pH and chlorine disinfection regulator

ASIN Aqua Redox
ASIN Aqua Redox Ext

User's manual

ASIN Aqua Redox automatically regulates pH and the concentration of free chlorine in water. A standard glass electrode measures the pH level, and a redox electrode measures the concentration of the chlorine disinfection. The measured values appear on a big touch screen which serves also for the system control and all settings. ASIN Aqua Redox is a compact system consisting of the control unit, electrode sensors and dosage pumps with an output of 60 ml/min. The system is mounted on the wall.
ASIN Aqua Redox S is in construction and function identical with ASIN Aqua Redox but it is designed to control the disinfection by salt water electrolysis in the systém ASIN Salt.
Both versions are delivered also in the design for the connection of an external display and pool water thermometer (the temperature is displayed together with the other regulated values on the external display).This design is marked by the suffix **Ext** (e.g. ASIN Aqua Redox Ext).

Technical characteristics	
Power supply	230 V, 50 Hz
Power demand	20 VA
Fuse	T80 mA
Overvoltage category	II
Protection	IP30
Climatic resistance	0-40°C
Weight	2200 g
Location	nástěnné
Levels measured	PH, redox potential, (water temperature)
Levels controlled	PH, Cl

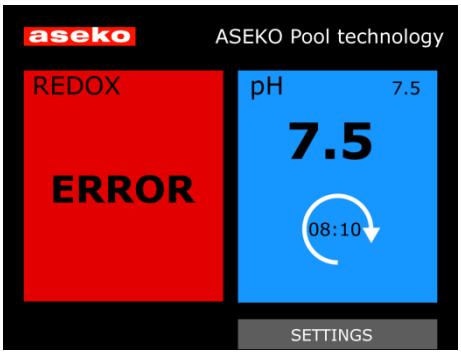
Installation

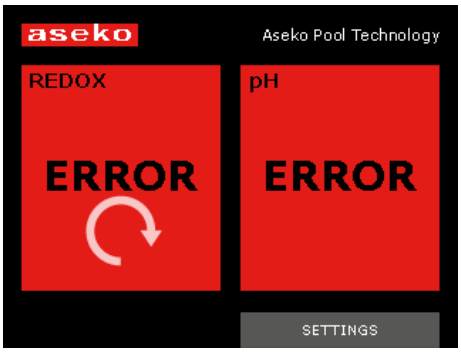
The connecting of the ASIN Aqua Redox system to a pool filtration circuit is illustrated in Fig. 1. Water leading to the measuring cells with electrodes should be hooked up after the cleaner pump, and the outlet should be placed before the cleaner pump or should go to the drain. Water is forced around the probes by the resulting pressure difference. The intake of the dosing pump is attached to the tank for the proper chemical agent, and the outlet leads through the feeding valves to pipes after the filter, by no means before the water intake into the measuring cells.
Screw the pH and redox probe into the measuring cells on both sides of the machine, then screw the contacts onto the probe connectors. Only use your hands (no pliers or wrenches) for any tightening.
ASIN Aqua Redox is turned on by connecting to the power source which must be the same as that one for the circulating pump of the cleaning device. Turning off the circulating pump must also turn off ASIN Aqua Redox to prevent incorrect dosing of chemical agents. Connect to the power source using an ordinary three-core cable. The cable is connected to a power outlet on the TNS network, equipped with an earth-leakage circuit breaker (ELCB) with a rated interrupting current of ΔIn =30 mA and a current capacity of at least 1A.

Taking into operation

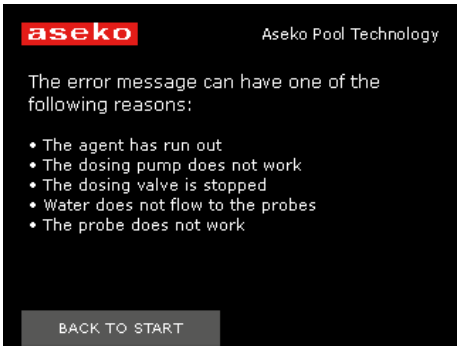
Turn on ASIN Aqua Redox by plugging it into a power outlet. The start screen appears on the display:

The device is checking the system and in case some errors occur, sends the error message e.g.

