



PROTON

High-Density Polyethylene Sand Filter — Side & Top Mount Installation, Operation & Maintenance Manual

Oxygen Codes: 102.01.29 · 102.01.30 · 102.01.31 · 102.01.32 | 102.01.29#top · 102.01.30#top
· 102.01.31#top



Scan for
product page

www.oxygen.gr

OXYGON — Karavasilis Stergios & Sia EE · N. Rysio, 57001 Thessaloniki, Greece
Tel: +30 2312 208 240 | info@oxygen.gr | www.oxygen.gr

Contents

1.	Safety Warnings	3
2.	Package Contents	4
3.	How the Filter Works	4
4.	Technical Specifications	5
5.	Control Valve — Six Positions	7
6.	Installation	8
7.	Start-up	10
8.	Operation — Backwash & Rinse	10
9.	Filter Media	11
10.	Maintenance	11
11.	Troubleshooting	12
12.	Spare Parts & Accessories	13
13.	Warranty, Contact & Certifications	15

1. Safety Warnings

Read this manual carefully before installing, operating or servicing the PROTON sand filter. It contains information essential to the safety of both the operator and the equipment. Keep it for future reference.

HIGH PRESSURE

This filter operates under pressure. When any part of the circulating system (clamp, pump, filter, valves) is serviced, air can enter the system and become pressurised. Pressurised air can blow the lid or the valve off and cause severe injury, death or property damage. Never unscrew the flange clamp screws while the filter is operating.

STOP THE PUMP FIRST

ALWAYS switch the pump off before changing the position of the control valve. Moving the valve handle under flow damages the spider gasket and can cause the handle to be thrown off.

ELECTRICAL SAFETY

All electrical connections to the circulation pump must be made by a qualified electrician, in accordance with national wiring regulations. The pump must be earthed and protected by a residual-current device.

Maximum working pressure: **50 psi (3.4 bar)**. Maximum water temperature: **50 °C**.

Do not unscrew any part while the unit is operating under pressure.

Clean the pump strainer and the skimmer baskets regularly — a restricted suction damages the pump.

Never start the pump with the control valve between two positions.

Do not use the filter with water containing solvents, oils or aggressive chemicals.

Keep children away from the plant room and from the filter during backwash.

Note: The product complies with the applicable European Directives. For warranty terms see Section 13.

2. Package Contents

Check the contents on delivery. Report any damage or missing item to Oxygen before installation.

- PROTON filter tank — high-density polyethylene (HDPE), blow-moulded
- 6-way multiport control valve — side mount or top mount depending on model
- Filter support stand
- Internal under-drain: central water distributor + 8 laterals
- Pressure gauge (manometer)
- Air release valve on the tank top
- Sight glass with O-ring, fitted on the control valve
- Bulkhead fittings, adaptors, nuts and O-rings
- PVC pipe and elbow for the pump connection
- Drain valve
- This manual

3. How the Filter Works

The filter uses special filter sand to remove dirt particles from pool water. The filter sand is loaded into the filter tank and functions as the permanent dirt-removing media. When the control valve is in the FILTER position, the pool water which contains suspended dirt particles is pumped through the piping system and is automatically directed by the filter control valve to the top of the filter tank. As the pool water is pumped through the filter, dirt particles are trapped by the sand bed and filtered out. The cleaned pool water is returned from the bottom of the filter tank, through the control valve and back to the pool through the piping system. This entire sequence is continuous and automatic and provides for total recirculation of pool water through the filter and piping system.

After a period of time the accumulated dirt in the filter causes a resistance to the flow, and it diminishes. This means it is time to clean your filter. With the control valve in the BACKWASH position, the water flow is automatically reversed through the filter so that it is directed to the bottom of the tank, up through the sand, flushing the previously trapped dirt and debris out the waste line. Once the filter is back-washed of dirt, set the control valve to RINSE and run the pump for about ½ to 1 minute, then resume normal filtering.

4. Technical Specifications

PROTON filters are available with a side-mounted or a top-mounted 6-way multiport valve. Both versions share the same tank, the same internal under-drain and the same filter media quantities.

