



*Vaki Ltd.*

## **MANUAL FOR THE VAKI – GRADER**



# Vaki-grader

## Basic Parts

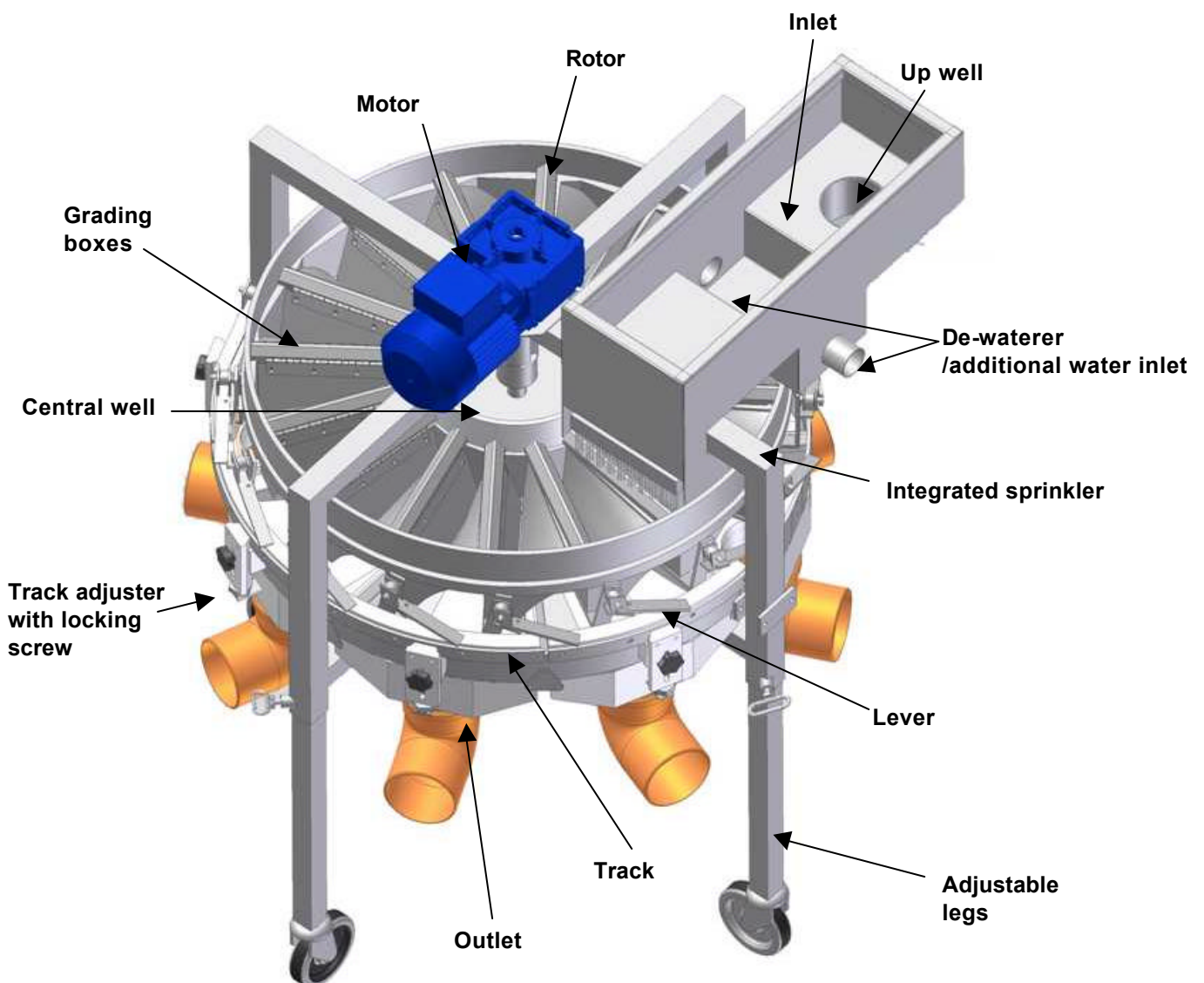
The Vaki-grader is designed to sort live fish, smolt, juveniles and fry.

The main design aims are for a compact machine which is easy to use and move in confined surroundings.

Additionally the grader was designed to accurately grade smaller fish with minimum stress and maximum capacity.

