Instruction manual

UWS
OUR WATER. SAFE.

Heaty Profiline № 2

Conditioning unit

Index

1 Introduction

1.1 Heaty Profiline № 2

Water treatment device Heaty Profiline № 2 is a device for treatment and filtration of water in heating systems and cooling systems (without inhibitors) of buildings. The device can be used as follows:

- As a filtration device in the circuit of a heating or cooling system (optional, *Filter Solo* operating mode)
- For water treatment using the bypass process or initial filling of a heating or cooling system without the bypass process (optional, special operating mode *Solo treatment*)
- For parallel filtration and water treatment in the bypass process (standard, *Kombi* operating mode)

Improper use of the device can lead to impairments in the safety of people and to qualitatively inferior process results.

Read through these operating instructions carefully and take careful note of the information on safety, operation and maintenance.

1.2 Conditions of use

In order to use the device properly, observe the following instructions:

- Before starting work, make sure that the heating or cooling system is state-of-the-art.
- Observe the regulations on the construction, commissioning, design and filling of heating and cooling systems.
- Operate the device with a flow pressure of the drinking water line of at least 1.5 bar if it is not used in the bypass process. This affects the Filter Solo operating mode and the special processing *Solo operating mode*.
- If the device is connected in the bypass for filtration or treatment, a system pressure of at least 1.2 bar is required.

- When treating water using the bypass process or filling a heating or cooling system for the first time without a bypass process, deionized water (DI water) can remove existing deposits. Any damage resulting from this can be attributed to the already existing deposits.
- Always flush and clean heating and cooling systems in accordance with EN 14336 if you are not using the device in the bypass process.
- The manufacturer does not guarantee compliance with the guide values if there are additives such as glycols, acids and cleaning agents or bacteria in the system.
- After work, completely drain the residual water from the device to protect it from frost damage.
- The installer is responsible for creating and handing over the documentation in accordance with the relevant country-specific guidelines (e.g. VDI 2035, Ö-Norm H 5195-1 or SWKI BT 102-1). The operator is responsible for keeping the documentation.

1.3 Target group

These operating instructions are intended for persons who work with or on the unit:

- Operating personnel
- Maintenance and servicing personnel

Qualifications of the target group

The target group of the operating instructions must have at least the following qualifications:

- Operating personnel: **Instructed person**

  An instructed person is someone who has been instructed about the tasks assigned and the possible dangers in the case of improper behaviour, who
  - instructed,
  - trained, if necessary, and
  - has been instructed about the necessary safety devices and protective measures.

- Maintenance and servicing personnel: **Skilled person**

  A skilled person is a person who is able to assess the assigned work and recognise possible hazards on the basis of technical training, knowledge and experience as well as knowledge of the relevant regulations.

1.4 Conventions

Warnings and other notes

In the operating instructions, notes are weighted differently and marked with a pictogram.

Warnings are structured as follows:

Symbol	Signal word	Meaning
	DANGER	**Warning:** Imminent danger. Death or serious injuries are the consequence.
	WARNING	**Warning:** Potentially dangerous situation. Death or very serious injuries may result.
	CAUTION	**Warning:** Possibly dangerous situation. Minor or slight injuries may result.
	NOTE	**Notice:** Notes that must be taken into account for optimum results and safe operation of the equipment.

- **Signal word**
  Indicates the severity of the hazard.
- **Type and source of danger**
  Indicates the hazard being warned about and where it may occur.
- **Cause and effect**
  Describes what caused the hazard or damage and its effect.
- **Remedy**
  Describes how the hazard can be prevented from occurring.

Example of a warning

DANGER

Risk of injury if not used as intended.

Improper use of the Heaty Profiline № 2 can endanger persons and property.

- Only use the appliance for its intended purpose as described below.

Instructions for action

Instructions are numbered to indicate the sequence of the individual steps. steps. Results of the actions (if available) are written directly below.

Example:

1 This is the first step.

2 This is the second step.

▶ This is the result of the second step.

Operating and control elements

Operating elements, e.g. buttons and switches, and control elements, e.g. buttons on the control panel, are marked in **bold**.

Example: The **emergency stop button** is located on the control cabinet.

1.5 Manufacturer's address

UWS Technologie GmbH

Sudetenstraße 6
91610 Insingen
GERMANY

Internet : www.uws-technologie.de
E-Mail : info@uws-technologie.de

Phone : +49 9869 91910-0
Fax : +49 9869 91910-99

2 Safety instructions

The Heaty Profiline № 2 appliance has been designed and manufactured in compliance with applicable legal regulations and in accordance with recognised safety rules. The appliance corresponds to the state of the art at the time of its initial commissioning. Nevertheless, dangers may arise for the operator, for other persons, for the appliance itself and for other material assets.

NOTE

For safe handling of the unit, observe the safety instructions in this section and the warnings in other sections of this operating manual.

2.1 General information

The unit may only be installed, operated and maintained by qualified personnel trained in safety technology.

Persons involved in the commissioning, operation, maintenance, repair, dismantling and disposal of the unit must have read and understood the operating instructions and in particular the safety instructions.

The operating instructions must be kept in a safe place and must be available at all times to persons working with or on the unit.

2.2 Intended use

In order to use the unit as intended, it is necessary to be familiar with the operating instructions and to comply with all the instructions, maintenance and inspection regulations contained therein.

DANGER

Danger to life or risk of serious injury

Mechanical and electrical hazards occur during operation of the unit. To prevent personal injury due to these dangers, you may only use the appliance as intended.

The unit may only be used as intended as follows:

For treatment and filtration of water in heating systems and cooling systems (without inhibitors) of buildings. The following additional specifications apply to this:

- **Heating and cooling systems**

  The device is intended for large heating systems or cooling systems (without inhibitors) with a buffer tank. The device types must be selected depending on the system performance (see section „8 Technical data").

- **Operating modes**

  Depending on the task, the device can be used in various operating modes:

  - *Filter Solo*: For filtration in the circuit of a heating or cooling system
  - *Solo treatment*: For water treatment using the bypass process or for the initial filling of a heating or cooling system without a bypass process
  - *Combi*: For combining filtration and water treatment

- **Filling**

  The unit may only be filled with the mixed bed resin Vadion pH-Control. resin.

- **Operation**

  The unit may only be operated and maintained by persons who are sufficiently qualified and authorised.

- **Safety devices**

  The unit may only be operated with intact safety devices. Safety devices must be checked regularly for correct condition and proper function.

- **Maintenance and servicing**

  General inspection and cleaning work must be carried out by instructed persons. Maintenance, servicing and repair work may only be carried out by qualified specialists.

2.3 Non-intended use

The unit may only be used in the ways described in section "2.2 Intended use" on page 11. on page 11. Any other use may endanger persons and property and is prohibited.

Uses that are not intended include:

- Use for purposes other than the treatment and/or filtration of water in heating systems or cooling systems (without inhibitors)
- Connection to heating or cooling systems with different system performance
- Operation in potentially explosive atmospheres as defined by the ATEX Directive
- Operation with defective or missing safety devices
- Servicing and maintenance in the absence of safety devices without increased safety measures
- Operation by unqualified or insufficiently qualified personnel

2.4 Dangers during transport and installation

2.4.1 Transport

During transport and installation of the unit, dangers may arise due to heavy and tipping parts. To avoid this, observe the following safety instructions:

- Transport the unit free of impact and shocks.
- During transport, secure the unit with suitable means against tipping and falling over. Do not remove any transport locks until after the unit has been set up.

2.4.2 Installation

The unit may only be installed by authorised and trained specialists. Improper installation can cause injury to persons. To avoid this, observe the following safety instructions:

- Wear suitable personal protective equipment during work (see section "2.6 Personal protective equipment" on page 15).
- Do not place heavy objects on the unit.
- Set up the unit on a level and sufficiently load-bearing surface.