Side-Mount Models

Code	Model (Ø)	Flow (m ³ /h)	Connection	Sand (kg)	Weight (kg)
102.01.29	Ø450	8	Ø50	75	7
102.01.30	Ø535	12	Ø50	100	11
102.01.31	Ø635	18	Ø50	175	14
102.01.32	Ø710	22	Ø50	250	19

Top-Mount Models

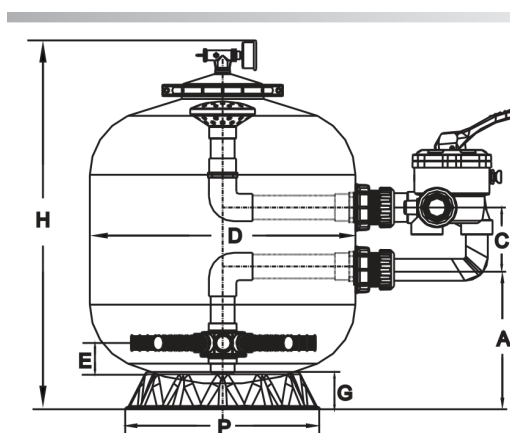
Code	Model (Ø)	Flow (m ³ /h)	Connection	Sand (kg)	Weight (kg)
102.01.29#top	Ø450	8	Ø50	75	7
102.01.30#top	Ø535	12	Ø50	100	11
102.01.31#top	Ø635	18	Ø50	175	14

The top-mount version carries the same 6-way multiport valve mounted on the tank neck instead of on the side flange. Flow rates, sand quantities and maintenance are identical to the side-mount models; only the valve position and the pipe routing differ. The Ø710 tank is supplied as side mount only.

Dimensions

mm	Ø450	Ø535	Ø635	Ø710
D	450	535	635	710
H	670	710	810	880
A	260	290	310	360
P	390	390	565	565
C	125	125	125	125
G	75	75	95	95
E	90	90	90	90

All dimensions in millimetres, as given by the manufacturer. Refer to the drawing for the location of each reference point.



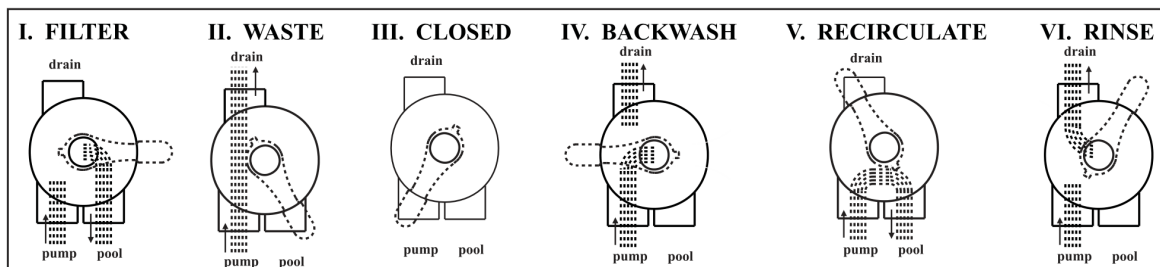
PROTON side-mount filter — dimension reference points

Common Characteristics

Tank construction	High-density polyethylene (HDPE), blow-moulded
Corrosion resistance	Fully corrosion-free; UV-stabilised
Control valve	6-way multiport, side mount or top mount
Under-drain	Central water distributor with 8 laterals
Max. working pressure	50 psi (3.4 bar)
Max. water temperature	50 °C
Backwash trigger	1.5 bar (150 kPa) above the clean starting pressure
Filter media	Quartz sand 0.5–0.8 mm, or glass filter media
Pressure gauge	Included, 3 bar
Sight glass	Included on the control valve

5. Control Valve — Six Positions

The 6-way multiport valve directs the water through the filter. Each position serves a distinct purpose. **Always stop the pump before moving the handle.**



The six positions of the multiport valve

Position	Function
I. FILTER	Normal operation. Water enters the top of the tank, passes down through the sand and returns to the pool.
II. WASTE	Water is sent directly to the drain, bypassing the sand. Used for vacuuming heavy dirt and for lowering the water level.
III. CLOSED	All ports closed. The pump must never run in this position.
IV. BACKWASH	Flow is reversed upwards through the sand and the dirt is flushed to the waste line.
V. RECIRCULATE	Water bypasses the filter and returns to the pool. Used when dosing chemicals.
VI. RINSE	Settles the sand bed and flushes residual dirt to waste after a backwash.

