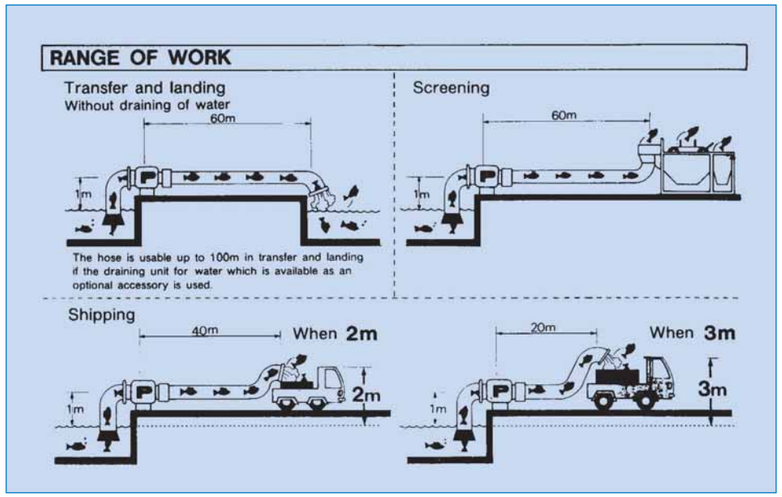
Venturi fish pumps

The Catvis Venturi fish pump is widely used for pumping eels and other fish species. Due to its special design the fish do not come in contact with any moving parts of the pump.
Complete units with fish pump and dewatering tank “in one”; can be connected directly to an automatic fish grader.
Another application of this pump is to clean tanks from debris, sand and / or sludge.



Venturi head

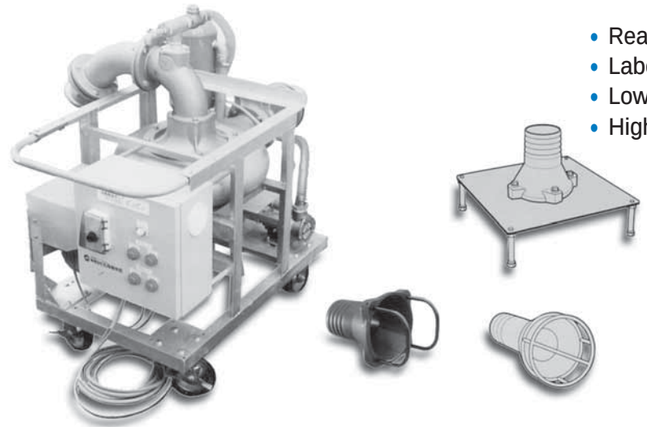
Application:
- pumping of life fish
- pumping of sludge

In most cases we deliver the Venturi head only, as the required water pump can be any suitable local model. Catvis will advise you about the required flow / head.

Technical specifications:

- Seawater resistant aluminium
- Inner diameter 80 mm
- Connections BSP thread 3” inlet / 4” outlet and DIN flange (NW 100)

Fingerling / Fry Transfer pumps



- Ready to use
- Labour saving
- Low running noise
- High transfer capacity

More and more, either with grading, loading or unloading of trucks or transfer to larger tanks, fish fry and fingerlings have to be transferred from place to place.
Smooth transportation of fish fry and fingerlings with a minimum of labour involved can be executed with the Matsusaka fish pump. Low stress during transfer of the fish with this pump is secured and shown by the fast recovery of appetite for feeding.

Technical specifications:

	Z-65L	Z-100L(-s)	Z-150L(-s)
Suction-flange (mm)	65	100	150
Discharge-flange (mm)	65	100	150
Main pump output 380 VAC, 3 phases (kW)	1,5	2,2	5,5
Priming pump output (kW)	0,75	1,5	1,5
Max. water discharge capacity (m3 / hr)	38	80	240
Max. transfer capacity (tons fish / hr)	4	8	20
Max. transfer height (m)	6	6	9
Max. transfer distance (m)	100	150	500
Fish size (gram) Trout, salmon, etc.		1 -> 250	1 -> 600
Seabream	0,4 -> 30	1 -> 100	1 -> 400
Seabass	0,4 -> 50	1 -> 150	1 -> 500
Width (cm)	55	65	101
Length (cm)	113	128	175
Height (cm)	97	120	154
Weight (kg)	118	220	450

Z-65L and Z-150L are suitable for fresh and salt water application, Z-100L for fresh water application, Z-100L-s for saltwater application.

