve position and quick disconnection of the electric actuator from the ball valve.** Now it is possible to install GIDROLOCK WINNER electric ball valve actuators instead of manual taps at the water inlet to an apartment or house, which saves space in the plumbing cabinet (Photos 9, 10, 11).

• **Installation in hard-to-reach places is possible!** During installation, the electric actuator can be disconnected from the ball valve (Photo 1, 7), which simplifies installation and makes it possible to install the device on almost any part of the water supply or heating system.

Photo 1. Ball Valve, Electric Actuator and Bracket

Photo 2. Wired Water Leakage Sensors WSP and WSP2

Photo 3. AA 3000 mAh Lithium Battery set

Fastening the electric actuator to the ball valve

The electric actuator is attached to the ball valve with a metal bracket (Photos 1, 5, 6, 7). To do this, connect the electric actuator and the ball valve by inserting the valve stem into the hole of the electric actuator gearbox (Photo 5), rotate the electric actuator body relative to the ball valve so that the holes for the bracket on the electric actuator body coincide with the grooves on the round mounting face of the valve. Then insert the bracket as far as it will go, its ends should be in the opposite holes of the electric actuator body (Photo 6) (slight effort may be required).

Photo 4. Internal "cranking" of the ball valve during self-cleaning

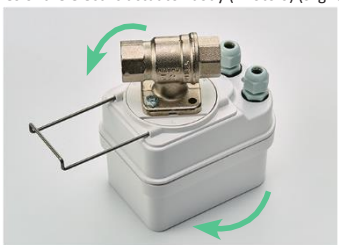


Photo 5. Fastening the electric actuator to the ball valve with a metal bracket

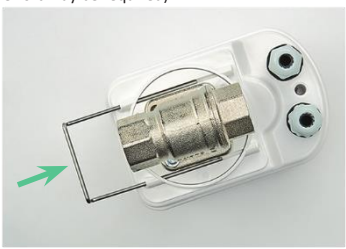


Photo 6. Fastening the electric actuator to the ball valve with a metal bracket

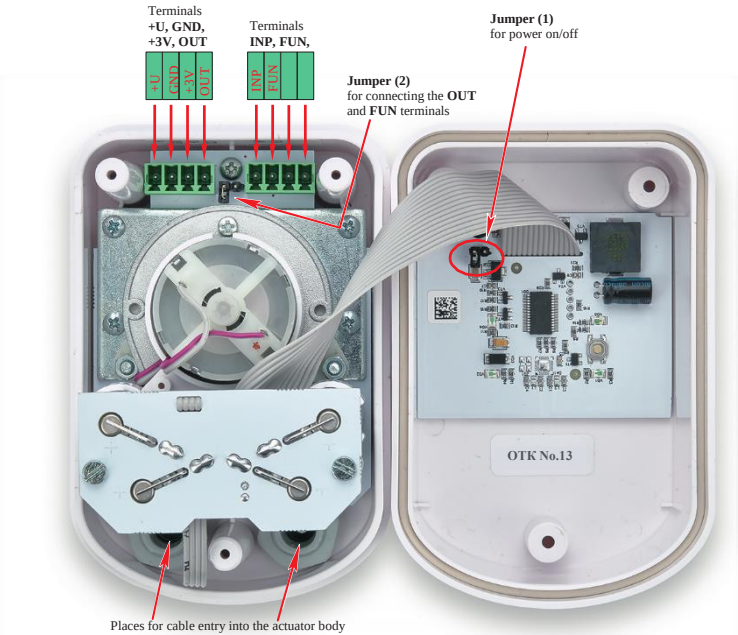


Photo 7. Electric actuator for ball valve control, with cover removed

Photo 8. Controls on the electric ball valve actuator body

Photo 9. Removing metal retainer

Photo 10. Manual control of the ball valve

Photo 11. Manual control of the ball valve

Manual control of the ball valve position

To manually control the position of the ball valve, you need to remove the metal bracket (Photo 9), then, without removing the electric actuator from the valve mounting face, turn the electric actuator body 90 degrees to close or open the ball valve (Photos 10 and 11)

Installation and connection of wired water leakage sensors WSP and WSP2

• Install water leakage sensors in places where water is most likely to appear in the event of leaks — for example, on the floor under the sink, bathtub, washing machine. If necessary, you can extend the WSP leakage sensor wires up to 100 meters. For this purpose, it is recommended to use a twisted pair cable, e.g.: FTP 2x2x0.35, UTP 2x2x0.35.

• Place the water leakage sensors on the floor with the electrodes facing down. All wired water leakage sensors are connected to the terminals in parallel. To connect a large number of sensors, it is necessary to use additional terminal contacts and junction boxes.

