

Filtrex® 2025

Sand Filter Series with Opaque and Transparent Top Cover
High Rate Sand Filters
Technical Data Sheet (TDS)



Quality Management System

Filtrex 2025 Sand Filter Series with Opaque and Transparent Top Cover High Rate Sand Filters Technical Data Sheet (TDS)



1. Product Description

The Filtrex 2025 Series with Transparent Top Cover is a series of high-rate sand filters featuring a GRP outer body and ABS inner shell, designed for swimming pools, SPA systems, water parks and water filtration applications.

2. Applications

Swimming pools, hotel pools, Olympic pools, SPA systems, ornamental pools, water parks, process water and industrial filtration applications.

3. Product Advantages

High corrosion resistance, UV resistance, long service life, easy maintenance, high filtration efficiency and low operating costs.

4. Filter Media (Silica Sand)

To achieve optimum filtration performance, the filter must be filled with **silica sand having a particle size between 0.5 and 0.7 mm**. Follow the steps below according to the filter media quantity specified on the product nameplate:

1. Load the filter media only after the filter has been installed in its final position and all piping connections have been completed.
2. Remove the filter cover and gasket.
3. Fill the filter with water until it is at least half full.
4. Carefully pour the required quantity of silica sand into the filter.
5. Clean the gasket seating surface thoroughly before reassembly.
6. Reinstall and securely fasten the filter cover.

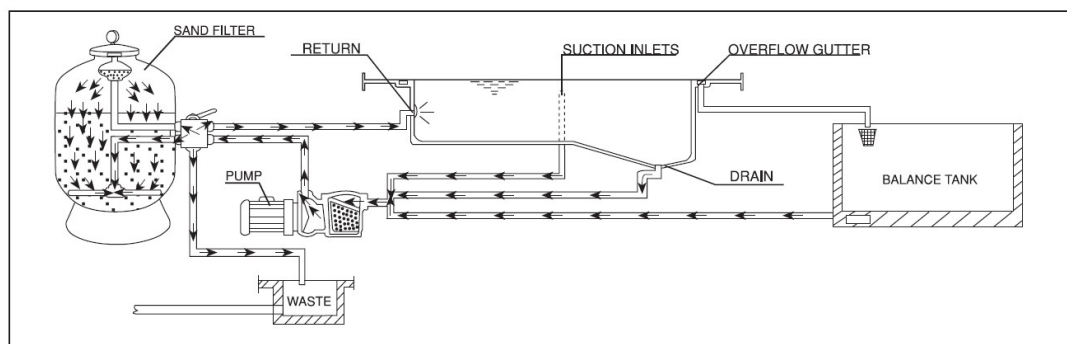
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5. Operating Conditions and Working Principle

Water passes through the sand bed where suspended particles are retained. Filtered water is returned to the system.

OPERATION PRINCIPLES



FILTRATION

Proper pool water treatment requires both **filtration** and **chemical conditioning**. These two processes are complementary and must be operated together to maintain optimal water quality.

Operating Principles

- Water is drawn from the main drains located at the bottom of the pool, from the skimmers located on the water surface, or from the balance tank. The water is then conveyed through dedicated piping systems to the circulation pump and subsequently to the sand filter.
- After the filtration process, the filtered water is returned to the pool through return nozzles installed opposite the skimmers and main drains.

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- As water enters the filter, it flows downward through the quartz (silica) sand bed. Suspended particles are retained within the filter media while clean water passes through the collector system and returns to the pool.
- To maintain filtration efficiency, the filter media must be cleaned periodically. This is achieved by reversing the water flow through the filter (backwashing) and discharging the accumulated contaminants to waste.

INSTALLATION

- The filter should be installed as close as possible to the swimming pool and preferably at a level not more than 0.50 m below the pool water surface.
- Ensure that a suitable drainage connection is available at the installation site.

IMPORTANT

Do not use steel pipes or steel fittings when connecting the multiport valve (selector valve).

Only plastic piping and PTFE (Teflon) sealing tape shall be used.

The connections are available with threaded or solvent-weld ends in sizes **1½"** and **2"**.
Please contact your pool equipment supplier for suitable connection fittings.

