

Gefico

Water Solutions



0.1	About us	4
0.2	Maritime services	5
0.3	Global impact	6
0.4	Desalination units	7
	0.4.1 Fresh Water Generators	7
	0.4.2 Reverse Osmosis Watermakers	11
0.5	Customized units	16
0.6	Water treatment	17
0.7	Antifouling systems	19
0.8	References	21

GEFICO

Gefico is a leading company that designs, develops and supplies water treatment solutions.

Over the past 35 years, Gefico has been manufacturing equipment for diverse sectors such as maritime, oil and gas and industry, with more than 7.000 offshore and inland installations, and 35 authorized agents.

In 2011, Gefico became part of industrial group Cetus . With a quality product certificate, the group focuses on sustainability and environmental solutions, holding several innovation awards and CSR (Corporate Social Responsibility).

Environmental impact is one of our main concerns. We therefore work to minimize negative impact on the environment by continuously developing new opportunities compatible with sustainable development.



SERVICES

Gefico supplies equipment and systems for offshore and maritime industry. We assist shipowners and shipyards with the best solutions to complete their requirements.

Gefico is specialist in:

- Antifouling systems
- Desalination processes
- Heat Exchangers
- Water treatment systems

Gefico knows the importance to provide our customers with original spare parts and a good service and support to maintain the systems working with a good performance.

Gefico service specialists are ready to support, depending on your need.

Services and parts are in easy reach of your operations, when you need them:

- Spare Parts
- Technical Support
- Commissioning and Start-Up
- Training



Cruise Roma. Equipped with 4 fresh water generators Gefico Evaporators, model AQ-60/70A.

GLOBAL IMPACT

Gefico is a global company with a distribution network that operates worldwide.

Africa: Egypt, Mauritania, Morocco, Mozambique, Namibia, Tunisia.

America: USA, Canada, Mexico, Panama, Argentina, Brazil, Chile, Ecuador, Uruguay, Venezuela, Colombia, Peru.

Europe: Germany, Belgium, Bulgaria, Croatia, Denmark, Scotland, Estonia, Finland, France, Greece, Holland, England, Ireland, Iceland, Faroe Islands, Italy, Norway, Poland, Portugal, Romania, Russia, Sweden, Turkey.

Asia & Pacific: China, Dubai, Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, Singapore, Philippines, Australia, New Zealand.



FRESH WATER GENERATORS

Gefico Fresh Water Generators are low pressure and submerged tube type, based on two sets of shell and tube exchangers (Heater + Condenser).

Our units can work with different heating sources (jacket water, steam, thermal oil, etc) and feed water (seawater, brackish, surface waters, etc) to produce technical water, increasing the energy efficiency of the installation.

With the proper post treatment (rehardening filters, dosing units) the technical water can be used as drinkable water.

When the available waste heat is not enough, Gefico can offer a double stage unit. The power consumption in a double stage unit is 50% lower compared to a simple stage unit.



Gefico double stage Evaporator, model AQ-25/2.

Small range. 1 to 10 m3/day

MODEL	AQ-1/2	AQ-2/3	AQ-3/4A	AQ-4/5A	AQ-5/6A	AQ-6/8	AQ-8/10	AQ-10/12
PRODUCTION (m3/day)	1	2	3	4	5	6	8	10
WEIGHT (kg)	184	191	210	390	423	540	587	642
ENERGY (kW)	30	61	92	122	153	184	245	308
DIMENSIONS								
Length (mm)	760	860	1000	1080	1220	1123	1350	1550
Width (mm)	495	495	495	560	560	700	700	700
Height (mm)	680	680	680	900	900	1070	1070	1070



Evaporator model AQ-4/5A.



Evaporator model AQ-16/20.