• Connect the WSP/WSP2 water leakage sensors to the GIDROLOCK WINNER electric ball valve actuator (Photos 12, 13, 14, 15). Terminals for connecting wired water leakage sensors: **INP, GND (INP, GND** — any color of the WSP/WSP2 sensor wire).

Photo 12. Insert the sensor wire into the cable gland

Photo 13. Terminals for connecting wired sensors — INP, GND

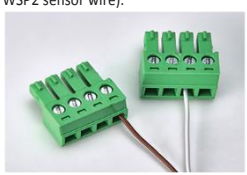


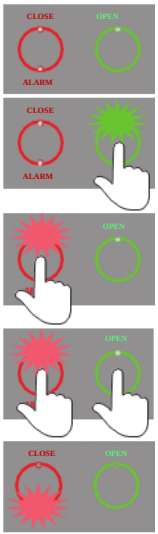
Photo 14. Connecting the sensor wire to the mating connector

Photo 15. Connecting the sensor to the electric actuator

Switching on for the first time

The GIDROLOCK WINNER electric ball valve actuator is supplied unassembled. A set of batteries is included in the delivery and installed in the housing of the electric actuator. To prevent the batteries from being discharged during transportation and storage, a jumper is removed on the control board, which is responsible for supplying power - a **jumper** (1) located on the inside of the electric ball valve actuator cover (Photo 7). **To switch the device on:** 1) open the cover of the electric actuator; 2) install the **jumper** (1) on the control board located on the inner side of the cover (Photo 7).

GIDROLOCK WINNER electric ball valve actuator controls



The **OPEN and CLOSE** buttons and light indicators are located on the actuator body: red LED **“CLOSE”**, green LED **“OPEN”**, red LED **“ALARM”**.

If the **OPEN button is pressed** and held for 3 seconds until a long beep, the actuator will open and all alarms will be reset. The end of the motor operation when the ball valve is fully open — two short beeps. If the ball valve is already open, there are two short beeps at once, the motor does not work.

If **button CLOSE is pressed** and held for 3 seconds until a long beep, the actuator will close and all alarms will be reset. The end of the motor operation when the ball valve is completely closed - two short beeps. If the ball valve is already closed — two short beeps at once, the motor does not work.

Pressing the OPEN and CLOSE buttons simultaneously results in light and sound indication of the state of the electric ball valve actuator. First, information about the status of the valve (open or closed) is displayed for 2 seconds, then the standby mode is turned on, if there are no emergency situations. In case of any abnormal situation, an indication occurs in accordance with the table “Emergency mode. Light and sound indication of the electric actuator mode” (page 5).

The green LED “OPEN” and **the red LED “CLOSE”** indicate the position of the electric actuator.

The red LED “ALARM” is intended to signal emergency operating modes of the electric actuator. In the absence of emergency situations, the red LED “ALARM” **does not light up!**

The **red LED “ALARM”** is continuously on (powered by an external DC 12V power supply) or blinks (powered by batteries) in the following emergency situations:

- There is a water leakage signal from the WSP or WSP2 wired sensor.
- Undervoltage of batteries in the electric actuator.

Light indication of the electric actuator position: LEDs “OPEN” and “CLOSE”

Power supply type:	With external DC 12V power supply		When powered by batteries	
Light signaling:	green LED **“OPEN”**	red LED **“CLOSE”**	green LED **“OPEN”**	red LED **“CLOSE”**
Electric actuator closes		flashing		flashing
Electric actuator opens	flashing		flashing	
Electric actuator open	continuously on		short flash 1 time in 5 seconds	
Electric actuator closed		continuously on		short flash 1 time in 5 seconds

Emergency mode. Light and sound indication of the electric actuator mode

When a water leak is detected (emergency), a long sound signal is turned on, then a short sound signal is turned on with a frequency of 1 time in 2 seconds. At the same time, the red LED **“ALARM”** and the red LED **“CLOSE”** blink (when powered by batteries) or are continuously on (when powered from an external DC 12V power supply).

Alarms are indicated by pressing the CLOSE and OPEN buttons simultaneously:

Alarm. Water leakage is detected by WSP wired sensor	**alternation of short and long beeps for 30 seconds, once every 30 minutes**
Emergency situation. Undervoltage in the batteries of the GIDROLOCK WINNER electric actuator	**10 long beeps once every 30 minutes**

ATTENTION! In the absence of emergency situations, the red LED “ALARM” does not light up.

