

21 CLIMATE AND WATER MAKERS



- Desalination
- Purifiers
- Self contained units
- DC Air Conditioner
- Split units

 calpeda

 aber
marine

 selmar[®]
technologies

 thermowell



PROGRESS



WATERMAKERS PROGRESS PROGRESS LIGHT

The Progress is a low power consumption watermaker, which needs 12 or 24V DC. Excellent for boats without generator on board. It can also work when fed by batteries provided with an aeolic generator or photovoltaic panels; it's easy to install and to use, and it needs a limited maintenance. Progress is very compacted, consisting of stainless structure units; it has electronic control units with lighting LED signals. It is provided with a control system (with automatic blockage) against an excessive operating pressure, and reverse polarity.

STANDARD EQUIPEMENT:
high and low pressure.
hydraulic circuit gauges.
316 L stainless steel operating
pressure regulator.

OPTIONAL FITTINGS:
booster pump.
Thermal circuit breaker.
Salinity meter.



LIGHT



Model	Flow l/h	Flow l/day	Flow gal/day	Consume	Dimensions cm	Weight Kg	Code
MC/40 P	15	360	95	18A (12V) - 9A (24V)	64 x 25 x 22	20	RE 97001
MC/80 P	30	720	190	18A (12V) - 9A (24V)	64 x 25 x 22	24	RE 97002
MC/120 P	50	1200	317	32A (12V) - 18A (24V)	64 x 25 x 22	28	RE 97003
MC/LIGHT	25	600	158	28A (12V) - 14A (24V)	52 x 52 x 29	29	RE 97004

WATERMAKERS PROGRESS LUX

The Progress Lux is a low power consumption watermaker, which needs 230 Volt 50Hz. Excellent for boats with a small power generator on board. It's easy to install and to use, and it needs a limited maintenance. Progress Lux is very compacted, consisting of stainless structure units; it has electronic control units with lighting LED signals. It is provided with a control system (with automatic blockage) against an excessive operating pressure, and a control system of water quality.

STANDARD EQUIPEMENT:
automatic over pressure
shutdown. Working pressure
regulator valve.
Flow pressure.
Salinity control.

OPTIONAL FITTINGS:
remote control.
U.V. Sterilizer.
Activated carbon post-filter.
Oil water separator.
Booster pump.



Model	Flow l/h	Flow l/day	Flow gal/day	Consume A	Dimensions cm	Weight Kg	Code
MC/25 Lux	25	600	158	0,5	69 x 35 x 30	24	RE 97005
MC/50 Lux	50	1200	317	0,5	69 x 35 x 30	28	RE 97006

WATERMAKERS CORAL ECR

The CORAL ECR line has a modular configuration and it can be used in any application, in which assembly space is limited.

The stainless steel machine is reliable and long-lasting.

It is available with a fresh water production capacity starting from 30 litres/hour up to 280 litres/hour and it fully satisfies all needs in pleasure boating and work fields.

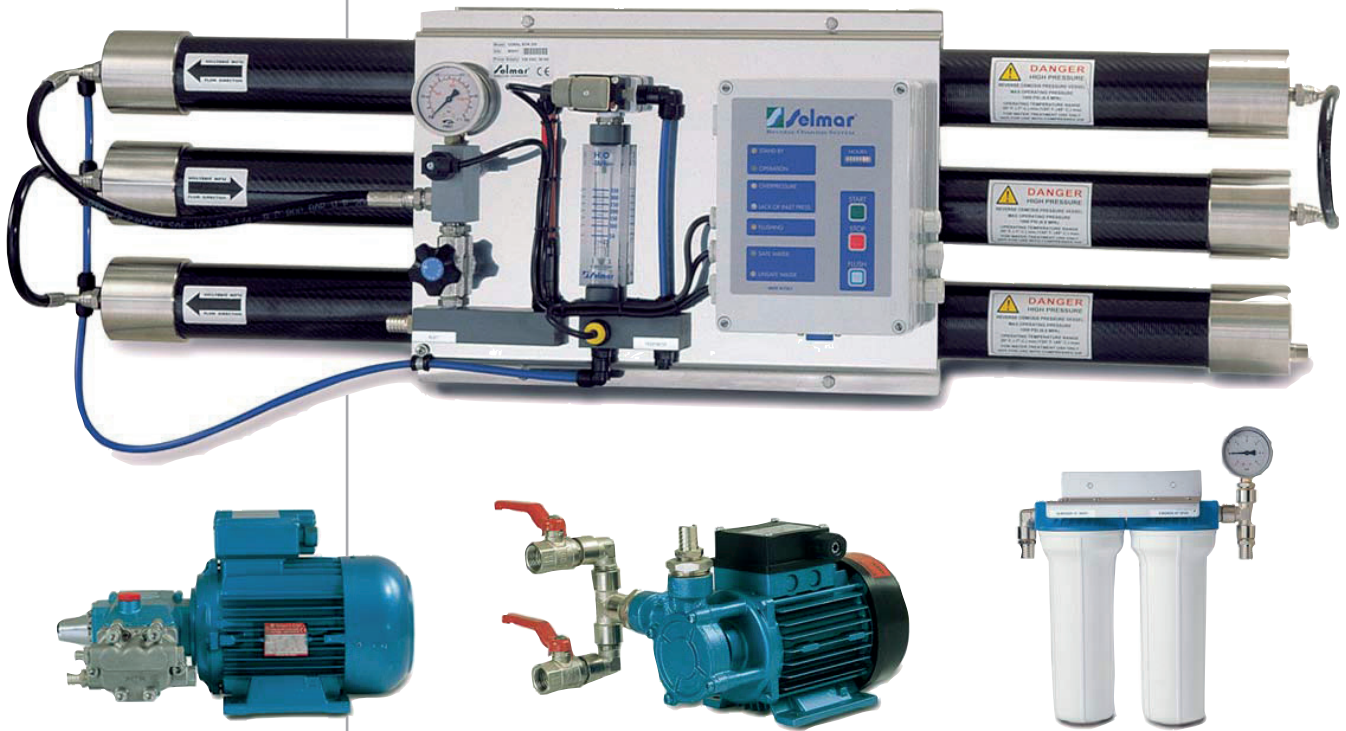
CORAL ECR requires an on-board generator providing 220/380 Volts and at least 3.5 kVA.