6. Technical Specifications

Property	Value
Filter Type	High Rate Sand Filter
Body Construction	GRP + ABS
Filter Media	Silica Sand / Glass Media
Filtration Rate	50 m ³ /h/m ²
Design Pressure	2,5 bar
Test Pressure	3,5 bar
Valve Options	Side Mount

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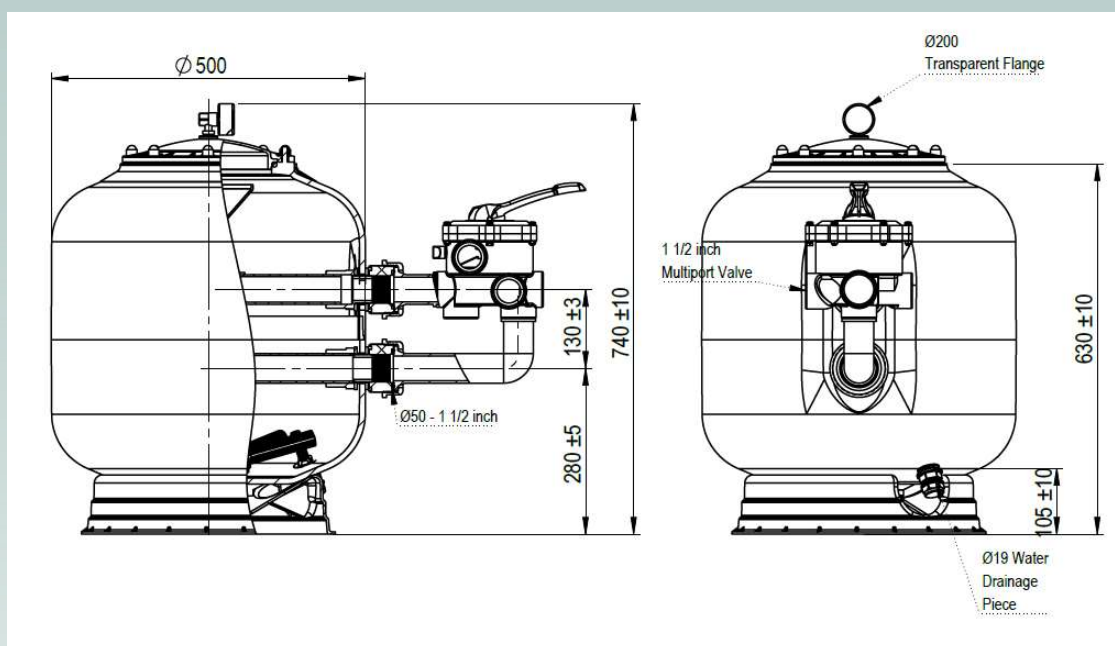


7. Models and Technical Specifications

Model	Diameter (mm)	Flow Rate (m ³ /h)	Sand Load (kg)*	Connection
021610BL	500	10	100	1½"
021611BL	630	14	150	1½"
021612BL	710	21	250	2"

*The sand loading quantities stated in the table are approximate. Actual loading quantities may vary depending on the type, granulometry (particle size distribution), and density of the filter media used.

