



# Reverse Osmosis Systems

## Purion Product Guide

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*Please note: Images in this product guide may vary and are a representation only. If you have any questions, please contact us for further information.*

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# Reverse Osmosis (RO) Systems

Demineralisation & reduction of total dissolved solids from water



## HYDRANT SERIES



Designed with the Highest Efficiency membranes in the industry and proprietary MemShell Carbon Cartridges, the Hydrant RO delivers up to 3500<sup>1</sup> litres of treated water per day at a 420kpa line pressure!

**NO ELECTRICITY REQUIRED**

HYDROPONICS

LABORATORY

RESIDENTIAL DRINKING WATER

CAR WASH FINAL RINSE

FOOD SERVICE

AQUATICS

STERILISING EQUIPMENT

FEATURES

HIGH PURITY WATER APPLICATIONS

DENTAL & MEDICAL WATER

Model: WTROHYDRANT

CARBON FILTER PRE-TREATMENT	Two 4" x 21" MemShell Coconut Carbon Cartridges, each rated to 378.5 kilolitres chlorine reduction at 2.0mg/l chlorine
RO MEMBRANES	Two 4" X 21" TFC HF5 Membranes. High flow membranes for 98.5% (nominal), 96% (minimum) rejection of impurities
MEMBRANE HOUSINGS	Two 4" x 21" Axeon PVC housings feature patented locking device and requires no tools for servicing
ACCUMULATOR TANK	Reduces TDS creep to supply consistent quality water on call
FRAME	White powder-coated corrosion resistant aluminium frame
FLUSH VALVE	Manual flush valve for cleaning RO membranes and extending service life
CASTERS	System supplied with castors for roll-away service convenience
COMPACT	Pre-plumbed with easy access to membranes and componentry
RECOVERY	High Recovery rate 1:1 ratio

<sup>1</sup>Actual performance is dependant on raw water TDS, water temperature and adequate pre-treatment. <sup>2</sup>Up to 2000 mg/l TDS

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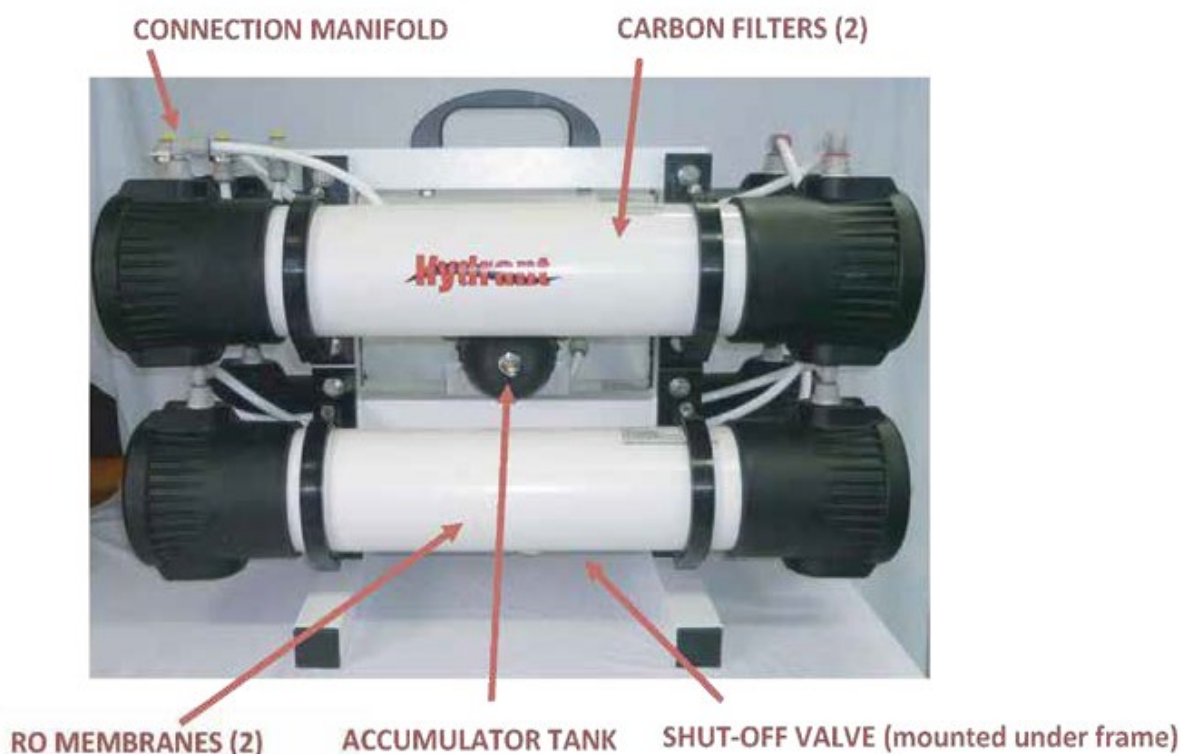
## HYDRANT SERIES SPECIFICATIONS

Litres/Day approx 3,785 @ 25°C @ 500 mg/l TDS	Dimensions 360mm d x 585mm l x 510mm h
Weight 23kgs	Feed Connection 3/8"
Product Connection 3/8"	Waste Connection 3/8"
System Recovery 50%	RO Membranes 2

## SYSTEM OPERATING SPECIFICATIONS

Minimum Feed Pressure 420 kpa	Maximum TDS 2000 mg/l
Recommended Operating Pressure 550 - 700 kpa	Maximum Hardness 100.0 mg/l
Maximum System Pressure 700 kpa	pH Range 3-11
Minimum Feed 5.3 litres per minute	Maximum Temperature 40°C
Maximum Feed 11.5 litres per minute	Minimum NaCl rejection 96%

## HYDRANT CONFIGURATION



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# Reverse Osmosis (RO) Systems

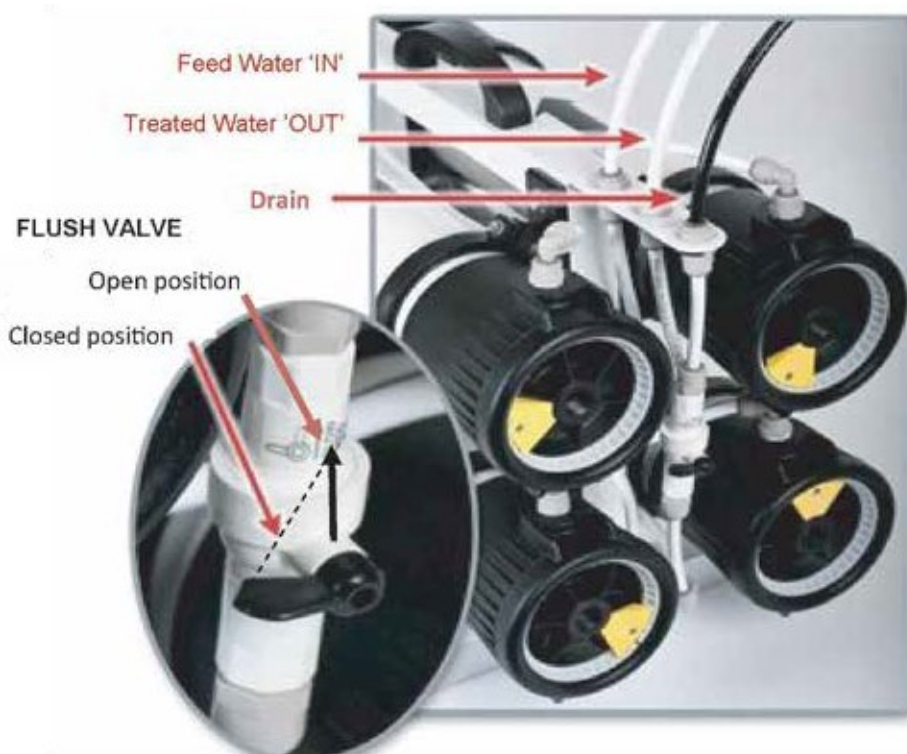
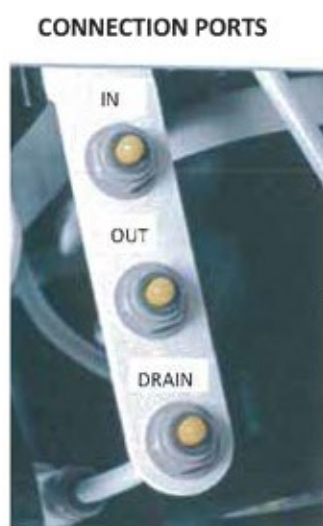
Demineralisation & reduction of total dissolved solids from water