STANDARD EQUIPEMENT:

- automatic over pressure shutdown.
- Salinity meter with automatic flow diversion valve.
- Flow pressure on permeate. Hour meter.
- High and low pressure hydraulic circuit gauges.
- Working pressure regulator valve.
- Booster pump. Automatic low pressure shutdown.

OPTIONAL FITTINGS:

- remote control.
- Automatic flushing system.
- U.V. sterilizer.
- Activated carbon post-filter.
- Sand filter.
- Oil water separator.



Model	Flow l/h	Flow l/day	Flow gal/day	Consume A	Dimensions cm	Weight Kg	Code
CORAL LE/30	30	720	190	1,1	70 x 35 x 23	45	RE 97007
CORAL LE/60	60	1440	380	1,1	70 x 35 x 23	50	RE 97008
CORAL ECR/30	40	960	254	1,8	70 x 35 x 23	45	RE 97009
CORAL ECR/60	70	1680	444	1,8	70 x 35 x 23	50	RE 97010
CORAL ECR/90	110	2640	697	1,8	70 x 35 x 23	55	RE 97011
CORAL ECR/150	170	4080	1078	1,8	118 x 35 x 23	55	RE 97012
CORAL ECR/150	170	4080	1078	1,8	118 x 35 x 23	55	RE 97013
CORAL ECR/220	220	5280	1395	2,2	118 x 35 x 23	62	RE 97014
CORAL ECR/280	300	7200	1902	2,2	118 x 35 x 23	69	RE 97015

WATERMAKERS SYNTHESI

The SYNTHESI line has been designed to be adapted to all working conditions in the marine field.

The plant is made up of three stainless steel modules, that make its installation extremely versatile and easy.



STANDARD EQUIPEMENT:

automatic over pressure shutdown.
Salinity meter with automatic flow diversion valve. Flow meter on permeate.
Hour meter. Working pressure regulator valve.
Pressure gauges. Booster pump.
Automatic low pressure shutdown.

OPTIONAL FITTINGS:

remote control.
Activated carbon post-filter.
U.V. sterilizer.
Automatic flushing system.
Sand filter.
Oil water separator.

Model	Flow l/h	Flow l/day	Flow gal/day	Consume A	Dimensions cm	Weight Kg	Code
SY 211	40	960	254	1,5	70 x 45 x 49	57	RE 97016
SY 212	70	1680	444	1,5	70 x 45 x 49	62	RE 97017
SY 213	110	2640	697	1,5	70 x 45 x 49	67	RE 97018

WATERMAKERS PACIFIC CS

The PACIFIC CS line, built with a compact configuration, is assembled in a solid stainless steel structure that makes the installation easy and guarantees high-reliability and long life.



STANDARD EQUIPEMENT:

automatic over pressure shutdown
Salinity meter with automatic flow diversion valve
Flow meter on permeate
Hour meter
Working pressure regulator valve
Pressure gauges
Booster pump
Automatic low pressure shutdown

OPTIONAL FITTINGS:

remote control
Activated carbon post filter
Chemical pre-treatment system
U.V. sterilizer
Automatic flushing system
Sand filter
Oil water separator

Model	Flow l/h	Flow l/day	Flow gal/day	Consume A	Dimensions cm	Weight Kg	Code
PACIFIC 90/CS	110	2640	697	1,8	90 x 50 x 54	69	RE 97019
PACIFIC 150/CS	170	4080	1078	2,2	118 x 50 x 54	68	RE 97020
PACIFIC 220/CS	220	5280	1395	2,2	118 x 50 x 54	75	RE 97021
PACIFIC 280/CS	300	7200	1902	2,2	118 x 50 x 54	82	RE 97022

SEWAGE TREATMENT SYSTEM



SEWAGE TREATMENT SYSTEMS - BLUESEA

The BLUE SEA system is a new-generation waste water purifier capable of treating from 2500 to 22000 litres a day.

