



# Marine Alliance for Science and Technology for Scotland

## MARINE INTERTIDAL TOUCH TANK – USERS GUIDE

**PLEASE NOTE:** When on loan (and not under the direct supervision of the MASTS Directorate) the touch tank and all associated equipment will be the responsibility of the organisation to which its use has been granted. As such any damage incurred to the aforementioned, during the loan period, will also be regarded as the responsibility of said organisation. In the event of damage the MASTS Directorate reserves the right to forward on the cost of any repairs or replacement deemed necessary.

### 1. Transportation and Handling

**NOTE: DUE TO THE WEIGHT OF THE TOUCH TANK AND WATER BARRELS A VAN (LUTON) FITTED WITH A HYDRAULIC TAIL LIFT IS A REQUIREMENT FOR TRANSPORTATION. UNDER NO CIRCUMSTANCES SHOULD ANY ATTEMPT BE MADE TO MANUALLY LOAD/LIFT THE TOUCH TANK.**

In addition to the above, certain consideration should be made with regard to loading and general handling. It is highly recommended that, when filled, the water barrels are positioned at the **front** of the load area and tightly secured against the van's bulkhead (to minimise the risk of them shifting on braking/acceleration) refer to Fig.1. The barrels should be secured using either the vans locking bars (if present) or the orange and black cargo strap provided (please do not use bungee cords or rope as these can snap/work loose in transit).

Once filled the barrels are extremely heavy (approx. 60kg) and should always be moved using appropriate manual handling techniques. If moving a full barrel any distance please use the red sack barrow provided. It is highly recommended, when using the sack barrow, that the barrel is secured to the frame (i.e. with a cargo strap) particularly if negotiating any steps or obstacles.

Although technically mobile the touch tank should only be moved when empty and by a **minimum of two people**. The touch tank's acrylic construction, while strong, is vulnerable to surface damage and impacts, therefore appropriate care should always be taken when moving and positioning the tank. On occasion it may be necessary to move the tank over lips or low steps; this requires a **minimum of three people using the hand holds located at each corner of the white base** (Fig. 2).

The tank should be positioned centrally in the vans load area (Fig. 3). To secure the tank the supplied (yellow) cargo straps should be used. The purple nylon loops provided should be run through the hand holds at each corner of the base before being looped through themselves (Fig. 4). The hooked ends of the cargo straps may then be attached to these loops (Fig. 5). The opposite end of each cargo strap should then be hooked into the corresponding 'O' clasp (Fig. 6) before the taking up of any slack using the ratchet mechanism (**please do not overtighten these straps as this could result in damage to the tank**). The (four) 'O' clasps provided should be attached to the anchor points on the sides of the van prior to attaching the straps.

Once all four cargo straps are in place (Fig. 3) ensure the tank is secure by attempting to move it, there should be a small degree of movement allowed, i.e. a few centimetres in each direction. During transportation/storage the tank should be covered with the cloths provided.

When driving please take into consideration both the weight and delicate nature of your load and wherever possible try to avoid sudden acceleration/braking.

## 2. Positioning and Set-up

**Before attempting to set up the tank it is strongly recommended that you review the MEH Touch Tank Set-Up and Operation Manual provided.**

In positioning the tank prior to filling ensure that it is sitting on a level, even surface (capable of supporting approx. 400kg) with all four castors in contact with the ground. It is also important that all vent grills remain unobstructed with at least 12 inches of unencumbered clearance; this is particularly relevant for those located around the chiller unit.

Once positioned the touch tank can then be filled. Seawater can be transferred using either the supplied electric pond pump or by bucket, **do not attempted to pour directly from the barrel as significant damage to the tank could result if the container is dropped.**

When the level in the main tank is sufficient to begin overtopping the central overflow (the black tower in the centre of the tank) water should then be added gradually with periodic pauses to allow the level within the sump to settle. Once the level within the sump reaches the appropriate point indicated on the gauge, approx. 2" from the top (Fig. 7) no further water should be add.

Once the central overflow pre-filter is replaced (Fig. 8) and the multi-directional return outflows are positioned level with the surface of the water (Fig. 9) the tank is ready to be turned on.

First ensure that all electrical connections are in place and dry (a dribox is supplied for this purpose). The tank requires its own dedicated 13 amp 240v supply. Turn on the power to the tank, first at the mains, and then at the internal transformer (Fig. 10). To accomplish the latter it will be necessary to remove the front right hand panel using the supplied 3/16 Allen key (the Allen key is stored in a plastic bag within the unit next to the sump). At this point the pump and chiller should start, if this does not occur then it is likely that the 5 amp glass fuse within the transformer has blown and requires replacing (please refer to section 5 'Replacing transformer fuse'). If the pump is running but after 30 seconds no water issues from the return outflows turn the tank off at the transformer and plunge both outflow nozzles below the water line. Wait a further 10 seconds before turning the tank back on. Once you see the trapped air working its way free of the system return the outflow nozzles to level with the surface of the water (Fig. 9) at this point water should issue from both outflows.

