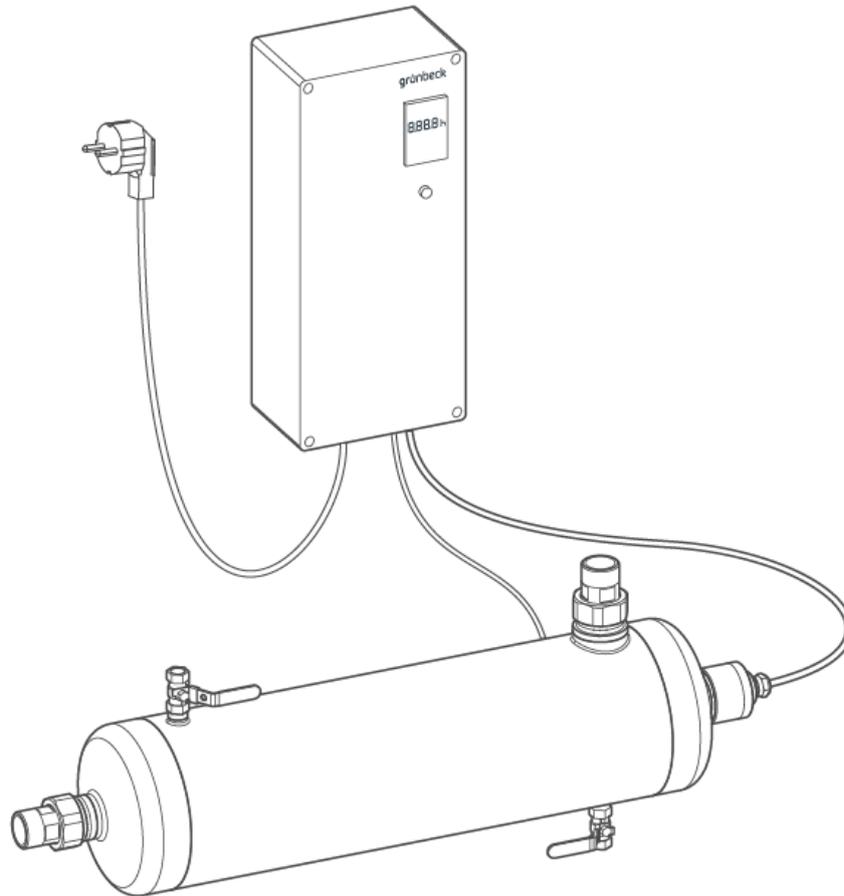


We understand water.



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UV disinfection system | violiQ:UV33i/80i/120i

Operation manual

grünbeck

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# 1 Introduction

This manual is intended for owners/operating companies, operators/users as well as qualified specialists and ensures the safe and efficient handling of the product. The manual is an integral part of the product.

- Carefully read this manual and the included manuals on the components before you operate your product.
- Obey all safety and handling instructions.
- Keep this manual and all other applicable documents, so that they are available when needed.

Illustrations in this manual are for basic understanding and can differ from the actual design.



According to the list as per § 11 of the German Drinking Water Ordinance, UV disinfection systems to be used for drinking water must be tested in accordance with DIN 19294-1. Grünbeck's UV disinfection systems violiQ:UVi for industrial applications do not meet this requirement and are not approved for operation in the drinking water sector.



If part of the water is used for drinking water, DVGW-certified UV disinfection systems such as violiQ:UV20/66/85 must be used.

## 1.1 Validity of the manual

This manual applies to the products below:

- Disinfection system violiQ:UV33i
- Disinfection system violiQ:UV80i
- Disinfection system violiQ:UV120i
- Special designs that essentially correspond to the standard products given above. For information on changes, please refer to the respective information sheet that is enclosed, if applicable.

## 1.2 Other applicable documents

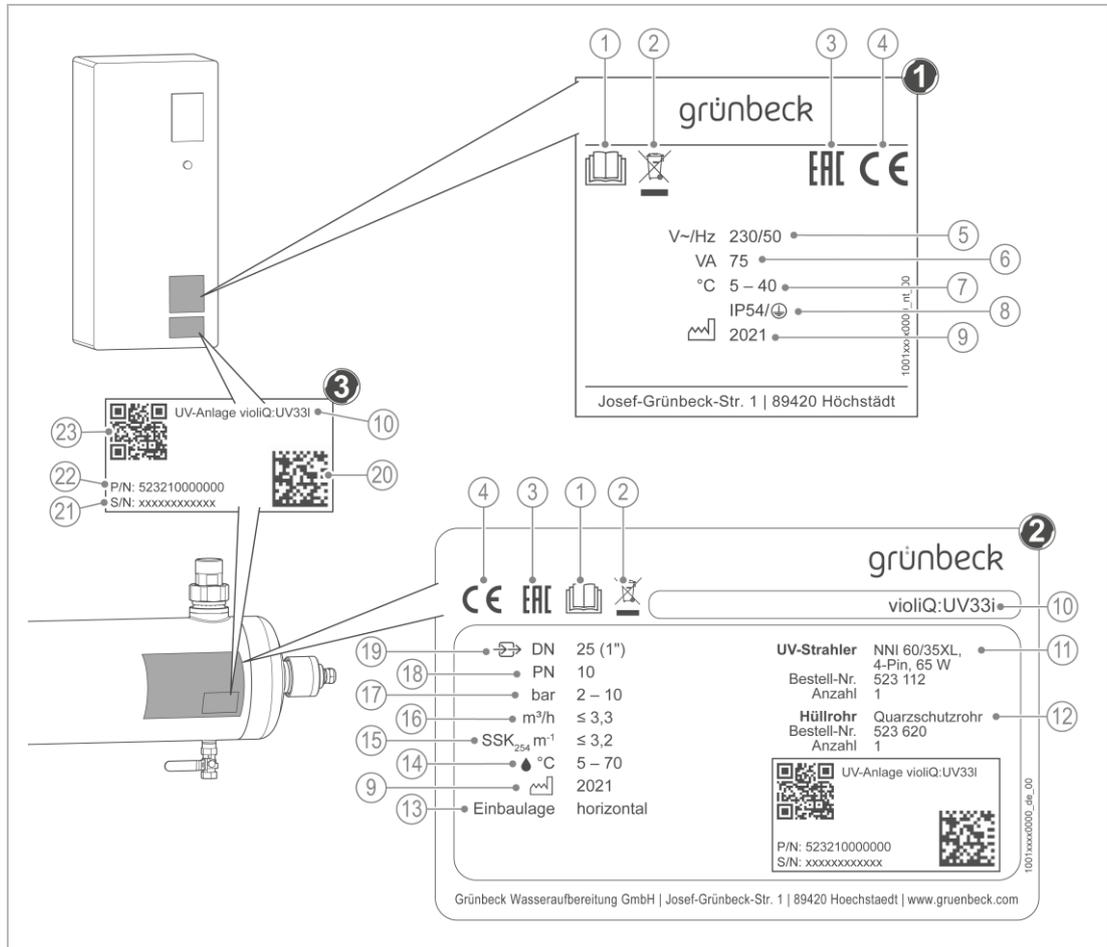
- Manuals for components from other manufacturers
- Safety data sheets for chemicals

### 1.3 Product identification

You can identify your product based on the product designation and the order no. indicated on the type plate.