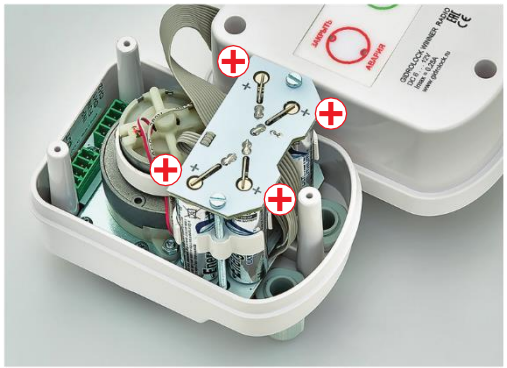


Photo 16. Electric actuator with top cover removed

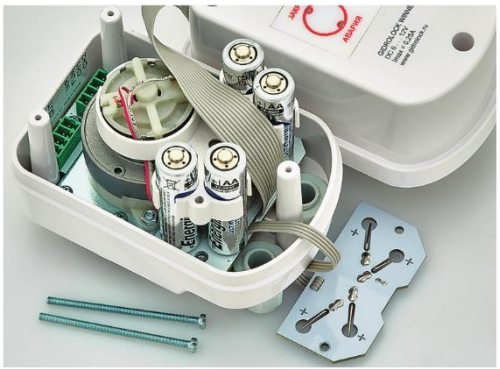


Photo 17. Contact plate is removed, batteries can be replaced

Installing and replacing batteries

The operating time of the electric actuator in autonomous mode depends on the type and quality of the batteries installed.

ATTENTION! The battery charge level automatic control function works only with the autonomous operation of the electric actuator. When a warning signal is received, the batteries in the electric actuator must be replaced.

ATTENTION! You can mute the warning sound signaling (until the next event) by simultaneously pressing the **CLOSE** and **OPEN** buttons on the electric actuator body (Photo 8). After replacing the batteries, the warning beep will turn off automatically.

To replace the batteries:

- Disconnect the electric actuator from the ball valve (Photo 9).
- Unscrew the 3 self-tapping screws on the cover of the electric actuator. Open the cover of the electric actuator (Photo 16).
- Unscrew the 2 long screws securing the 4 batteries and the contact plate (Photo 17). Replace batteries.

ATTENTION! Observe the polarity when replacing the batteries as shown in Photos 16 and 17.

- Gently tighten the 2 screws securing the 4 batteries and the contact plate.

ATTENTION! Do not overtighten the screws to avoid bending the PCB.

Photo 18. AC 220V power supply unit of the electric actuator

Photo 19. Connecting an external +12V power supply unit to the mating connector of the electric actuator

Photo 20. Electric actuator connector terminals for connecting an external +12V power supply unit, a wire switch, combining several electric ball valve actuators into a system

Connecting the GIDROLOCK WINNER device to an external power supply

Estimated operating time of the GIDROLOCK WINNER electric ball valve actuator based on 4 built-in batteries (type AA 3000 mAh Lithium) in standby mode (auto-cranking once a month, no emergency situations, remote water supply shutdown is not used) is up to 10 years. Frequent remote shutdown of the water supply, the presence of emergency shutdowns and other emergency situations with the shutdown of the water supply by the electric ball valve actuator leads to a significant decrease in the operating time with one set of batteries. In such cases, it is recommended to use an external DC 12V power supply (Photo 18).

When using an external power supply unit, it is necessary to connect the red wire (+12V) of the power supply to the +U terminal of the electric actuator, connect the black wire (-12V) of the power supply to the GND terminal of the electric actuator (Photo 19, 20).

ATTENTION! In some models of the power supply, the color coding of the wires may differ from the above. It is recommended to first check the description of the power supply and observe the polarity of the voltage in accordance with it.

Connecting the remote wired switch to the electric ball valve actuator

For remote control of the water supply, **any** mechanical switch with latching position for external or internal wiring (Photo 22) (not included) must be **connected** to the FUN and GND terminals of the electric actuator.

Terminals for connecting a switch for remote opening / shutting off the water supply: FUN, GND (shorting the FUN and GND terminals will close the actuator, opening these terminals will open the actuator) (Photo 24). For connection, it is recommended to use a twisted pair cable, e.g.: FTP 2x2x0.35, UTP 2x2x0.35 (Photo 23). The switch can be located in a convenient place for you (for example, in the corridor). Now you can shut off (open) the water supply remotely.

Photo 22. Switch for external wiring

Photo 23. Connecting a wired switch

Photo 24. Connecting a wired switch

ATTENTION! When a water leak is detected, signals from the remote water supply control switch are ignored by the device until the accident is eliminated.

ATTENTION! Do not apply voltage to the FUN, GND terminals.

