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HatchTech U-Vaporator

TK-12865A

User manual

Version 1.0 ENG



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1 Foreword

This user manual provides all information needed to correctly use the HatchTech U-Vaporator for optimal uniform humidification in your incubator. The HatchTech U-Vaporator is only used in a HatchTech hatchery. The HatchTech U-Vaporator may only be operated by hatchery personnel trained by HatchTech.

Before using your HatchTech U-Vaporator, first read the provided user manual and observe the instructions. This will prevent accidents and ensure that the warranty remains valid.

This user manual describes all measures necessary for the safe use and proper maintenance of your HatchTech U-Vaporator. The operating company is responsible and must guarantee that all users have received and understood all operating instructions provided by HatchTech.

If the HatchTech U-Vaporator will be used for purposes other than incubating, a formal approval of the manufacturer and, if applicable, the relevant regulatory authorities, must be obtained prior to use. The HatchTech U-Vaporator can be operated within specified boundaries conform product specifications.

HatchTech is constantly engaged in the further development of the HatchTech U-Vaporator. The content of this manual is subject to change, so any claims based on this information cannot be asserted. The end-user is always responsible to ensure that he keeps the last version of the Instructions for use ('IFU') on file. The last version of the manual can be downloaded on https://myhatchtech.com/.

If you have any questions, please contact HatchTech.

1.1 Explanation of information symbols

⚠ DANGER

Indicates procedures that must be strictly followed in order to prevent the risk of irreversible injuries.

⚠ WARNING

Indicates procedures that must be strictly followed in order to prevent the risk of reversible injuries.

⚠ CAUTION

Indicates procedures that must be strictly followed in order to prevent material damage and/or destruction.

NOTE

For technical requirements that require special attention.

ENVIRONMENT NOTE

To prevent environmental damage.

1.2 Product warranty

An unauthorized modification or addition to the HatchTech U-Vaporator is not allowed. Any unauthorized modifications are not covered by support services or product warranty. You should, therefore, contact HatchTech beforehand.