Top range. 12 to 25 m3/day

MODEL	AQ-12/16	AQ-16/20A	AQ-20/25A	AQ-25/30A
PRODUCTION (m3/day)	12	16	20	25
WEIGHT (kg)	800	1100	1375	1666
ENERGY (kW)	355	480	610	730
DIMENSIONS				
Length (mm)	1490	1490	1800	2060
Width (mm)	850	950	1050	1050
Height (mm)	1310	1510	1760	1760

Modular range. 30 to 100 m3/day

MODEL	AQ-30/35A	AQ-35/40A	AQ-40/50A	AQ-50/60A	AQ-60/70A	AQ-80/100A	AQ-100/120A
WPRODUCTION (m3/day)	30	35	40	50	60	80	100
WEIGHT (kg)	2250	2340	2450	3400	3900	4400	4900
ENERGY (kW)	880	1120	1210	1480	1765	2370	2958
DIMENSIONS							
Length (mm)	2780	2780	2780	3190	3190	3250	3250
Width (mm)	1485	1485	1485	1485	1595	1820	1925
Height (mm)	2200	2200	2200	2200	2370	2370	2370



Evaporator model AQ-25/2.



Evaporator model AQ-60/70.

Double stage range. 5 to 100 m3/day

MODEL	AQ-5/2	AQ-8/2	AQ-12/2	AQ-25/2	AQ-40/2	AQ-60/2	AQ-75/2	AQ-100/2
PRODUCTION (m3/day)	5	8	12	25	40	60	75	100
WEIGHT (kg)	550	650	1170	2040	3400	4700	5800	7200
ENERGY (kW)	80	155	192	420	682	1030	1160	1546
DIMENSIONS								
Length (mm)	1220	1400	1370	1985	2540	2820	4250	4250
Width (mm)	1100	1215	1190	1730	2000	2395	2600	2725
Height (mm)	900	1400	1100	1840	2060	2120	2430	2430

OUR CUSTOMERS

“Severnoye Siyaniyel”

Russian continental shelf.
Two dual-stage evaporator plant model AQ-40/2.



“Grande Africa”

One single stage evaporator plant model AQ-30/35A.



FPSO “Cidade de Vitoria”.

Equipped with Gefico evaporator AQ-40/50 with steam injector.



“Lagan Viking”

Two single stage evaporator plants model AQ-16/20A.



REVERSE OSMOSIS WATERMAKERS

In the Gefico RO water makers, the raw water is pressurized and forced to pass through a semipermeable membrane, producing high quality permeate water. It is removed around 95-99% of dissolved salts, particles, colloids, organics, bacteria and viruses.

The RO units Gefico can treat any type of waters to be used as drinking, irrigation or industrial waters with the minimum electric consumption.

Our units are modular including all components installed in a common frame, only the booster pump and media filter are loose supply for an easy installation.



Reverse Osmosis plant Gefico, model AQE-120DDA explosion proof.

Small range. 1,6 to 30 m³/day

HORIZONTAL

MODEL	AQE-2M	AQE-4M	AQE-6M	AQE-10M	AQE-15M	AQE-18M	AQE-20M	AQE-25M
Fresh Water Output (m ³ /day)*	2	4	6	10	15	18	20	25
Power (kW)**	3.75	3.75	3.75	7	7	7	9	9
Length x Width x Height (mm)	680x1200x868			730x1600x1034			930x1370x900	

*This capacity is calculated at seawater temperature of 25°C and a TDS of 35.000 ppm.

**Including HP and Feed Water pump.



AQE-6M Horizontal configuration



AQE-6M Vertical configuration

VERTICAL

MODEL	AQE-2M	AQE-4M	AQE-6M	AQE-10M	AQE-15M	AQE-18M	AQE-20M	AQE-25M
Fresh Water Output (m ³ /day)*	2	4	6	10	15	18	20	25
Power (kW)**	3.75	3.75	3.75	7	7	7	9	9
Length x Width x Height (mm)	680x820x1235			900x920x1684			1040x860x1490	

*This capacity is calculated at seawater temperature of 25°C and a TDS of 35.000 ppm.

