

PRODUCT DATA SHEET

Brackish Water Reverse Osmosis-Basic (BWROB) Desalination

water | wastewater | sewage

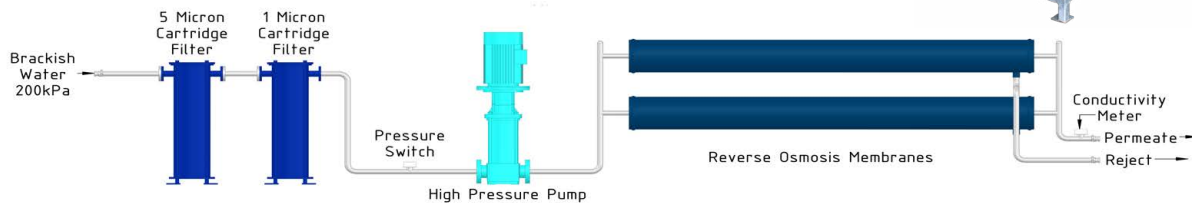


OVERVIEW

MAK Water's Brackish Water Reverse Osmosis - Basic (BWROB) plants are pre-engineered products, designed to suit simple applications where a high level of electrical instrumentation and controls is not required, and the feed water quality falls within the parameters defined in this data sheet.

The standard treatment process involves pre-filtration (5 and 1 micron cartridge filters) and RO desalination. The BWROB is designed to operate continuously until the permeate tank is filled, or feed water is unavailable.

The BWROB is available with a pre-determined number of standard options and is supplied with a generic documentation package.



STANDARD SPECIFICATIONS

Parameter	Units	BWROB-010	BWROB-015	BWROB-025	BWROB-030	BWROB-035	BWROB-050
Permeate flow rate	m ³ /day	10	15	25	30	35	50
Permeate recovery rate	%	40~70 (varies according to feed water quality and RO configuration)					
Ambient design temperature	°C	1~35 (1~43 with optional air conditioned container)					
Feed water inlet pressure	kPa	min. 200~500 max. (flooded suction only with optional low pressure feed pump)					
Permeate discharge pressure	kPa	~40					
Brine discharge pressure	kPa	~40					
Power supply	-	AC 240V, 1 Phase, 50Hz					
Power consumption (approx.)	kW	2	2	2	3	3	5
Control panel IP rating	-	IP50					
Skid dimensions (approx.)	mm	1,500W x 1,700H x 680D					
Skid weight (approx.)	kg	150	160	170	180	190	200
Container size (optional)	-	10' ISO					
UV disinfection (optional)	UV dose	>40 mJ/cm ² @ 90% UVT					
Distribution pump set (optional)	m ³ /hr @ 300kPa	1.04	1.56	2.6	3.13	3.65	5.21

Parameter	Units	Feed water	Permeate
Total dissolved solids (TDS)	mg/L	<3,000	<500 (typical)
Temperature	°C	15~30	-
pH	pH units	5~8.5	-
Total suspended solids (TSS)	mg/L	<5	<1
Particle size	µm	>1	-
Silt density index	-	<5*1	-
Free chlorine	mg/L	0 (<2 with optional GAC filter)	0 (0.2~2.0 with optional chlorine disinfection)
Dissolved iron	mg/L	<0.1	-
Dissolved manganese	mg/L	<0.1	-
Biological oxygen demand (BOD) as O ₂	mg/L	<10	-
Chemical oxygen demand (COD) as O ₂	mg/L	<10	-
Total organic carbon (TOC)	mg/L	<3	-

