Heathro Fish Pump

User Manual

Contents

1. Warranty Terms of Heathro Fish Pump

VAKI Aquaculture Systems Ltd. Warranty covers any manufacturing defects occurring within one (1) year after delivery by VAKI or its reseller, provided that the equipment is installed, used and maintained in accordance with instructions for assembly and use.
VAKI undertake to repair such defects caused by construction or material faults arising in the fabrication of the equipment. Such defects will be repaired or replaced. The equipment must be returned to the manufacturer or authorized representative for the repair.
VAKI offers waranty for any original parts that are used for repair for a period of one (1) year from date of delivery.

VAKI is not responsible for:

- Incorrect installation use, or improper care and maintenance.
- Defects caused by parts, materials , components or equipment not supplied by VAKI and are obtained , installed or used by the customer without prior written approval from VAKI.
- Defects caused by modifications to the equipment made by the customer without the written approval from VAKI.
- Improper or unauthorised repairs made by the customer.
- Normal wear and tear on equipment.
- Improper connection of electric / hydraulic equipment.
- Defects caused by power surges.
- Damage to electrical cables.
- Any economic losses caused by the equipment out of service.

If errors or defects occur on the equipment, the customer must report as soon as possible and without any unreasonable delay to VAKI or representative.

Such report must be submitted no later than two (2) weeks after the waranty period, one (1) year after delivery.
If the customer does not inform VAKI or authorised representative within the time limits stated above, the customer will not be entitled to any warranty repairs or replacements for errors or defects. Repairs to equipment shall be made in accordance with the conditions stated above.

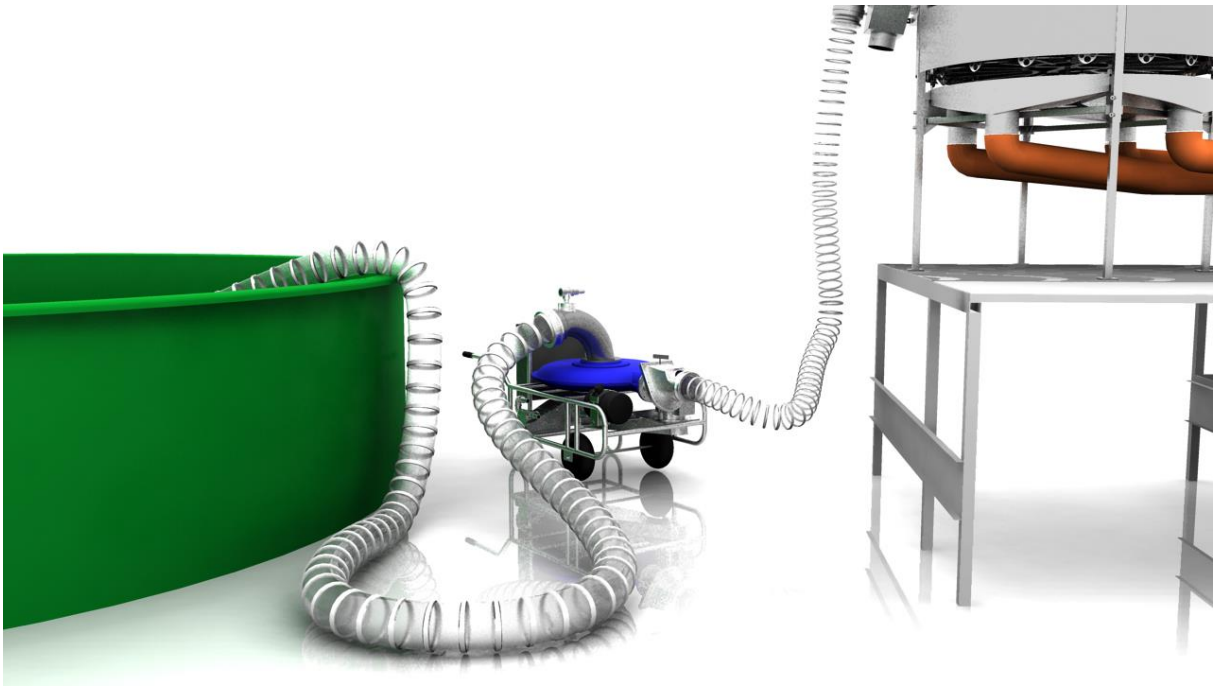
2. Environment

The Heathro Fish pump is designed to work in all weathers, except for temperatures below 0 ° C (Celsius).

Use in cold weather can cause damage to hoses and priming system. Heathro pump is built on a chassis with 2 large rubber wheels that can carry up to 400 kg per wheel, this allows the pump to easily move over rough and uneven surfaces. The pump is designed to move fish up to 400 g (salmonids). It is not suitable to pump pebbles , debris or sand.

Electrical needs

An electrical expert must ensure that appropriate power socket correctly connected to the pump power cable.



