

KC Multi corer, 4 x Ø100 mm
Model 71.500

Manual

KC Denmark

Research Equipment

Limnology • Oceanography • Hydrobiology

Contents

Item	Description	Page
	Attention – A word of safety	3
1-9	Preparation	4-7
3	Securing the lid	5
10-13	Adjustable penetration depth	7-8
14-17	Extending the corers footprint	8-9
18	The hydraulic damper	10
19-20	Deploying the multi corer	11
21-24	Securing and ejecting the sample	11-12
25	Storing	13
26	Troubleshooting and maintenance	13

**Manual for
Multi corer, 4 x Ø100 mm**

**Model no.
71.500**



Caution

This multi corer is very dangerous in unskilled hands and serious precautions must be taken to avoid accidents.

The safety clamp must always be in the secured position and must be released only, when the multi corer is outside the rail of the boat.

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.





Never walk under the multi corer, when lifted by the winch.




The photo shows an old model with 2 pcs of safety clamps.


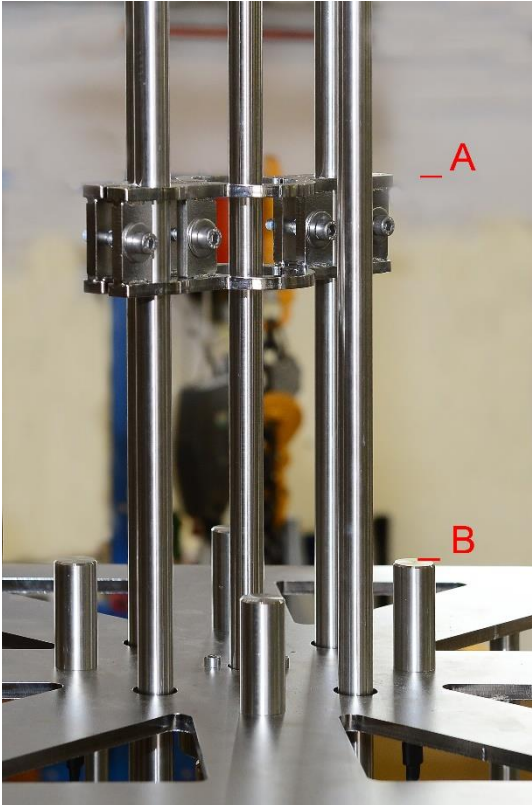



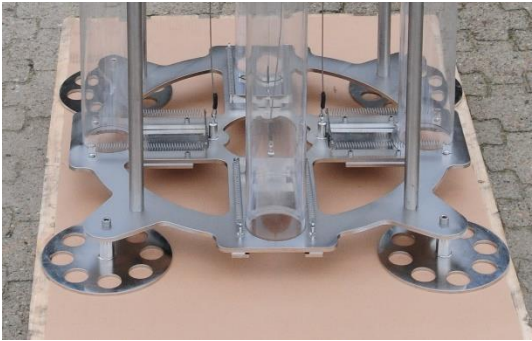

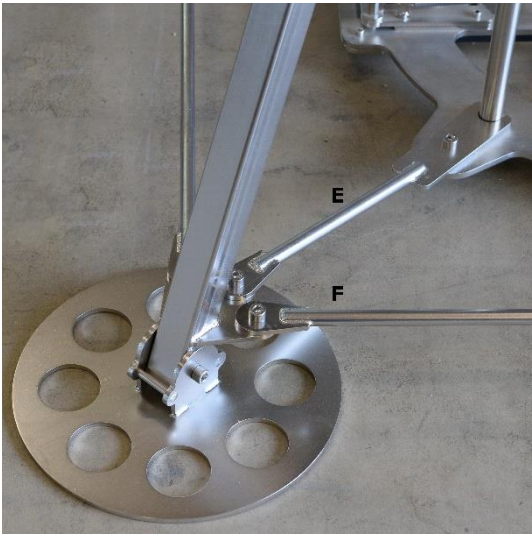
	Preparation	
<p>1</p>	<div data-bbox="236 539 352 667" data-label="Image"> </div> <p><i>The actual design comes with only one safety clamp.</i></p> <p>Attach the safety clamp at the top of the corer, ensuring the handle is locked properly at “1”.</p> <p>The photo shows an old model with 2 safety clamps.</p>	<div data-bbox="956 217 1415 1211" data-label="Image"> </div>
<p>2</p>	<p>The handle behind the lid secures the steel wire from top of sampler to the bottom release system.</p> <p>Press down the handle, ensure the wire is taut and release the handle.</p>	<div data-bbox="911 1276 1445 1827" data-label="Image"> </div>

3	<p>Press the spring-loaded bottom lid "H" towards the centre of the sampler.</p> <p>The security pin "I" at the end of the steel wire is inserted into "J", so the bottom lid is locked in open position.</p> <div data-bbox="236 495 352 595" data-label="Image"> </div> <p>Caution When loaded you must avoid an unattended release as the mechanism may cause injury to people.</p>	
4	<p>Open the quick release bracket for the tube.</p>	
5	<p>Tilt the sample tube to the side, so you can insert it into the hole, lower the tube for 1 cm, approx. Lift and align the tube to vertical position.</p>	


6	<p>The sample tube has a reinforcement at the top.</p>	
7	<p>The reinforcement of the tube is aligned at the quick release.</p> <p>Check, if the lower end of the tube is inserted correct (item 8).</p>	
8	<p>Tighten the handle to secure the tube.</p> <p> Caution Do not over tighten the handle, as you may damage the tube.</p>	





