GENO-mat® duo WE--X

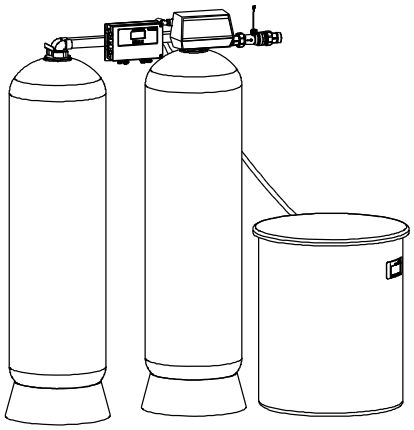


Fig. 1: GENO-mat® duo WE-X

Designated application

Water softeners of the GENO-mat® duo WE-X series are designed for the softening and partial softening of cold drinking and process water. As twin systems, they are suitable for the continuous supply of soft water. There are system types available with regeneration with full salting or economy salting.

In order to soften the water to less than 0.1 °dH, only and exclusively systems with full salting are suitable.

The systems can be used for the (partial) softening of well, process, boiler feed, cooling and air-conditioning water.

Function

The water softener works according to the ion exchange principle.

The water softener GENO-mat® duo WE-X is a twin system for the continuous supply of soft water. The system is equipped with a central control valve for both exchangers and is volume-controlled. The regeneration is released when the pre-set water volume in an exchanger tank has been softened. The system regenerates with soft water.

Design

Two double-walled plastic exchanger tanks.

Food-compatible ion exchanger resin.

A central control valve made of red bronze.

Brine tank made of PE incl. sieve bottom (which separates the salt supply chamber and the brine chamber) and brine valve made of PP with safety float (controls the brine flow). With brine buffer technology

Microprocessor controller with back-lit LCD graphic display (controls all system functions and indicates operating states and disturbances).

The systems are interference-free and comply with the EMC guidelines.

Power supply by means of a shock-proof plug with 1.5 m cable. The system operation itself runs with protective low voltage 24 V DC. The control unit features a signal/ fault signal contact and can be interconnected with the bus compatible OSMO-X control unit.

Turbine water meter (TWZ) to register the soft water volume.

Scope of supply

Water softener GENO-mat® duo WE-X complete with water test kit "total hardness" and operation manual.

Accessories

GENO-STOP® 1“
The new safety device GENO-STOP® provides reliable and comprehensive protection against water damage. The GENO-STOP® may be equipped with up to 2 wired water sensors and with 5 wireless water sensors.
- For additional versions, please inquire -
Order no. 126 875

Pre-alarm salt supply
Infra-red light sensor to register the minimum salt filling level in the brine tank.
Signal via control unit
Order no. 185 335

Adapter connection 9000
with integrated blending unit, R 1“ (standard equipment for duo WE-X 50, 130 and 230, available as an option for duo WE-X 65, 150 and 300)
Order no. 125 809

Blending valve
(to adjust the residual hardness by adding raw water)
Connection R 1 ¼"
Order no. 126 003

Water meter with counter
Connection R 1"
Order no. 163 080

Connection R 1½"
Order no. 163 085

Mounting set 1:
(for easy connection to the water installation). Compact valve block R 1'' female thread, built-in bypass with shut-off valve for hard and soft water, raw water outlet (e. g. for garden pipe), 2 flexible braided hoses made of stainless steel (connection R 1'' female thread, length 600 mm).
Order no. 125 845

Mounting set 2:
(for easy connection to the water installation).
Connection block R 1'', male thread, with screw-connections, ball-type shut-off valves for hard and soft water, non-return valve, overflow valve, 2 flexible braided hoses made of stainless steel (connection R 1'' female thread, length 600 mm).
Order no. 125 850

Overflow valve
Connection R 1“, male thread, opening pressure 0.8 bar (to cover peak consumption by adding raw water, to be installed in the bypass).
Order no. 125 855

Voltage-free signal
(indication of the operating state)
Order no. 126 890

Installation requirements

Please observe local installation directives, general guidelines and technical specifications.

A fine filter must always be installed upstream of the system. The systems must be protected according to DIN 1988, part 4 (e. g. by means of a system separator).

The installation site must be frost-proof and ensure the system's protection from chemicals, dyes, solvents and vapours. The ambient temperature as well as the radiation temperature next to the system must not exceed 40 °C.

A separate socket (230 V/50 Hz) is required within a range of approx. 1.2 m from the system.

A drain connection for the discharge of the residual water (min. DN 50) must be available. In case the residual water is directed to a lifting system, make sure that said device is salt water proof.

