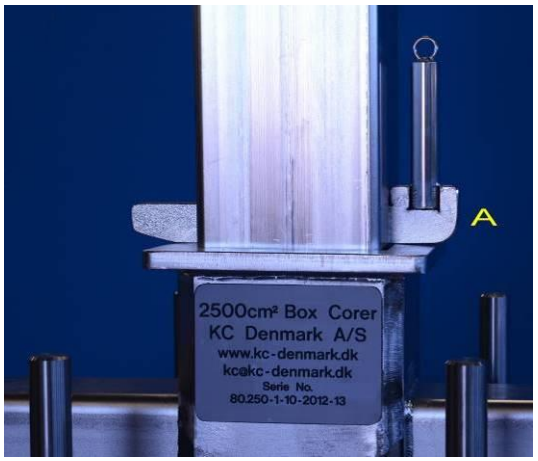
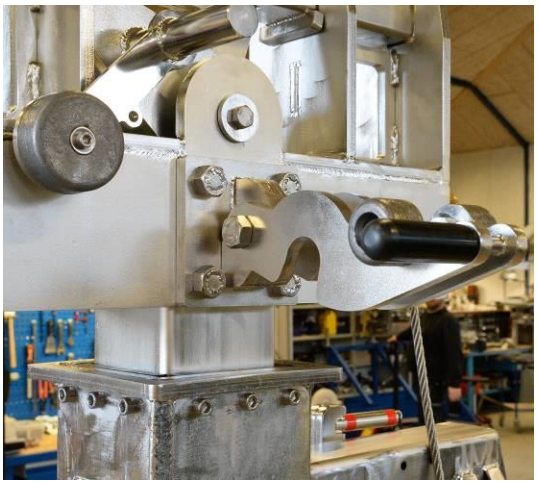
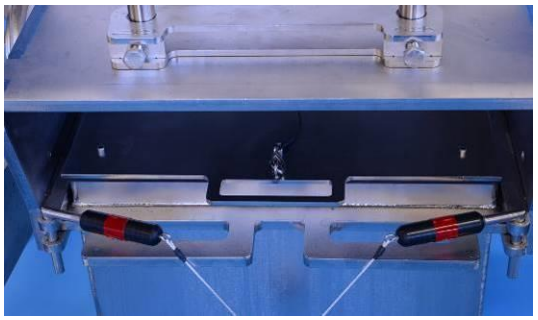
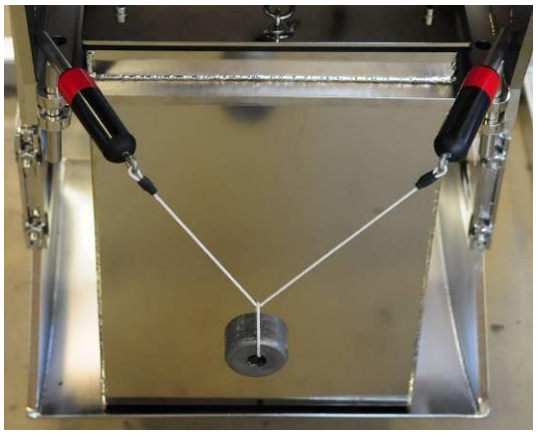
Box Corer
Model 80.250