3. Explanation of Parts

Heathro Fish pump is made of aluminum and fiberglass and provides very gentle handling of fish during transport. The pump is 6 "but can be reduced down to 4", 5 "or 3" with purpose made fish friendly cam lock reducer kits.
The pump is available in three versions, the standard electric which is the most popular version , and also hydraulic and petrol-driven.
Large handles and rubber wheels alow the pump to easily move around eneven ground. Camlock quick couplings are used for simple and safe connection of hoses.

3.1 Pump Body

The Heathro pump body shell is made using a specially moulded form developed with over 20 years experience in the production of fibre glass fish farming equipment. Inside the pump body there is an aluminum impellor which leads fish and water through the pump. The impellor speed can be be fully controlled as required, either directly from the main pump control box or by radio remote control.

3.2 Main Motor

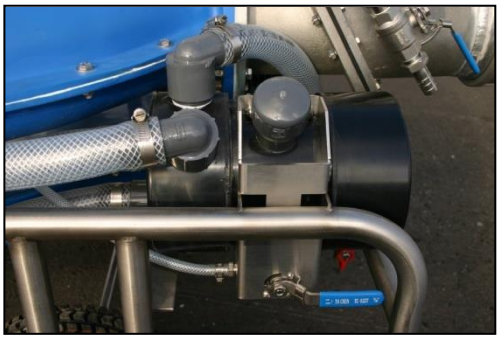
The main 4kW motor drives the impellor with two belts located under the pump body .
The motor is controlled by a frequency converter (Altivar 31), making it easy to regulate the pumping speed as required. ***Note: If the wiring of the the main power socket is inverted the internal circuit breaker will trip cutting the power to the main pump preventing the motor turning in the wrong direction.***

3.3 Priming motor

The Priming motor drives the priming pump that creates the suction inside the main fish pump before the main pump is started. This motor is 1.5 kW **and has no rotation protection**.

Note: If the wiring of the main power socket is inverted the priming motor may turn in the wrong direction and must be recitifed .

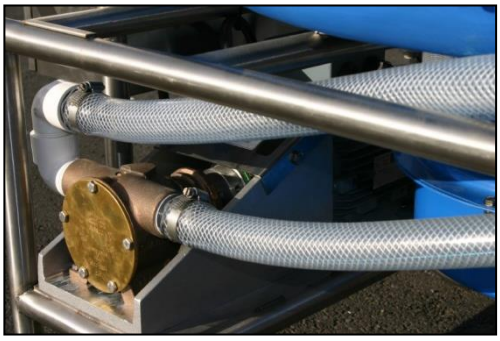
3.4 Priming tank



The Priming tank must be filled with water before using the pump. The water in this tank is used to create suction in the pumping system.

Only after running the priming pump and when water starts flowing out the priming sytem outlet can the main motor/pump can be started. There are two valves to empty the priming tank and the other to empty the main pump housing. In freezing temperatures the pump may be damaged if not drained fully after use.

3.5 Priming pump



The priming the pump is connected to the priming motor by a shaft. On this shaft there is a coupling that is easy to replace if necessary (see photo below). The motor is marked with an arrow showing which direction it should turn. It is important to empty the priming pump of water if there is a danger of frost.

3.6 Control cabinet

The Control unit has seven buttons, switches and lights. The large red switch at the bottom of the cabinet is the main power switch and can only be turned on when the cabinet door is closed.

There are an on and off button for priming the pump and also an on and off button for the main pump.

If required it is possible to use the priming pump while running the main pump. The black button controls the speed of the main pump and the red light shows if there is power to the pump or not. The sensitivity of the speed button can be adjusted as follows:

1 Turn off the power at the main switch and open the door of the control cabinet. The door can not be opened unless the main switch is turned off.

2 Turn on the power in the cabinet by turning the white shaft of the main switch clockwise. ***There will now be electric current in components of the cabinet, so avoid contact with any live components.***

3 The Altivar 31 has four buttons and a screen. It should now be rdY the screen. There is an up and a down button on the left side and esc and ent touch button on the screen.

4 Press (Ent) once and "Set" appears on the screen.

5 Press (Ent) again and "ACC"(acceleration) will appear on the screen.

6 Press (Ent) again and a value will be displayed on the screen. The ACC value is set to 3.0 at the factory. This value indicates the time in seconds for the main the drive to go from 0 to full speed. A higher ACC value (longer time period to go from 0 to full speed) will make it easier to have fine speed adjustments.

7 Use the up / down arrows to adjust to the desired ACC setting. The Factory setting @ 3.0, corresponds to 2.4 Hz per press of the remote control.
Increasing to 6.0s reduces every remote button press to1.2Hz steps.
The Altivar 31 can go from 0 to full speed of 50 Hz

8 Press (Ent) to save the new value.

9 Press (Esc) to return to the "ACC"

10th Press down arrow to scroll to "dEC" (deccelerate) this time setting the time to go from full speed to stop.

