

SEAWATER REVERSE OSMOSIS DESALINATION SYSTEM



SEAWATER REVERSE OSMOSIS (SWRO) DESALINATION SYSTEM

- About 97% of the earth's water is seawater, which is not fit for human consumption. Desalination converts sea water into potable and process water for municipal populations, industrial users and agriculture.
- We offer the latest energy saving reverse osmosis technology to ensure an economical supply of high quality potable water from seawater, especially in water-stressed countries.
- We have more than three decades of experiences in SWRO systems with supply of over 250 sets of RO systems.

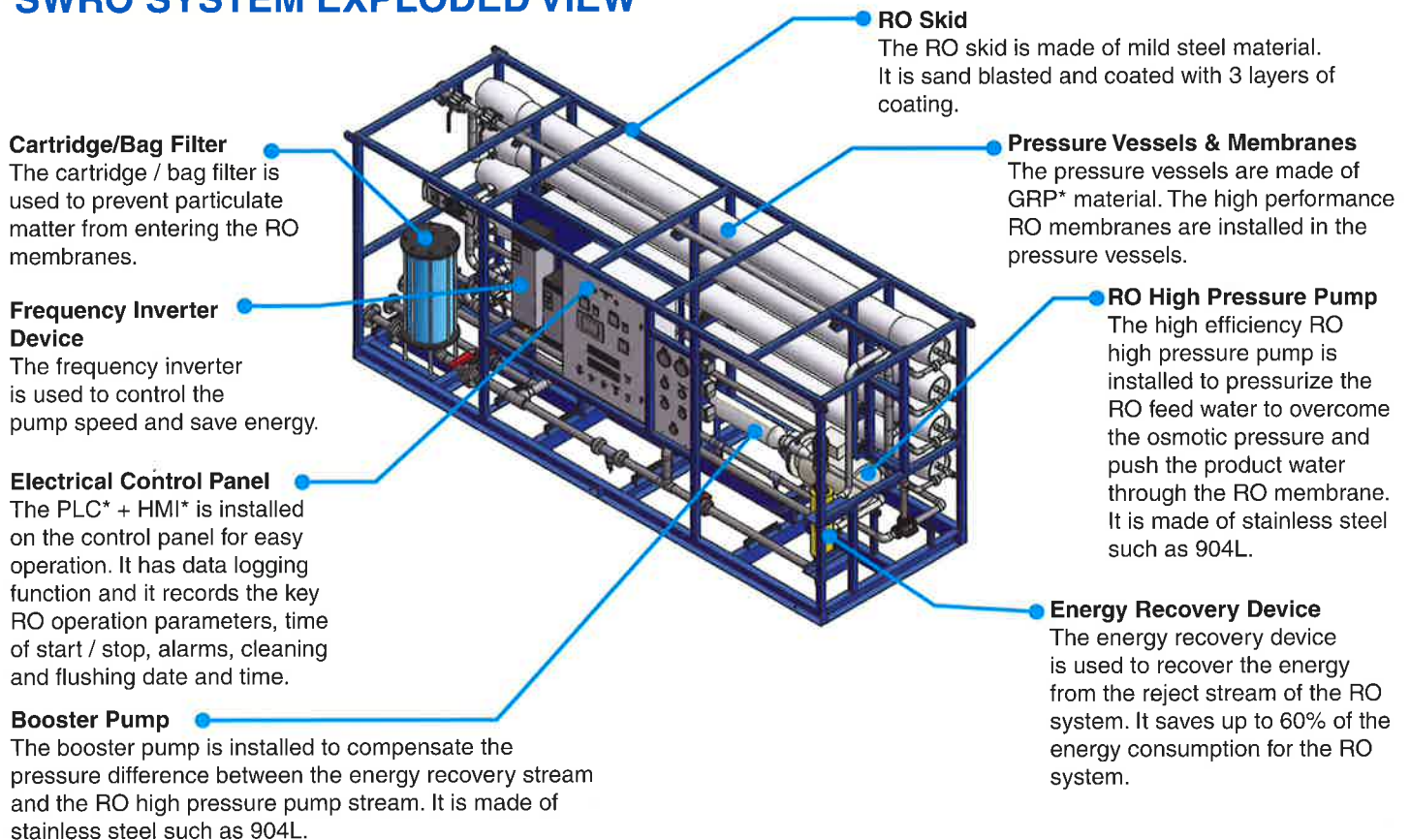


3,000,000 litres/day production capacity Seawater RO in Male', Republic of Maldives

FEATURES AND BENEFITS

- | | |
|--|---|
| 1) Standardized systems with competitive price | 6) Fast delivery with in-house fabrication capability |
| 2) Energy and cost efficient | 7) Minimum site work required |
| 3) High quality equipment and materials | 8) High quality product water |
| 4) Easy process control and monitoring | 9) Designed for ease of shipping |
| 5) Excellent proven track records | 10) High reliability with excellent service support |