The Vaki-grader is circular with an inlet hopper feeding into the rotating grading boxes. The gaps in the bottom of the grading boxes are controlled by a lever running along the track around the outside of the grader. The fish are graded by thickness.

From the grading boxes the graded fish enter a collector box (outlet).



## Inlet.

To achieve the best results and highest capacity it is important to spread the fish evenly, uniformly and at a steady rate through the grader.



Dewaterer outlet

Upwell inlet

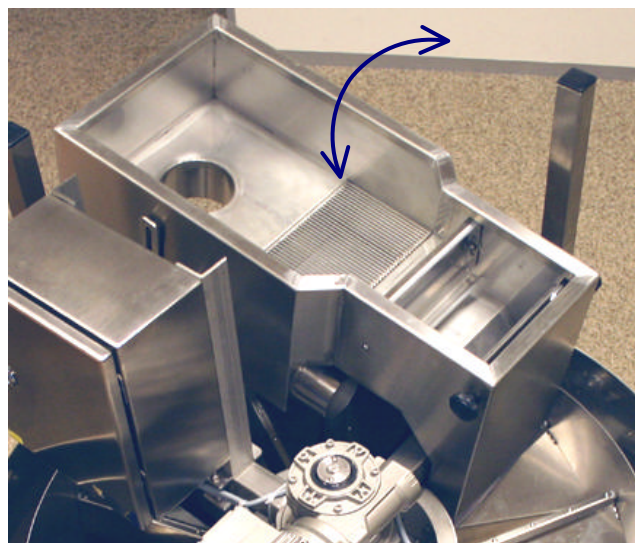


Fish can be transferred into the grader through the up-well or netted into the inlet hopper. Care must be taken to control the pump and water flow into the inlet hopper.

There is a de-waterer integrated into the inlet hopper. Additional dewatering may be required if larger pumps or very small fish are being used.

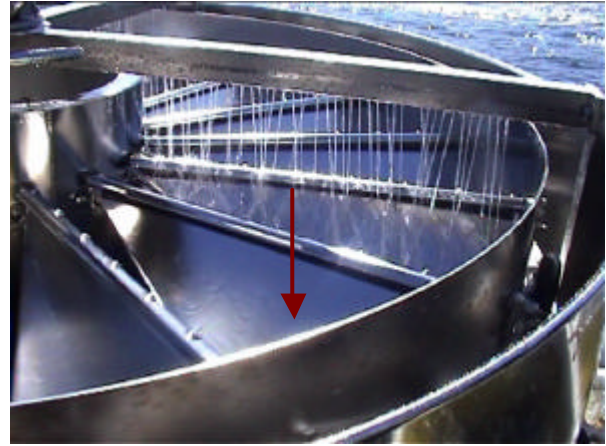
## Even Fish Flow

The inlet has a transparent window to observe the flow into the grading boxes. The inlet hopper has a tilt and fish flow adjustment to control the speed and flow of fish into the grading boxes.



## Water

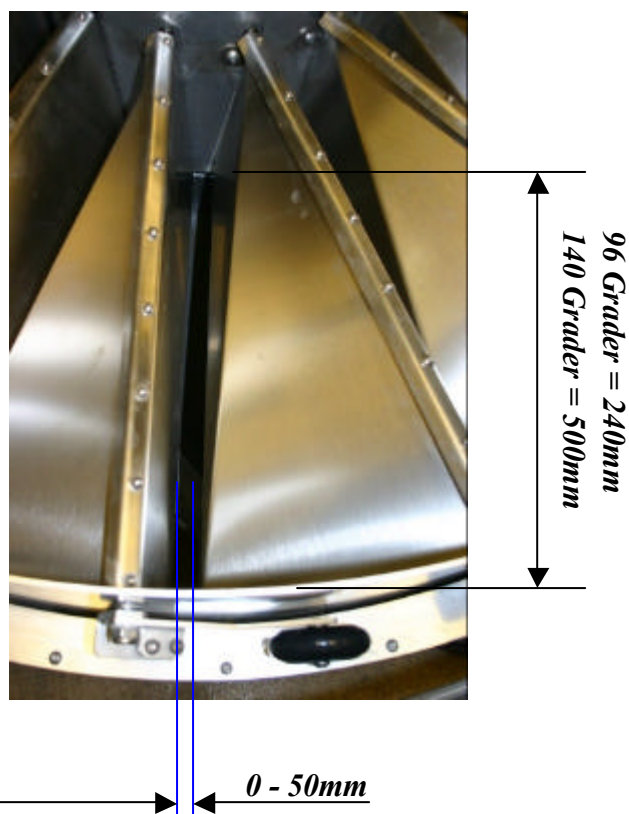
Water can be sprayed over and into the grading boxes from the integrated water supply. The water connection is located the main chassis. For additional water the central well can be filled which will spill into the grading boxes.