- When connecting the unit to the mains, make sure that the mains voltage corresponds to the specifications on the rating plate.
- Have the mains connection and the earthing of the unit carried out by qualified personnel in accordance with national regulations.
- Use an all-pole switch with a distance of at least 3 mm between the contacts to connect the unit to the power supply.
- Install a high-sensitivity differential switch (0.03 A) for additional protection against electric shock.
- Route cables and hoses so that there is no risk of tripping.
- If tripping hazards cannot be avoided, mark the tripping hazards clearly.
- Carry out adjustment work or simple repairs in consultation with the manufacturer.
- Do not make any modifications to the appliance or to the water and power lines.
- Position the unit so that the motor of the circulation pump is sufficiently ventilated.

2.5 Dangers during operation and maintenance

2.5.1 Mechanical hazards

The unit consists of moving or heavy components. This can cause injury to persons. To avoid this, observe the following safety instructions:

- Exercise caution when replacing heavy parts:
  - Wear suitable safety shoes
  - Secure the unit against tipping and slipping.
- When carrying out maintenance work on supplier components, observe the relevant documentation of the manufacturers concerned.
- Do not reach with your hand into rotating or moving parts of the unit when it is in operation.

2.5.2 Dangers due to hot surfaces

Parts of the unit heat up during operation. There is a risk of burns if there is direct contact with hot surfaces. To avoid this, observe the following safety instructions:

- Do not touch hot lines and the housing of the circulation pump when the unit is switched on, but only after it has been switched off and cooled down.
- Wear suitable protective gloves if you have to touch hot parts or carry out work on hot parts.

2.5.3 Dangers due to electric current

The unit is operated with electric current. Touching live components can result in dangerous injuries or death. To avoid this, observe the following safety instructions:

Disconnect the main power supply before working on electrical equipment

- Unplug the main power supply before working on electrical equipment.
- Ensure that the mains cable is equipped with an appropriate blocking device for maintenance protection (lockout tagout).

Liquids

- Be careful when handling liquids. Penetration of liquids may cause short circuit or electric shock..

Connection data

- Observe the specified electrical connection data (see section "8 Technical data" on page 43).

Covers of the electrical components

- Do not open the covers while the unit is switched on or in operation.
- Do not remove covers even when the unit is switched off when wiring work or checks are being carried out.

2.5.4 Dangers in handling the circulation pump

The unit uses a circulation pump, which poses various hazards. To avoid To avoid damage to property and injury, observe the following safety instructions:

- Only use the unit in accordance with the technical data (see section "8 Technical data" on page 43).
- Do not use the unit to transport easily flammable or hazardous liquids.
- Do not leave the unit unattended during operation or ensure that unauthorised persons do not have access to the unit.
- Switch off the unit and disconnect the mains plug from the socket before carrying out maintenance and servicing work.
- Do not operate the unit with closed ball valves at the inlet and outlet of the unit or the composite container.
- Check the area around the unit for leaks and remove any leaking liquids.
- Protect the pump from environmental influences such as splash water or dust.

2.5.5 Dangers due to operating materials

The unit contains a mixed bed resin that must be replaced regularly. Skin or eye contact may cause irritation or even visual disturbances. To avoid this, observe the following safety instructions:

- Observe the information in the safety data sheet.
- Wear suitable personal protective equipment when working to avoid skin and eye contact with the mixed bed resin:
  - Safety goggles
  - Protective gloves

2.6 Personal protective equipment

To work safely with the unit, you must wear various personal protective equipment. In the following list and in the corresponding places in the document you will find information on the required personal protective equipment.

The following personal protective equipment is necessary when working with the appliance:

- Protective gloves
- Safety goggles
- Protective work shoes

2.7 Warning and information signs

Places where there is a potential danger under certain conditions are marked with warning and information signs.

- Do not remove warning and information signs.
- Replace damaged or removed warning and information signs immediately.

The following warning and information signs are located on the unit:

Character	Meaning	Character	Meaning
	Warning of electrical voltage		Warning of magnetic field
	Hot surface warning		No admission for persons with pacemakers or implanted defibrillators

3 Device description

Water treatment device Heaty Profiline № 2 is a device for treatment and filtration of water in heating systems and cooling systems (without inhibitors) of buildings.

The device is intended for use in large heating systems or cooling systems (without inhibitors) with a buffer tank. Various device types are available, which are designed for the following heating or cooling systems:

- Heaty Profiline № 2: for heating or cooling systems with a capacity of approx. 100 kW

NOTE

The power level of 100 kW is used to preselect the device and does not represent a technical necessity or requirement. With the device type Heaty Profiline № 2 you can B. also work on a heating or cooling system with 50 kW.

The device can be used as follows:

- For filtration in the circuit of a heating or cooling system (operating mode *Filter Solo*)
- For water treatment using the bypass process or initial filling of a heating or cooling system without the bypass process (special operating mode for *solo treatment*)
- As a combination of filtration and water treatment (*Combi* operating mode)

The following section describes the device with its components and operating elements.

3.1 The device at a glance

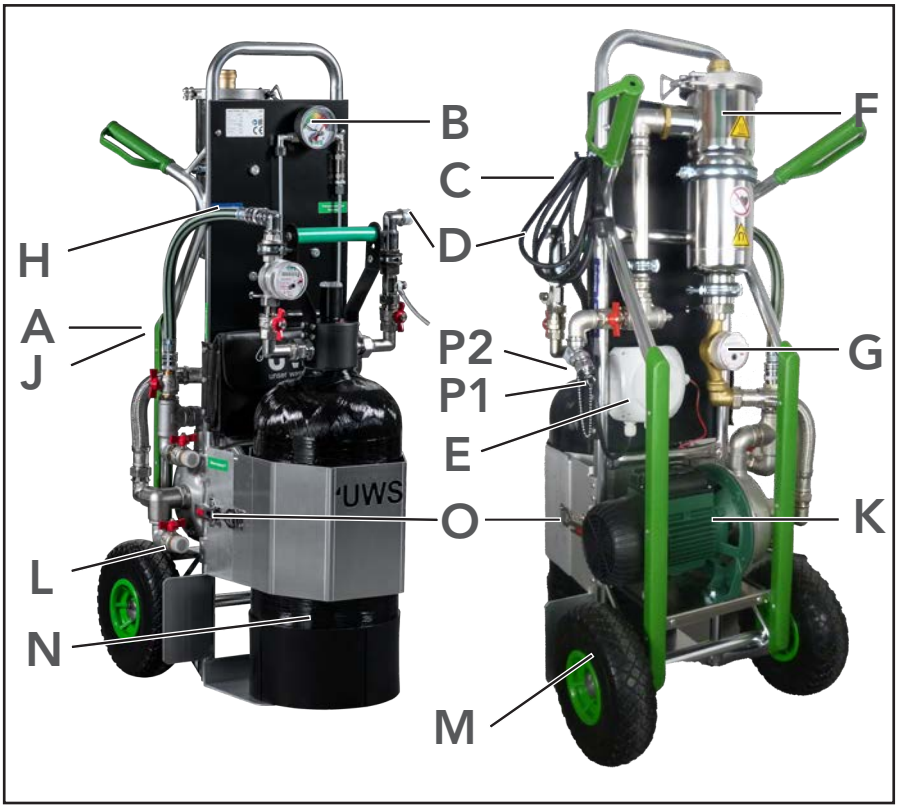


Figure 3-1: Overview of the components of the device (Heaty Profiline № 2)

- **A** Filling device connection
- **B** Fine filter capacity indicator
- **C** Mains cable with mains plug
- **D** Filler outlet
- **E** Circulation pump main switch
- **F** MAGella twister**5**: powerful magnetite separator and fine filter
- **G** Water meter filtration
- **H** Filter output II
- **J** Filter output I
- **K** Circulation pump
- **L** Drain tap circulating pump/ sampling system
- **M** Sack truck
- **N** Filling device Heaty 100 Small HW
- **O** Quick release filling device
- **P1** Inlet filtration/treatment
- **P2** Inlet filtration/treatment

3.2 Connection filling device

The water flows into the filling device via the filling device connection, where it is treated. The filling device connection is equipped with a water meter to read the amount of water when a heating or cooling system is filled for the first time.