Combining several electric actuators of the GIDROLOCK WINNER series into a system

In certain cases, it may be necessary to connect the GIDROLOCK WINNER electric ball valve actuator with other electric actuators of the GIDROLOCK WINNER series. For example, if the water supply system provides for shutting off cold and hot water, then two devices will be required to solve this problem: one GIDROLOCK WINNER electric ball valve actuator as the master and the other as the slave.

Several electric actuators can be connected to the master device (Fig. 1). Terminals for combining two or more electric actuators into a single system: **OUT, GND, FUN**.

The GND terminal of the GIDROLOCK WINNER RADIO electric ball valve actuator is connected to the corresponding GND terminals of other electric actuators of the GIDROLOCK WINNER series.

The OUT terminal of the GIDROLOCK WINNER RADIO electric ball valve actuator is connected to the corresponding OUT terminals of other electric actuators of the GIDROLOCK WINNER series.

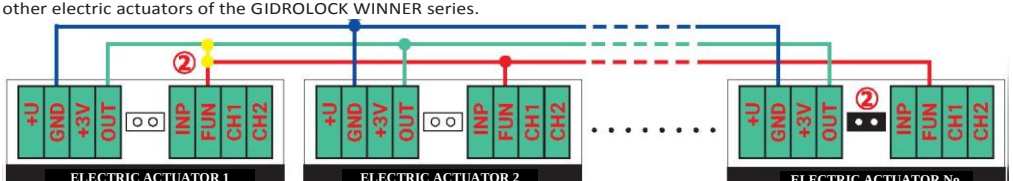


Fig. 1. Combining several electric ball valve actuators of the GIDROLOCK WINNER series into a system

The FUN terminal of the GIDROLOCK WINNER RADIO electric ball valve actuator is connected to the corresponding FUN terminals of other electric actuators of the GIDROLOCK WINNER series.

ATTENTION! In one of the electric actuators, connect the **OUT and FUN terminals** together or install a **jumper (2)** (Fig. 1, Photo 8).

- Close the cover of the electric actuator and screw the 3 self-tapping screws on the cover of the electric actuator.
- Check the functionality of the electric actuator after replacing the batteries.

Performance check

- To check if the water leakage protection function has been activated, open a hot and cold water tap (e.g., in a bathroom).
- Wet the sensor electrodes.
- The corresponding sound and light alarm will turn on, the electric actuator will cut off the water.
- Wipe the sensor electrodes dry.
- If necessary, press the OPEN and CLOSE buttons simultaneously and find out the type of alarm from the display.
- Press and hold the OPEN button on the electric actuator (about 3 seconds) until a long beep is heard.
- The electric ball valve actuator will open and the water supply will resume.
- Check the performance of the remaining sensors in the same way.

If there is a water leak and the water supply is blocked by the electric ball valve actuator (s), **do the following:**

- Eliminate the cause of the accident.
- Wipe dry the electrodes of the emergency water leakage sensor.
- If necessary, press the OPEN and CLOSE buttons simultaneously and find out the type of alarm from the display.
- Press and hold the OPEN button on the electric actuator for about 3 seconds until a long beep: the electric ball valve actuator will open and water supply will resume.

Operation and care

- Periodically (at least once every six months) clean the sensor electrodes from dirt. Use warm water and soapy water to clean the electrodes. Do not use solvents or abrasives to clean the electrodes.
- Periodically (at least once every six months) check the performance of the entire system.

ATTENTION! Additional information on the installation and operation of the GIDROLOCK WINNER electric ball valve actuator can be found at **www.gidrolock.ru**

GIDROLOCK®

ENGINEERING SAFETY SYSTEMS

GIDRORESURS, LLC
8 (495) 585-12-59
8 (498) 720-52-28
8 (495) 120-50-02
8 (800) 707-51-58
(free in Russia)
www.gidrolock.ru

Warranty Certificate

Dear customer! Thank you for purchasing our product.
The GIDROLOCK WINNER system will serve you for a long time and will protect you from troubles associated with accidents in the water supply and heating systems.
The warranty period for the GIDROLOCK WINNER system is 6 years from the date of sale. Batteries are not covered by the warranty period.
The conditions for fulfilling the warranty are:

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1. Availability of a completed Warranty Certificate for the GIDROLOCK WINNER system.
2. Correct fulfillment of all conditions for the installation and operation of the equipment in accordance with the operating instructions for the GIDROLOCK WINNER system.

Warranty obligations do not apply to products with defects resulting from mechanical damage, incorrect connection of system elements and failure to follow the installation and operating instructions.

Sale Date: ____ /_____ 20____

Signature of the seller _____

I have no complaints about the appearance and configuration of the product. I agree with the terms of the warranty.

Buyer's signature _____