



Plankton Pump for 6000 m

Model 23.590

Manual

KC Denmark A/S

Research Equipment
Limnology • Oceanography • Hydrobiology

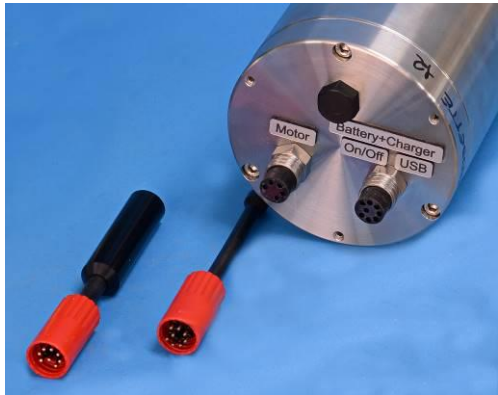
Plankton Pump for 6000 m







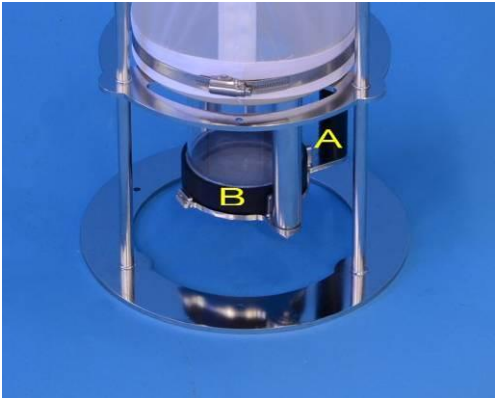
Caution




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.

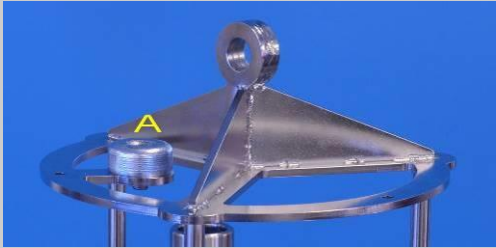

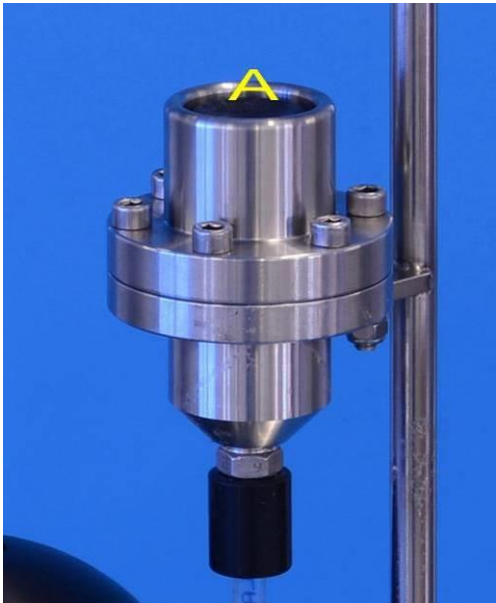

Table of contents	Page
Charging and preparation	2
Connect motor cable, charger and USB cable	3-4
Dummies	3-4
Plug for starting the pump	3-4
Emptying the collecting bottle	4
How to handle the pump	4
Zinc anode	5
Pressure compensation	5
SubConn handling instructions	6-9
Maintenance	10
Safety information	10

Item	Charging and preparation	
1	<p>The battery cylinder has 2 Subconn connectors:</p> <ol style="list-style-type: none"> 1. Always grease the connectors with Molykote, see pg. 6-8 2. Power supply to motor (5 pins - MCBH5F). 3. Charging the battery (8 pins - MCBH8F). Once the battery is charged, you also use this connector for programming by USB. 4. The photo shows the programming plug and a dummy to the right; the dummy is not part of the standard delivery. 	
2	<ol style="list-style-type: none"> 1. Connect the charger to ensure the battery is fully charged. Allow up to 10 hours of charging 2. The charger has a built-in circuit to prevent overcharging the battery. 3. The battery charger is useable for a main voltage between 100 and 240 VAC. 	

3	Connect the cable from the motor to the battery cylinder, connector 1 .	
4	<p>A is connected at top of the motor. B is inserted into 1 on the battery cylinder. You may secure the motor cable to the vertical bar with 2 plastic strips, C and D.</p>	
5	<p>The delivery includes a laptop with preinstalled software. Turn on the laptop. Connect the USB cable from the laptop to the USB connector on the battery cylinder. Start the application via the icon on the desktop, adding the requested data for start/stop etc. Disconnect the cable and once you are ready to deploy the pump, insert the 8-pins programming plug into the battery cylinder. The plug is shown in front of the laptop; please also refer to item 6, next pg. Once inserted, the programmed session will start. Deploy the pump.</p>	

6	<p>Once the plug is inserted, the actual programming cycle will start within 1 min.</p> <p>It is possible implementing a longer delay in the program so that the pump first starts pumping after a set amount of time. Another option is a trigger system done by pressure transmitter.</p> <p><i>(Pressure transmitter is not included, please ask KC Denmark A/S for more information).</i></p>	
7	<p>When the pump is retrieved back on deck, you can empty the collecting bottle.</p> <p>Force down the spring loaded handle A, and you can remove the bottle B.</p>	

	Handling the pump	
8	 <p>Caution</p> <p><u>Do not lift the pump here</u>, you may damage the net itself or cause a stretch of the plankton cloth.</p>	
9	<p>Lift the pump here as shown.</p>	

10	<p>The 4 zinc anodes, A, at the top will prevent corrosion of the pump when used in salt water. Replace the zinc anodes when they are eroded.</p>	
11	<p> Caution</p> <p>The pressure compensation, A, will compensate the over pressure during the deployment. It is important, to rinse the membrane A regularly with fresh water.</p> <p>To extend life of the membrane please don't expose to direct sunlight for a long time.</p> <p>The motor and the pressure compensation contains Fluorinert FC-770 liquid. If you need to add extra liquid please contact KC Denmark A/S for more information.</p>	
12	<p> Caution</p> <p>It is highly recommended, that the pump isn't exposed to direct sunlight for a longer period. The battery cylinder and the motor will accommodate the heat. Battery's life will increase and the Fluorinert in the pump's house may expand, so it can break the membrane for the pressure compensation.</p>	

SubConn® handling instructions

Follow these instructions carefully to ensure correct use of your SubConn® connectors.