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Fingerling / Fry Transfer pumps

The Aqualife BioStream aquatic transfer pumps feature self priming, variable speed electric drive operation. Optional remote control is also available.The BioStream fish pumps combine gentle fish handling and easiness of use.

Three models are available to meet your requirements in hatcheries, nurseries or early stages of on-growing: BP25 (2,5" / 65 mm), BP40 (4" / 100 mm) and BP60 (6" / 150 mm)

Technical specifications :

Model	BP25	BP40	BP60
Max fish weight (salmonids)	100 g	350 g	600 g
Max fish weight (seabass)	80 g	250 g	500 g
Max. fish weight (seabream) :	50 g	150 g	400 g
Capacity (fish / h)	4 MT / h	8 MT / h	12-15 MT / h
Max pump water output	700 L / min	1400 L / min	2500 L / min
Max pumping head	7,5 m	9 m	9 m
Inlet and outlet diameter	2,5" (65 mm)	4" (102 mm)	6" (152 mm)
Unit weight	145 kg	185 kg	280 kg
Priming motor output	1HP / 0,75kW	1HP / 0,75 kW	1HP / 0,75 kW*
Main motor output	2HP / 1,5kW	3HP / 2,2kW	5HP / 3,7kW*

* For high head applications and faster priming, the BP60 model is also available in BP60S version with a 1,5HP priming motor and 7,5HP main motor

Fish pumps

SPP fish pumps

Aqualife fish pumps can be supplied as self-priming pumps (SPP). These models are mounted on a wheeled frame and are very easy to manoeuvre.
These fish pumps are electric belt driven. Standard is 400V three-phase (230V single phase optional). The variable speed electric drive motors make it easy to adjust the pumping speed to the required application.

Technical specifications:

Model	1080-SPP	1210-SPP
Max. fish weight (g)	900	2300
Fish per hour (kg)	20.500	51.000
Pump output (lpm)	3.000 - 4.500	4.500 - 9.500
Max. pump head (m)	9	9
Inlet / Outlet size (inch)	8	10
Inlet / Outlet size (mm)	203	254
Installed electrical power	15 HP / 11kW	25 HP / 20kW

Technical features

- Lightweight construction using Marine Alloy Aluminum.
- Aluminum wheels with powder coated finish for extended life span.
- Unique compact design for easy manoeuvrability.
- Whisper quiet Electric Drive.
- TEFC Electric motors to spare power.
- Conveniently located Mechanical Speed controls for the priming pump & Aqua-Life Fish Pump.
- High head & long distance pumping capacities.
- Water-tight control box.
- Large pneumatic tires for outdoor use or neoprene casters for indoor use.
- Optional remote control for all operational functions available.

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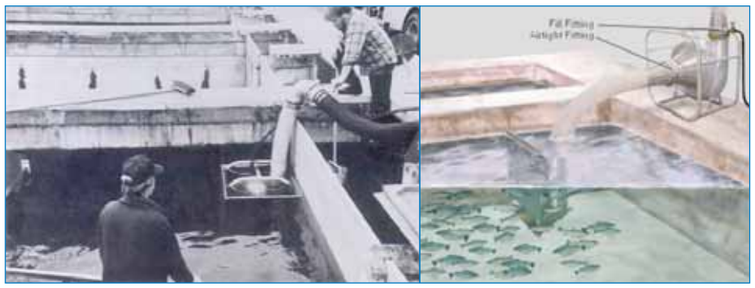
Fish pumps

The Aqualife fish pumps have been designed and developed specifically for the gentle movement of live fish. Fish pumps are available in various sizes ranging from pumps for small fry up to pumps that can handle fish of 9kg (based on salmonids). The Aqualife pumps are constructed of marine alloy aluminium, making them very light and easy to handle.
They are hydraulically run and if a suitable hydraulic power source is not available we can supply hydraulic power packs that are either electric, petrol or diesel driven.