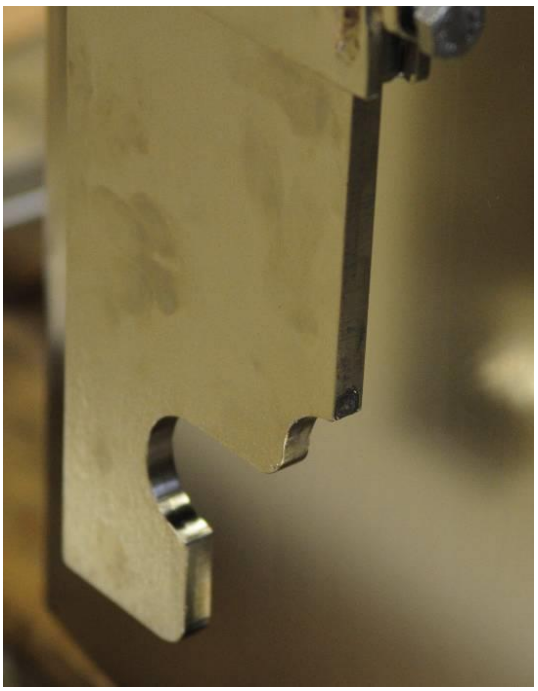
Manual

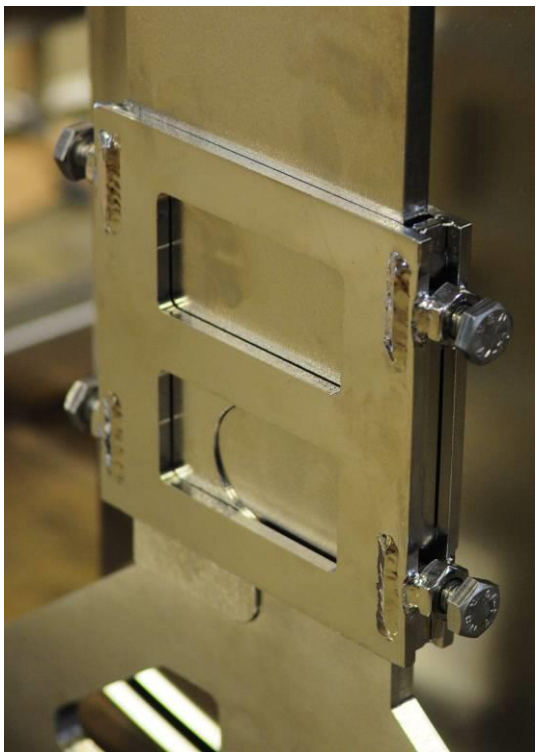
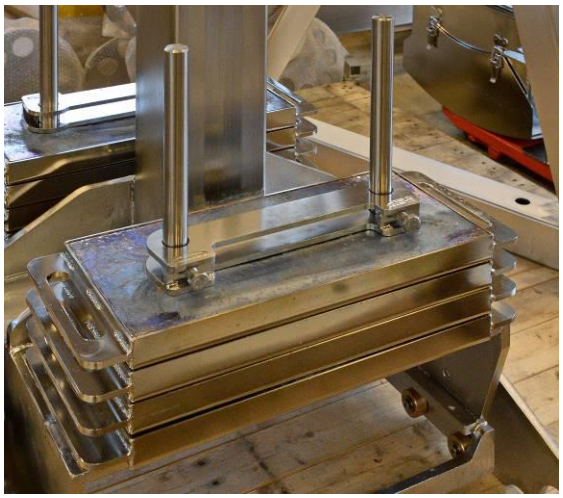
KC Denmark A/S

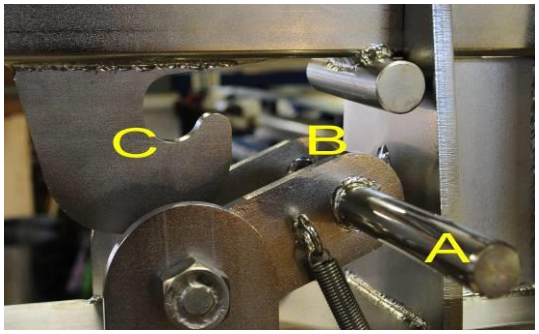
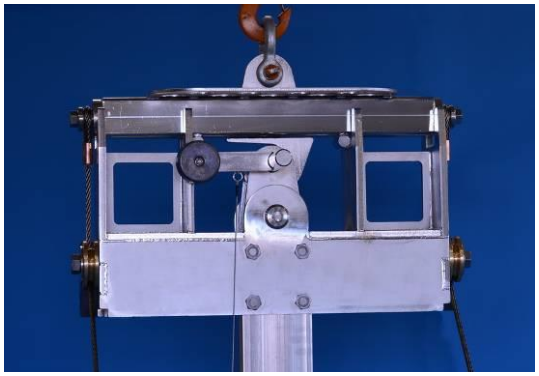
Research Equipment
Limnology • Oceanography • Hydrobiology

