Rotator

The Rotator atomises water using a special high speed spinning disc. A high-pressure clean water supply is therefore not required. With the Rotator, the water is sprayed onto the back of a rotating disc. This flings the waters to the outside of the disc, where it collides with a circle of pins and a fine water vapour is produced

Rotator

The rotator is designed for installation in a humidification or cooling system in the hatchery. The water has to be supplied with a pressure between 1 and 6 bar. The addition of any type of chemicals is forbidden. The unit atomises the water by throwing it to the outside of a high speed (2850 rpm) spinning disc. As the water hits the pins located around the disc small droplets are formed. An air stream, induced by a built-in fan rotating at 1420 rpm distributes the mist through the building. As the water evaporates, the surrounding air cools and the relative humidity of this air increases. Water that is not atomised by the disc and pins is collected in the tank and recirculated by the water pump. The two motors, one for fan and one for disc must be connected to separate electrical supplies. This allows the unit to be used for ventilation purposes only, without the disc spinning.

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Rotator

Construction

The Rotator is assembled from a number of components. Figure 1 shows the construction of the fan. Check whether all parts are present, if not, please contact your local supplier.

Installation

Installation must be carried out by qualified personnel and electrical connection should satisfy the nationally and locally applicable regulations.

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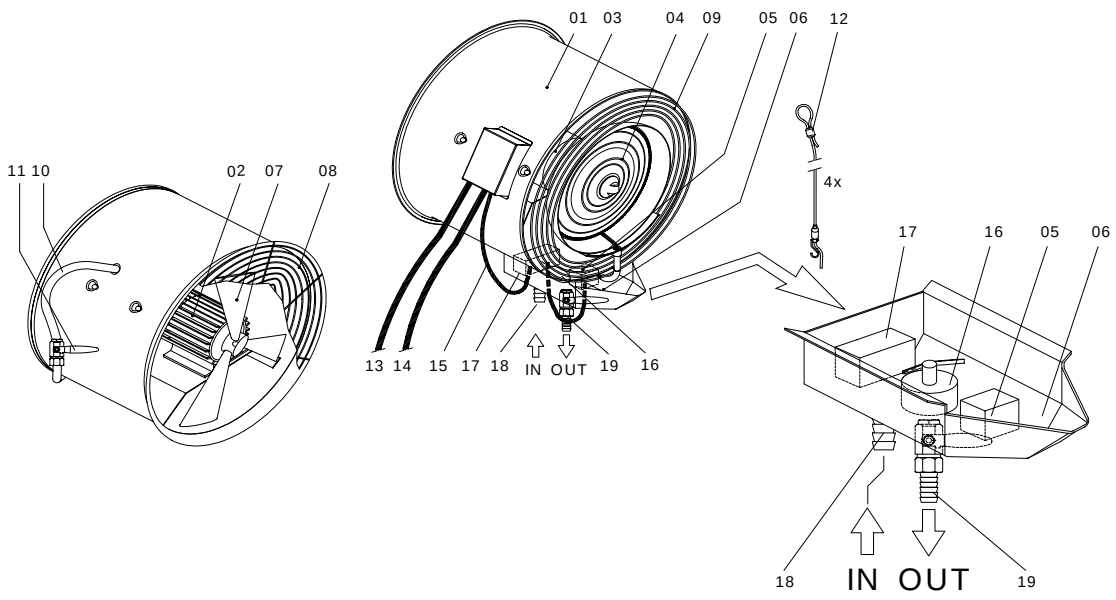

Figure 1. Layout Hygrofan Rotator

1. Body (stainless steel), 2. Ventilator motor, 3. Disc motor, 4. Disc, 5. Drain water pump, 6. Water tank, 7. Fan blade, 8. Inlet grid,

9. Outlet grid, 10. Water supply, 11. Ball valve (flow control), 12. Ventilator mounting cable (4x), 13. Ventilator motor cable,

14. Disc and pump cable, 15. Internal pump cable, 16. Float, 17. Minimum water level switch, 18. Water supply

(pillar ø 16 mm outside diameter), 19. Tap (ball valve) + pillar ø 10 mm outside diameter)

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Electrical connection

Check first whether the electrical data (type of current, mains voltage and frequency) on the motor sticker match the local mains supply. The electrical connection of both motors (fan and disc) should be made to separate switched supplies. This way the unit can be used for ventilation purposes only, without the disc spinning. The pump motor and the disc motor share the same power supply line. Larger installations can best be controlled centrally. Because of the high preamble current it will be better to start up the Rotator disc in stages. For optimal operation, it is best to follow the switching sequence as shown below. This to prevent wet spots under the units at start and stop. This sequence can be followed manually or with time relays. Upon request the Controller PHC 1.0 (plus some additional relays) can control the installation. Please contact the Pas Reform sales support team for further information.