**Including HP and Feed Water pump.

Top range. 30 to 120 m3/day

MODEL	AQE-30MD	AQE-30D	AQE-60D	AQE-70D	AQE-100D	AQE-120D
PRODUCTION (m3/day)	30	40	50	80	100	120
WEIGHT (kg)	620	950	1050	1340	1450	1560
DIMENSIONS						
Length (mm)	1520	2200	2200	2200	2200	3204
Width (mm)	1220	1418	1418	1840	1840	1840
Height (mm)	920	1230	1230	1580	1580	1691



AQE-20S

PLUG&PLAY SOLUTIONS

MODEL	AQE-4S	AQE-6S	AQE-10S	AQE-15S	AQE-18S	AQE-20S	AQE-25S
Fresh Water Output (m ³ /day)*	4	6	10	15	18	20	25
Power (kW)**	4.9	4.9	8.7	8.7	8.7	10.7	10.7
Length x Width x Height (mm)	1356x1300x1503				1476x1400x1763		

*This capacity is calculated at seawater temperature of 25°C and a TDS of 35.000 ppm.

**Including HP, Booster, CIP and Metering pumps.

Top range. 60 to 200 m3/day

MODEL	AQE-30DPP	AQE-60DPP	AQE-70DPP	AQE-100DPP	AQE-150DPP	AQE-200DPP	AQE-500DPP
PRODUCTION (m3/day)	40	60	80	100	150	200	500
WEIGHT (kg)	1350	1420	2640	3500	3900	4300	4820
DIMENSIONS							
Length (mm)	3490	3490	4800	4800	4800	-	7000
Width (mm)	1500	1500	1600	1600	1600	1600	1600
Height (mm)	2000	2000	2000	2000	2000	2000	2000



Reverse Osmosis model AQE-100DPP.



Containerized Reverse Osmosis plant.

PORTABLE SOLUTIONS

Container	Length	Width	Height	Production
Standard ISO 10'	2991 mm / 10'	2438 mm / 8'	2591 mm / 8' 6"	1-30 m ³ /day
Standard ISO 20'	6058 mm / 20'	2438 mm / 8'	2591 mm / 8' 6"	30 / 60 / 120 / 240 m ³ /day
Standard ISO 40'	12192 mm / 40'	2438 mm / 8'	2591 mm / 8' 6"	250 / 500 m ³ /day

OUR CUSTOMERS

“Erviken”

One Reverse Osmosis plant model AQE-18D.



“Lyubov Orlova”

Polar cruise with One Reverse Osmosis plant model AQE-60.



“Sarmiento de Gamboa”

Oceanographic vessel with two Reverse Osmosis plant model 2 x AQE-10D.



“Clelia II”

One Reverse Osmosis plants model AQE-25D.



CUSTOMIZED UNITS

Gefico can quote customized units, in order to fulfill specific certifications and customer requirements.

- Stainless steel
- Duplex steel
- ATEX regulations
- Contained systems



"Pyotr Velikiy" Russian Navy.
1 x AQE-60D and 2 x AQE-15D



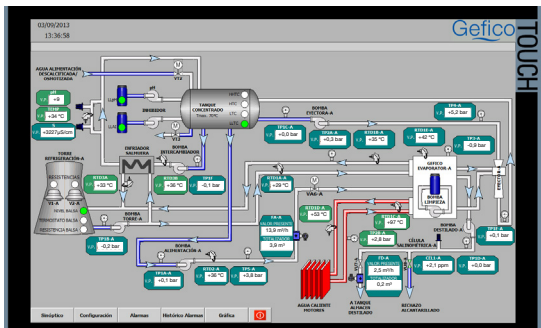
Reverse Osmosis plant model AQE-15DHHTS.

AUTOMATIC PROCESS

Our watermakers can be supplied fully automatic for monitoring and control.

Our installations can be controlled locally or by a remote system TCP / IP that allows to the customer analyze and check all process factors.

This control allows a further optimization of the process, through the possibility of carrying out analysis of the several parameters that affect to production.



Control software for Gefico plant.

WATER TREATMENT

Gefico supplies a wide range of products for water treatment:

Rehardening filters

For pH adjustment and water mineralization.

UV sterilizer lamps

To sterilize drinking water.

