


**TEHO**

# **SUSTAINABLE WATER SOLUTIONS**

**TEHO WATER  
& ENVIROTEC  
PTE. LTD.**

**ULTRO**   
REVERSE OSMOSIS





**“All the water  
that will ever  
be is, right now.”**

*National Geographic*



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# Company background

**Founded in 2008**, amidst the tough market competition, TEHO Water & Envirotec Pte Ltd is a prime example of the Reverse Osmosis industry's shift toward sustainability, amongst its global presence.

TEHO Water has been able to thrive in the competitive water treatment industry with the company's ability to provide stable, high-performing equipment, and prompt and seamless after-sales service.

The company's products are designed to withstand intensive use and difficult environmental conditions. With a strong presence and manufacturing base in Singapore, TEHO Water provides immediate solutions to customers globally.

To continuously improve our products that exceed customer expectations, we always stay abreast of the latest technology and innovation while keeping costs in mind.



# TEHO Water: Future plans

We maintain a network of distributors throughout South East Asia and tap on TEHO Group's global reach to respond quickly to our clients' needs in terms of delivery and services.

In TEHO Water, we aim to be the preferred partner to all our customers by bringing our quality products to the rest of the world.



# ULTRO Reverse Osmosis



**We are pleased to announce the incorporation of a new brand name that reflects our commitment to sustainability and continuous advancement.**

With over 10 years of industrial experience, ULTRO Reverse Osmosis Watermaker is designed and engineered to produce clean potable water even in the arduous marine and offshore environment. Available in single and double pass constructions, these high quality products are renowned in Singapore and South East Asia.

ULTRO water makers are fast becoming the trusted water makers for use in vessels, oil rigs and onshore applications. Their functional designs with excellent piping configurations for ease of maintenance have been perfected over the years. We source materials and parts from established manufacturers in USA and Europe. Assembled and tested by our well trained technicians, we ensure utmost quality control while keeping costs at bay. Customisation to meet specific requirements or for larger scale desalination projects are available on request. TEHO Water provides strong on-site support for vessels operating globally.