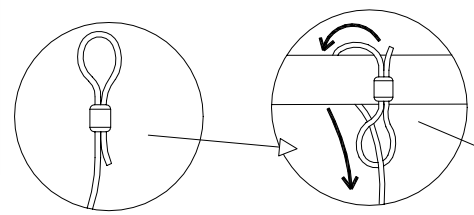

Fig. 2 loop on cable

Fig. 3 guide cable through loop

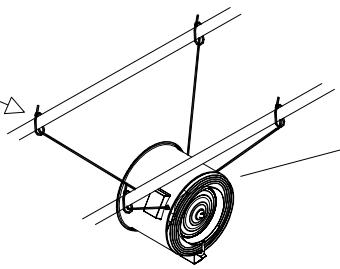

Fig. 5 hang unit horizontally

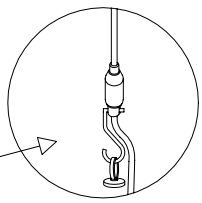

Fig. 4 adjustable hook

Mechanical suspension

The Rotator should be hung from the cables, which are included. Ensure that it is firmly fixed. If attaching the cables to beams in the hatchery loop the cables as shown in fig 4. Slide the loose end of the cable through the clip and hook the clip through the eye on the Rotator (see fig. 3). Do this with all four cables. By pulling the cables further through the clips, the Rotator can be set straight and horizontal (see fig. 5). Pushing the cable through the clip, while pushing the security ring (on top of the clip) downwards can do lowering the unit. Make sure of sufficient distance to obstacles (e.g. crop) to avoid wet spots. Before operating the unit for the first time check that all parts (motor supports, fan, disc, etc.) are fixed tightly. The standard grilles protect persons aged 14 or older.

Beware of the spinning disc. Do not put fingers (or other things) in the direction of the disc. Also watch out for loose clothing, like neck ties.

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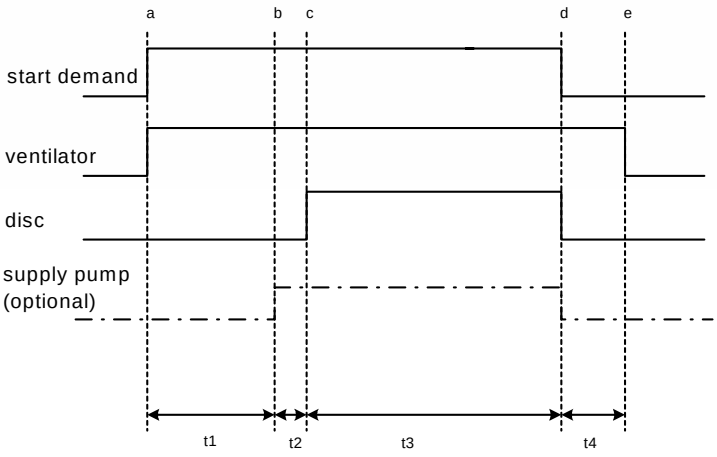
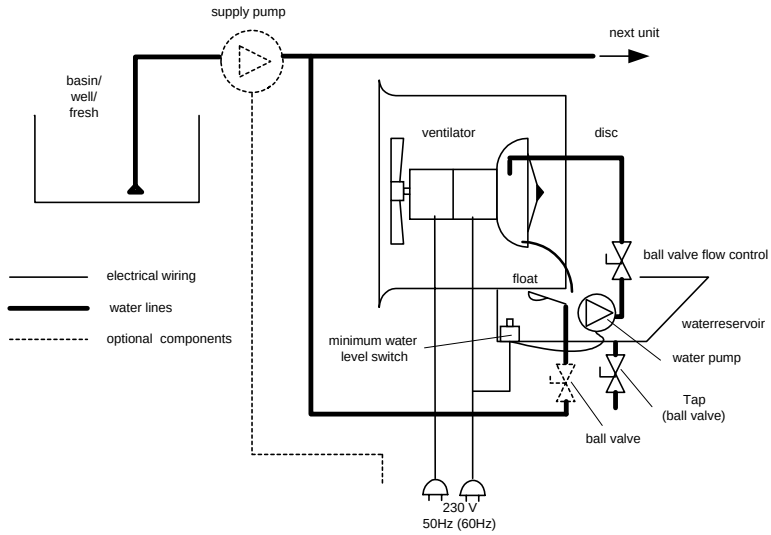
Water supply connection

Make sure the water supply lines are sized correctly so there will be sufficient water pressure (between 1 and 6 bar) at all units. Take precaution to avoid a water temperature increase in the supply lines. Avoid for instance direct radiation of the sun onto the supply lines. When the water supply is insufficient, the water pump will be switched off by means of the minimum water level switch. This to prevent drying running, which damages the pump. If the supply pressure is low or fluctuating, a supply booster pump should be fitted. If well or basin water is to be used, an inlet filter must be fitted (100 micron maximum mesh size). Never use clear hoses/lines to prevent algae and bacteria growth. Connect the water supply hose to the pillar (ø 16mm outside diam.) on the bottom of the water tank, and fix it with a hose clamp. With the ball valve of the unit the desired spray volume can be adjusted between 10 and 40 litres per hour. A flow larger than 40 litres per hour will result in a bigger droplet that evaporates very slowly. This could result in wet spots near the unit, especially when the ambient air is cold and has a high relative humidity. The actual volume delivered per unit could be checked using a rota (variable area) flow meter, fitted in the supply line. For easy servicing a Rotator it is advisable to fit a ball valve in the supply line directly for the Rotator.



a start demand
1 prepurge ventilator, app. 60 sec.
b start supply pump (optional)
t2 time to pressurize the system
c start disc
t3 system active
d end demand, disc stops
(optional: system pump stops)
t4 postpurge ventilator, app. 4 minutes
e end of postpurge ventilator



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Servicing

Before cleaning the fan, switch off the power supply. The motors, rotor and disc should be cleaned regularly, at least once a year. Regular cleaning of the fan avoids an unbalanced rotor and disc (causing a defective bearing) and contamination of the motors (causing poor cooling) and thus increases the service life. Only brush clean, never spray with water. The fans have sealed ball bearings which require no maintenance under normal operating conditions.
Check the operation of the water pump, minimum water level switch and float and remove any dirt from the tank. A stopped or blocked water system may cause damage by spilled water. In case the impeller or disc has to be removed: take rubber plug out of motor body. Block the shaft by putting a screwdriver through the hole in the shaft. When the disc has been remounted on the shaft, use some loctite 243 and lock-screw to be sure that nut is really fixed.

Safety instructions

•Beware of the spinning disc. Do not go near the disc with loose clothing, loose hair etc. or put fingers etc. close to the spinning disc. Check correct fixation of the disc every three months.
•Make sure the air stream with water droplets is not directed towards electrical appliances or connections. This could cause fire or electric shocks.
•For reasons of system hygiene and to prevent bacteria growth, it is necessary to run the system each day for approximately 30 minutes. Always supply clean water to the Rotator. Do not supply any water to the unit, which has been in the supply pipes for a longer period, during which the water temperature could have become more than 20 °C.
•When the system has not operated for a certain period (more than 2 weeks, for instance at the beginning of the misting season), all water supply lines have to be drained before start up. Opening the drain valve (pos.19 of fig.1) of all Rotators does this, while collecting the water or leading it into the sour. Do this for a certain period; to make sure all water in the lines has been drained. Per meter of water supply line at least 0,5 liter of water should be drained.
•Always disconnect the power supply before working on the fan, in such a way as to not allow accidental switching on. Refit the grilles immediately after the work is completed.
•Persons under 14 may only enter the room in which the fans are installed under adult supervision.
•Ensure that the fans are firmly and safely fixed. If possible, always use the steel cable delivered with the unit
•The addition of any form of chemicals to the water is forbidden, as this may damage the system.
•Electrical connections should satisfy the national and locally applicable regulations.
•Check the function of the water pump, float minimum and water level switch. Malfunction of these parts or a blocked water system might cause damage by spilled water.
•If the disc and fan becomes unbalanced and vibrates, stop the system immediately and clean the unit. If the problem persists call your installer. If the unit is operated unbalanced damage to the unit, especially the bearings can occur.
•The Rotator complies with the EMC directive 89/336/EEC; 92/31/EEC and the Low Voltage directive 93/68/EEC.

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Rotator

Technical Specifications

			50 Hz	60 Hz
Air volume		m^3/h	4000	(4600)
Water capacity		Ltrs/h	max. 40	
Range/throw		m	20-35*	
Mains voltage		Vac	230	
Frequency		Hz	50	(60)
Enclosure		--	IP 54	
Speed	ventilator	rpm	1420	(1700)
	disc	rpm	2900	(3500)
I-nominal	ventilator	A	0,8	(1,3)
	ventilator			
	+ disc/pump	A	1,8	(3,9)
Power cons.	Ventilator	W	170	(200)
	ventilator			
	+ disc/pump	W	400	(450)
Supply water pressure		bar	min. 1, max. 6	
Diameter hose pillar (outside)		mm	16	
Diameter		mm	560	
Air intake		mm	610	

In our commitment to quality improvement through continuous research, we reserve the right to alter specifications of our products without notice

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