Gefico dosing systems

Are used for:

- Seawater Treatment
- Drinking Water Treatment

Gefico Carbon filters

Potable water post-treatment:

- To eliminate flavours and odors
- To remove chlorine contents

Potable water heaters

Our water heater consists in a pressurized tank which incorporates electric resistances heating, thermostats and sensors PT-100 for temperature control, a safety valve, level switches and electrical controls.

Hydrophore tanks

Hydrophore tanks are used in the fresh water system to keep the entire water circuit with the suitable pressure.



Mineralizer filter Gefico model RF-1.5



UV sterilizer lamp

OUR CUSTOMERS

“Arbol Grande”

One double stage evaporator plant with mineralizer filter model MHF-3500.



“Bigfoot 1”

One Reverse Osmosis plant with UV sterilizer lamps models UBK-2 and UB2-3.



“Edda Fides”

Complete system for potable water post-treatment for flotel vessel.



“Bourbon Oceanteam 101”

Potable water post-treatment.



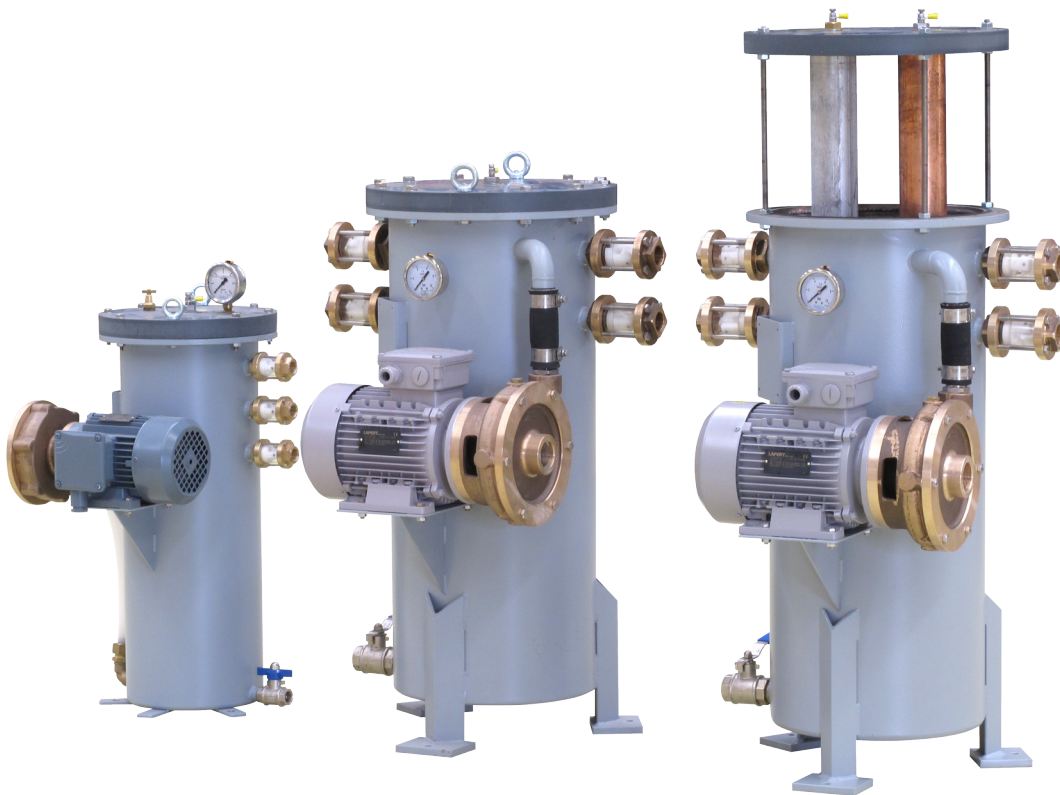
ANTIFOULING SYSTEM

The biological components present in the sea water can cause marine growth in the cooling systems.

This growth reduces the volume of water flowing through the system worse the cooling effect. These results in an increase in the working temperature of the components connected to the cooling system.

