

Super Maramu 2000
User's Guide
Optional Equipment



Le respect de la mer



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7 Optional equipment

7.1 30 A charger

You have chosen to fit out your boat with a 30 A charger, which allows you to charge your batteries from the shore power.
To switch it on, switch on the circuit breaker on the 220 V panel in the galley (little charger icon).

7.2 Holding tanks

Your Super Maramu 2000 has 2 holding tanks (one in each toilet). You must not drain them but pump the waste in the equipped harbours.
They can be rinsed with freshwater added of a little bleach.

7.3 50 litres / hour desalinator

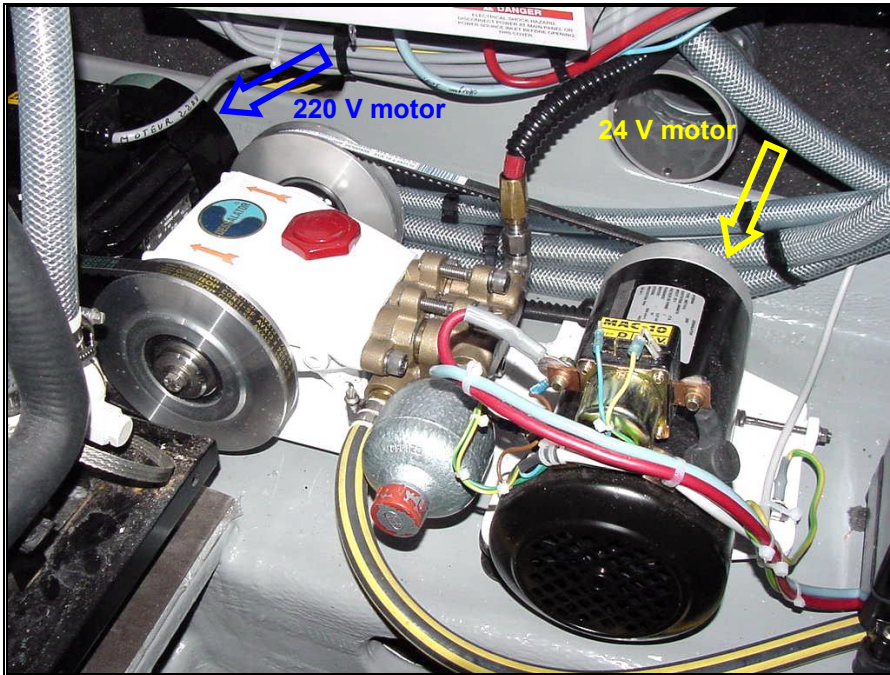
7.3.1 Working



CAUTION ! Read carefully the desalinator's manual before use. It contains **warnings** concerning your own safety while operating and doing maintenance.
Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.

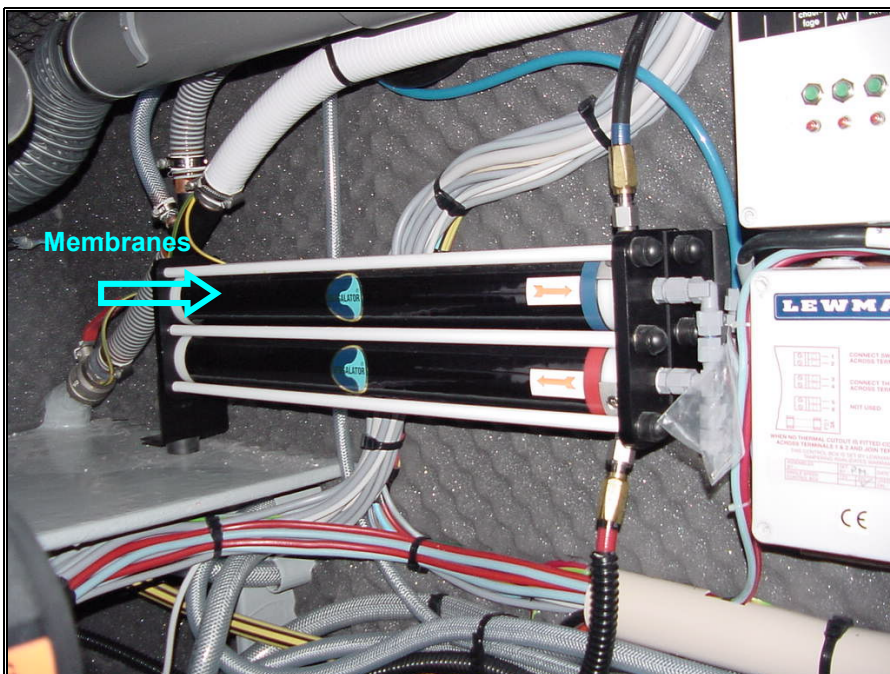
The Super Maramu's desalinator is especially made for AMEL. It's able to produce 50 litres / hour (approx. 11 Imperial Gallons per hour, 14 U.S. Gallon) of freshwater. These values are only for information, because the rate of desalination depends extremely on the seawater characteristics. More the temperature is low, more weaker will be the volume of freshwater.

This device works on 220 V through the 24 V battery charger (generator's alternator) or on 24 V (on the main engine's alternator or on the batteries).

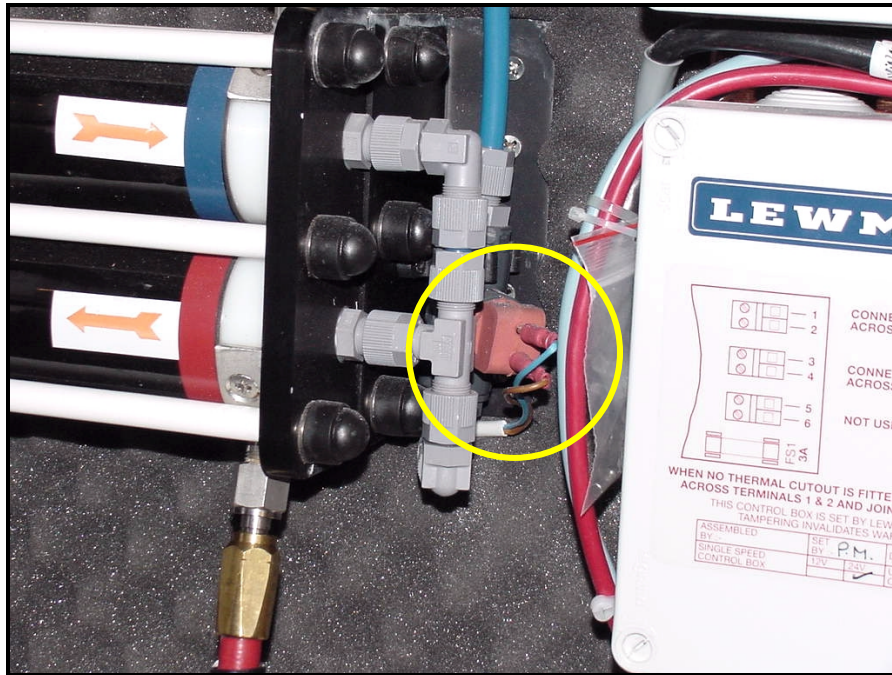


Picture 1– Desalinator

The desalinator has got 2 membranes to produce freshwater due to the reverse osmosis phenomena.

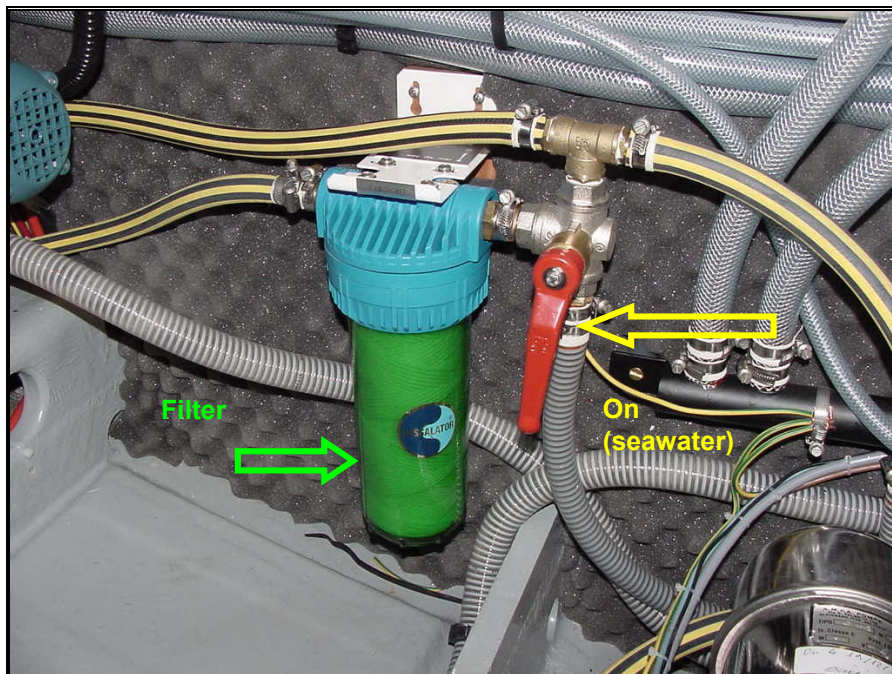


Picture 2 – Desalinator's membranes



Picture 3– Quality sensor

The installation has got a 5 microns filter. Right to this filter is a stop cock. The vertical position is the normal one, to treat seawater using this filter. Horizontally, it allows to flush and to clean the desalinator with freshwater.



