



OLYMPUS Deep Bed Series

Polyester / Fiberglass-Reinforced Sand Filter
Installation, Operation & Maintenance Manual

Oxygen Codes: 102.01.92N | 102.01.93N | 102.01.94N | 102.01.95N | 102.01.96N



**Scan for
product page**

www.oxygen.gr

OXYGON — N. Rysio, 55236 Thessaloniki, Greece
Τηλ: +30 2312 208 240 | info@oxygen.gr | www.oxygen.gr

Table of Contents

1. Safety Warnings
2. Package Contents
3. Product Overview
4. Technical Specifications
5. Installation
6. Backwash & Cleaning Procedure
7. Operation
8. Maintenance
9. Troubleshooting
10. Spare Parts & Accessories
11. Warranty, Contact & Certifications

1. Safety Warnings

Read these instructions carefully before installing, operating or maintaining the OLYMPUS Deep Bed sand filter. They contain important information for the safety of the operator and the equipment.

PRESSURE HAZARD

The filter operates under pressure. NEVER service or open the filter while the pump is running or while the system is pressurised. Always switch the multivalve to the Closed position, stop the pump, and open the air relief valve to release residual pressure before any service operation.

ELECTRICAL HAZARD

All electrical work on the connected circulation pump must be carried out by a qualified electrician in accordance with EN 60335-2-41 and applicable local regulations. Always disconnect the mains power before any maintenance involving the pump, valves or electrical components in the equipment room.

MECHANICAL HAZARD

Maximum operating pressure: 2.5 bar. Never exceed this value. Use only the supplied or recommended multivalve / 6-way valve. Sand and gravel are heavy — use proper lifting equipment and personal protective equipment when filling or emptying the filter tank.

GENERAL WARNINGS

- On delivery, check the integrity of the tank, base, multivalve connections and observation glass.
- Keep this manual for future reference.
- Do not expose the filter to freezing temperatures while filled with water.
- Installation must be carried out by qualified personnel.
- Use only genuine OXYGON spare parts.
- Maximum ambient temperature: 45 °C.

Note: The product complies with relevant European Directives. For warranty terms, see Section 11.

2. Package Contents

Each OLYMPUS Deep Bed sand filter is supplied complete with the following items. Please verify on delivery.

- OLYMPUS Deep Bed filter tank (monoblock polyester + fiberglass-reinforced body)
- Internal Octopus distributor (no plate design)
- Pressure gauge / manometer
- Air release valve
- Manhole cover (Ø220 mm) on Ø620-Ø920; reinforced fiberglass DN 395 cover on Ø1050-Ø1250
- Observation glass (Ø500-Ø920 models)
- Strainer
- EPDM seals and stainless steel bolts
- Multivalve (6-way) — INCLUDED on Ø620 (1½"), Ø800 and Ø920 (2"); NOT INCLUDED on Ø1050 and Ø1250 (order Ø75 / Ø90 6-way valve separately)
- Two-year warranty document

Note: Quartz sand and gravel are NOT supplied with the filter. Order separately according to Section 5 (Installation) — required quantities are listed in the dimensions table.

3. Product Overview

The OXYGON OLYMPUS Deep Bed Series is a range of professional polyester / fiberglass-reinforced sand filters designed for medium and large swimming pools, hotels, hydrotherapy facilities and commercial installations. The filters are manufactured to DIN norm standards using a monoblock polyester body with fiberglass reinforcement, and are pressure-tested at 4 bar.

Key Features

- **Deep Bed design** — 1.2 m sand bed depth for superior filtration quality and longer service intervals
- **Monoblock body** — single-piece polyester with fiberglass reinforcement, no welded seams
- **Octopus distributor** — internal flow distributor without plate, ensures uniform sand bed and lower pressure loss
- **Side valve connection** — 6-way multivalve included on Ø620-Ø920
- **EPDM seals & stainless steel bolts** — corrosion-resistant
- **Observation glass** for visual monitoring of the sand bed (Ø500 - Ø920 models)
- **Manhole cover** for easy access to the sand bed
- **Pressure-tested at 4 bar** (operating range 1.5 - 2 bar)
- **Filtered particle size:** 0.7 - 5.0 mm
- **2-year warranty**

