



Congratulations on your purchase of a ROYAL MARINER® Tide and Time Clock



Mounting your Clock

The location of your clock is primarily is a matter of choice, but some places should be avoided

Mounting screws are provided, and these are intended for use on wooden mounting surfaces

If mounting the clock on masonry or plasterboard wall, additional fasteners will almost certainly be required

- *Avoid placing in direct sunlight, near to or above heating/air conditioning outlets, heaters or cooking appliances*
- *Avoid placing near windows, hatches, ports, under dorade vents etc to protect where possible from salt laden air*
- *Do not place near strong magnetic fields, such as electrical cables, speakers, microwaves, TV, radio, aerials*
- *This clock is not waterproof*

Use and care of your Clock

This clock requires a 1.5 volt battery. Alkaline types AA, UM3, LR6, 15A are suitable. Use high quality only.

Open the front hinged part of the case to allow access to the battery compartment and to the clock setting knobs.

Battery life should be 1 year. Do not leave flat batteries in the clock, as they may leak and cause extensive damage.

Keep the battery contacts terminals very clean. The clock draws little current, so dirt or film can easily stop the clock.

Wipe the clock with a clean cloth frequently. Brass models benefit from an occasional polish with Brasso or similar.

Setting your Tide and Time Clock for your location

It is recommended to first set the clock on a day when a local high tide coincides with a full Moon. See below for why.

Obtain a local tide table and calendar showing phases of the Moon from your newspaper, Nautical Almanac or similar.

Set the normal time clock first by adjusting the small knob on the rear of the clock movement.

Then, using the larger knob on the rear of the movement, set the tide hand to the high tide position at the correct local high tide time as ascertained from one of the sources mentioned above.

Please remember any subsequent adjustment of the time hands will also alter the tide hand.

It will be necessary to make a correction to the tide clock hand from time to time. Read more below.

A brief explanation of how the tidal cycle works

The Moon is the major cause of the tides. The 'lunar day' (the time it takes for the Moon to re-appear at the same place in the sky) is 24 hours and 50 minutes.

Most places in the world, have 2 high tides and 2 low tides each day. Some areas of the world have only one tide cycle per day, and a tide clock such as this unit is therefore not suitable. Our website www.cruisingelectronics.co.nz has information with detailed world tidal information. Look under the Info, Links or Support headings.

The tide clock hand rotates once every 12 hours and 25 minutes (twice each lunar day).

This equals 1/2 the average period of the Moon orbit around Earth, but there are many other factors that can make the day-to-day tides a little earlier or later than the tide clock shows. For example, the Sun also affects the tides, but has less than half the influence of the moon. When Sun, Moon and Earth are lined up, as they are at times of new Moon and half Moon, their influence combines and high tide is higher than normal and low tide is lower than normal. When the Sun and the Moon are at right angles, as they are at the first quarter and last quarter of the Moon, the Sun cancels some of the Moon's effect, and the range of tide is smaller than normal. Also, at these times the Sun will make the tides somewhat earlier or later than average. This is why it is so important to first set your tide clock on the day of a full Moon. Other factors also influence tide times, and are beyond the ability of the clock to predict. For example, a difference of 30 hPa in barometric pressure will cause about 300mm difference in sea level. Strong onshore winds will also cause a temporary increase in sea level. Both of these effects will change the times of low and high tides. Tides in deep bays will differ, and the lower portions of rivers will be affected by the changing volume of the river flow.

Each user must determine these conditions for their locality and take them into account when correcting the clock.

Your guarantee of quality

In the event of malfunction Cruising Electronics will, at their discretion, repair or replace the unit, providing that:

Malfunction has occurred within 36 months from the date of purchase - proof of purchase is required

The unit has not been exposed to any fluid, corrosive or hazardous substance, or excessive airborne particles

The unit is returned freight paid to Cruising Electronics or their nominated agent

Please note that under no circumstances can Cruising Electronics be held responsible or accept liability for any consequential damages or loss, incurred as a result of installing or operating this clock

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