

# Install Hot Water on board...

An electric water heater 12 V cables, pipes, fittings, a water pump and a shower to get enough hot water under pressure on a boat of 6 or 7 meters powered speedboat.

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Famous for its water management systems, fast pumps and fittings, Whale made a grand entrance into the world of comfort with a new electric water heater suitable for transportable units.

With this compact and lightweight unit, pressurized hot the water is no longer the privilege of cruise ships and becomes a reality, affordable and fully functional for small units.

Thanks to a heating element 300W powered by 12 V, a current rating of 30 A means the Whale water heater can run without generator, converter or shore supply, for a day trip on a boat using an outboard motor.

To do this, the performance of the device has been optimized to increase the water temperature as fast as possible, in the order of one degree per minute, with an upper limit set at 60 °C. The tank, with a capacity of 12 litres, is made from Alclad, a high-strength aluminium

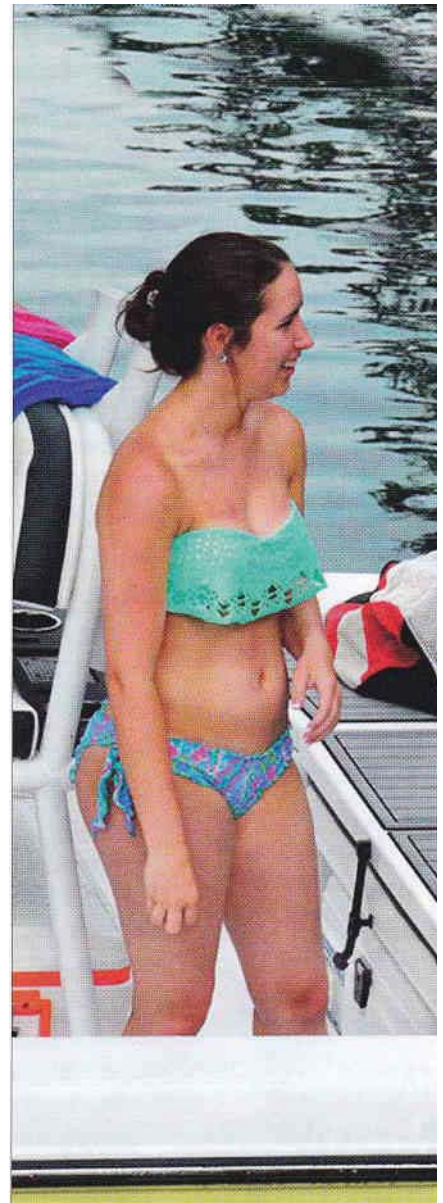
alloy, insulated by a cabinet of about thirty centimetres square.

With a light alloy construction, the weight of the unit is less than 7 kg empty, less than 20 kg in working order.

## A hot shower: a welcome comfort

Once the maximum temperature and the power turned off, the loss of temperature is limited to 20 C over ten hours, which can heat one hour in the morning and for the evening there is still hot water without having to use extra energy.

The 12 litres of hot water will not allow the crew to benefit from a prolonged hot shower after a swim, but the water heater is happy to warm a wetsuit, washing dishes or washing away fish remains, dirt



embedded on the bridge or hands. In a word, this device allows for most cleaning operations or hot water is more effective than the cold. The Whale 12 V water heater is equipped with a fully automatic control circuit which prevents malfunction if the power of the cold water supply or overheating. It also comes fitted with a drain valve for winterising and a magnesium anode to protect the internal tank from any risk of electrolytic corrosion.



## The installation steps followed

We were able to follow step by step installation of a water heater on an Asso 67, powered by a 150 horsepower Mariner, perfectly matching the overall program referred to by Whale for this device. The work took place afloat, boat moored at the dock, private AC power following a general network failure!

### 1. The installation of the heater



The compactness of the casing, measuring just 330 mm wide, 350 mm high and 340 mm deep, will fit nicely in a narrow compartment, here located under the rear seat.

The pressure relief valve and drain valve are preinstalled, but it is possible to disassemble to further decrease a little more clutter.



Before mounting the fittings, in order to that of the arrival of cold water, with a non-return valve, that of hot water outlet that does not have, and seal the connector threads with the help of Teflon tape. The heater is attached to the boat by means of two metal plates, themselves secured to the tank and not insulated enclosure. Eight

stainless steel screws used to secure the twenty kilograms of the water heater on the floor of the trunk, thick enough here. Otherwise, it will be better to use bolts to provide additional reinforcement.



## 2. The assembly of the piping

The connectors are compatible with Whale Quick Connect system connectors and tubing, which includes all items - equal straight, elbow or equal tee connectors needed to put together the circuit. A simple assembly to fit-together, enough to get

a tight connection and can be removed without having to use tools. The rigid polyethylene pipe can be cut with a knife, but the special clamp is more than useful for a fraction of a second a cut perfectly square. The blue tube is

logically dedicated to the red and cold water with hot water. Ultimate refinement, the marks are printed at regular intervals along the pipe, so there is no need to measure anything! The cold water tank should of course be equipped with a dispensing pump, like the Whale Watermaster automatic model. The cold water inlet and hot water outlet,

oriented here to the transom are in place, as well as the breather (black) of the pressure relief valve, which discharges directly into the sump of the vessel. Control cables integrated ignition relay to the water heater and the operation of control were more difficult to install. As the manufacturer of this Italian boat had provided no additional wiring



sleeve and that the existing sleeve is completely filled by the original wiring loom, required the additional fitting of a polyethylene pipe linking the console and the trunk to enable the pulling of the two electrical cables leads in order to get the equipment to function.



## 3. Electric power

30 amperes required for the power supply require a large cable 16 mm<sup>2</sup>, with crimped lugs, if possible, on previously tinned ends. It is also best to power the water heater using a service

battery rather than the starter battery, because the risk of emptying it inadvertently leaving the unit is very important. Unlike the control lead, installation of power cables posed no particular

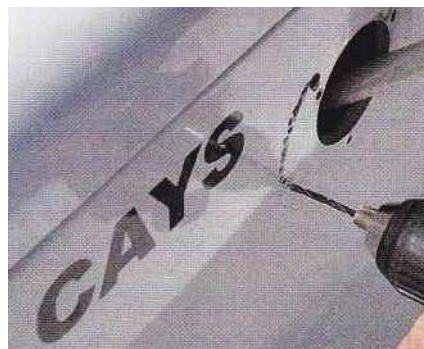
problem. The batteries of the Asso 67 are located under the leaning-post, near the water heater, the cables are easy to install and length remained minimum to limit voltage drop and to keep the cost down (large copper section costs several tens of euros per meter).



The line must of course be protected by a 35A fuse or differential circuit breaker of the same rating.

## 4. The installation of the shower

Installed on the back cover of the seat boxes, the original shower, very degraded by UV, was replaced by the Whale Twist model which, thanks to its dual power supply flexible cord, includes its own hot / cold water faucet. But its mounting case requires a larger opening than the absence of mains forced to carry the old, by



drilling a series of adjacent holes and finishing the holes opening with a file. A tedious but effective job, but here is the proof!

hardly protrudes the surface, its colour harmonizing very well to that of the gel coat and looking very discreet.

Once in place, the housing of Twist shower



## 5. Test

After running the water heater about forty minutes, the time to check that the energy required for hot water supply had no effect on the functioning of the alternator of the engine, we saw that the water had indeed reached forty degrees. We also verified that the limited capacity of the unit forced a certain parsimony in its use. For large hot water needs,

Whale offers a range of higher capacity heaters from 20-80 litres which are bulkier, but which have a heating element, which varies depending on the model between 650 and more than 2000 W, can only be operated on either 230V or 110v current supply. The technical characteristics of these types of water heater units require the

use of power generators or power converters. The weight of the equipment is on an increasing scale and can go up to several hundred kilograms which is far away compared to the compactness and lightness of the 12 V model presented here.