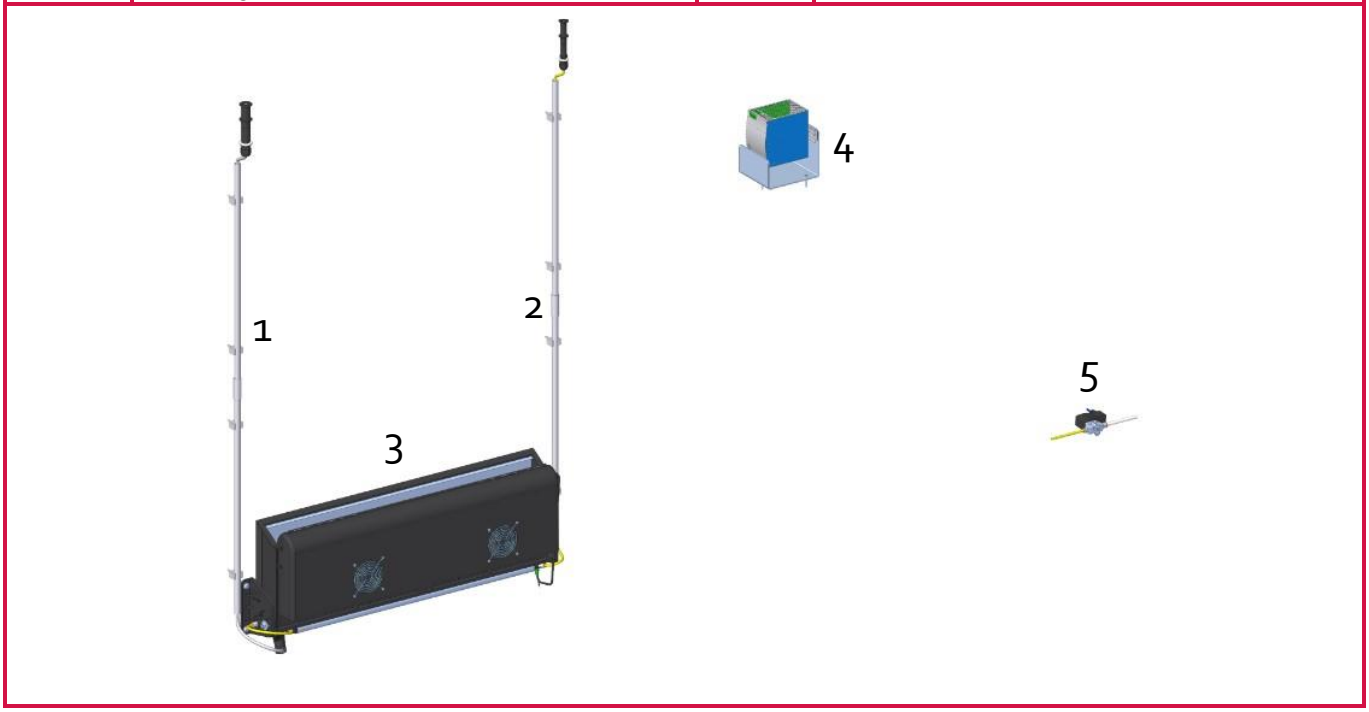
2 Product description

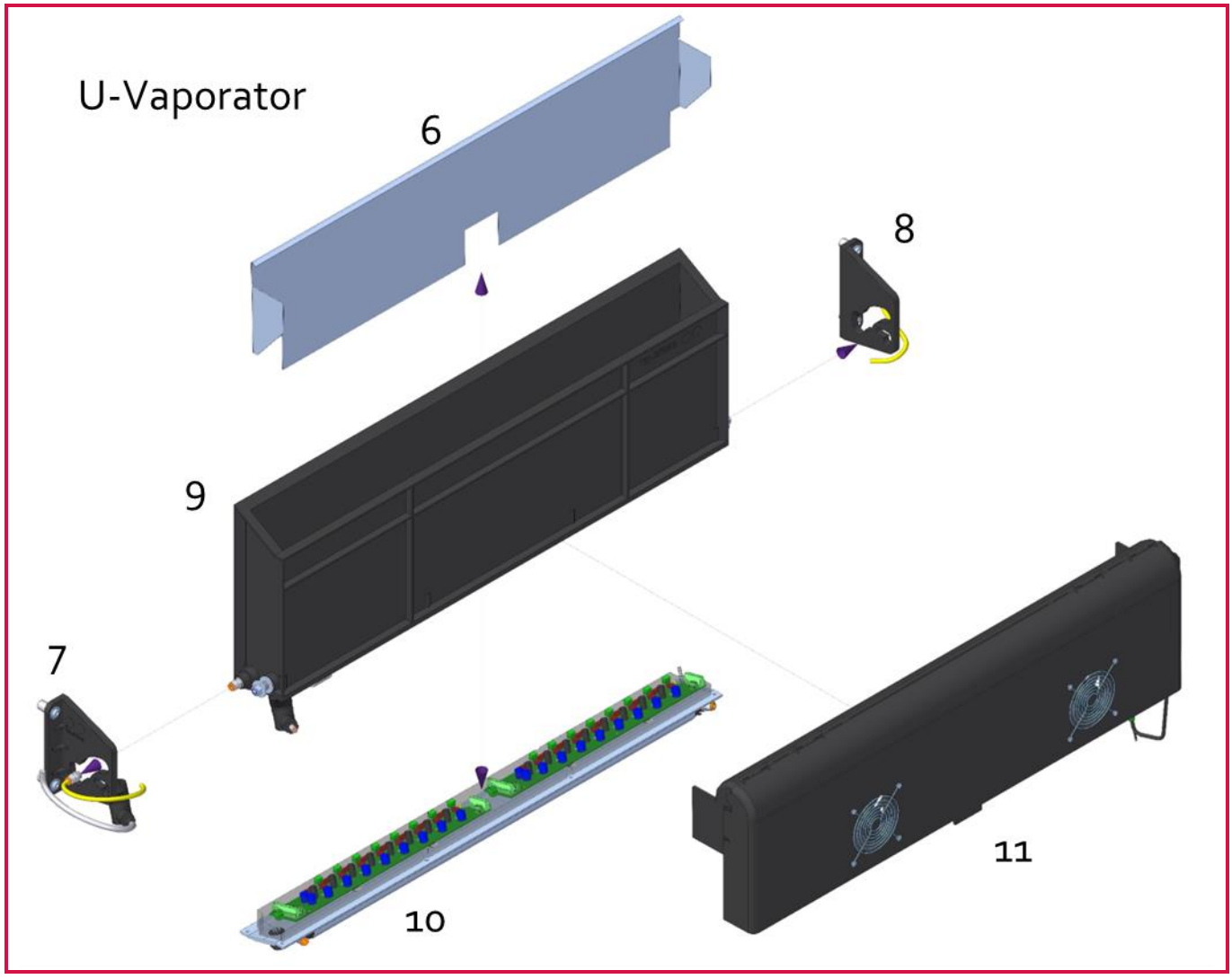
2.1 Introduction

During the incubation process, several factors influence embryo development. Two important factors are temperature and humidity. To control embryo temperature, a proper humidity level is required, as humidity is the transport medium for heat. The smaller the water droplet size, the better the distribution and the more uniform the total heat-transport. The HatchTech U-Vaporator creates small droplets of 1 micron. As a result every embryo in the incubator can lose the optimum amount of heat. This will lead to optimal and uniform chick quality.

2.2 Product composition

Ref.	Article	Ref.	Article
1	TK-07632 Control cable & connector	7	TK-07363 Support left
2	TK-07634 Hose	8	TK-07364 Support right
3	TK-07360 U-Vaporator	9	TK-13300 Spare box
4	TK-08156 Power supply	10	TK-12908 Cooling profile
5	TK-13334 Magnetic valve	11	TK-08627 Air guiding plate
6	TK-07405 Plate		




U-Vaporator
6
8
9
7
10
11

2.3 Working principle

The HatchTech HatchTech U-Vaporator consists of 16 ultrasonic elements, mounted in a water bath and generates a humidification capacity up to ~7 L/hr. By a sensor, the amount of the water inside the HatchTech HatchTech U-Vaporator is maintained at an amount of approximately 1.5L. The ultrasonic technology in the HatchTech U-Vaporator switches on at the moment the sensor indicates that the relative humidity is too low.

The ultrasonic elements create cavitation by use of vibrations. Cavitation forms bubbles in the water. These bubbles implode and explode when they are released from the water, creating a fine mist.
The airflow inside the machine subsequently distributes the water vapor throughout the machine.

3 Safety

Careful operation is your best assurance against an accident. Read and understand this section carefully before starting installation, connection and operation of the HatchTech U-Vaporator. All operators, no matter how experienced, must read and understand this user manual. The operating company is obligated to provide all operators with this information.

3.1 General safety instructions

⚠ DANGER

The use of drugs, alcohol or medications that affect reactions, impair the ability to correctly use the HatchTech U-Vaporator!

People under the influence of the above-mentioned substances are not permitted to perform work of any kind on or with the HatchTech U-Vaporator.

⚠ DANGER

Electromagnetic interference may occur on medical devices! Only use equipment that is sufficiently protected against electromagnetic interference!

Medical equipment, such as pacemakers or hearing aids, may not work properly when the HatchTech U-Vaporator is in operation.

Ask your doctor or the manufacturer of the medical equipment to confirm that the medical equipment is sufficiently protected against electromagnetic interference.

ENVIRONMENT NOTE

We recommend working with a professional recycling company for disposal issues.