3.3 Input filtration/treatment

The water flows through the two filters on the back of the device via the filtration/ treatment inputs.

3.4 Water meter filtration

The filtration water meter shows the amount of water that has passed through the filtration (MAGella twister**5** magnetite separator).

3.5 Filling device output

Treated water from the filling device flows back into the circuit of the heating or cooling system via the filling device outlet.

3.6 Main switch for circulation pump

The circulation pump is switched on or off with the circulation pump main switch in order to start or end the treatment or filtration.

3.8 Magnetite separator MAGella twister5

The dual filter of the MAGella twister**5** is a unique, highly efficient system filter for magnetic and non-magnetic impurities in heating systems. It includes an absolute fine filter up to 1 µ and one of the most powerful magnetite separators on the market. Further information on the MAGella twister can be found in section „9.3 MAGella twister" on page 51.

3.9 Filter outputs I and II

Depending on the operating mode, hoses can be connected to the filter outputs I and II in order to connect the device to the heating or cooling system. See section „5 Operation“ for more information.

3.10 Filter capacity indicator

The degree of contamination of the filter is shown on the display. As soon as a filter change is pending, this is visible directly on the display.

3.11 Circulation pump

The circulation pump conveys the water through the device. The circulation pump is equipped with a drain tap to drain water.

3.12 Filling Device

The filling device essentially consists of a composite container in which the mixed-bed resin is located. This is attached to the sack trolley with a quick-release fastener. The filling device can be dismantled and used separately for the initial filling of a heating or cooling system.

Depending on the device type, the composite container has the following different capacities:

Figure 3-3: Heaty Profiline № 2: Filling device Heaty Small 100 HW with 23 l capacity

The water is treated by ion exchange in the mixed-bed resin of the composite tank until the capacity of the mixed-bed resin is exhausted.

The filling device consists of the following additional components:

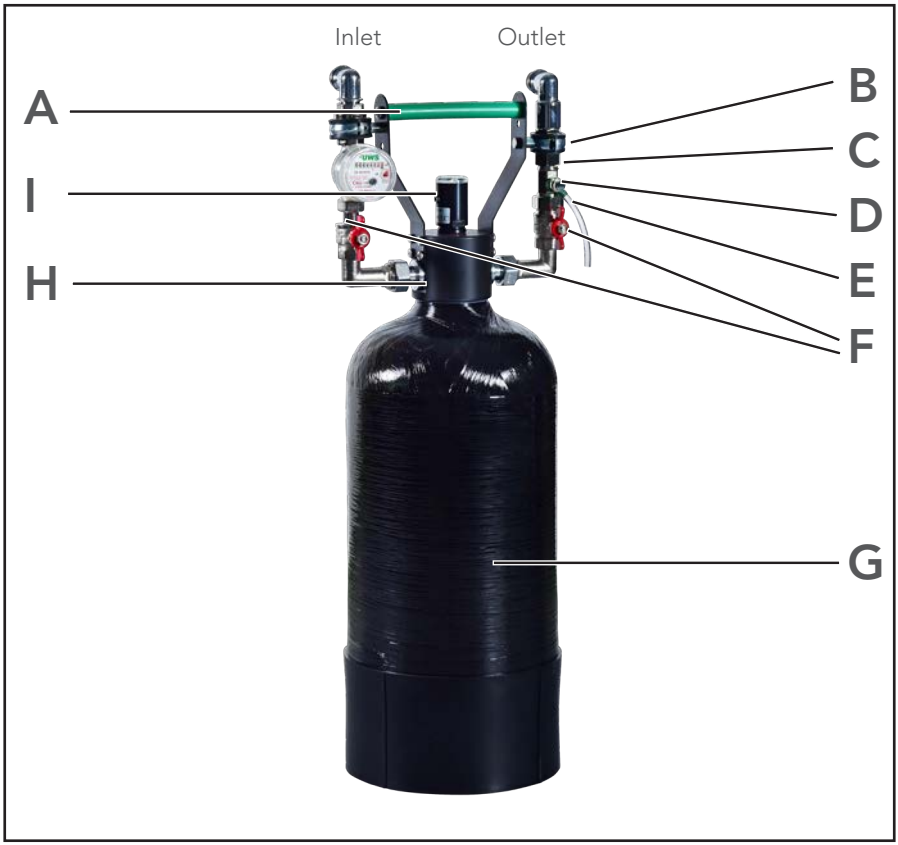


Figure 3-4: Components of the filling device

A handle
B Flow regulator
C check valve
D tap
E screen seal
F Shut-off valve
G Composite tank with mixed bed resin
H 3-way head with suction lance (covered)
I Measuring cell with LED display

The measuring cell with LED display shows the remaining capacity of the mixed-bed resin. The colors of the LED display have the following meanings:

Colour of the LED display	Conductivity (µS/cm)	Meaning
Green	<15	Capacity very good
	<30	Capacity good
	30 - <75	Capacity sufficient
Yellow	<90	Capacity insufficient, replace mixed bed resin **promptly** (see p. 37)
Rot	>90	Capacity exhausted, replace mixed bed resin **immediately** (see p. 37)

NOTE

LED function

At the beginning of the process, the individual LEDs are checked (light organ). If the Vadion pH-Control has been replaced, the LED display of the measuring cell may light up red. In this case, continue the process for approx. 5 minutes. If the display of the LED measuring cell does not change, bleed the measuring cell or check the measuring cell with a manual measuring device to rule out a fault. If there is no error, the capacity of the mixed-bed resin is exhausted and the mixed-bed resin must be replaced.

4 Transport, installation and commissioning

4.1 Transportation

Use lifting gear such as a crane or forklift to transport the device. The lifting gear must be suitable, tested and approved. On level ground you can use the wheels of the sack trolley to move the device.

Observe the following information during transport:

- Use suitable tools to secure the device against slipping and tipping over.
- Only move the sack trolley when the quick-release fastener of the filling device is closed.
- When transporting the device, only load it at suitable points.
- Remove the transport devices after transport.

4.2 Installation and Commissioning

To avoid damage to the device or personal injury, observe the following instructions during installation and commissioning:

- Installation and commissioning are only to be carried out by trained specialists from a recognized specialist company in the HVAC industry, taking the necessary safety measures into account.
- Before starting the installation, examine the device for completeness and any transport damage. The following components are included in the scope of delivery:
  - Device according to order, pre-assembled
  - hose set
  - operating manual
- Place the device on a solid and level surface.
- Do not set up the device in areas where there is a risk of frost.
- Lay cables, hoses and lines in such a way that there is no risk of tripping. Mark unavoidable tripping points.
- Connect the device properly to the power supply and observe the electrical connection data (see section „8 Technical data“).

The device is intended for temporary connection to a heating or cooling system. Observe the following notes when connecting:

- Before connecting the device, familiarize yourself with the specific structure of the heating or cooling system. Contact the manufacturer if you need assistance.
- Ensure that the installation work is carried out professionally and that the result complies with the relevant rules and regulations.

In the bypass process, a partial volume flow of water from a heating or cooling system is routed through the device. During the preparation we recommend switching on the system pumps in order to achieve the fastest possible mixing.