- Check whether the products indicated in chapter 1.1 correspond to your product.

The type plates are located on the control unit and the irradiation chamber.



Designation	
1	Obeý the operation manual
2	Disposal information
3	EAC mark
4	CE mark
5	Power supply
6	Power input
7	Ambient temperature
8	Protection/protection class
9	Date of manufacture
10	Product designation
11	Information on UV lamp
12	Information on protective pipe

Designation	
13	Installation position of irradiation chamber
14	Water temperature
15	Spectral attenuation coefficient SSK <sub>254</sub>
16	Nominal flow
17	Operating pressure
18	Nominal pressure
19	Nominal connection diameter
20	Data matrix code
21	Serial no.
22	Order no.
23	QR code

## 1.4 Symbols used

Symbol	Meaning
	Danger and risk
	Important information or requirement
	Useful information or tip
	Written documentation required
	Reference to further documents
	Work that must be carried out by qualified specialists only
	Work that must be carried out by qualified electricians only
	Work that must be carried out by technical service personnel only

## 1.5 Depiction of warnings

This manual contains information and instructions that you must obey for your personal safety. The information and instructions are highlighted by a warning symbol and are structured as shown below:



**SIGNAL WORD** Type and source of hazard

- Possible consequences
- ▶ Preventive measures

The signal words below are defined subject to the degree of danger and might be used in the present document:

Warning symbol and signal word	Consequences if the information/instructions are ignored	
 <b>DANGER</b>		Death or serious injuries
 <b>WARNING</b>	Personal injury	Possible death or serious injuries
 <b>CAUTION</b>		Possible moderate or minor injuries
<b>NOTE</b>	Damage to property	Possible damage to components, the product and/or its functions, or an object in its vicinity

## 1.6 Requirements for personnel

During the individual phases in the service life of the system, different persons carry out work on the system. This work requires different qualifications.

### 1.6.1 Qualification of personnel

Personnel	Requirements
Operator/user	<ul style="list-style-type: none"> <li>No special expertise required</li> <li>Knowledge of the tasks assigned</li> <li>Knowledge of possible dangers in case of incorrect behaviour</li> <li>Knowledge of the required protective equipment and protective measures</li> <li>Knowledge of residual risks</li> </ul>
Owner/operating company	<ul style="list-style-type: none"> <li>Product-specific expertise</li> <li>Knowledge of statutory regulations on work safety and accident prevention</li> </ul>
Qualified specialist <ul style="list-style-type: none"> <li>Electrical engineering</li> <li>Sanitary engineering (HVAC and plumbing)</li> <li>Transport</li> </ul>	<ul style="list-style-type: none"> <li>Professional training</li> <li>Knowledge of relevant standards and regulations</li> <li>Knowledge of detection and prevention of potential hazards</li> <li>Knowledge of statutory regulations on accident prevention</li> </ul>
Technical service (Grünbeck's technical service/ authorised service company)	<ul style="list-style-type: none"> <li>Extended product-specific expertise</li> <li>Trained by Grünbeck</li> </ul>

### 1.6.2 Authorisations of personnel

The table below describes which tasks may be carried out by whom.

	Operator/ user	Owner/ operating company	Qualified specialist	Technical service
Transport and storage		X	X	X
Installation and mounting			X	X
Start-up/commissioning			X	X
Operation and handling	X	X	X	X
Cleaning		X	X	X
Inspection		X	X	X
Maintenance			X	X
			X	X
Troubleshooting	X	X	X	X
Repair			X	X
Decommissioning and restart/recommissioning			X	X
Dismantling and disposal			X	X

### 1.6.3 Personal protective equipment

- ▶ As an owner/operating company, make sure that the required personal protective equipment is available.

The components below fall under the heading of personal protective equipment (PPE):



Protective gloves



Protective footwear



Protective overall



Safety goggles



Protective UV goggles



Mask

## 2 Safety

According to § 11 of the German Drinking Water Ordinance, UV disinfection systems must only be used if tested according to DIN 19294-1. Grünbeck's UV disinfection systems violiQ:UVi for industrial applications do not comply with this requirement.

- Without safety device, the UV disinfection system cannot be operated according to the German Drinking Water Ordinance. There is a risk that water which is not or insufficiently disinfected might enter the installation downstream of the UV disinfection system. This can result in a contamination of the pipes and microbiological loading of the water making it unfit for human consumption.
- If part of the water is used for drinking water, DVGW-certified UV disinfection systems such as violiQ:UV20/66/85 must be used.

### 2.1 Safety measures

- Only operate your product if all components are installed properly.
- Obey the local regulations on drinking water protection, accident prevention and occupational safety.
- Do not make any changes, alterations, extensions or program changes on your product.
- Only use genuine spare parts for maintenance or repair.
- Keep the premises locked against unauthorised access to protect imperilled or untrained persons from residual risks.
- Comply with the maintenance intervals (refer to chapter 8.2). Failure to comply can result in the microbiological contamination of your drinking water system.
- Be aware of a possible risk of slipping due to leaking water on the floor.

#### 2.1.1 Mechanical hazards

- You must never remove, bridge, or otherwise tamper with safety equipment.
- For all work on the system that cannot be carried out from the ground, use stable, safe and self-standing access aids (e.g. stepladders).
- Make sure that the system is set up in a way that it cannot tip over and that the stability of the system is guaranteed at all times.

## 2.1.2 Pressure-related hazards

- Components can be under pressure. There is a risk of injuries and damage to property due to escaping water and unexpected movement of components. Check the system's pressure lines for leaks at regular intervals.
- Before starting repair and maintenance work, make sure that all affected components are depressurised.

## 2.1.3 Electrical hazards

There is an immediate danger of fatal injury from electric shock when touching live parts. Damage to the insulation or individual components can be life-threatening.

- Only have qualified electricians carry out electrical work on the system.
- In case of damage to live components, switch off the voltage supply immediately and arrange for repair.
- Switch off the supply voltage before working on electrical system parts. Discharge residual voltage.
- Never bridge electrical fuses. Do not disable fuses. Use the correct current ratings when replacing fuses.
- Keep moisture away from live parts. Moisture can cause short-circuits.

## 2.1.4 Danger due to chemicals

- Chemicals can be hazardous to health and environment. They can cause skin and eye burns as well as irritation of the respiratory tract or allergic reactions.
- Avoid any skin/eye contact with chemicals.
- Use personal protective equipment.
- Read the safety data sheet before handling chemicals. Obey the instructions for different activities/situations.
- Current safety data sheets for chemicals are available for download at **[www.gruenbeck.de/en/info-centre/safety-data-sheets](http://www.gruenbeck.de/en/info-centre/safety-data-sheets)**.
- Obey in-house instructions when handling chemicals. Make sure that protective and emergency equipment such as emergency showers and eyewash are available where required, and functional.

### **Mixing and residual amounts of chemicals**

- Do not mix different chemicals. Unforeseeable chemical reactions posing a lethal danger can occur.
- Dispose of residual amounts of chemicals in accordance with local regulations and/or in-house instructions.
- Residual amounts from used containers should not be transferred into containers with fresh chemicals in order not to impair the effectiveness of the chemicals.