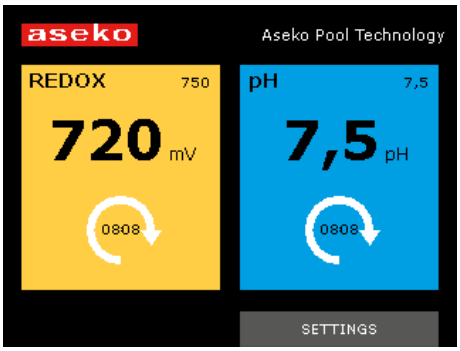




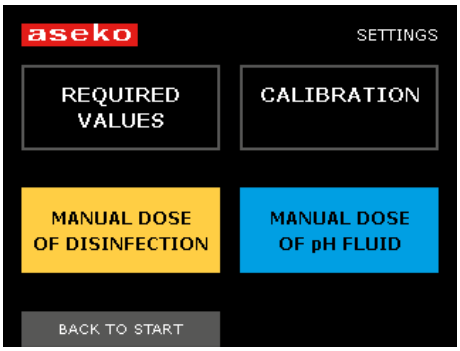
By touching the field Error possible reasons are displayed:



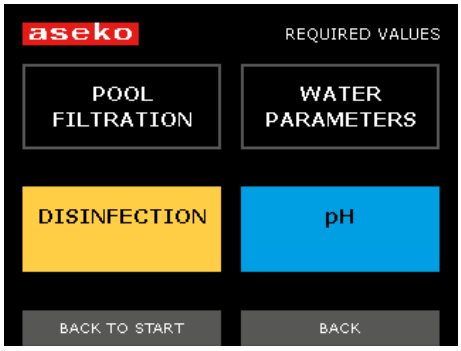
Is everything OK, the measuring screen appears:



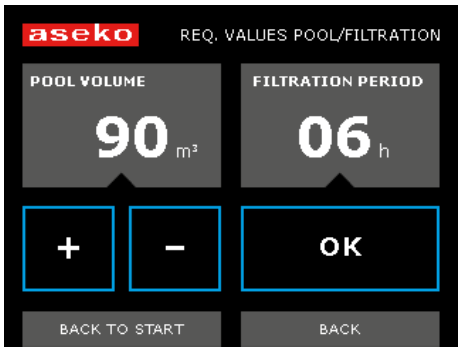
Now touch the field SETTINGS



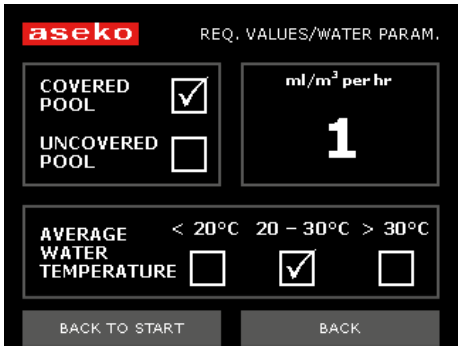
And here the field REQUIRED VALUES



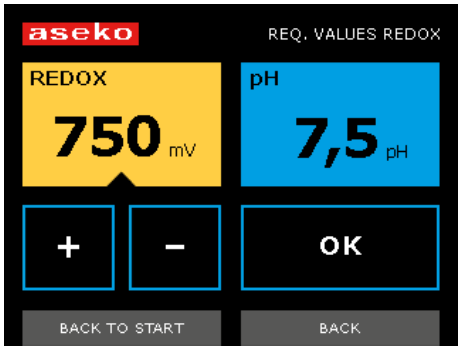
where by touching particular fields you invoke the menus for the insertion of the required values. From the field POOL and FILTRATION you come to



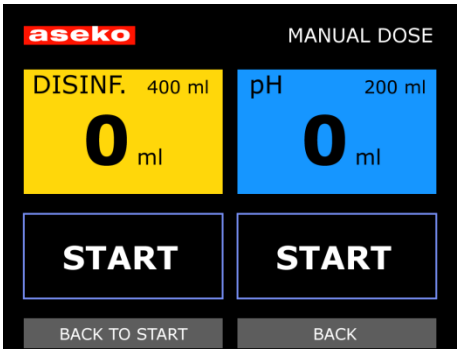
where the currently adjusted value is marked by the black wedge at the bottom of the gray field. The numerical value is set by the + and – buttons.
The field BACK TO START returns the measuring screen, BACK returns the previous screen.
The setting of WATER PARAMETERS



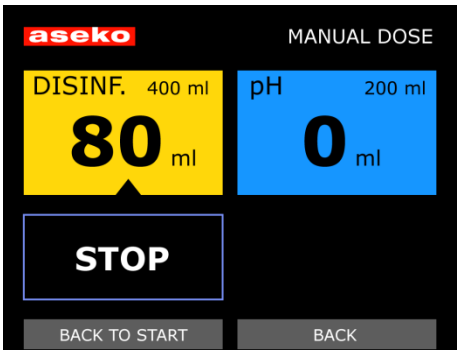
requires to fulfill the checkboxes. The device then computes the suitable disinfection dosis and displays it in the field „ml/m^3 per hour“.
The setting DISINFECTION as well as pH invokes the screen



