Operators manual
Basic water heater

Isotemp Basic water heater has been designed and produced to ensure that your water heater will give long and trouble free operation for many years.
It is important, however, that your Isotemp water heater is correctly installed and maintained. During the winter period when the unit is not being used it is essential that it is drained to avoid risk of damage due to freezing.
Every single Isotemp water heater is individually pressure tested prior to delivery and carries a 2 year factory warranty in respect of defects in material and/or manufacture and a limited 5 year warranty on the inner tank.

Installation:

1. Placement: The water heater may be placed in a suitable place with the engine water connectors on the water heater below the level of the engine header tank. The connection hoses between the engine and the water heater should be kept as short as possible.

2. Mounting: The water heater can be mounted horizontal, with the safety valve lowest, or vertical with all connections pointing downwards. The mounting brackets can be turned to fit the bottom or a bulkhead on board. Bear in mind the weight of the unit when full of water.

3. Water connections:

3.1 Fittings: Use only fittings and accessories made of non-corrosive material such as brass or stainless steel. Avoid plastic fittings on the water heater depending on the heat. For the engine cooling water connections, use heat resistant (100°C/210°F) reinforced rubber hoses, resistant to anti-freeze and pressure proved for 5 bar (70 psi). For the fresh water, use heat resistant fresh water hoses (food industry quality). They shall be rated 8 bar (115 psi).
Seal the threaded connections with e.g. LocTite 243.

3.2 Engine connections (see schedule): The water heater may be used with either fresh or sea water cooled engines. The flow of cooling water from the engine through the water heater must be at least 2 litres/min. If the boat has two engines, connect the water heater to one engine only.
Connection to the engine shall be done with min. 16 mm / 5/8" hoses and adaptors to avoid restrictions. See the instructions in the engine operators manual, regarding hose connection points.

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3.3 Freshwater connections (see schedule): The water heater is fed with fresh water from the electrical fresh water pump. Max pressure 3 bar (42 psi). The hot water outlet, which also vents the water heater, should be connected to a mixer tap at the sink and/or basin outlet. Cold water can be mixed with hot to avoid scalding. Set a proper temperature on the thermostat mixing valve on the water heater, if fitted. A waste water hose can be mounted on the safety valve and must always have a free outlet. There must be no valves or skin fittings, fitted to the waste water hose. A small quantity of water may be expended via the safety valve during the heating up period. This water can be led to the bilge or collected in a small plastic bottle.

3:4 Electrical connection: All internal connections are made in the factory. The mains power supply cable is fitted with an international plug (EU plug), which should be fitted to a correctly installed socket. This socket as all "high-voltage" installations on board, must be carried out to fulfil valid regulations. The Isotemp Basic water heater is designed to meet EU regulations in this field.
Important! The water heater shall be connected to the mains power supply only when it is in service. When leaving the boat for any length of a period, it is recommended to pull out the cable connector from the socket to also disconnect the earth protection. This should be done even if the shore power system is shut off, as there can be a potential difference, between the earth from shore and the sea water earth of the boat. This can seriously damage, by stray current corrosion, the immersion heater, water heater tank or the engine with its drive unit.
Installation of a insulation transformer in the shore power equipment eliminates the risk of galvanic corrosion via the shore power connection.

4. Start up/Test: Start the engine and check the circulation of the cooling water. Secure the hoses after checking. When using with a fresh water engine system, compensate with anti-freeze for the additional volume in hoses and heat exchanger. Fill up the water heater with fresh water by starting the fresh water pump, leaving the hot water tap open to air the system. Check there are no water leaks and finally connect the power cable when the water heater is full. Check that the safety valve outlet is free to allow water to escape.
Note: the water expands during the heat up process, a small quantity can come out through the safety valve.

5. Maintenance:

5:1 Winter drain: When there is a risk of freezing temperatures, the water heater must be drained. This is done by pulling the lever on the safety valve to its open position. Take off the hot water hose and/or open the air bleeder screw on the mixer valve, to allow air coming into the tank.
The water heater can be left safely on board over winter.

5:2 Immersion heater: The immersion heater is on 750W. The thermostat has an integrated working thermostat and a double over heat protection thermostat. This is manually re-settable, by pushing the white indicator pin, under a white cap, at the top of the overheat thermostat. Also check why the overheat thermostat initially tripped before re-connection the power supply.
When leaving the boat for long periods, it is recommended to disconnect the power supply cable plug. See at 3:4 above.
The immersion heater is also available in other versions of power rating as well as in 115 volt on special order.

5:3 Controls: Check regularly that there is no leakage in the connections.

Technical data Isotemp Basic

Type	Volume lit.	L x øD x H mm	Weight kg	Immersion heater
602431B000003	24	490 x 390 x 395	14	230V/750W
603031B000003	30	555 x 390 x 395	17	230V/750W
604031B000003	40	660 x 390 x 395	20	230V/750W
605031B000003	50	780 x 390 x 395	23	230V/750W
607531B000003	75	1070 x 390 x 395	29	230V/750W

Connection fresh water: BSP ½" outside for cold and hot water, Engine water: BSP ½" outside.
Inside thread for cold water in when thermostat mixing valve is mounted.
Material: Engine water coil, storage tank and all connections: Stainless steel AISI 316
Outside cover and mounting feet stainless steel AISI 304
Immersion heater in copper covered by nickel. Immersion heater also available in 120V version.
Safety valve: 85 psi / 6.0 bar
Insulation: Foamed expanded polyurethane

Above data valid for Basic with thermostat mixing valve mounted.
Changes of the specification may be done without prior notice.