Table C-1: Technical specifications		**Waster softener GENO-mat® duo WE-X**				
Systems with full salting		**65**	**150**	**300**	**450**	**750**
Connection data						
Nominal connection diameter		DN 25 (1" female thread)			DN 40 (1½" female thread)	
Min. drain connection		DN 50				
Power supply	[V]/[Hz]	85 -250/50-60 (system operation with protective low voltage 24V DC)				
Connected load	[VA]	10				
Protection/protection class		IP 54/I				
Performance data						
Nominal pressure (PN)	[bar]	10				
Min./max. operating pressure	[bar]	2.0/8.0				
Max. continuous flow*** at a residual hardness of < 0.1 °dH	[m³/h]	2.0	3.0	5.0	6.0	9.5
Pressure loss at max. continuous flow	[bar]	0.6	1.1	2.1	1.5	2.3
k_V value (at Δp = 1.0 bar)	[m³/h]	2.6	2.7	3.1	4.5	5.6
Nominal capacity	[mol]	12.0 67	26.6 149	53.9 302	80.2 449	133.2 746
Capacity per kg of regeneration salt	[mol/kg]	3.33	3.32	3.32	3.16	3.33
Time capacity	[m³ x °dH/h]	72	84	145	214	269
Dimensions and weights 1)						
Total height	[mm]	1310	1530	1790	1840	1970
Overall height (without control unit) ****	[mm]	1080	1300	1560	—	—
Exchanger tank ∅	[mm]	208	257	334	369	469
Brine tank ∅ *	[mm]	500	570	700	780	900
Overall height of brine tank *	[mm]	810	880	870	1100	1250
Height of safety overflow of brine tank *	[mm]	700	780	770	980	1120
Connection height of control valve (raw water)	[mm]	940	1160	1420	1710	1830
Min. depth of foundation *	[mm]	600	700	800	900	1000
Min. length of foundation *	[mm]	1460	1500	1700	2100	2400
Operating weight, approx. *	[kg]	285	435	730	1110	1745
Filling volumes and consumption data **						
Resin quantity	[l]	18	40	81	115	200
Freeboard (resin in form of sodium), approx.	[mm]	270	230	290	390	300
Salt consumption per regeneration, approx.	[kg]	3.6	8.0	16.2	25.3	40.0
Max. regeneration salt supply *	[kg]	130	190	285	485	760
Total waste water volume per regeneration, approx.	[l]	112	211	451	693	1020
Operating water volume	[l]	10	22	45	70	111
Minimum filling height of salt *	[mm]	—	—	—	—	50
Ambient data						
Max. water temperature	[°C]	30				
Max. ambient temperature	[°C]	40				
Order no.		**186 100**	**186 110**	**186 120**	**186 130**	**186 140**

* with standard brine tank

** The waste water volume and salt consumption refer to an inlet pressure of 3 bar. The indicated values change at different inlet pressures and only serve as a means for a rough determination.

*** The indicated max. continuous flows may decrease in case of high raw water hardness.

**** In case of systems with a nominal connection diameter of DN 40, the control unit is fastened between the exchanger tanks.

1) All indicated dimensions and weights are approximate!

Table C-2: Technical specifications		**Waster softener GENO-mat® duo WE-X**				
Systems with economy salting		**50**	**130**	**230**	**330**	**530**
Connection data						
Nominal connection diameter		DN 25 (1" female thread)			DN 40 (1½" female thread)	
Min. drain connection		DN 50				
Power supply	[V]/[Hz]	85 -250/50-60 (system operation with protective low voltage 24V DC)				
Connected load	[VA]	10				
Protection/protection class		IP 54/I				
Performance data						
Nominal pressure (PN)	[bar]	10				
Min./max. operating pressure	[bar]	2.0/8.0				
Max. continuous flow*** at a residual hardness > 0.1 °dH	[m³/h]	2.0	3.0	5.0	6.0	9.5
Peak flow in case of blending to 8 °dH and a raw water hardness of 20 °dH	[m³/h]	3.3	5.0	8.3	10.0	15.8
Pressure loss at max. continuous flow	[bar]	0.6	1.1	2.1	1.5	2.3
k_V value (at Δp = 1.0 bar)	[m³/h]	2.6	2.7	3.1	4.5	5.6
k_V-value in case of blending to 8 °dH and a raw water hardness of 20 °dH	[m³/h]	4.3	4.5	5.2	7.5	9.3
Nominal capacity	[mol] [m³/x°dH]	9.5 53	20.9 117	42.3 237	60.0 336	95.2 533
Capacity per kg of regeneration salt	[mol/kg]	5.27	5.22	5.22	5.20	5.90
Time capacity	[m³x°dH/h]	68	81	143	207	243
Dimensions and weights 1)						
Total height	[mm]	1310	1530	1790	1840	1970
Overall height (without control unit) ****	[mm]	1080	1300	1560	—	—
Exchanger tank ∅	[mm]	208	257	334	369	469
Brine tank ∅ *	[mm]	410	500	570	700	700
Overall height of brine tank *	[mm]	670	810	880	870	870
Height of safety overflow of brine tank *	[mm]	570	700	780	770	770
Connection height of control valve (raw water)	[mm]	940	1160	1420	1710	1830
Min. depth of foundation *	[mm]	500	600	700	800	800
Min. length of foundation *	[mm]	1300	1500	1600	2100	2200
Operating weight, approx. *	[kg]	190	340	555	825	1080
**Filling volumes and consumption data ** **						
Resin quantity	[l]	18	40	81	115	200
Freeboard (resin in form of sodium), approx.	[mm]	270	230	290	390	300
Salt consumption per regeneration, approx.	[kg]	1.8	4.0	8.1	11.5	16.0
Max. regeneration salt supply *	[kg]	65	130	190	285	285
Total waste water volume per regeneration, approx.	[l]	98	181	376	583	865
Operating water volume	[l]	5	11	23	32	44
Minimum filling height of salt *	[mm]	—	—	—	—	—
Ambient data						
Max. water temperature	[°C]	30				
Max. ambient temperature	[°C]	40				
Control unit						
Order no.		**186 200**	**186 210**	**186 220**	**186 230**	**186 240**