## INSTALLATION & START UP - refer to pictures below

- Connect feed water tube to the port labeled "IN"
- Connect R.O. drain line to the port labeled "DRAIN"
- Connect the product water port marked "OUT" to your tank or dispensing device
- Turn the Flush Valve to the "closed" position
- Turn on the water supply
- At first start-up or after membrane replacement, disconnect the 'OUT' tube and allow the RO to run for at least 15 minutes to flush preservative chemical from the membrane
- Reconnect tube to 'OUT' fitting
- The RO is now ready for use

## MEMBRANE FLUSH FEATURE



## MEMBRANE FLUSH

To prevent the RO membrane from premature fouling and prolong membrane life it is recommended to perform membrane flush every 2 weeks:

- Turn the Flush Valve to the open position.
- Allow water to run for approximately 5-10 minutes
- Close the Flush Valve

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# Reverse Osmosis (RO) Systems

Demineralisation & reduction of total dissolved solids from water



## PRF-RO\* SERIES

HIGH PURITY DEMINERALISED WATER IDEAL FOR POTABLE USE,  
AUTOCLAVES, STERILISERS & LABORATORIES



PRE-CARBON FILTER  
& TWO RO  
MEMBRANES



QUICK CONNECT FITTINGS

THE LATEST IN MEMBRANE TECHNOLOGY TO PRODUCE HIGH YIELD,  
HIGH QUALITY PERMEATE FLOW AT TOWN WATER PRESSURES  
NO PUMP - NO STORAGE TANK

## UP TO 2600 LITRES PER DAY WATER PRODUCTION\*

### WHAT IS REVERSE OSMOSIS?

Reverse Osmosis (RO) is a process that occurs when water containing dissolved impurities is forced under pressure against a special synthetic semi-permeable membrane. Molecular forces prevent the dissolved impurities from passing through the membrane surface. The impurities are repelled by the membrane and carried away to drain by the water flow. Water molecules, however, are strongly attracted to the membrane surface and, when pressure is applied (e.g. town water pressure), the water molecules pass through the pores of the membrane surface leaving high purity water on the other side.

### OPERATING PARAMETERS

**Inlet water pressure:** 280-560kpa. Above 560 kpa and/or if water hammer exists, a pressure limiting valve must be used.

**Total Dissolved Solids:** < 2000mg/l    **Temp:** 4-38°C    **pH:** 4-11    **Total Hardness:** <120mg/l

**Chlorine:** 1.0mg/l maximum. Iron, manganese, hydrogen sulphide should be removed prior to R.O.

**DIMENSIONS:** 51.0 cm height, 25.0 cm length, 25.0 cm depth

**INLET & DRAIN:** ½" tube

**TREATED WATER & WASTEWATER OUTLETS:** 3/8" tube

\* Production variable dependant on inlet pressure, total dissolved solids content and quantity and water temperature

\* PRF-RO is trade-mark of and manufactured by GE Water & Process Technologies

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# Reverse Osmosis (RO) Systems

Demineralisation & reduction of total dissolved solids from water



## L SERIES

## 3 MODELS: 7.2M3 TO 28.8M3 /DAY



### Pre & post treatment options:

pH correction • antiscalant dosing • Auto iron, sediment & carbon filtration • Bag or cartridge filtration • Softening • Ultrafiltration



### FEATURES

- PLC controlled • Waterproof control box • Stainless Steel
- Multistage pump 230V 50/60 Hz TEFC Motor
- Low pressure switch • 5-micron sediment pre-filter
- Concentrate recycle for higher recovery
- Permeate Recycle & Reject flow-meters
- Stainless steel permeate, recycle and pump throttle valves
- On/Off switch • Emergency shut-off switch
- Reject, feed-water, pre-filter and post-filter pressure gauges
- Stainless or fiberglass membrane housings
- High rejection TFC membranes • Conductivity monitor
- Contacts for product & raw water level control
- Treated water tank high-level float switch
- Automatic flush valve • Automatic feed shut-off valve
- Galvanised steel frame with 2-coat epoxy coating

**RAW WATER REQUIREMENTS:** ≥30 psi inlet pressure • < 5 SDI  
• < 0.1 mg/ltr chlorine feed-water • < 1 NTU turbidity

### SPECIFICATIONS

MODEL	L1	L2	L4
Litres per day <sup>1</sup>	7,200	14,400	28,800
Membranes 4" x 40"	1	2	4
Pump Size	1.0kw	1.0kw	1.5kw
Power	230v/50hz	230v/50hz	230v/50hz