### **Labelling/Minimum shelf life/Storage of chemicals**

- Check the labelling of the chemicals. Chemical labels must not be removed or made illegible.
- Do not use any unknown chemicals.
- Comply with the use-by date (minimum shelf life) stated on the label.
- If stored incorrectly, chemicals could change their state of matter, crystallize, outgas, or lose their effectiveness. Store and use the chemicals at the indicated temperatures only.

### **Cleaning/Disposal**

- Immediately absorb spilled chemicals with suitable binding agents.
- Collect and dispose of chemicals in such a way that they cannot pose any risks to people, animals, or the environment.

## **2.1.5 Groups of persons requiring protection**

- Children must not play with the product.
- This product must not be used by persons (including children) with reduced capabilities, lack of experience or knowledge.
- Children should be supervised to make sure that they do not play with the product.

## 2.2 Product-specific safety instructions

### 2.2.1 Safety devices

The system heats up with increasing periods of standstill without water withdrawal.



#### CAUTION

Temperature increase in the UV disinfection system

- Water temperature of up to 60 °C are possible in the system.
- The increase in temperature has an impact on the UV lamp.  
With the increasing temperature (starting from a water temperature of approx. 25°C), the irradiance decreases and in case of high temperatures can even fall below the alarm limit value.
- ▶ Use temperature-controlled flushing to flush the system subject to the temperature (refer to chapter 3.5).

### 2.2.2 Signals and warning signs

#### Labels on the product



Risk of electric shock



Risk due to optical radiation



Risk of explosion



UV irradiation



Risk due to mercury



The affixed information and pictograms must be clearly legible.

They must not be removed, soiled or painted over.

- ▶ Obey all warnings and safety instructions.
- ▶ Immediately replace illegible or damaged symbols and pictograms.

## 2.3 Conduct in emergencies

### 2.3.1 In case of water leaks

1. De-energise the system – pull the mains plug.
2. Locate the leak.
3. Eliminate the cause of the water leak.

## 3 Product description

### 3.1 Intended use

- The UV disinfection systems violiQ:UVi are designed for the disinfection of process and swimming pool water. They must not be used for operation in the drinking water sector.
- The UV disinfection systems violiQ:UVi are to be installed downstream of water treatment systems and are designed exclusively for use in the industrial and commercial sector.
- The room irradiation required to kill bacteria and viruses is at least 400 J/m<sup>2</sup>. At this room irradiation, a reduction rate of 99.99 % is achieved.
- The UV disinfection systems violiQ:UVi are adapted to the water demand and the water quality to be expected and are suitable up to a spectral attenuation coefficient SSK<sub>254</sub> of 6.5 m<sup>-1</sup>. The maximum flow must not be exceeded under any circumstances (refer to chapter 3.2, diagram with flow rates as a function of the spectral attenuation coefficient SSK<sub>254nm</sub>). At an attenuation coefficient SSK<sub>254</sub> of 3.2 m<sup>-1</sup>, the flow/irradiance indicated in the Technical Specifications guarantee a disinfection effectiveness of at least 400 J/m<sup>2</sup>.
- A reliable disinfection of the water can only be achieved if the water is mostly free of turbidities and only slightly loaded with regard to microbiological growth. Water containing turbidities and faecal indicator germs requires treatment for particle separation.

#### 3.1.1 Foreseeable misuse

- Use of UV disinfection systems violiQ:UV 33i/80i/120i in the drinking water sector.

### 3.2 Application limits

The SKK<sub>254</sub> (spectral attenuation coefficient at a wavelength of light of 254 nm) indicates how much light is lost in water.

The tables below also indicate the water transmission. The transmission data refers to the size of the cuvette used for measuring. For better comparability of different water analyses, the transmissions are given for cuvette thicknesses of 10 mm, 50 mm and 100 mm.



The transmission and the spectral attenuation coefficient SSK<sub>254</sub> can only be determined by a water analysis in the laboratory.

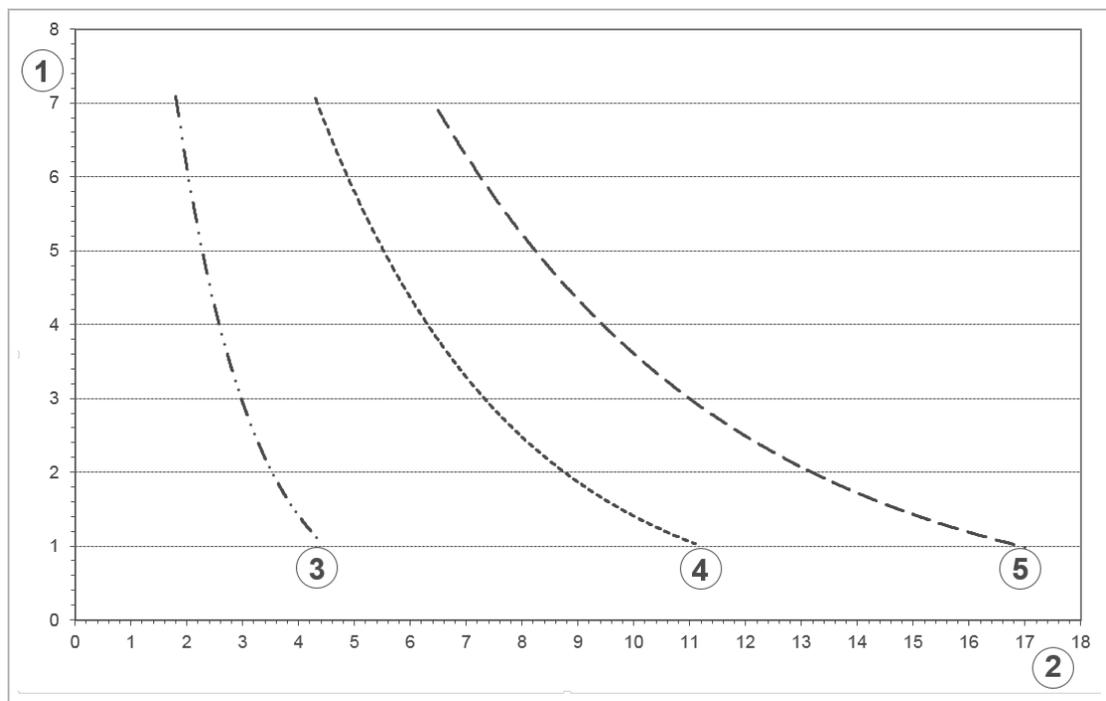
The temperature of the water also has an influence on the performance of the UV disinfection systems as the water temperature affects the operating temperature of the lamps.

Therefore, the UV disinfection systems must only be operated within the specified temperature range (5 –70 °C).