Dimensions - Ø500

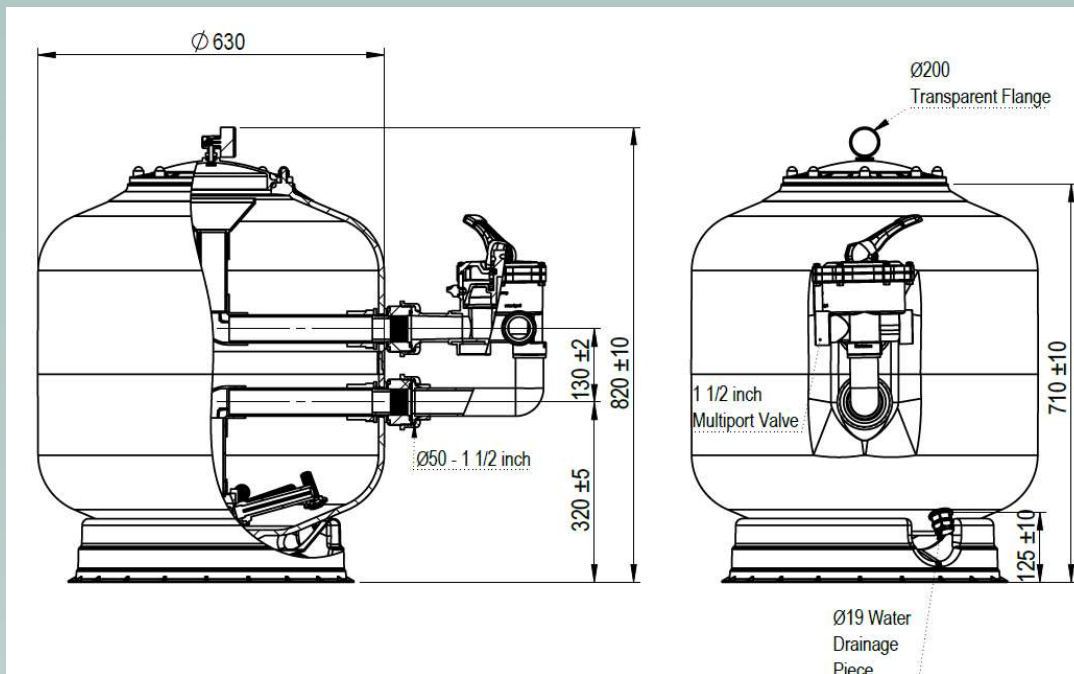


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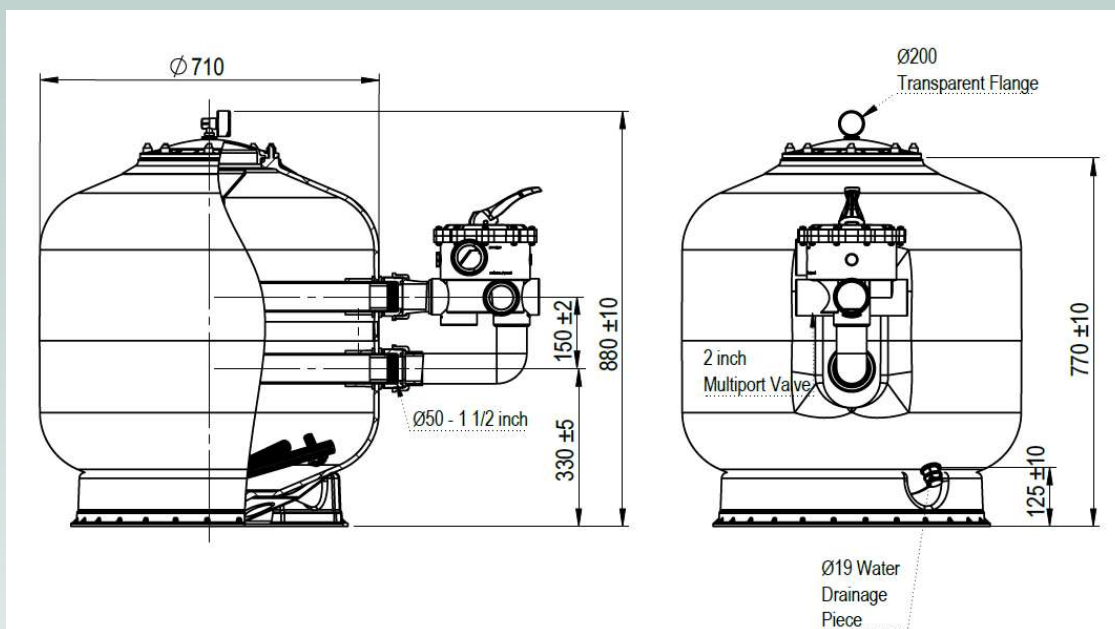
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Dimensions – Ø630



Dimensions – Ø710



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8. Filter Selection Guide

The selection of the filter should be based on the pool volume, required turnover time, hydraulic design criteria and operating conditions of the circulation system.

For optimum filtration performance, the selected filter capacity should be compatible with the circulation pump flow rate and the required water turnover rate. The filtration system shall be designed to ensure adequate water quality, efficient particle removal and reliable long-term operation.

