

Manta Net, ver. 2.0  
Model 23.440 – 30 x 15 cm

Manual

**KC** Denmark A/S

Research Equipment  
Limnology • Oceanography • Hydrobiology


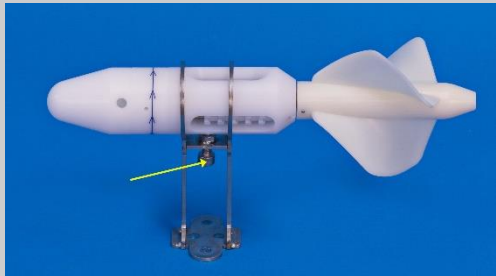
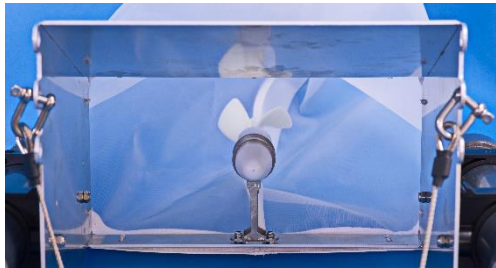
## Manta Net – 30 x 15 cm

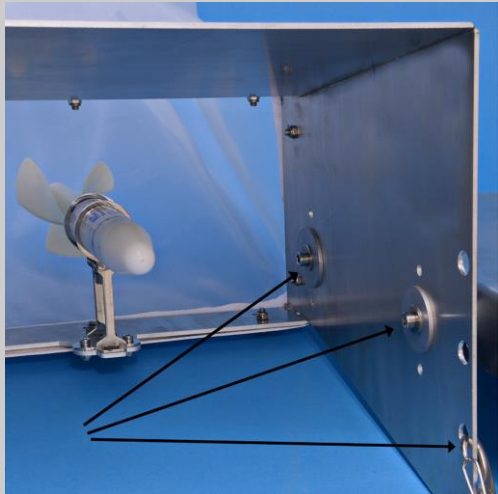
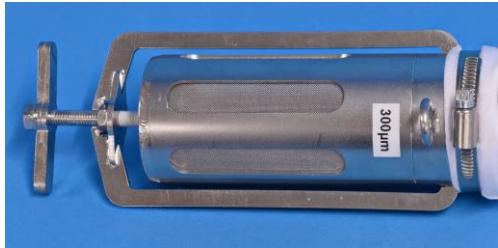



Caution

**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.**

**Recommended towing speed: Max. 3 knots. For mesh sizes below 300 µm, you may lower the speed to compensate for the less opening area in the net bag.**

Item	Description	
1	If the Manta net is supplied with a flow meter, it comes with a small bracket and bolts/nuts for the mounting. For calculating the flow see item 8.	
2	While mounting the flow meter in the bracket, observe it is in an easily readable position and secure it with the bolt. Do not overtighten the bolt, as it will cause damage to the flow meter. It comes with small lines, and for additional safety, you may shorten one of these and tie it to the bracket.	
3	Mount the flow meter as shown.	

4	<p>The net's position on the water surface can be adjusted in 2 ways:</p> <ol style="list-style-type: none"> <li>1. On front of the net, the bridle has 3 positions as shown.</li> <li>2. The front and rear edges of the opening has 2 vertical sets of holes for adjusting the angle of the wings to determine the actual sample depth.</li> </ol>	
5	<p>The collecting bottle has 5 windows covered by a stainless steel filter and the mesh corresponds to the size of the main net.</p> <p>Furthermore the bottle has a small eye, in which you can fasten a small buoyancy to keep the bottle close to the water's surface.</p>	
6	<p>Unscrew the lower part to empty the bottle.</p>	

## Calculating the water flow

For calculating the volume of water passing through the plankton net, you can attach a digital flow meter.

The principle to calculate the volume of water is the same for both models, see below. The digital flow meter incorporates a three-blade impeller coupled directly to a five-digit counter that records each revolution of the impeller.

The pitch of the impeller is 0,3 m per revolution, i.e., the number of revolutions multiplied by 0.3 makes the towing distance.

For quantitative measurements the threshold flow velocity of the impeller should not be smaller than 0,5 m/sec. For comparison measurements flow velocities smaller than 0,5 m/sec are possible.

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Example: The number of revolutions is 100; this means a towing distance of 30 m.

The opening area of the plankton net must be known or has to be calculated. The water volume passed through the plankton net is determined as follows:

Indicated number of revolutions x 0,3 x net opening area (m<sup>2</sup>) x 1000 = water volume.

Example:

The plankton net has a diameter of 40 cm, i.e., the opening area is 0,125 m<sup>2</sup>. If the number of revolutions associated with a tow is 266 (noted from the digital flow meter counter), the water volume passed through the plankton net is:

$266 \times 0,3 \times 0,125 \times 1000 = 9.975 \text{ L} = 9,975 \text{ m}^3$

## Maintenance

### **The plankton net:**

Give plankton nets proper care and maintenance. Do not let particulate matter dry on the net because it can significantly reduce size of mesh apertures and increase frequency of clogging.

Wash net thoroughly with water after each use. Periodically clean with a warm soap solution. It is also advisable to hang-up the net to air-dry after washing.

Because nylon net material is susceptible to deterioration from abrasion and sunlight, guard against unnecessary wear and store in the dark.

### **The flow meter:**

Rinse the digital flow meter thoroughly with freshwater after use. Otherwise the mechanism will get clogged by salt etc.

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