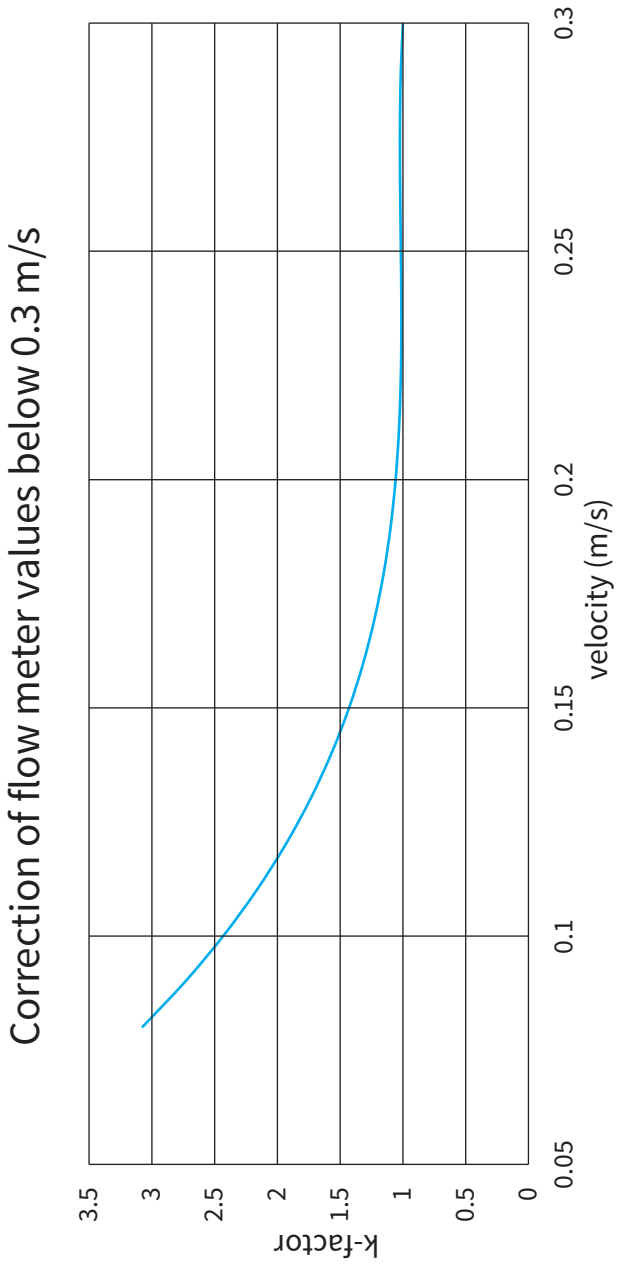


At speeds below 0.3 m/s the indicated measurement value (end deployment - start deployment) has to be multiplied by the k-factor of the corresponding speed.
Example: speed: 0.15 m/s; indicated value: 50; true value = 50 · 1.4 = 70

k-factor = $-404v^3 + 308.2v^2 + 77.92v + 7.546$

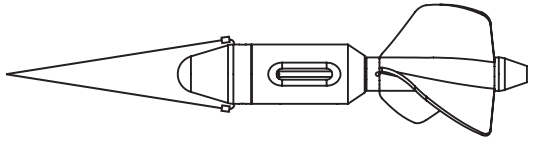
HYDRO-BIOS

Rigging Instructions
Mechanical Flow Meter Model 438 110 / 438 115

The Mechanical Flow Meter Model 438 110 may be used with towed equipment such as plankton nets etc. or in stationary applications such as flow monitoring of rivers and outfalls. The Mechanical Flow Meter is supplied with a towing bridle which can be used in two different ways:

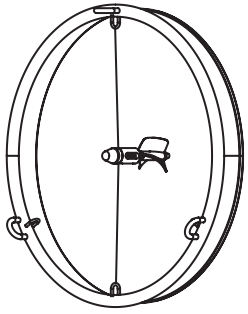
Mechanical Flow Meter Models 438 110 / 438 115

When towed from vehicles or streamed from fixed structures the towing bridle can be connected to a single point in front of the Mechanical Flow Meter.



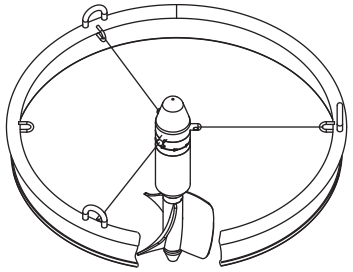
Mechanical Flow Meter Model 438 110

When used with plankton nets the bridle may be attached to the net mouth ring.



Mechanical Flow Meter with back-run stop Model 438 115

Installation of the Mechanical Flow Meter Model 438 115 is made by triple point connection of the nose piece inside the net ring.



Determination of the water volume passing through a Plankton Net

The Mechanical Flow Meter (Models 438 110 and 438 115) incorporates a three blade impeller coupled directly to a five-digit counter which records each revolution of the impeller.

Please note that the counter is non-resetting, the number of revolutions is to be read before and after deployment.

The pitch of the impeller is 0.3 m per revolution, i.e. the number of revolutions multiplied with 0.3 constitutes the towing distance.

Example: The number of revolutions is 100, this corresponds to a towing distance of 30 metres.

For quantitative measurements the threshold flow velocity of the impeller should not be smaller than 0.3 m/sec. For comparative measurements flow velocities smaller than 0.3 m/sec. are feasible.

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 · 0.3 · net opening area (m^2) · 1000 = water volume in litres.

Example: The Plankton Net has a diameter of 40 cm, i.e. the opening area is 0.125 m^2. If the number of revolutions associated with a tow is 266 (noted from the Mechanical Flow Meter counter) the water volume passed through the Plankton Net is

266 · 0.3 · 0.125 · 1000 = 9975 litres

	438 110	**438 115**
Length (mm)	190	205
Diameter (body) (mm)	32	32
Diameter (impeller) (mm)	75	75
Materials	plastic, titanium	
Measuring range (m/s)	0.3 .. 10	
	± 10 % in the range of 0.3 .. 0.6 m/s	
	± 5 % in the range of 0.6 .. 10 m/s	

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