



ADVANCED WATER TECHNOLOGY
PETER TABOADA
TECNOLOGÍA AVANZADA DEL AGUA



PETSEA RO TW REVERSE OSMOSIS DESALINATORS **Feeding Water: Tap (surface) water under 2000 ppm**

The PETSEA RO TW desalination systems have been designed to obtain high quality purified water with a continuing operation of 24 hours a day.

The robust desalination systems design has been improved to resist the hardest operating conditions.

MODELS:

- TW-Y 17 / 34 / 48 / 65
- TW-Y 96 / 144 / 190 / 240 / 300

There is also the possibility of having bigger and more specialised equipments manufactured according to the client's necessities.



PICTURE: TWY-2300 for 240 ton/day (10 m³/h) water production



PETSEA RO TW SYSTEMS STANDARD FEATURES

FEED PUMP (OPTIONAL):

- Low pressure pump in stainless steel.
- It ensures that the high pressure pump is fed with water under enough pressure, after flowing through the media filter (optional) and the micrometric filters (included). There is also available a submersible pump in stainless steel.

PRE-FILTRATION:

- Anthracite and quartz sand filter (OPTIONAL) for removing the biggest particles, of approximately 50 microns, main marine contaminants, and for avoiding a rapid fouling of micrometric filters. It includes an automatic cleaning system.
- Dechlorinating activated carbon filter (OPTIONAL) for eliminating the chlorine, which may severely damage the reverse osmosis membranes. It includes an automatic cleaning system.
- 5 micron bag filter (INCLUDED) does not allow particles bigger than 5 micron to enter into the membranes. The frame has been designed for the easy substitution of the bag. It includes a pressure gauge that indicates when the replacement is needed and a drain valve for 5/8 – 10/15 – 15/23 TW models and pressure gauge for the other models.

HIGH PRESSURE PUMP:

- High pressure pump with head in 316 stainless steel. It ensures there is enough pressure to the membranes for the specific production.

REVERSE OSMOSIS MEMBRANE – PRESSURE VESSEL:

- A spiral wound membrane in polyamide thin film composite fibre, that constitutes the most advanced and current technology. High production with low pressure.
- Great water purity, with a minimum rejection rate of 99 %.

- The membrane has been designed for exceptional life and an easy cleaning.
- Pressure vessel in fibreglass for an operating pressure of 22 kg/cm². Its actual resistance is 42 kg/cm².
- Long-lasting easy-to-change assembly.

INSTRUMENTATION AND PROTECTION FEATURES:

- Long-lasting high and low pressure glycerine-filled gauges in 316 stainless steel.
- High and low pressure switches in 316L stainless steel. The low pressure switch do not allow the operation of the high pressure pump if the feed pressure is not enough, what avoids that the pump operates dry and deteriorates. Indicator lights which are installed in the control panel, warn if there is a default of high pressure.
- High pressure switch in 316L stainless steel. The high pressure switch does not allow the high pressure pump to operate with more pressure than the recommended. Indicator lights which are installed in the control panel, warn if there is a default of high pressure.
- Product and rejection flow gauge manufactured in shockproof methacrylate.
- Operation time counter. It informs about when the service is required according to the system operating hours.
- “On - off” switch with indicator light and thermal protection of the high and low pressure pump motors. In the control panel, one indicator light warns if there is a default in the motor.
- Visual control of the product water quality, by means of an electronic conductivity meter.
- All the electric connections are watertight.
- Metallic watertight electric box. The whole electric installation follows the EC and IMO legislations. The wiring includes numbered nomenclature for a better identification of each wire.



FRAME:

- The polished 316 stainless steel frame has been manufactured for a long-lasting life.
- Components disposition for an easy maintenance and working space with outer opening.

CONNECTIONS:

- Water inlets and outlets with metal connections.
- The tubes and connections in contact with the potable water are food graded.

TESTING:

The equipment is tested in PETER TABOADA S.L. installations in Vigo before being sent. The

tests include: Electric and electronic operation, hydraulic operation, performance with different temperatures and different feed water qualities, operation under extreme conditions applying the maximum pressures, produced water quality, security systems, etc.

EXPANDABLE SYSTEMS:

All the PETSEA RO systems are expandable with the only need of installing extra membranes. The systems are prepared in the factory with bigger pumps, motors and tubes to easily expand the systems.

This unique characteristic makes the PETSEA RO systems the most versatile ones in the current market.



