

AQUA-TEKNIK A/S

WATER DISINFECTION WITH ELCLOZID ELECTROLYSIS

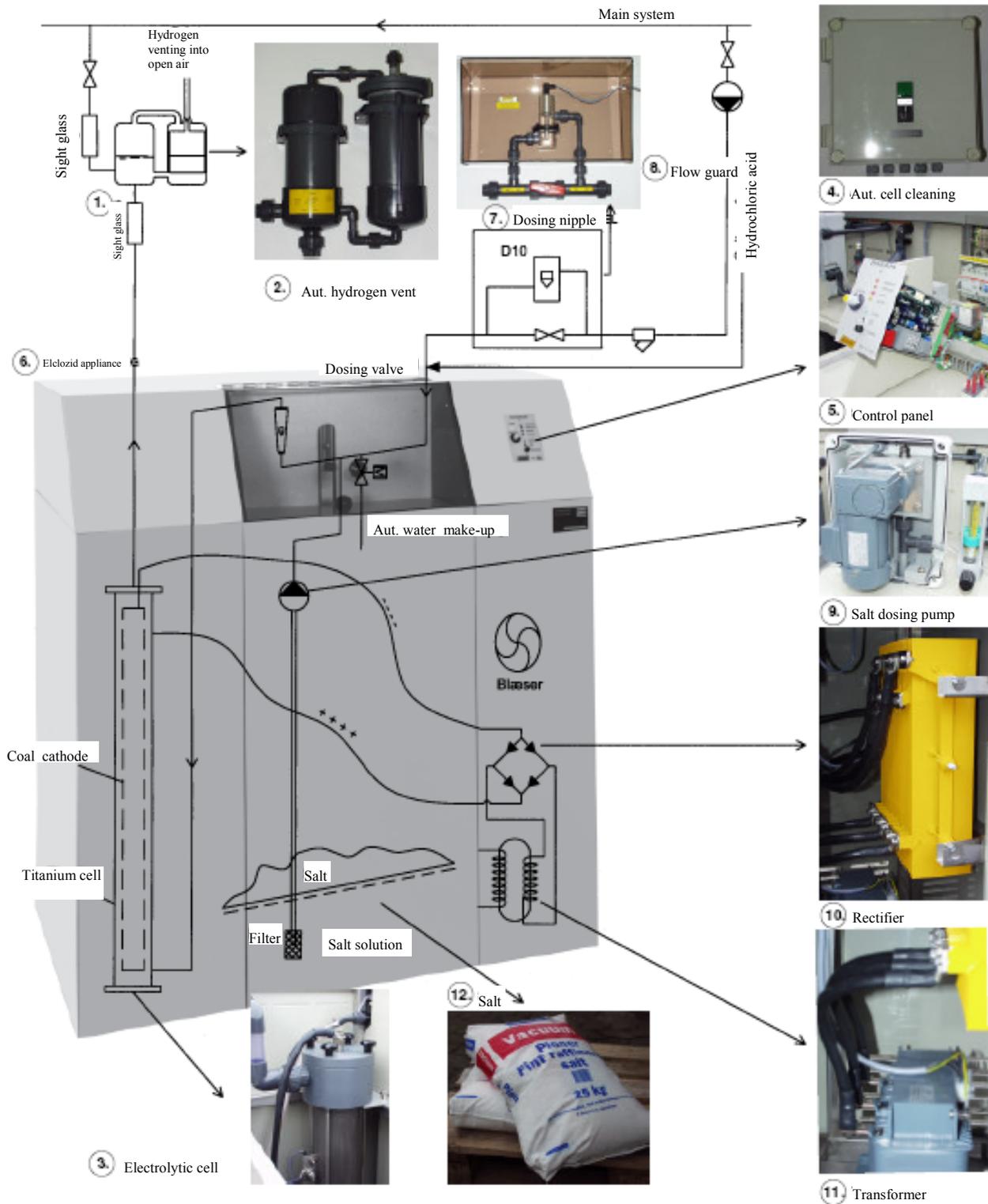
**The safe and environmentally friendly alternative -
claiming only a minimum of maintenance!**



AQUA-TEKNIKA/S · Adgangsvejen 1 · DK-6700 Esbjerg
Phone: +45 75 167 148 · Fax: +45 75 167 948
e-mail: post@aqua-technik.com · www.aqua-technik.com

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THE PROCESS IN THE ELCLOZID APPLIANCE



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|--------------------------------|------------------------|----------------------|
| (1) Sight glass | (5) Control panel | (9) Salt dosing pump |
| (2) Automatic hydrogen venting | (6) Elclozid appliance | (10) Rectifier |
| (3) Electrolytic cell | (7) Dosing nipple | (11) Transformer |
| (4) Automatic cell cleaning | (8) Flow guard | (12) Salt |

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INTRODUCTION OF ELCLOZID

WATER DISINFECTION: ELCLOZID is an environmentally friendly system for water purification within the fields of bathing water, industrial water, drinking water and salt and sea water. The system was developed in Switzerland in 1984. World-wide ELCLOZID systems have been delivered for more than 1000 plants.

EXPERIENCE—INSTALLATION/OPERATION: AQUA-TEKNIK A/S in Esbjerg got the agency for the Danish market.

Since then a lot of appliances have been installed in Denmark, primarily within the swimming pool line, showing increasing interest in chlorine electrolysis. Pursuant to AQUA-TEKNIK's co-operation with Danish swimming baths it has been natural to market the ELCLOZID appliances to this target group.

ENVIRONMENTAL TARGETS, SAFETY AND WORKING ENVIRONMENT: With the continuously increasing requirements for improving the working environments, there is a general interest for appliances that can currently produce chlorine on demand, without storage and handling.

From an isolated point of view this method of electrolysis can highly contribute to meet with the environmental targets of the industry. In addition to the safety aspects and a good working environment, there also is a considerable financial aspect, as the expenses for the chlorine are halved.

The appliances can be installed in any process of which chlorine is a part and is a thoroughly tested Swiss quality product with a long term, maintenance-free operation.

THE ELECTROLYTIC PROCESS: Production of chlorine on the basis of salt and electrical energy.

1. **VISUAL SURVEILLANCE:** From the sight glass you can optically observe the hydrogen production, and thus follow the electrolytic process. Besides you will note that the hydrogen is not led with the part steam to the basin.
2. **FULLY AUTOMATIC HYDROGEN VENTING:** The ELCLOZID appliance is equipped with a fully automatic hydrogen vent so that the hydrogen by-product is let directly out into open air.
3. **THE ELECTROLYTIC CELL:** Consists of a patented combination of anode and cathode in respectively titanium alloy and coal to which a dc voltage of app. 7 volt is applied via electronic control. The warranty on the electrolytic cell is 5 years. However, experiences show that it has a life circle of at least 8 to 10 years.
4. **AUTOMATIC CELL CLEANING:** The ELCLOZID cell build-up allows the installation of a self-cleaning function making it possible to use basin water for the chlorine production. Through this daily process the cell is automatically supplied with acid (cell cleaning), by means of which calcifications are removed. This function makes any softening device, and the involved service and maintenance, unnecessary.
5. **EXACT AND ENVIRONMENTAL SALT DOSING:** The chlorine production is controlled both via the voltage of the chlorine cell, and via the feeding of salt water. Thus the appliance construction guarantees that all the salt is transformed in the electrolytic process which is a protection against intermediate salt accumulation in the basin water. The correct electronic control guarantees a full transformation so that the product leaving the cell to enter the circuit/production is an aqueous solution of sodium hypochlorite.
6. **MODULAR ASSEMBLIES:** The appliances are made in sizes corresponding the production of pure chlorine of 20 to 2000 gr./h. The devices are built-up in modules making an upgrade or even a downgrade possible. However, the control system makes it possible to adjust the capacity to the actual needs at any time. It is possible to use the basin water with or without sodium contents, as the ELCLOZID appliances are adjusted from the factory acc. to the actual conditions.

Approvals: BAGP nr. 8604, CE Marked and TÜV approval.

RESSOURCE REQUIREMENTS

The direct production costs for the production of a quantity of sodium hypochlorite solution corresponding 1 kg of concentrated chlorine are the consumption of 2,8 kgs of salt and a current consumption of 4,5 kW/h.

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COMPLETE PRODUCT RANGE AND TECHNICAL DATA

Model: S 20-T
 Production capacity: 20 gr. CL2/h
 Max. power consumption 0,20 kW
 Part stream: 20 l/h
 Power supply: 220 Volt
 Working pressure, max.: 2,5 Bar
 Salt container capacity: 30 kg
 Dimensions in mm: Ø 310x500



Model: LT30 LT 50 LT 100
 Production capacity: 30 gr. CL2/h 50 gr. CL2/h 100 gr. CL2/h
 Max. power consumption 0,35 kW 0,46 kW 0,96 kW
 Part stream: 20 l/h 20 l/h 40 l/h
 Power supply: 400 Volt
 Working pressure, max.: 2,5 Bar
 Salt container capacity: 200 - 250 kg
 Dimensions in mm: 790x590x1330 (L x B x H)



Model: TS 250 TS 500
 Production capacity: 250 gr. CL2/h 500 gr. CL2/h
 Max. power consumption 2,50 kW 5,00 kW
 Part stream: 80 l/h 160 l/h
 Power supply: 400 Volt
 Working pressure, max.: 2,5 Bar
 Salt container capacity: 500 kg
 Dimensions in mm: 1410x660x1530 (L x B x H)



Model: MV 1000 MV 1500 MV 2000
 Production capacity: 1000 gr. CL2/h 1500 gr. CL2/h 2000 gr. CL2/h
 Max. power consumption 11,20 kW 16,80 kW 24,00 kW
 Part stream: 320 l/h 480 l/h 640 l/h
 Power supply: 400 Volt
 Working pressure, max.: 2,5 Bar
 Salt container capacity: 1000 kg
 Dimensions in mm: 1410x660x1530 (L x B x H)



Model - Varia: MS 100 MS 250 MS 500
 Production capacity: 100 gr. CL2/h 250 gr. CL2/h 500 gr. CL2/h
 Max. power consumption 1,00 kW 2,50 kW 5,00 kW
 Part stream: 40 l/h 80 l/h 160 l/h
 Power supply: 400 Volt
 Working pressure, max.: 2,5 Bar
 Dimensions in mm: 500x660x1480 950x660x1480 950x660x1480

MS 1000 MS 1500 MS 2000
 Production capacity: 1000 gr. CL2/h 1500 gr. CL2/h 2000 gr. CL2/h
 Max. power consumption 10,00 kW 15,00 kW 20,00 kW
 Part stream: 320 l/h 480 l/h 640 l/h
 Power supply: 400 Volt
 Working pressure, max.: 2,5 Bar
 Dimensions in mm: 1850x660x1480 1850x660x1480 2350x660x1480

