

# Aqua pura



behropur®

# behropur® High Purity Water System – Quality Pays for Itself

## Quality in Design and Development

The behropur® high purity water systems are convincing in their uncompromising performance in routine use, day after day.

"Built by practical people for practical people" – the design and development of our instruments has been and remains committed to this motto.

You just hook your new behropur® unit up and you're immediately able to use it.

In order to offer the advantages of rapid unproblematic installation and long-term performance to the highest specifications, our research and development staff has invested a good deal of thought and effort.

And above all, we are able to draw on our many years of experience in the design and production of laboratory equipment and instrumentation to insure that our products fully meet your expectations.

## Quality in Material and Production

Naturally, we produce our behropur® water purification systems according to strict quality assurance guidelines, which we have developed ourselves.

We exercise the strictest continuous quality control of both components and production stages.

Thus, you can always be certain that every behr product which you purchase meets the highest quality standards.

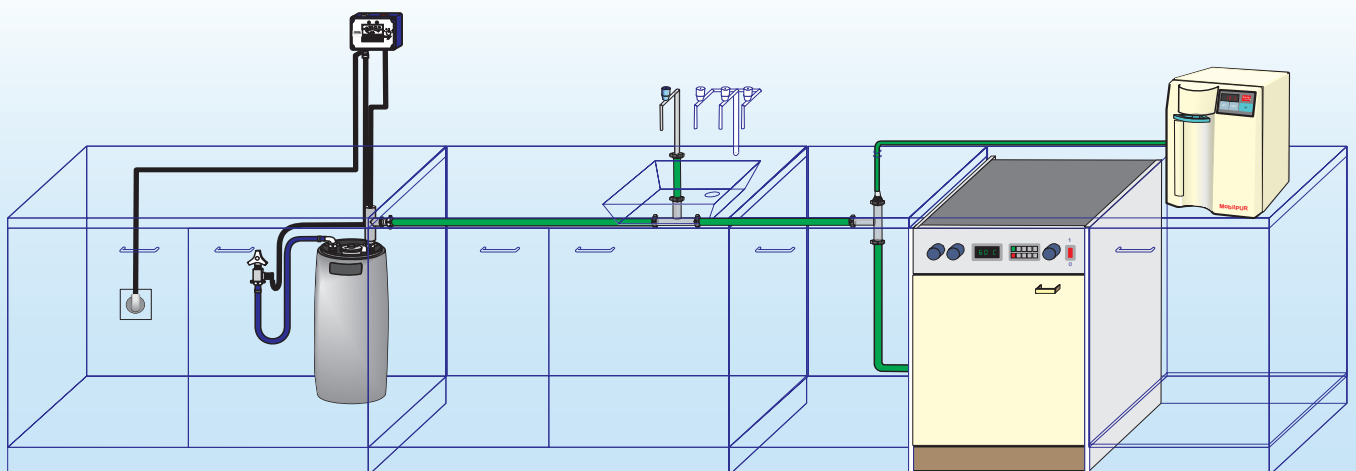
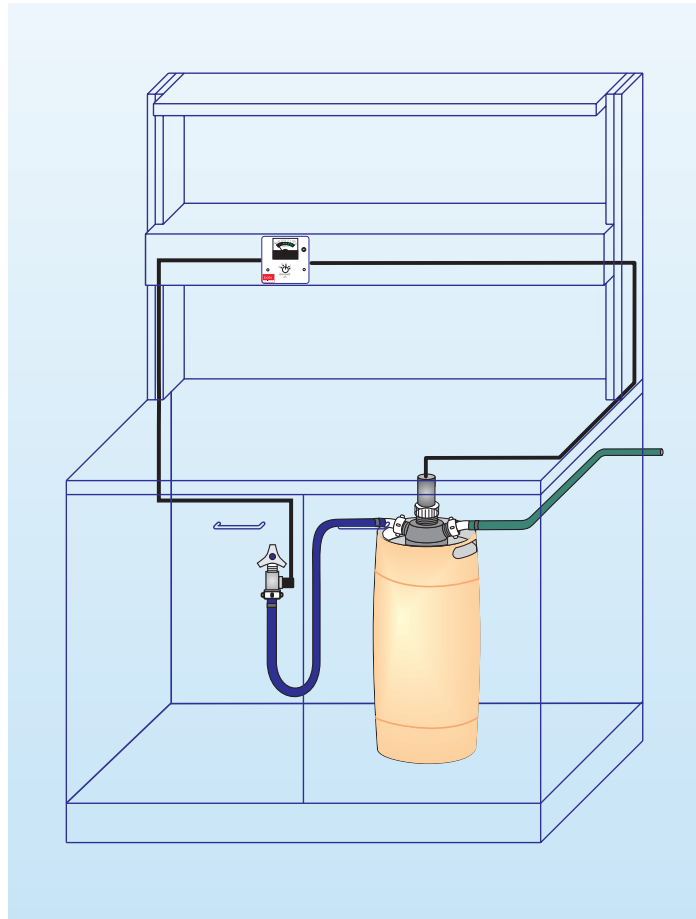
That holds for our water systems... and likewise for our replacement ion exchange resins.

