



Gefico

Excellence in water



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Worldwide

Through our worldwide agents, we are prepared to give assistance to our customers wherever they are.

Agents

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. Spain, Estonia, Finland, France, Greece, Holland, England, Ireland, Iceland, Faroe, Italy, Norway, Poland, Portugal, Romania, Russia, Sweden, Turkey.

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



Worldwide network of agents Gefico.



Gefico

Gefico contributes with clean and effective solutions in desalination plants and water treatment with more than thirty five years of experience.

We are a leader corporation manufacturing equipments for naval, offshore and industrial water. Our products are designed to work with efficiency in the hardest and extreme conditions. More than seven thousand ships and industrial facilities around the world are equipped with our products.

The efficiency and simplicity of our systems have consolidated the Gefico international prestige.

We are part of the industrial holding group Cetus, with accreditations of quality products and services, with innovation awards and contributions to the sustainability and environmental care, in addition to several S.M.R. (Social Managerial Responsibility) acknowledgements.



We are part of the industrial holding group Cetus.

Environment

The environmental conscience is one of the identity marks of Cetus Group.

Through pioneering methodology, checked and based in life-cycle test, we work with the least possible environmental impact, also our awareness management make easier the integration and self-improvement at work.

The certifications are our targets, the recognitions and obtained awards, are consequence of our social and environmental philosophy.

We design and manufacture products that help eliminate or reduce polluting discharges and emissions in several industrial processes.

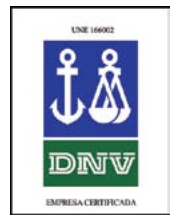


In the place where “As Salgueiras” foundation is located, the “Anllóns” river clean waters are born. Gefico contributes to global environmental awareness through this foundation.

Quality

The Quality Management Systems comply with the ISO 9001 standard to assure quality in our products and services.

All our units are tested in our factory to guarantee a correct performance.

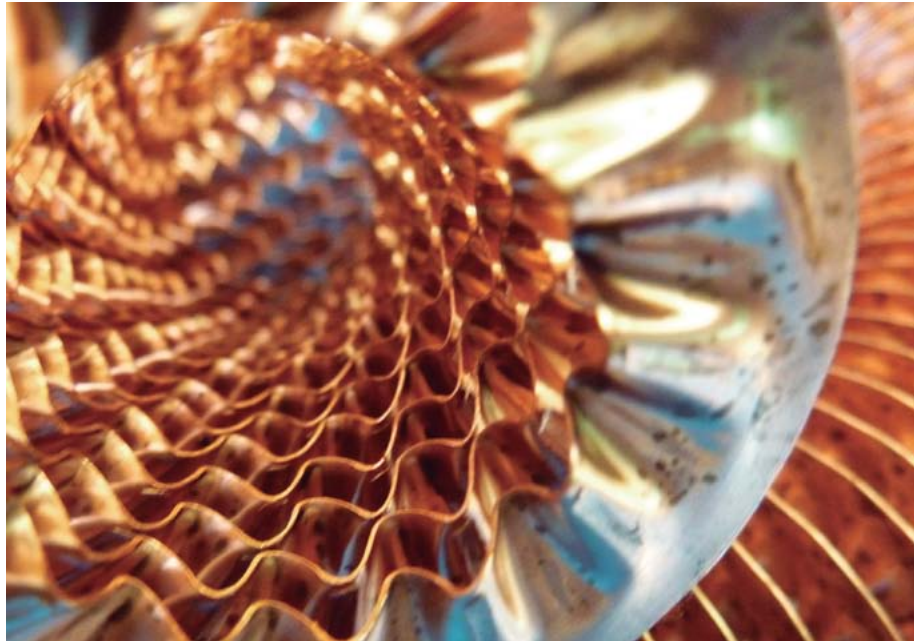


ISO 9001 Quality Management System.

Engineering

The engineering department gives the best and effective solution to our clients based in the experience and knowledge of different industries during the last 35 years.

Our technical team works in a way that always satisfies the demands of our customer.



Young and expert technical team.

Amudsen.
2 RO units AQE-15D



Naval

From the beginning Gefico have designed and built desalination plants and water treatment for installation on commercial vessels.

We supply effective solutions, standard and customized, to the mainly shipyards and shipowners in the world.



Cruise Roma ship equipped with 4 fresh water generators GEFICO Evaporators, model AQ-60/70A. Shipyard Fincantieri. Italy.

Offshore

The efficiency and reliability of our units has built a reputation in the major offshore Companies.

Several platforms, drillships and different offshore supply vessels have entrusted the production and water treatment to our units.



West Eminence
sea drill
2 AQ-40/2



Semi-Submersible platform P-26. Equipped with one freshwater generator Gefico, model AQ-40/2, and two mineralizer filters MHF-2500. Petrobras.

Power plant.
3 evaporator units
AQ-50/60
Grelva-Puleva
Spain



Industrial

The technical water needs are presents in many industrial processes. We are a world leader Company in distillate water generation from seawater or surface waters.