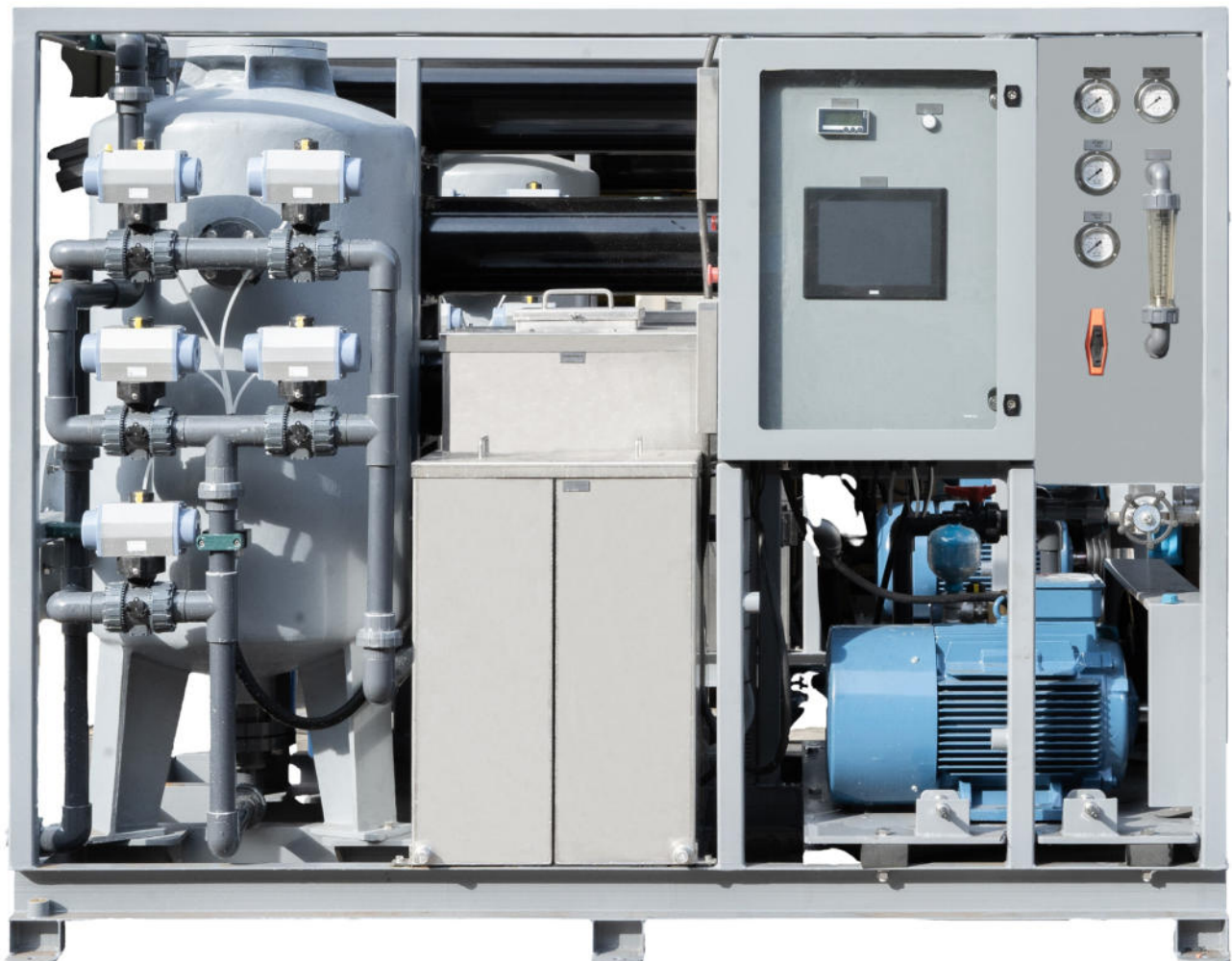


**In short, ULTRO  
stands for Strength,  
Spontaneity and  
Beyond Expectation.**

**We are a provider of sustainable solutions exceeding our clients' expectations in both performance and prompt and seamless after sales support.**

Reverse Osmosis ("RO") is a water purification technology that uses a semipermeable membrane. Different from a filtration method of desalination and solid suspension treatment, RO applies high pressure to overcome osmotic pressure, a colligative property that is driven by chemical potential, a thermodynamic

parameter. RO effectively retains many types of molecules and ions in a solution on the pressurized side of the membrane, while allowing the smaller components (the solvent) to pass through. This method is commonly used in Marine, Offshore O&G and industrial processes to produce potable water.