### Conversion transmission/spectral attenuation coefficient SSK

Spectral attenuation coefficient SSK <sub>254</sub> in m <sup>-1</sup>	τ10 in %	τ 50 in %	τ100 in %		UV33i in m <sup>3</sup> /h	UV80i in m <sup>3</sup> /h	UV120i in m <sup>3</sup> /h
1.5	96.0	82.0	67.0		4.5	11.0	17.0
2.2	95.0	77.0	60.0		3.8	9.5	14.0
<b>3.2</b>	<b>93.0</b>	<b>70.0</b>	<b>49.0</b>		<b>3.3</b>	<b>8.0</b>	<b>12.0</b>
4.5	90.0	59.0	35.0		2.7	6.5	10.0
6.5	86.0	47.0	22.0		2.5	5.3	8.0

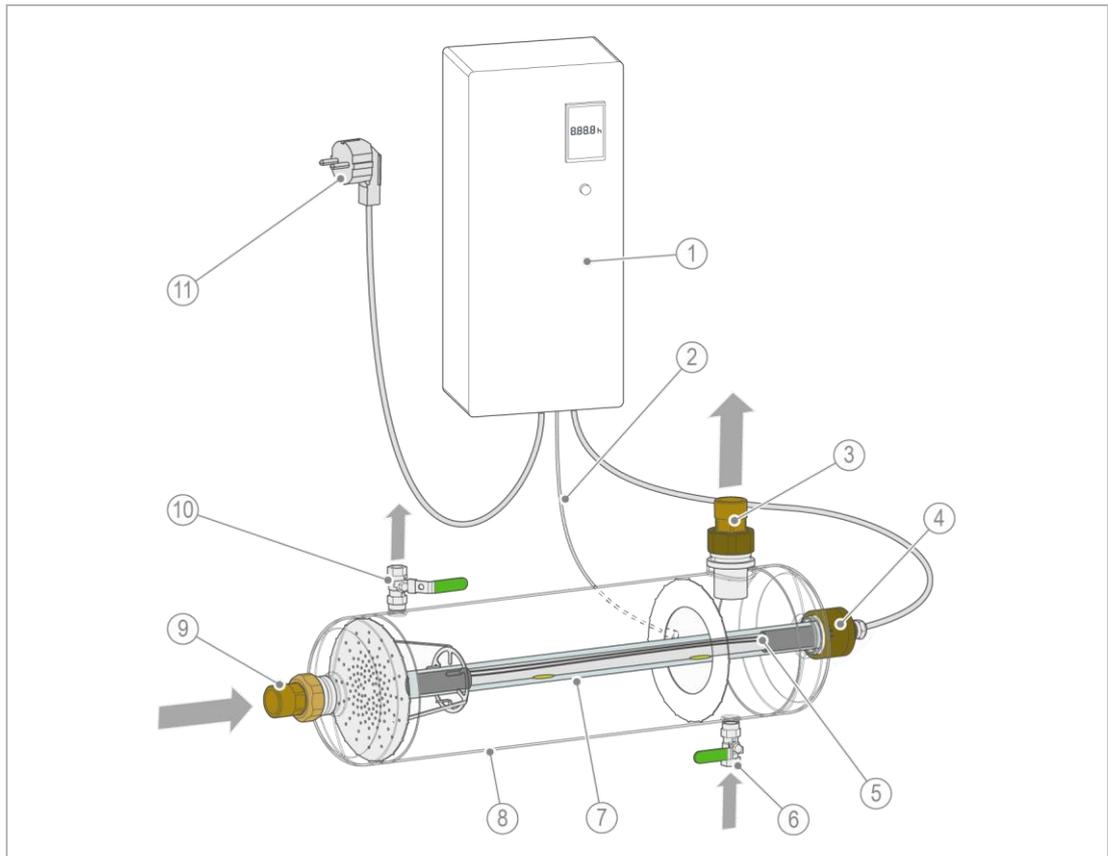
### Flows rates as a function of spectral attenuation coefficient SSK<sub>254nm</sub>



Designation	
①	Spectral attenuation coefficient SSK <sub>254</sub> in m <sup>-1</sup>
②	Flow in m <sup>3</sup> /h

Designation	
③	violIQ:UV33i
④	violIQ:UV80i
⑤	violIQ:UV120i

### 3.3 Product components



Designation	Function
1 Control unit violiQ:UVi	To control, monitor and forward signals
2 Protective conductor	For earthing the control unit including the irradiation chamber
3 Water meter screw connection	For water outlet
4 Brass screw connection	For protective pipe with UV lamp
5 UV lamp	For room irradiation with UV light
6 Ball valve	Inlet for flushing the irradiation chamber
7 Protective quartz pipe	To house the UV lamp
8 Irradiation chamber	Pressure pipe made of stainless steel as reactor housing
9 Water meter screw connection	For water inlet
10 Ball valve	Outlet for flushing the irradiation chamber and for venting
11 Mains plug	For Schuko socket

## 3.4 Functional description

The UV disinfection systems violiQ:UVi are designed according to DIN 19294-1. They work with a room irradiation of at least 400 J/m<sup>2</sup>.

### 3.4.1 Disinfecting effect of UV light

UV light (ultraviolet light) is light with a wavelength between 100 and 380 nm. These wavelengths are below the sensitivity limit of the human eye and therefore invisible. For UV disinfection, the wavelength at 254 nm is of particular importance. This wavelength is emitted by mercury-arc lamps.

The disinfecting effect of UV light is due to the fact that light with a wavelength of 254 nm is absorbed by the nucleic acids in the genetic material of micro-organisms. The absorption of the high-energy radiation results in the modification of the genetic material (DNA or RNA) and leads to an incapability to reproduce.

The room irradiation (light dose) required to inactivate micro-organisms depends on the respective species and population of the micro-organisms. Fungi, spores and algae require a much higher room irradiation than bacteria and viruses.

- According to DIN 19294-1, a minimum room irradiation of 400 J/m<sup>2</sup> achieves a reduction rate of 99.99 % for viruses and bacteria.  
For further and more detailed information, refer to DVGW worksheet W 294-1.

### 3.4.2 Room irradiation

The intensity of the room irradiation depends on the irradiance and the irradiation time. The irradiance on the other hand depends on the specific attenuation coefficient of the water at 254 nm (SSK<sub>254</sub>). With regard to UV disinfection, the organic substances (e.g. humic acid) and inorganic salts (e.g. iron or manganese ions) contained in the water are of major importance as these absorb the UV light at 254 nm and thus reduce the transmission. As the wavelength of 254 nm is in a range invisible to the eye, the SSK<sub>254</sub> can only be determined by a UV-VIS spectrometer.

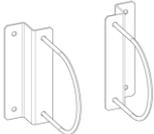
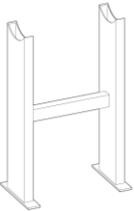
Furthermore, the irradiance is subject to the age of the UV lamps. The performance of the UV lamps decreases with their increasing operating time. In order to continue to guarantee the required room irradiation, the UV lamp must be replaced at the end of its service life.

The irradiation time results from the flow and the volume of the UV disinfection system.

Subject to being operated properly, all UV disinfection systems violiQ:UVi meet the effective minimum room irradiation of 400 J/m<sup>2</sup> required by the standards.

### 3.5 Accessories/optional equipment

You can retrofit your product with accessories. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechststadt/Germany for details.