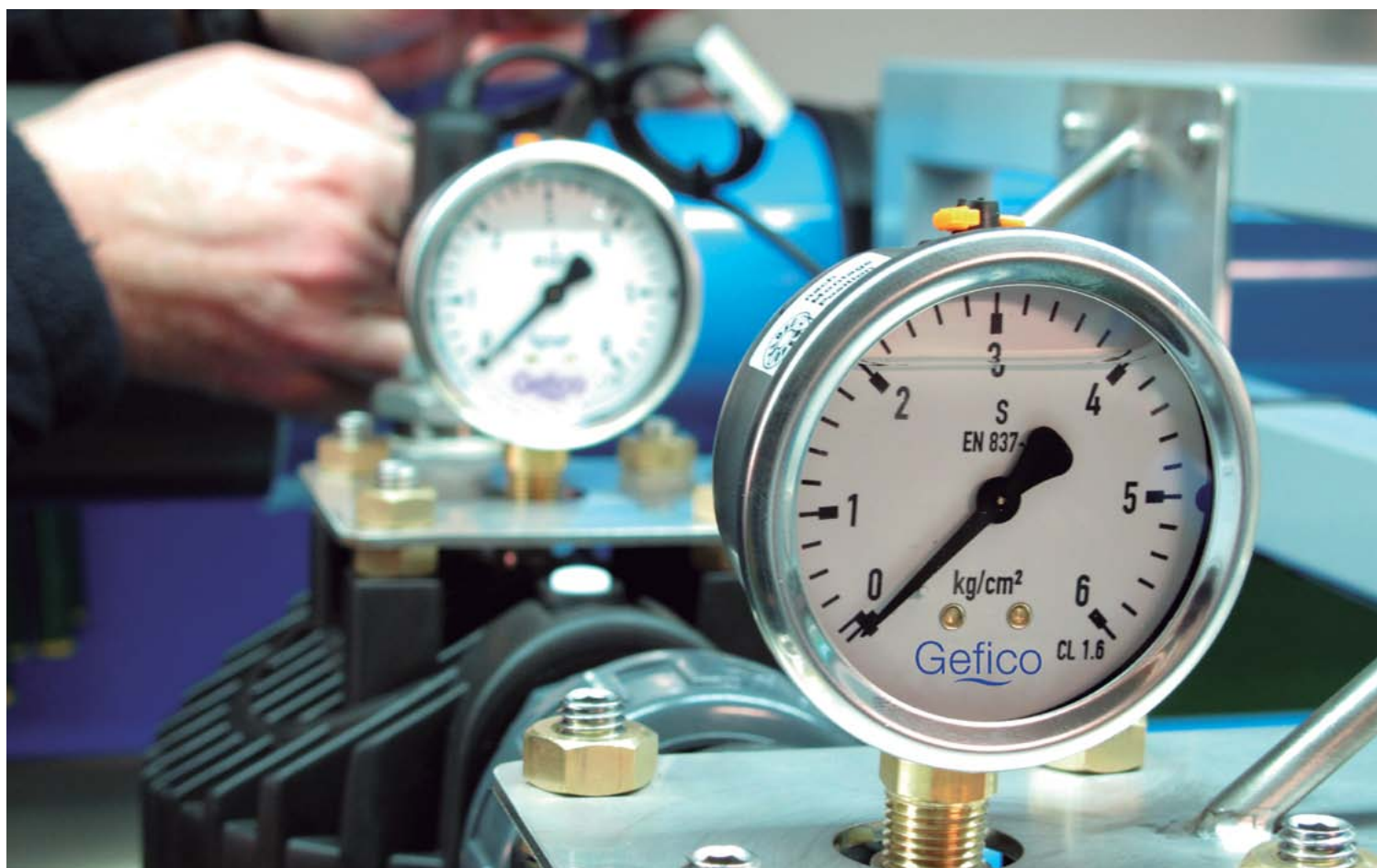
We work continuously developing the system to give the best solution and benefit in land-based applications.



Power plant, equipped with 1 fresh water generator GEFICO Evaporator model AQ-100/120A. Viscofan Group. Spain.

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GEFICO Evaporators

The Gefico Evaporator units are vacuum and submerge tube type obtaining distillate water at low evaporation temperature.

Our evaporation units works with any heating waste (hot water, steam, thermal oil, etc) to produce high quality distillate water increasing the energetic efficiency of the installation. Any type of water can be used as source like: sea water, brackish, surface waters, etc.

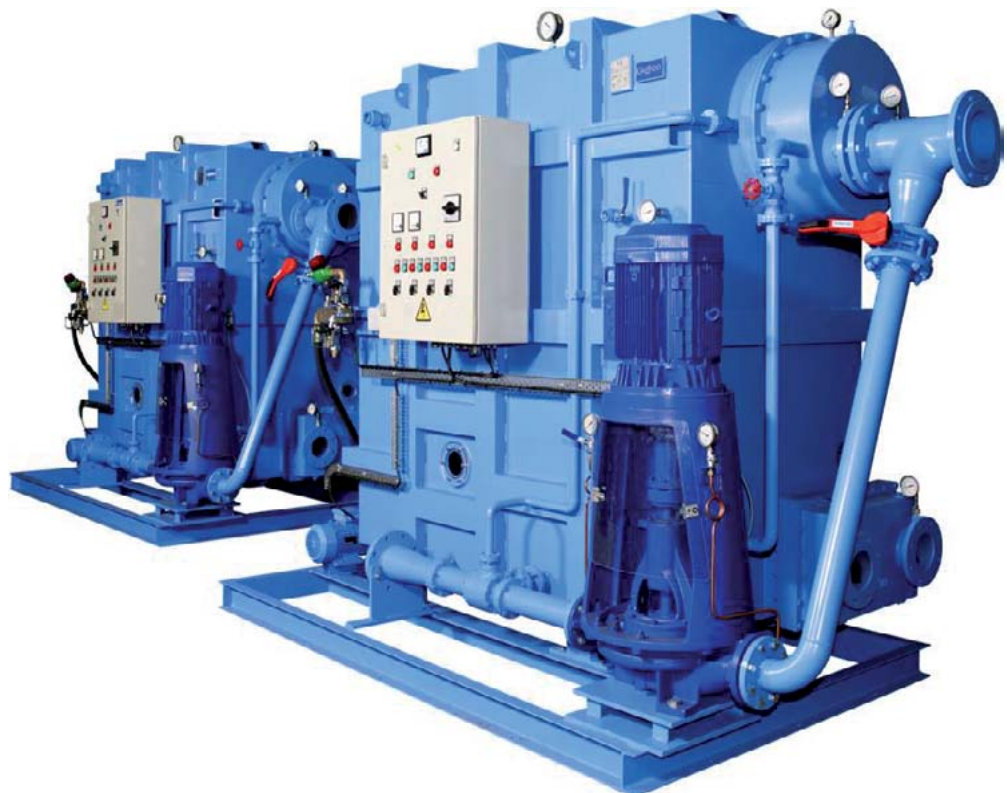
These equipments are used in the naval & offshore market to produce different waters from the sea:

- Technical. For boilers, cooling systems and any process that needs this type of low mineralizing waters.
- Potable for human consumptions, after the suitable post-treatment.

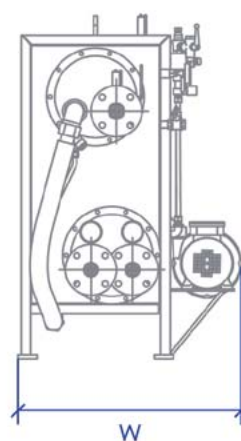
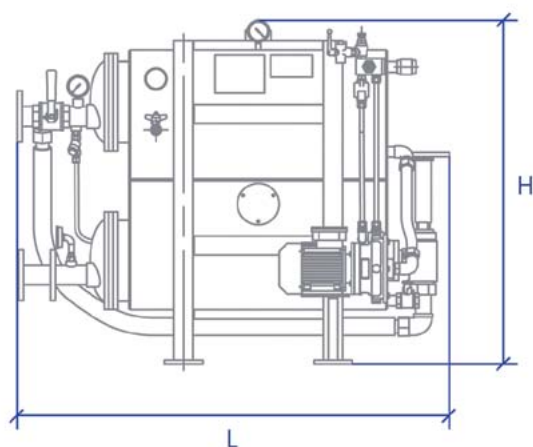
When the installation doesn't have enough waster heat available, Gefico Evaporators Double Stage are the best solution for distillate water production, with a low energy consumption, 50% less than a single stage unit.

When the heat source comes from engine jacket cooling seawater system, we can use the Gefico Evaporator Flash Range to obtain distillate water.