6. Installation

Only simple tools are required — a screwdriver, wrenches and pipe sealant for the plastic adaptors.

6.1 Positioning

Place the filter on a reasonably level surface with adequate drainage.

Position the tank so that the piping connections and the control valve are convenient and accessible for operation and service.

Place the filter as close to the pool as possible to reduce line losses from pipe friction.

Leave enough clearance above the tank to remove the valve and to open the top cover.

6.2 Loading the Filter Media

Loosen the flange clamp and remove the control valve if it is already fitted.

Cap the internal centre pipe with the plastic cap to prevent sand from entering it.

Fill the tank approximately half full of water. This cushions the fall of the sand and protects the under-drain laterals from shock.

Pour in the correct amount and grade of filter media. Be sure the centre pipe remains centred in the opening.

Level the surface of the sand and bring it up to about the middle of the tank.

Remove the plastic cap from the internal pipe.

DO NOT OVERFILL

Use only the sand quantity stated for your model in Section 4. Overfilling blocks the valve and causes sand to be carried back into the pool.

6.3 Fitting the Control Valve — Side Mount

Insert the control valve, with its O-ring in place, into the tank neck. Make sure the centre pipe slips into the hole in the bottom of the valve.

Place the two plastic clamps around the valve flange and the tank flange and tighten them just enough that the valve can still be rotated on the tank for final positioning.

Screw the pressure gauge, with its O-ring in place, into the tapped hole in the valve body. Do not over-tighten.

Connect the pump to the valve opening marked PUMP. After the connections are made, tighten the flange clamps with a screwdriver and tap around the clamp with a screwdriver handle to help seat the valve flange clamp.

Make the return-to-pool connection to the valve opening marked RETURN, and complete the remaining plumbing — suction lines to the pump, waste line, etc.

6.4 Fitting the Control Valve — Top Mount

Fit the valve to the top opening of the tank instead of the side flange, with its O-ring in place and the centre pipe engaged in the bottom of the valve.

Tighten the clamp evenly around the tank neck so that the valve stays square with the tank.

Route the PUMP and RETURN pipes from above. Allow enough straight pipe above the valve so that it can be removed for servicing without cutting the pipework.

Fit the pressure gauge and the sight glass as for the side-mount version.



PROTON with top-mounted multiport valve

6.5 Pipework and Electrical Connections

Use adaptor unions on both valve ports. They make installation, maintenance and replacement far easier.

Make all electrical connections to the pump following the pump instructions.

To prevent water leakage, be sure all pipe connections are tight.

7. Start-up

Be sure the correct amount of filter sand is in the tank and that all connections have been made and secured.

Push the control valve handle down and rotate it to the BACKWASH position. Always push the handle down before turning, to prevent damage to the valve seal.

Start the pump according to the pump instructions, making sure all suction and return lines are open. Allow the filter tank to fill with water. Once water is flowing out of the waste line, run for about 1 to 2 minutes to remove any impurities or fine sand particles from the media.

Stop the pump and set the valve to RINSE. Start the pump and operate until the water in the sight glass is clear — about ½ to 1 minute.

Stop the pump, set the valve to FILTER and restart the pump. The filter is now operating in the normal filter mode, filtering dirt particles from the pool water.

Adjust the pool suction and return valves to achieve the desired flow. Check the system and the filter for water leaks and tighten connections, bolts and nuts as required.

Note the initial pressure gauge reading with the filter clean. This reading varies with each pool, depending on the pump and the piping. It is the reference for all future backwashing.

During the initial clean-up of the pool water it may be necessary to backwash frequently, because of the unusually heavy initial dirt load in the water.

8. Operation — Backwash & Rinse

As the filter removes dirt and impurities from the pool water, the accumulation inside the filter causes the pressure to rise and the flow to diminish. When the pressure gauge reads **1.5 bar (150 kPa) higher** than the initial clean pressure you noted at start-up, it is time to backwash the filter.