When selecting a filter, the following parameters should be considered:

- Pool volume
- Required turnover time
- Circulation flow rate
- Filtration velocity
- Hydraulic losses within the system
- Operating pressure
- Type of filter media
- Environmental and operating conditions

Note: The final filter selection should be verified by a qualified pool system designer or engineer to ensure compliance with project-specific hydraulic requirements.

9. Start-Up Procedure and Operating Principle

After loading the filter media, the media must be cleaned before normal operation. Follow the steps below:

1. Set the multiport valve to the "BACKWASH" position.
2. Open the valves controlling the pool suction lines and operate the pump for approximately 4 minutes.

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3. Stop the pump and move the multiport valve handle to the "FILTER" position.

Once these steps have been completed, the filter is ready to begin normal filtration cycles for swimming pool water treatment.

IMPORTANT

The pump must be always be switched off before changing the position of the multiport valve handle.

10. Multiport Valve Positions and Functions

FILTRATION

With the pump switched off, set the multiport valve handle to the **FILTER** position and start the pump.

During filtration, it is recommended to periodically monitor the pressure gauge, as it indicates the degree of filter loading and contamination. When the operating pressure rises approximately **50% above the initial clean filter pressure**, a **BACKWASH** cycle should be performed.

The suction valves connected to the main drains and skimmers should be adjusted according to the amount of floating debris present on the water surface. Please note that when the main drain valve is fully open, suction through the skimmers will be reduced. To increase the skimming effect, partially close the main drain valve.

Typical Pressure Readings:

- **0.8 kg/cm² (11.4 PSI):** Normal operating pressure at the beginning of the filtration cycle.
- **1.2 kg/cm² (17.0 PSI):** Approximately 50% above the initial pressure. This indicates that a backwash cycle is required.

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BACKWASH

During filtration, the filter media develops thousands of flow channels that retain suspended contaminants. As contaminants accumulate, the number of free flow channels decreases, causing a gradual increase in operating pressure.

When the pressure rises approximately 50% above the clean filter pressure, the filter media should be cleaned as follows:

1. Set the multiport valve to the **BACKWASH** position.
2. Ensure that the main drain and return valves are open.
3. Start the pump and operate for approximately **2 minutes**.
4. Stop the pump after the backwash cycle is completed.

At the end of this process, accumulated contaminants will have been discharged to waste.

RECIRCULATE

In the **RECIRCULATE** position, water from the pump is returned directly to the swimming pool without passing through the filter media.

This mode may be used when circulation is required without filtration.

WASTE

If the swimming pool cannot be drained directly through a dedicated drain connection, the pool water may be discharged using the filtration pump.

To perform this operation:

1. Set the multiport valve to the **WASTE** position.
2. Open the main drain valve.
3. Ensure that the pump strainer basket and suction pipe are completely filled with water.
4. Close the skimmer valves and pool vacuum line valves before starting the pump.

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5. Operate the pump until the required water level is reached.

Water will be discharged directly to waste without passing through the filter.

RINSE

After completing a **BACKWASH** cycle, the first water passing through the filter may contain residual suspended particles.

To prevent this water from returning to the swimming pool:

1. Set the multiport valve to the **RINSE** position immediately after backwashing.
2. Operate the pump for approximately **1 minute**.
3. Stop the pump.
4. Set the valve back to the **FILTER** position.

This operation directs the initial cloudy water to waste and ensures proper filter bed settlement before returning to normal filtration.

CLOSED

As the name implies, the **CLOSED** position shuts off the water flow between the pump and the filter.

This position is typically used when servicing or opening the pump strainer basket.

Valve Position Function

FILTER Normal filtration operation

BACKWASH Cleaning the filter media

RINSE Settling the filter media after backwash

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RECIRCULATE Circulation without filtration

WASTE Direct discharge to drain

CLOSED Flow shut-off for maintenance

11. Water Quality Recommendations

The recommended pH range for swimming pool water is **7.2 to 7.6**. Appropriate disinfectant levels should be maintained at all times to ensure safe and hygienic water conditions.

pH LEVEL

The pH value is an indicator of the acidity or alkalinity of water. A pH value of **7.0** is considered neutral. Values between **0 and 7** indicate acidic conditions, while values between **7 and 14** indicate alkaline conditions.