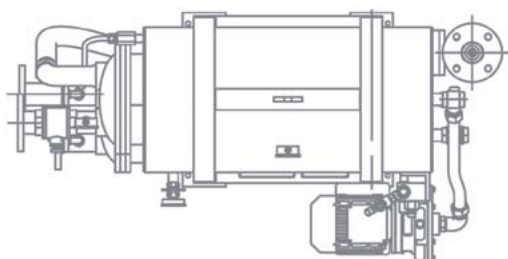
Gefico
Evaporator
model AQ-60/70



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
CONNECTIONS								
Hot water (in)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	2	2
Sea Water inl. (in)	1	1	1	1 1/2	1 1/2	2	2	2
Distillate water (in)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Sea water dis. (in)	1 1/4	1 1/4	1 1/4	2	2	2	2	2

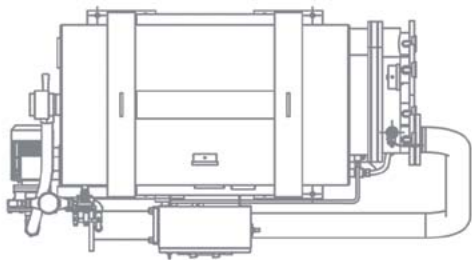
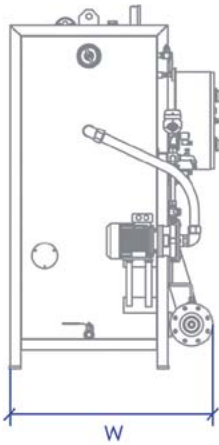
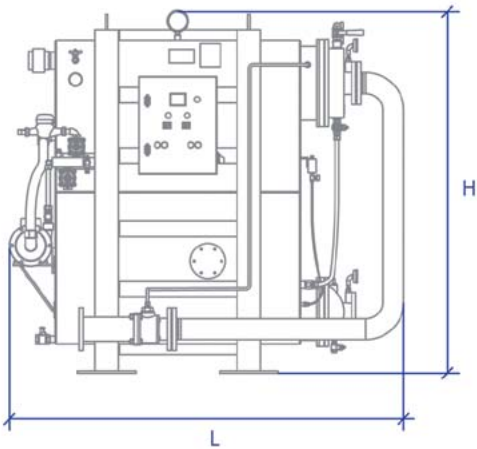


Gefico
Evaporator
model AQ-8/10

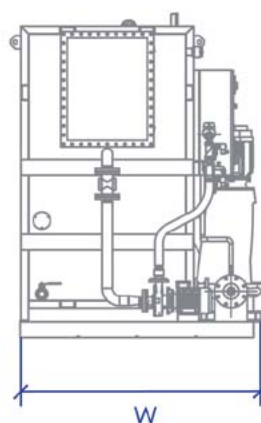
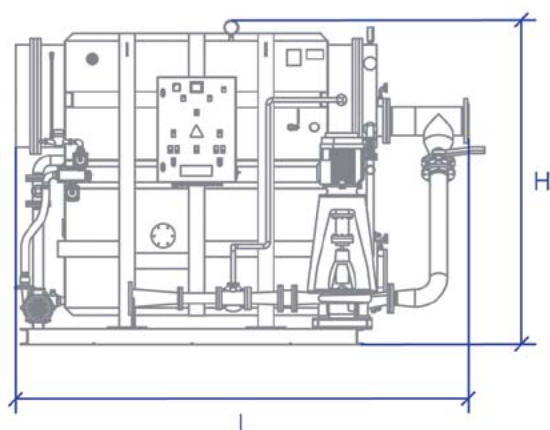


MODEL	AQ-12/16	AQ-16/20A	AQ-20/25A	AQ-25/30A
PRODUCTION (m3/day)	12	16	20	25
WEIGHT (Kg)	800	1100	1375	1666
ENERGY (Kw)	355	480	610	730
DIMENSIONS				
Length (mm)	1490	1490	1800	2060
Width (mm)	850	950	1050	1050
Height (mm)	1310	1510	1760	1760
CONNECTIONS				
Hot water (in)	2 1/2	2 1/2	3	3
Sea Water inl. (in)	2 1/2	2 1/2	3	3
Distillate water (in)	1/2	1/2	3/4	3/4
Sea water dis. (in)	2	4	4	4

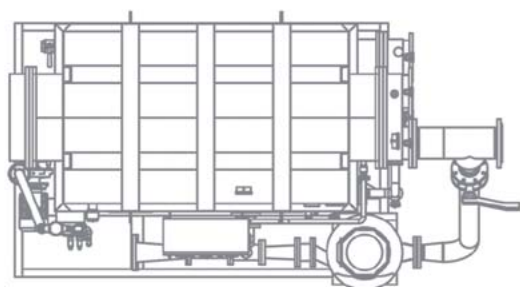
Gefico
Evaporator
model AQ-25/30A



MODEL	AQ-30/35A	AQ-35/40A	AQ-40/50A	AQ-50/60A	AQ-60/70A	AQ-80/100A	AQ-100/120A
PRODUCTION (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
CONNECTIONS							
Hot water (in)	3	4	5	5	5	6	8
Sea Water inl. (in)	5	5	5	6	6	6	8
Distillate water (in)	3/4	3/4	3/4	1	1	1 1/2	1 1/2
Sea water dis. (in)	4	4	4	5	5	6	6

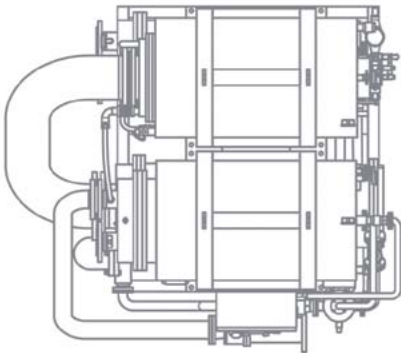
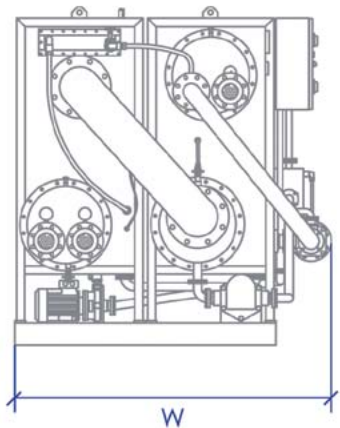
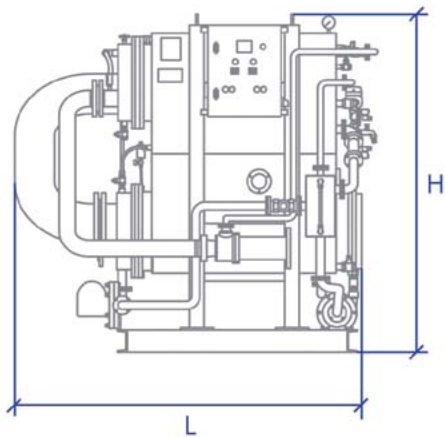