The HatchTech U-Vaporator is composed of different materials. Replacement of the components needs to be carried out in accordance with regional and national regulations.

⚠ CAUTION

Installing unoriginal parts to the HatchTech U-Vaporator without approval of the manufacturer impairs human safety and voids the manufacturer's guarantee!

Original parts, attachments and accessories are specially designed for this HatchTech U-Vaporator. Parts, attachments and accessories supplied by other companies have not been tested and approved by HatchTech.

Installation or use of such products may have a negative impact on the design features of the HatchTech U-Vaporator and thereby impair safety.

Obtain approval from the manufacturer before installing such parts. The manufacturer accepts no liability for any damage caused by the use of non-original parts and accessories without approval!

3.2 Misuse

Damage or other defects to the HatchTech U-Vaporator must be reported to the responsible person as designated by the operating company immediately, so that the defect can be rectified.

Do not remove or deactivate protective guards, safety systems and/or switches.

Do not use the HatchTech U-Vaporator as a method of disinfection in a setter or hatcher.

Do not fill the HatchTech U-Vaporator with anything else than RO-water. Never fill it with chemical solutions.

Work on the electrical system is only permitted with the manufacturer's approval. All electrical system interventions must be documented.

3.3 Protective measures

In order to prevent residual risks, the following protective measures must be observed.

⚠ DANGER



Never put your hand inside the HatchTech U-Vaporator.



Be aware that contact with the ultrasonic elements inside the HatchTech U-Vaporator may lead to skin burns. Do not touch the HatchTech U-Vaporator during operation.



Switch of the main power before disassembling the HatchTech U-Vaporator. Wait for at least 5 minutes to allow the buffer capacitors to discharge.

⚠ CAUTION



Use reverse osmosis (RO) humidification water according to GENS-003 for the HatchTech U-Vaporator.

Keep the HatchTech U-Vaporator in its original packaging during transport.

The HatchTech U-Vaporator is not protected against incorrect connection to the main voltage. Incorrect connection can damage the HatchTech U-Vaporator.

Do not install the HatchTech U-Vaporator in an area with UV-light disinfection. UV-light will harm the HatchTech U-Vaporator.

4 Installation

For installation instructions, see electrical schematic and step-by-step file of the MicroClimer Setter and Pre-humidifier.

4.1 Connections

In this section the external connections of each component of the U-vaporator are described.

4.1.1 Control principle

The control principle is described in

Figure 1.

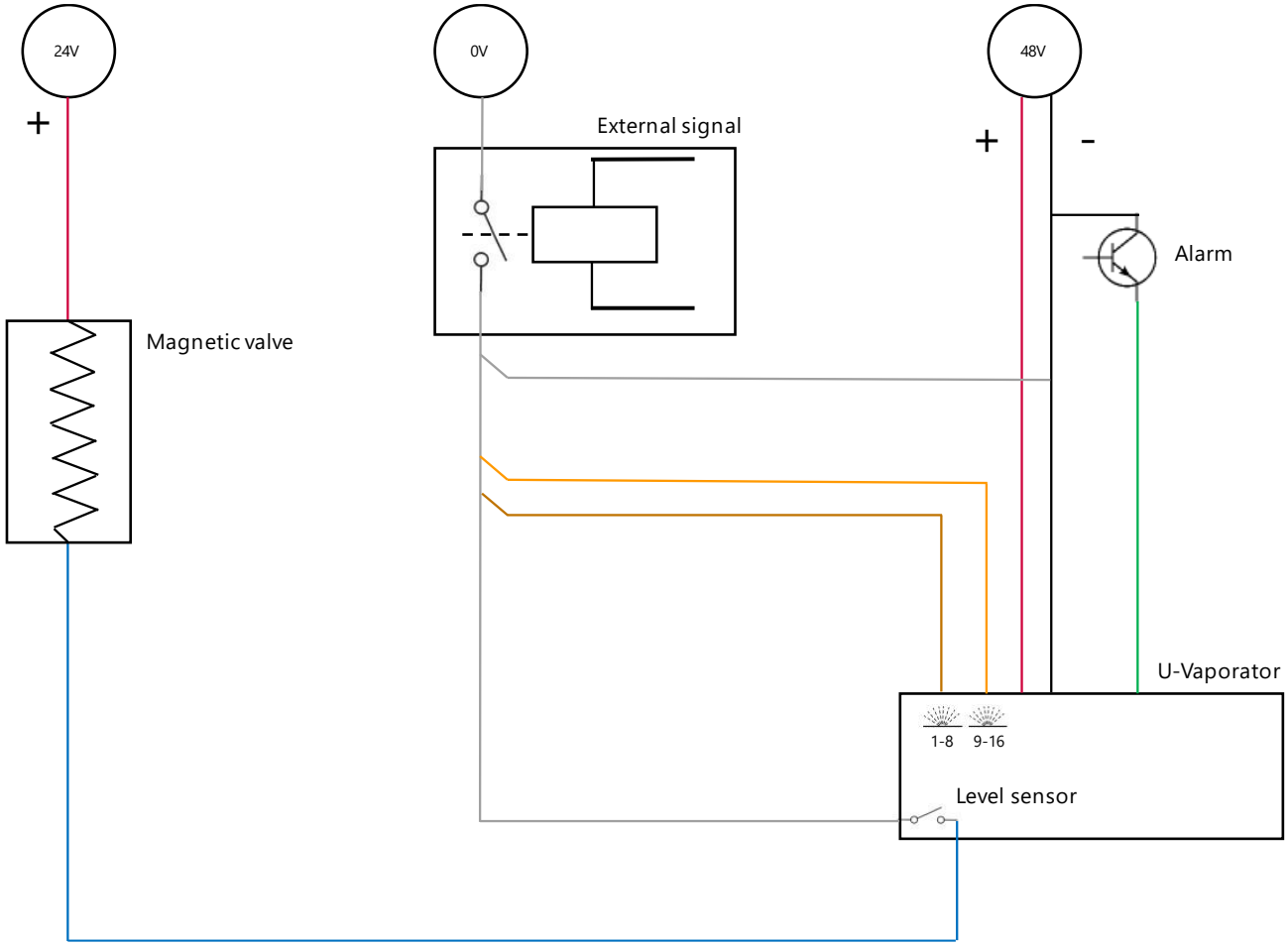
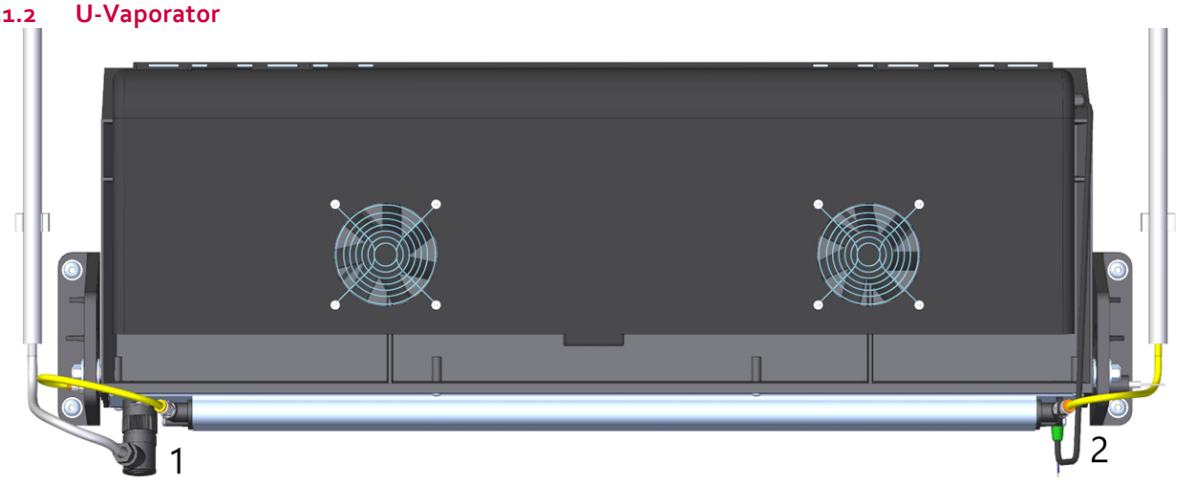