This completely automatic, technologically advanced system is equipped with a special chemical/physical laboratory where waste water is purified, triturated, sterilized, all in accordance to the enforced norms regarding the discharge of waste water into the sea. In fact, a BLUE SEA waste water treatment system guarantees the elimination of bacterial pollution through an oxide/reduction process and, most of all, drastically reduces TSS, BOD5, COD, turbidity and the organic and physical pollutants in waste water produced on boat thanks to a fine purification system.

With BLUE SEA it is now possible to discharge waste water directly into the sea with full respect for the environment and compliance with current standards, at the same time avoiding heavy and inconvenient waste collection tanks and long drainage procedures in authorized ports.

BLUE SEA series purifiers are compact and assembled on a solid stainless steel structure that guarantees the maximum reliability and long life; because of their small size and versatility, compared to traditional systems, they can be installed in all applications where the available space is limited.

The management of the system and the various purification steps are handled by a latest-generation PLC that coordinates and constantly monitors its operations. The unit allows the user to control all its operating parameters, making control of its plumbing and electrical systems simple.



STANDARD EQUIPEMENT:
 automatic flushing system.
 Liquid oxidant tank.
 Electronic over flow.
 Mechanical over flow.
 Hour meter.
 Primary "U.V. STERILIZER".
 Air blower.
 Cycle counter.
 Kit external sensors for your holding tank installation.
 Operator panel with LCD display for control and self-diagnostics.
 Electronic max and min sensor for the on-board sewage tank.
 On-board sewage tank sensor installation kit.
 Siphons for the sewage water and seawater charging lines.

HYDRAULICS: SYSTEM CHARACTERISTICS:

Models	2500, 3500, 4000, 7000, 12000	22000
Input/output terminals	1.1/4"	1.1/2"
In black and grey water	1.1/4"	1.1/2"
In sea water	1.1/2"	2"
Outlet	1.1/4"	1.1/2"
Overflow	1.1/4"	1.1/2"
Vent	3/4"	3/4"
In air	1.1/4"	1.1/4"
In/out primary U.V.	Yes	Yes

All sewage treatment systems Blue Sea are certified by DNV-GL in compliance with the new IMO MARPOL 227(64) and with MED 96/98/EC with MED-D-1810 certificate.

OPTIONAL FITTINGS:

macerator booster pre-pump. Seawater pump. Air filter (activated carbon) U.V. sterilizer for post secondary treatment. Remote control with LCD display
 GREASE TRAPS: Mod. SEL1 0,75 l/s - Mod. SEL1 1,25 l/s - Mod. SEL1 1,75 l/s
 ENZYMATIC GREASE TRAPS*: Mod. SEL300

*Enzymatic biological version, the SEL300 model is indicated for boats with serious problems of pitch and roll.

Model	Flow l/day	Litres of waste water treated per cycle	Purification process duration min	Nominal AC power consumption KW	Dimensions mm	Weight Kg	Code
BLUE SEA 2500	2500	27	15	0,75	620 x 730 x 550	70	RE 97023
BLUE SEA 3500	3500	37	15	0,75	620 x 920 x 740	85	RE 97024
BLUE SEA 4000	4000	42	15	0,75	620 x 1120 x 740	90	RE 97025
BLUE SEA 7000	7000	85	17	0,75	670 x 900 x 1025	100	RE 97026
BLUE SEA 12000	12000	145	17	0,75	990 x 900 x 900	105	RE 97027
BLUE SEA 22000	22000	260	17	1,5	1200 x 1400 x 1200	185	RE 97028