Gefico
Evaporator
model AQ-100/120A

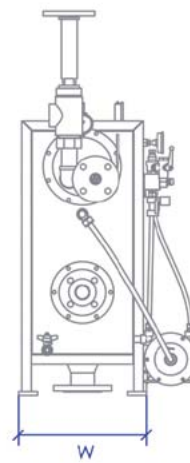
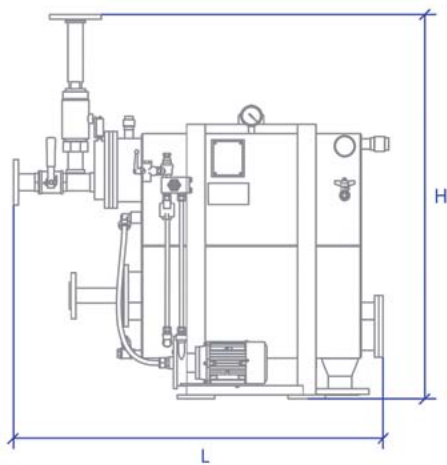


MODEL	AQ-5/2	AQ-12/2	AQ-25/2	AQ-40/2	AQ-60/2	AQ-75/2	AQ-100/2
PRODUCTION (m3/day)	5	12	25	40	60	75	100
WEIGHT (Kg)	750	1170	2040	3400	4700	5800	7200
ENERGY (Kw)	80	192	420	682	1030	1160	1546
DIMENSIONS							
Length (mm)	1220	1370	1985	2540	2820	4250	4250
Width (mm)	1100	1190	1730	2000	2395	2600	2725
Height (mm)	900	1100	1840	2060	2120	2430	2430
CONNECTIONS							
Hot water (in)	2	2	3	4	5	6	6
Sea Water inl. (in)	1 1/2	2	3	4	5	8	8
Distillate water (in)	1/2	1/2	3/4	3/4	1	1 1/2	1 1/2
Sea water dis. (in)	2	2	4	4	5	6	6

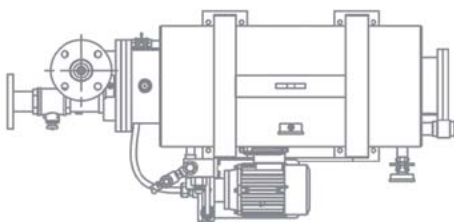
Gefico
Evaporator
model AQ-25/2



MODEL	AQ-1F	AQ-2F	AQ-3F	AQ-4F	AQ-5F
PRODUCTION (m ³ /day)	1	2	3	4	5
ENERGY (Kw)	29	58	87	116	145
DIMENSIONS					
Length (mm)	1250	1200	1875	1800	1570
Width (mm)	390	390	540	540	590
Height (mm)	890	1150	1510	1310	1310



Gefico
Evaporator Flash model
AQ-1F



“Seven Borealis”.
Equipped with Gefico
evaporator AQ-4/5A
with thermal oil as
heating source.



“Le Boreal cruise”.
Equipped with Gefico
evaporator AQ-25/2
with steam booster
system.



FPSO “Cidade de
Vitoria”. Equipped
with Gefico evaporator
AQ-40/50 with steam
injector.



Gefico Reverse Osmosis units

The Gefico RO unit works with the reverse osmosis principle. The raw water is pressurized through a semipermeable membrane only allowing the flow of fresh water. The salts and other contaminants are eliminated with the brine flow.

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

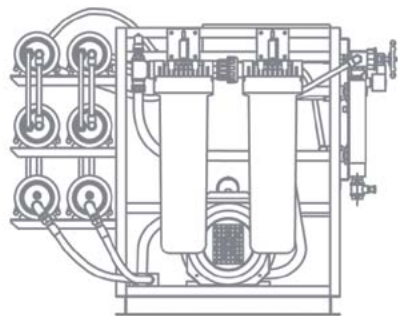
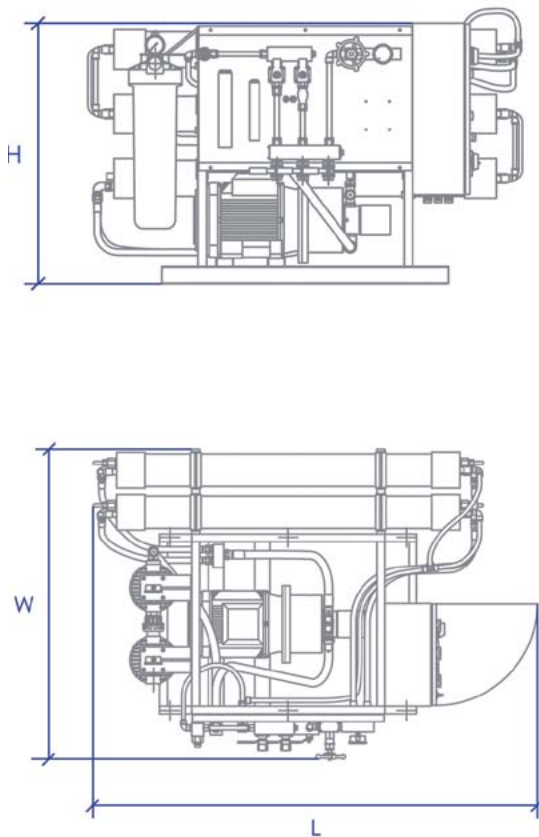
Our units are modular including all components installed in a common frame, only the booster pump and media filter are loose supply for an easy installation.