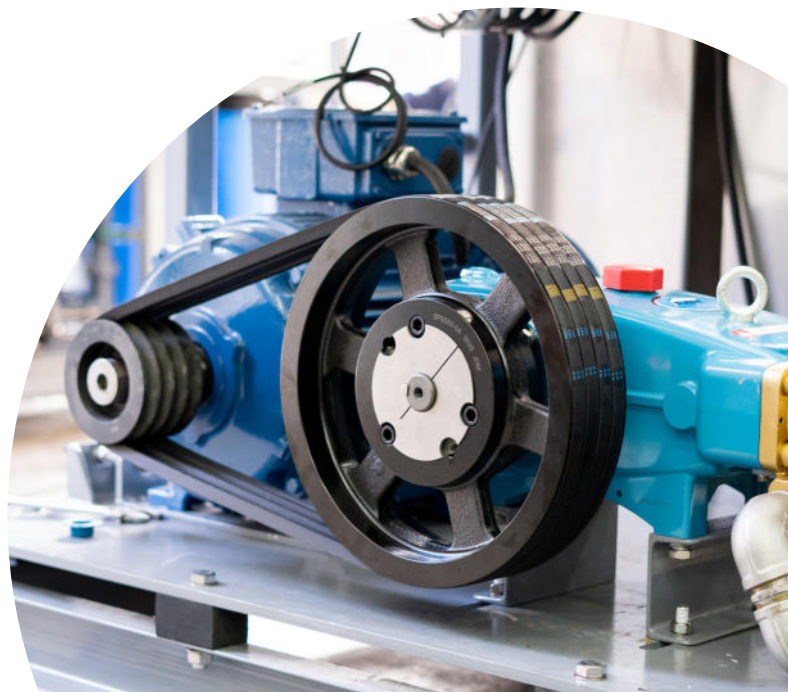




Model	Capacity (L/day)	Dimensions (mm)	Dry Weight (kg)
SW-5T	5,000	1310 x 700 x 1600	467
SW-10T	10,000	1310 x 860 x 1655	578
SW-20T	20,000	1530 x 950 x 1600	816
SW-40T	40,000	2200 x 1300 x 1810	1368
SW-60T	60,000	2200 x 1300 x 1810	1798
SW-80T	80,000	2200 x 1300 x 2120	1955
SW-100T	100,000	2800 x 1910 x 1850	3565
SW-150T	150,000	2800 x 1910 x 2250	3712
SW-300T	300,000	5000 x 2035 x 1850	5000

## Hotels & Resorts

Water is a big deal in Maldives. The archipelago nation of 500,000 people is more water than land. Being abundant in ocean resources, the only freshwater is rainwater that is harvested in special collection tanks but poor rainfall leaves groundwater table's low and harvesting tanks half empty. This leaves many people and communities straining resources to buy bottled water or struggling to get by. Therefore, desalination plants have been widely installed in Maldives' tourist resorts since the late 1970s. Currently each resort has its own desalination plant, which is usually operated and maintained by a technician appointed for that purpose. ULTRO Reverse Osmosis Watermakers has successfully designed and delivered large desalination systems to sustain heavy consumption of fresh and drinking water for both tourists and workers on each island. As a sustainable water solution provider, we will design the complete potable water treatment system of the whole island.







**Single and double pass, for ultra pure (technical water) requirement, Automatic back flushing function, Durable for 24 hours operation, PLC touch screen control panel, Compact design suitable for marine & offshore requirements**

The Reverse Osmosis water treatment process can be extended to industrial processes and procedures in power plants. For instance, huge, expensive plants require large volumes of process and cooling water that must be demineralised in order to safeguard the system against limescale, which could potentially damage essential components. Pharmaceutical and microchip manufacturers need unusually pure water, and ULTRO Reverse Osmosis Watermakers are commonly utilised for the production of the ultra-pure water required - a crucial resource for the manufacturing. Correctly designing treatment plants for this purpose and receiving comprehensive consulting are of critical importance for the production of ultra-pure water required - a crucial resource for the manufacturing process



# Potable Water Systems

**ULTRO Hydrophore System is used onboard a vessel, to keep pressure and flow of water constant at different levels throughout the ship.**

ULTRO Hydrophore Systems are designed to be compact, easy to use, and durable. The freshwater hydrophore is made of 304 stainless steel, while the sanitary hydrophore is made of 316 or 316L stainless steel for greater durability. Both types of hydrophores are available with either one or multiple pumps. The multiple pump system has an added advantage of having a longer product

lifespan because it works in a rotational cycle that minimizes exhaustion. In addition, it is programmed with a special control measure to handle drastic drop in pressure from high water usage. All pressurized tanks used in ULTRO Hydrophore Systems must meet all IACS members' class certification standards before they can be used.