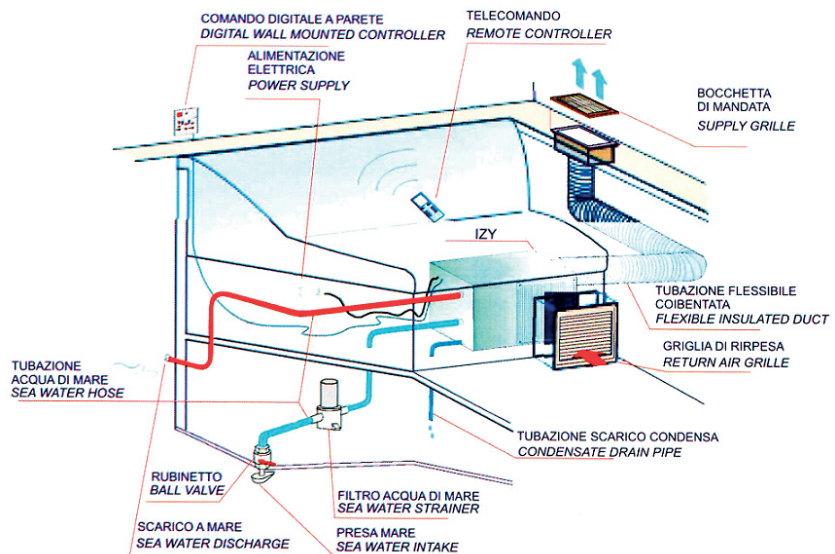
SELF CONTAINED UNITS

aber
marine®



DO-IT-YOURSELF AIR CONDITIONING KIT

IZY KIT is the exclusive product which allows the do-it-yourself installation of an air conditioning system inside each kind of boat. Inside the Inox structure you can find an high performance compressor, cupro-nickel tube-in-tube corrosion resistant heat exchanger, direct expansion evaporator made by copper tubes expanded into aluminium corrugated fins, sea water pump and electrical components are mounted inside a stainless steel case internally covered for noise reduction. EH version allows both cooling and heating the cabin. Unlike reversing cycle systems, the heating operation by the electric heater is not effected by the lower sea water temperature reached temperature reached during winter season, thus obtaining 100% heating efficiency with sea water temperature below 10°C.

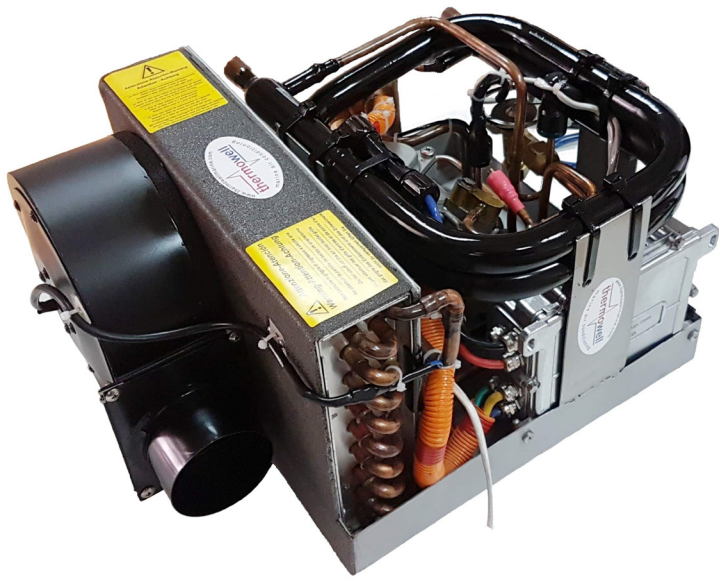


KIT INCLUDES:

- 1 Wall and IR remote control
- 2,5 mt flexible insulated duct
- 1 PVC circular white grill 100mm
- 1 PVC hose clamps 400x8 mm
- 1 PVC white return air grill 300x300
- 3 mt 16 mm PVC hose spiral reinforced
- 1 Sea water strainer
- 2 female hose connector 1/2" x 8mm
- 1 Male hose connector 1/2" x 20
- 1 ball valve 1/2" female/female
- 1 Sea water intake 1/2"
- 1 Sea water discharge 1/2"
- 6 Stainless steel hose clamps 17x32mm
- 1,5 mt Condensate drain pipe 16mm
- 1,5 mt Electrical cable



Model	Capacity BTU/h	Voltage V AC / Hz	Nominal power cooling	Nominal power heating	Dimensions H x L x D mm	Air duct diameter	Sea water connections diameter	Weight Kg	Code
IZY09	9000	230/50	860 W	1260 W	303 x 283 x 620	Ø 102	Ø 16	29	RE 97050
IZY13	13000	230/50	1300 W	1500 W	370 x 330 x 570	Ø 102	Ø 16	35	RE 97051



AIR CONDITIONER "AIRJET 12/24"

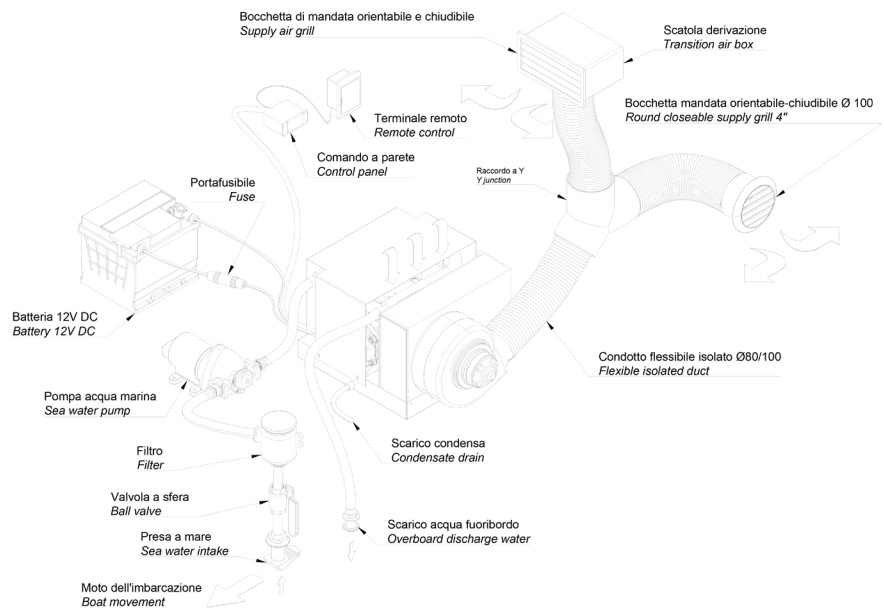
AirJet 12 e AirJet 24 are the exclusive and innovative sea water cooled boat air conditioner directly powered in 12V or 24V (direct current) from the battery bank of your boat, without using a generator or an inverter.