The fish pumps can be used submerged or non-submerged.
In the submerged application, the pump is generally lowered into the race-way or pond with hydraulic hoses attached. The pump is then positioned and fish can be crowded into the pump intake chute. A discharge hose is attached and runs from the pump to a grader, truck or elsewhere.



Submerged application *Non-submerged application*

In the non-submerged application, the pump is generally placed at the side of the tank, pond or cage. The air-tight inlet of the pump is connected to a suction hose equipped with a uniquely designed fish-friendly foot-valve to allow the priming of the pump. A discharge hose is attached and runs from the pump to a grader, truck or elsewhere.

Model	860-P	1080-P	1210-P	1614-P
Max. Fish weight (g)	250	900	2300	9000
Fish per hour (MT)*	5,5	20,5	51	200
Fish pump output (m^3 / min)	2,3 - 3,2	3,0 - 4,5	4,5 - 9,5	10 - 21
Max. Pump head (m)	7,6	9,1	9,1	9,1
Outlet size (inch)	6	8	10	14
Outlet size (mm)	152	203	254	356
Pump weight (kg)	65,8	84	139	463
Hydraulic flow (lpm) (at 175-200 bar)	38 - 53	38 - 53	68 - 79	87 - 106
Optional Powerpacks:				
- Electric in kW (3 phases, 400V 50Hz)	15	15 or 20	20 or 25	50
- Diesel / gasoline (kW)	27 / 31	35 / 41	35 / 41	50 - 80

* Rated using largest fish capacity, size depends on fish species

At low pumping head fish can be transferred over a distance of more than 1 kilometer.
The pumping is very gentle and fish constantly stays in water. Stress is minimal and fish starts feeding again soon after a transfer.

Handling

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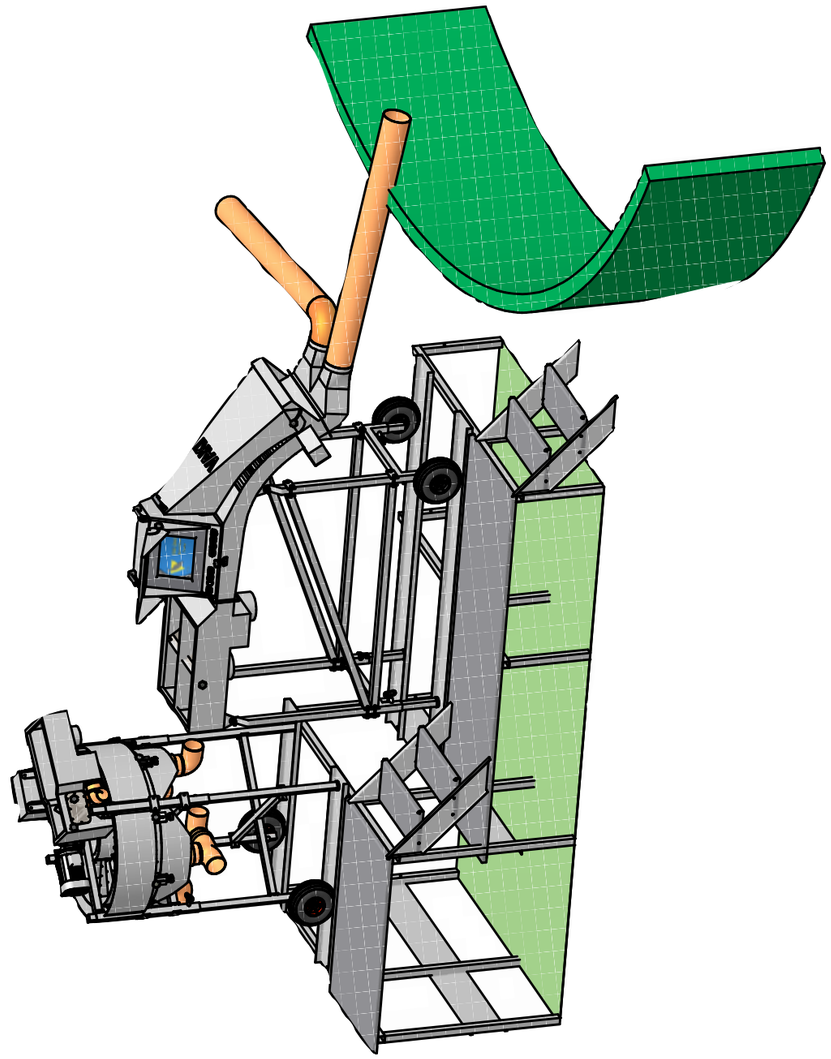
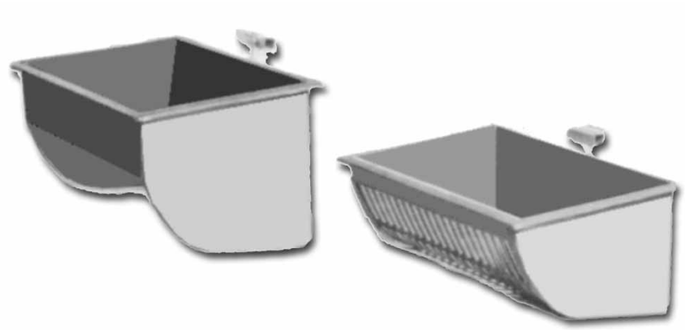
Grading