Illustration	Product	Order no.						
	<b>Temperature-controlled flushing for violiQ:UVi</b> To prevent the water in the UV system from heating up	<b>523 820.10</b>						
	<b>Flushing kit for cleaning UV systems with GENO-clean CP</b> For cleaning the UV system	<b>520 020</b>						
	<b>UV safety goggles</b>	<b>522 810</b>						
	<b>Wall bracket for UV systems</b> To mount the UV system on the wall	<b>523 800</b>						
	<b>Floor rack</b> To place the UV system on the floor	<table border="1"> <tr> <td><b>violiQ:UV33i</b></td> <td><b>523 815</b></td> </tr> <tr> <td><b>violiQ:UV80i</b></td> <td><b>523 805</b></td> </tr> <tr> <td><b>violiQ:UV120i</b></td> <td><b>523 810</b></td> </tr> </table>	<b>violiQ:UV33i</b>	<b>523 815</b>	<b>violiQ:UV80i</b>	<b>523 805</b>	<b>violiQ:UV120i</b>	<b>523 810</b>
<b>violiQ:UV33i</b>	<b>523 815</b>							
<b>violiQ:UV80i</b>	<b>523 805</b>							
<b>violiQ:UV120i</b>	<b>523 810</b>							
	<b>Stainless steel connection kit 1"</b> for UV systems violiQ:UV33i	<b>520 070</b>						
	<b>Stainless steel connection kit 2"</b> for UV systems violiQ:UV80i/UV120i	<b>520 075</b>						
	To protect the continuing pipe (in case of plastic pipes) from damage due to highly energetic UV-C light							

## 4 Transport, set-up and storage

### 4.1 Shipping/Delivery/Packaging

The system is fixed on a pallet at the factory and secured against tipping.

- ▶ Upon receipt, immediately check for completeness and transport damage.

### 4.2 Transport/Set-up

- ▶ Transport the product in its original packaging only.
- ▶ When transporting the product on site and setting it up, make sure to always place it the right way round, if so indicated on the packaging.
- ▶ Place the system parts/packages on a level and stable surface. Take the weight of the system parts/packages into account.

### 4.3 Storage

- ▶ Protect the product from the impacts below when storing it:
  - Dampness, moisture
  - Environmental impacts such as wind, rain, snow, etc.
  - Frost, direct sunlight, severe heat exposure
  - Chemicals, dyes, solvents and their vapours

## 5 Installation

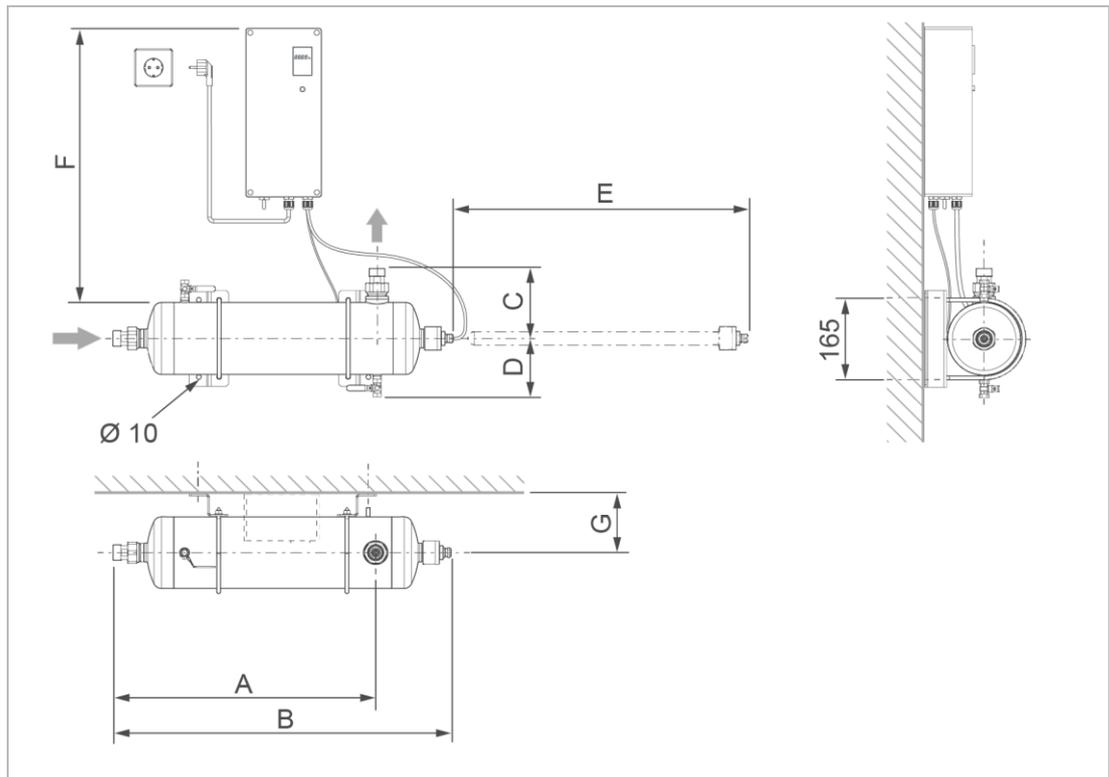


The installation of the system must be carried out by a qualified specialist only.