## Grading boxes.

The grading gaps in the bottom of the grading boxes can be adjusted from fully closed up to 50 mm wide

The length of the boxes are fixed at 240mm in the smaller (96) grader and 500 mm on the larger (140) version. The length of box and 50mm width is the limit to the maximum size of fish that can be graded.

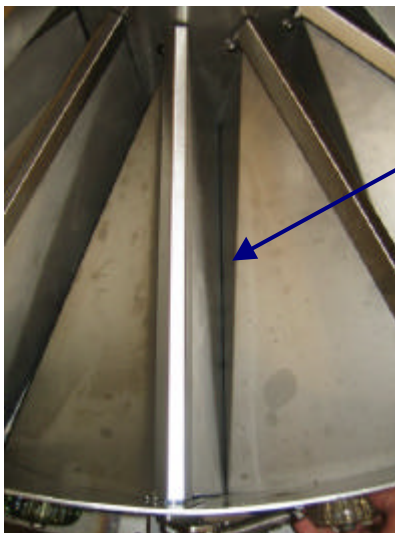
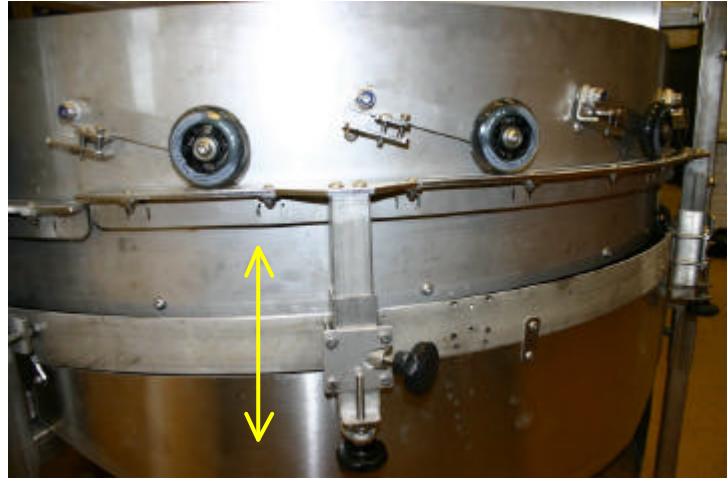




## Track & Lever.

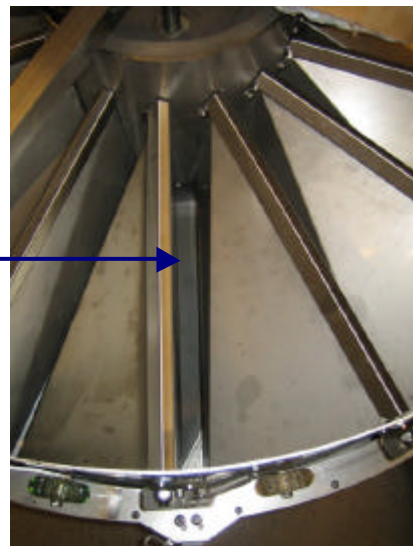
The bottom of the grading boxes are opened by a lever running on the track. The track is in 4 sections and each section can be raised or lowered independently using the adjusting screws. Lowering the track will cause the lever to open the slot in the bottom of the grading box increasing the grade size.

Raise and lower track to adjust grading gap in bottom of grading boxes.



Grading gap closed

Grading gap open





### **Outlet.**

Fixed under the rotating grading boxes are the outlet chutes. The outlets collect the graded fish and direct them into pipes away from the grader. The standard outlets are 110 mm tubes (a reduction can bring the size to 80 or 60 mm). There are four outlets on the standard machine.