Depending on the temperature of the seawater added it will likely be necessary to run the system for a period of time prior to placing animals in the tank (to allow the system to reach optimum holding temperature). This period may range from 2 to 24 hours; consequently, it is recommended that, if possible, the system be set up the day before and allowed to acclimate overnight.

Prior to the addition of any rocks or animals please ensure that the supplied clear mat is positioned on the bottom of the tank to prevent scratching of the acrylic (it will be necessary to weigh the mat down with the rocks provided).

### 3. Maintenance

Due to its self-contained design the touch tank requires very little in the way of upkeep while in use. For short term deployments (i.e. less than 4 days) no maintenance is required. However, if the tank is deployed for an extended period (i.e. over a week) it will be necessary to clean the exterior of the tank and centre overflow filter (warm water only) as well as perform a 10% water exchange (please refer to pages 12 and 13 of the manual; note if natural seawater is used then point 3 is unnecessary).

In addition, during these longer term deployments it will become necessary to feed some of tanks inhabitants. It is strongly advised that animals are transferred to a holding aquaria or large container (such as a cool box or bucket) for feeding. Crustaceans in particular are messy eaters and the feeding of these within the touch tank will result in a reduction in water quality and an increased requirement for cleaning.

### 4. Breakdown

Ensure that all animals have been transferred to their travel containers and that the system is turned off and unplugged (reverse process to that described under section 2). Utilise the supplied pond pump and hosing to siphon the seawater from the main tank into either the barrels or an available drain. Always ensure that the pumps outlet hose is securely positioned in the barrel/drain prior to activating the pump and **never** leave the tank unattended whilst draining.

Once the main display tank has been largely emptied the sump can be drained using the same method. Any residual water remaining in the main tank and sump can be easily removed by placing the sump end of the unit on the wooden step provided. This allows any residual water to collect at opposite end of the tank/sump. Any significant water residue remaining on the interior of the display tank should be removed by blotting with kitchen/blue roll.

If required, the exterior of the tank may be cleaned using a highly dilute solution of washing up liquid and good quality kitchen or blue roll, **do not** use paper towels as these may scratch/scuff the acrylic.

Before attempting to move the tank ensure that the lid and all side panels are secured and the power cord is stowed.

[NOTE: Please check to ensure that no parts or equipment are left behind (in particular the lid of the tank and overflow tower, the overflow pre-filter, etc.) as MASTS will charge for the replacement of any missing items.]

### 5. Replacing Transformer Fuse

In the event that the tank does not start up as described in section 2 or ceases to run at any point then it is likely that the 5 amp glass fuse within the transformer unit has blown.

Replacement fuses can be found in the padded envelope in the supplied dibox. Firstly ensure all power to the tank is turned off and unplug from the mains. Remove the front right hand panel and side panel (the one from the side of the unit where the chiller is located) using the supplied 3/16 Allen key (the Allen key is stored within the unit in a plastic bag next to the sump).

The fuse to be replaced is located in the rear of the transformer (Fig. 11). There are two black plastic, ridged knobs, one marked 120v the other 240v, it is the 240v (left-hand) fuse which requires replacement. No tools are required, simply unscrew the 240v knob (counter clockwise) the fuse should come free with the knob (Fig. 12). Check the fuse (the glass should be slightly blackened and the wire broken if the fuse has blown) and if blown replace. Check that the unit is functional, i.e. reconnect to the mains, turn on power at the mains and then turn on power at the transformer (Fig. 10) before replacing the side panels.

**In the event of any technical problems outside of that described in section 5 above, please contact Dr John Thompson on 07753 310036.**

**Fig. 1**



**Fig. 2**



**Fig. 3**



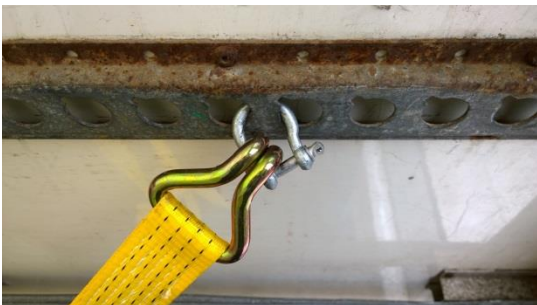
**Fig. 4**



**Fig. 5**



**Fig. 6**



**Fig. 7**



**Fig. 8**



Fig. 9



Fig. 10



Fig. 11



Fig. 12