AirJet 12/24 is a well designed and elegant product which offers the most simple and versatile installation, and it is the ideal solution for cooling single cabins. The heart of this air conditioner is a semi-hermetic horizontal scroll compressor using an advanced brushless DC motor (BLCD) which allows the direct connection to the boat's battery bank, also avoiding, through a dedicated program of the compressor control driver, the start up peak.

The blower can be rotated allowing many installation options according to the path of the air ducts.

The best quality of the treated air is assured by the installation of an easily removable and washable filter. Each unit is pre-charged, leak checked and tested in all operating modes at the most critical conditions.

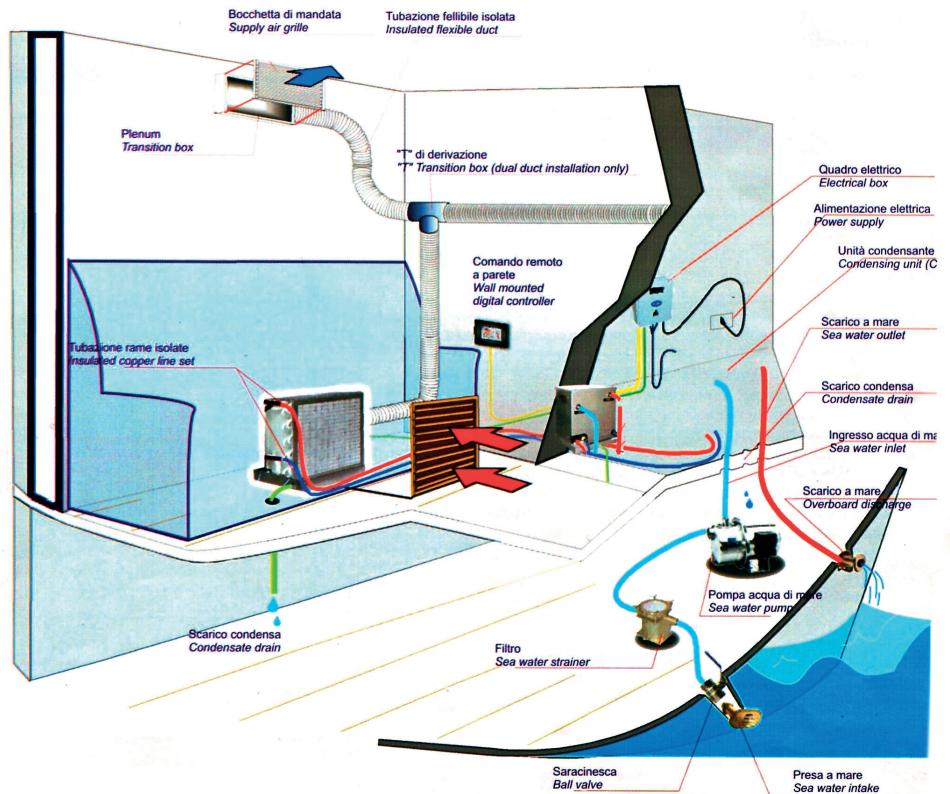
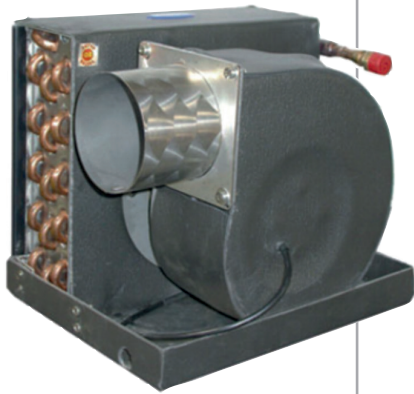
All the air conditioners are filled up with environmentally friend green refrigerant and no further charge is required before the installation on board.



Model	Cooling ca capacity BTU/h	Power supply V DC	Absorbed amp max A/h	Absorbed power W	Blower diameter mm	Air flow mc/h	Sea water connections diameter	Dimension H x L x D mm	Weight kg	Code
AirJet 12	3700	12	50	600	Ø 80	500	Ø 18 mm	240x380x500	17	RE 97090
	6100	12	65	800	Ø 80	500	Ø 18 mm	240x380x500	17	RE 97091
AirJet 24	5400	24	39	930	Ø 100	580	Ø 18 mm	280x330x480	18	RE 97092
	7400	24	44	1000	Ø 100	660	Ø 18 mm	280x330x480	18	RE 97093