The figure below shows an example of how to connect the device using the bypass method:

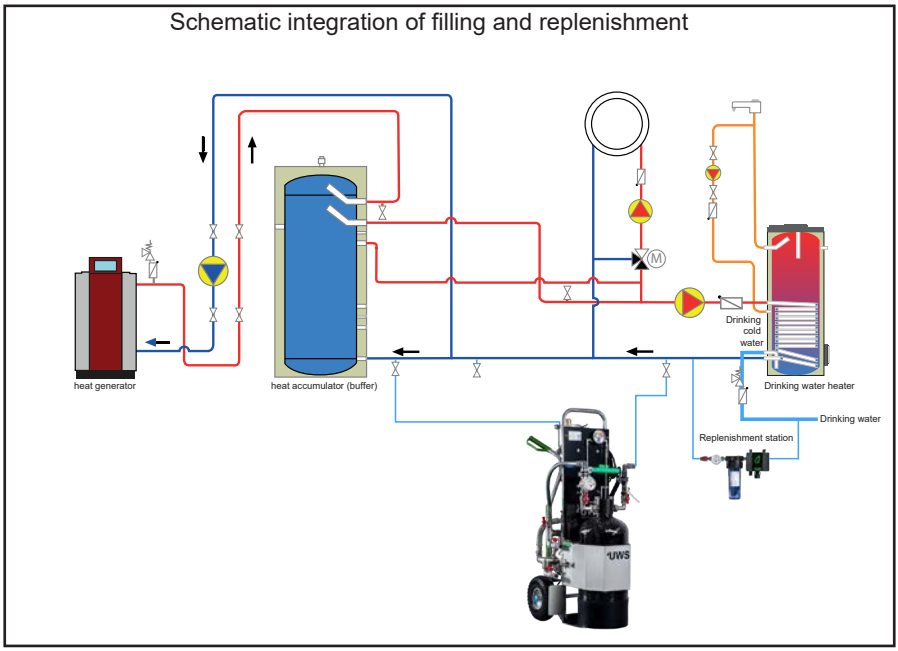


Figure 4-4: Bypass procedure connection diagram

5 Operation

The following section contains information on operating the device.

NOTE

Controls

The controls referred to in the text are explained in section "3 Device Description".

5.1 Preparing the device for operation

To prepare the device for operation, proceed as follows:

1 Flush the device after a long period of inactivity. To do this, open all valves, connect the device to a drinking water pipe and open the drinking water pipe.

NOTE

Flushing over a drain

Rinse the device over a drain so that the escaping water can drain away.

NOTE

The pump must not be switched on dry; it must always be filled and vented.

2 Connect the device to the power supply by plugging the mains plug into a socket.

NOTE

When connecting, observe the electrical connection data (see section „8 Technical data").

▶ The device is ready for operation.

5.2 Connect and operate the device

WARNING

Risk of injury due to improper connection.

Improper connection can cause hot liquids to escape or damage to the unit.

- Make connections to the heating or cooling system in a depressurised state. To do this, connect the corresponding fittings to the heating or cooling system.
- Select the connection points in the pipe system of the heating or cooling system so that they are far enough apart to avoid a short circuit.
- Install a 3/4" size connection spigot at each of the connection points in the heating or cooling system's piping system.
- Only use hoses that are designed for the pressure of the heating or cooling system. The hoses provided are designed for a pressure of up to 8.0 bar.

The operating mode and the corresponding connection method of the unit depend on the specific purpose. In the following sections you will learn how to connect and operate the unit for the various tasks.

5.2.1 Filter Solo mode

In the optional operating mode Filter Solo, you can use the unit to filter the water of a heating or cooling system in bypass mode. Proceed as follows:

Prerequisite

- The unit is prepared for operation as described in section „5.1 Preparing the unit for operation". Also observe the instructions in section „4 Transport, installation and commissioning".
- The MAGella twister**5** magnetite separator has been checked and, if necessary, replaced or cleaned (see section „6 Maintenance and servicing").

Procedure

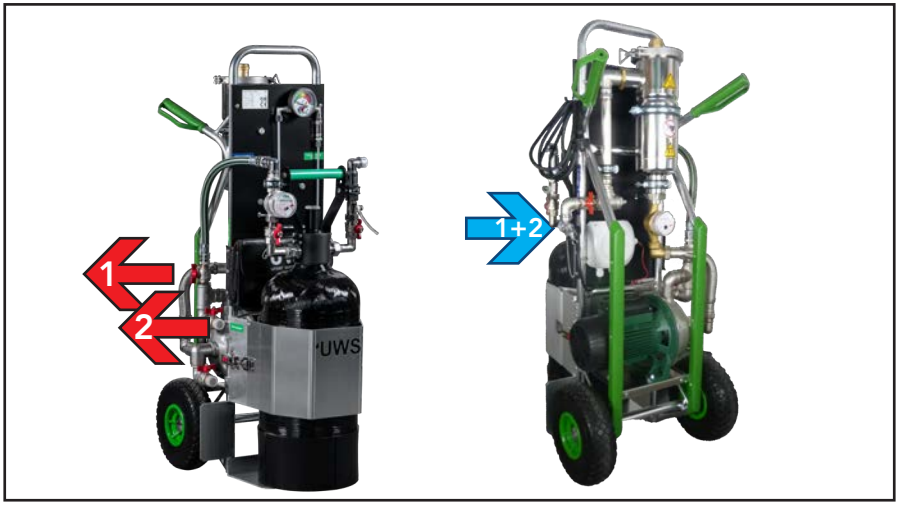


Figure 5-6: Connection diagram Filter Solo

Input filtration / treatment

Inlet treatment / outlet filtration 1

Inlet treatment / outlet filtration 2

1 If the filler is to be used elsewhere during filtration, dismantle it as follows during filtration, disassemble it as follows:

- Disconnect the hoses from the filler.
- Open the quick-release fastener of the filling device.
- Remove the filling device from the bag trolley.

NOTE

Separating the unit

It makes sense to separate the filling device from the unit if work is to be carried out on several heating or cooling systems at the same time. During filtration on one heating or cooling system, another heating or cooling system can be prepared or filled in parallel.

2 Connect the filtration/processing input with a suitable hose to a point in the return flow of the heating or cooling system.*

3 Connect filter outlet I with a suitable hose to a point in the remote return of the heating or cooling system.
If there is no other return, a supply can also be used.*

4 Open the valves where the connection is used.
If the second inlet and outlet are connected, the filtration capacity can be increased and the filtration speed can be influenced.

5 Make sure that the system temperature of the heating or cooling system is 80 °C maximum.

6 Open the fittings on the connections of the heating or cooling system.

▶ A partial volume flow of the heating or cooling system flows through the unit.

7 Make sure that the **circulation pump drain tap** is closed.

8 Press the **circulation pump main switch** to switch on the circulation pump on.

▶ The unit is operated in Filter Solo mode. The water from the heating or cooling system passes through the unit and is filtered..

9 Take water samples regularly to assess the result of the filtration.

10 When the filtration result is satisfactory, switch off the circulation pump. To do this, press the **main switch circulation pump**.

* **Please note the following connection options:**
If one input is used, only one output may be used.
If two inputs are used, both outputs may be connected.
This allows you to achieve the maximum filtration of 1,900 l/h.

5.2.2 Special operating mode preparation Solo

CAUTION

Checking the heating or cooling system before initial filling

Before you fill a heating or cooling system with the unit for the first time, observe the following instructions:

- Flush and clean the heating or cooling system according to EN 14336 and record flushing and cleaning.
- Measure the conductivity and water hardness of the raw water and enter the values in the system log.
- If the raw water is softened, measure the conductivity and use the conversion tables to estimate the capacity of the unit (see section „9 Applicable documents").
- Please note that the use of a softening unit can lead to an increased conductivity of the drinking water.
- Make sure that the drinking water pipe has a flow pressure of at least 1.5 bar when filling heating or cooling systems. If this value is not reached, the capacity of the unit may be impaired.
- The drinking water must be free of suspended matter. If necessary, connect an appropriate filter system upstream.
- Observe the instructions for reducing conductivity during operation.
- Make sure that a filling combination is installed on the unit before the filtration/treatment input. Observe the regulations of the responsible water supply companies.
- The use of a filling combination can lead to a pressure loss of approx. 1 bar. Use a suitable pressure boosting system if the system pressure must be higher than the flow pressure of the drinking water pipe.