Backwash Procedure

Stop the pump.

Push the valve handle down and turn it to BACKWASH.

Start the pump and run it for 1 to 3 minutes, until the water in the sight glass runs clear.

Stop the pump.

After Backwashing

Turn the valve to RINSE and run the pump for about 30 seconds. This settles the sand bed and flushes the residual dirt to waste.

Stop the pump, return the valve to FILTER and restart. Normal filtration resumes.

Note the new pressure reading — it should be close to the original clean pressure.

9. Filter Media

The PROTON filter operates with a single bed of graded quartz sand. Glass filter media may be used as an alternative and generally lasts longer. Use the exact quantity given for your model in Section 4.

Code	Description	Packaging
102.09.00	Quartz sand 0.5–0.8 mm	25 kg
102.09.02	Quartz sand 0.8–1.2 mm	25 kg
102.09.19	Glass filter media 0.5–1.4 mm	25 kg
102.04.01	Pressure gauge, 3 bar	—

Replace quartz sand every 3 to 5 years, depending on use and water quality. Glass media has a longer service life. Never mix grades within the same bed.

10. Maintenance

Check the pressure gauge weekly during the season and backwash when the pressure rises 1.5 bar above the clean reading.

Clean the pump strainer and skimmer baskets regularly — restricted suction reduces the filtration rate and damages the pump.

Inspect the sight glass; replace it and its O-ring if it becomes cracked or permanently clouded.

Check the flange clamp and all unions for leaks at the start of every season.

Lubricate the valve O-rings with silicone grease once a season. Never use petroleum-based lubricants on plastic parts.

Before winter: backwash, rinse, then stop the pump, open the drain valve, remove the pressure gauge and leave the valve handle between two positions so that the seal is not compressed.

Protect the filter from freezing. Water left in the tank or valve can crack the body.

Replace the filter media every 3 to 5 years.

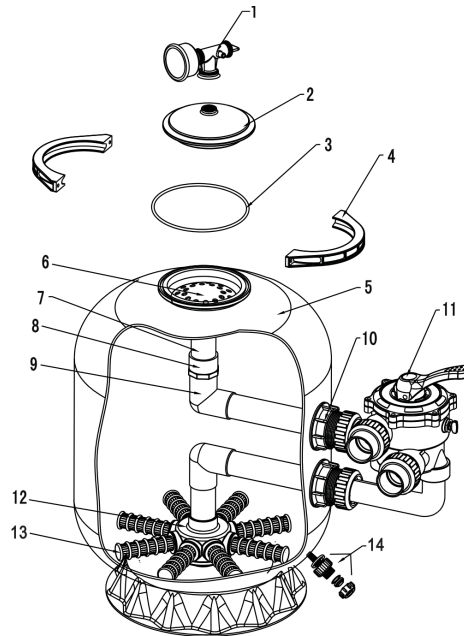
11. Troubleshooting

Symptom	Probable cause	Remedy
High pressure, low flow	Filter media loaded with dirt	Backwash, then rinse
High pressure right after backwash	Media compacted or wrong grade	Break up and level the bed; verify the grade is 0.5–0.8 mm
Pressure does not rise, no flow	Pump not primed, or a closed valve in the suction line	Prime the pump; open all suction and return valves
Sand returning to the pool	Broken lateral or cracked distributor	Empty the tank and replace the damaged part
Sand returning to the pool	Tank overfilled with media	Remove media down to the quantity stated in Section 4
Sand lost during backwash	Backwash flow rate too high	Throttle the pump discharge slightly during backwash
Water to waste while in FILTER	Worn spider gasket in the valve	Replace the spider gasket
Water flows while in CLOSED	Handle not pushed down and locked	Stop the pump, push the handle down and reseal it
Leak at the control valve	Worn or dry O-rings	Replace the O-rings; lubricate with silicone grease
Leak at the flange clamp	Clamp not tightened evenly, or damaged cover O-ring	Retighten evenly; replace the O-ring if damaged
Cloudy water after backwash	Rinse step skipped	Run the RINSE position for 30 seconds before returning to FILTER
Valve handle will not turn	System still under pressure, or handle not pressed down	Stop the pump, release pressure, press the handle down before turning
Short filter cycles	Filter undersized for the pump, or high bather load	Check flow against Section 4; correct water chemistry

12. Spare Parts & Accessories

When ordering spare parts, state the Oxygen code of your filter and the item number from the drawing below.