For swimming pools, the normal operating pH range is generally between **6.8 and 8.4**.

WHY IS pH IMPORTANT?

THE IDEAL pH VALUE FOR SWIMMING POOL WATER IS BETWEEN 7.2 AND 7.6

As previously mentioned, a sufficient level of residual chlorine must be maintained in the pool to eliminate undesirable microorganisms. Chlorine acts effectively as a disinfectant only when the pool water pH is maintained within the recommended range of **7.2 to 7.6**.

Maintaining the correct pH level is also important for other reasons. When the pH rises above **7.6**, calcium dissolved in the water may begin to precipitate, causing visible cloudiness and scale formation. This effect is particularly noticeable in areas with hard water.

CHLORINE

Standards and regulatory requirements regarding residual (free) chlorine concentration may vary from country to country depending on local health authority regulations. Typical recommended values are between **0.2 and 0.6 ppm (mg/L)**.

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WHAT IS FREE OR RESIDUAL CHLORINE?

Even after filtration, certain microorganisms may remain in the water and must be eliminated through disinfection. Chlorine, primarily in the form of hypochlorous acid, provides this disinfecting action.

A portion of the chlorine added to the water remains available after the oxidation of organic contaminants and destruction of microorganisms. This remaining chlorine acts as a reserve disinfectant capable of neutralizing new contaminants introduced by swimmers or environmental factors.

The chlorine remaining in the water in the form of hypochlorous acid is known as **free chlorine** or **residual chlorine**.

Parameter	Recommended Range
pH	7.2 - 7.6
Free Chlorine	0.2 - 0.6 ppm
Total Alkalinity	80 - 120 ppm
Water Temperature	According to pool design

12. Periodic Maintenance

Pressure gauge, valve assembly, filter media and sealing components should be inspected regularly.

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Maintenance Activity	Daily	Weekly	Monthly	Quarterly	Semi-Annual	Annual
Pressure Check	■					
Leak Inspection	■					
Backwash Requirement Check	■					
Pressure Gauge Inspection		■				
Multiport Valve Inspection			■			
O-Ring and Gasket Inspection			■			
Drain System Inspection				■		
Fasteners Inspection				■		
Internal Collector System Inspection					■	
Filter Vessel Visual Inspection					■	
Filter Media Level Check						■
Filter Media Performance Evaluation						■
General System Maintenance						■

** A backwash cycle should be carried out whenever the operating pressure increases by approximately 50% above the clean filter pressure, or when a significant decrease in filtration performance or flow rate is observed.** Filtre medyasının değişim süresi kullanım yoğunluğu, su kalitesi ve işletme şartlarına bağlı olarak değişebilir.*

13. Materials of Construction

Component	Material
Filter Outer Shell	GRP (Glass Reinforced Plastic)
Filter Inner Shell	ABS
Collector System	ABS + PVC
Multiport Valve	ABS
Top Cover	ABS
O-Rings	EPDM
Drain System	ABS
Connection Fittings	PVC

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14. Safety Instructions

To ensure safe operation and prevent damage to the filtration system, the following safety instructions shall be observed at all times:

- **Never open the filter while it is under pressure.**
- **Always switch off the circulation pump before changing the position of the multiport valve.**
- **Completely relieve system pressure before performing any maintenance, inspection or repair work.**
- **Do not exceed the maximum design pressure of the filtration system.**
- **Inspect the filter, piping and valve assembly regularly for signs of damage, leakage or deterioration.**
- **Only qualified personnel should perform installation, maintenance and repair operations.**
- **Do not operate the filtration system with damaged components.**
- **Ensure that all covers, clamps and connections are properly secured before starting the system.**
- **Use only original or manufacturer-approved replacement parts.**
- **Keep children and unauthorized persons away from the equipment during operation and maintenance activities.**
- **Protect the system from freezing conditions. Water trapped inside the filter may cause permanent damage if frozen.**
- **Always follow applicable local regulations and safety requirements when installing and operating the filtration system.**