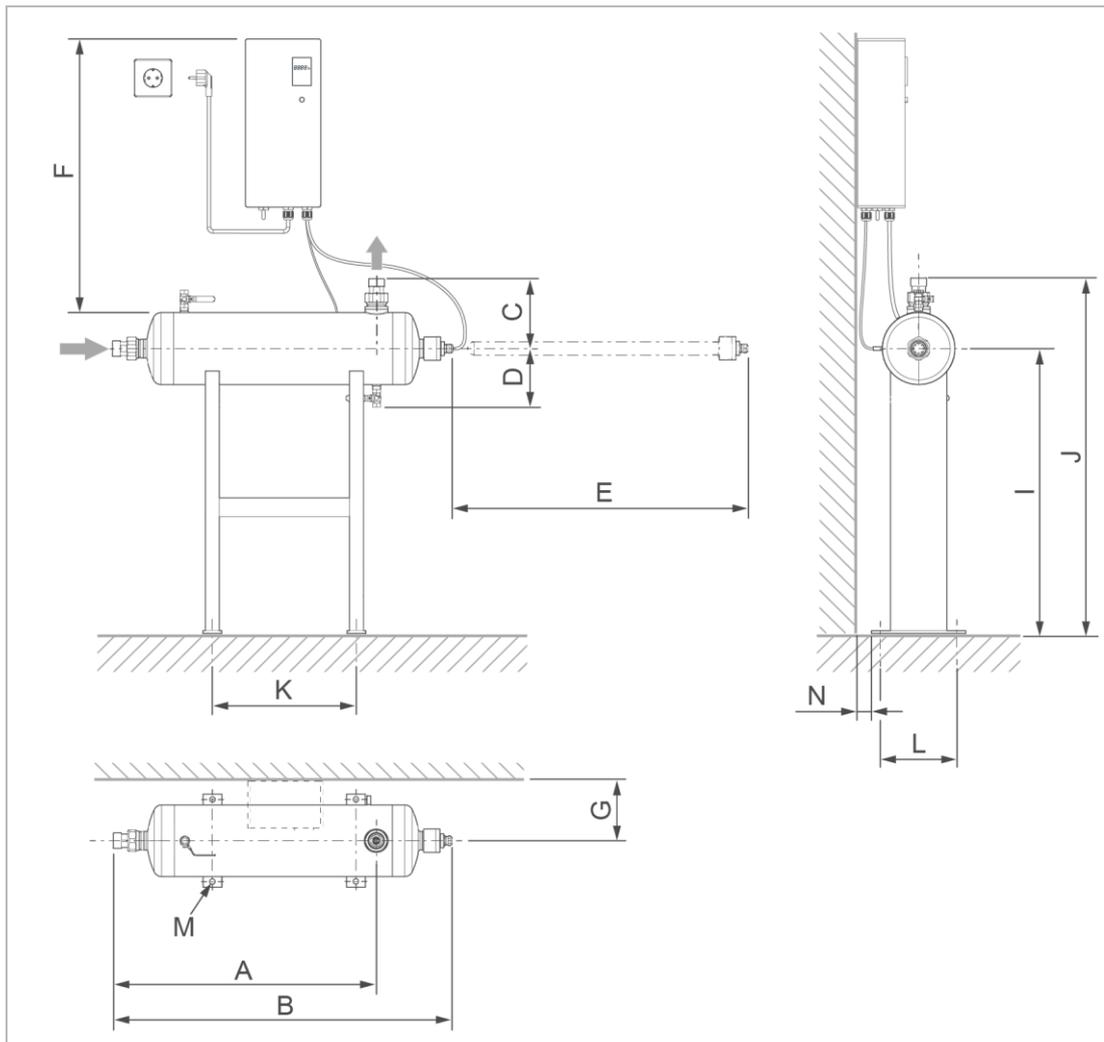


The installation site must offer adequate space. The required connections must be provided prior to the installation of the system.

### Space required and installation dimensions (for wall mounting)



### Space required and installation dimensions (with floor rack)



Dimensions and weights		violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
A	Installation length with screw connection	mm	560	960
B	Total length with screw connection	mm	795	1185
C	Overall height above centre of connection with screw connection	mm	149	168
D	Overall height below centre of connection	mm		130
E	Clearance required on right of system for lamp replacement	mm	560	950
F	Clearance required above the system	mm		≥ 580
G	Distance to wall from centre of connection	mm		≥ 125
I	Overall height centre of system with floor rack	mm		610
J	Overall height with screw connection, with floor rack	mm		791
K	Distance between holes to fasten floor rack, width	mm	306	550
L	Distance between holes to fasten floor rack, depth	mm		180
M	Diameter of bore to fasten floor rack	mm		Ø 12
N	Distance of floor rack to wall	mm		≥ 30

## 5.2 Requirements for the installation site

Obey the local installation directives, general guidelines and technical specifications.

- The adequately dimensioned installation surface of the system must be level and provide sufficient strength and load-bearing capacity to support the operating weight of the system.
- The installation site must be frost-proof and protect the system from chemicals, dyes, solvents and their vapours.
- In case the optional temperature-controlled flushing is used, a drain connection  $\geq$  DN 50 must be available.
- The installation room must have a floor drain. If no floor drain is available, a safety device with water stop function must be installed in order to prevent water damage.
- Floor drains that discharge to a lifting system do not work in case of a power failure.
- The installation site must be adequately illuminated and ventilated.
- Unimpeded and prompt placing of the system must be possible.
- Disturbing influences and restrictions on site must be indicated by the client in advance and taken into account in the design of the system.

### 5.2.1 Products installed upstream and downstream

- Always install a drinking water filter and, if required, a pressure reducer upstream of the UV disinfection system.
- Upstream and downstream of the UV disinfection system, shut-off valves must be provided.
- 0.5 m upstream and downstream of the UV disinfection system, the water pipes must be made of UV-resistant material (stainless steel, galvanised steel or copper). Plastic pipes are not suitable.

### 5.2.2 Requirements for electrical wiring

- For the electrical connection, a Schuko socket is required, which must not be more than 1.5 m away from the UV disinfection system.
- The socket must be supplied with continuous current and must not be coupled with a light switch, heating emergency switch or the like.

## 5.3 Checking the scope of supply

- 1 Stainless steel pressure pipe (irradiation chamber)
- 1 Protective quartz pipe
- 1 Moulded seal for the protective quartz pipe
- 1 Sealing paste for installing the protective quartz pipe
- 1 UV lamp



A special warranty period of max. 4,000 operating hours or max. 12 months after installation applies for UV lamps.

- 2 Water meter screw connections (inserts with union nuts)
  - 1 Control unit violiQ:UVi
  - 1 Operation manual
- ▶ Check the scope of supply for completeness and damage.

## 5.4 Water installation



Regarding the installation and operation of UV disinfection systems, the DVGW work sheet W 294-1 must be complied with.

- ▶ Make the water connection according to the installation drawing.
- ▶ The fastening material must be provided by the client on site according to the local conditions at the installation site (refer to chapter 5 “Installation dimensions for wall mounting or installation with floor rack”)



The easiest and safest way to install the system is to use the wall bracket for wall mounting or the floor rack available as accessories (refer to chapter 3.5).

- ▶ Mount the UV system horizontally with the outlet directing upwards in order to be able to remove accumulated air.



The UV systems are only tight when the protective quartz pipes are installed properly.

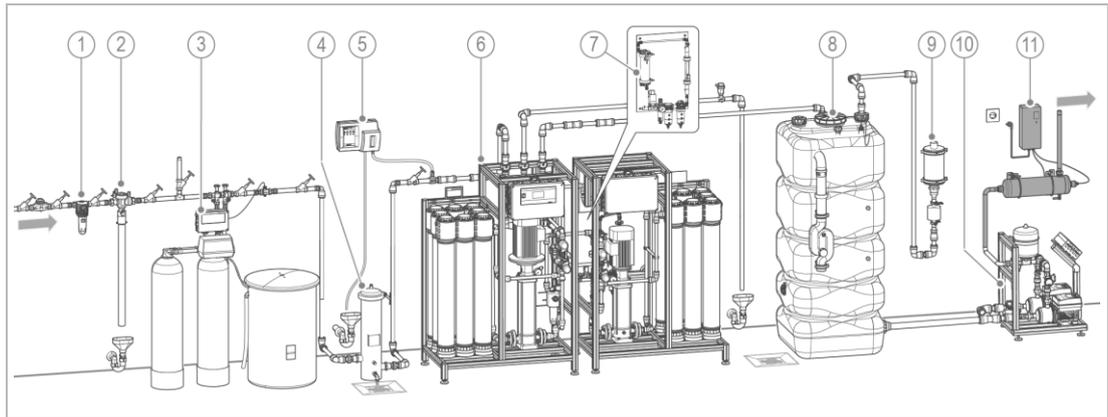
- ▶ Carry out a leak test after installing the protective quartz pipe.

### NOTE

If the protective quartz pipe breaks, water might leak.

- Water escaping from the pipe network.
- ▶ Make sure that there is a floor drain in the installation room.

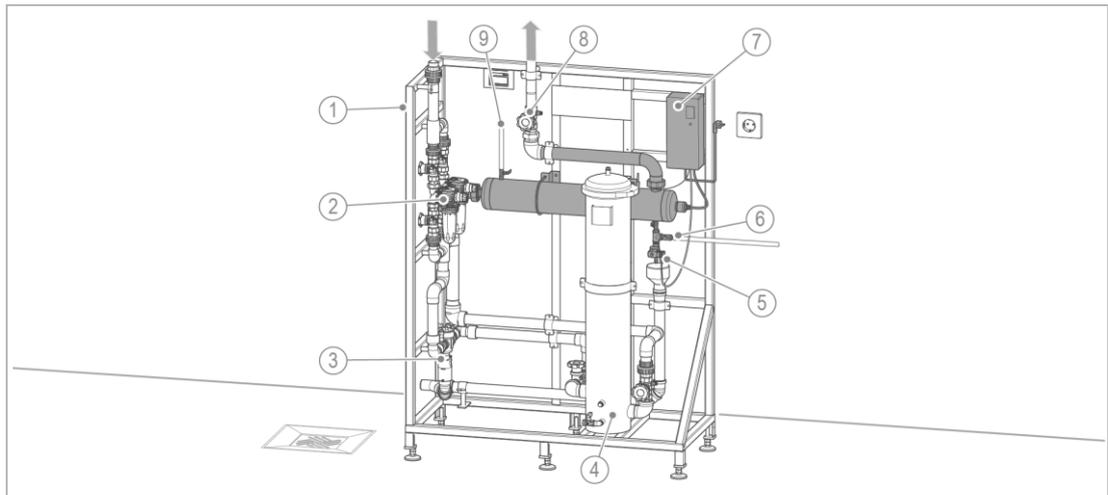
### Installation example of treatment section



Designation	
1	Drinking water filter
2	System separator
3	Water softener
4	Activated carbon filter AKF
5	Automatic water analysis system
6	Reverse osmosism system

Designation	
7	GENO membrane degassing system
8	Basic pure water tank GT-X with level probe
9	CO <sub>2</sub> trap with sterile air filter
10	Pressure booster system
11	UV disinfection system

### Installation example on system rack



Designation	
1	Rack-mounted modular system GENO-UV skid
2	Drinking water filter
3	System separator
4	Activated carbon filter AKF

Designation	
5	Solenoid valve (time-controlled) for temperature-controlled flushing (optional accessory)
6	Inlet flushing connection
7	UV disinfection system
8	Outlet shut-off valve
9	Outlet flushing connection

## 5.5 Electrical installation

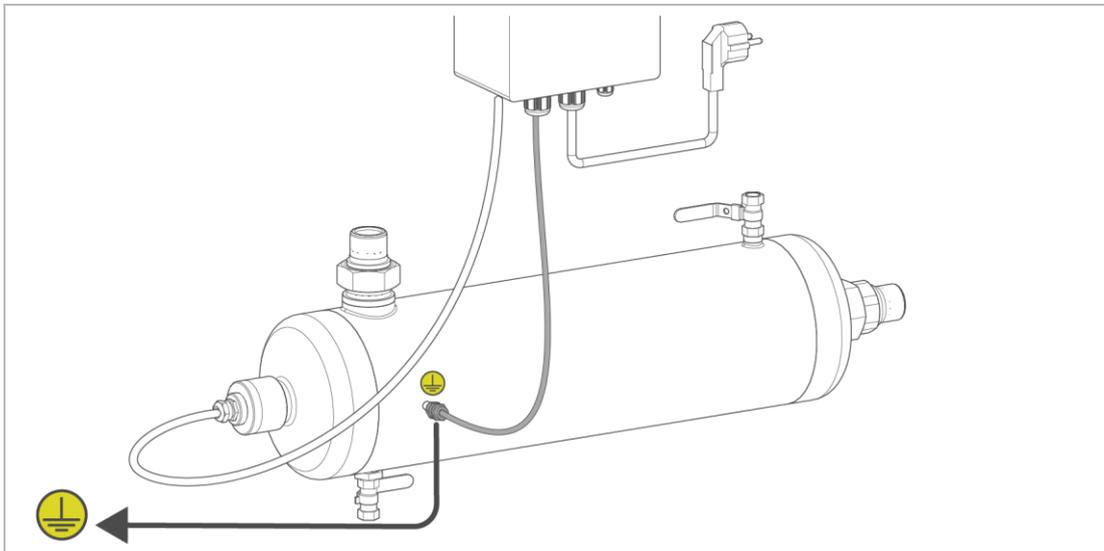


The electrical installation must be carried out by a qualified electrician only.



**DANGER** Life-threatening voltage of 230 V on terminals 1, 2, 4, 5, 7 and 8.

- Severe burns, cardiovascular failure, fatal electric shock.
- ▶ Check the system for proper condition before start-up/commissioning.
- ▶ Only plug the mains plug into the socket after the work has been completed.
  
- ▶ Determine the position of the control unit (as close as possible to the UV system).
  - a Take the space required into consideration and make sure that the control unit is accessible for use.
- ▶ Fasten the control unit with the fastening materials provided by the client on site and according to the on-site wall situation.



- ▶ Connect the protective conductor of the control unit to the connection on the reactor housing.

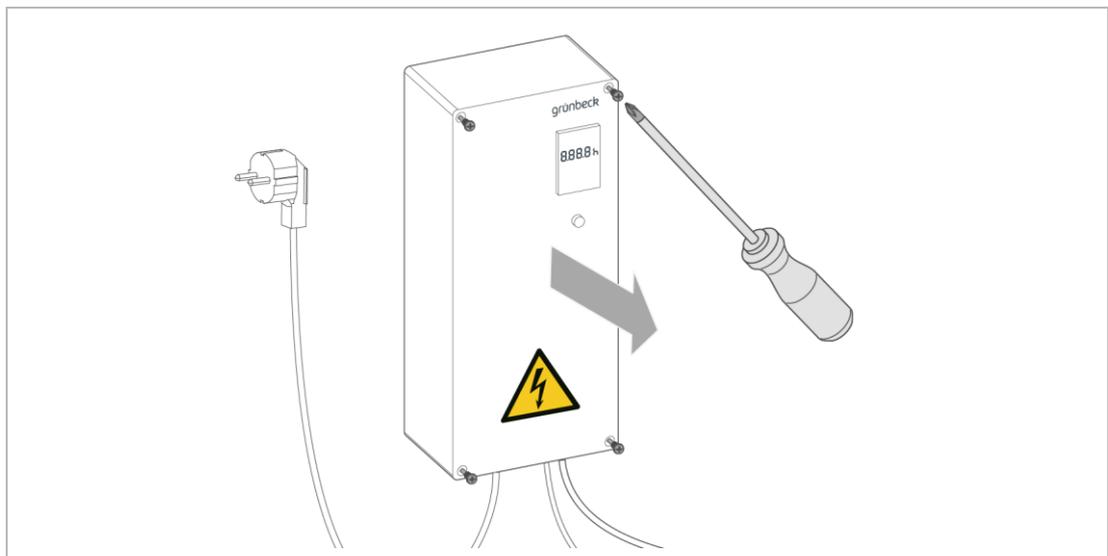


The reactor housing of the UV system must be connected to the building's equipotential bonding system via a PE cable with a cross-section of 6 mm<sup>2</sup>– 16 mm<sup>2</sup>.

The UV systems are electrically pre-wired.