### WEIGHTS & DIMENSIONS (mm, kgs)

Depth	670	670	670
Width	580	580	740
Height	1720	1720	1720
Weight	80	88	100

<sup>1</sup>Permeate flow rate & salt rejection based on: 2000 ppm NaCl, 225 psig (15.5 bar), 77°F (25°C), & 15% recovery. Lower flow rates & operating pressures are advised

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# Reverse Osmosis (RO) Systems

Reduction of total dissolved solids from water



## HR SERIES INDUSTRIAL HIGH REJECTION SYSTEMS



### STANDARD FEATURES

PRE-TREATMENT WITH AUTOMATIC MEDIA FILTERS • PRE-RO 5 MICRON FILTRATION • 365 ft<sup>2</sup> (40") & 575 ft<sup>2</sup> (60") AREA PER RO MEMBRANE • ANTISCALANT DOSING TO PREVENT HARD WATER SCALING ON RO MEMBRANES • AUTO FLUSH VALVE TO REMOVE DEPOSITION ON MEMBRANES • SOFT-START VARIABLE SPEED DRIVE PUMPS TO PROTECT PIPING & MEMBRANES FROM HYDRAULIC IMPACT ON PUMP START-UP • AUTO DUMP VALVES ON PERMEATE LINES DIVERT HIGH CONDUCTIVITY PERMEATE WHEN RO IS INACTIVE • DUAL CHANNEL CONDUCTIVITY ANALYSER CONSTANTLY MONITORS FEED & PERMEATE QUALITY • FULLY AUTO OPERATION, PLC BASED • HMI OPERATOR INTERFACE • FEED, REJECT, PERMEATE & RECYCLE FLOW METERS • VISIBLE & AUDIBLE ALARMS FOR POOR QUALITY WATER & FAULTS • STAINLESS STEEL VSD PUMPS • AUTO, SEMI AUTO, & MANUAL OPERATING MODES • FULL MANUALS & DRAWINGS

### SPECIFICATIONS

MODEL	TYPICAL FLOWRATE M <sup>3</sup> /HR	INLET PIPE SIZE	MEMBRANES		PUMP POWER KW		PREFILTER TANK SIZE
			Size	Qty	FEED PUMP	RO PUMP	
L1-8060HR	2.0	40mm	8"x60"	1	1.5	4.0	18"x65"
L2-8040HR	2.7	40mm	8"x40"	2	2.0	4.0	21"x62"
L2-8060HR	4.0	40mm	8"x60"	2	2.5	5.5	24"x72"
L4-8040HR	5.5	50mm	8"x40"	4	3.0	7.5	30"x72"
L4-8060HR	8.0	50mm	8"x60"	4	4.0	7.5	42"x72"
L6-8060HR	12.0	75mm	8"x60"	6	5.5	11	48"x72"

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# Reverse Osmosis (RO) Systems

Reduction of total dissolved solids from water



## HR SERIES INDUSTRIAL HIGH REJECTION SYSTEMS - DIMENSIONS



### 'HR' SERIES DIMENSIONS (approximate, subject to change)

MODEL	L1-8060HR	L2-8040HR	L2-8040HR	L2-8060HR	L4-8040HR	L4-8060HR	L6-8060HR
Length	2.0 m	3.2 m	3.2 m	3.8 m	4.5 m	5.2 m	6.0 m
Width	1.0 m	1.5 m	2.0 m	2.0 m	2.2 m	2.5 m	2.5 m
Height	2.1 m	2.1 m	2.3 m	2.3m	2.3 m	2.3 m	2.3 m
Weight	1000 Kg	1100 Kg	1300 Kg	1500 Kg	1800 Kg	2200 Kg	2800 Kg

### ADDITIONAL RO SYSTEMS BY DOWDENS

#### 'ES' ENERGY SAVING SERIES

Employs ultra-low pressure membranes that lower power consumption. Suitable for less-stringent water quality applications and where less capital cost is a factor. Capacities 0.5 - 60.0 m<sup>3</sup>/hr

#### 'XR' EXTRA-HIGH REJECTION SERIES

Deliver extra-high rejection to purify brackish water with salt contents up to 15.0 gm/l. Capacities 1.0 - 25.0 m<sup>3</sup>/hr

#### 'SW' SEAWATER DESALINATION SERIES

For desalinating sea water with up to 40.0 gm/l in salt content. Most models offer optional Energy Recovery Devices (ERD) for lower unit cost of water produced. System capacities up to 600.0 m<sup>3</sup>/day





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