The solution is a mechanical cleaning in order to eliminate the growth from the pipes and other areas in the cooling system, to restore the original water flow. Such cleaning requires the whole system to be shut down, with a consequent loss of time and money.

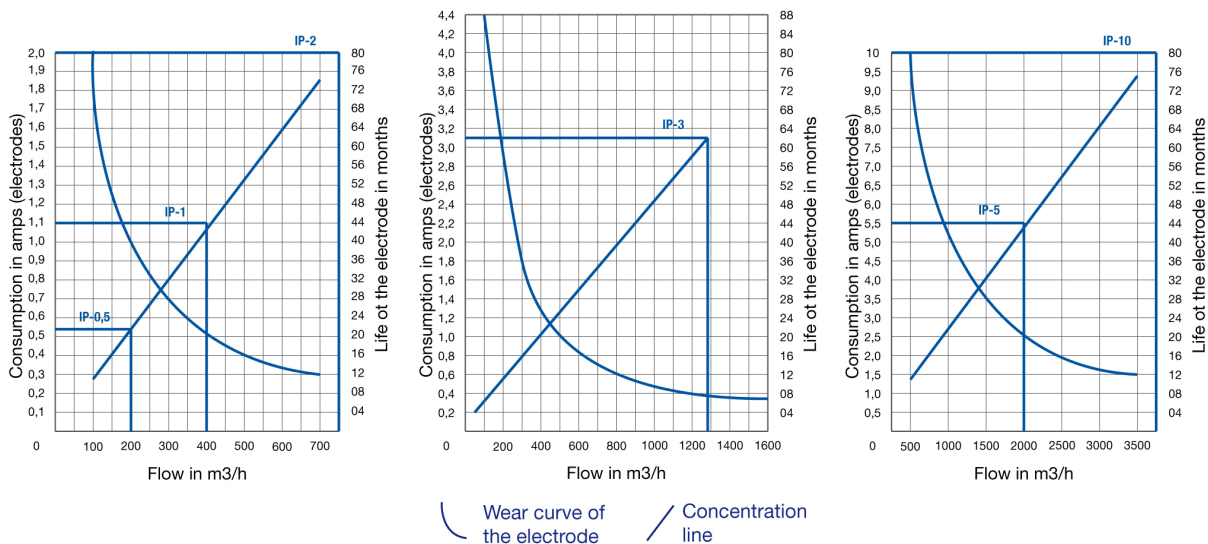
Gefico has developed the Antifouling System to solve this problems. The system inject copper ions (CU+2) into the sea water cooling system to prevent marine growth and remove the existing one.



Gefico Antifouling systems by ion injection of copper and aluminium.

Antifouling system. Treatment capacity from 200 to 2500 m3/h

MODEL	IP-0,5	IP-1	IP-2	IP-3	IP-5	IP-10
PRODUCTION (m3/h)	200	400	700	1200	2000	2500
ENERGY (kW)	0,04	0,5	0,5	1,5	2	2
DIMENSIONS						
Length (mm)	483	483	483	610	710	710
Width (mm)	395	395	395	530	770	770
Height (mm)	637	637	637	820	790	790
CONTROL PANEL						
Length (mm)	200	400	400	400	400	400
Width (mm)	300	500	500	500	500	500
Height (mm)	150	200	200	200	200	200



Selection graphic tables for antifouling.

OUR CUSTOMERS

"Far Sailor"

Offshore Supply Vessel with one antifouling system model IP-0'5.



"Miguel de Cervantes"

Rescue ship with one Antifouling system model IP-3.



"Island Wellserver"

Offshore service vessel with one Antifouling system model IP-2 and one IP-3.



"Viking Poseidon"

Offshore Construction Vessel with one Anti-fouling system model IP-3 and one IP-0'5.



Polígono O Acevedo, Parcela A
15185 Cerceda - A Coruña. Spain
Tel +34 981 250 111 - Fax +34 981 258 439
Email: gefico@gefico.com
www.gefico.com

Gefico

Excellence in water



Gefico cannot accept responsibility for possible errors in catalogs, brochures and other printed material. Gefico reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed.