

Filter system GENO-mat F 500/600/610 A, AC Eco

Intended use

The GENO-mat F filter system is designed for the filtration of pool water in private swimming pools, whirlpools or ornamental pools. Other applications (e.g. well or circulation water filtration) are possible upon consultation with Grünbeck.

Function

The pool water to be filtered is drawn by a circulation pump and directed to the filter via the piping and an upper distribution system.

In the filter tank, the pool water flows through the filter layers from top to bottom. The upper and lower distribution systems ensure a uniform flow through the system.

As the water flows through the filter layers, finest dirt particles are filtered off. The filtered pool water flows back into the pool via the lower distribution system, the piping and the compact heat exchanger installed downstream.

The lower distribution system is designed in a way that the filter material remains in the filter tank.

The retention of the dirt particles increases the filter resistance and the pressure indicator (pressure gauge) of the filter rises.

If the pressure increases by 0.2 – 0.3 bar above the initial pressure, the filter must be backwashed. Irrespective of the increase in pressure, the filter should be backwashed on one or several days a week - depending on the load of impurities. For hygiene reasons, the filter must be backwashed at least once a week, however.

During the filter backwash, the multi-way valve deviates the backwash water in a way that it flows into the filter via the lower distribution system. That way, the various filter layers are lifted, flown through and the dirt particles are discharged to the drain via the upper distribution system.

Following the filter backwash, subsequent flushing, also called first filtrate, takes place. Here, the abraded filter material and dirt particles in the lower distribution system are discharged to the drain. The flow is directed through the filter from top to bottom.

The outflowing backwash water as well as the first filtrate can be monitored via a transparent pipe section on the multi-way valve.

At the speed-controllable circulation pump, 3 individual speeds (filtration, backwash, partial-load operation) can be set.

The filter system is controlled by means of the GENO-BW-tronic control unit. Together with the optional module FU Eco-BW-tronic, it activates the speed-controllable circulation pump as well as the electrical actuator in automatic systems.

Subject to the operating state, one of the 3 speeds of the speed-controllable circulation pump is activated.

If the system is in the operating state "Filtration" (timer programming or continuous operation), the speed "Filtration" is activated.

With an additional contact "Partial load operation", coming in from an optional measuring and control system for instance, the speed "Partial load operation" is activated during the operating time of the filter.

If the system is in the operating state "Filter backwash" (timer programming or manual release), the speed "Backwash" is activated.

• Product Data Sheet

Filter system GENO-mat F 500/600/610 A, AC Eco

Application limits

Use of the filter system is restricted by the following limit conditions:

- Free chlorine: max. 1.4 mg/l (for a short time up to 10 mg/l)
- Chloride content: max. 500 mg/l
- Do not operate with salt water/ seawater or brine
- The filter system must not be used with salt water electrolysis processes
- The filter system must not be used with ozone disinfection

Design

- Filter tank made of glass fibre reinforced plastic (GRP)
 - Manufactured using a hand lamination process
 - Lower distribution system in the shape of a star, made of PP
 - Upper distribution system for optimum and steady water distribution during filtration and optimum discharge of the backwash water during filter backwash

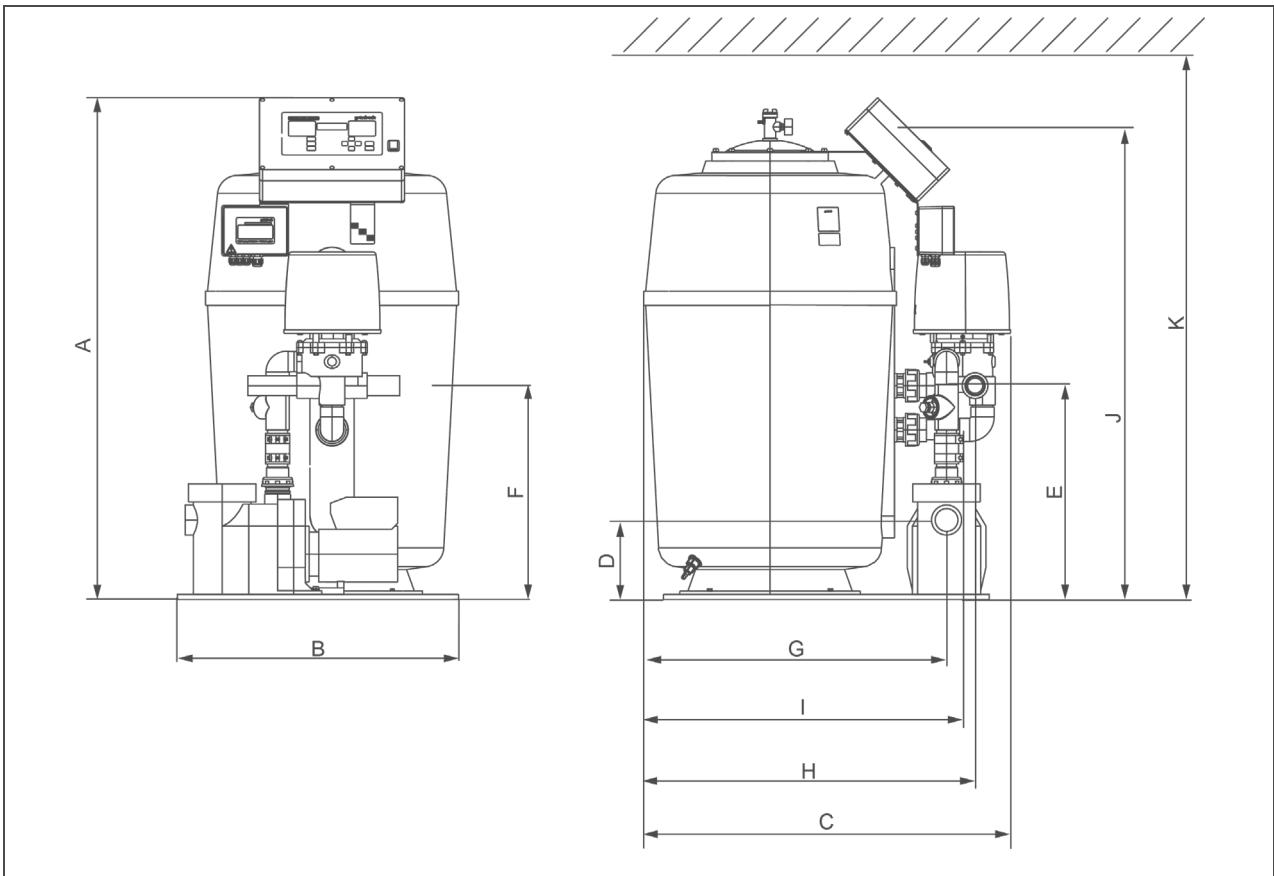
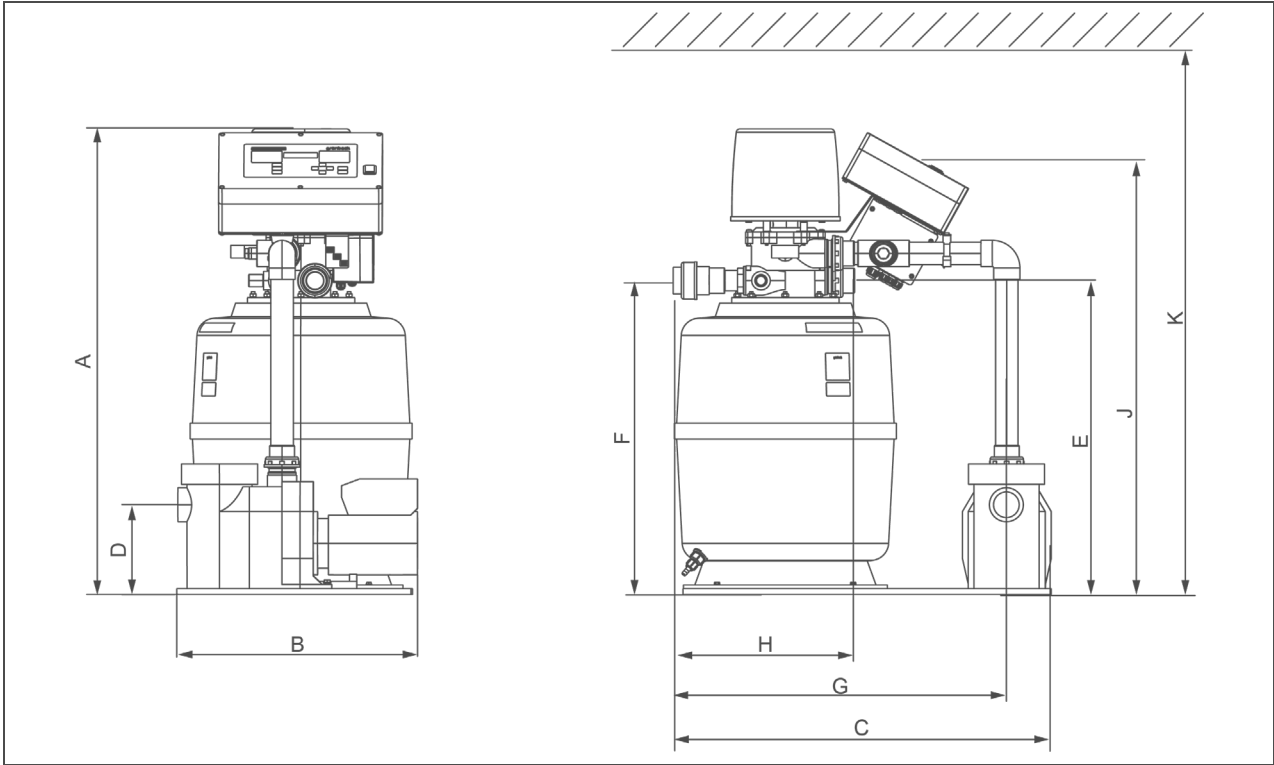
- Black tank lid and multi-layer valve with pressure gauge. GENO-mat F 610 version with transparent tank lid and pressure gauge
- The GENO-mat F 610 version features a black, lateral service opening
- Manual aeration and ventilation
- Draining valve
- According to Pressure Equipment Directive 97/23 EC
- Speed-controllable, self-priming circulation pump made of plastic (low-noise version with integrated hair and fibre strainer)
- Piping made of PVC-U with a water withdrawal point for optional measuring and control system
- Automatic multi-way valve with electric actuator
- Control unit GENO-BW-tronic
 - For semi or fully automatic operation of the filter system via timer programming

- With two-point temperature controller and temperature sensor
- With numerous inputs and outputs
- With serial interface RS 485
- Indication and operation via plastic foil keypad and LC display
- Menu in 6 languages
- Optional module FU Eco-BW-tronic

Scope of supply

- Filter system, completely pre-assembled and packed on a pallet
- Operation manual

Technical specifications I



• **Product Data Sheet**

Filter system GENO-mat F 500/600/610 A, AC Eco

Dimensions and weights					
GENO-mat F					
Order no.		500 A, AC Eco	600 A, AC Eco	610 A, AC Eco	
		240 490	241 490	242 490	
A	System height	mm	1025	1250	1420
B	System width	mm	535	700	865
C	System depth	mm	835	915	1000
D	Height of raw water connection	mm	198	198	238
G	Height of filtrate connection	mm	692	533	723
H	Height of backwash water connection (drain)	mm	692	533	723
G	Connection depth of raw water connection	mm	735	755	827
H	Connection depth of filtrate	mm	398	825	899
I	Connection depth of backwash water connection (drain)	mm	-	755	827
J	Operating height	mm	960	1160	1300
K	Min. room height	mm	1200	1600	1800
Ø	Filter tank	mm	510	630	630
	Empty weight, approx.	kg	40	71	105
	Filter system incl. filter material, approx.	kg	103	232	430

Technical specifications II

Connection data GENO-mat F		500 A, AC Eco	600 A, AC Eco	610 A, AC Eco
Order no.		240 490	241 490	242 490
Nominal connection diameter of raw water			Rp 2"	DN 65
Nominal connection diameter of filtrate			DN 40	DN 50
Nominal connection diameter of backwash water (drain)			DN 40	DN 50
Withdrawal point for measuring water			3/8" (female thread)	
Drain connection/floor drain required			DN ≥ 100	
Power supply of filter controller	V/Hz		230/50	
Protection/protection class of filter controller			IP54/⊕	
Power input of filter controller ¹	W		8.4	
Fuse protection of filter controller by client	A		6	
Speed-controllable circulation pump			GENO-Prime-Eco-VS	GENO-Profi-Eco-VS
Power supply of circulation pump	V/Hz		230/50	
Protection/protection class of circulation pump			IP55/⊕	
Power input of circulation pump	kW		0.08 – 1.40	0.09 – 1.80
Current consumption of circulation pump ²	A		0.65 – 6.10	0.64 – 7.80
Fuse protection of circulation pump by client	A		16	

¹ Filter controller in standby without any other electrical consumers (e.g. heating circulation pump).

² According to the standard, the rated current for pumps can be up to 20 % higher than the manufacturer's specification (indication on type plate).

Performance data				
Nominal pressure			PN 2	
Filter/backwash capacity ³	m ³ /h	6/8	12/15	15/20
Pump capacity (at 8 mWC)	m ³ /h		≤ 24	≤ 34
Max. pool volume	m ³	35	70	90
Max. suction height	m		3	
Max. inlet height on suction side of pump	m		3	

³ Provide for an additional 10 % if the backwash water is directed to a waste water lifting system.

General				
Water temperature	°C		5 – 40	
Ambient temperature	°C		5 – 35	
Max. humidity of air (non-condensing)	%		90	
Order no.		240 490	241 490	242 490

Installation requirements

Obey local installation directives, general guidelines and technical specifications.

The following requirements are placed on the installation site:

- Must be frost-proof and ensure the system's protection from chemicals, dyes, solvents and vapours.
 - Must be sufficiently ventilated and must not be prone to flooding.
 - Should be located below the water level (max. 3 m). In exceptional cases, the circulation pump can be installed max. 3 m above the water level.
 - A foundation of sufficient size and adequate load-bearing capacity must be provided.
 - The system must be easily accessible for maintenance and repair work.
 - Take the minimum room height into consideration.
 - Regarding the power supply to be provided by the client on site, a power outlet that has its own ground fault circuit interrupter (30 mA) is required.
 - The electrical connection is made via a 230 V/50 Hz AC network.
- The GENO-BW-tronic controller and the speed-controllable circulation pump each feature a mains cable (3 m) including a mains plug.
 - Two shock-proof sockets are required for electrical connection.
 - The backwash water line must be directed to a drain pipe as a free outlet according to DIN EN 1717.
 - To discharge the backwash water, a chemical-resistant drain connection is required in the floor.
 - In case the backwash water is directed to a lifting system, make sure that said device is resistant to chemicals.
 - A floor drain must be present. If no floor drain is available, an appropriate safety device must be installed. Floor drains that discharge to a lifting system do not work in case of a power failure.

Accessories

Touch panel 5.7" Order no. 203 545

Remote control and remote display of all relevant components for interconnection of GENO-BW-tronic and measuring and control unit GENO-CPR-tronic 02.

Consumables

Quartz sand filter filling F 500 Order no. 200 840

AFM filter filling F 500 (glass granulate) Order no. 240 180

Quartz sand filter filling F 600 Order no. 200 560

AFM filter filling F 600 (glass granulate) Order no. 241 800

Hydro-anthrasite filter filling F 600 Order no. 200 565

Quartz sand filter filling F 610 Order no. 242 185

AFM filter filling F 610 (glass granulate) Order no. 242 180

Hydro-anthrasite filter filling F 610 Order no. 242 190

Contact

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoehstaedt
GERMANY

☎ +49 9074 41-0

☎ +49 9074 41-100

✉ info@gruenbeck.com
www.gruenbeck.com