**Available up to 10,000ℓ in tank capacity, integrated control function and alarm options according to client's specifications, 304, 316 or 316ℓ stainless steel pressure tank, Comes in either cast iron, stainless steel or bronze pumps configuration**





# Hot Water Systems

**ULTRO Hot Water Calorifiers are used onboard a vessels or rigs, supplying constant hot water supply and is safe for use throughout the ship.**

ULTRO Hot Water Calorifiers provide high-quality solutions for the consistent supply of hot water onboard vessels or rigs. Our calorifiers are fitted with pressure tanks made from 304, 316 or 316L stainless steel and marine grade standard. They meet all IACS members' class certification requirements. In addition, ULTRO Hot Water Calorifiers are designed with multiple safety points to cut off the heater for safety precaution. They are specially engineered to withstand diverse marine and offshore conditions; customers can be assured of utmost durability and reliability. Customization of various functions according to specific needs is available: customization options include integrated control function, alarm option, circulation pump quantity, and heater size. Multiple safety points are installed.



# Environmental Treatment Systems

Measurement	Unit	Inflow Criteria	Outflow Criteria	TEHO's STP Test	Global STP Test
BOD	mg/ℓ	≥200	≤25	6.27	3
COD	mg/ℓ	≥100	≤125	37	45
PH	-	-	≈6.0-8.0	6.13	N/A <small>(membrane type)</small>
TSS	mg/ℓ	≥500	≤35	15.2	2
Coliforms	cells/ml	-	≤100cells/ml	2	9
TRO	mg/ℓ	-	≤0.5	0.34	N/A <small>(membrane type)</small>

## Marine Sewage Treatment

TEHO Water offers one of the most durable and easy-to-maintain Marine Sewage Treatment Plants (STP) in the market. The system was designed with years of technical expertise from South Korea, and it is specifically used in the marine and offshore oil & gas industries.

Suitable for black and grey water treatment, Compact design, Efficient cleaning process, easy maintenance, Complies with the IMO inflow and outflow criteria, Available in capacities from 1,050ℓ/day to 10,500ℓ/day, Suitable for vacuums operation





## Oily Water Separator

TEHO Water's Oily Water Separators (OWS) are designed and built to better control pollution in the ocean. The OWS benefits the marine and offshore environment. Using the latest technology and premium parts, our OWS is able to achieve treated water with oil content of less than 15ppm, meeting the IMO Regulations MEPC 107(49) and is DNV Class Type approved.

**Fitted with a 15ppm bilge alarm device (oil content monitor); BILGMON 488 with an automatic bypass is fitted to the separating system to extend the lifespan of the demulsifier. A 3-way valve is**



**installed downstream of OWS in the overboard line for recirculating the water to the bilge (automatic stopping device.) Capacity from 0.2m<sup>3</sup>/h to 10.0m<sup>3</sup>/h available, suitable for all kinds of vessels.**

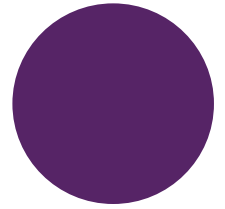
## 15ppm Bilge Alarm

Commonly used with OWS, the 15-ppm Bilge Alarm BILGMON 488 model is designed to monitor the oil content in bilge water and accurately measure the amount of oil present through its unique measuring cell. This device conforms to IMO Regulation MEPC107(49), which prohibits ships from discharging bilge water with an oil content exceeding 15 ppm. When this limit is exceeded, the alarm sounds and activates an overboard discharge valve to prevent further discharge of contaminated water.



**Current output from 0 to 20mA or 4 to 20mA. Power supply of 115/230 VAC or 24V AC/DC. User friendly and applicable to any OWS type. Automatic fresh water flushing. No regular fuse to replace. Small, compact and wireless design.**

# High Pressure Plunger Pumps



**TEHO Water is an authorized OEM  
and service centre for CAT Pumps  
in SEA region**

## CAT 2531



## CAT 3560



TEHO Water offers high-pressure pumps from CAT Pumps, a renowned manufacturer of pumps for both commercial and industrial use. With more than 40 years' experience in the industry, CAT Pumps produces durable and reliable pumps for use with high pressure water and other fluids. TEHO Water has been appointed as the official service centre for CAT Pumps in Southeast Asia; we have a healthy inventory of new parts at our warehouse to meet customers' needs for fast delivery or replacement of used pumps. Our wide range of pumps are available in brass, nickel aluminium bronze, 304 or 316 stainless steel and duplex stainless steel for different levels of corrosion and environmental conditions. Headquartered in Singapore, we fulfil the role as proficient service centre for stock and after-sales support in the Southeast Asia region.

