Feeding System

- centralized feeding system that is easy to install and simple to use
Easy to install

The VAKI Feeding System is a self contained system installed in a standard 20’ shipping container.

The system is designed and assembled to customer specification at our headquarters in Iceland, and delivered to site ready to go.
The VAKI feeding system was developed in partnership with fish farms producing both juvenile and harvest size fish.

The system has been installed in hatcheries, smolt units and grow out fish farming operations on land and sea.

The system was developed to be a low cost, centralized feeding system that is easy to install and simple to use.

**How it works**

The feeding operation is based on delivering feed from storage silos to fish farming cages or tanks.

The silo empties into a feed dosing auger via an airlock into the main transport pipe to a feed distributor (revolver).

The blower sends compressed air into the distributor. The feed is then directed into the individual feed pipes and transferred to specific cages.

The dedicated software interface is used to control and monitor the feeding operations including feed rates, meal times, feed types and feed mix.
Feeding System software

Maximum Fish Growth

The VAKI Feeding System offers full control and overview of the daily feeding and is used to control the quality and efficiency of the feeding process.

Full control for better utilisation of the fish feed to gain maximum growth while ensuring a minimum of the feed nutrients are lost back into the water which may need further filtration.

The efficiency in utilising the nutrients in fish feed improves fish health, farming economy and benefits the environment.

Advanced Software

The VAKI Feeding Program is the user interface to monitor and control the feeding system.

The operator can view, reprogram or override the automatic operation of the system.
Feeding System components

Components supplied by VAKI

- Revolver/Distributor
- Airlock with funnel
- Blower
- PLC
- PC-software
- Sensors
- Pipes between components

Other Components not supplied

- Cooler (optional depending on size of blower)
- Feed Storage Silo
- Pipes fromangers
- Pipes to cages
VAKI feeding system is automatic feeding system designed for Fish Farms. The system utilizes one or more feed storage silos, which is useful when different sized feed is used.

**Components**

- **Funnel**: The auger on the silo drops the feed into this funnel which "guides" the feed to the airlock.
- **Air lock**: The airlock sends the feed into the airflow from the blower.
- **Blower**: Supplies the compressed air to move the feed through the feed pipes and into the cages.
- **Revolver**: Controlled with an encoder and PLC which selects the correct feed pipe for the feed to enter.
- **Pipes Connections**: Up to 36 feed pipes to the cages can be connected to the revolver.
Revolver

Revolver is rotated by a motor and positioned using an encoder.

The PLC is programmed to move the revolver to the correct pipes for each feed dose.

Typical sizes (special sizes on request)

- 4 pipe/cages
- 6 pipe/cages
- 24 pipe/cages
- 36 pipe/cages
- 48-50 pipe/cages
Airlock with funnel

**Airlock**
Allows feed to enter the compressed airflow without losing air pressure or scattering the feed.

**Funnel**
Is used to guide the feed dropped from the silos into the airlock. On the top of the funnel is plastic cover to prevent the dust.

**Sensor**
The sensor on the funnel stops the system if the funnel becomes blocked or is full of feed.
Blower

Sends compressed air through the main pipe to transfers feed from the airlock to selected cage via the revolver. The blowers are selected for the requirement of each system.

Blower size 2-30kW.
Programmable Logic Controller

The operation of the system hardware is controlled by Programmable Logic Controller (PLC).

The PC software is used to interface and program the feeding system. The system software controls feeding operations such as feed rates, meal times, feed types, etc. The operator can monitor, interface, reprogram or override the automatic operation of the system.
Pipes

Temperaute tolerance: +80°C

CR lining and steel spiral.
Compressed air cooler (optional)

SIMPLE WATER COOLER

AIR COOLED WITH WATER COOLER

AIR FLOW COOLED WITH AIR COOLER
Pipes from silos (optional)

Feed pipes in standard transparent or white milk.
Pipes to cages (optional)

Two types of pipes available that go from the distribution valve to the tank, cage or raceways.

**Plastic pipes.** Recommended feed pipe diameter to be used is dia 63mm outer, 57mm inner (3mm wall thickness). Maximum pipelength 800m.

**Arges (antistatic) pipes.** Comes as a dia 90mm hose with wall thickness of 5,4 mm. No maximum pipelength/ no joints.
PC software

The Main Screen shows the overview of the farm. Cages are shown on the left and the silos on the right side of the main program screen.

Cages are displayed with the cage name and population name. Water temperature, total number of fish, total days feeding, fish weight and population ID is also shown. Mouse over gives more detailed information.

Silos are displayed with; silo name, feed type, total feed in silo and total feed needed for today's feeding.
PC software

Populations
The Population sheet collects and stores the total number of fish in cage, connects to the SGR matrix and shows the daily feed.

The Feed Profile shows the feed distribution within the day.

The feeding profile shows percentage of total day feeding in each hour.
PC software

The history of growth and feeding can be viewed in the Growth and Feeding table. Import to excel, farm control etc.

Options to transfer files containing feeding info according to Norwegian Standard NS9403, e.g. Farm control.
Other components

Different types of silos

Many different silos are widely available to suit all set ups.
Basic feeding system
Slave – examples of setup

Feeding system with main revolver and slave revolvers.

The main revolver is located close to silos and Slaves are located close to cages. Kept indoors or outdoors.
Hopper System

The feeding system can be set up as refilling system for smaller feeding hoppers.

Both as single revolver system and multi slave system.