DIRECT EXPANSION SYSTEMS

Direct expansion sea water condensed air conditioning split systems
 The best choice for small/medium vessels (8-18mt)
 Evaporator and condensing unit are installed separately, maximum 6 meters distance
 High efficiency and quiet operation compressors and fans
 High corrosion resistant cupro/nickel sea water condenser
 Deep condensate pan, removable and washable air filter included.
 Filled up with green gas R407C



Model	Cooling capacity BTU/h	Heating capacity BTU/h	Voltage V AC	Absorbed power W	Dimension H x L x D mm	Air duct diameter	Sea water connections diameter	Weight Kg	Code
08H	8000	8870	230	900	325x500x280	Ø 100	Ø 16	24	RE 97058
10H	10000	10550	230	1300	325x500x280	Ø 100	Ø 16	26	RE 97059
13H	13000	13650	230	1400	340x500x300	Ø 100	Ø 16	33	RE 97060
16H	16000	17600	230	1700	330x660x380	Ø 100	Ø 16	36	RE 97061
18H	18000	19800	230	1800	380x930x380	2 x Ø 100	Ø 16	45	RE 97062
24H	24000	26200	230	2400	380x930x420	2 x Ø 100	Ø 16	52	RE 97063

AIR CONDITIONING MONOBLOCK



DIRECT EXPANSION SELF CONTAINED SYSTEMS

Direct expansion sea water condensed air conditioning systems

The best choice for small/medium vessels (8-18mt)

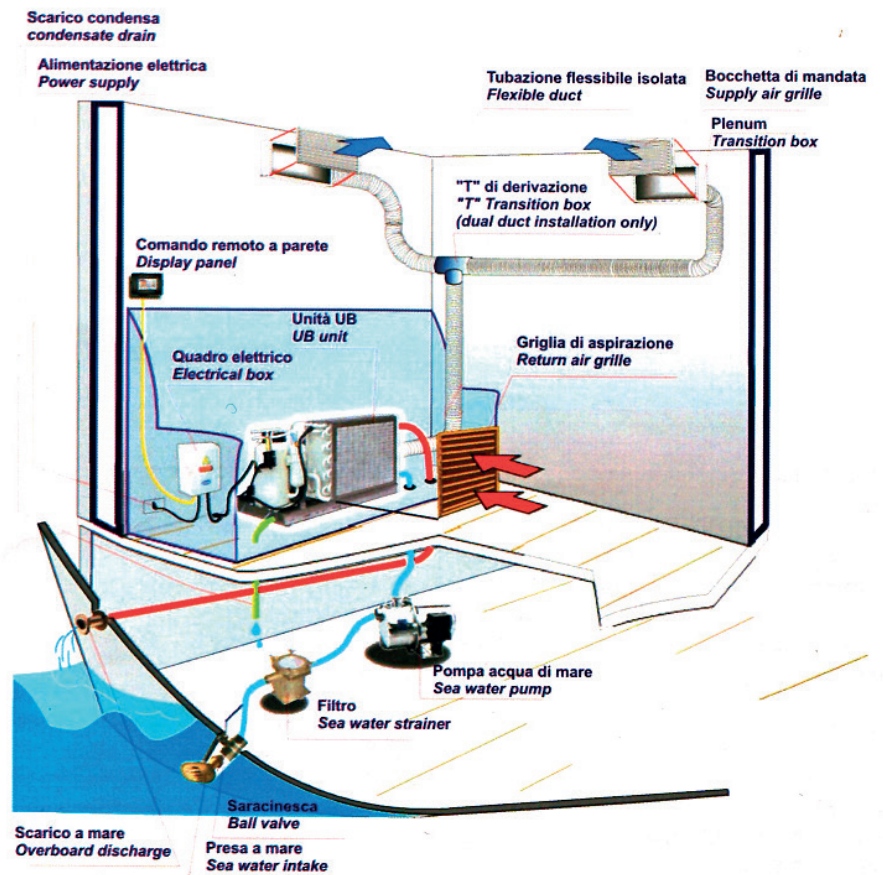
All components arranged on a 100% stainless steel single chassis