*1Increased membrane fouling will occur where feed water SDI exceeds 3

STANDARD INCLUSIONS + OPTIONS

✓ = Standard Supply ○ = Optional Supply

Equipment	BWROB-010	BWROB-015	BWROB-025	BWROB-030	BWROB-035	BWROB-050
Skid mounted plant	✓	✓	✓	✓	✓	✓
uPVC pipe work with isolation, non-return and sampling valves	✓	✓	✓	✓	✓	✓
Inlet pressure regulating valve*1	✓	✓	✓	✓	✓	✓
Solenoid valves (inlet feed and CIP/flush)	✓	✓	✓	✓	✓	✓
Low pressure feed pump	○	○	○	○	○	○
High pressure RO pump	✓	✓	✓	✓	✓	✓
RO pressure vessels and membranes with reject control valve	✓	✓	✓	✓	✓	✓
Concentrate recirculation with throttling valve	✓	✓	✓	✓	✓	✓
Hose connections for membrane clean in place (CIP)*2	✓	✓	✓	✓	✓	✓
Control panel with indicator lamps, isolators and e-stop	✓	✓	✓	✓	✓	✓
Pre-RO treatment	Cartridge filters (5 and 1 µm)	✓	✓	✓	✓	✓
	Auto-backwashing GAC filter*3	○	○	○	○	○
	Anti-scalant dosing*4	○	○	○	○	○
Post-RO treatment	Flow paced chlorine dosing	○	○	○	○	○
	UV reactor with ballast*5, 6	○	○	○	○	○
Containerised system with overhead lighting and air conditioning	○	○	○	○	○	○
Permeate distribution pump with controller*5	○	○	○	○	○	○

*1Not supplied where low-pressure feed pump option is taken, *2CIP tank and pump by others, *3For free chlorine removal, *4May be required depending on feed water quality, consult MAK Water, *5Separate power connection required, *6UV system supplied loose for installation by others

Instrumentation	Included	
Level switches	Feed water tank	✓
	Permeate tank	✓
	Anti-scalant dosing tank (optional)	✓
	Chlorine dosing tank (optional)	✓
Pressure switches	Low pressure feed pump discharge (optional)	✓
	High pressure RO pump discharge	✓
	Permeate distribution pump (optional)	✓
Pressure gauges	Feed water inlet or low pressure pump discharge (optional)	✓
	GAC filter discharge (optional)	✓
	Cartridge filter discharge	✓
	High pressure RO pump discharge	✓
	Brine discharge	✓
Flow indicators (rotameters)	Permeate	✓
	Reject	✓
	Recirculation	✓
Conductivity meter	Permeate	✓

MODEL SELECTION

- BWROB 010** Capacity - 10 m³/day
- BWROB 015** Capacity - 15 m³/day
- BWROB 025** Capacity - 25 m³/day
- BWROB 030** Capacity - 30 m³/day
- BWROB 035** Capacity - 35 m³/day
- BWROB 050** Capacity - 50 m³/day

Transfer model size below:

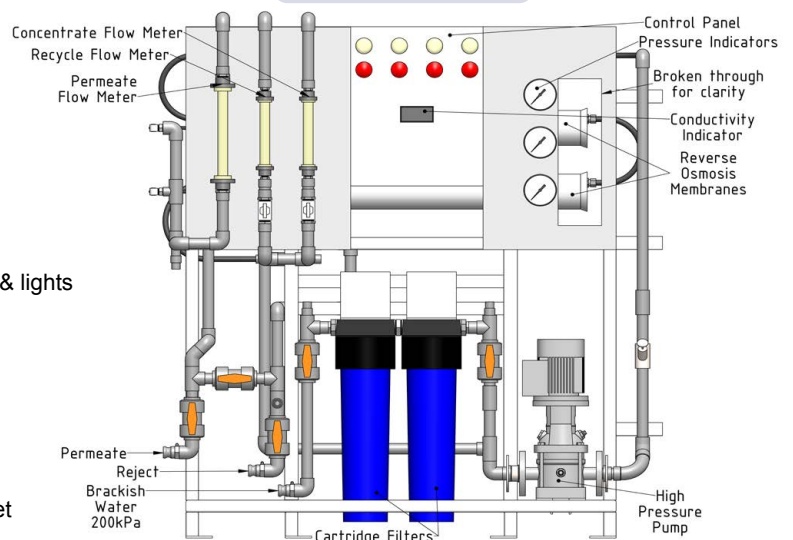
OPTIONS

- BWROB --- - CX** Containerised system c/w AC & lights
- BWROB --- - LP** Low pressure feed pump
- BWROB --- - AS** Anti scalant dosing
- BWROB --- - GAC** Activated carbon filter
- BWROB --- - SHSF** Chlorine disinfection
- BWROB --- - UV** UV disinfection
- BWROB --- - DPS** Permeate distribution pump set
- BWROB --- - MPL** Chlorine Neutralisation

NEED A QUOTE?

COMPLETE THIS TABLE AND EMAIL TO...

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PDS-BWROB-012 | FEB-2024