In the optional special operating mode Preparation Solo, you can use the unit for the initial filling of a heating or cooling system with water without a bypass procedure.

To do this, proceed as follows:

Prerequisite

- The unit is prepared for operation as described in section „5.1 Preparing the unit for operation". Also observe the instructions in section „4 Transport, installation and commissioning".

Procedure

Figure 5-7: Connection diagram filling

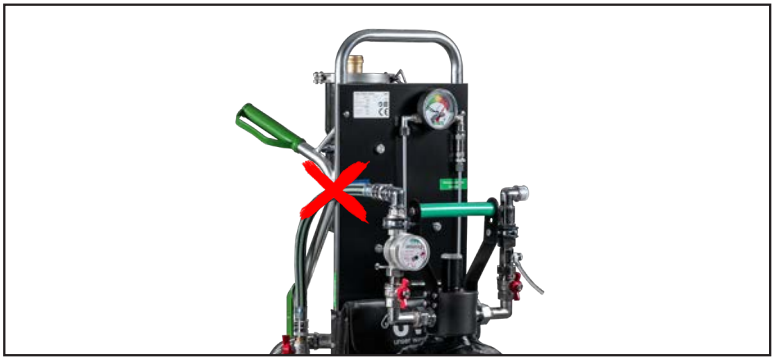
Input filtration / treatment

Inlet treatment / outlet filtration 1

Inlet treatment / outlet filtration 2

1 Close the filter outlet I.

2 Open the quick-release fastener on the filling device connection and disconnect the connecting hose to the filters from the filling device.



3 Connect the filling device connection to the drinking water pipe using a suitable hose.

4 Connect the outlet of the filling device to the supply line of the heating or cooling system using a suitable hose.

5 Open the drinking water pipe.

NOTE

The flow rate through the unit is limited by the integrated flow limiter. You can turn on the drinking water line fully.

▶ The heating or cooling system is filled with treated water.

6 Check the water quantity at the water meter and close the drinking water pipe when the close the drinking water pipe when the desired water quantity has been reached. Enter enter the water quantity in the system logbook.

7 Close all valves and disconnect the hoses from the heating or cooling system.

8 Put the heating or cooling system into operation.

9 Measure the conductivity and pH value of the water and enter the measured values in the system log. the measured values in the system logbook.

5.2.3 Operating mode combi

In the standard operating mode Combi, you can use the unit for combined treatment and filtration of the water of the heating or cooling system in a bypass process. Proceed as follows:

Requirements

- The unit is prepared for operation as described in section „5.1 Preparing the unit for operation". Also observe the instructions in section „4 Transport, installation and commissioning".
- The MAGella twister**5** has been checked and replaced if necessary (see section „6 Maintenance and servicing").

Procedure

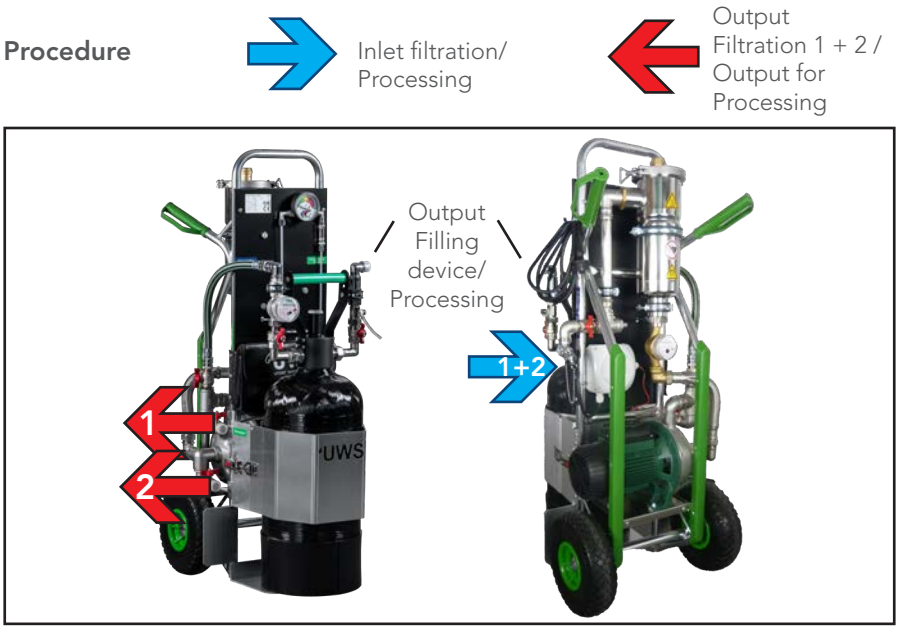


Figure 5-8: AConnection diagram combi

Procedure

1 When the filling unit has been disconnected from the machine, mount it as follows:

- Place the filling device on the bag trolley.
- Connect the hoses to the filling device.
- Close the quick-release fastener of the filling device.

2 Connect the filtration/treatment inlet to a point in the return flow of the hose to a point in the return line of the heating or cooling system.* 

3 Connect the conditioning outlet with a suitable hose to a point in the remote return of the heating or cooling system. If there is no other return, a supply can also be used.* 

4 Open the valve at the filter outlet you want to use, or both if necessary, please note. *

5 Make sure that the following valves are open:

- Inlet and outlet valve on the MAGella twister**5**
  (see section „9.3. MAGella twister" on page 51
- Shut-off valves on the filling device (2 pcs.)

6 Make sure that the **drain cock circulation pump** is closed.

7 ress the **main switch Circulation pump** to switch on the circulation pump.

▶ The unit is operated in *Combi* mode. The water of the heating or cooling system is treated and filtered in the bypass process.

Please note the following connection options:

If one input is used, only one output may be used.
If two inputs are used, both outputs may be connected.
This allows you to achieve the maximum filtration of 1,900 l/h.

5.3 Switch off the unit in an emergency

To switch off the unit in an emergency, proceed as follows:

1 Press the **main switch Circulating pump**

or

Pull the mains plug out of the socket.

▶ The unit is switched off.

2 Eliminate all reasons that caused the unit to switch off.

To switch the unit back on after an emergency, proceed as described in the 5.1 Preparing the unit for operation" and „5.2 Connecting and operating the unit".

5.4 Switch off the unit and disconnect it from the heating or cooling system

To switch off the unit after filtration or treatment and to disconnect it from the heating or cooling system, proceed as follows from the heating or cooling system, proceed as follows:

1 Press the **circulation pump main switch** to switch off the circulation pump. off.

2 Let the unit cool down.

3 Close the fittings on the heating or cooling system, open the tap to drain the water. open the tap to depressurise the unit and disconnect the unit's hoses from the heating system. disconnect the hoses of the unit from the heating or cooling system.

4 Empty the residues from the hoses into a drain.

5 If you want to store the unit or take it out of operation, open the **circulation pump drain tap** and drain the unit.

6 Maintenance and servicing

To ensure trouble-free operation of the unit, the unit must be kept in a clean and functional condition. Furthermore, regular visual and functional checks must be carried out in order to detect and rectify any damage at an early stage.

CAUTION

Risk of injury due to improperly performed maintenance work

The unit may only be serviced by specialist personnel trained in safety technology.

Carry out the following steps before any maintenance and servicing work:

- Switch off the unit.
- Disconnect the unit from the mains.7
- Take suitable measures to secure the unit against being switched on again.
- Also observe the safety instructions in section „2 Safety instructions".

6.1 Maintenance schedule

The following table contains an overview of the maintenance work to be carried out regularly:

Interval	Activity	Responsibility
Daily before starting work or on a new construction site	Check the MAGella twister and change it Change depending on the degree of contamination	Operating personnel
	Check the suction lance nozzles for damage and clogging and clean and clean or replace if necessary	Operating personnel
	Check the flow limiter for blockage check	Operating personnel

Interval	Activity	Responsibility
Monthly	Check hoses for leaks and damage and replace if necessary	Operating personnel
	Cleaning the pre-filter of the filter capacity indicator (see 6.2.3 on page 40)	
Half-yearly	Check the fastening and position of the unit as well as the welded and screwed connections	Operating personnel
Annual	Check warnings and markings on the unit	Operating personnel
	Check sieve seal (union nut right, outlet) and replace if necessary	Operating personnel

6.2 Maintenance work

6.2.1 Change mixed bed resin

NOTE

Capacity indicator jumps from green to red immediately after resin change

Flush with at least 10-20 litres, then it will jump back to green. Or simply bleed the cell.