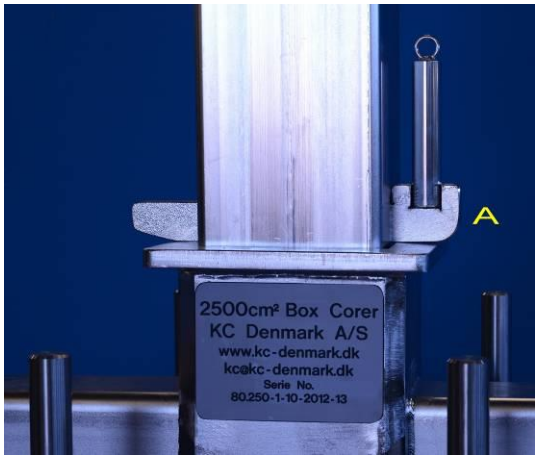
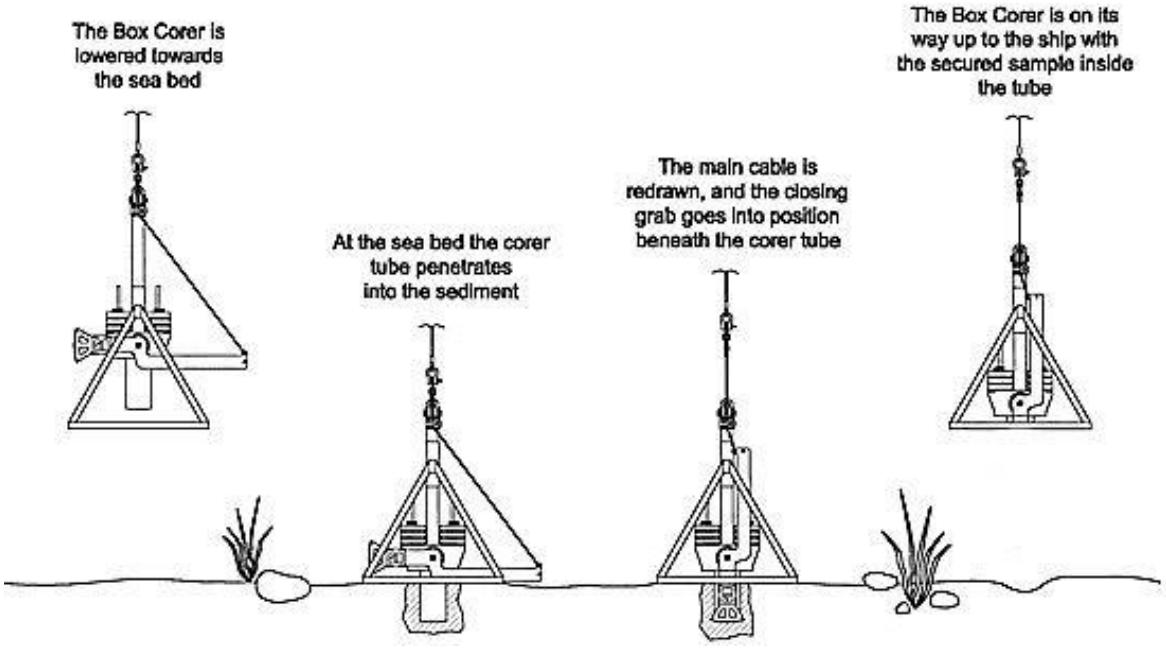
	Manual for Box Corer	Model no. 80.250
	Caution **This box corer is very dangerous in unskilled hands and serious precautions must be taken to avoid accidents.** **KC Denmark A/S is not, and cannot be held, responsible for any damage(s) made to equipment or to operators who ignore safety precautions or because of misuse or wrong operation.** **Never walk under the box corer, when lifted by the winch.**	
	Preparation:	
1	Caution **The safety pawl must be inserted, and it is very important, that the lever arm (A) will lock correctly.** **Before each deployment: Inspect the copper ferrules and the 12 mm steel wires very thoroughly to detect wear and corrosion damages. If both wires fail, you will leave the main rack on the sea floor!**	