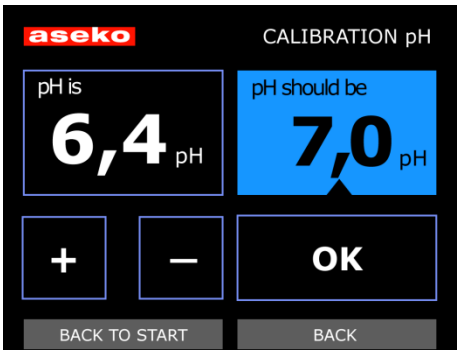
where we in the above described way adjust the redox-potential and pH value. In case of the new start of a pool with clean water (without any disinfection or other agents) we adjust 700 mV and 7.0.
Then we return to the screen SETTINGS and click on the yellow box MANUAL DISINFECTION DOSIS:



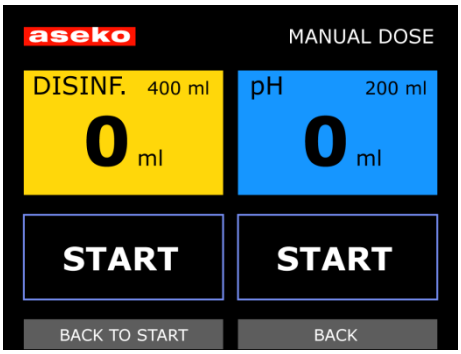
By touching the START box at the disinfection side we start the dosage. The inscription START changes to STOP, by which we stop the dosage after the required dosis (shown in the box) is reached. In the right upper corner of the box the maximum allowed dosis is displayed.

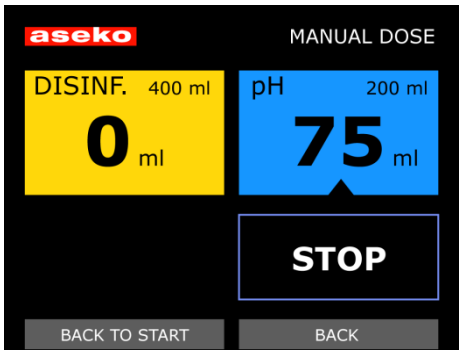


We let the disinfection in water thoroughly stirr and then measure with the manual tester the pH value. If needed we calibrate the pH probe. To do this, we open the menu CALIBRATION from the SETTINGS screen:



Here in the right blue box there is the preset regulation value. In the left black box there is the value measured by the pH probe that we now correct by the buttons + and – to the value measured by the manual measuring. It should be between 6.8 and 7.2, otherwise the manual dosage of the pH fluid must be made the same way as the manual disinfection dosage:





After the pH value has been adjusted, we measure the chlorine concentration with the manual method (e.g. DPD). According to the result we must correct the preset redox-potential. For example:
The preset value is 700 mV, we want to regulate for 0.6 mg Cl/l, pH is OK. After the first manual dosage the display shows 640 mV, by the manual test we have found 0.3 mg Cl/l. After the second manual dosage the display shows 720 mV, by the manual test we have found 0.5 mg Cl/l. To achieve the concentration 0.6 mg Cl/l we must increase se preset value (already now the redox-potential is 720 mV and the measured concentration is only 0.5 mg Cl/l). So we change the preset redox-potential by estimation from 700 to 740 and after 24 hrs we make th esame way the correction.

Do not dose any chemicals (including flocculants) directly into the skimmer (they would be drawn directly into the measuring probes, which would be destroyed).If it is necessary to pour any chemicals into the pool, turn off ASIN AQUA and shut off the water intake and outlet for the probes.
It is recommended to let on the circulation pump at least 6 hrs. a day in order that the sufficient filtration is ensured

Maintenance

ASIN Aqua Redox requires regular visual inspection and maintenance. Do not forget to test the water quality regularly and to check the pH calibration. Regularly check the connection points of pipes and chemical pumps for leaks.

Feeding valves for chlorine disinfection
During operation, feeding valves for chlorine disinfection may frequently become clogged, causing increased pressure in the spray tubing. This shortens the service life of the tubes in the pump. Complete blockage may cause a tube in the pump to burst. We therefore recommend cleaning the valves and replacing the pump tubes twice a year.

pH probe
The probe for measuring pH does not require any maintenance. During long periods between uses, it is best to keep the probe in its airtight case so that it does not dry out. The probe's service life is 1-2 years. We therefore recommend replacing it promptly.

Peristaltic pump
During the off season, remove the pump head from the motor shaft. This protects the pump tubes. We recommend changing the pump tubes approximately once a year given normal operations. This prevents possible tube bursting that can damage the equipment.
The machine can be used at temperatures between +5° and +40°C. The water absolutely must not be allowed to freeze! Freezing can damage or completely destroy the probe in the machine.

