

# HARBORMASTER

## INSTALLATION & OPERATION INSTRUCTIONS

### INSTALLATION

Please follow this procedure before setting your tide clock. Use of our wall mounted panels or mantle mounts is recommended but not necessary. Our panels are pre-drilled so that centering the instrument is not a concern. Simply screw the two supplied right angle hangers into the two centrally located pilot holes on either side of the large hole in the panel. These hangers should be screwed in so that there is approximately a ½” of clearance left between the hanger and the panel.

On the back of your tide clock you will find 2 holes that will line up with the hangers. Align the holes and hangers and push the clock against the panel. The clock's three rubber feet (not the rim of the brass case) will now be resting on the panel. While still applying pressure against the rubber feet simply slide the clock down so that it seats on the 2 hangers. If this feels too tight simply back the hangers off one turn. If it feels too loose simply tighten the hangers one turn.

If you are not using one of our panels you can use the supplied template to spot the hanger holes on your mounting surface. Using a #50 or 1/16” drill bit bore the two hanger holes into your mounting surface. The installation instructions above will now apply as if you were using one of our panels.

### TIDE SETTING

Insert a standard AA 1.5 volt battery in the battery compartment observing proper polarity. Look at the face and check that the round disc with the small hand at the center of the clock is rotating. This is the “going indicator” and its sole purpose is for you to verify that the clock is operating. You are now ready to set the Harbormaster. It is first necessary to determine the exact time of the high or low tide you wish to set the clock to. This information is most easily found in a current tide table, either printed or on-line. When reading a tide table, remember to allow for the difference (if any) between your exact location and that of the reference location. Once you have determined when high or low tide is, simply set the clock accordingly at that time using the thumbwheel on the clock mechanism just above the battery.

### HOW A TIDE CLOCK WORKS

It has been known for centuries that up and down the east coast, tides occur approximately 50 minutes later each day than they did the day before. The primary reason for this daily lag can be traced to the moon. It takes the earth 24 hours to make one complete rotation in relation to the sun. This rotation is called a “solar day”. It takes the moon 24 hours and 50 minutes to make one complete rotation around the earth. This rotation is called a “lunar day”. It is the moon's close proximity to us and the relatively strong gravitational effect it has on the earth that causes the tides to follow the moon's lunar schedule of 24 hours and 50 minutes per cycle.

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While this lunar cycle is the primary force behind the workings of the tide, it is not the only force. On a daily basis the average tidal cycle of 24 hours and 50 minutes can be affected by such cosmic variables as the relative position of the earth to the sun and the specific elliptical pattern of the moon around the earth. Localized variables affecting daily tides also exist. These would include strong winds, changes in atmospheric pressure, distant storms and an infinite number of other atmospheric conditions. The total affect of all these different factors cause tides to vary around the average point of 24 hours and 50 minutes. These variations can cause the reading of your tide clock to be either fast or slow in relation to actual tides, by as much as one hour or more on any given day. However, the rhythmic 24 hour and 50 minute cycle will prevail over any given 28 day lunar period. Basically what all this means, is that on any give day the clock may read fast or slow, but over a 28-day period it will average itself out to be correct.

For most purposes, high and/or low tide is not really a point in time, but a condition that exists over a period of time. If for some reason you require exact tide information you should always refer to a current tide table. The purpose of a tide clock is not to be exact, but to tell us the best approximate time to go swimming, fishing, boating, etc. For these functions a tide clock works just fine.

## TROUBLESHOOTING

It is very easy to determine if your Harbormaster is functioning properly. First make sure it has a fresh battery. Then, simply time it against a regular clock. It takes 12 hours for a regular clock to make one complete revolution. However, a tide clock requires 12 hours and 25 minutes to make one complete revolution. If the hand on your Harbormaster completes one revolution in 12 hours and 25 minutes it is working properly. If it takes more or less than 12 hours and 25 minutes then there is a problem and the clock should be sent to the factory for service.

## IMPORTANT ADDITIONAL INFORMATION

Your brass case is solid brass A70-30 Hollowware quality with a durable lacquer finish. It is in fact a piece of jewelry and should be treated as such. It should be cleaned at least once a week to keep airborne pollutants (dust, etc...) and any moisture from collecting on the case thereby attacking the lacquer. At no time should you use an abrasive cleaner or cloth on the brass case. Simply use a soft cloth or soft paper towel with a mild glass cleaner to wipe the case clean. If your instruments are in a summer home, and you are not able to clean them regularly, simply lay a small cloth or towel across the top two-thirds so that dust cannot settle on the finish.

## COMPONENTS

Along with the indicator, the following components are included with the instrument:



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PIN OR TACK

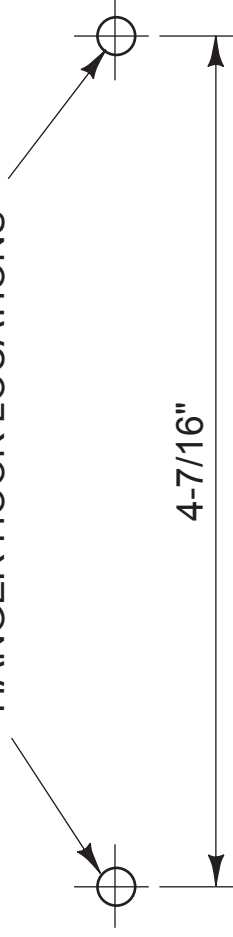


TO USE TEMPLATE USE A LEVEL  
TO MAKE LINE LEVEL

OR

USE A PIN OR TACK TO MOUNT  
TEMPLATE ON WALL AT POINT SHOWN.  
ATTACH A PAPER CLIP WHERE INDICATED.  
LET THE TEMPLATE LEVEL ITSELF.  
SPOT TWO HANGER HOLES

HANGER HOOK LOCATIONS



ATTACH PAPER CLIP HERE