We offer exclusively quality controlled mixed-bed resins.

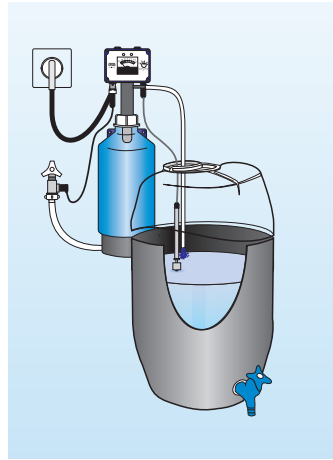
This assures a consistently high ion exchange performance over prolonged periods... and this results in high exchange capacity.

As our resin capacity approaches exhaustion, the conductance of the water increases nearly linearly as a function of water volume. Thus, the useful life is considerably extended.

Thus, quality pays for itself.



# behropur® High Purity Water Systems – Tailor Made for You



## Quality in Consultation and Planning

The terminology pure water is technically somewhat ambiguous.

Quite different criteria are applicable for different applications.

For the detection of inorganics present at the ppb level, the presence of organic compounds in the high purity water is of lesser significance.

Alternatively, in Bacteriology, the greatest emphasis is placed on the water being sterile or even pyrogen-free. A residual concentration of ionic material at ppm levels is still acceptable.

Various different applications also pose different operating requirements on the water purification system.

A system designed to fill a water reservoir has a different design than a system which provides pure water directly to laboratory instruments on demand.

The place of installation of the water deionizer is not necessarily identical with the place from which the user desires to monitor the quality of the purified water. The production of purity water may necessarily be dependent on the level in a reservoir

## Quality in Regeneration

We check the quality of each lot of resin on delivery.

This provides you reliability.

Reliability that you can count on in the quality of de-ionized water.

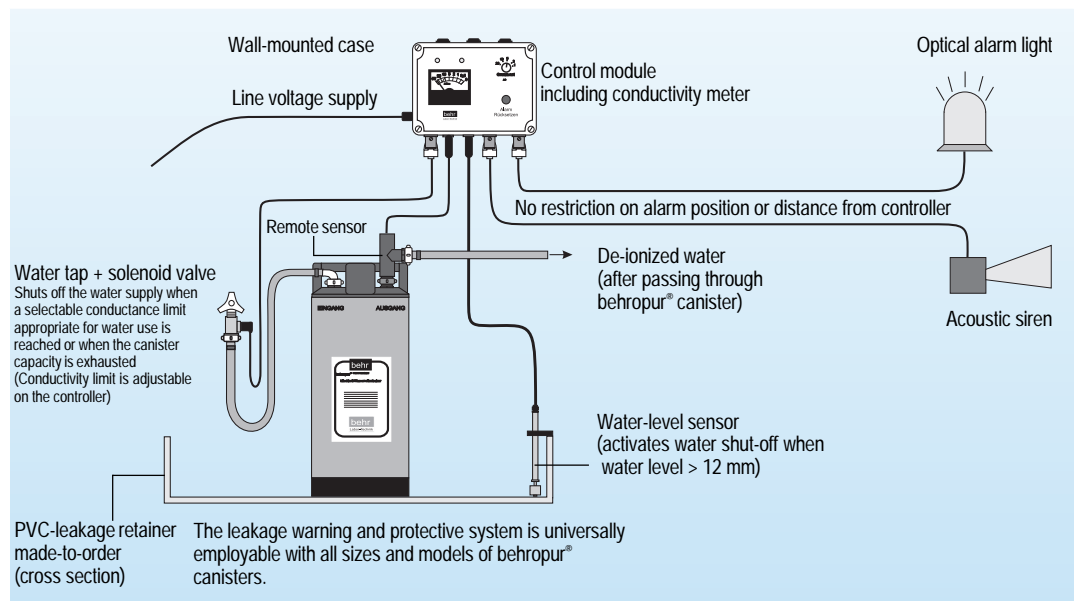
Regardless of whether you return your canisters to us for regeneration or refill them yourself with our resin.