Picture 4 – 5 microns filter



Picture 5 – Freshwater rinsing position

In the galley, above the portside sink, is the remote control panel of the desalinator. This panel is composed of many instruments :

- 3 lighted quality indicators,
- one On / Off switch,
- one hour metre,
- one flowmeter in glass, to measure the volume of freshwater delivered,
- one tap delivering freshwater for check,
- one high pressure manometer (in bars),
- one high pressure control system (regulating wheel)



Picture 6 – Desalinator control panel



We give here a few simplified instructions for the desalinator, but refer to the manufacturer's one too :

- ① before using, check the opening of seacocks.
- ② if the desalinator hasn't work for a few days, rinse it with freshwater using the stop cock right to the 5 microns filter. Like for every rinsing, stop the desalinator and open the pressure regulator thoroughly (anticlockwise) for 2 minutes, and then replace this seacock in the *Marche* (seawater) position.
- ③ to start, regulator open, switch on the device, let it work 1 minute without pressure, and do a 1st setting with the needle in the green area. This is to eject air from the circuit ant to obtain a better pressure stability. Check the pressure and readjust if needed.
- ④ producing freshwater depends on seawater temperature and on the cleanness of the filter.
- ⑤ checking the freshwater quality and sending it in the tank is made using a quality sensor and integrated circuit automatically. If freshwater produced contains salt, it will be rejected.
- ⑥ a too much higher pressure setting lights the red default of the desalinator and stops the device ; in this case, set the pressure lower and start again.
- ⑦ to stop, set the pressure lower opening the regulating wheel thoroughly, stop and rinse like described at ②.
- ⑧ concerning the winter service, rinse every month or fill up with sterilizing agent.
- ⑨ add some glycerine to the sterilizing agent if needed.
- ⑩ don't forget to drain the glass pipe of the flowmeter.

7.3.2 Maintenance

In case of freezing, refer to the manufacturer's manual.

The 5 microns filter must be checked regularly, because its lifetime depends on the boat's navigation area regarding how clean the sea is.

For the maintenance at long term of this appliance, refer to the manufacturer's manual, section "Maintenance".



7.4 150 litres / hour desalinator

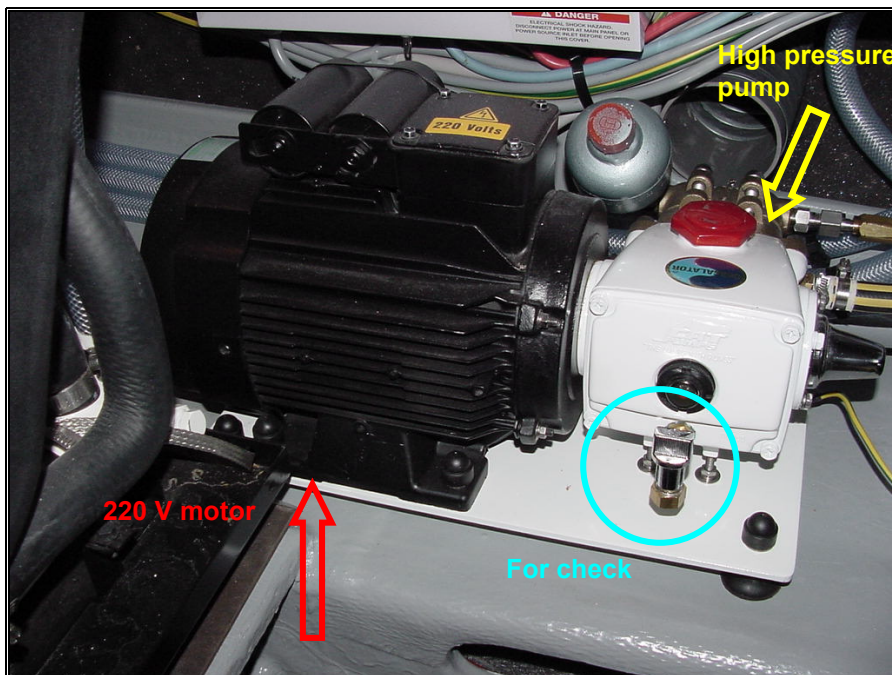


CAUTION! Read carefully the desalinator's manual before use. It contains **warnings** concerning your own safety while operating and doing maintenance. Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.

7.4.1 Working

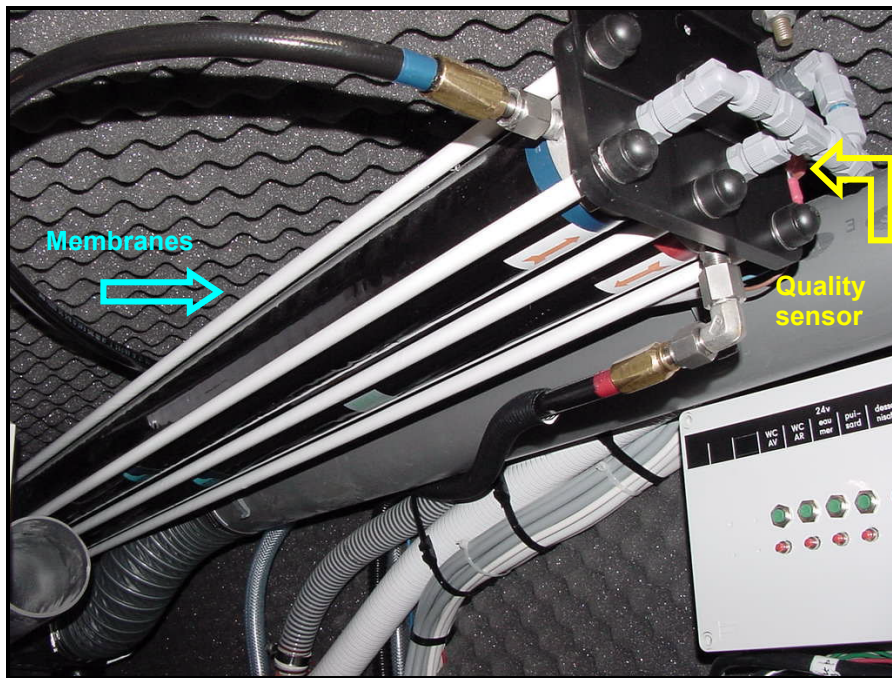
You have chosen to equip your Super Maramu 2000 with a especially AMEL's made desalinator. It can produce 150 litres / hour (33 Imperial Gallons per hour, 40 U.S.). These values are only for information, because the rate of desalination depends extremely on the seawater characteristics. More the temperature is low, more weaker will be the volume of freshwater.

This appliance runs on 220 V coming from the power generator.



Picture 7 – Desalinator

The desalinator has got 2 membranes to produce freshwater due to the reverse osmosis phenomena. The quality sensor give information about the freshwater produced.



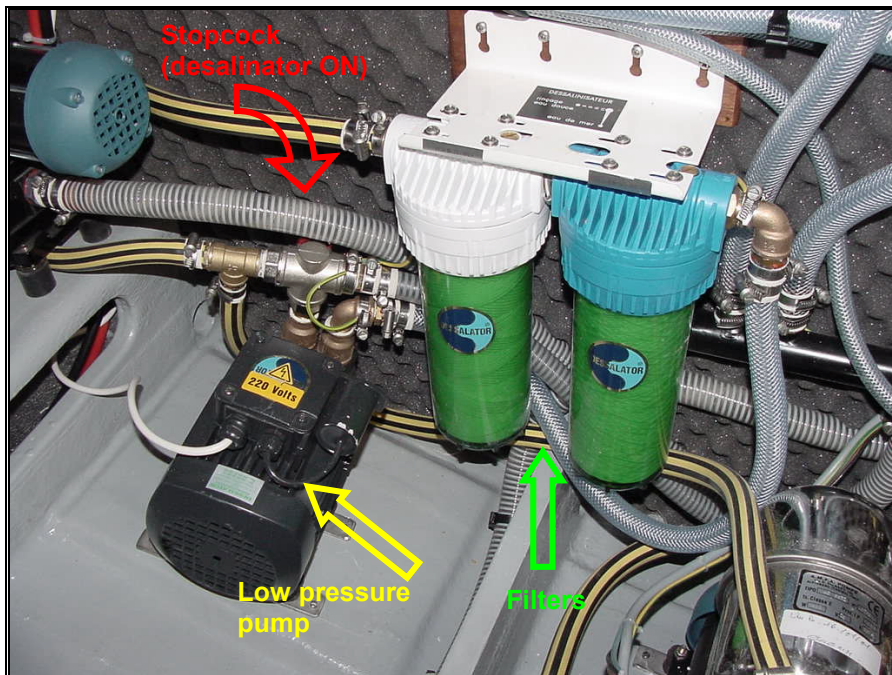
Picture 8 – Desalinator's membranes

The installation has got 2 filters :