NOTE

Handling mixed bed resin

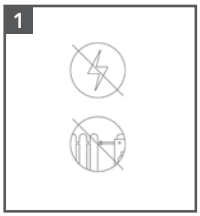
Observe the following points when handling the mixed bed resin:

- Do not store the mixed bed resin openly as it will lose capacity.
- Use the outer packaging of the refill pack to dispose of the replaced mixed bed resin.
- Change the mixed bed resin over a drain so that the water separated from the replaced mixed bed resin can drain off.
- Wear appropriate personal protective equipment (goggles, gloves).

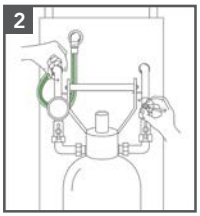
When the mixed bed resin is used up, proceed as follows:

NOTE

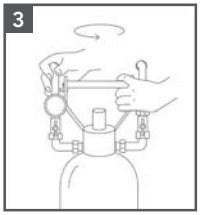
The resin can be changed anywhere. This makes it possible to continue filling immediately.



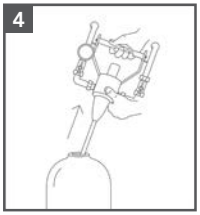
1.
Make sure that the appliance is switched off and disconnected from the mains and the heating or cooling system.



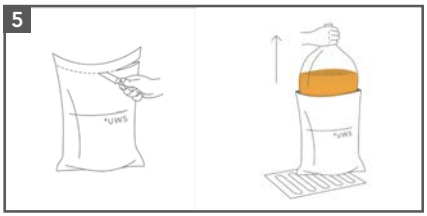
2.
Remove the hoses from the unit and open all valves to drain the unit.



3.
Turn the 3-way head on the handle anticlockwise to release the 3-way head



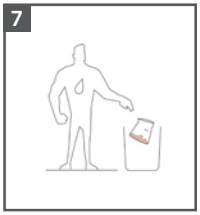
4.
Pull the 3-way head with the suction lance out of the composite container.



5.
Remove the refill pack of mixed bed resin from the outer packaging and place the outer packaging over a drain.

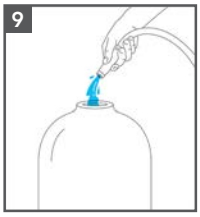
6.
Empty the exhausted mixed bed resin from the composite container into the outer packaging:

►The used mixed bed resin is retained by the outer packaging while the water flows into the drain.



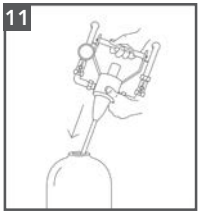
7.
Dispose of the mixed bed resin and empty the remaining water into a drain.

8.
Open the refill pack with mixed bed resin and fill it into the composite container using a funnel. If necessary, compact the mixed bed resin by shaking or circling the composite container.

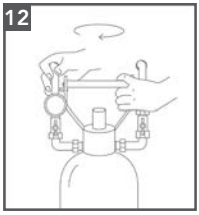


9.
Fill the composite container with water to a height of about 2 cm below the thread.

10.
Stir the mixed bed resin with a pipe or other suitable tool to make it easier to insert the 3-way head with suction lance.



11.
Insert the 3-way head with suction lance back into the composite container.



12.
Hand-tighten the 3-way head clockwise.

Video instruction resin change

▶ The mixed bed resin has been changed and the filling device is working at its full capacity again.

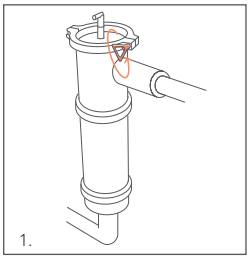
NOTE

Close the packaging

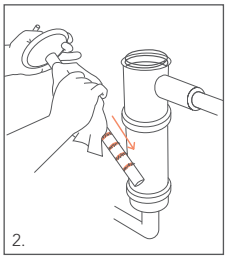
Storing the resin openly will greatly reduce its capacity!

6.2.2 MAGella twister5 maintenance/cleaning

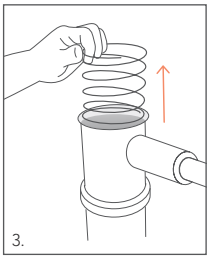
This section describes how to clean the built-in dual filter.



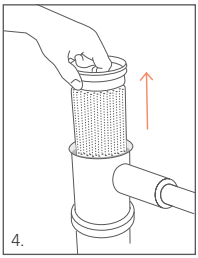
Close the inlet and outlet fittings. Open the KFE tap to release the pressure. Then open the bleed cock on top of the filter. Unscrew the wing nut and remove the cap.



Remove the magnetic rod and clean it with a cloth, for example.



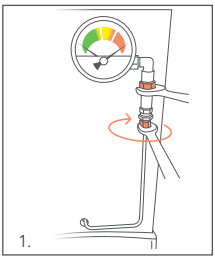
Then remove the pressure spring and clean it with water if necessary.



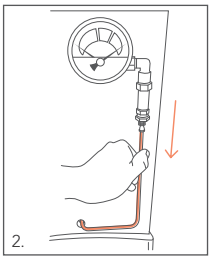
Now you can remove and replace the basket with the fine filter bag.
(spare part number 100454)

Assembly is carried out in reverse order.
The twister insert on the magnetic rod should be directed towards the input to achieve the highest capacity.

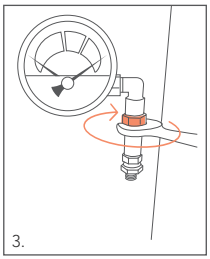
6.2.3 Cleaning the pre-filter of the filter capacity indicator



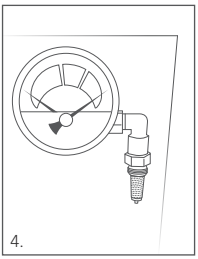
Loosen the lower screw connection. Secure the upper union nut with a spanner.



Remove the pipe by pulling gently.



Loosen the union nut on the O-ring and unscrew it.



Clean the 20 µm filter with compressed air. Blow out the union nut. You can also clean the protruding magnetic separator with a cloth.
Reassemble the pre-filter in reverse order.

6.3 Regular in-house inspection

Certain parts of the appliance are additionally checked and serviced at regular intervals:

- Circulation pump

The inspection dates must be coordinated by the operator

6.4 Spare parts and accessories

The following spare parts for the unit are available from the manufacturer:

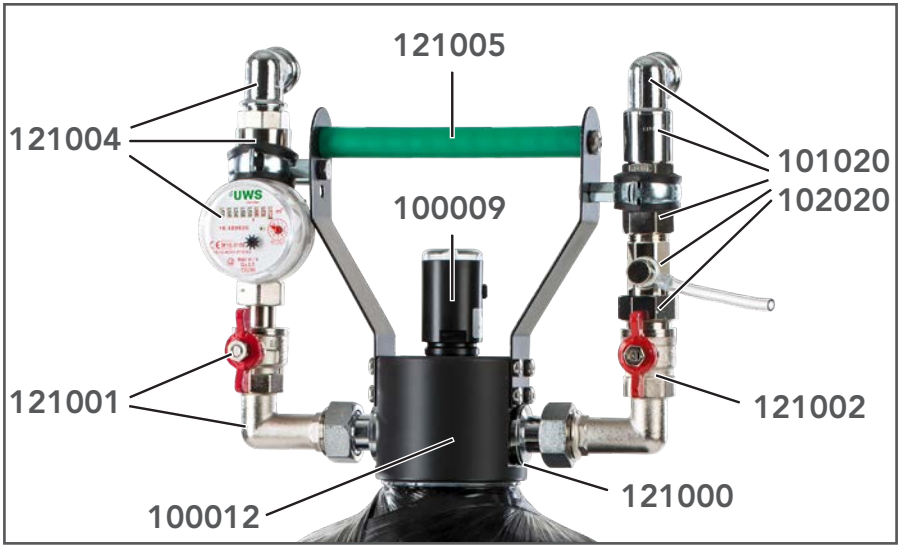


Figure 6-9: Spare parts Heaty Profiline № 2

Part no.	Designation	Part no.	Designation
100007	LED measuring cell	100012	3-way head for composite Container
100012-10	Seal 3-way head	100013-10	Stand for composite (specify size when ordering)
100013-12-100	Distributer pipe with nozzle 100er lance	100013-19	Hose set suitable for all UWS filling devices, 2x3 m
101015	Composite container Heaty 100 without 3-way head	101016	Composite container Heaty 100 HW without 3-way head
101021	Flow limiter set 16 liters	120515	Screen seal 1“
121000	Connection fitting 3-way head	121001	Inlet side filling unit
121002	Output side Filling unit	121004	Water meter connection set WW
121005	Carrying handle with fastening		

The following accessories are available for the unit from the manufacturer:

Part no.	Designation	Part no.	Designation
100454	Spare filter for fine filter	100055	Refill pack mixed bed resin (Vadion pH Control 23l)
100047	Measuring case „PROFI“	300900	UWS filling combination 1/2“ incl. system separator
100041	Funnel		

7 Dismantling and Disposal

CAUTION

The appliance may only be dismantled by authorised and qualified personnel who are familiar with the hazards.

NOTE

Regulations and laws

Observe the local regulations and laws for the disposal of environmentally harmful substances.

- The unit may only be dismantled by authorised specialist personnel.
- Observe the safety instructions in the operating instructions in section „2 Safety instructions".
- Do not touch any voltage-carrying components.
- Wear suitable personal protective equipment.
- Only use suitable and tested lifting equipment.

Injuries can be caused by:

- Voltage-carrying components
- Heavy components that fall down after being released
- Sharp edges

7.1 Specialist personnel

Qualified personnel must take the following points into account:

- Observe the safety instructions in this operating manual.
- Wear suitable personal protective equipment.
- Only use suitable and tested lifting equipment.
- Use suitable means of transport and keep transport routes clear.
- Switch off the unit and disconnect it from the power supply before starting work.

7.2 Disassembly

To dismantle the unit, proceed as follows:

1 Switch off the unit and disconnect the power supply from the mains.
2 Discharge energy storage devices such as springs or capacitors, if present.
3 Make sure that any residual pressures have been relieved.
4 Disassemble the unit into its components using suitable tools.

7.3 Disposal

Dispose of assemblies and operating materials properly and in an environmentally friendly manner.

Observe the legal and company regulations.

8 Technical data

In this section you will find technical data on the unit in general as well as on the applications and components used.

8.1 General data

	Heaty Profiline № 2
Article number	100455-FL
Height × width × depth (approx.)	1,180 × 520 × 580 mm
Weight incl. 23 l or 46 l mixed bed resin	approx. 59 kg
Mains connection	230 V – 50/60 Hz

8.2 Operating mode Filter Solo

	Heaty Profiline № 2
Maximum filtration capacity	1,900 l/h
Required working pressure	1.5–6 bar
Maximum operating temperature	80° C

8.3 Combined operating mode and special Solo treatment operating mode

	Heaty Profiline № 2
Pipe connection	3/4“
Maximum filling capacity without bypass	1,200 l/h
Average circulation capacity bypass and filtration	approx. 1,900 l/h
Required flow pressure of drinking water (without bypass process)	1.5 bar
Maximum operating pressure	6 bar
Maximum operating temperature	80 °C
Composite tank capacity	23 l
Capacity at 420 µS/cm at <100	3,420 l

8.4 Components

8.4.1 Circulation pump

Maximum operating pressure	8 bar
Maximum ambient temperature	40 °C
Media temperature	–10 °C to 90 °C
Flow rate	7.2 m³/h

9 Applicable documents

These operating instructions apply together with the following documents:

- Safety data sheet Vadion pH-Control
- Capacity calculator for filling devices, see manufacturer's homepage: http://uws-technologie.de/services/berechnungstool/
- Measured values and conversion tables, see „9.1 Measured values and conversion tables".
- Determination of capacity, see „9.2 Determination of capacity".
- Information on the MAGella twister can be found in section „9.3 MAGella twister" on page 51.

9.1 Measured values and conversion tables

9.1.1 Corrosion rate

Oxygen, acids and dissolved salts cause corrosion in the heating or cooling system. The speed of corrosion depends on the amount of dissolved substances in the water, which can be assessed by measuring the conductivity.

The following guide values apply for estimating the speed of corrosion with the help of conductivity:

Conductivity [µS/cm]	Corrosion rate
0–100	braked
100–350	very slow
350–500	slow
500–1,000	accelerated
1,000–2,000	strongly accelerated
>2,000	very strongly accelerated

9.1.2 Lime content and water hardness

By measuring the conductivity, the lime content and the water hardness can be roughly estimated. estimated. The following table illustrates the correlations:

Conductivity [µS/cm]	Lime content [g/1.000 l]	Classification Water hardness
<100	<35	desalinated
100	50	very soft
200–300	100-150	soft
400–500	200-250	medium hard
600–800	300-400	hard
900–1,000	450-500	very hard

The following table serves to determine the exact water hardness:

NOTE

This conversion is only applicable if the water is not softened and does not contain any chemical additives.

In the case of softened water, measurement via the hardness drop method is necessary. Hand-held measuring devices do not provide meaningful values for softened water.

Conductivity [µS/cm]	Hardness [°dH]	Hardness [°fH]	Lime content [g/1.000 l]	Conductivity [µS/cm]	Hardness [°dH]	Hardness [°fH]	Lime content [g/1.000 l]
<100	<1	<2	<35	1,120	32	57	560
105	2	5	53	1,155	33	59	578
140	4	7	70	1,190	34	61	595
175	5	9	88	1,225	35	62	613
210	6	11	105	1,260	36	64	630
245	7	12	123	1,295	37	66	648
280	8	14	140	1,330	38	68	665
315	9	16	158	1,365	39	69	683
350	10	18	175	1,400	40	71	700
385	11	20	193	1,435	41	73	718
420	12	21	210	1,470	42	75	735
455	13	23	228	1,505	43	77	753
490	14	25	245	1,540	44	78	770
525	15	27	263	1,575	45	80	788
560	16	28	280	1,610	46	82	805
595	17	30	298	1,645	47	84	823
630	18	32	315	1,680	48	85	840
665	19	34	333	1,715	49	87	858
700	20	36	350	1,750	50	89	875
735	21	37	368	1,785	51	91	893
770	22	39	385	1,820	52	93	910
805	23	41	403	1,855	53	94	928
840	24	43	420	1,890	54	96	945
875	25	45	438	1,925	55	98	963
910	26	46	455	1,960	56	100	980
945	27	48	473	1,995	57	101	998
980	28	50	490	2,030	58	103	1,015
1,015	29	52	508	2,065	59	105	1,033
1,050	30	53	525	2,100	60	107	1,050
1,085	31	55	543	2,100	60	107	1,050

9.2 Determination the capacity

The capacity of the unit indicates the amount of water of a certain conductivity that can be treated with a 23-litre mixed bed resin filling. The capacity depends on various factors such as the water temperature, the chemical composition or the flow pressure.