Vaki round grader and Microcounter

Grading boxes



These grading boxes are used for hand sorting of fish, mostly fry, fingerlings and eels.

The grading boxes are made of fibreglass-reinforced polyester.
Dimensions: 70x50x40 / 16 cm

Grading grids

A series of grids is available for the grading boxes.
Grids are available with opening sizes ranging
- from 1 to 6 mm (interval 0.5 mm)
- and 7 to 30 mm (interval 1 mm).

The grids are manufactured on a precision machine to ensure the highest degree of accuracy. The opening sizes are stamped on the grids.

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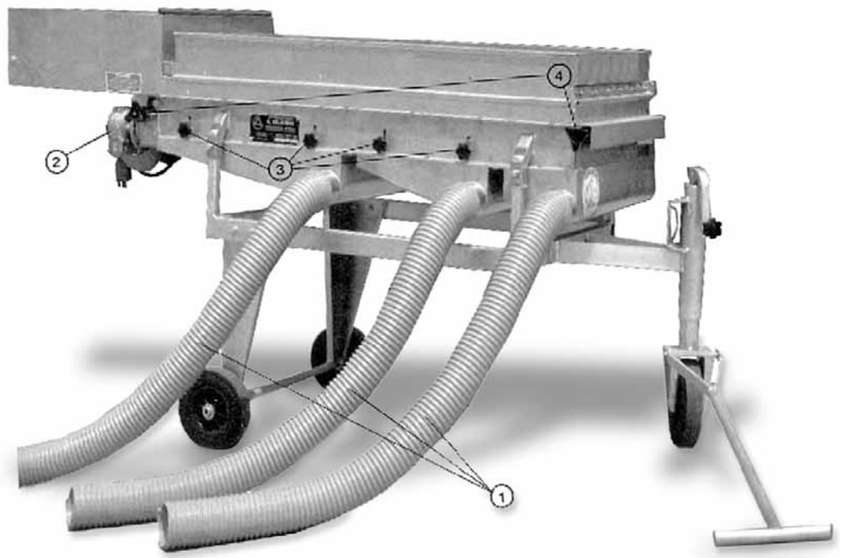
Fingerling graders



1 Outlets for the sorted fish
2 Geared motor
3 Knobs to adjust the bottom
4 Grips to adjust the gap between the rollers

An automatic roller grader to sort fingerlings from 0,5 to 50 g. in three sizes. The capacity of the grader can be up to 350 kg of fish per hour.
A separate water pump supplies water to the rotating rollers and flushes graded fish down the three outlets to the receiving tanks.
The total length of the machine is approx. 1,9 m.

