

Maskon vaccination system

– revolutionizing and rationalizing the vaccination of fish



One operator, up to 20 000 fish/hour

The Maskon vaccination system is developed in a close cooperation with the world's largest salmon producers. We have developed a system based on comprehensive specifications, which gives remarkable savings compared to the traditional methods! A thorough test program used by many of the big fish hatcheries have resulted in a well-tested system with a solid, documented performance.

Easy to integrate, easy to expand

The machine can be integrated with an existing anesthetizer or be equipped with Maskons own 2-chamber continuous anesthetizer. To secure a steady flow and optimal capacity utilization the system can be supplemented with a Maskon buffer tank with feeding system.

Very high vaccination quality

A camera system controls the vaccination units so that the injection point becomes completely exact to every single fish. The injection point's accuracy is above 98%, and the mortality rate is below 0.02%.

The injection depth adjusts automatically in relative to the length of the fish. A sensor at the needle is monitoring the injection performance and that the vaccine has been dosed correctly in every single fish. A new vacuum technic is used to hold the fish while it's being vaccinated and makes the injection point almost invisible. The vaccine doesn't have to be tempered before vaccination. A water jacket with tempered water, is assuring that the vaccine keeps a correct temperature.

One operator, easy to operate

Feeding and singulation of the fish is a fully automated process with simple rotational movements. Only one operator is necessary to operate the machine,

resulting in significant savings compared to traditional methods. The machine communicates with operators via voice messages that are getting sent to a headset on the FM – band. This means that the operator doesn't have to be by the machine at all times.

When exchanging needles, you only have to stop the unit where the exchange is being made, the rest of the machine keeps going. Exchanging the needle is a fast and easy process, with no tools necessary.

Automatic weight sorting and rejection

The fish doesn't need to be sorted before vaccination. The system will sort the fish and divide it into three weight classes between 25 – 150g which is decided by the operator. Different rapports such as weight, amount and categories, can be generated automatically.

Monitoring, service and support

Every facility is supported by the Maskon remote via the internet. Control procedures can be performed in their own programs and the control system can communicate with other systems.

Maskon vaccination machine is delivered with an operation- and service agreement that includes support, service and spare parts. This is assuring a high reliability and a predictable economy.



