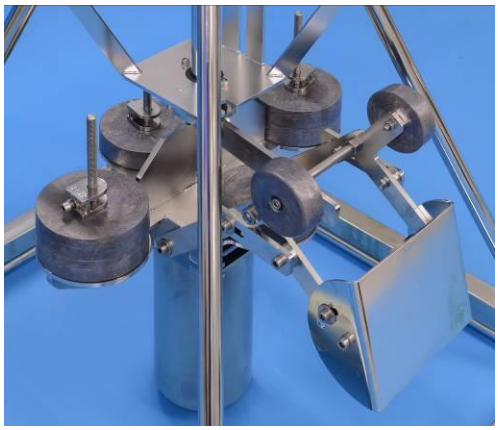
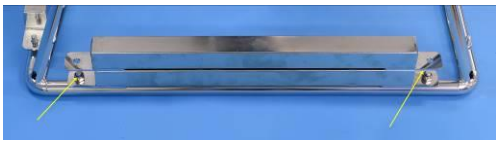
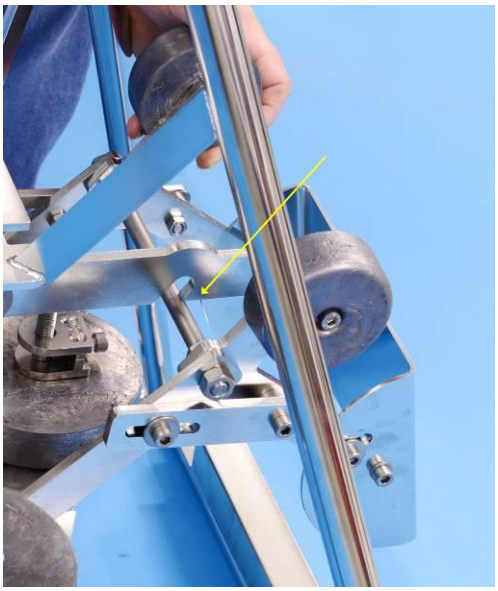
KC Haps
Model 50.000

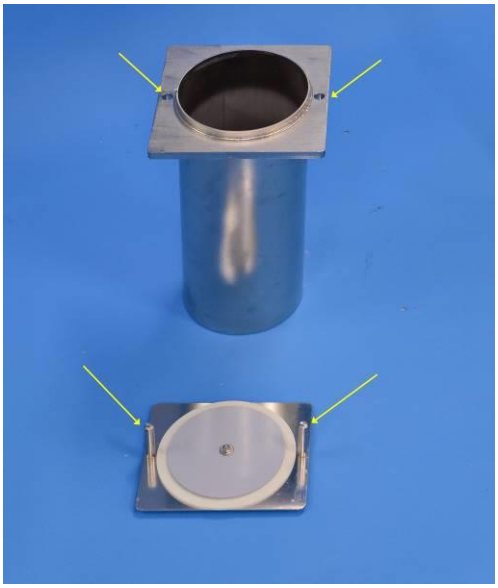
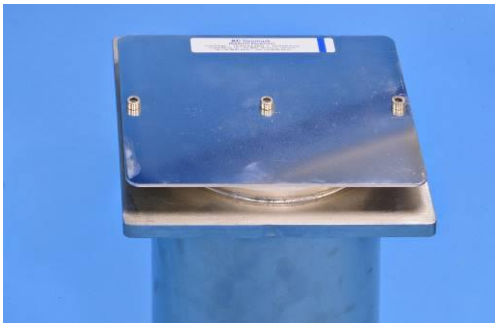
Manual