PICTURE: TWY-96 for 9 ton/day (0.4 m³/h) water production



PETSEA RO TW SPECIFICATIONS

Common specifications:

MINIMUM REJECTION RATE: 99%
SEAWATER PRESSURE: Minimum 0.5 kg/cm ²
MAXIMUM OPERATION PRESSURE: 18 kg/cm ²
MAXIMUM INLET WATER PRESSURE: 6 kg/cm ²
INLET WATER TEMPERATURE: Minimum 2°C – Maximum 40°C
MAXIMUM FEEDING WATER SALINITY: 2000 p.p.m. TDS
MAXIMUM FILTRATION: Maximum 5 micron particles (optionally 1 micron).

Specifications according to models:

TW-Y MODELS	MAX. PRODUCTION (m ³ /day)	TYPE AND AMOUNT OF MEMBRANES	ELECTRICAL POWER	HYDRAULIC CONNECTIONS	NOISE LEVEL db(A)	APPROX DRY WEIGHT
TW-Y 17	1.75	Size 2540; nr. 1	0.75 kW	Feed ½" Rejection ½" Production ½"	72	50 kg
TW-Y 34	3.50	Size 2540; nr. 2				55 kg
TW-Y 48	5.00	Size 2540; nr. 3				60 kg
TW-Y 65	6.50	Size 2540; nr. 4				65 kg
TW-Y 96	10	Size 4040; nr. 2	2.2 kW	Feed ¾" Rejection ½" Production ½"	75	125 kg
TW-Y 144	15	Size 4040; nr. 3				130 kg
TW-Y 190	20	Size 4040; nr. 4				140 kg
TW-Y 240	25	Size 4040; nr. 5				150 kg
TW-Y 300	30	Size 4040; nr. 6				160 kg



TW-Y 65 with 4 membranes type 2540



TW-Y 144 with 3 membranes type 4040



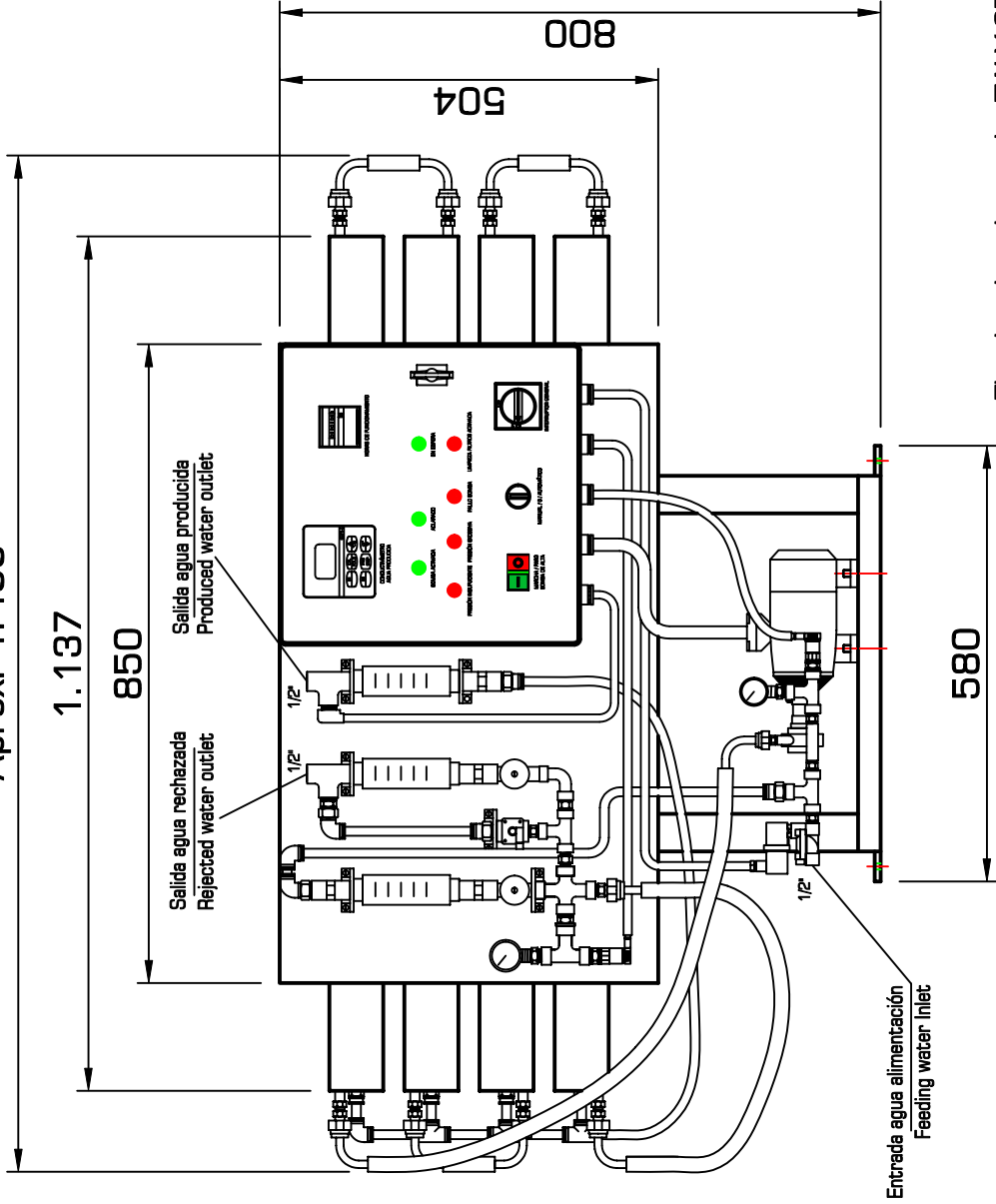
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MAIN DRAWINGS

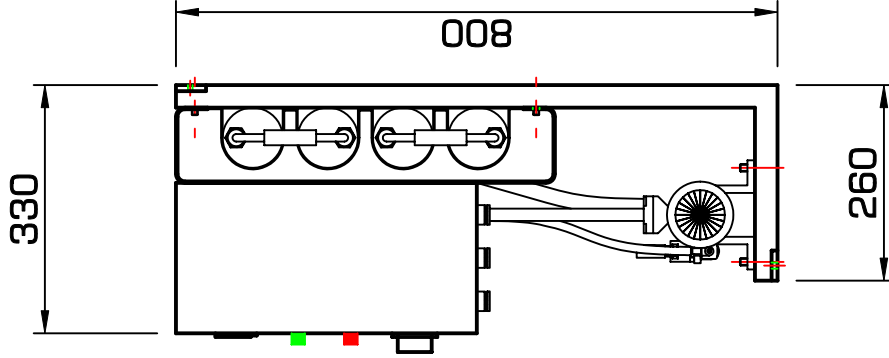
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Aprox. 1.400



ALZADO / FRONT VIEW

The drawing shows the TW-Y 65 plant,
 with 4 membranes and 4 pressure vessels.



PERFIL / SIDE VIEW

- PETSEA RO® TW-Y 17 => 1 MEMB => 1.7 m³/d
- PETSEA RO® TW-Y 34 => 2 MEMB => 3.4 m³/d
- PETSEA RO® TW-Y 48 => 3 MEMB => 4.8 m³/d
- PETSEA RO® TW-Y 65 => 4 MEMB => 6.5 m³/d

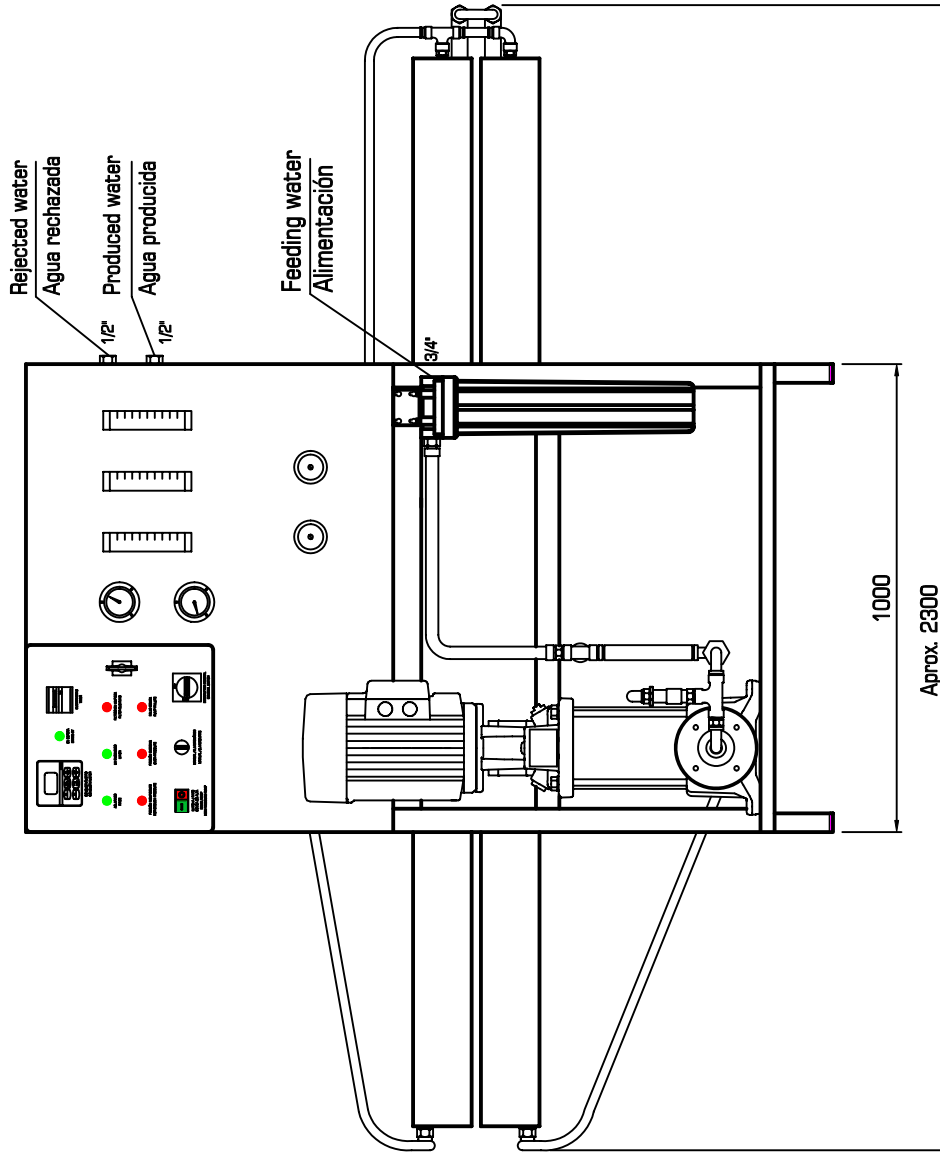
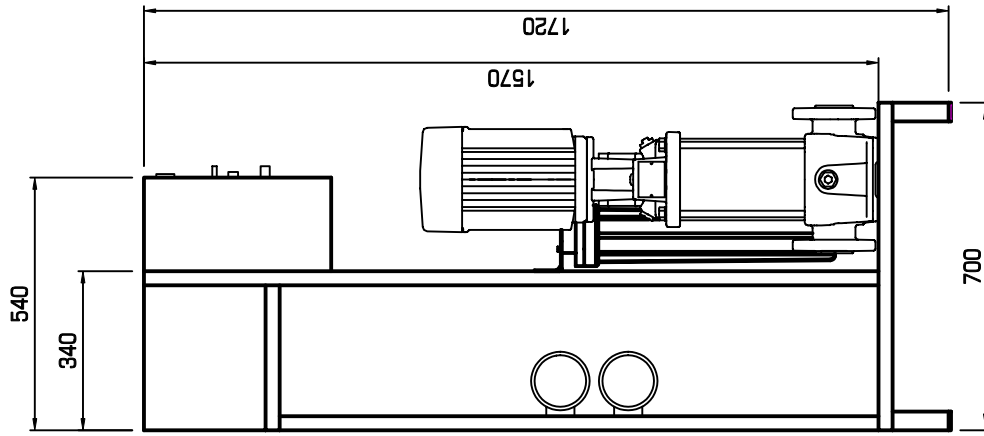
Revisión: 00

Dibujado / Drawn: Lois Anjo Fecha / Date: 02/10/06	Comprobado / Checked: Fernando X. Fecha / Date: 02/10/06	Aprobado / Approved: Jesús Tabo Fecha / Date: 02/10/06	
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Range: PETSEARO® TW-Y
 Membranes 2540 type
 Membranas tipo 2540

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The drawing shows the TW-Y 300 plant,
 with 6 membranes and 3 pressure vessels.

PETSEA RO
 Rango: PETSEARO® TW-Y
 Membranas 4040 type
 Membranas tipo 4040



Revision / Review: 00 / PT001152	
Dibuñado / Drawn: Fernando X. Fecha / Date: 18/10/07	Aprobado / Approved: Jesús Tabo Fecha / Date: 18/10/07
Comprobado / Checked: Fernando X. Fecha / Date: 18/10/07	[Signature]
[Signature]	[Signature]

- PETSEA RO® TW-Y 96 => 2 MEMB => 10 m³/d
- PETSEA RO® TW-Y 144 => 3 MEMB => 15 m³/d
- PETSEA RO® TW-Y 190 => 4 MEMB => 20 m³/d
- PETSEA RO® TW-Y 240 => 5 MEMB => 25 m³/d
- PETSEA RO® TW-Y 300 => 6 MEMB => 30 m³/d