9	<p>After attaching the required numbers of lead weight, you must tighten all locks for the lead weights.</p>	
	<p>Adjustable penetration depth</p>	
10	<p>Before mounting the bracket for adjustable penetration depth (optional), you must ensure, that the security clamp is placed correctly (see item 1).</p>	
11	<p>The bracket is attached to the bars. For full penetration, leave the bracket as shown. Fasten the 4 bolts firmly to keep the bracket in place.</p>	

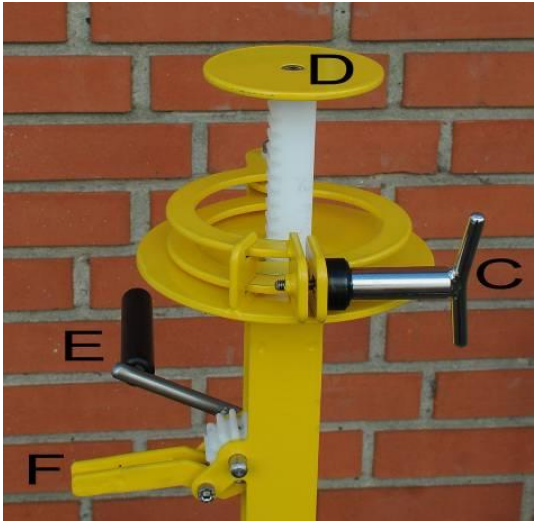

12	<p>For a shorter penetration move the bracket upwards in vertical position and fasten by means of the 4 bolts. See next item.</p>	
13		
	Extending the corers footprint	
14	<p>The extension kit 71.500 EXT (optional) ensures a larger footprint of approx. 140 x 140 cm giving more stability to the corer when used in deep waters.</p>	


15	<p>Lift the multi corer a few centimetres above the ground.⁷</p> <p>Remove 4 legs.</p>	
15	<p>On the top plate, unscrew one of the bolts 1-4, attach one leg and mount the bolt again without tightening. Add the corresponding bolt A-D.</p> <p><i>For mounting of older multi corers, you must drill the holes A-D (M10 mm).</i></p> <p>Repeat for all 4 legs.</p>	
16	<p>Add the forks E and the spacers F. Tighten all bolts inclusive the bolts on the top plate.</p>	

17	The extension kit is in place.	
----	--------------------------------	--

	The hydraulic damper	
18	<p>The multi corer has an automatic, hydraulic damper located at the centre.</p> <p>Upon lowering to the sea, the damper is filled up with water through the inlet "K"</p> <p>When the multi corer hits the seabed, the water is forced through the outlet "L", causing a delay before the tubes penetrate the sediment.</p>	

	Deployment	
19	 <p>The multi corer is now ready for deployment. When the rack is outside the bulwarks, you can remove the safety clamps "1".</p> <p><i>The photo shows an old model with 2 safety clamps.</i></p> <p>If you must remove the security clamp while the sampler is on deck, you must avoid an unattended release to protect against injury.</p>	
20	<p>The sampler can now be deployed to the seabed, and the hydraulic damper will ensure a smooth sample taking to avoid a shock wave during penetration.</p> <p>When hoisting the sampler, the sediment tubes will be withdrawn from the sediment, and the lids will close to protect the samples from exit.</p>	
	Securing the multi corer	
21	 <p>After the sample has been taken and you hoist the multi corer, it is very important to mount the safety clamp before doing any job on the sampler.</p> <p><i>The photo shows an old model with 2 safety clamps.</i></p>	
	Securing and ejecting the sample	
22	<p>For emptying the sample tube, you must hold a thin plate at the end of the tube to keep the sample while removing the tube.</p>	

23	<p>The sample extruder is optional.</p> <ol style="list-style-type: none"> 1. The sample tube is placed on the piston (D). 2. Tighten the handle (C) to fasten the tube. 3. Turn the handle (E) and remove the desired height of sample. 4. To lower the piston at its start position, you must lift the pawl, (F) and turn the handle backwards. 	
24	<p>A complete unit, ready for ejecting the sample.</p>	

	Storing the multi corer	
25	 <p>Caution</p> <p>Before storing the sampler all parts must be rinsed carefully with fresh water to avoid rust and corrosion.</p> <p>You can store the sampler in two ways:</p> <ol style="list-style-type: none"> 1. In loaded position having both safety clamps attached. 2. You may remove the safety clamps and the sample tubes. By use of the winch, lower the multi corer slowly, so it will empty the hydraulic damper. 	

	Troubleshooting and maintenance	
26	<p>When using the corer, you might encounter problems with the sampling.</p> <p>If the sediment is too soft, it will not be able to take a correct sample, as you will need a "bung" of hard(er) sediment to hold the sample inside the core tube. Otherwise, the soft sample will seep away because of the small space of app. 1 - 2 mm between the bottom of the sample tube and the moveable closing mechanism. (Will depend on the change of temperature from sea deck to bottom of the sea).</p> <p>If the depth of penetration is too low, it will be necessary to add more weights to the weight station at the top of the rack.</p> <p>When you raise the sampler, it is important to have a reasonable weight on the rack to ensure the closing mechanism will work correctly. If the weight of the rack is too small and you raise the sampler, the rack will begin to rise before the closing mechanism has locked and secured the sample. Please add more weights to the rack.</p> <p>For a smoother operation we recommend regularly use of silicone grease on the vertical bars, where the parts move up and down.</p>	

Rev.: May 17, 2023 - lkj



Research Equipment
Limnology • Oceanography • Hydrobiology

E-mail: kc@kc-denmark.dk website: <http://www.kc-denmark.dk/>
 Holmbladsvej 17-19, DK 8600 Silkeborg, Denmark. Tel. +45 86 82 83 47. Fax +45 86 82 49 50
 Bank: Sydbank. SWIFT: SYBKDK22 IBAN DK5070460000104832
 VAT no. DK 29 61 96 62