Available Variants

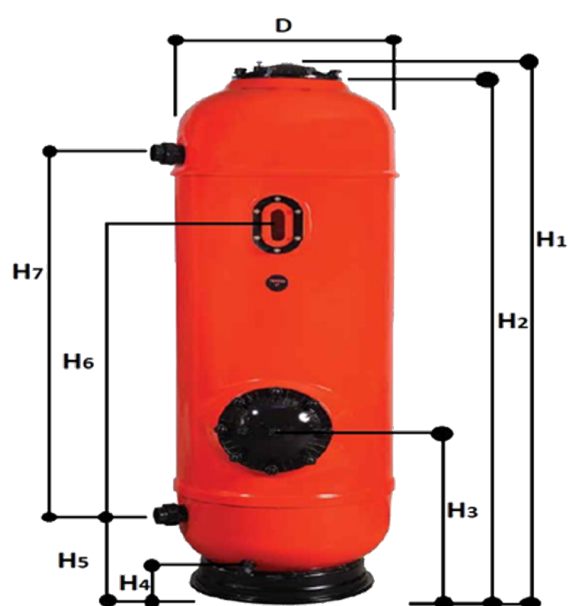
Code	Tank Ø (mm)	Flow @ 30 m³/h/m²	Flow @ 40 m³/h/m²	Multivalve
102.01.92N	Ø620	9 m³/h	12 m³/h	Included 1½"
102.01.93N	Ø800	15 m³/h	20 m³/h	Included 2"
102.01.94N	Ø920	20 m³/h	26.5 m³/h	Included 2"
102.01.95N	Ø1050	26 m³/h	34 m³/h	Not included
102.01.96N	Ø1250	36 m³/h	48 m³/h	Not included

4. Technical Specifications

Common Operating Parameters

Operating temperature	Max. 45 °C
Operating pressure	1.5 – 2 bar
Test pressure	4 bar
Filtered particle size	0.7 – 5.0 mm
Operating speed	30 – 50 m ³ /h/m ²
Optimum operating speed	34 m ³ /h/m ²
Sand bed depth	1.2 m (Deep Bed)
Body construction	Monoblock polyester, fiberglass-reinforced
Internal distributor	Octopus type — no plate
Seals	EPDM
Bolts	Stainless steel
Manhole cover (Ø620-Ø920)	Diameter 220 mm
Manhole cover (Ø1050-Ø1250)	DN 395 fiberglass-reinforced PP
Observation glass	Ø500 – Ø920 models
Equipment supplied with	Air release valve, pressure gauge, strainer
Warranty	2 years

Dimensions & Sand Loading



OLYMPUS Filter — dimension reference points (D, H1-H7)

Dimensions (mm)

Code	D	H1	H2	H3	H4	H5	H6	H7
102.01.92N	620	196	190	60	17	32	134	126
102.01.93N	800	198.5	192.5	80	17	35	137	131
102.01.94N	920	213	207	98	21	55	154	124
102.01.95N	1050	—	—	—	—	—	—	—
102.01.96N	1250	—	—	—	—	—	—	—

Note: All dimensions in cm ($\times 10 = \text{mm}$). For Ø1050 and Ø1250 models, dimension drawings are supplied separately on request. Refer to the dimension reference image above for the meaning of each H label.

Filtration Media — Required Quantities

OLYMPUS Deep Bed filters use a multi-layer media bed: a **top filtration layer** of either **Anthracite** OR **Quartz Gravel 0.8-1.6 mm**, a **main filtration layer** of Quartz Sand 0.5-1 mm, and a **bottom support layer** of Quartz Sand 1-3 mm above the laterals. The total bed depth is 1.2 m. Quantities below cover one complete fill.

Code	Anthracite or Gravel 0.8-1.6 mm (lt)	Quartz Sand 0.5-1 mm (lt)	Quartz Sand 1-3 mm (kg)
102.01.92N	200	200	150
102.01.93N	275	275	200
102.01.94N	425	400	375
102.01.95N	550	450	275
102.01.96N	725	675	500

Loading order (bottom to top): 1) **Quartz Sand 1-3 mm** as the bottom support layer above the laterals; 2) **Quartz Sand 0.5-1 mm** as the main filtration layer; 3) **Anthracite** OR **Quartz Gravel 0.8-1.6 mm** as the top filtration layer (choose at installation — anthracite increases dirt-holding capacity and extends the run-time between backwashes; gravel is the conventional, lower-cost option). Do NOT mix anthracite and gravel in the same fill.

Connection Sizes

Code	Connection (Ø mm)	DN
102.01.92N	50	40
102.01.93N	63	50
102.01.94N	63	50
102.01.95N	75	65
102.01.96N	90	80

5. Installation

The OLYMPUS Deep Bed filter must be installed on a level, solid concrete base capable of supporting the filled weight (tank + sand + gravel + water). The equipment room must be ventilated and protected from freezing.

5.1 Site Preparation

- Provide a flat, level concrete pad sized for the filter base diameter plus working clearance (min. 0.5 m around the tank).
- Verify that the floor is rated for the filled weight — see filled-weight calculation below.
- Ensure the equipment room is dry, ventilated and lit; ambient temperature must not exceed 45 °C and must remain above 0 °C.
- Provide a floor drain or sump near the filter for backwash discharge.
- Plan the suction and return piping path before lifting the filter into position.