11th Press enter and the value of dEC will appear on the screen.

12th Adjust to the desired value. The value of ACC and dEC need not be equal. If desired, one can have fine adjustemt on the ACC to allow a slower rate of acceparation speed up while a coarse adjustment on reducing speed.

13th Press (Ent) to save.

14th Press (Esc) button repeatedly until 'rdY "on screen

15th Test the new setting and adjust if necessary (Section 4-14)

16th When the adjustment is complete the power is turned off by turning the white shaft of the main switch counterclockwise.

17th The door of the cabinet is closed.

3.7 Remote Control

Wireless remote control is optional and highly recommended. With this you can start and stop the priming pump and the main pump, and control the speed of the main pump. (see page 10 of the manual)

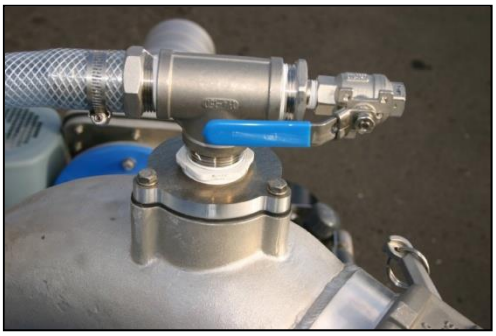
Inside the control cabinet there is an antennae for wireless connection to the handheld remote unit.

The remote must be recharged with the battery charger supplied.

3.8 Valves

On top of the swan neck there is a valve, this is used to release the vacum formed on the suction side of the pump. If the suction hose gets stuck open this valve to get the air into the system and loosing the vacum and releasing the suction hose.

On the main pump outlet there is a valve to empty and discharge the water on the outlet relieving the water pressure before removing the outlet hose from the pump.



3.9 Connections and Reducers

There are different sizes of reducers and connections with Heathro fish pump. The Camlock system is used for quick and safe connection of hoses. The standard size is 6 " and 4" but 5“and 3“ can also be ordered. The connections are designed and manufactured so that there are no sharp edges and the fish has a very gentle treatment during pumping. Ensure that the rubber gasket is in place so no air is sucked to the suction side.

3.10 Parts Pack

Many customers choose and buy a spare part package consisting of key parts that can be easily replaced.

1 coupler element
2 Cover of the coupler element
3 Impellor for the Jabsco pump priming
4 Adapter ring for the motor
5 Jabsco shaft seal
6 EDPM rubber check valve gasket and the aluminum plate
7 Drive belt (2 pcs.)
8 Jabsco gasket

3.11 Rubber Wheel

Heathro fish pump is on large rubber wheels so it's easy to move it over uneven terrain. Make sure the air pressure is equal on both wheels and fill grease cups regularly.

4. Use of Heathro Fish Pump

Heathro fish pump is available in three versions, electric, gas and hydraulic.

4.1 Electric model

Before you start the fish pump.

1 Make sure the main motor and priming motor is turned off.
2 Fill priming tank with water until it is full.
3 Ensure control cabinet is closed and turn on the main switch.
4 Check the main light illuminates on the control cabinet.
5 Make sure the valve on top of the swan neck is closed.
6 Make sure the valves and lid of the priming tank is closed

START THE PRIMING PUMP

1 Check the light on the control cabinet for priming the pump is on.
2 Check the priming pump turns in the right direction. See arrows on the pump. (If priming pump is turning in the wrong direction, the wiring must be corercted.
3 Run the priming pump until water flows out of the priming tank outlet hose.

NOW TURN ON THE MAIN PUMP

AND TURN OFF PRIMING PUMP

1 Check the lights on the control cabinet for the main pump is on.
2 Make sure the belts are not slipping.
3 Run the engine up to the desired speed.
4 If the pump sucks air and is shuddering then turn on the priming pump and let the priming pump run while the main pump is also running. The pump will shake if there is air in the system, and in this case use the priming pump.
5 For optimal use, it is very important that the pump does not suck air and shake so carefully check all connections and hoses on the suction side to detect and fix any leaks.

4.2 Maintenance

After the first 24 hours of use:

1 Check the belts have proper tension

Daily Maintenance:

1 Flush the pump and motor with fresh water
2 Check Camlock connections.
3 Check mechanical parts.

Weekly maintenance:

1 Lubricate the wheel bearing.
2 Make sure nothing is stuck in the drive belt cover. Check the belts are ok.
3 Check the air in the tires.
4 Check all hoses and connections for leaks
5 Lubricate the pump shaft bearing (under the main pump housing). IMPORTANT: before greasing remove the screw on the opposite side of the shaft . Remember to replace the screw afterwards.

To switch on the remote control to the pump:

Push the red stop button on top of the remote.

Press Start twice and hold the button the second time , until the

remote control starts blinking green.