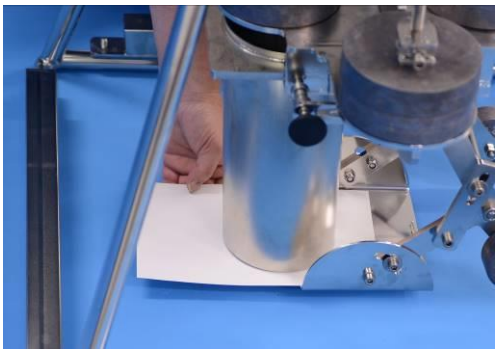
KC Denmark A/S

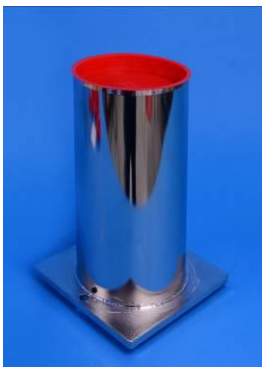
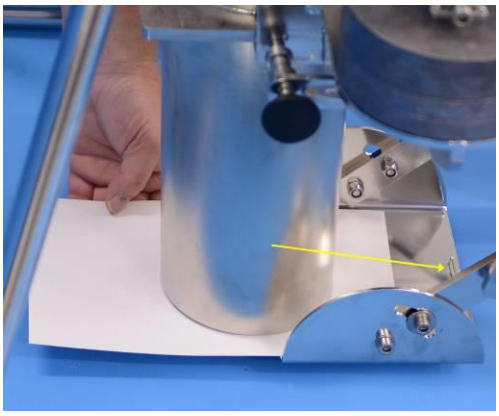
Research Equipment
Limnology • Oceanography • Hydrobiology

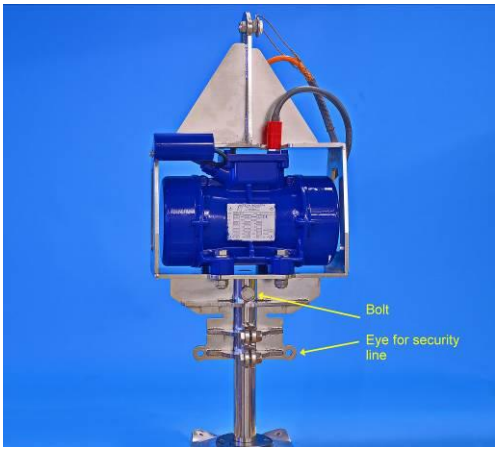
	Manual for Haps	Model no. 50.000
	Caution The Haps is very dangerous in unskilled hands, and you must take serious precautions to avoid accidents. KC Denmark A/S is not, and cannot be held, responsible for any damage(s) made to equipment or to operators who ignore safety precautions or because of misuse or wrong operation.	
	Preparing the Haps	
1	Caution **IMPORTANT:** Be sure the automatic releaser is in lock position (lock grip in function). <u>Max. operating depth is 200 m to avoid collapse of the releaser.</u> You can extend the operating depth to full oceanographic depth (>6000 m) by removing the automatic releaser. The modification demands a slightly different procedure: When you raise the Haps from the sea, it must remain on the winch, and you must remove the sample tube **<u>before lowering the Haps to the deck</u>**. Otherwise, the Haps will sink to the deck and prevent removal of the sample tube.	

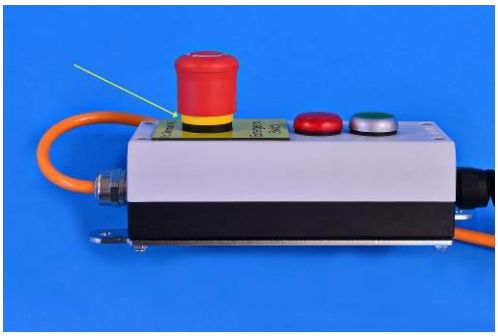
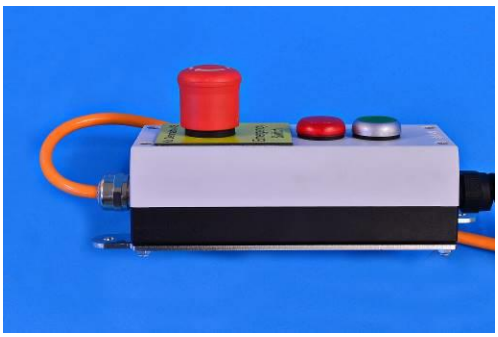
2	Standard delivery comes with 4 pcs of lead weights, each 5 kg. The platform supports 10 lead weights.	
3	The horizontal frame comes with 4 pcs lead weights, each 10 kg. Using threaded spacers with bolts, you can add extra 4 weights.	
4	Lift the shovel's horizontal bar into the locking arm so the shovel plate remains in open (vertically) position.	