5.2 Filling the Filtration Bed (Anthracite + Sand + Gravel)

BEFORE FILLING

Protect the central Octopus distributor and stand-pipe by sealing the top opening with adhesive tape or a plastic bag. No media must enter the distributor pipe. Add water (~1/3 of tank volume) before pouring the first layer to cushion the impact of the gravel on the laterals.

Quantities for each model are given in Section 4 — Filtration Media. For the top filtration layer, choose **Anthracite** OR **Quartz Gravel 0.8-1.6 mm** — do NOT mix the two. Load the layers **strictly in the following order, from bottom to top**:

1. Open the manhole cover.
2. Add water until the laterals are submerged (cushion layer).
3. **Layer 1 (bottom) — Quartz Sand 1-3 mm**: pour the recommended kg quantity evenly to cover the laterals and form the support layer.
4. **Layer 2 (middle) — Quartz Sand 0.5-1 mm**: pour the recommended litres of fine quartz sand evenly through the manhole — this is the main filtration layer.
5. **Layer 3 (top) — Anthracite OR Quartz Gravel 0.8-1.6 mm**: pour the recommended litres on top — captures the larger particles and completes the bed.
6. Remove the protective tape/bag from the distributor.
7. Inspect the manhole gasket; reseal the cover and tighten the cover bolts evenly in a star pattern.

5.3 Hydraulic Connection

- Connect the multivalve **Pump** port to the discharge of the circulation pump.
- Connect the multivalve **Return** port to the pool return line.
- Connect the multivalve **Waste** port to the floor drain / sewer (NOT to the pool).
- Use unions on both Pump and Return connections to allow easy filter removal for service.
- Provide isolation valves upstream and downstream of the filter.

5.4 First Fill and Pressure Check

1. Set the multivalve to the **Backwash** position.
2. Open the air relief valve on top of the filter.
3. Start the pump and let water fill the tank until a steady stream comes out of the air relief — close it.
4. Backwash for 3-5 minutes until the sight glass / waste discharge runs clear.
5. Stop the pump, set the valve to **Rinse**, run for 30-60 seconds, stop the pump.
6. Set the valve to **Filter** and start the pump — record the clean-bed pressure on the gauge. This is your reference value for backwash triggering (see Section 6).

6. Backwash & Cleaning Procedure

Backwashing reverses the flow through the sand bed to flush out trapped dirt. Backwash whenever the pressure gauge reads **0.3 - 0.5 bar above the clean-bed reference**, or after heavy bather load.

6.1 Backwash Steps

1. Stop the circulation pump.
2. Set the multivalve to **Backwash**.
3. Start the pump and run for **3-5 minutes**, until the sight glass / waste line runs clear.
4. Stop the pump.
5. Set the multivalve to **Rinse**.
6. Start the pump and run for **30-60 seconds**.
7. Stop the pump.
8. Set the multivalve back to **Filter**.
9. Restart the pump for normal operation. Record the new clean-bed pressure as your reference.

NEVER OPERATE THE MULTIVALVE WITH PUMP RUNNING

Always stop the pump before changing the multivalve position. Operating the valve under pressure may damage the seals and the valve handle.

6.2 Multivalve Positions

Position	Use
Filter	Normal pool operation — water passes top-down through sand
Backwash	Reverse flow to flush dirt out of sand bed to waste
Rinse	Settle sand bed after backwash; brief flush to waste
Recirculate	Bypass sand bed (e.g. flocculation, shock dosing)
Closed	Stops all flow — service position
Waste	Drain pool to waste, bypassing the filter
Winter	Off-season position (loose), prevents seal compression

7. Operation

During normal pool operation the multivalve is set to **Filter**. Monitor the pressure gauge daily — it is the primary indicator of filter condition.

7.1 Daily Checks

- Read and record the operating pressure.
- Visually inspect for leaks at the multivalve, manhole cover, observation glass and connections.
- Verify that the air relief valve is closed and not weeping.
- Listen for unusual pump noise (cavitation indicates clogged sand or low water level).

7.2 Recommended Operating Speed

- **Optimum:** 34 m³/h/m² (best filtration quality, longest run-time between backwashes)
- **Acceptable range:** 30 – 50 m³/h/m²
- Operating below 30 m³/h/m² causes channelling; above 50 m³/h/m² reduces filtration efficiency and shortens backwash interval.

8. Maintenance

Regular maintenance prolongs filter life and maintains water clarity. Keep a maintenance log noting backwashes, pressure readings and sand changes.