* with standard brine tank

** The waste water volume and salt consumption refer to an inlet pressure of 3 bar. The indicated values change at different inlet pressures and only serve as a means for a rough determination.

*** The indicated max. continuous flows may decrease in case of high raw water hardness.

**** In case of systems with a nominal connection diameter of DN 40, the control unit is fastened between the exchanger tanks.

All indicated dimensions and weights are approximate!

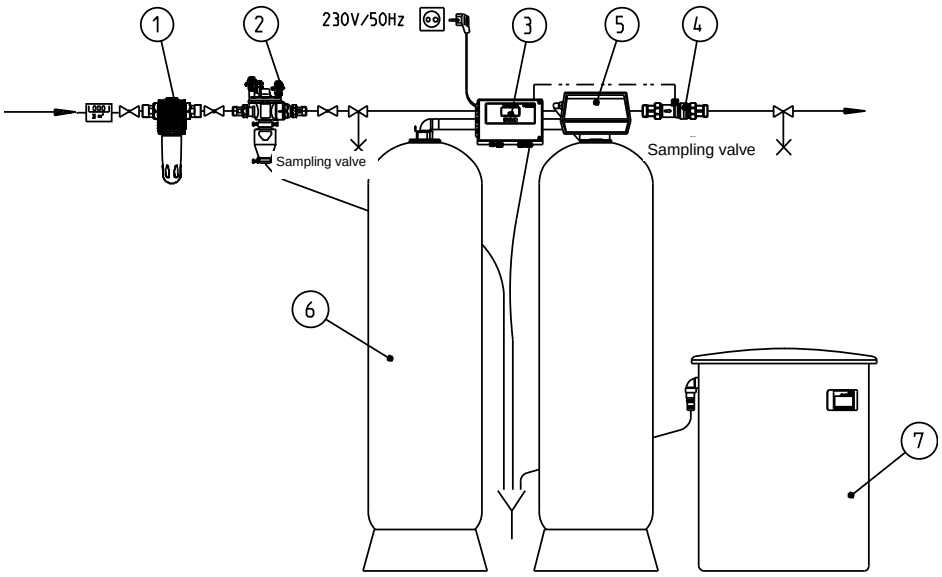
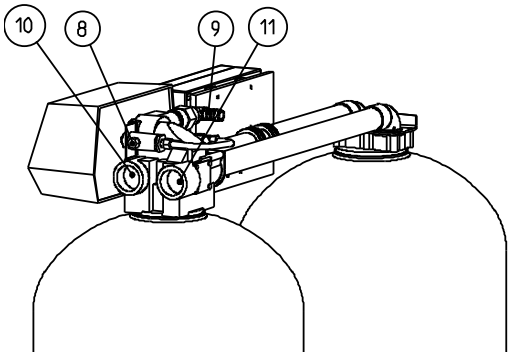


Fig. 2: Installation drawing water softener GENO-mat® duo WE-X



① Drinking water filter BOXER®
② Euro system separator GENO® DK 2
③ Control unit
④ Water meter
⑤ Control valve
⑥ Exchanger tank
⑦ Brine tank
⑧ Brine line
⑨ Connection of hose to drain
⑩ Raw water inlet
⑪ Soft water outlet

Fig. 3: Water softener GENO-mat® duo WE-X rear view

In case of systems with economy salting - indicated pressure loss without blending!

Fig. 4: Pressure loss curve GENO-mat® duo WE-X