With the help of the following diagrams you can estimate the approximate capacity of the unit:

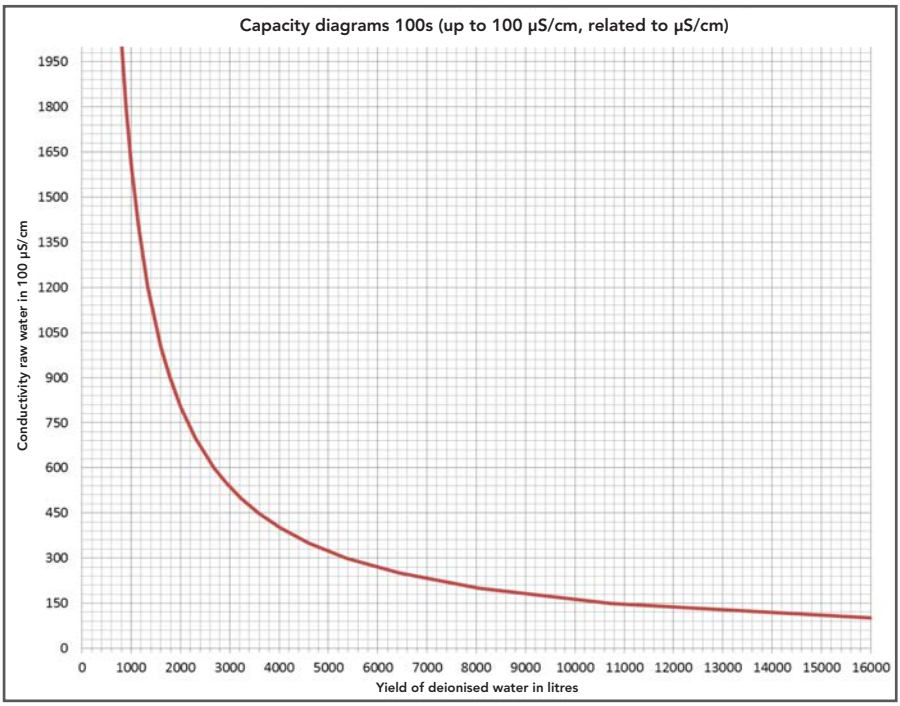


Figure 9-10: Diagram for determining the capacity from the conductivity – Heaty Profiline № 2

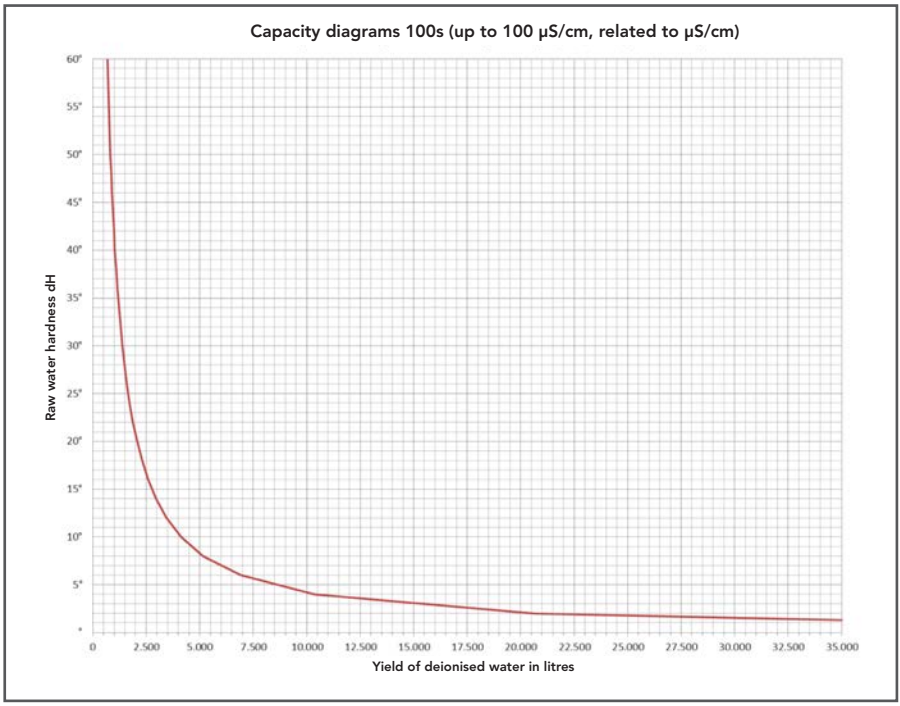


Figure 9-11: Diagram for determining the capacity from the raw water hardness – Heaty Profiline № 2

Example:

With a hardness of the raw water of 10 °dH, this results in a capacity of 4,100 l. If you have the full 23 l of mixed bed resin at your disposal, you can treat approx. 4,100 l of water.

NOTE

Online capacity calculator

As an alternative to these diagrams, you can use the capacity calculator for filling devices on the manufacturer's homepage:
http://uws-technologie.de/services/berechnungstool/

10 List of figures

CE

EG-Konformitätserklärung

gemäß der EG-Maschinen-Richtlinie 2006/42/EG vom 17. Mai 2006, Anhang II A
Hiermit erklären wir, dass die nachstehend bezeichnete Maschine in ihrer Konzeption und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie 2006/42/EG entspricht. Bei einer mit uns nicht abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Hersteller:
UWS Technologie GmbH
Sudetenstraße 6, 91610 Insingen
Telefon: 09869 919100
E-Mail: info@uws-technologie.de

Beschreibung der Maschine:

• Funktion:	Heizwasserfüllgeräte
• Typ:	Heaty Profiline 100 № 2
• Artikel Nr.:	100455-FL
• Masse:	ca. 59 kg
• Baujahr:	2022
• Elektroanschluss:	230V - 50/60 Hz
• Typ:	Heaty Profiline 200 № 2
• Artikel Nr.:	100456
• Masse:	ca. 79 kg
• Baujahr:	2022
• Elektroanschluss:	230V - 50/60 Hz

Es wird die Übereinstimmung mit weiteren, ebenfalls für das Produkt geltenden Richtlinien/Bestimmungen erklärt:
- EMV-Richtlinie (2014/30/EU) vom 26. Februar 2014
- RoHS-Richtlinie (2011/65EU) vom 08. Juni 2011
- Niederspannungs-Richtlinie (2014/35/EU) vom 26. Februar 2014

Angewandte harmonisierte Normen insbesondere:

• DIN EN ISO 12100	Sicherheit von Maschinen – Grundbegriffe, allgemein Gestaltungsleitsätze, Risikobeurteilung und Risikominderung
• DIN EN ISO 13854	Sicherheit von Maschinen; Mindestabstände zur Vermeidung des Quetschens von Körperteilen
• DIN EN 809	Pumpen und Pumpenaggregate für Flüssigkeiten — Allgemeine sicherheitstechnische Anforderungen
• DIN EN ISO 14118	Sicherheit von Maschinen – Vermeidung von unerwartetem Anlauf
• DIN EN ISO 13849-1	Sicherheit von Maschinen – Sicherheitsbezogene Teile von Steuerungen- Teil 1: Allgemeine Gestaltungsleitsätze
• DIN EN ISO 13857	Sicherheit von Maschinen – Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen und unteren Gliedmaßen
• DIN EN ISO 14120	Sicherheit von Maschinen – Trennende Schutzeinrichtungen – Allgemeine Anforderungen an Gestaltung, Bau und Auswahl von feststehenden und beweglichen trennenden Schutzeinrichtungen
• DIN EN 60335-1	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke — Teil 1: Allgemeine Anforderungen

Bevollmächtigter für die Zusammenstellung der Technischen Dokumentation:
Steffen Breitmoser, siehe Herstelleradresse

Ort/Datum: Insingen 29.11.2021

Angabe zur Person des Unterzeichners:
Hans-Georg Breitmoser, Geschäftsführer

Unterschrift:

UWS
UWS Technologie GmbH
Sudetenstr. 6
D - 91610 Insingen
T: +49 9869 91910-0
F: +49 9869 91910-99

OUR WATER. SAFE.

Your contact: