

Fish Grading Systems



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Fish Grading Systems

Overview

An important criterion for obtaining good growth of fish is a uniform size range in the holding unit. Once they begin to feed, fish soon reveal critical differences in size. Also point source feeding favours a small group of fish which are quick in feed uptake or as a result are dominant on the feeding place, revealing improved growth and survival. Any group of fish, which obtains more food, grows faster, and over time becomes dominant. In some species, large size differences within a cohort increase the risk of cannibalism. Generally, differences in size can lead to mortality of weaker fish due to stress and lack of food.

Frequent grading therefore can have a positive influence on the rearing performance. Of course, culture conditions and any observed differences in growth, will help determine when grading should be done. Grading frequency generally increases with intensity of culture (stocking density). In extensive pond culture it is not feasible to grade during the production season, whereas fish grown under intensive conditions can and should be graded frequently. The frequency of grading is dependent on species and the size of the fish. On the other hand, batch separation requires sound logistics, sufficient numbers of rearing facilities and precise record keeping. Regarding the grading procedure, it is obvious that it should be preceded by at least one day of feed depreciation in order to minimize oxygen requirements and the susceptibility to stress. As a rule of thumb, fish in any group should not vary more than 10-20 % from the average size.

Smaller fish sizes and quantities are usually graded by manual grading devices or grading whips. This devices are preferably made of floating wood, metal or plastic have round grading grids on the lower side, which can be exchanged or better adjusted (grating distance 4-30 mm). The grading process allows for grading into two size classes: small fish go through the grid, but large fish which cannot pass the grid are put into a nearby tank. It is recommended that the grading devices are not filled with fish too much, so that all fish can reach the grids and are sorted well.

Larger fish sizes and quantities are usually graded by automatic grading machines with a capacity of 1-9 t/h. This machines are preferably made of stainless steel or aluminium alloy, on a trolley with wheels and legs, have one to several V-shaped channels with rotating rolls or moving fingers below which can be adjusted in wide. It is recommended to test the grading distance with a small lot of fish, so that the optimal grading wide, for the species and sizes in question, can be found out.

For live fish with a body weight of 1-5000 g, we offer not only a complete product range of fish graders, but also fish pumps before the grader and fish counters after the grader, which allow a rational and automatic operation and therefore save a lot of stress for both, fish and workers.



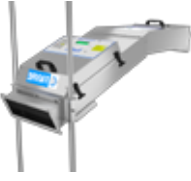












Quality for reasonable prices!

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Fish Grading Systems

Selection

Series	Fish Pumps	Fish Graders	Fish Counters
Series 10			
Series 30			
Series 40			
Series 50			
Series 60			

EN



CE

Made in the European Union!

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Fish Grading Systems

Specifications

Model	Impeller Pumps				Vacuum Pumps	
Type	PM-2	PM-6	PM-8	PM-10	PV-8	PV-10
Connections Ø ¹	63 mm (2,5")	150 mm (6")	200 mm (8")	250 mm (10")	200 mm (8")	250 mm (10")
Capacity max.	5 t/h	20 t/h	30 t/h	40 t/h	10 t/h	15 t/h
Fish sizes ⁴	1-40 g	2-700 g	5-1500 g	5-3000 g	5-3000 g	10-5000 g
Dynamic head ²	3+6=9 m	3+9=12 m	5+6=11 m	4+6=10 m	4+1=5 m	4+1=5 m
Water volume	42 m ³ /h	232 m ³ /h	550 m ³ /h	600 m ³ /h	-	-
Speed ³	800-1500 RPM	200-540 RPM	100-390 RPM	100-390 RPM	-	-
Size (LxWxH)	1,3x0,7x1,1 m	1,8x0,9x1,3 m	1,8x1,1x1,7 m	2,3x1,3x1,9 m	2,5x1,2x1,5 m	2,9x2,0x1,5 m
Weight approx.	100 kg	200 kg	500 kg	950 kg	440 kg	720 kg
Motor	1,5 kW	3,0 od. 5,5 kW	11,0 kW	18,5 kW	5,5 kW	11,0 kW

¹Connections on both sides. ²Suction+Pressure = Dynamic head (total). ³Speed = Rounds/Minute (RPM).

Model	Grading Machines					
Type	H-10	H-25	H-30	H-40	H-50	H-60
Outlets Ø ¹	125 mm	160 mm	160 mm	200 mm	250 mm	250 mm
Capacity max.	1 t/h	2 t/h	3 t/h	5 t/h	7 t/h	9 t/h
Fish sizes ⁴	1-100 g	5-500 g	5-800 g	5-1500 g	10-2500 g	100-5000 g
Grads	4	3	3	4	3	3
Channels	5	2	3	3	3	2
Channel size	1600x28 mm	1600x35 mm	2000x42 mm	2500x65 mm	2400x75 mm	2400x120 mm
Size (LxWxH)	3,3x1,0x1,4 m	3,2x0,9x1,2 m	3,0x1,0x1,3 m	3,9x1,0x1,3 m	3,7x1,2x1,5 m	3,7x1,2x1,5 m
Weight approx.	280 kg	240 kg	320 kg	480 kg	520 kg	530 kg
Motor	0,25 kW	0,25 kW	0,25 kW	0,37 kW	0,55 kW	0,55 kW
Water demand	20 m ³ /h	25 m ³ /h	30 m ³ /h	40 m ³ /h	50 m ³ /h	60 m ³ /h

⁴Max. Fish size for round Salmon/Trout/Charr, for high Bass/Bream/Tilapia about the half.