Occupational safety

ASIN Aqua may operate persons without electronic qualification.
Removing covers and exchanging any of the machine's parts is forbidden. To clean the machine, use a cloth dampened with water or detergent. Use ethyl alcohol to remove stubborn stains. The use of other organic solvents is forbidden, as well as the use of any cleaners that would cause abrasion of the surface of the plastic case or the front cover.
Persons working with Asin Aqua must be informed that using the machine in a manner not intended by its manufacturer can render ineffective the electrical safety features of the device.

!!! WARNING !!!

All of the chemicals used for water quality treatment are caustic. Do not allow them to come in contact with your skin! Wear rubber gloves and work with all due care when refilling chemical supplies and when changing pump tubes. Stains on clothing from these substances will cause irreparable damage! Always obey the safety instructions for the individual chemicals (see the safety sheets) when handling them or performing repairs.

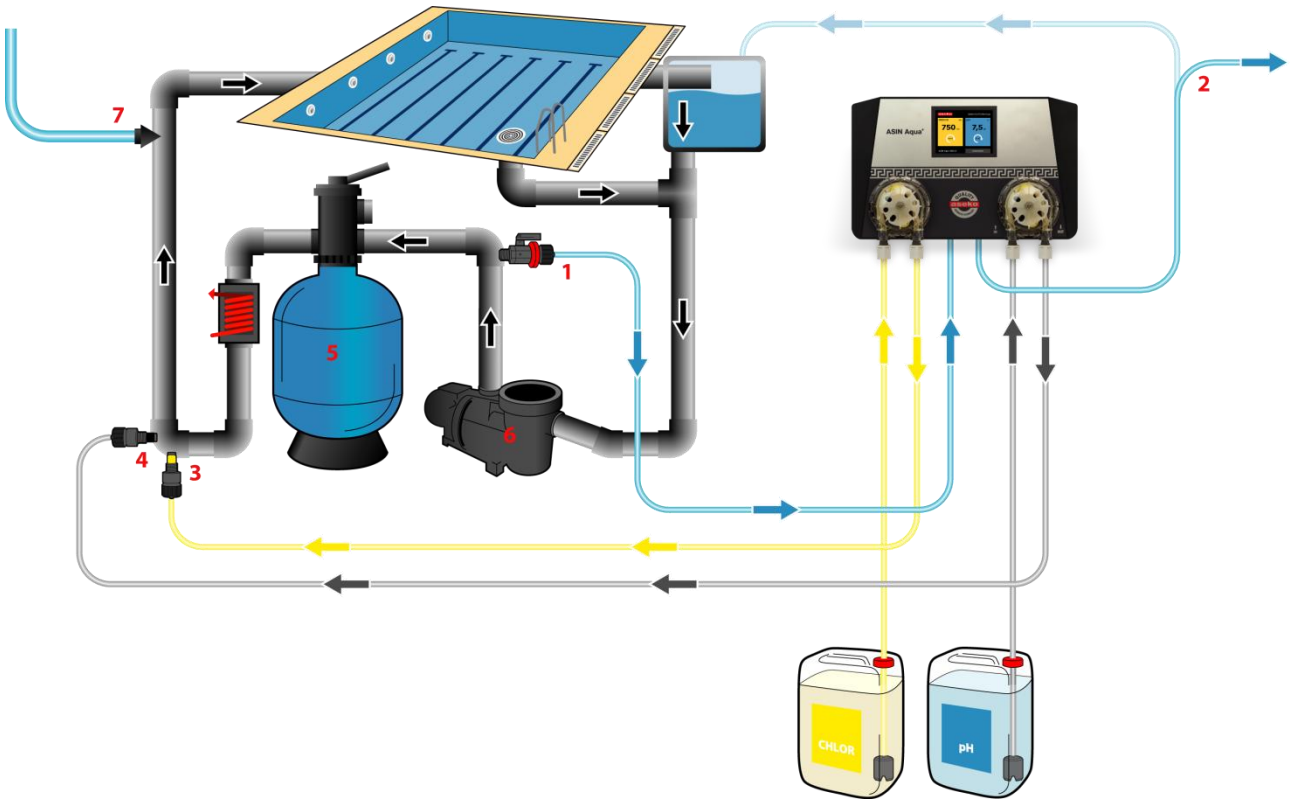


Fig. 1. Connecting ASIN Aqua Redox to the filtration circuit

1 Water to probes is taken from the output of the circulation pump
2 Water from probes is led before the circulation pump or to drain
3 Diasinfection dosage
4 pH-fluid dosage
5 Filter
6 Circulation pump
7 Water filling