The quality is unvarying.

Optimal.

We know this from QC verification.

You will know it through customer satisfaction.



Thus, every different application calls for different technical specifications of water purity. And for every requirement, there is an optimally configured water purification system, either based on ion exchange or reverse osmosis, possibly coupled with second stage purification and application-specific accessories.

container. Alternatively, there may be a requirement to automatically cease production of purity water if a specified conductance level is reached.

Off the shelf stock solutions? – At behr, you get a "personalized" water purification system ... tailor made.

# behropur® Water Deionizers with Unpressurized Gravity-flow Output

## behropur® B5, B10 and B25

Practical mixed bed (anionic & cationic) ion exchanger in an especially thick-walled, robust blue polyethylene container with gravity-fed unpressurized output to a reservoir. It is also ideal for second stage deionization of output from reverse osmosis units and for use in aquaria containing particularly sensitive fish species.



- Can be connected directly to the water line and is immediately ready for operation.
- Since the water enters at the bottom of the canister, air is automatically displaced.
- The unique behropur® radial slit-jet system distributes the input water uniformly over the entire resin bed, thus maximizing exchange capacity and water quality.
- The polyethylene slit-jet does not provide a breeding ground for bacterial growth.
- The slit-jet unit is robust and easily cleaned. It is impervious to damage resulting from mechanical stress or water pressure.
- The slit-jet unit is sealed into the canister base by means of a special behr thermal fusion
- production process. A secure and leak-proof bond results.
- Conductance meter is mounted directly on canister.
- The B5 and B10 canisters may be wall-mounted using the provided mounting brackets.
- B5A, B10A and B25A models offer automatic shutoff of water supply at preselectable conductivity levels by means of solenoid valve. Water supply can also be shut off when the pure water reservoir is full by means of a float switch, model SW2, which is available as an option.
- Conductance is monitored by meter mounted directly on resin canister. Also available with remote-location meter
- Connections provided for laboratory ½" and standard ¾" pipe thread water faucets.

## Technical Specifications

Model	Capacity (liters)*	Max. Flow Rate (l/h)	Ø (cm)	Height (cm)
Hardness: 4 ppm CaCO <sub>3</sub>				
B5	500 l	50	16	53
B10	1,000 l	100	21	63
B25	2,500 l	250	27	77

\* Cutoff at 20 µS

## Ordering Information

Art. no.	Mod. des.	Description
93 48 20005	B5	Deionizer, gravity flow output, with conductivity meter
93 48 20010	B10	Deionizer, gravity flow output, with conductivity meter
93 48 20025	B25	Deionizer, gravity flow output, with conductivity meter
93 48 20050	B5Z	Spare gravity flow deionizer canister
93 48 20110	B10Z	Spare gravity flow deionizer canister
93 48 20125	B25Z	Spare gravity flow deionizer canister
93 48 50005	B5A	Deionizer, gravity flow output, with conductivity meter and electronically controlled shut-off valve
93 48 50010	B10A	Deionizer, gravity flow output, with conductivity meter and electronically controlled shut-off valve
93 48 50025	B25A	Deionizer, gravity flow output, with conductivity meter and electronically controlled shut-off valve

# behropur® Deionizers with Nylon Resin Canisters – Operating Pressures up to 8 bar

behropur® B10dN, B22dN and B45dN

Safe and convenient mixed bed (cationic & anionic) ion exchanger for low to medium volume high purity water requirements. Optimal for glassware washers, general laboratory use and for smaller industrial applications. Suitable for second stage purification in conjunction with reverse osmosis units.



- Optimal exploitation of the full ion exchange capacity by means of absolutely uniform water distribution through the resin bed.
- The unique behropur® radial slit-jet system distributes the input water uniformly over the entire resin bed, thus maximizing exchange capacity and water quality.
- May be connected directly to the water supply without a pressure reducer.
- Resistant to damage resulting from water pressure peaks and variations.
- Conductance is monitored by meter mounted directly on resin canister. Also available with remote-location meter.
- Optional automatic shutdown at preselectable conductivity levels and automatic reservoir fill-level shutdown sensor.

