

## Supplementary material

### Low-cost device for retrieval of moorings deployed with underwater remote release systems

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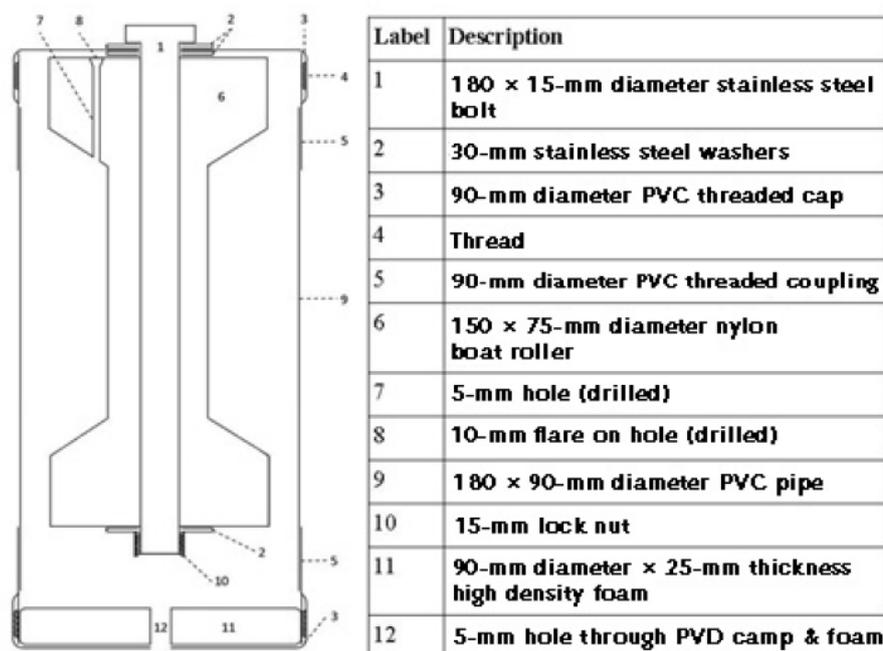
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#### Detailed description of retrieval pod

**Table S1. The following equipment is required**

• One 180 × 90-mm diameter PVC tube	• One 150-mm boat trailer roller
• Two 90-mm diameter PVC threaded couplings with caps	• One 180 × 15-mm diameter stainless steel bolt
• PVC cement	• Three 30-mm stainless steel washers
• 20 m of 400-kg, 3-mm diameter Spectra cord	• One 15-mm stainless steel lock nut
• Electric drill with 4-, 10-, 15- and 19-mm bits	• 90-mm diameter foam plug
• 15-mm spanner	• Vice
• Duct tape	• 40-mm cable ties
• Hot glue gun	• Antifoul paint



To assemble, glue the threaded couplings to the end of the PVC pipe and drill a 19-mm hole in the centre of one coupling cap and a 5-mm hole in the other. Drill a 5-mm hole through the centre of the foam plug and glue it inside one end of a threaded coupling so it sits flush with the threaded edge. Drill a 5-mm hole through the lip of the boat trailer roller and drill a 10 mm-deep flare on the outer side. Caulterise the ends of the cord and thread one end through the hole in the boat roller and tie an overhand

knot in the outside end to secure. The knot should sit within the flare of the hole and be flush with the outside of the boat roller. Pass the stainless steel bolt through the washers and the 19-mm hole in the coupling cap, position the boat roller over the bolt (cord attachment end towards cap). Mount the head of the bolt in a vice and fasten with the lock nut. Once roller is fixed in place, firmly and neatly wrap the cord around the roller. Do not spin the roller to wrap the cord as it causes knuckles to form when the cord is released which can result in entanglement. When the cord capacity of the roller is met, use a small amount of hot glue to secure the tail to the roller to prevent unravelling.

Insert the roller assemblage into the PVC tube, threading the cord tail through the holes in the foam plug and the remaining coupling cap. Tightly screw both coupling caps to the PVC tube. To mount the retrieval pod, align with the receiver so the cord tail faces down. Use large plastic cable ties to attach the pod firmly to the acoustic receiver or other equipment. Wrap the pod and receiver with duct tape and paint the tape, exposed PVC and receiver with antifoul paint. A heavy duty stainless steel swivel between the receiver and the anchor connection can be used to allow rotation in water currents. Fasten the cord tag to the shackle that attaches the release lug to the swivel.

To operate a retrieval pod, activate the acoustic release of the VR2AR. This will disconnect the primary anchor connection, transferring the float's buoyancy onto the secondary connection of the pod. The lift from the float will break the hot glue fastener on the cord, allowing it to unravel from the spool as the receiver floats to the surface. When the receiver has been brought on board, the mooring anchor and fixings can be hauled to the surface using the 400-kg breaking strain cord.