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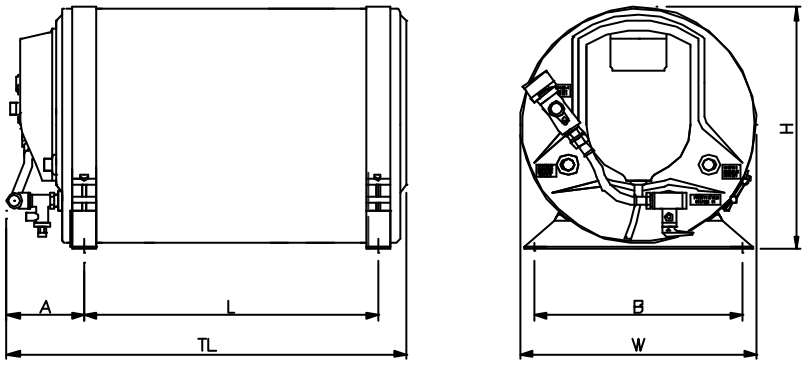
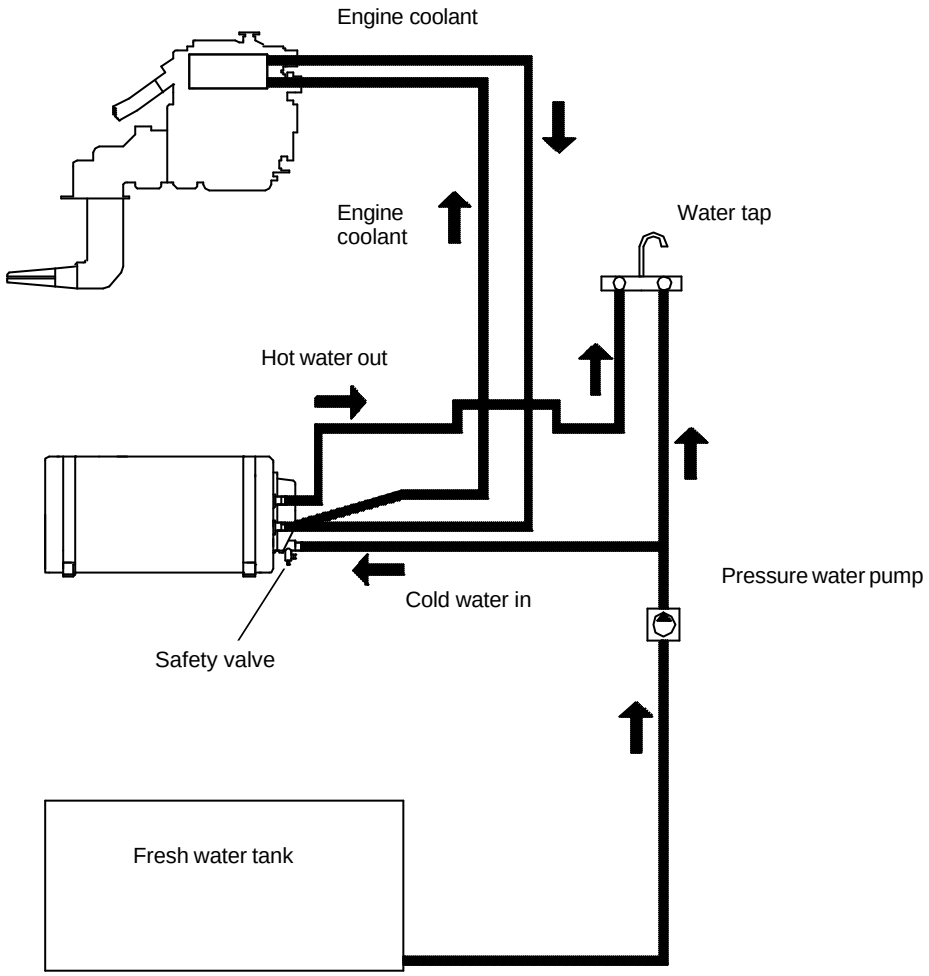
Dimensions

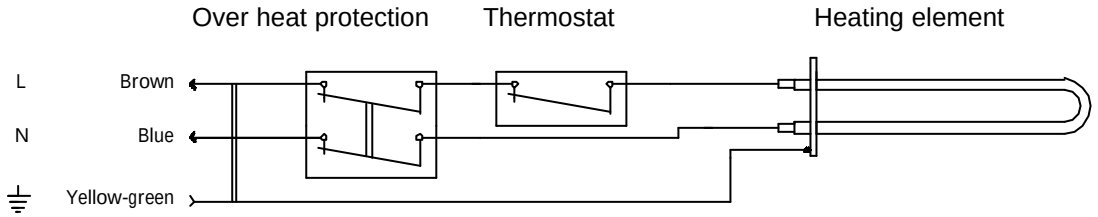


Type	A	L	B	TL	W	H
22	135	265	340	490	385	395
30	135	330	340	555	385	395
40	135	435	340	660	385	395
50	135	555	340	780	385	395
75	135	2x420	340	1070	385	395

Principal connection diagram



Wiring diagram



Thermostats