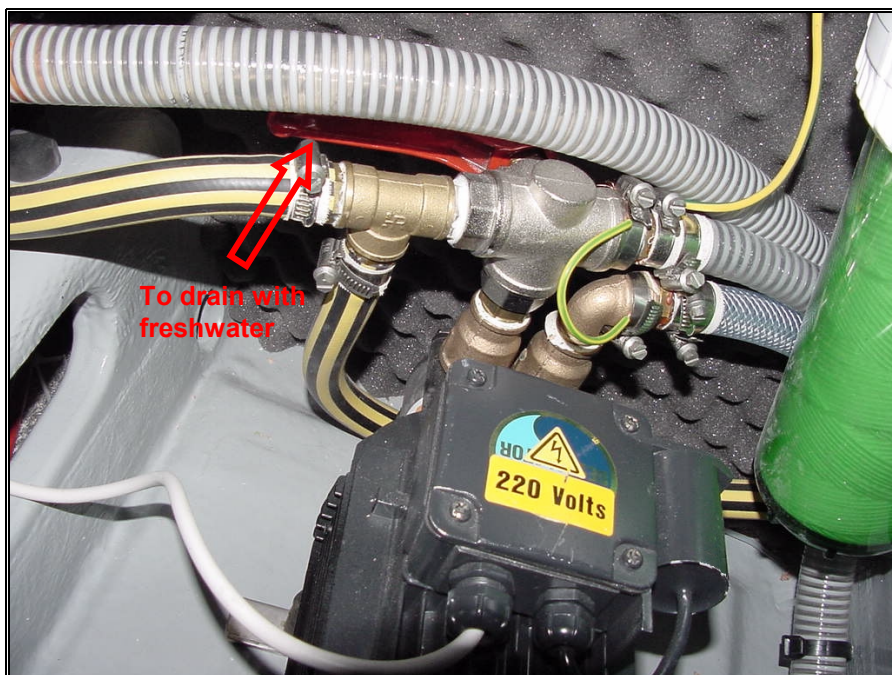
- 25 microns : just after the seawater filter. It stops the biggest particles at the entry of the system.
- 5 microns : to stop the finest ones.

You must check these 2 filters regularly, because their lifetime depends on where the boat is used.

Behind this low pressure pump (which is the primary pump for seawater suction), is the stopcock. The vertical position is the normal one, to treat seawater using this filter. Horizontally, it allows to flush and to clean the desalinator with freshwater.



Picture 9 – 25 et 5 microns filters



Picture 10 – Stopcock to drain the desalinator with freshwater

In the galley, above the portside sink, is the remote control panel of the desalinator. This panel is composed of 3 different parts :

- the first, in the upper left side, has 3 coloured lights to show the freshwater quality, the ON / OFF switch, and the horameter,
- the 2nd, in the lower left side, gives the way to start the installation,
- the third, in the right side, has a flowmeter in glass, to measure the volume of freshwater delivered and 2 manometers :
 - low pressure (higher side) in bars,



- high pressure (lower side) in bars too.
- A high pressure control system (regulating wheel) allows to adjust the quantity of freshwater produced.



Picture 11 – Desalinator control panel

We give here a few simplified instructions for the desalinator, but refer to the manufacturer's one too :

- ① before using, check the opening of seacocks.
- ② if the desalinator hasn't work for a few days, rinse it with freshwater using the 3 ways stopcock right to the 5 microns pre-filter. Like for every rinsing, stop the desalinator and open the pressure regulator thoroughly (anticlockwise) for 2 minutes, and then replace this seacock in the *Marche* (seawater) position.
- ③ to start, regulator open, switch on the device, let it work 1 minute without pressure, and do a 1st setting with the needle in the green area. This is to eject air from the circuit ant to obtain a better pressure stability. Check the pressure and readjust if needed.
- ④ producing freshwater depends on seawater temperature and on the cleanness of the filters.
- ⑤ checking the freshwater quality and sending it in the tank is made using a quality sensor and integrated circuit automatically. If freshwater produced contains salt, it will be rejected.
- ⑥ a too much higher pressure setting lights the red default of the desalinator and stops the device ; in this case, set the pressure lower and start again.
- ⑦ to stop, set the pressure lower opening the regulating wheel thoroughly, stop and rinse like described at ②.
- ⑧ concerning the winter service, rinse every month or fill up with sterilizing agent.
- ⑨ add some glycerine to the sterilizing agent if needed.
- ⑩ don't forget to drain the glass pipe of the flowmeter.

7.4.2 Maintenance



In case of freezing, refer to the manufacturer's manual.
The filters must be checked regularly, because their lifetime depends on the boat's navigation area regarding how clean the sea is.
For the maintenance at long term of this appliance, refer to the manufacturer's manual, section "Maintenance".

7.5 Fuel air heater



DANGER ! The user's manual gives some security information that must be respected for a secure use of this appliance. Refer to it before continuing.
Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.
In case of leak in the fore peak or in the fore cabin, close the air outlet in the fore cabin : pull and fix the stainless steel lever in the portside saloon shelf (above the *Fluxgate* compass).
Never obstruct all the outlets simultaneously when the device is working.

Your boat is fitted out with a fuel air heater EBERSPÄCHER D5LC.

7.5.1 About the watertight bulkheads

In case of damage needing to set the fore watertight bulkhead, don't forget to close the heater outlet in the fore cabin : pull and fix the stainless steel lever in the portside saloon shelf (above the *Fluxgate* compass).



Picture 12 – Closing the heater outlet from the saloon



7.5.2 Operation of the heater

Before working the heater, be sure the outside air inlet (in the cockpit, inside of the ropes stock location at the foot of the mizzen mast) is not closed.

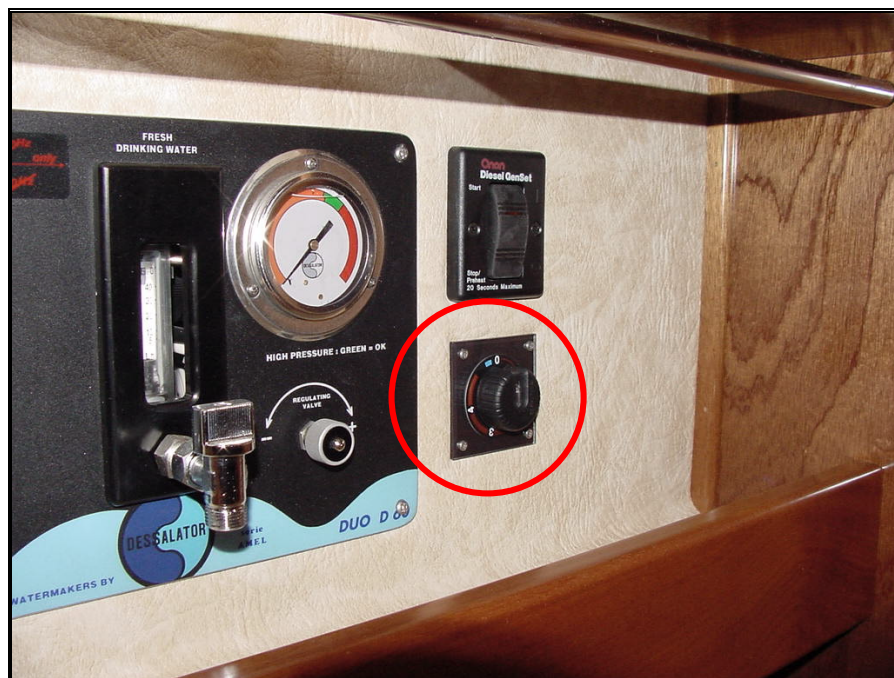
The fuel heater works switching on the actuating unit right to the desalinator panel. 4 temperature settings, a ventilation and an OFF position are available. The warmed air is dispatched in :

- the saloon,
- the fore cabin,
- the aft cabin.