Gefico
R.O. model
AQE-60D-SS

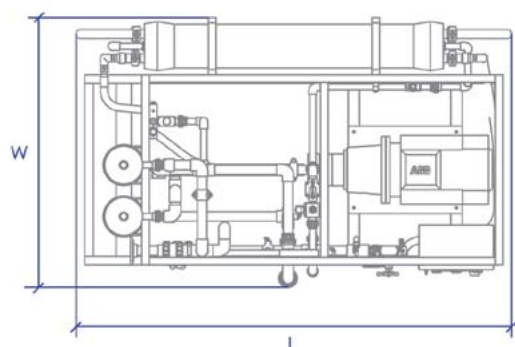
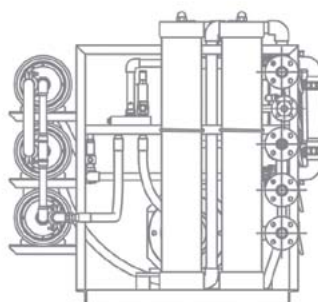
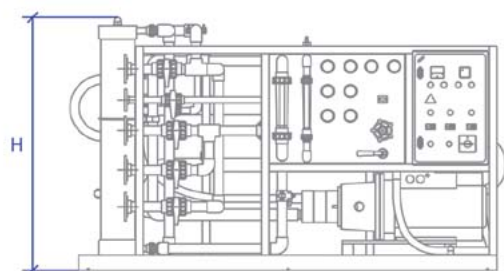
MODEL	AQE-2D	AQE-4D	AQE-6D	AQE-10D	AQE-15D	AQE-18D	AQE-20D	AQE-25D	AQE-30MD
PRODUCTION (m3/day)	1,6	3,2	4,8	8	12	15	20	25	30
WEIGHT (Kg)	120	130	140	380	415	432	520	550	580
DIMENSIONS									
Length (mm)	1300	1300	1300	1570	1570	1570	1514	1514	1521
Width (mm)	740	740	740	990	990	990	1210	1210	1210
Height (mm)	660	660	660	890	890	940	910	910	910
CONNECTIONS									
Seawater inlet (in)	3/4	3/4	3/4	1	1	1	1 1/2	1 1/2	1 1/2
Produce water (in)	1/4	1/4	1/4	1/2	1/2	1/2	3/4	3/4	3/4
Brine discharge (in)	3/8	3/8	3/8	1/2	1/2	1/2	3/4	3/4	3/4
Chemical cleaning (in)	3/8	3/8	3/8	1/2	1/2	1/2	3/4	3/4	3/4

Gefico
R.O. model
AQE-25D



MODEL	AQE-30D	AQE-60D	AQE-80D	AQE-100	AQE-120D	AQE-250D
PRODUCTION (m3/day)	40	50	70	80	150	250
WEIGHT (Kg)	950	1050	1340	1450	1560	2100
DIMENSIONS						
Length (mm)	2200	2200	2200	2200	3204	3204
Width (mm)	1418	1418	1840	1840	1840	1840
Height (mm)	1230	1230	1580	1580	1691	1691
CONNECTIONS						
Seawater inlet (in)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Produce water (in)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Brine discharge (in)	2	2	2	2	2	2
Chemical cleaning (in)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

Gefico
R.O. model
AQE-60D



RO customized special units

Our Reverse Osmosis units can be manufactured according to the customer requirements, following different regulations, specifications, power conditions, etc.

- AISI stainless steel / Duplex steel
- ATEX regulations
- Contained systems
- Self powered units with independent power (diesel, photovoltaic panels or wind power)
- Yachts, with reduced dimensions
- Low electrical consumption, equipped with recovery pump

“Polar King”.
3 units AQE-20D



“R.M. Elegant Yatch”.
3 units AQE-15.



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



Land based desalination plants

The membrane filtration system by reverse osmosis, is the most effective alternative for obtaining drinking water, minimizing the environmental impact and reducing costs.

Therefore, the Gefico Reverse Osmosis plants are also used for several land uses and applications.

Our technical and engineering department, study each particular situation to give you the best solution to obtain drinking water.

We use different technologies depending on the raw water to be treated:

Seawater

Relatively high salt concentration. More than 10,000 mg/l.

High pressure RO: 50 - 70 bar.

Brackish water

Salt ratios lower than seawater. Between 1,000 to 10,000 mg/l.

Low pressure RO: 12 - 20 bar.



Two reverse osmosis units Gefico, model AQE-60D, in two 40 feet container with pre and post-treatment to obtain drinking water. Porto do Lobito - Angola.



One reverse osmosis unit Gefico, model AQE-30D. Pescanova facilities. Vigo - Spain.



One reverse osmosis unit Gefico, model AQE-25D-BW. Fandicosta facilities. Vigo - Spain.

Land based desalination plants

Canning companies and processing seafood products, have installed Gefico Reverse Osmosis plants in their facilities.

Our plants, help these companies to ensure, from sea water, a constant production of high quality drinking water to use in the different food processing carried out on site.

Geographic locations where fresh water is a limited goods, as in the case of islands, Gefico is present in processes such as manufacturing ice, entertainment, restaurants, accommodations, or spas.



One reverse osmosis unit Gefico, model AQE-100. Fish farm Prodemar - Stolt Sea Farm. Spain.



One reverse osmosis unit AQE-18D and two AQE-15D. Cies islands. Vigo - Spain.

Water treatment

Gefico has a wide range of products for water treatment and control.

- Rehardening filters MHF for water mineralization and pH adjustment.
- Sterilization system for drinking water by chlorine dosage or UV lamps.
- Full control and automatic adjustment for the potable water distribution systems according with WHO (World Health Organization) requirements.



Rehardening filters
model MHF-5000



Surface waters filtration

Through our experience over 35 years in water treatment, in Gefico we have designed and developed units for the treatment of all types of surface waters (rivers, reservoirs, lakes, etc.) to obtain drinking water with the maximum guarantee sanitation.

The main advantages of our surface water treatment UF units against conventional methods are:

- Production of high quality drinking water.
- Don't provide any chemical substances into water because it is a physical process.
- Production and quality of drinking water are constant regardless of water to be treated.
- The modules are compact and easy automation.

The application of UF membranes can not remove dissolved matter.

The Gefico ultrafiltration (UF) systems ensure complete retention of any inorganic or organic particle having a size greater than 0.05 μm , ensuring a better quality of treated water.

- Constant water quality, independent to feed TSS (turbidity <0.1 NTU).
- Efficient removal of pathogens in water.

Protozoan parasites such as *Giardia lamblia*, *Blastocystis hominis*, *Cyclospora cayetansensis*, *Cryptosporidium*, *Balantidium coli*, *Entamoeba histolytica*, etc..

Fecal contamination due to: fecal coliform, *E coli*, fecal esterococos, *Clostridium perfringens* and somatic colicafagos.

99.999% removal of bacteria as *Leptospirona*, *Campylobacter jejuni*, *Yersinia enterocolitica*, etc..

- Reduction of organic material between 50 and 90%.
- Undissolved Heavy metals.



Ultrafiltration units

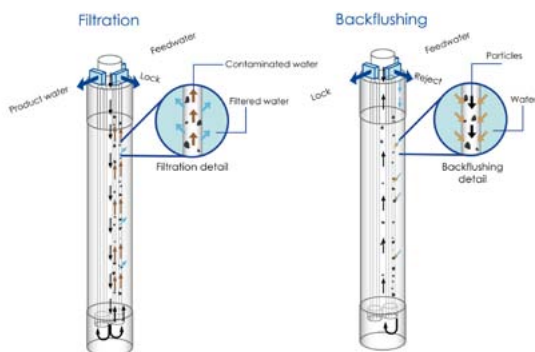
Gefico has a wide range of models with capacity to produce small volumes of 12 m³/day of potable water to volumes greater than 1,000 m³/day.

In large installations, the UF is complemented by the raw water pretreatment and post-treatment drinking water produced to optimize the performance of the units and improve drinking water conditions.

Also have manual equipments, contained and powered with alternative energy to emergencies .