Figure 1 Control principle HatchTech U-Vaporator.

4.1.2 U-Vaporator



Ref.	Article
1	TK-07632 Control cable & connector
2	TK-07634 Hose (Ø6 mm)

4.1.3 Control cable

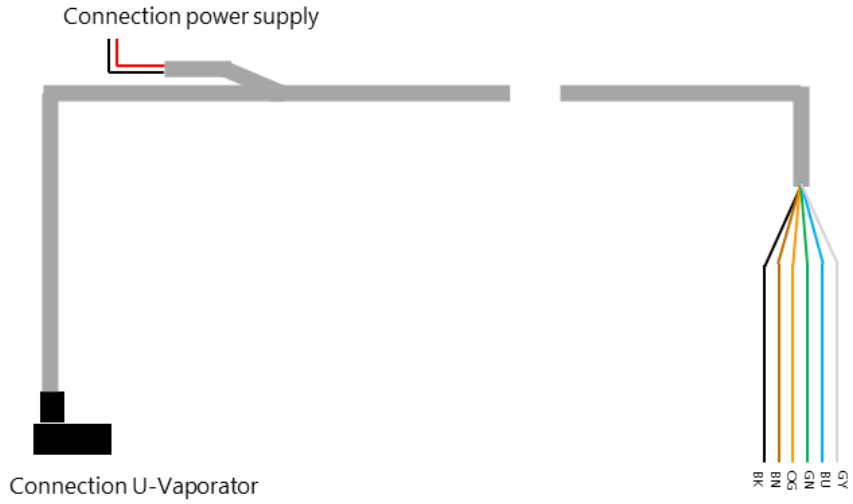


Figure 2 Schematic drawing TK-07632 Control cable & connector.

Connector pin	Wire color	Function	Logic
1	Black (BK)	Ground	
2	Red (RD)	+48 V	
3	Brown (BN)	Ultrasonic elements 1-8	Active low
4	Orange (OG)	Ultrasonic elements 9-16	Active low
5	Green (GN)	Alarm	Active low
6	Blue (BU)	Level switch	Closed when water level is too low
7	Gray (GY)	Level switch / Ground	Closed when water level is too low

4.1.4 Magnetic valve

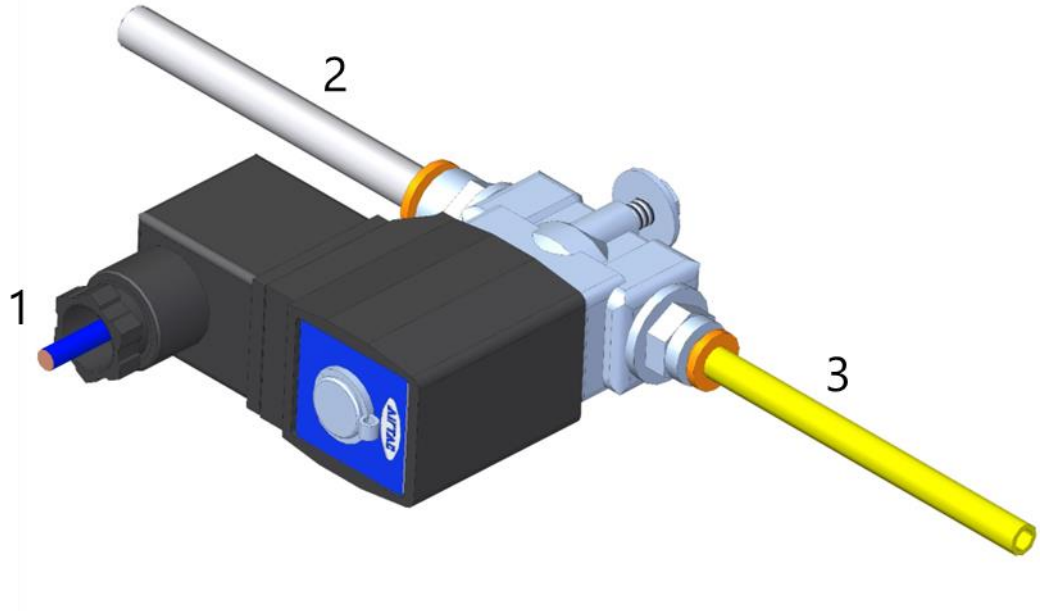


Figure 3 Connections magnetic valve.

Ref.	Article
1	TK-12873 Cable water valve
2	TK-11435 Hose (Ø8 mm)
3	TK-07634 Hose (Ø6 mm)

4.1.5 Power supply

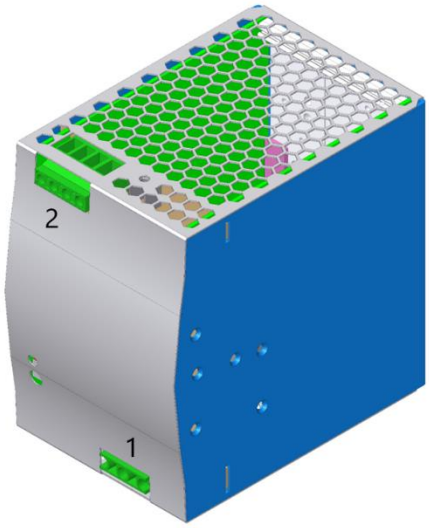


Figure 4 Connections power supply.

Ref.	Article
1	TK-10114 Cable (3x 0,75 mm)
2	RD + BK wire of TK-07632 Control cable & connector

5 Operation

5.1 Cleaning

In order to prevent cross contamination between different incubation cycles, it is mandatory to clean the HatchTech U-Vaporator after each incubation cycle according to the following cleaning instructions.

5.1.1 Safety

Cleaning work must be carried out by adequately trained personnel.

⚠ CAUTION



The disinfection chemicals should be used safely according to the supplier's instructions.

⚠ CAUTION



Corrosive cleaning detergents can damage components!

- **HatchTech U-Vaporator high pressure cleaning and cleaning with detergent is not allowed.**

⚠ CAUTION



Ignoring the cleaning instructions may have the following consequences:

- **Incorrect functioning of the equipment.**
- **Contamination of micro-organism between production cycles.**
- **Ineffective maintenance.**

⚠ CAUTION



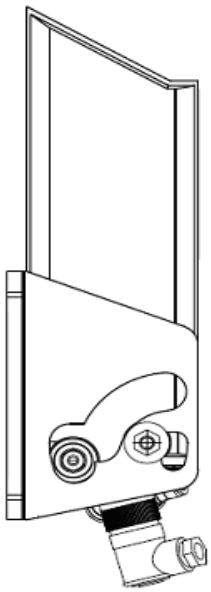
Use personal protective equipment

- **Use working footwear with anti-slippery soles.**
- **Wear adequate working dressing, protective glasses and rubber gloves, to protect the worker against contact with used chemicals as well as hot water.**