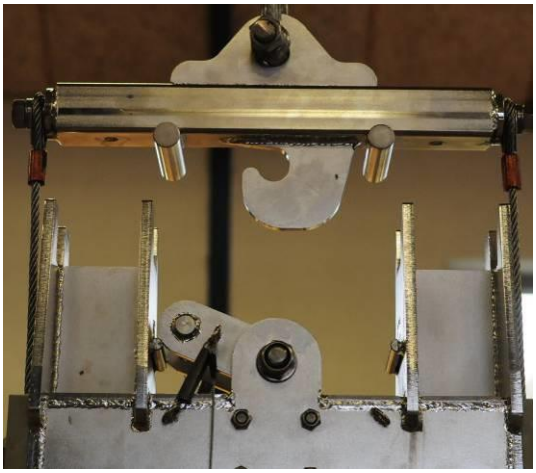
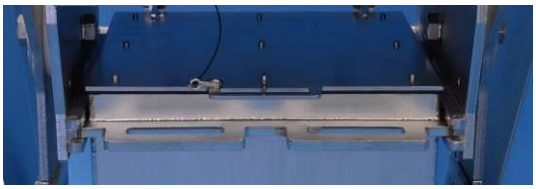
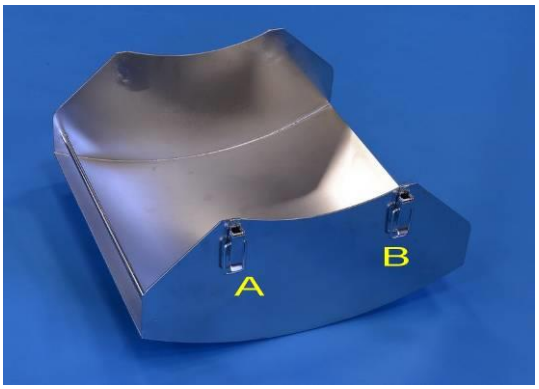
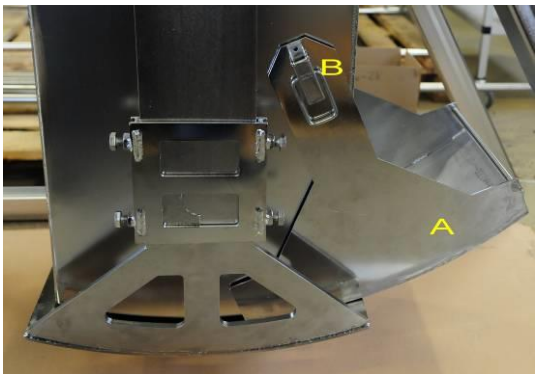
2	Caution **The two arms that hold the outer shovel can be lifted in vertically position so that the horizontal crossbar can be locked in the bracket. When opening the locking mechanism, take serious care as, the weight will push down the arms with great force, which can cause injury. Also, be aware that the opposite end of the outer shovel swings up on the back of the box core, where it can also cause damage to personnel or equipment.**	
3	Push the sample tube into the two guiding rails; you may use the hydraulic carriage, follow items 23-26 in reverse order.	
4	Insert 2 locking clamps to secure the sample tube.	

5	The box corer has 2 arms for fastening the outer shovel.	
6	Align the outer shovel to the notch of each arm.	

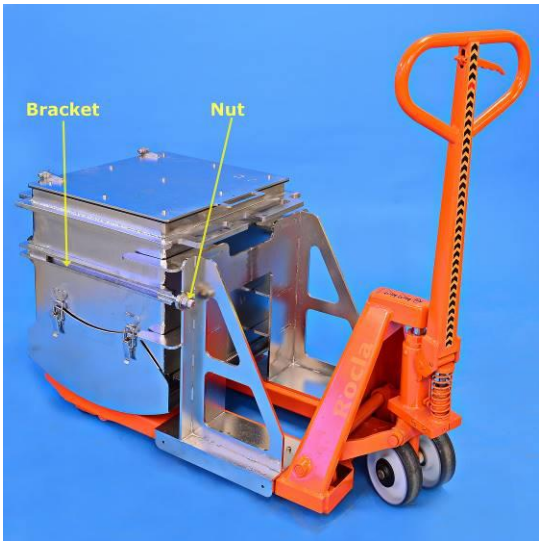
7	Push the locking clamps downwards so they will cover the notches. Tighten the bolts firmly to avoid loss of the outer shovel.	
8	Force the arms for the shovel into horizontal position. Caution **Take care that no body parts are getting jammed.**	
9	Add the desired number of lead weights and secure with the brackets. <u>The lead side must point upwards.</u> You must add an equal number of weights at both sides.	

10	Attach the lifting hook from the winch and secure it to the upper part of the box corer.	
11	While pushing "A" upwards and slowly hoisting the box corer with the winch, force "B" into the notch "C", so the main wire from the winch is taut. Caution **During the hoisting you must keep a safe distance to "B and C" to avoid any injury.** The box corer is now loaded, ready for deployment to the sea.	
12	The pawl is now secured.	

13	Caution **Remove the security pawl "A" (preferable when the box corer is outside the bulwarks to avoid injury by an unattended release).**	
14	The box corer is ready for deployment. Lower the box corer with a controlled, reasonable speed of 1-2 m/sec. Reaching the seabed, the releaser is activated, see item 16 for a brief description.	
15		

16	As soon as the box corer hits the seabed, the upper part is released from the main rack. Upon retrieval, the upper part will hold the box corer by means of the two steel wires. When the box corer returns to the deck, align the top part into the forks. Caution **Repeat item "11" and hoist the box corer slowly and insert the safety pawl so it is secured in its position.**	
	Emptying the sample tube	
17	1. Remove the two locking clamps (item 3) 2. Remove the snap hook on the lid of the sample tube (item 11).	
18	To secure the sediment sample you will need the inner shovel. It had 2 locking hinges "A" and "B" on each side.	
19	1. Force the inner shovel "A" between the sample tube and the outer shovel. 2. Lift up the locking hinges "B" while inserting the shovel (otherwise, there is no room for the locking procedure). 3. Secure the 4 locking hinges to the sample tube.	

20	The inner shovel has now been fastened by the locking hinges.	
21	Force the outer shovels arm into horizontal position. Caution **Take care that no body parts are getting jammed.**	
22	Use the hydraulic carriage for removal of the sample tube.	

23	1. Push the carriage beneath the sample tube. 2. By pushing the handle "A" downwards, you can elevate the forks by moving the lever "B" forth and back. 3. Forcing the handle "A" in an upwards direction, will release and lower the forks. A gently pressure on "A" will lower the forks very slowly.	
24	1. Push the lever B into horizontal position, so you can push the carriage all way in. 2. When located under the sample tube, you must elevate the forks gently, until the sample tube gets loose. 3. Once the carriage is placed underneath the sample tube, add the two brackets (see item 22 and 25) and fasten the nuts, so the box is secured. 4. Now the sample tube is ready for transportation.	
25	The sample tube has been removed from the box corer.	

Maintenance

All parts of the box corer can be rinsed using salt water or fresh water. Regular cleaning with fresh water is recommended and all moveable parts must be moved individually to ensure all dirt has been removed.

Before storing all parts must be rinsed thoroughly with fresh water to avoid corrosion

Safety information

All maintenance, inspection and repairs must only be done by an expert maintenance technician fully familiar with the attendant hazards.

Persons charged with working on the box corers and the accessories must be trained specially for the purpose with special abilities and experience in this area as well as being equipped with the appropriate tools and individual safety equipment. Failure to meet these requirements constitutes a risk to personal health and safety and economic damages.

When working on the unit in areas which are difficult to access or hazardous, ensure that adequate safety precautions have been taken for the operator and others in compliance with the provisions of law on health and safety at work.

Always replace worn component with original spare parts.

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