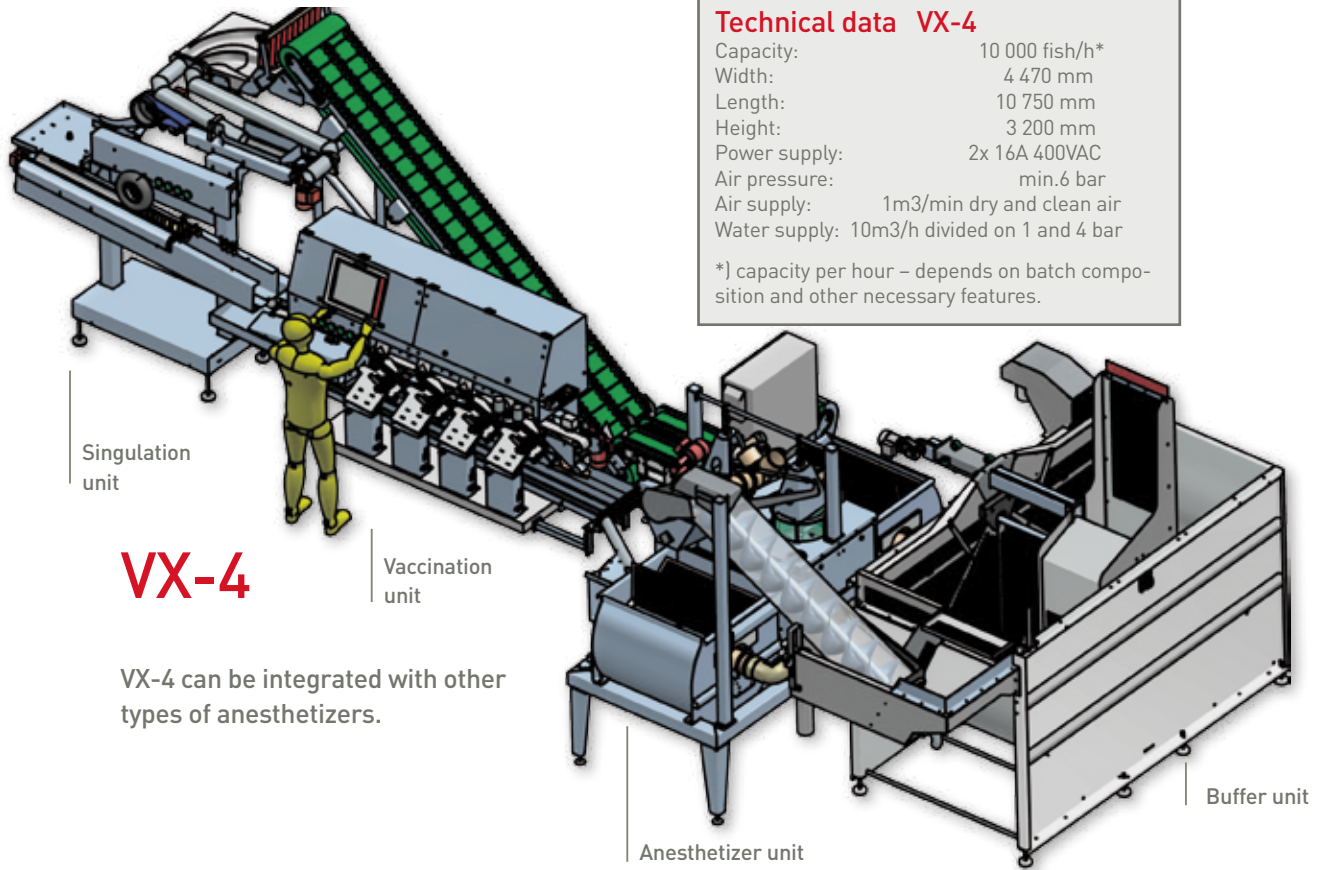
Only one operator is necessary to operate the machine, which is controlled by an operator panel. The machine also communicates with the operator via voice messages.



Fish in position for vaccination. A camera system controls the vaccination units, adjusting injection point and depth to every single fish. The accuracy is above 98%.



The fish doesn't need to be sorted before the vaccination. The system sorts the fish into three different weight classes, and can also separate fish that is too small, deformed or damaged.



Technical data VX-4

Capacity:	10 000 fish/h*
Width:	4 470 mm
Length:	10 750 mm
Height:	3 200 mm
Power supply:	2x 16A 400VAC
Air pressure:	min.6 bar
Air supply:	1m3/min dry and clean air
Water supply:	10m3/h divided on 1 and 4 bar

*] capacity per hour – depends on batch composition and other necessary features.

Singulation unit

VX-4

Vaccination unit

VX-4 can be integrated with other types of anesthetizers.

Anesthetizer unit

Buffer unit

Technical data VX-8

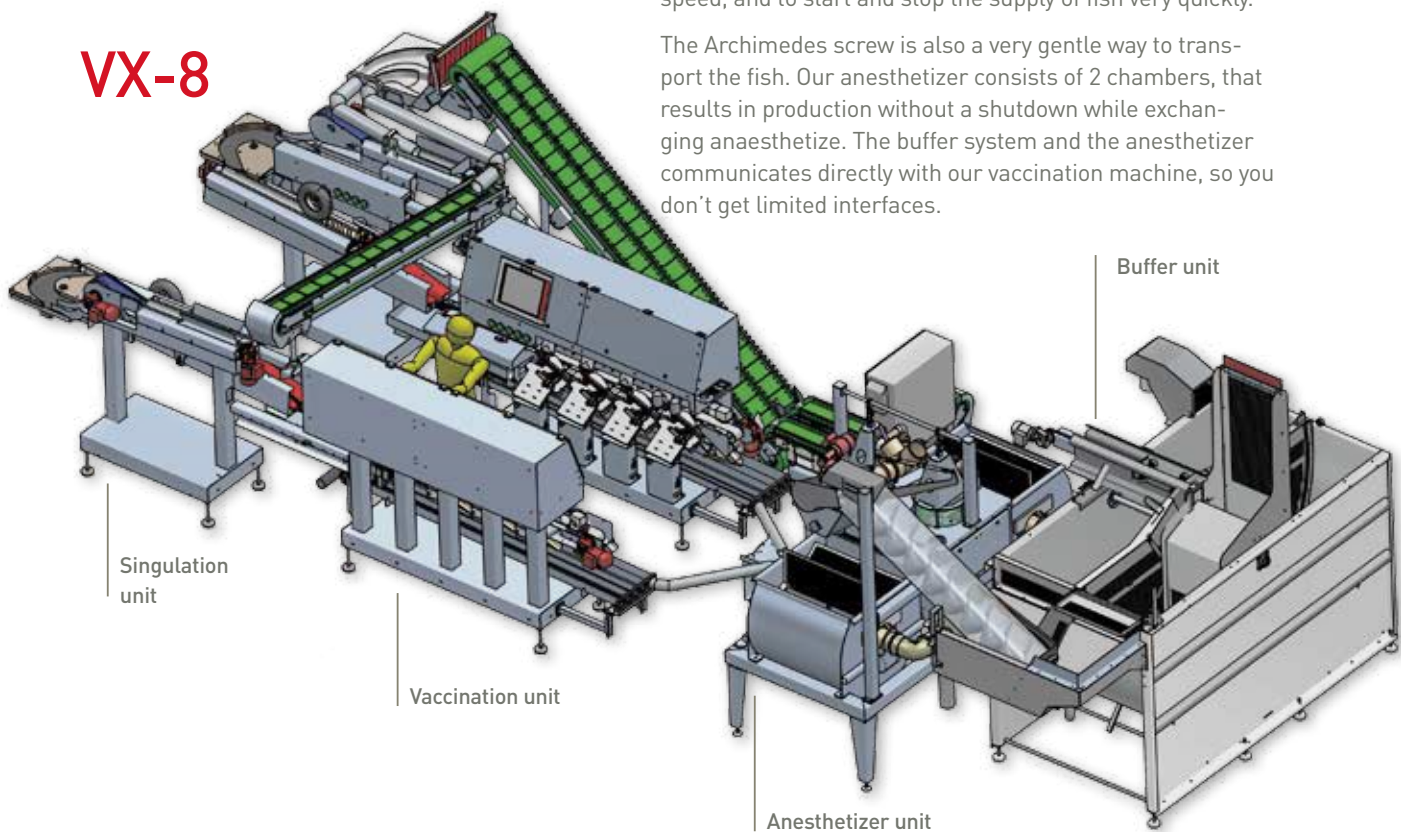
Capacity:	20 000 fish/h*
Width:	4 470 mm
Length:	10 750 mm
Height:	3 200 mm
Power supply:	3x 16A 400VAC
Air pressure:	min.6 bar
Air supply:	1m3/min dry and clean air
Water supply:	15m3/h divided on 1 and 4 bar

*] capacity per hour – depends on batch composition and other necessary features.

High efficiency as a complete solution

With Maskons anesthetizer and buffer tank, the supply of fish to the vaccination machine will be automatic. We are using data from the vision system to calculate the weight of the fish, based on that information we know how much fish that should go into the vaccination machine. The system weighs the fish on the way to the anesthetizer, and is therefore getting a very accurate amount of fish from the anesthetizer. The supply of fish to the anesthetizer is done by a Archimedes screw. This gives us the opportunity to regulate the speed, and to start and stop the supply of fish very quickly.

The Archimedes screw is also a very gentle way to transport the fish. Our anesthetizer consists of 2 chambers, that results in production without a shutdown while exchanging anaesthetize. The buffer system and the anesthetizer communicates directly with our vaccination machine, so you don't get limited interfaces.



Singulation unit

Vaccination unit

Anesthetizer unit

Buffer unit



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