High efficiency and quiet operation compressors and fans

High corrosion resistant cupro/nickel sea water condenser

Deep condensate pan

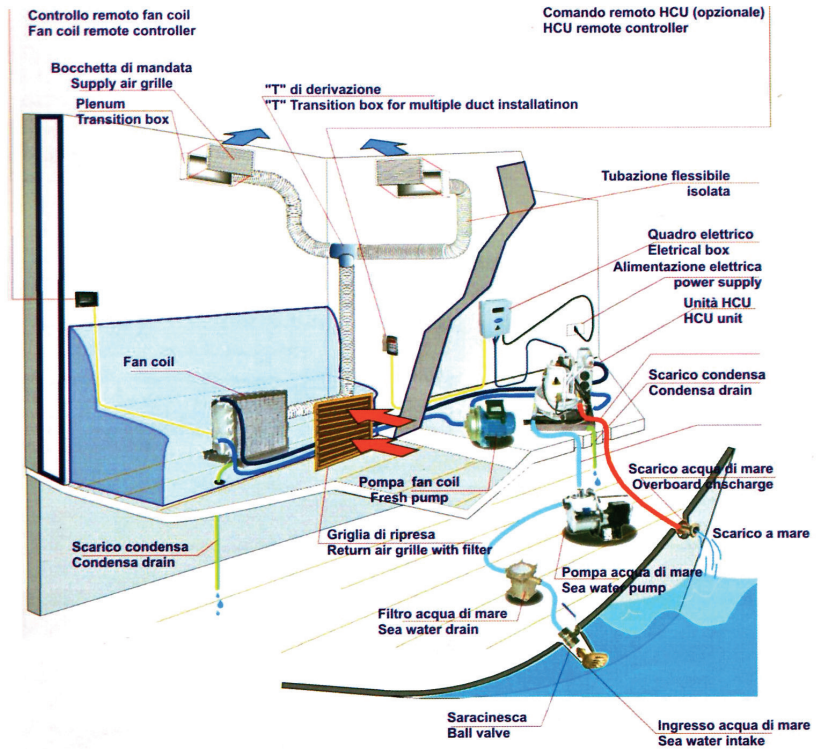
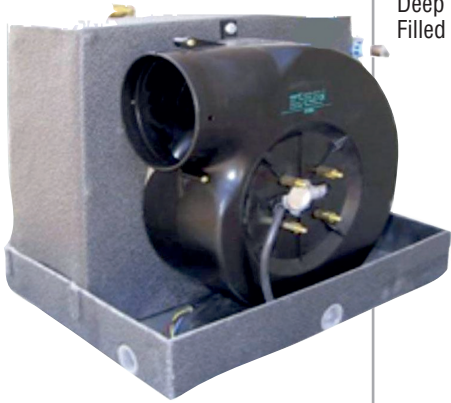
Filled up with green gas R407C



Model	Cooling capacity BTU/h	Heating capacity BTU/h	Voltage VAC	Absorbed power W	Dimension H x L x D mm	Air duct diameter	Sea water connections diameter	Weight Kg	Code
08H	8000	8870	230	900	325x500x280	Ø 100	Ø 16	24	RE 97052
10H	10000	10550	230	1300	325x500x280	Ø 100	Ø 16	26	RE 97053
13H	13000	13650	230	1400	340x500x300	Ø 100	Ø 16	33	RE 97054
16H	16000	17600	230	1700	330x660x380	Ø 100	Ø 16	36	RE 97055
18H	18000	19800	230	1800	380x930x380	2 x Ø 100	Ø 16	45	RE 97056
24H	24000	26200	230	2400	380x930x420	2 x Ø 100	Ø 16	52	RE 97057

“UC-FC” SPLIT UNIT

This model is composed by a chiller unit and a fan coil
 The best choice for vessels from 45 feet and more
 Insulated metallic parts to prevent condensation
 High efficiency and quiet operation compressors and fans
 High corrosion resistant cupro/nickel sea water condenser
 Deep condensate pan, removable and washable air filter included.
 Filled up with green gas R407C



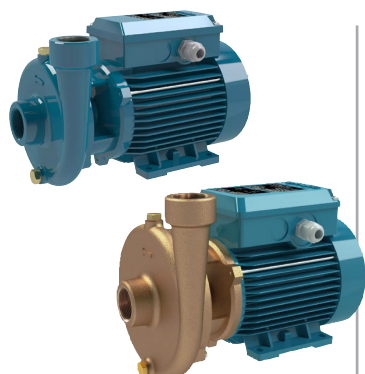
CHILLER UNIT

Model	Cooling capacity BTU/h	Heating capacity BTU/h	Voltage V AC	Absorbed power W	Dimension H x L x D mm	Sea water connections diameter	Weight Kg	Code
16H	16000	18000	230	1700	360x330x330	Ø 20	38	RE 97064
18H	18000	20000	230	1800	380x330x330	Ø 20	41	RE 97065
24H	24000	30000	230	2400	430x350x350	Ø 20	50	RE 97066
30H	30000	36000	230	3000	460x420x390	Ø 20	56	RE 97067

FAN COIL

Model	Cooling capacity BTU/h	Heating capacity BTU/h	Voltage V AC	Absorbed power W	Dimension H x L x D mm	Air duct diameter	Weight Kg	Code
FC05	5000	230	400	90	280x330x260	Ø 100	5,5	RE 97068
FC08	8000	230	440	100	280x330x260	Ø 100	6,5	RE 97069
FC10	10000	230	500	105	280x330x260	Ø 100	6,5	RE 97070
FC13	13000	230	520	115	280x330x260	Ø 100	6,5	RE 97071
FC16	16000	230	560	140	280x330x280	Ø 120	9,5	RE 97072
FC18	18000	230	2x470	200	290x600x350	2x Ø 100	13	RE 97073
FC24	24000	230	2x470	230	290x600x350	2x Ø 100	13	RE 97074

PUMPS AND ACCESSORIES



CENTRIFUGAL PUMPS WITH OPEN IMPELLER

Close-coupled centrifugal pumps for moderately dirty liquids or emulsions for industry and agriculture.