## Technical Specifications

Model	Capacity (liters)* <small>Hardness: 4 ppm CaCO<sub>3</sub></small>	Max. Flow Rate (l/h)	Ø (cm)	Height canister with cond. unit (cm)	Height canister only (cm)
B10dN	1.200 l	300	21	68	55
B22dN	2.400 l	500	21	112	98
B45dN	5.500 l	800	26	125	110

\* Cutoff at 20 µS

## Ordering Information

Art. no.	Mod. des.	Description
93 48 30011	B10dN	Mixed bed deionizer, nylon 8 bar pressure canister , with conductivity meter
93 48 30023	B22dN	Mixed bed deionizer, nylon 8 bar pressure canister , with conductivity meter
93 48 30046	B45dN	Mixed bed deionizer, nylon 8 bar pressure canister , with conductivity meter
93 48 30111	B10dNZ	Spare nylon 8 bar pressure mixed bed deionizer canister
93 48 30123	B22dNZ	Spare nylon 8 bar pressure mixed bed deionizer canister
93 48 30146	B45dNZ	Spare nylon 8 bar pressure mixed bed deionizer canister
93 48 50112	B10dNA	Mixed bed deionizer, nylon 8 bar pressure canister, with conductivity meter and electronically controlled shut-off valve
93 48 50123	B22dNA	Mixed bed deionizer, nylon 8 bar pressure canister, with conductivity meter and electronically controlled shut-off valve
93 48 50146	B45dNA	Mixed bed deionizer, nylon 8 bar pressure canister, with conductivity meter and electronically controlled shut-off valve

# Mixed Bed Stainless Steel Ion Exchange Unit – Operating Pressures up to 10 bar

behropur® E28d and E40d

Standard canister made of V4A stainless steel with widespread applicability; useful for water supply of lab glassware washers, general laboratory pure water supply and low-demand industrial applications. Also suitable as a second stage purification following reverse osmosis units.



- Optimal exploitation of the full ion exchange capacity by means of absolutely uniform water distribution through the resin bed.
- Throughput rates up to 700 l/h.
- The unique behropur® radial slit-jet system distributes the input water uniformly over the entire resin bed, thus maximizing exchange capacity and water quality.
- May be connected directly to the water supply without a pressure reducer
- Resistant to damage resulting from water pressure peaks and variations.
- Hard rubber collars vulcanized onto the base and top of the canister provide effective protection.
- Convenient carrying handles are molded into the upper protective collar.
- Conductance is monitored by meter mounted directly on resin canister. Also available with remote-location meter.
- Optional automatic shutdown at preselectable conductivity levels and automatic reservoir fill-level shutdown sensor.

## Technical Specifications

Model	Capacity (liters)* <small>Hardness: 4 ppm CaCO<sub>3</sub></small>	Max. Flow Rate (l/h)	Ø (cm)	Height canister with cond. unit (cm)	Height canister only (cm)
E28d	2.800 l	500	24	74	60
E40d	4.000 l	700	24	84	70

\* Cutoff at 20 µS

## Ordering Information

Art. no.	Mod. des.	Description
93 48 40028	E28d	Mixed bed 10 bar pressure deionizer, special alloy V4A stainless canister, with conductivity meter
93 48 40040	E40d	Mixed bed 10 bar pressure deionizer, special alloy V4A stainless canister, with conductivity meter
93 48 40128	E28dZ	Spare special alloy V4A stainless 10 bar pressure mixed bed deionizer canister
93 48 40140	E40dZ	Spare special alloy V4A stainless 10 bar pressure mixed bed deionizer canister
93 48 50128	E28dA	Mixed bed deionizer, special alloy V4A stainless canister, with conductivity meter and electronically controlled shut-off valve
93 48 50140	E40dA	Mixed bed deionizer, special alloy V4A stainless canister, with conductivity meter and electronically controlled shut-off valve

# Extraordinarily Robust: Polyurethane-coated Stainless Steel Canisters

behropur® E10dK, E28dK and E60dK

**M**ixed bed (anionic & cationic) ion exchange canister constructed of V4A stainless steel and additionally protected with a fluorocarbon-free polyurethane coating. This is the unit of choice for utilization in aggressive surroundings. The canisters are impact resistant, offer superior protection against denting and are not attacked by aggressive gases or vapors.



- Optimal exploitation of the full ion exchange capacity by means of absolutely uniform water distribution through the resin bed.
- Throughput rates up to 500 l/h.
- May be connected directly to the water supply without a pressure reducer
- Resistant to damage resulting from water pressure peaks and variations.
- Hard rubber collars vulcanized onto the base and top of the canister provide effective protection.
- Convenient carrying handles are molded into the upper protective collar.
- Conductance is monitored by meter mounted directly on resin canister. Also available with remote-location meter.
- Optional automatic shutdown at preselectable conductivity levels and automatic reservoir fill-level shutdown sensor.

## Technical Specifications

Model	Capacity (liters)* <small>Hardness: 4 ppm CaCO<sub>3</sub></small>	Max. Flow Rate (l/h)	Ø (cm)	Height canister with cond. unit (cm)	Height canister only (cm)
E10dK	1.200 l	300	24	48	32
E28dK	2.800 l	500	24	71	56
E60dK	6.000 l	500	37	76	61

\* Cutoff at 20 µS

## Ordering Information

Art. no.	Mod. des.	Description
93 48 40010	E10dK	Mixed bed 10 bar pressure deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter
93 48 40280	E28dK	Mixed bed 10 bar pressure deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter
93 48 40060	E60dK	Mixed bed 10 bar pressure deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter
93 48 40110	E10dKZ	Spare 10 bar pressure polyurethane coated special alloy V4A stainless mixed bed deionizer canister
93 48 40228	E29dKZ	Spare 10 bar pressure polyurethane coated special alloy V4A stainless mixed bed deionizer canister
93 48 40160	E60dKZ	Spare 10 bar pressure polyurethane coated special alloy V4A stainless mixed bed deionizer canister
93 48 50111	E10dKA	Mixed bed deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter and electronically controlled shut-off valve
93 48 50280	E28dKA	Mixed bed deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter and electronically controlled shut-off valve
93 48 50160	E60dKA	Mixed bed deionizer, polyurethane coated special alloy V4A stainless canister, with conductivity meter and electronically controlled shut-off valve

# behropur® – Analytical Grade Water Systems for Every Application

## Conductance Meters

**T**oday, everything is digital. For our water deionizers, we nonetheless still build in conductance sensors with a traditional analog meter.

Analog meters provide a far better and more rapid information transfer, permitting an overview of the operating conditions to be grasped immediately and effortlessly.

Take a look at your wrist watch.

Still have a digital one?

Furthermore, our conductance meters are particularly robust

due to an additional see-through housing, protecting both meter and conductivity limit knob (when present).

The wall or panel-mount meters are connected by electric cable to the remote sensing electrode units, which are mounted on the deionizer canister. Thus, even

when the deionizer is situated in the remotest location, the meter can be located where it can be readily observed.

## Mobile Apparatus for Preparation of Analytical Grade Water

**T**he behropur® MobilPUR RF with built-in water container, makes ultra-pure water available anywhere you need it.

It requires no special installation or plumbing.

Since it is lightweight, it is readily transported to where the ultra-pure water is required.

The output of the MobilPUR RF fulfills the requirements the following instrumental methods:

- AAS
- HPLC
- TOC
- GC-MS
- ICP/MS



- Ultrapure water having a TOC content below 10 ppb and a conductance below 18,5 MΩ (0,055 μS) and free of organic and inorganic components as well as bacteria.
- Produces 0.5 l/min.
- Optimal for use where the daily requirement for ultrapure water is up to 15 l.
- Features a built-in 6.5 l feedwater reservoir for water pretreated by reverse osmosis or ion exchange.
- In "stand-by mode," the unit recirculates the already purified water, thus guaranteeing ultra-pure water even after long periods of standing.
- Optional wall mounting bracket.

## Secondary Processing

**U**ltra-pure water for use in conjunction with HPLC or GC-MS methods must be absolutely free of organic contaminants.

Bacteriology requires a high degree of sterility or even complete absence of pyrogen content.

Biotechnology requires "the purest of the pure" when it comes to preparation of substrates.

For these applications, ultra-pure water must be prepared employing a secondary stage of purification, i.e. ultrafiltration, UV-oxidation, activated carbon adsorption, etc.

We also offer you solutions utilizing these technologies, naturally with your specific application in mind.

## Reverse-Osmosis

**I**f you are searching for a reverse osmosis unit, you will also certainly find a behr system to fill your requirements.

We offer reverse osmosis units in a wide range of capacities and

technical variations, certainly including capabilities which you will find attractive

...and first and foremost, the level of efficiency, which you have long sought.

## Costs

**N**aturally, all manufacturers claim that their prices are especially low.

We don't just make claims...

...we deliver.

**behr**  
Labor-Technik

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