KLAR series. For high filtration capacities.



BT450 module with manual pump.



Solar UF and UV disinfection units

We have UF purification and UV disinfection solar systems powered by photovoltaic panels to provide drinking water to remote as well as urban areas.

These plants have the following features and advantages:

- Automatic operation.
- Low maintenance.
- Modular system.



Solar UV disinfection unit.



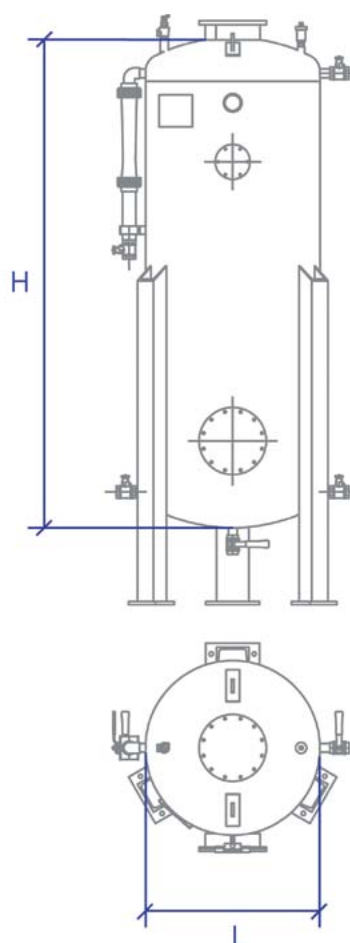
Solar ultrafiltration unit.

MHF Rehardening filters

Designed for increasing the hardness and the pH value of the water produced by a fresh water generator and improve its taste eliminating odours.

Treatment capacity: From 6 to 240 m³/day.

MODEL	PRODUCTION (m ³ /day)	DIMENSIONS Height (mm)	DIMENSIONS Length (mm)
MHF-250	6	1000	300
MHF-350	8	1010	350
MHF-500	12	1100	400
MHF-800	20	1200	450
MHF-1000	24	1290	450
MHF-1250	30	1540	450
MHF-1500	36	1690	450
MHF-2500	60	1740	480
MHF-3500	100	1900	650
MHF-5000	120	1900	650
MHF-10000	240	2800	950



Rehardening filter model
MHF-3500

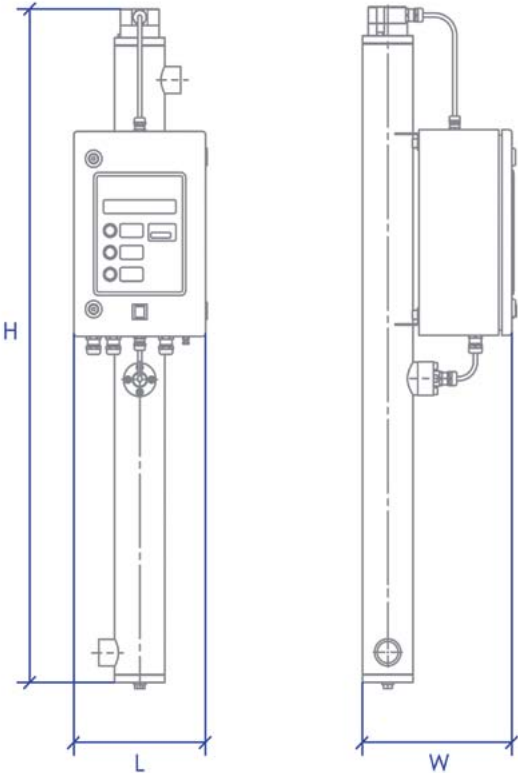
Gefico UV sterilizer lamps

With Gefico UV sterilizer lamps, we obtain high quality disinfection water.

The small range can treat water from 3 to 16 m3/h.

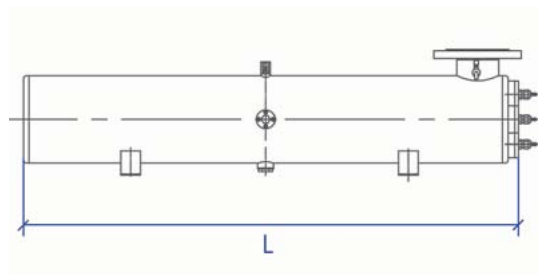
MODEL	UBK-1	UBK-2	UBK-3	UBK-4
TREATMENT CAPACITY (m3/h)	3	6	9	16
ENERGY (W)	30	80	130	200
DIMENSIONS				
Length (mm)	200	200	200	300
Width (mm)	225	253	253	361
Height (mm)	984	985	985	1262

UV sterilizer lamp



Gefico UV sterilizer lamps

Big range to treat large water capacities.



MODEL	Lamps	Energy	DIMENSIONS
UB3-1	1	300	1695
UB2-2	2	400	1320
UB3-2	2	600	1695
UB2-3	3	600	1320
UB2-4	4	800	1320
UB3-3	3	900	1695
UB2-6	6	1200	1320
UB3-6	6	1800	1900
UB3-8	8	2400	1900
UB3-10	10	3000	1900
UB3-12	12	3600	1900
UB3-15	15	4500	1900

UV sterilizer lamp



Gefico dosing units

The Gefico dosing units, are used for:

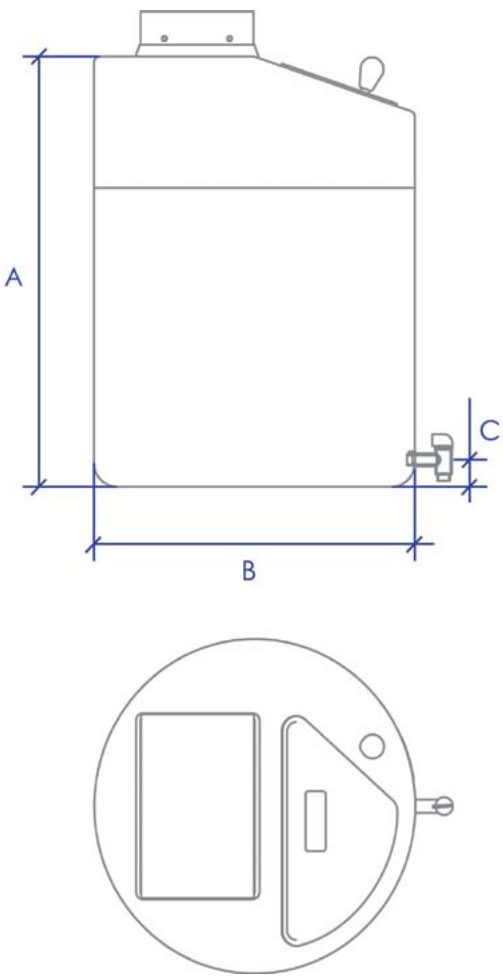
Seawater pretreatment. Pollution control, disinfection, chlorine dosage, inhibitor systems, etc.