Model	Max flow rate	Max head	Power		Ambient temperature	Code
			230V	kW		
BCM 16/1E	40 lt min a 3,6 m	5 m	1,7 A	0,16	up to 40° C	RE 80301
BCM 20/A monofase	80 lt min a 9 m	12,3 m	2,8 A	0,4	up to 40° C	RE 80302
BCM 22A	110 lt min a 12 m	20,5 m	4,5 A	0,9	up to 40° C	RE 80303
BCM 41/E	250 lt min a 15,5 m	22,4 m	7,4 A	1,6	up to 40° C	RE 80304



CLOSE COUPLED CENTRIFUGAL PUMPS WITH SCREWED CONNECTIONS

Close-coupled, centrifugal pumps with electric motor and extended shaft directly connected to the pump. For clean liquids without abrasives, which are non-aggressive for the pump materials (solids content up to 0.2%). For water supply, for heating, air-conditioning, cooling and circulation plants. For civil, industrial applications and for irrigation.

Model	Max flow rate	Max head	Power		Ambient temperature	Code
			230V	kW		
NMM 1/A	70 lt min a 16,3 m	22 m	3 A	0,37	up to 40° C	RE 80305
NMM 2A/A	100 lt min a 24 m	33,5 m	5,7 A	0,75	up to 40° C	RE 80306
NMM 3A/A	140 lt min a 26,5 m	47,5 m	11,2 A	1,8	up to 40° C	RE 80307
NMM 6/B	125 lt min a 18 m	30,5 m	5,7 A	0,75	up to 40° C	RE 80308



HOSE RING

The hose ring facilitates mounting the ventilation ducts

Shape	Ring diameter	Color	Material	Code
Round	80	Black	ABS	RE 97030
Round	100	Black	ABS	RE 97031
Round	125	Black	ABS	RE 97029
Oval	80	Black	ABS	RE 97032
Oval	100	Black	ABS	RE 97033
Oval	125	Black	ABS	RE 97034



AIR DIVIDERS IN T AND IN Y

Fix directly to the ventilation ducts or to the central units
Supply options are either: direct into a cabin by means of two separates grill or in two adjacent cabins

Type dividers	Ø input mm	Ø output mm	Color	Material	Code
Y	100	100	Nero	ABS	RE 97035
T	100	80	Nero	ABS	RE 97037
T	100	100	Nero	ABS	RE 97038
T	120	100	Nero	ABS	RE 97039



CENTRIFUGAL ELECTRIC PUMPS

CONTINUOUS DUTY, NOT SELF-PRIMING

Body pump: bronze -Impeller: special brass alloy - Shaft: AISI 316 stainless steel

Mechanical seal: high quality on ceramic, graphite, steel

Model	Supply	Power	Frequency	Delivery l/min	Ports IN OUT	Manometric Head	Dimensions mm	Weight Kg	Code
CB 22 E	230 V	0,55 Kw	50 Hz	100	1" 1"	19,5 m	185x190x300	16	RE 80378



WATER FILTERS

Body in nickel-plated brass,

cover in transparent polycarbonate

Stainless steel filter

Available in 3/8, 1/2, and 3/4

Connections inches	Delivery l/h	Dimensions mm	Material	Approval	Code
3/8	-	105x99	Nickel-plated brass	RINA	RE80087
1/2	2550	105x99	Nickel-plated brass	RINA	RE80088
3/4	4750	105x99	Nickel-plated brass	RINA	RE80089



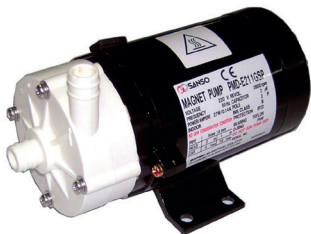
WATER FILTERS

Body in nickel-plated brass, cover in transparent polycarbonate

Stainless steel aisi 316 filter

R.I.N.A approvals

Connections inches	Delivery l/h	Dimensions mm	Weight Kg	Material	Approval	Code
1/2"	1740	Ø 110 x 140	2,5	Nickel-plated brass	RINA	RE 81066
3/4"	2880	Ø 146 x 160	3	Nickel-plated brass	RINA	RE 81067
1"	4580	Ø 146 x 160	3,5	Nickel-plated brass	RINA	RE 81068



MAGNETIC HAULAGE SEA WATER PUMP

Delivery l/h	Absorption W	Inlet/Outlet mm	Dimension mm	Weight Kg	Code
10	27	14	167x10x100	2	RE 97081
15	45	17	202x106x113	2,3	RE 97082
22,5	60	20	272x120x130	4	RE 97083



BRASS INTAKE MANIFOLD

Plants number	Inlet	Outlet	Code
2	1"	2x1/2"	RE 97084
3	1"	3x1/2"	RE 97085
4	1"	4x1/2"	RE 97086
5	1"	5x1/2"	RE 97087
6	1"	6x1/2"	RE 97088