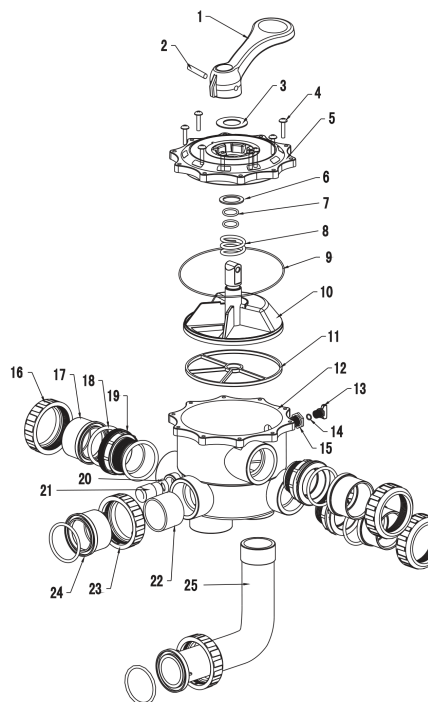
Filter Tank Assembly



PROTON filter — exploded view

Item	Description	Qty
1	Air releaser	1
2	Top cover	1
3	O-ring, top cover	1
4	Top-cover clip	1
5	Tank (Ø450 / Ø535 / Ø635 / Ø710)	1
6	Water distributor	1
7	PVC pipe	1
8	PVC adaptor	4
9	PVC elbow	1
10	Nut, bulkhead	2
11	Multiport valve	1
12	Filter support stand	1
13	Lateral	8
14	Drain valve	1

Multiport Valve Assembly



6-way multiport valve — exploded view

Item	Description	Qty	Item	Description	Qty
1	Handle	1	14	O-ring, plug	1
2	Pin, handle	1	15	Nut, plug	1
3	Washer	1	16	Nut, bulkhead	3
4	Bolt	6	17	Adaptor, bulkhead	3
5	Lid assembly	1	18	O-ring, bulkhead	8
6	Washer	1	19	Bulkhead fitting	3
7	O-ring, rotor	2	20	O-ring, sight glass	1
8	Spring	1	21	Sight glass	1
9	O-ring, lid	2	22	PVC pipe	1
10	Rotor	1	23	Nut, bulkhead	2
11	Gasket, spider	1	24	Adaptor, bulkhead	1
12	Body-diffuser assembly	1	25	Elbow pipe	1
13	Plug	1			

13. Warranty, Contact & Certifications

Warranty

Oxygen warrants the PROTON filter against defects in materials and workmanship for **24 months** from the date of purchase, under normal use and correct installation.

The warranty covers the tank, the control valve body and the internal under-drain. It does not cover wear parts — O-rings, spider gasket, sight glass — nor the filter media.

The warranty is void where the filter has been operated above 50 psi (3.4 bar) or above 50 °C, connected to an oversized pump, damaged by frost, or serviced with non-original parts.

Claims must be accompanied by the purchase document and the Oxygen code of the product.

Contact Information

Company	OXYGON — Karavasilis Stergios & Sia EE
Headquarters	N. Rysio, 57001 Thessaloniki, Greece
Phone	+30 2312 208 240
Mobile	+30 6945 157 589
Email	info@oxygen.gr
Website	www.oxygen.gr
Romania subsidiary	OXYGON SRL — Str. Constelatiei 1 Bis, Voluntari, Bucharest 077191
Romania Phone	+40 753 380 848
Romania Email	info@oxygen.ro

ISO Certifications

ISO 9001:2015 Quality Management <i>EUROCERT</i>	ISO 14001:2015 Environmental Management <i>BQV</i>	ISO 45001:2018 Health & Safety <i>BQV</i>
ISO 22301:2019 Business Continuity <i>EUROCERT</i>	ISO 46001:2019 Water Efficiency <i>BQV</i>	

Recycling of materials must be carried out in accordance with applicable regulations.