5	The bar in locked position.	
6	Attach the non-return flap on top of the sample tube, aligning the two pins into the corresponding holes, see next photo.	
7	The non-return flap is in correct position.	

8	Pull and hold the black release knob towards the outer frame and you can now slide the sample tube into the rails. Once the tube is in position, release the spring-loaded knob and it will secure the sample tube.	
	Retrieving the Haps	
9	As soon as the Haps is retrieved from the sea, make sure the automatic releaser is in lock position (horizontal). If you have removed the releaser before deploying the Haps, see item #1, the Haps must remain on the winch until you have removed the sample tube.	
	Emptying the sample tube	
10	If the sediment is very soft, you may insert and hold a thin plate while removing the sample tube.	

11	Sample ejection aggregate (optional). Remove the sample by slicing. Insert the sample tube at top of the extruder and for every turn of the handle, a layer of 5 mm of is released, ready for slicing.	
12	If you want to store the samples for later analysis, you can close the sample tubes with red caps, our order no. DBD-131. The cap fits for the inner side of the steel tube and for the outer side of the Polycarbonate tubes.	 
	Adjusting the shovel	
13	1. Insert the sample tube. 2. Loosen all bolts in the shovel and the corresponding arms. 3. Insert a thin plate of metal or hard cardboard with a thickness of 2 mm. A thinner plate of 1,5 mm can be used, but the clearance between shovel and sample tube becomes very narrow and may cause malfunction. 4. Lower the Haps to the floor so the sample tube hits the plate. 5. Push the sample tube against the mechanical stop shown with an arrow. Some old models of the Haps may not have this stop; then you must align the shovel by centring the sample tube at the middle of the shovel. 6. Tighten all bolts and the Haps is ready for use.	

	Adding the vibrator	
13	Unscrew the bolt and remove the lifting hook from top of the Haps.	
14	Attach the vibrator unit on top of the bar. Insert the bolt from the removed top part into the hole so it secures the vibrator to the vertical bar, see photo. It is very important you insert the bolt to prevent loss of the Haps itself. <u>Each time the bolt is unscrewed it is highly recommended adding a new lock nut.</u> Tighten the bolt so it is fully screwed into the lock nut; the bolt is only used for preventing loss of the Haps. Tighten the 4 bolts in the brackets, and ensure the vibrator is firmly secured to the vertical bar. If you wish, you may also attach a security wire from one of the eyes down to the Haps.	
15	The vibrator demands a power supply of 230 V AC/50 Hz, single phase. The power cord comes without a connector and you must be aware of correct wiring for the main supply; see below: Connections: Blue = N Brown = L Green/Yellow= Ground on the vibrator/manoeuvre box	

16	Fasten a steel wire in the eye on top of the vibrator and you are now ready to deploy the Haps. When the Haps reaches the seabed, push the green knob, and the vibrator will start. At the same time, the red lamp is illuminated. If the vibrator does not start, check the position for the emergency knob. If it is in the lower position, as seen on item 18, turn the emergency knob clockwise and pull it towards you. A yellow ring becomes visible, see item 17. Pushing the emergency switch will force the vibrator to stop immediately.	
17	The emergency stop allows operating the vibrator; yellow ring is visible.	
18	The emergency knob is actuated, causing the vibrator unit to stop.	

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