A larger model with a total machine length of approx. 3,1 m is also available for even more accurate and faster grading (three sizes from 1 to 600 g, capacity up to 3.000 kg / h).

- Accurate and fast
- Labour saving (one man only)
- Reduces fish stress

Grading machines

Many different models besides the models shown in the catalogue can be delivered: please specify your needs and we will make an offer.

Belt graders for eel and catfish

Bar graders for various fish species

Grader for flat fish

Handling

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Fry/ Fingerling grader

Vaki round grader

This fish grader has been designed and developed for high speed grading of small fish from 0,5-200 gr. The grader is circular and therefore requires less floor space than other grading machines.
The grader is very simple to operate and is available in 2 sizes with capacity of up to 6.000 kg / hour.

Revolving grader

The grader has a number of boxes that rotate.
As each box passes over an outlet the opening in the bottom of the box is increased to a pre-selected size. The grading gaps can be set from fully closed up to 50 mm wide. The length of the box determines the maximum length of fish that can be sorted.
The grader has 1 one inlet with dewatering section and 4 outlets.

Variable speed

The Vaki grader is driven from a geared motor with a speed regulator that can adjust the speed from 5 - 15 rpm. Mains power supply by either single or three phases.

Compact and light

Both graders are lightweight. The smaller grader is 150 kg and the larger is 200 kg. Both graders are fully portable on wheels mounted on height adjustable legs. The graders are constructed
from stainless steel and plastic.

Advantages

- Accurate grading of fish from 0.5 g.
- High capacity up to 200.000 1 g fry per hour.
- 4 grading sizes.
- Compact, light and portable.
- Height adjustable.
- Fish are in water at all times.

Applications:

The Vaki grader is designed for the high-speed grading of large numbers of fry and smolts. The grader is very compact, light and easily moved around the farm. The smaller grader has been designed to pass through a 100 cm doorway.

Specifications:

Fish size: From 0,5 - 25 gr: 96 cm grader
Grading box length 22 cm
From 1-200 gr: 140 cm grader
Grading box length 50 cm

Dimensions: 96 cm diameter
140 cm diameter
Power supply: 240 V, 2 amp
Supplied with 4 outlets as standard.
Fish species: Salmon, trout, sea bass, sea bream, halibut, turbot, cod.

Model	Capacity (fish per hour)		Weight
Fish size	0,5 gr	1 gr	-
96 cm	70.000	50.000	150 kg
140 cm	100.000	85.000	200 kg

Spray Bar

A spraybar is situated over the rotating boxes ensuring the fish pass easily through the outlet pipes.

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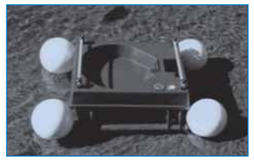
Fishcounters

These fish counters are used for fry and fingerlings of various species of fish. Counting fish helps you to accurately determine your stocking densities, so feeding and fish density are well balanced. There are four models for various sizes of fish (see table) as well as a special model for flat fish fry available.





Technical specifications:

	MICRO	MICRO / MICRO KIT	MINI
Fish size	0,5 - 6 g 0,5 - 5 g 0,5 - 9 g	0,2 - 0,5 g 0,2 - 0,5 g 0,2 - 0,5 g	5 - 50 g (bass) 4 - 40 g (bream) 5 - 70 g (trout & salmon)
Capacity per hour	30.000 to 35.0000 fish	30.000 to 35.000 fish	5.000 to 30.000 fish
Accuracy	98 -100 %	98 - 100 %	98 - 100 %
Size	77 cm long 64 cm wide 47 cm high		104 cm long 79 cm wide 80 cm high
Weight	10 kg	3 kg	15 kg
Power supply	operates on chargeable batteries	operates on chargeable batteries	operates on chargeable batteries
Mounting	frame for mounting the counter on the edge of the tank	to be used together with Micro	4 floats for placing the counter in tank or cage
Nozzles	2 x 13 mm Ø 2 x 17 mm Ø 2 x 23 mm Ø	2 x 10 mm Ø	2 x 23 mm Ø 2 x 35 mm Ø 2 x 48 mm Ø
Pump Type	Grundfos AP12.40.06.1		Grundfos AP12.40.06.1
Capacity per hour	17 - 19 m^3 / h		17 - 19 m^3 / h
Material	stainless steel		stainless steel
Weight	11 kg		11 kg
Power supply	1 x 230 V, 50 Hz		1 x 230 V, 50 Hz
Power consumption	940 W		940 W

TPS FLAC 1000

The TPS FLAC 1000, flat fish counter can be used stand alone or directly connected to a grader.

Technical specifications

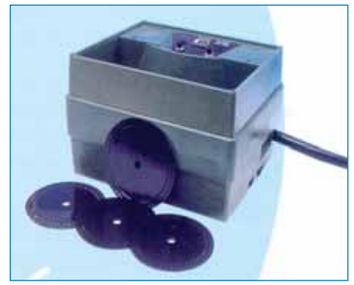
	TPS FLAC 1000
Fish size	2-15 g (max 75 mm Ø)
Capacity per hour	5.000 fish
Accuracy	98 - 100 %
Size of counter l x w x h	4 x 20 x 40 cm.
Size of plastic box	1 x 134 l. 2 x 66 l.
l x w x h	80 x 60 x 32 cm 58 x 40 x 35 cm
Nozzles	1 x 50 mm / 1 x 75 mm
Power supply	operates on chargeable batteries
Mounting	in a plastic box
Pump	Grundfos KP150-M -1
Capacity per hour	8 m^3
Material	stainless steel
Power supply	1 x 230 V, 50 Hz, 300 W

Winsorter egg sorter and counter

The Winsorter WB 9, egg sorting machine separates opaque unfertilized eggs from the healthy clear eggs. Additionally a counter can be added to the machine to combine the two operations (Winsorter WB 9C).

	Winsorter WB 9 (C)	Winsorter WB 9x2 (C)
Capacity per hour	100.000 eggs	200.000 eggs

Options are preset to count a set amount of eggs and an extra counting device to count the rejected eggs.



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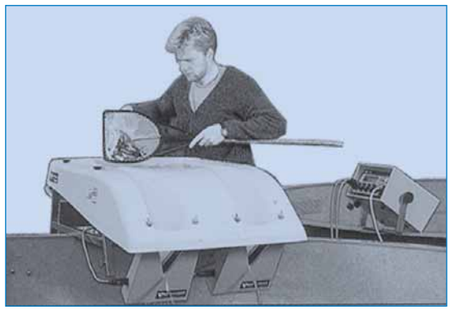
Bioscanner fish counters

Accurate knowledge of the number and size of farmed fish is important in modern aquaculture, since data on the numbers and overall biomass of the fish in tanks and cages make it possible to monitor production and facilitates management and planning.

The Vaki Bioscanner fish counter is a sophisticated electronic device specially designed for counting fish. The Bioscanner gives the fish a gentle treatment and stress to the fish is minimised.

The V-channel is available in two sizes: for 3 - 750 g. fish and for 500 g. - 6 kg. fish. The V-channel can be directly connected to the outlet of a grader. It regulates the flow of fish and water and separates the fish, making it possible to count them accurately with the scanner unit.

The control unit gathers and displays data from up to four scanners. To distinguish and to count two fish coming down the channel at the same time, the microprocessor based counter uses advanced software to analyse data obtained from the scanning.



- Stand-alone units are available with 1, 2, 3 and 4 channels.
- Capacity is up to 60.000 50-gram fish per hour.
- Accuracy is 98 - 100 %.

Bioscanner Nano, Micro and Macro

These counters are designed for fry from 0,1 to 20 gr, 0,1 to 200 gr and 0,5 to 400 gr respectively. The capacity is up to 1.000.000 fry per hour and the counters can handle all fish species provided sufficient pigmentation is present.

The counters are based on a digital camera and computer vision, in which the outlines of objects that pass beneath the scanner are recorded. Specially designed software is then used to analyse the images and count the individual fish.

The counter channel can be divided, so one counter can be used for counting separate fish groups coming from a grader.

Optional size estimation software can be added, providing fish size and size distribution in a report.