Model	Infrared Counters				Camera Counters	
Type	FC-12	FC-8	FC-4	FC-2	CC-1	CC-0
Connections Ø	125 mm	160 mm	200 mm	200 mm	125 mm	200 mm
Capacity max.	1 t/h	2 t/h	3 t/h	4 t/h	5 t/h	10 t/h
Fish sizes ⁴	1-20 g	10-100 g	50-1000 g	500-5000 g	0-20 g	300-3000 g
Channels ⁵	12 x 30 mm	8 x 50 mm	4 x 100 mm	2 x 200 mm	1 x 400 mm	4 x 200 mm
Size (LxWxH)	1,4x0,6x0,5 m	1,4x0,6x0,5 m	1,4x0,6x0,5 m	1,4x0,6x0,5 m	1,4x0,6x1,2 m	2,5x1,4x2,2 m
Weight approx.	22 kg	23 kg	24 kg	25 kg	75 kg	250 kg

⁵Channels = Pieces x Wide. All data are average (changes reserved).

Optimally coordinated systems!

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Live Fish Pumps

Properties



Impeller-Pump



Vacuum-Pump

Accessories



Hoses, flanges, adapters, suction cone and remote control



Fish pump with dewatering hopper

Consulting:

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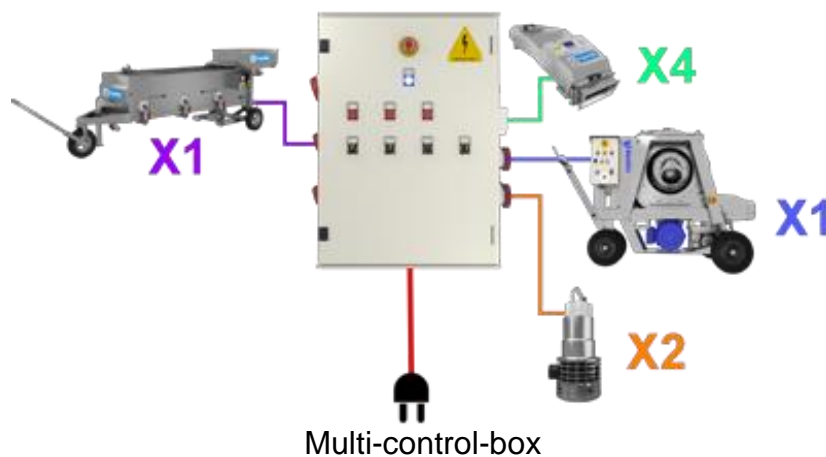
Live Fish Graders

Properties



Grading machine with up to 5 grading channels and up to 4 grading sizes

Options



Consulting:

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Live Fish Counters

Properties



Infrared-Counter



Camera-Counter

Options



Reception funnels with or without frame



Grading machine with integrated counters

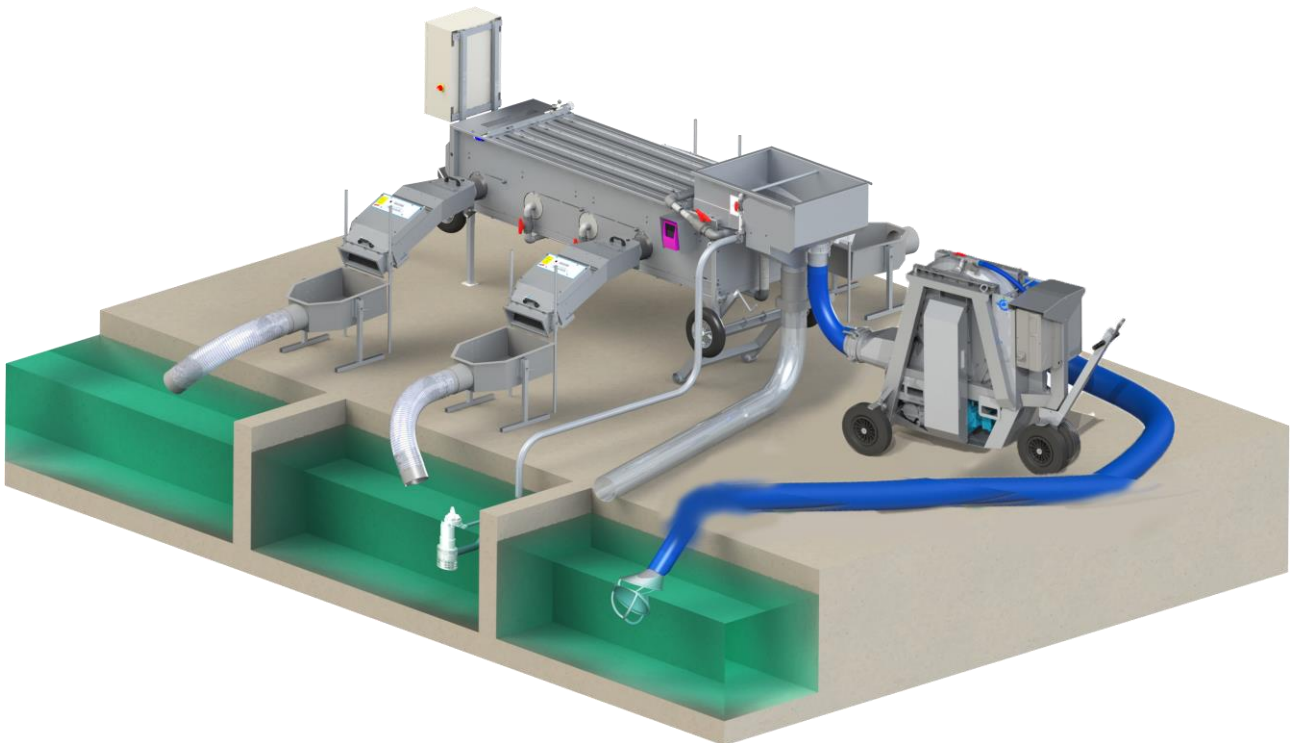
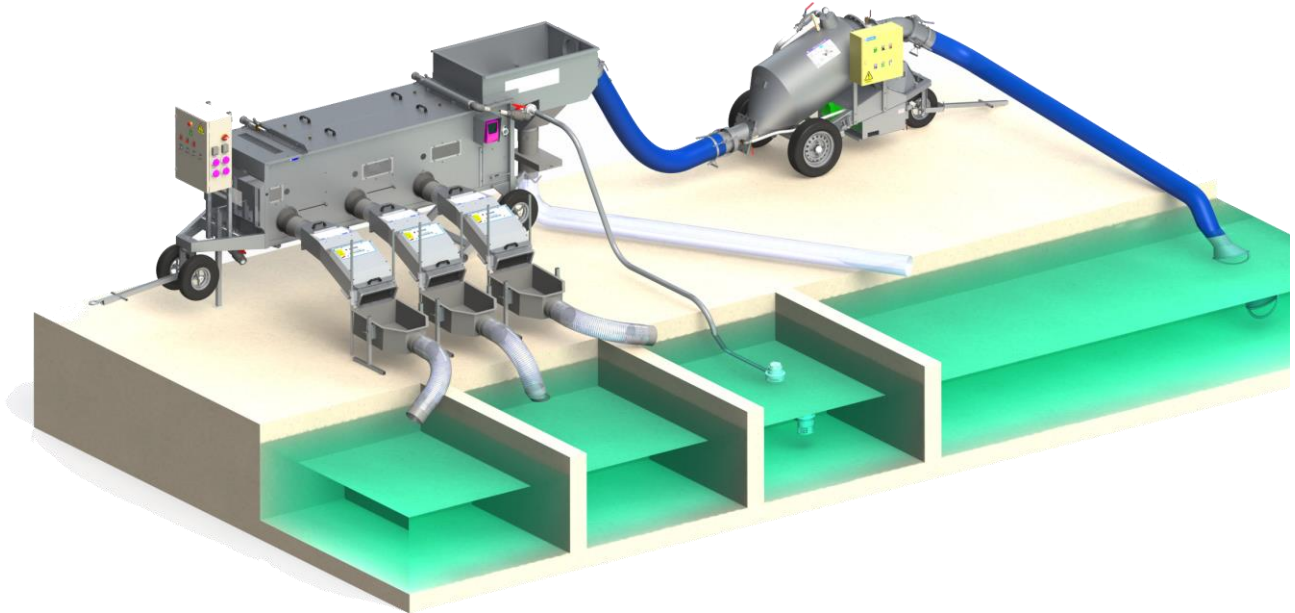
Consulting:

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Fish Sorting Systems

Examples



If questions, please contact:

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Fish Sorting Systems

Alternatives



Double-chamber vacuum pump with integrated dewatering hopper



One-cannel grading machine with removable inlet hopper

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Fish Sorting Devices

Selection



Grading device with flappable grading whips



Grading table with exchangeable grids

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Fish Grading Devices

Selection



Grading whip with changeable grading grids



Grading device with adjustable grading grid

Model	Grading Devices		Grading Whip
Type	Fry	Fingerling	Universal
Grading distance	4-16 mm	17-30 mm	5-30 mm
Fish sizes approx.	1-100 g	100-500 g	1-500 g
Dimensions (LxWxH)	36x36x18 cm	45x45x18 cm	75x60x45 cm
Weight approx.	3 kg	4 kg	9 kg
Use	floating		hanging

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