### **The Motor.**

The machine is driven from a geared motor. The motor is fitted with a regulator to control the speed from 5 to 15 rpm.

It is best practice to start up the grader at low speed.

The grader should be connected to an ordinary 230 volts, AC electrical supply (2 ampere), which is converted internally to three-phased current for the motor by the transformer.

As an option a 110-volt version can be supplied.

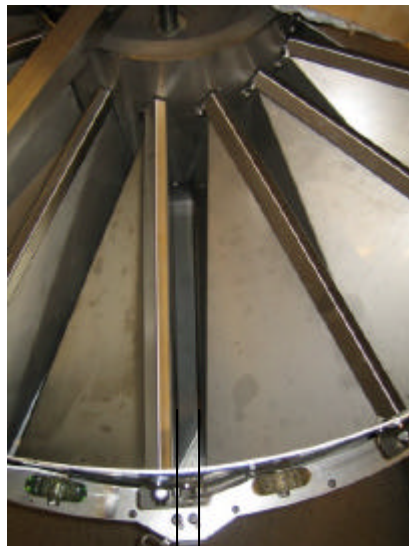
## Re Calibrating the Vaki Grader

The Vaki grader is calibrated at the factory. However in time should the calibration need resetting if possible this should be carried out by an authorised Vaki service agent.

The calibration procedure is to ensure all boxes open identically for each grade size. Each of the grading boxes must be checked and reset, if required, at the same position on the grader. It is therefore preferable to carry out the calibration in a position where you can either manually or using the motor rotate the grader to the point you are going to carry out the calibration.

**Step1.** Using a suitable gauge (e.g.10mm drill bit to set opening in box to 10mm) set the first box to a fixed size by adjusting the track up or down. Note: Ensure all other tracks are suitably adjusted so that the wheels can run over smoothly when turning the rotor and not get jammed against a track that is set too high.

Step 1

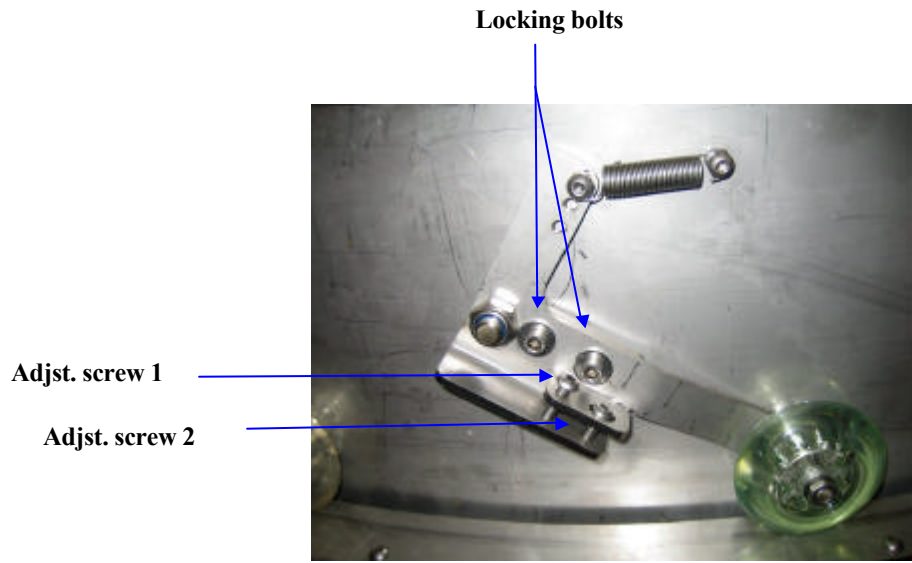


10mm

**Step2.** Ensure both locking bolts and adjustment screws are tight. Bring the next box onto the exact same point on the track and test with gauge. If gap is too small or too large, slightly loosen the 2 locking bolts only enough to make adjustments. Loosen the adjustment **screw 1** if gap in box is too small loosen adjustment **screw 2** and tighten **screw 2** if gap is too big until gap is correct, and re tighten up adjustment **screw 1**. Tighten locking bolts and re check.

**Step 3.** Repeat for all boxes ensuring that checking and adjusting the grading gap takes place at the exact same point on the same piece of track.

Step 2



# Wiring Diagram