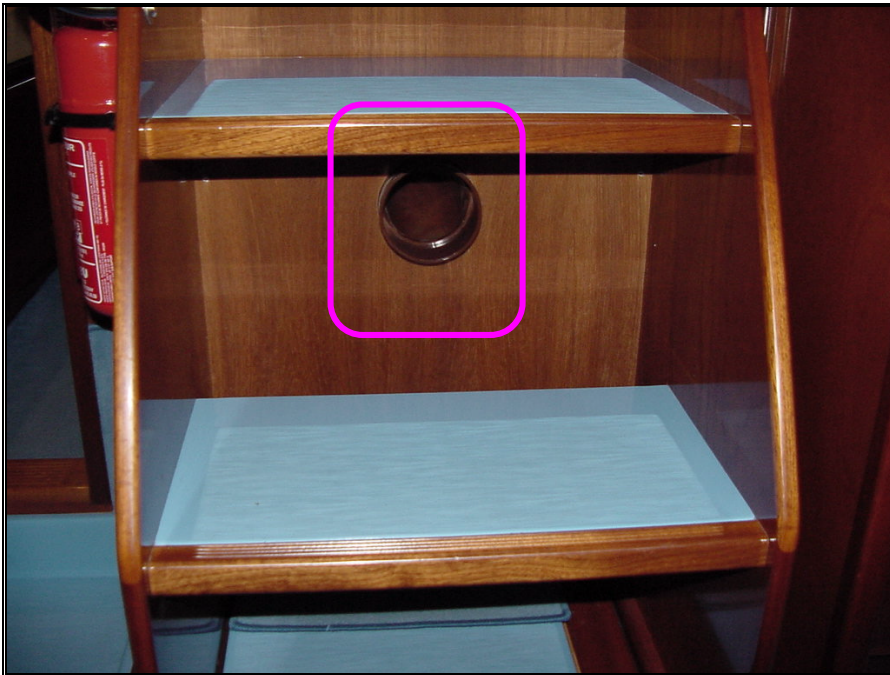
The power is approximately 4800 W at maximum speed.

Refer to the builder's manual, section "Technical description" for more information. Each heating outlet can be closed independently of the other.

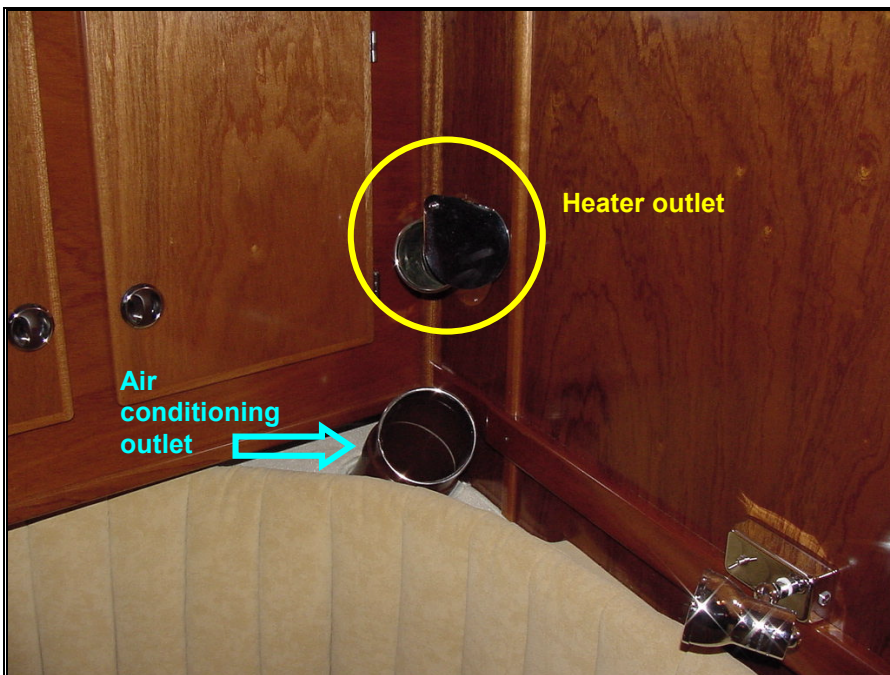
Remark : in the fourth position, the consumption of this heater is approximately 0,58 litres of fuel per hour (0.13 Imperial Gallon, 0.15 U.S. Gallon)



Picture 13 – Air heater actuating unit



Picture 14 – Warmed air outlet in the saloon



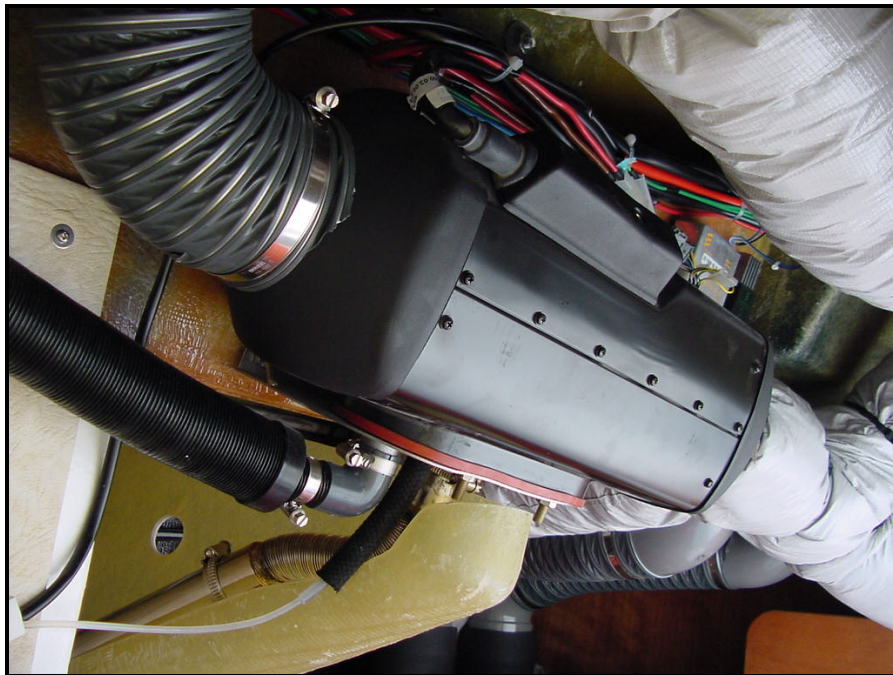
Picture 15 – Warmed air outlet in the aft cabin



Picture 16 – Warmed air outlet in the fore cabin

After switched off the heater, wait 5 minutes that the fuel circuit cools too. Now you can switch off the 24 V circuit.

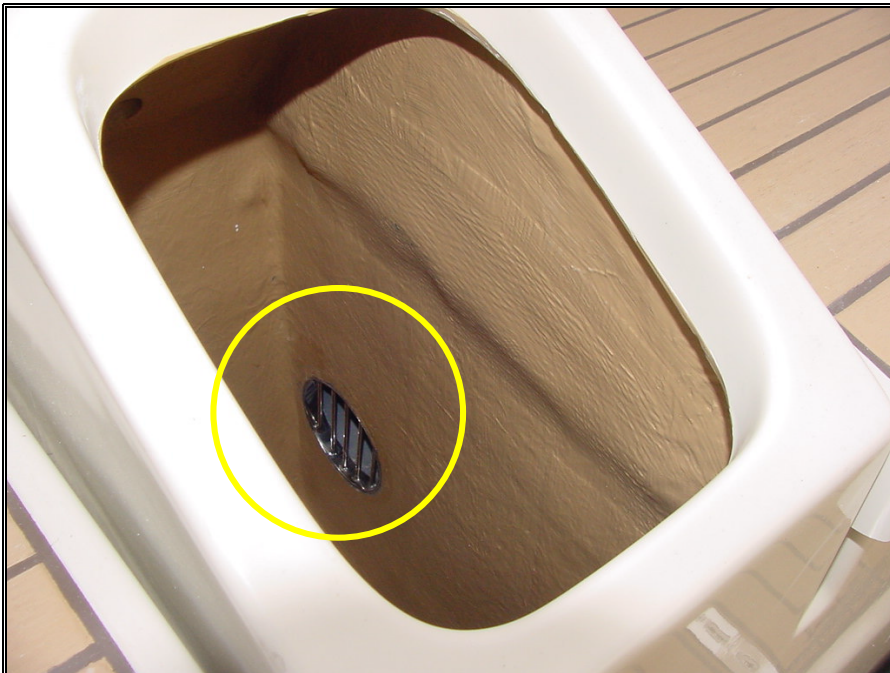
The air heater device is located in the portside cockpit locker. The fuel comes from the decant filter. We can switch off the heater setting directly the shutoff on the filter. The exhaust is located at portside, on the hull.



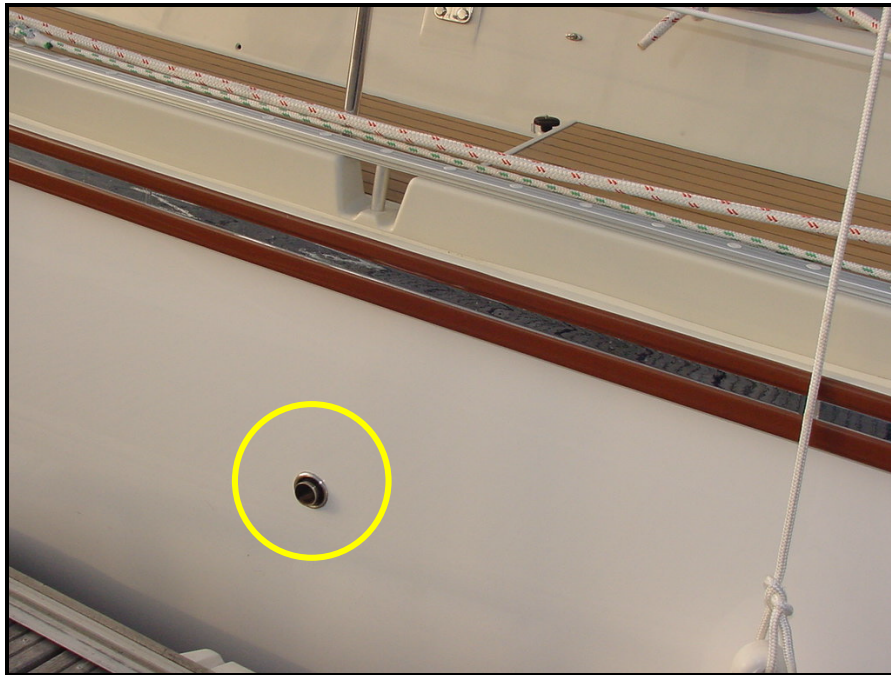
Picture 17 – Air heater



Picture 18 – Shutoff on the decant filter



Picture 19 – Fresh air inlet for the air heater appliance



Picture 20 – Air heater exhaust

A temperature sensor is placed in the saloon, above the portside shelves.