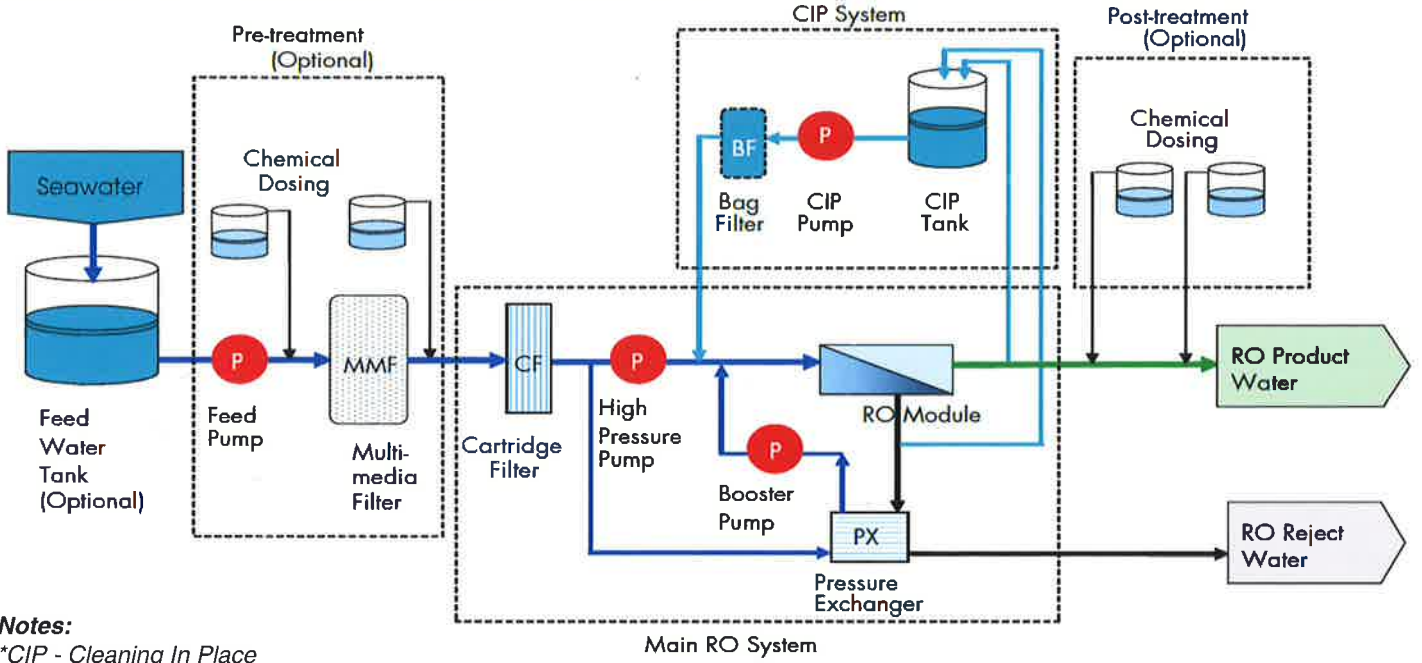
SWRO SYSTEM EXPLODED VIEW



Notes:

*PLC - Programmable Logic Controller HMI - Human Machine Interface GRP - Glass-reinforced Plastic

GENERAL PROCESS FLOW DIAGRAM

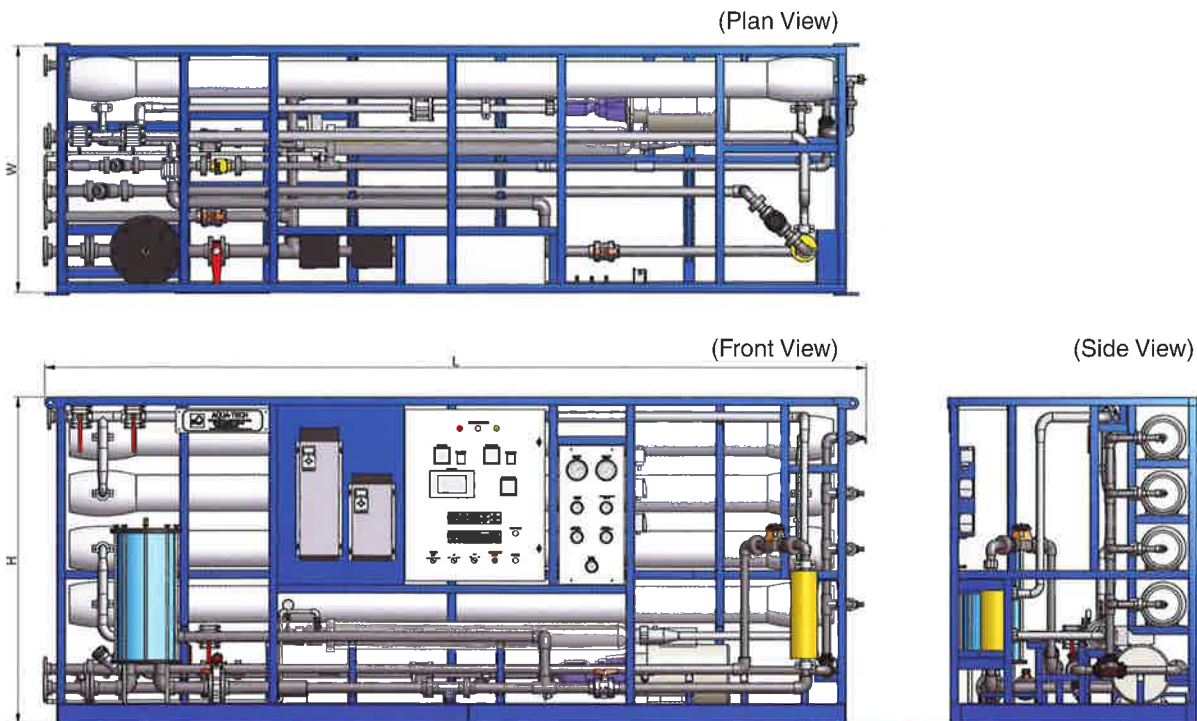


100,000 litres/day production capacity Seawater RO powered completely by solar power in Abu Dhabi, UAE



200,000 litres/day production capacity Seawater RO with PX Energy Recovery Device in Zanzibar, Tanzania

TYPICAL SWRO MAIN SKID LAYOUT



TYPICAL SPECIFICATIONS OF SWRO DESALINATION SYSTEMS

| Model SWRO- | Product Water Flow | Feed Water Flow | Main RO Skid [^] Dimensions (L x W x H) | Overall* Floor Space | Overall* Shipping Weight | Overall* Electrical Loading | Overall* Power Consumption |
|-------------|-----------------------|-----------------------|--|----------------------|--------------------------|-----------------------------|----------------------------|
| | (m ³ /day) | (m ³ /day) | (m x m x m) | (m ²) | (kg) | (kw) | (kwh/day) |
| 200T-PX | 200 | 500 | 5 x 1.5 x 2 | 36 | 5,500 | 31 | 660 |
| 300T-PX | 300 | 750 | 7.2 x 1.5 x 2 | 42 | 8,500 | 58 | 1,180 |
| 500T-PX | 500 | 1,250 | 7.9 x 1.5 x 2 | 80 | 13,000 | 78 | 1,660 |
| 800T-PX | 800 | 2,000 | 7.9 x 1.8 x 2.2 | 100 | 17,000 | 115 | 2,650 |
| 1000T-PX | 1,000 | 2,500 | 8.1 x 1.8 x 2.4 | 128 | 20,000 | 142 | 3,120 |
| 1200T-PX | 1,200 | 3,000 | 8.1 x 2 x 2.4 | 150 | 24,000 | 154 | 3,650 |
| 1500T-PX | 1,500 | 3,750 | 8.1 x 2.1 x 2.4 | 200 | 30,000 | 205 | 4,430 |
| 2000T-PX | 2,000 | 5,000 | 8.1 x 2.1 x 2.4 | 230 | 38,000 | 277 | 5,790 |

Notes:

[^] Multiple skids may be required for systems designed for 500m³/day or more.

* Overall system includes main RO system which comes with Pre-treatment, Post-treatment and CIP systems.

TYPICAL WATER QUALITY OF SWRO DESALINATION SYSTEMS

| Ion | Concentration (ppm) | | Ion | Concentration (ppm) | |
|------------------------------|---------------------|---------|-------------------------------|---------------------|---------|
| | Feed | Product | | Feed | Product |
| Ca ²⁺ | 440 | 0.654 | CO ₃ ²⁻ | 0.8 | 0.001 |
| Mg ²⁺ | 1418 | 2.107 | HCO ₃ ⁻ | 160 | 1.841 |
| Na ⁺ | 11876.9 | 84.579 | SO ₄ ²⁻ | 2976 | 4.767 |
| K ⁺ | 420 | 3.737 | Cl ⁻ | 21320 | 136.45 |
| Ba ²⁺ | 0.055 | 0.0 | F ⁻ | 1.5 | 0.019 |
| Sr ²⁺ | 14 | 0.021 | B | 4.5 | 0.777 |
| NH ₄ ⁺ | 0.1 | 0.0 | SiO ₂ | 8.0 | 0.04 |
| TDS | 38640 | 235 | pH | 8 | 6.5-7.5 |

Design Criteria:

1) Recovery: 40% 2) Feed water temperature: 25°C

OPTIONS

- Solar Powered System**
 clean energy which reduces commercial electricity consumption
- Double Pass RO System**
 to meet stringent industrial requirements
- Containerized RO System**
 customized and built into brand new / used 20 foot / 40 foot containers that meet international quality standards



Solar powered system



Containerized RO system

The content described here provides general information for the products. Hitachi Aqua-Tech Engineering Pte Ltd reserves all rights to revise the design, specifications and equipment without prior notice.

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