Applications

The Vaki Bioscanner Nano, Micro and Macro are specially designed for the high-speed counting of large numbers of fry :

- when delivering fish
  - to or from well boats
  - to or from transport trucks
- for internal control when grading, splitting or moving fish from tanks
- and to collect overall information during the growing season

Technical specifications:

	Nano	Micro	Macro
Accuracy:	98-100%	98-100%	98-100%
Fish sizes:	0,05-20 gr	0,1-200 gr	0,5-400 gr
Capacity:	Up to 200.000 fish per hour	Up to 500.000 fish per hour	Up to 1.000.000 fish per hour

Handling

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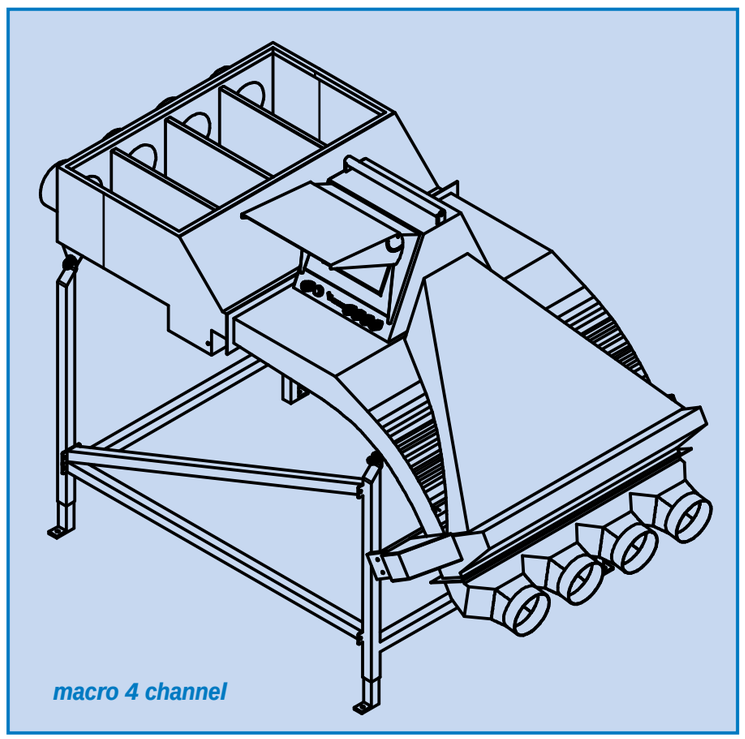
Bioscanner Nano, Micro and Macro

Nano



macro 4 channel

Biomass counters

The Vaki Biomass Counter gathers in a simple operation data on numbers, average weight, size distribution and the condition factor of the fish. In other words, all fundamental data for the profitable operation of any aquaculture enterprise are obtained. These data make it possible to plan harvesting and sales more accurately, thus ensuring maximum prices for the fish and customer satisfaction.
An accurate knowledge of the biomass and average weight also makes it possible to control feeding and drug dosage, and to monitor the health and growth rate of the fish.

The Vaki Biomass Counter - two products in one

The Vaki Biomass Counter can be used for both counting and weighing the fish. The scanner frame is submerged in the cage. When a fish swims through the scanner unit it interrupts a net of infrared light beams and the silhouette image of the fish is used to count it and calculate its size. In this way, accurate measurements are obtained with minimum effort and without subjecting the fish to stress or injury. As each fish is measured, data on its weight and condition factor appear on the display of the control unit. Also displayed are the average weight of the fish in the sample and the number of fish that have been recorded. Good measurements can be obtained in a few hours; generally, the frame is left suspended in the pen for 24 hours, during which anything from 300 to 3.000 fish can be measured, depending on local conditions.

The Biomest Aquaculture program

With the aid of the Vaki Biomass Counter and analysis of the data using the Biomest Aquaculture program, the user obtains an accurate picture of the size distribution, average weight, condition factor, biomass and number of the fish. It is possible to see the distribution and average weight of gutted or live fish and to obtain a trend analyses of the growth history of the fish. Furthermore, the future growth of fish can be predicted on the basis of measurements of growth of each size group and water temperature.

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