Handling

- Always apply grease before mating (see next page)
- Disconnect by pulling straight, not at an angle
- Do not pull on the cable and avoid sharp bends at cable entry
- When using a bulkhead connector, ensure that there are no angular loads
- Do not over-tighten the bulkhead nuts
- SubConn® connectors should not be exposed to extended periods of heat or direct sunlight. If a connector becomes very dry, it should be soaked in fresh water before use

Untagged cable and pigtail colour coding

2 - 25 pin connectors (excluding 3 pin connectors):

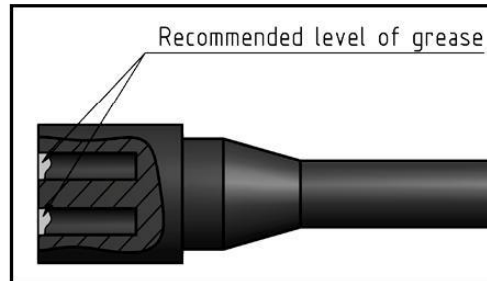
1 Black	7 White / Black	13 Red / White
2 White	8 Red / Black	14 Green / White
3 Red	9 Green / Black	15 Blue / White
4 Green	10 Orange / Black	16 Black / Red
5 Orange	11 Blue / Black	17-25 Tagged numbering
6 Blue	12 Black / White	

3 pin connectors:

1 Black	2 White	3 Green
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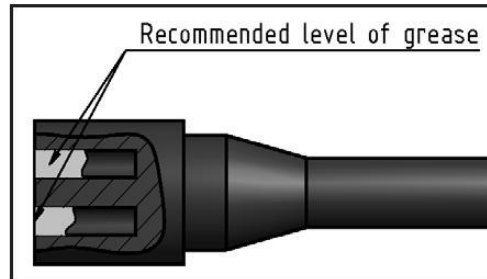


Greasing and mating above water (dry mate)



- Connectors must be greased with Molykote 44 Medium before every mating
- A layer of grease corresponding to minimum 1/10 of socket depth should be applied to the female connector
- The inner edge of all sockets should be completely covered, and a thin transparent layer of grease left visible on the face of the connector
- After greasing, fully mate the male and female connector in order to secure optimal distribution of grease on pins and in sockets
- To confirm that grease has been sufficiently applied, de-mate and check for grease on every male pin. Then re-mate the connector

Greasing and mating under water (wet mate)



- Connectors must be greased with Molykote 44 Medium before every mating
- A layer of grease corresponding to approximately 1/3 of socket depth should be applied to the female connector
- All sockets should be completely sealed, and transparent layer of grease left visible on the face of the connector
- After greasing, fully mate the male and female connector and remove any excess grease from the connector joint

Cleaning

- General cleaning and removal of any accumulated sand or mud on a connector should be performed using spray based contact cleaner (isopropyl alcohol)
- New grease must be applied again prior to mating

Scan to access
SubConn® greasing
and cleaning
instruction videos



Bulkhead Connectors

Tightening force


Type	Material	Rec. Torque - Nm
3/8" - 24 UNF	Brass, Aluminium	4,0
	Stainless Steel, Titanium	6,0
	Non-metallic (Peek)	2
7/16" - 20 UNF	Brass, Aluminium	10,0
	Stainless Steel, Titanium	14,0
	Non-metallic (Peek)	4,2
1/2" - 20 UNF	Brass, Aluminium	15,0
	Stainless Steel, Titanium	21,0
	Non-metallic (Peek)	5,2
5/8" - 18 UNF	Brass, Aluminium	29,0
	Stainless Steel, Titanium	41,0
	Non-metallic (Peek)	10,0
3/4" - 16 UNF	Brass, Aluminium	44,0
	Stainless Steel, Titanium	63,0
	Non-metallic (Peek)	15
7/8" -14 UNF	Brass, Aluminium	60
	Stainless Steel, Titanium	80
	Non-metallic (Peek)	20

Use of Loctite

- Always use Loctite 5910 to lock non-metallic (Peek) connectors
- For locking metallic connectors, the use of Loctite 243 is recommended

For further support and advice, please contact your local SubConn® distributor or MacArtney (www.macartney.com)

07-2013

	Maintenance
	All parts of the plankton pump must be rinsed using fresh water. Regular cleaning with fresh water is recommended and all moveable parts must be moved individually to ensure all dirt has been removed.
	Safety information
	 <p>Caution</p> <p>Disconnect power supply to avoid any unattended operation causing accident to personnel and pump.</p> <p>An expert maintenance technician fully familiar with the attendant hazards must only do all maintenance, inspection and repairs.</p> <p>When working on the unit in areas, which are difficult to access or hazardous, ensure to take adequate safety precautions for the operator and others in compliance with the provisions of law on health and safety at work.</p> <p>Replace worn component with original spare parts.</p>

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