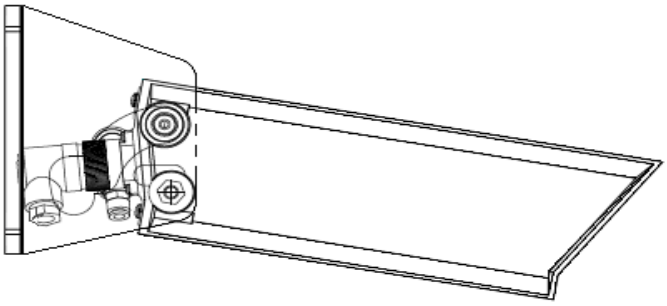
5.1.2 Cleaning operation

For optimal hygiene control the following cleaning protocol must be followed:

1. Turn the HatchTech U-Vaporat from the operational position to the cleaning position see figure below.



Operational Position



Cleaning Position

2. Remove the metal plate from the HatchTech HatchTech U-Vaporator and clean it.
3. To clean the HatchTech HatchTech U-Vaporator use the same disinfectants used to clean the machine at their normal operational levels. Don't leave the disinfectants to soak.
4. Rinse the HatchTech HatchTech U-Vaporator directly with water afterwards.
5. Return the HatchTech HatchTech U-Vaporator to the operational position and place back the metal plate before starting the machine.

6 Troubleshooting

In the this chapter a troubleshooting guide for most common situations is described.

Only one side of the HatchTech U-Vaporator is operating		
Cause		Action
1. Incorrect wiring of the Control cable		Check connection of the Control cable to the mainboard of the controller.

No humidification from the HatchTech U-Vaporator		
Cause	Check	Action
1. Incorrect settings		Ensure that the humidification system is switched on.
2. No power on the Power supply unit (green LED off)		Check in the controller that Fuse 6A slow is replaced and installed.
		Check connection of the Power cable to the Power supply unit.
		Check connection of the Power cable to the mainboard of the controller.
3. No power on the HatchTech U-Vaporator		Restore power to machine and restart.
		Check wiring of the Control cable to the Power supply unit.

No water running into the HatchTech U-Vaporator		
Cause		Action
1. Water valve closed		Check if the water valve that is located between the main pipe and the magnetic valve is open.
2. No pressure on main water system		Check for a pressure range of 1~4 bar on main water system.
3. Incorrect direction of the water flow over the magnetic valve		Check that the 8 mm Push-in Nipple is connected to side 1 of the Magnetic valve and that the 6 mm Push-in Nipple is connected to side 2 of the Magnetic valve.

4. Incorrect wiring of the magnetic valve		Check connection of the Control cable to the mainboard of the controller.

7 Maintenance

⚠ CAUTION

Not replacing the spare box SP-13300 every 6 months leads to leakage, technical failure and standstill. May lead to damage of other electronic components of the U-Vaporator!

To prevent the HatchTech U-Vaporator from undesired standstill because of technical failure, HatchTech recommends replacing the spare box SP-13300 every 6 months. The spare box must be replaced according to the instruction video below:

https://myhatchtech.com/?p=organization/instructions&video=91588176o

8 Spareparts

Spareparts are provided by the HatchTech Service department. All spareparts can be ordered via https://my.hatchtech.nl/ or HatchTech Care Department.

Only use spareparts as per the manufacturer's instructions. The use of unapproved spareparts can result in an increased risk of accidents due to insufficient quality or incorrect assignment.

The spareparts are summarized below:

SP-07361 U-Vaporator
- SP-13300 Spare box
    - SP-02995 Nipple
- SP-07632 Control cable & connector
- SP-12908 Cooling profile
- SP-09087 Air guiding plate w. fan
    - SP-09013 Fan
- SP-10078 Hose

SP-13334 Magnetic valve
- SP-01126 Nipple
- SP-04836 Nipple
- SP-10296 Belimocable

SP-17847 Power supply
- SP-07630 Cable
- SP-08132 Fuse

9 Service and support

Our technical support service will be pleased to provide any additional information you may require.

Where we can help:
- Commissioning
- Training
- Servicing
    - Spareparts
    - Repair service
- Monitoring/optimization
- Consulting & maintenance

Contact us:
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