Drinking water treatment. Disinfection of produced water.

Cooling circuits treatment.

MODEL	A	B	C
130 liters tank (mm)	720	560	45
280 liters tank (mm)	930	670	45

130 liters capacity tank with dosing pump and level switch.



Gefico design units

Two dosage technologies:

Standard system

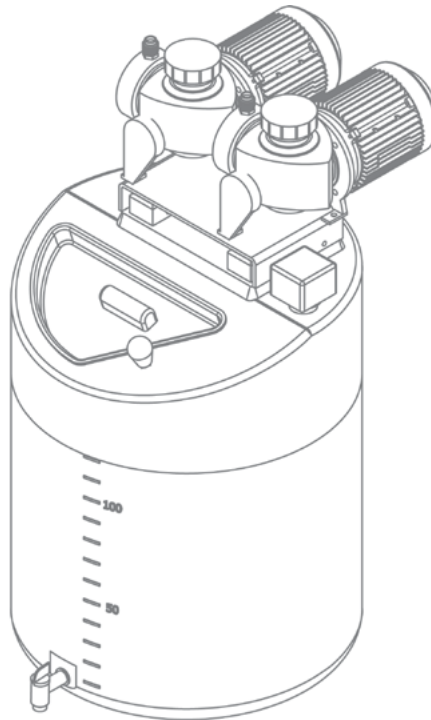
Using a tank, with a dosing pump fitted, dosing a constant flow in main stream to treated.

System with analyzer

As an option, the system can include an analyzer that takes constant readings to ensure the suitable dosing concentration.

Analyzer and control system for:

- Salinity control
- PH values
- Chlorine dosage
- Redox reactions



130 liters capacity tank
with two pumps to treat
120 tons/day



300 liters capacity tank
with pump.

Antifouling System

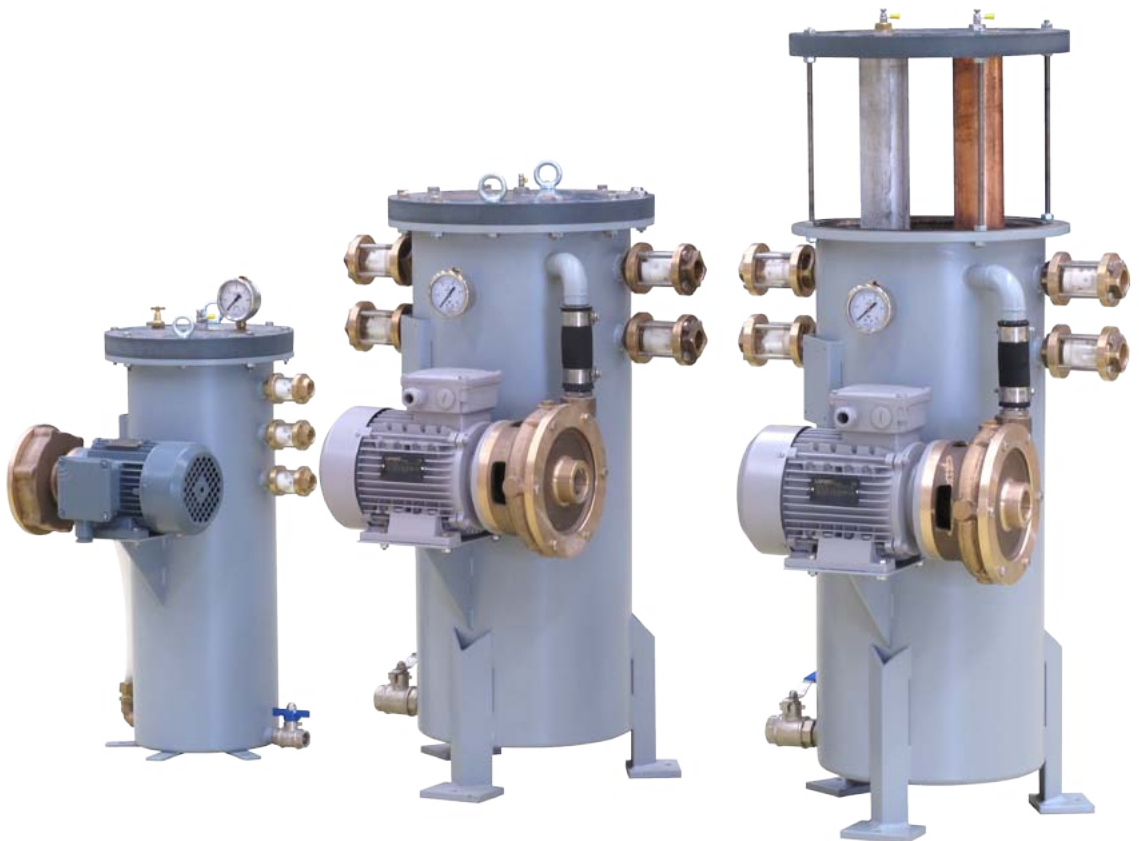
The biological components present in the sea water can cause marine growth in the cooling systems.

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.

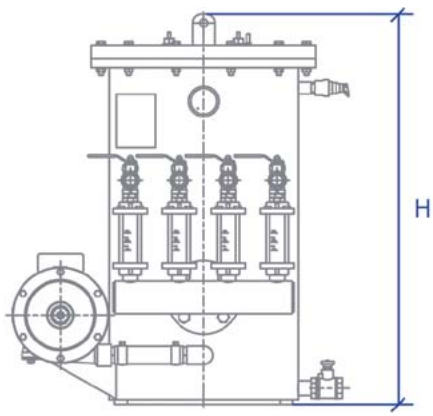
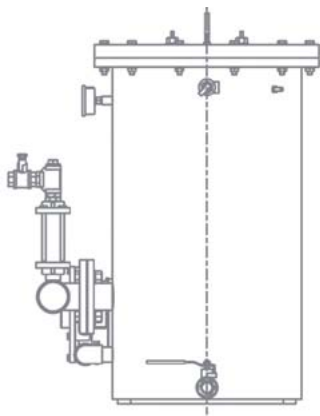
The solution is a mechanical cleaning in order to eliminate the growth from the pipes and other areas in the cooling system, to restore the original water flow. Such cleaning requires the whole system to be shut down, with a consequent loss of time and money.

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.

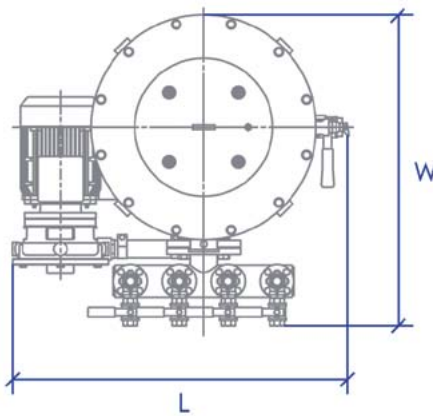
Gefico Antifouling systems
by ion injection of copper
and aluminium.



MODEL	IP-0,5	IP-1	IP-2	IP-3	IP-5	IP-10
PRODUCTION (m3/day)	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



Gefico Antifouling
model IP-5

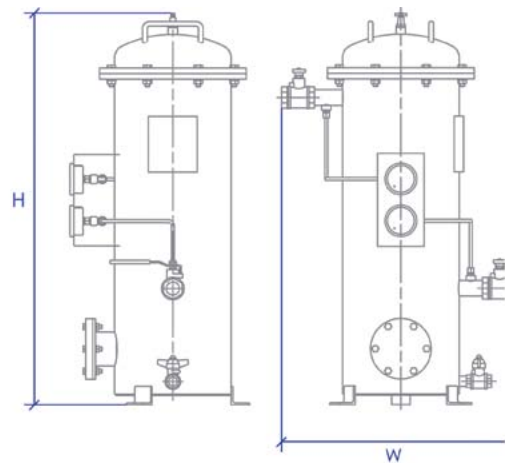


MFS microfilters

These microfilters have been developed in order to avoid the several breakdowns that a dirty diesel-oil (solid particles in suspension and water in emulsion) can produce in a Diesel Engine, especially in the fuel injection systems.

MODEL	MFS-1000	MFS-2000	MFS-3500
PRODUCTION (liters/hour)	1000	2000	3500
DIMENSIONS			
Height (mm)	760	842	960
Width (mm)	502	502	502

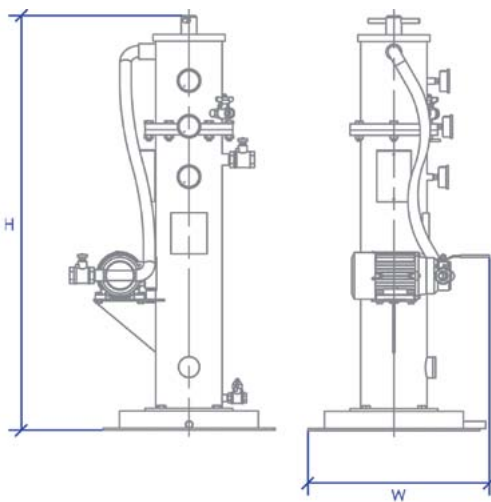
Microfilter model
MFS-2000.



UMFS microfilters

The UMFS microfilters has the same main functions than the MFS, filtration of solid particles and water separation. But in addition, the UMFS contains one pump with starter.

MODEL	UMFS-1000	UMFS-2000	UMFS-3500
PRODUCTION (liters/hour)	1000	2000	3500
DIMENSIONS			
Height (mm)	900	1000	1155
Width (mm)	506	506	506



Microfilter model
UMFS-3500.

Heat exchangers

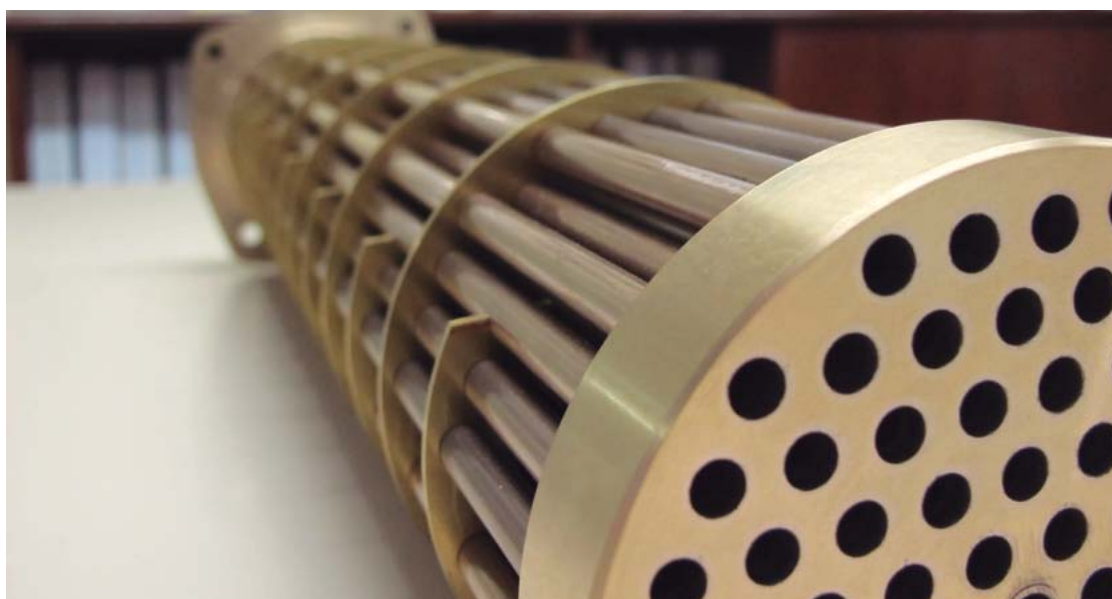
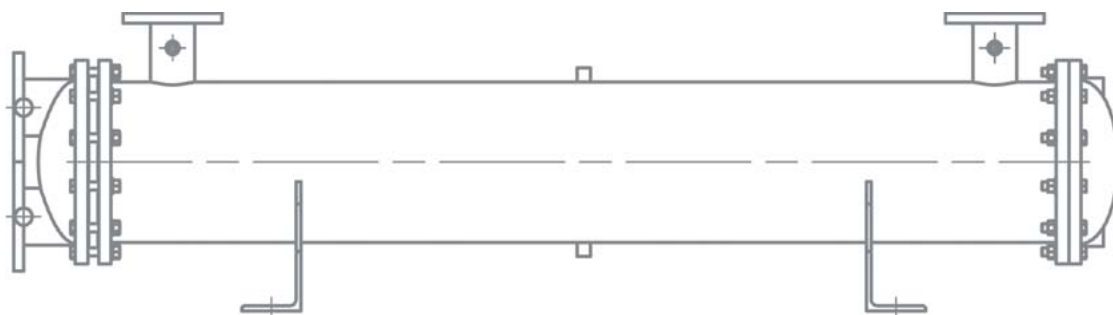
Since 1990 our company is specialized in calculation and design tubular heat exchangers. We manufacture them for several applications in the naval, petrochemical, food, automotive and other industries.

The big demand of our units is supported by its good efficiency and reliability.

We use top quality materials against corrosion like copper nickel, naval bronze or stainless steel to obtain the best results.

We also offer a repair service for existing heat exchangers or recalculate the units for a best performance.

Caterpillar 3516HD
cooler engine.



Aftersales

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.

The aftersales department gives a fast and effective service to any place around the world:

- Spare parts
- Online technical assistance
- Commissioning and start up service
- Trainings