7.5.3 Maintenance

To obtain information about the maintenance of the heater, refer to its manual.

7.6 Fresh air ventilation



DANGER ! The user's manual gives some security information that must be respected for a secure use of this appliance. Refer to it before continuing.

Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.

In case of leak in the fore peak or in the fore cabin, close the air outlet in the fore cabin : pull and fix the stainless steel lever in the portside saloon shelf (above the *Fluxgate* compass).

Never obstruct all the outlets simultaneously when the device is working.



7.6.1 About the watertight bulkheads

In case of damage needing to set the fore watertight bulkhead, don't forget to close the heater outlet in the fore cabin : pull and fix the stainless steel lever in the portside saloon shelf (above the *Fluxgate* compass).



Picture 21 – Closing the fresh air ventilation outlet from the saloon

7.6.2 Operation of the fresh air ventilation

Before working the fresh air ventilation, be sure the outside air inlet (in the cockpit, inside of the ropes stock location at the foot of the mizzen mast) is not closed.

The fresh air ventilation is switched on when pushing the circuit breaker under the companionway. The fresh air is dispatched in :

- the saloon,
- the fore cabin,
- the aft cabin.

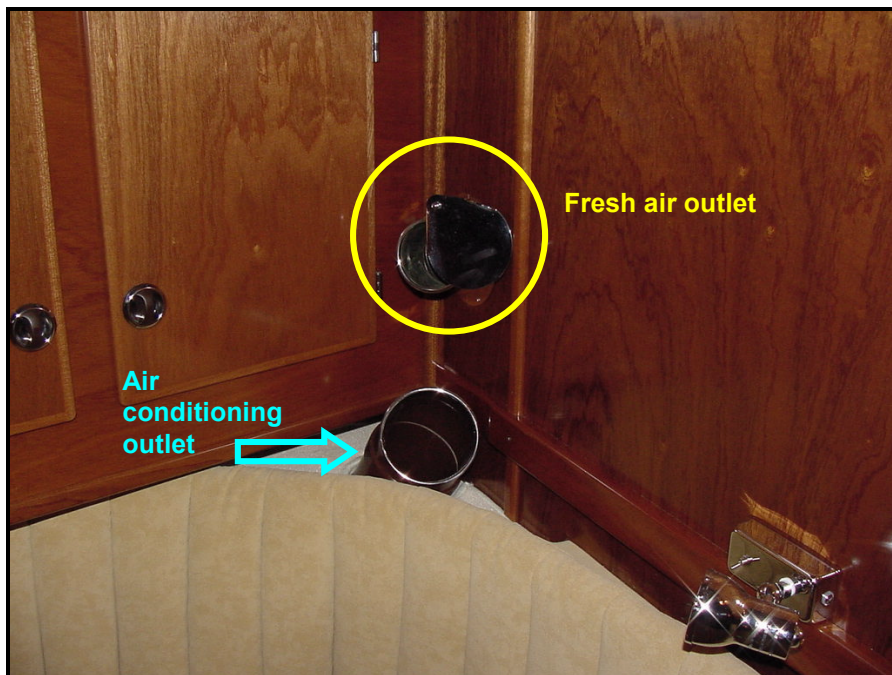
Each fresh air outlet can be closed independently of the other.

The consumption is approximately 2 A under 24 V.

The fresh air ventilation appliance is located in the portside cockpit locker.



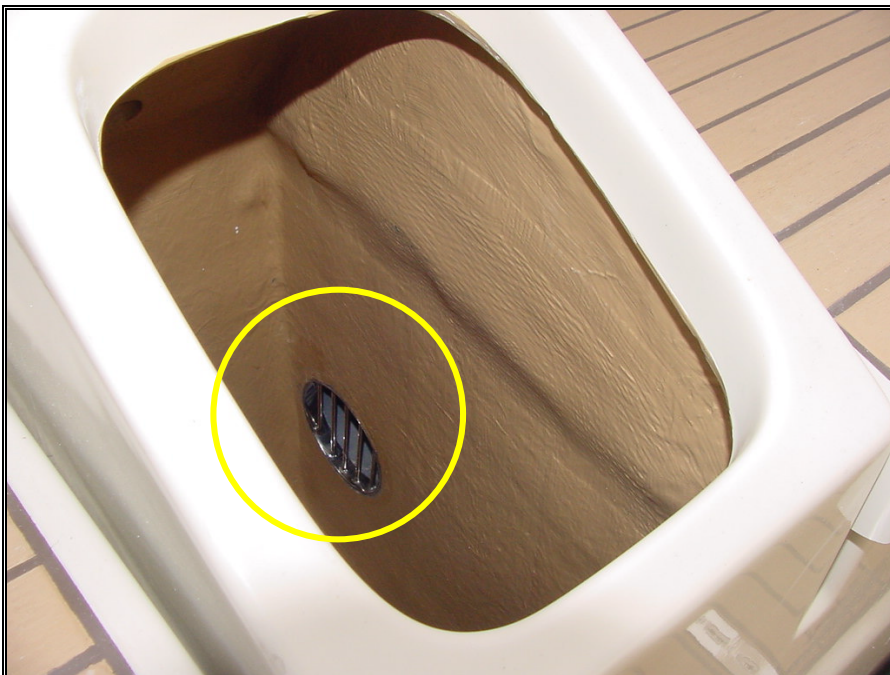
Picture 22 – Fresh air outlet in the saloon and circuit breaker



Picture 23 – Fresh air outlet in the aft cabin



Picture 24 – Fresh air outlet in the fore cabin



Picture 25 – Fresh air inlet for the fresh air ventilation appliance



Picture 26 – Fresh air ventilation appliance

7.6.3 Maintenance

To obtain some information about the maintenance of this device, please refer to its own user's manual.

7.7 DHI deck level running lights

You have chosen to equip your Super Maramu 2000 with the DHI deck level running lights :

- portside : red (112,5° - 25 W),
- starboard : green (112,5° - 25 W),
- stern : white (135° - 10 W).

They are switched on when pushing the "Navigation lights on deck" circuit breaker at the 24 V panel.



Picture 27– Fore DHI deck navigation lights



Picture 28– Aft DHI navigation light

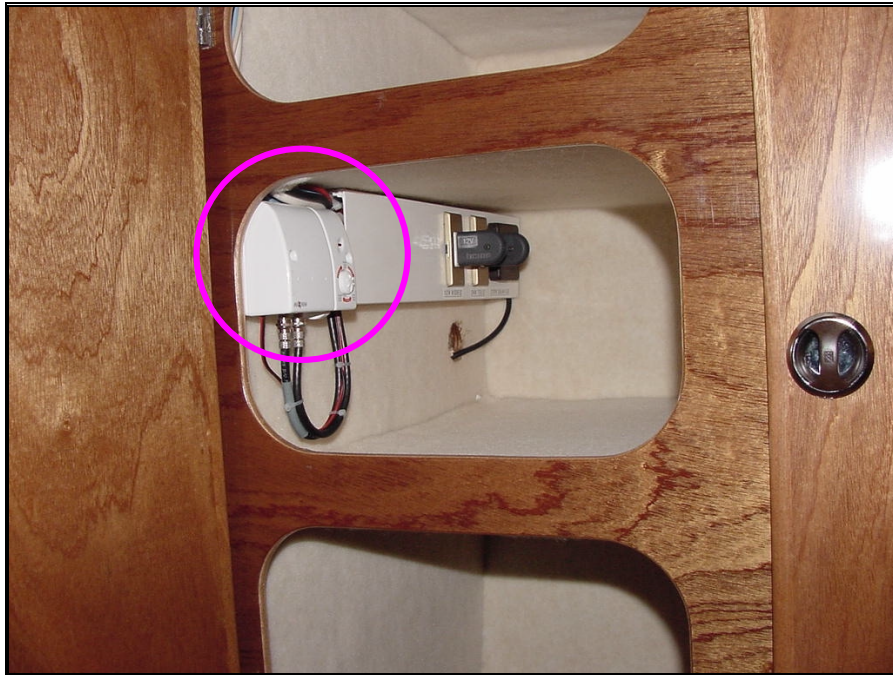
7.8 2nd deep freezer

You fitted out your boat with a 2nd deep freezer in the saloon. It works is the same as the standard one. The circuit breaker is located on the 24 V panel, right to the fridge.



7.9 Television

You have chosen to equip your boat with a television on starboard. In the right shelf is the amplifier. The antenna is fixed at the top of the main mast.



Picture 29 – Amplifier for television

For the consumption, the power supply and the maintenance, please refer to the builder's manual. Never leave this appliance switched on when it isn't used.

7.10 SEAGULL freshwater filter

7.10.1 Use

A SEAGULL IV freshwater filter is set under the starboard sink. It eliminates the bad tastes, dusts and metal particles. The shutoff which gives this freshwater is the portside one.



Picture 30- SEAGULL freshwater shutoff



Picture 31 – SEAGULL IV freshwater filter

7.10.2 Maintenance

The cartridge must be replaced every 4000 litres, or at least every year. Nevertheless, its capacity can vary due to the water quality.

To replace the cartridge, please refer to the builder's manual. Its characteristics are :



RS-1 cartridge for SEAGULL IV freshwater filter	
Normal flow	4 litres / minute (pressure of 2,5 kg/cm ² , 36.25 psi)
Estimated capacity	4000 litres
Micro filtration	0,4 microns
Height	109 mm
Diameter	99 mm

7.11 Compressor for oxygen cylinder

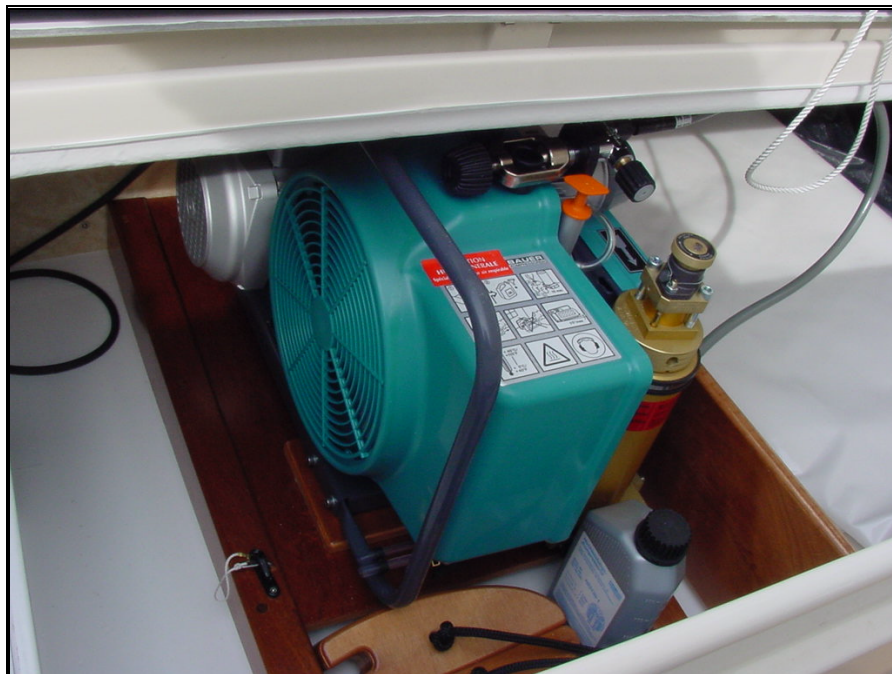
The compressor for diving bottles is located in the portside cockpit locker. Please refer to its builder's manual for more information.

A few characteristics are mentioned here :

BAUER J II 3W	
Motor	24 V single-phase – 2,2 kW
Flow	100 litres / minute
Maximum inflation pressure	245 bars (3465 psi)

To run this equipment, switch on the circuit breaker *Compresseur* at the 220 V panel. Check that the equipment is switched on.

For the maintenance, see the builder's manual.



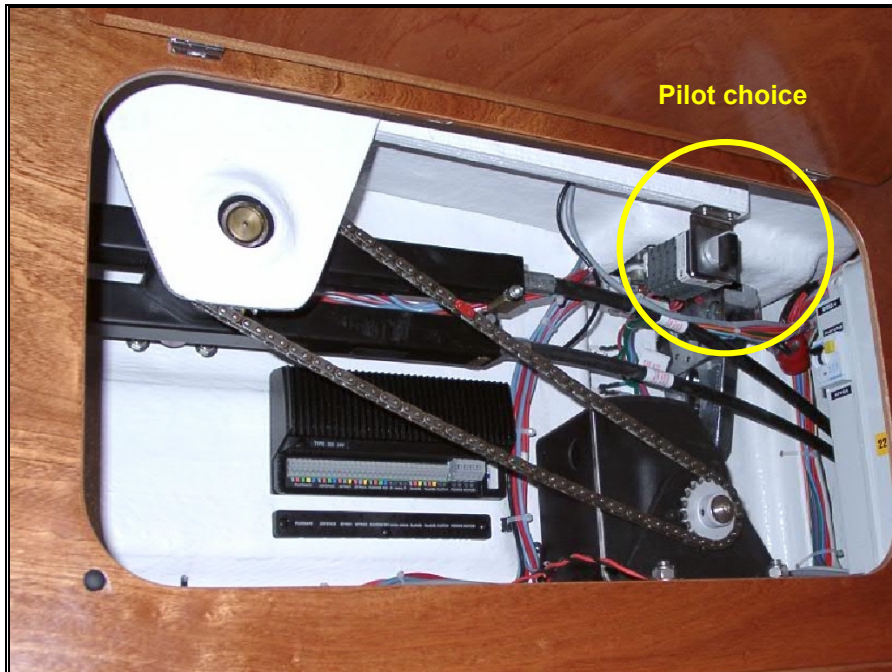
Picture 32 – Compressor for oxygen cylinder



7.12 Rotary motor pilot unit

You have chosen to fit out your Super Maramu 2000 with a rotary motor pilot unit. It is located in the galley, above the sink. The choice of the one who works (linear or rotary) is made switching the toggle switch located in the shelf above the sink :

- "1" position : linear,
- "2" position : rotary,
- straight up : no one works.



Picture 33 – Rotary motor pilot unit



DANGER ! Read carefully the electronic equipment's manuals before use and sail. They contain **warnings** concerning your own safety while operating and doing maintenance.

This information must be read prior to sail and intervention.

Any maintenance work on mechanical or electrical parts on these devices should be done by skilled workers, using appropriate tools and protections.

7.13 3rd main mast halyard

You have chosen to equip your boat with a 3rd main mast halyard, at starboard. You can hoist a gennaker or a spinnaker.

The tack point is on the anchor fairlead.

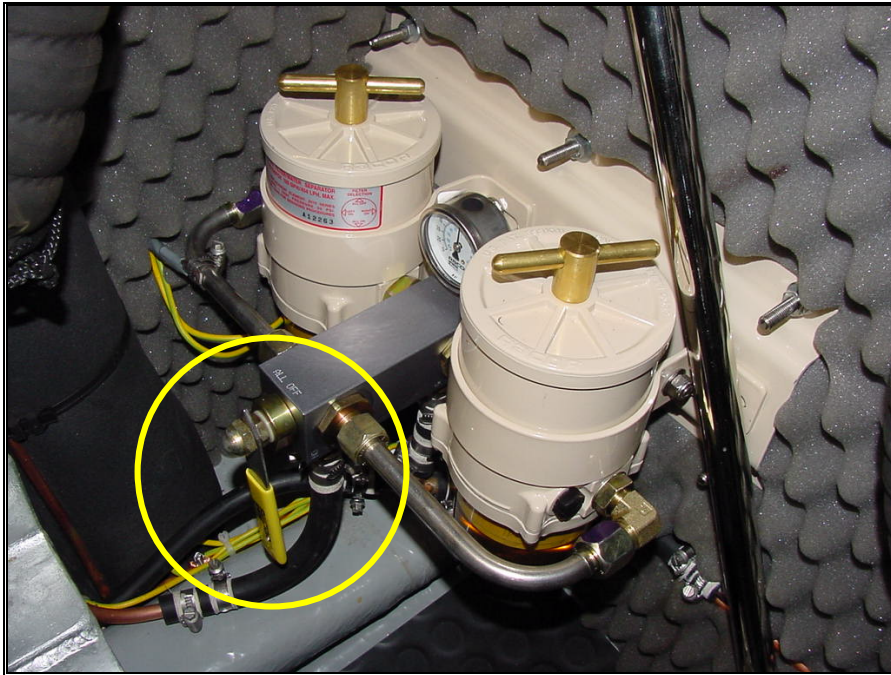


Picture 34 – Tack point on the anchor fairlead



7.14 Dual RACOR filter

You have chosen to fit out your boat with a dual gas oil RACOR filter. To choose the used one, select it with the shutoff between the two filters (the two filters can't work together at the same time). The vertical position (as shown on the picture below) shuts off the two filters.



Picture 35 – Dual RACOR filter



7.15 Rope cutter



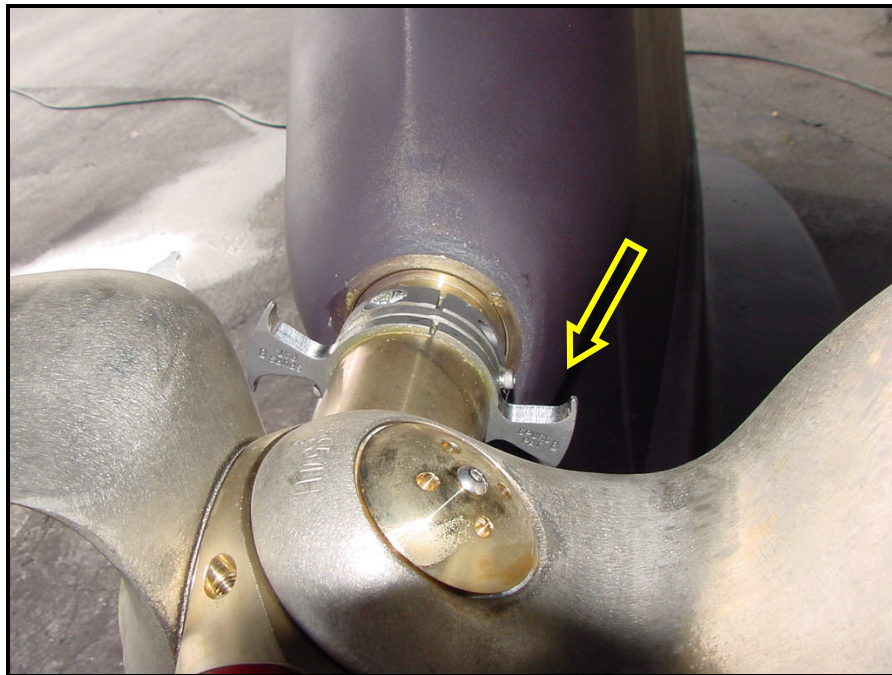
DANGER ! Before any work, be sure the engine gas oil arrival is shut off.

This equipment is very sharp ; you must wear protecting gloves.

Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.

7.15.1 Use

Your Super Maramu 2000 is equipped on his propeller shaft with a rope cutter. It cuts automatically a rope or a little wire which have been rolled around the propeller.



Picture 36 – Rope cutter

7.15.2 Maintenance

The only maintenance which can be made is a cleaning and a little sharpening when the boat is lifted out of the water. It can be replaced during a propeller inspection.



7.16 110 / 220 V transformer

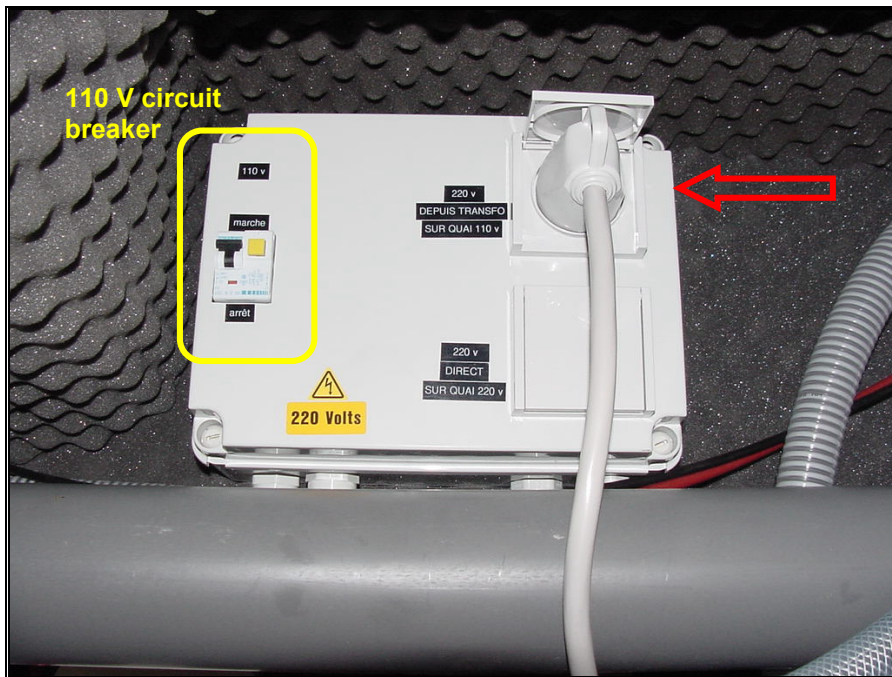
Your boat is equipped with an 110 / 220 V transformer of 6000 W. The frequency isn't changed and is the same as the frequency of the input voltage.

To run the appliances with the 110 V :

- switch off all the 220 V consumptions,
- check that the circuit breaker on the left is on *Arrêt*,
- connect the shore wire equipped with the 110 V on the 110 V shore plug,
- from the engine room, just above the air conditioning pump, connect the wire in the plug called "220 V depuis transfo sur quai 110 V",
- on this panel, switch the circuit breaker on (*Marche*).

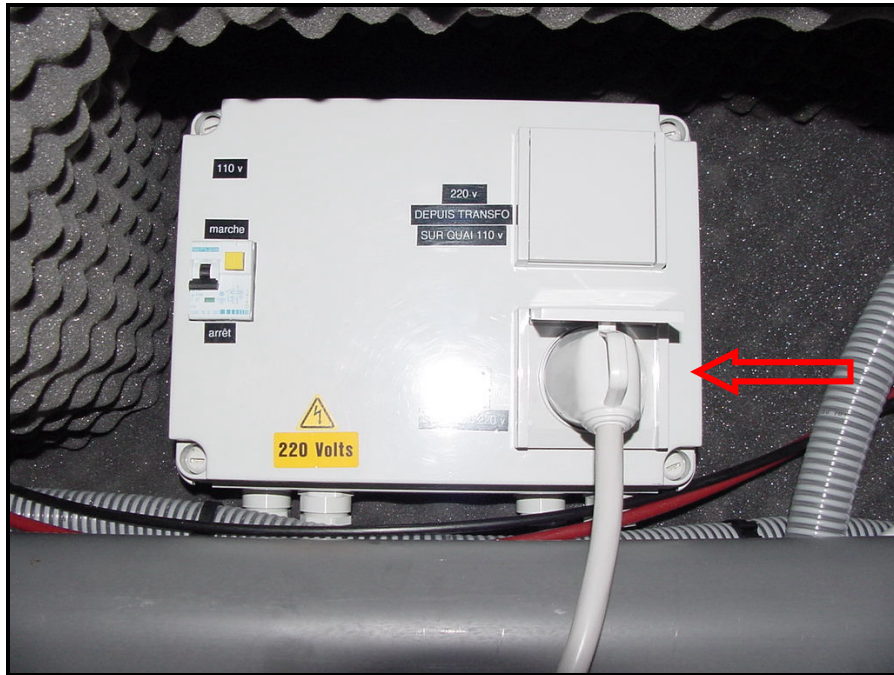
Remark : switch on this circuit breaker only if the boat is connected to the 110 V.

The Picture 37 – 220 V obtained from the 110 V at the harbor shows what you must see.



Picture 37 – 220 V obtained from the 110 V at the harbor

The Picture 38 – 220 V obtained from the 220 V generator shows how must be the panel when the 220 V comes from the 220 V generator or from the 220 V shore power. The wire is connected directly at the « 220 V direct sur quai 220 V » plug.



Picture 38 – 220 V obtained from the 220 V generator

The transformer is located in the engine room, at portside. Never obstruct the air inlets on each side : it may cause a dangerous overheating of the appliance.



Picture 39 – 110 / 220 V transformer

Remark : As the frequency of the tension is maintained to 60 Hz when electricity comes from the shore, a few appliances don't work :

- desalinator,
- microwave oven,
- clothes washer / dryer,
- dish washer.

They must be run with the 220 V generator.



7.17 Fans

Your boat is equipped with many supports for swivelling fans. They run on 24 V (the plug is behind the support). A fan can be set in another room unscrewing the wheel.

To run the fan, turn the central wheel :

- 1st position : low speed,
- 2nd position : high speed.

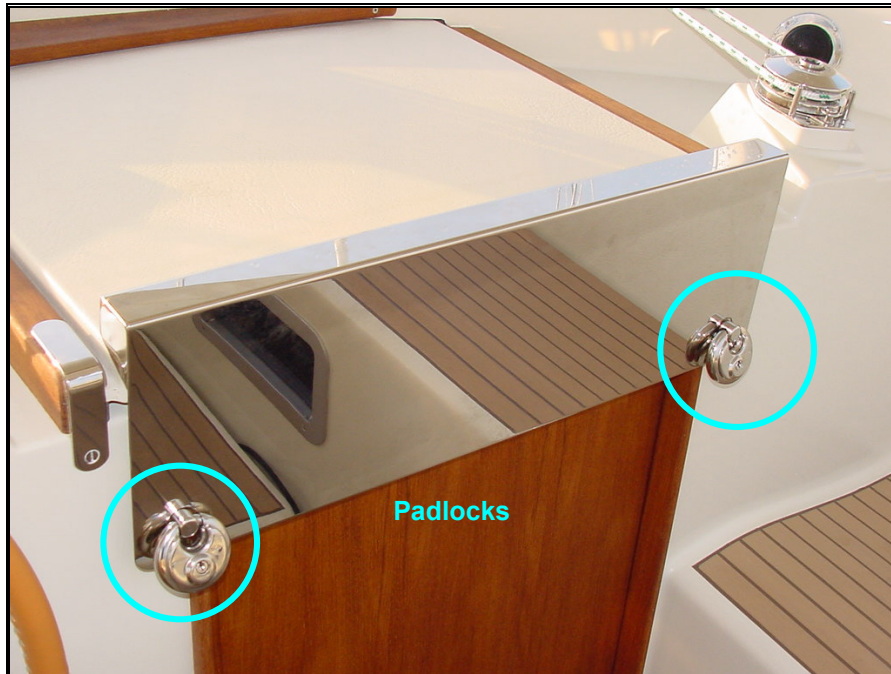


Picture 40 – Swivelling fan



7.18 Door locker

The companionway can be secured with a stainless steel cover, set in 2 plugs in the cockpit. 2 padlocks avoid to go inside the boat.



Picture 41 – Door locker with stainless steel cover



7.19 24 / 220 V inverter



DANGER ! Read carefully the inverter's manual before use. It contains **warnings** concerning your own safety while operating and doing maintenance.
The user's manual gives some security information that must be respected for a secure use of this appliance. Refer to it before continuing.
Any maintenance work on mechanical or electrical parts on this device should be done by skilled workers, using appropriate tools and protections.

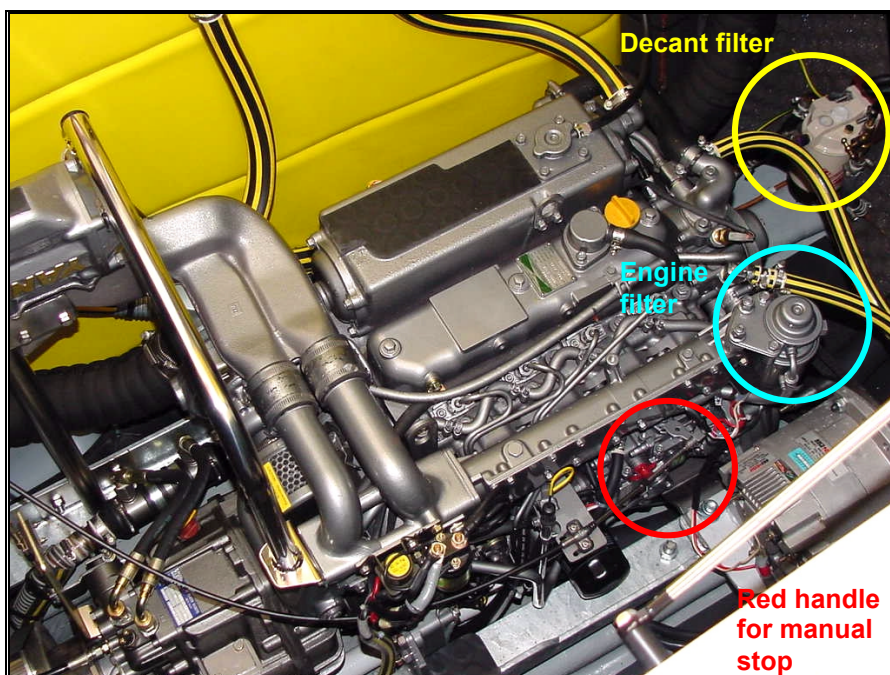
An inverter changes a 24 V DC voltage (the batteries) to an alternating 220 V voltage. This type of appliance doesn't allow to use "big consumers" (dish washer, washer / dryer machine).

If we use the microwave oven with the inverter, the circuit breaker will switch it off 3 or 4 minutes later : it's normal. The functioning time of the microwave oven is intentionally limited to the necessary time for heating a cup of coffee for example, without starting the power generator.

7.20 Comfort pack

You have chosen to fit out your Super Maramu 2000 with a comfort pack. It contents a lot of elements, which are :

7.20.1 100 hp. main engine



Picture 42 – 100 hp. main engine



Engine specifications (for further details, refer to engine's manual) :

<i>Diesel engine YANMAR 4JH3-HTE</i>	
Type	Turbo powered with intercooler Diesel engine, 4 strokes, 4 cylinders verticle in line direct injection
Engine capacity	1995 cm ³
Power	73,6 kW (100 hp.) à 3800 t/mn
Minimum idling speed	900 ± 25 rpm
Cooling system	Freshwater with heat exchanger
Engine battery alternator	12 V, 55 A
Service batteries alternator	24 V, 175 A
Fuel consumption (clean hull)	Economical cruising (1800 rpm ; 6,5 knots) : 3,9 l/h Cruising (2000 rpm ; 7 knots) : 5,5 l/h

7.20.2 175 A alternator

A 24 V / 175 A alternator is coupled with this engine. He charges the 12 service batteries (see 7.20.3), from 1500 rpm.

7.20.3 Batteries

Your boat has twelve batteries (of 12 V / 105 A.h each) for all the 24 V equipment. Connected in line and parallel, it represents a full capacity of 630 A.h.

7.20.4 100 A charger

To charge the service batteries from the power generator, a 24 V / 100 A is installed. Switch on the circuit breaker on the 220 V panel (big charger icon, in the upper left corner) to run it.



7.20.5 4 plate gas stove and oven

This 4 plate gas stove and oven working with butane gas has the following characteristics :

Burner power	1,0 kW – 2 x 1,5 kW – 2,2 kW
Oven power	1,8 kW
Grill power	1,6 kW
Oven volume	36 litres
Electronic lighting	1,5 V DC

Don't forget to switch on the circuit breaker of the electrical gas shutoff on the 24 V panel to use this appliance.

To light the grill, use a manual gas-lighter.



Picture 43 – 4 plate stove and oven



7.21 Propeller shaft alternator

You have chosen to equip your Super Maramu 2000 with a propeller shaft alternator. It gives up to 20 A, and is really efficient from 7 knots. It can be unclutched with an electrical shutoff located close to the transmission.

Because of safety rules, don't connect the propeller shaft alternator cruising with the engine.

The control switch is located in the cockpit, close to the voltmeter and the temperature indicator.

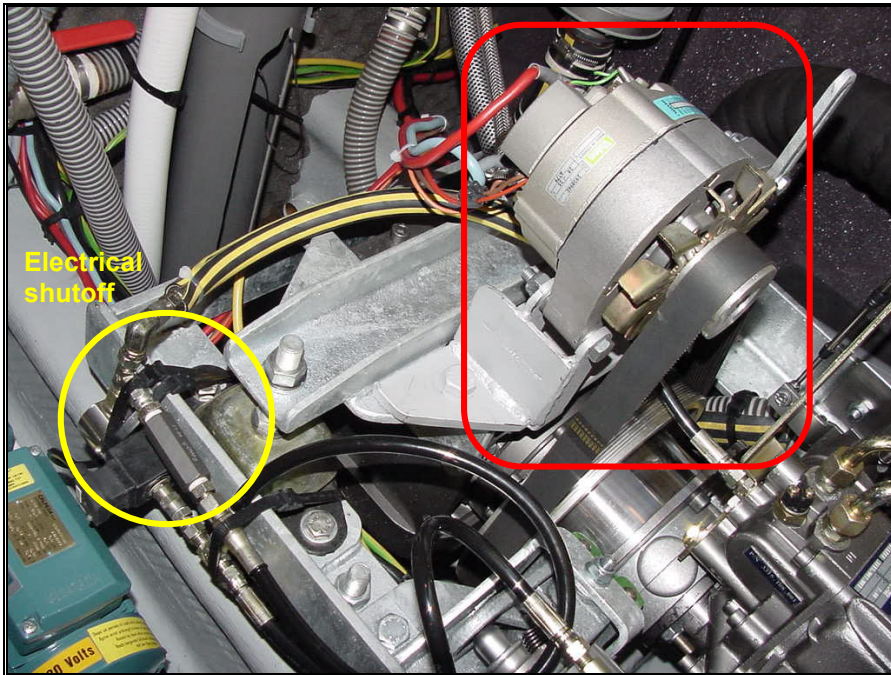
To use the propeller shaft alternator with the sails :

- start the main engine without clutching it, to make the hydraulic brake free,
- clutch in the rear sense (to spread the propeller's blades), and then come back in the neutral position,
- excite the alternator switching on (in the up position) the control switch,
- stop the engine.
- the indicator becomes green (the red indicator lights if the propeller's rotation isn't fast enough),

To stop the propeller shaft alternator, stop the excitation (which allows the hydraulic brake to close up) switching in the lower position the control switch.



Picture 44 – Propeller shaft alternator control switch



Picture 45 – Propeller shaft alternator and his electrical shutoff

There is no danger to damage something when running it in a wrong use by accident.



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Version 2.5
November 2002