8.1 Routine Maintenance

Interval	Task
Daily	Read pressure gauge; check for leaks; verify pump operation
Weekly	Inspect observation glass clarity; check air relief valve
When $\Delta P > 0.3\text{--}0.5$ bar	Perform full backwash (Section 6)
Monthly	Lubricate multivalve seal with silicone grease (when off)
Annually	Inspect manhole gasket; check sand bed level by opening manhole
Every 3–5 years	Replace filter sand
Off-season	Backwash, rinse, set valve to Winter, drain tank if freezing risk

8.2 Sand Replacement

1. Stop the pump and isolate the filter (close upstream and downstream valves).
2. Set the multivalve to Closed and drain the filter via the drain plug at the base.
3. Open the manhole cover.
4. Remove the old sand using a wet/dry vacuum or hand tools — protect the central distributor.
5. Inspect the laterals and Octopus distributor for cracks or damage.
6. Reseal the central pipe with tape, then refill following the procedure in Section 5.2.
7. Backwash thoroughly (10–15 minutes) before returning to filter mode.

9. Troubleshooting

If a problem is not listed below or persists after corrective action, contact your installer or OXYGON technical support.

Symptom	Probable Cause	Corrective Action
Pressure rises rapidly	Sand bed clogged with debris/oils	Backwash; if no improvement, replace sand
Pressure too low	Suction line air leak; pump priming lost	Check pump strainer lid, valve seals and pipe joints
Sand returning to pool	Cracked lateral or distributor; over-filling of sand	Open manhole, inspect laterals; correct sand level
Cloudy water despite filtration	Sand exhausted; flow rate too high	Replace sand; verify flow $\leq 50 \text{ m}^3/\text{h}/\text{m}^2$
Water leak from multivalve	Worn spider gasket; valve operated under pressure	Stop pump; replace gasket; never operate valve with pump running
Water leak at manhole	Damaged or mis-seated O-ring; uneven bolt torque	Inspect & replace O-ring; tighten bolts in star pattern
Air at the air-relief valve	Air entering through pump suction	Check water level, skimmer baskets, pump lid O-ring
Short backwash intervals	Excessive bather load; flocculant overdose	Adjust dosing; consider higher filter size
Pressure does not drop after backwash	Insufficient backwash flow / time	Verify pump performance; extend backwash to 5+ min
Cracked observation glass	Mechanical impact; over-pressure	Replace observation glass assembly; check pressure gauge
Filter difficult to fill / slow water rise	Air-locked distributor	Open air relief; check pump priming
Multivalve stiff to operate	Lack of lubrication; debris under spider	Lubricate with silicone grease; clean spider seat

10. Spare Parts & Accessories

Use only genuine OXYGON spare parts to maintain the warranty and ensure long-term reliability. Order by Oxygen code via your dealer or info@oxygen.gr.

10.1 Filter Media

Code	Description
102.09.00	Quartz Sand 0.5 – 0.8 mm, 25 kg bag
102.09.02	Quartz Sand 0.8 – 1.2 mm, 25 kg bag
102.09.10	Anthracite 0.8 – 1.6 mm (top filtration layer)
102.09.15	Quartz Gravel 1 – 3 mm (bottom support layer)
102.09.19	Filter Glass 0.5 – 1.4 mm, 25 kg bag (alternative to sand)

10.2 Multivalves (for Ø1050 and Ø1250)

Code	Description
102.07.07	6-way side mounted multivalve Ø75 – 2½"
102.07.08	6-way side mounted multivalve Ø90 – 3"

10.3 Accessories

Code	Description
102.04.01	Manometer for sand filter, 3 bar
102.04.02	Manometer elbow, 3 bar
102.02.01	Air release valve

11. Warranty, Contact & Certifications

Warranty

OXYGON warrants the OLYMPUS Deep Bed sand filter against defects in materials and workmanship for a period of **two (2) years** from the date of purchase, when installed and operated in accordance with this manual. The warranty covers replacement of defective parts. The warranty does NOT cover: damage from freezing; chemical attack from out-of-spec pool chemistry; impact damage; consumables (sand, gaskets); or installations not carried out by qualified personnel.

Disposal & Recycling

At end of life, dispose of the polyester / fiberglass tank, the multivalve and metal components in accordance with local regulations for plastics, composite materials and metals. Used filter sand may be

disposed of as inert construction waste.

Contact Information

Company	OXYGON — Karavasilis Stergios & Sia EE
Headquarters	N. Rysio, 55236 Thessaloniki, Greece
Phone	+30 2312 208 240
Mobile	+30 6945 157 589
email	info@oxygen.gr
website	www.oxygen.gr
phone	+30 2312 208 240
address	N. Rysio, 55236 Thessaloniki, Greece
Branch	Bucharest, Romania

ISO Certifications

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

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