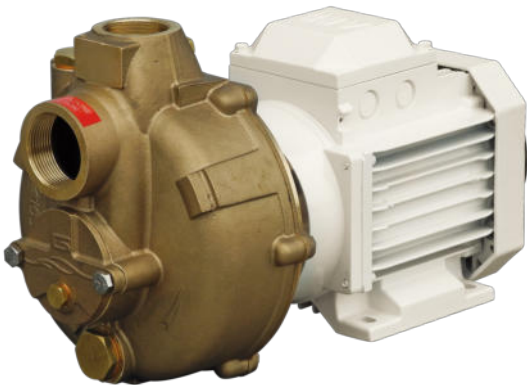


## IDROMAXI JET 518 B



The addition of marine pumps and blowers further expanded TEHO Water's product portfolio of water treatment systems. Gianneschi's range of pumps and blowers have been in the market since 1969. Its long standing in the market among the stiff competition stemmed from its impeccable performance and durability. Designed and made in Italy with reliable casting, all products have been attested to suit different applications and specification needs in the Marine and Offshore O&G industries. We are always diligently looking for opportunities to establish a comprehensive product range so that our customers can benefit from a convenient one-stop shop, with quality assurance

## BMA-S Series



**TEHO Water collection of Self-priming Centrifugal Pumps feature high efficiency and low pulsation, low running speed, robust body design, low maintenance and is cost effective.**

# After Sales Support: RO Chemical

TEHO Water offers a range of readily available high-quality chemicals, developed for cleaning and treatment efficiency while keeping cost control in mind.



**ULTRO-7198**  
pH Stabilizer



**ULTRO-9198**  
Membrane Anti Scalant



**ULTRO-0583**  
High pH Cleaner



**ULTRO-1574N**  
Sodium Metabisulfite



**ULTRO-9291**  
Low pH Cleaner



**ULTRO-1529** is a liquid product for membrane cleaning formulated to remove biofilm, color compound, organic matters etc. from reverse osmosis (RO). This can inhibit and removes biological fouling effectively in activated carbon filter and cartridge filters.



**ULTRO-1529**  
Biocide

- Proprietary biocide for RO system
- NSF certified for online application in drinking water system
- Effective against large variety of bacteria
- “Peeling off” effect: Can penetrate into biofilm and remove the biological matters from membrane surfaces.
- Reduce chemical cleaning downtime
- Effective in inhibiting and removing biological fouling in activated carbon filter and cartridge filter.
- It does not cause RO membrane deterioration by oxidation.
- Liquid type for ease of handling.



# After Sales Support: Spare Parts & Filter



Having fostered relationships with some of the industry's best manufacturers, we are able to offer superior-quality products at economical prices. These products include: RO membrane, RO electrical components, RO chemicals, Cartridge filters, Multi-media filters, UV sterilizers, CAT Pumps oil, CAT Pumps spares, Grundfos pumps and spares, Pre-filters and troubleshooting services

## Hydranautics RO Membrane SWC5-LD

Features LD Technology - high-performance RO technology that helps reduce fouling from colloidal particles and biological growth.



## Melt Blown Cartridge Filter

Consistent flow rate and superior filtration performance.



## ULTRO-5 Micron Cartridge Filter WB18

- This pleated polyester design can provide more surface area, and maximize dirt-holding capacity.
- Size: 2 1/2"



## ULTRO-20 Micron Cartridge Filter HB18

- This pleated polyester design can provide more surface area, and maximize dirt-holding capacity.
- Size: 4 1/2"



## **Headquarter**

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The appointed official service centre for CAT Pumps in Southeast Asia.*

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