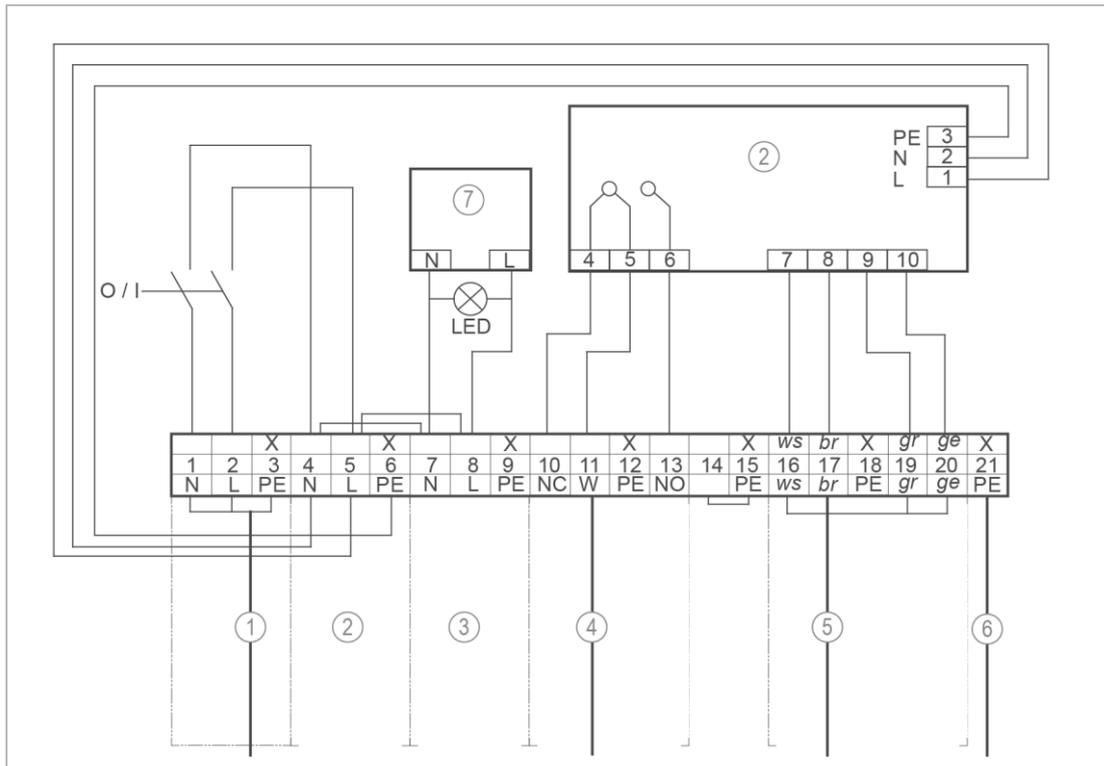
In addition, possible signal lines or signal transmitters must be connected to the voltage-free fault signal output.

- When the system is switched off or in case of a malfunction, contacts 10/11 are closed and contacts 11/13 are open.
- The voltage-free fault signal output does not carry any voltage.



1. Open the cover of the control unit.
2. Establish the required electrical connections (refer to chapter 5.5.1).
  - a Provide a suitable power supply for terminal 11 (24 V-230 V AC, 50–500 mA or 5 V-24 V DC, 50–500 mA).
3. Close the cover of the control unit.

### 5.5.1 Terminal diagram



Item	Component	Terminal	Signal	Colour of litz wire
①	Mains cable	1 L	230 V / 50 Hz phase	BN/BK (brown or black)
		2 N	Neutral conductor	BU (blue)
		3 PE	Protective conductor	YE-GN (yellow-green)
②	Electronic ballast (EVG)	4 N	Neutral conductor	BU (blue)
		5 L	230 VAC	BN/BK (brown or black)
		6 PE	Protective conductor	YE-GN (yellow-green)
③	Reserve/LED	7 N	Neutral conductor	BU (blue)
		8 L	230 VAC	BN/BK (brown or black)
		9 PE	Protective conductor	YE-GN (yellow-green)
④	Voltage-free fault signal output (external signal/fault of electronic ballast)	10 NC	Normally closed contact	
		11 W	24 V-230 V AC, 50–500 mA or 5 V-24 V DC, 50–500 mA	
		12 PE	Protective conductor	YE-GN (yellow-green)
		13 NO	Normally open contact	
⑤	UV lamp	14		
		15 PE	Protective conductor	YE-GN (yellow-green)
		16		WH (ws = white)
		17		BN (br = brown)
		18 PE	Protective conductor	YE-GN (yellow-green)
		19		GR (gr = green)
⑥	UV reactor (protective conductor)	20		YE (ge = yellow)
		21 PE	Reactor grounding	YE-GN (yellow-green)
⑦	Operating hour meter	N	Neutral conductor	BU (blue)
		L	230 VAC	BN/BK (brown or black)

## 6 Start-up/Commissioning

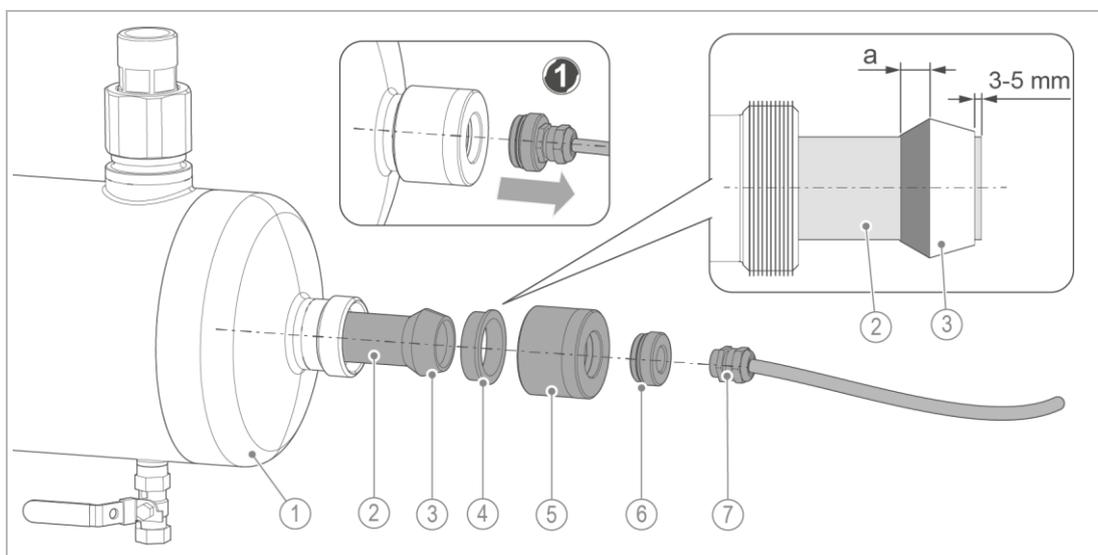


The initial start-up/commissioning of the product must be carried out by technical service personnel only.

### 6.1 Installing the protective quartz pipe

**NOTE** Do not touch the protective quartz pipe with bare hands.

- Touching it with bare hands will decrease performance.
- ▶ Use cotton gloves when installing the protective quartz pipe.



Designation	Designation
1 Pressure pipe	5 Brass screw connection
2 Protective quartz pipe	6 Screw-in part with spacer
3 Seal	7 Cable screw connection
4 Stainless steel binding ring	a Sealing paste

1. Remove the screw-in part with spacer from the brass screw connection.
  - a Loosen the cable glands of the screw-in part.
2. Unscrew the brass screw connection and remove the stainless steel binding ring.
3. Install the seal as shown in the detail drawing.



Make sure not to apply any sealing paste to the area of the protective quartz pipe where the light passes through.

4. Apply the sealing paste to the seal as shown in the detail drawing.



In order to facilitate the installation, you can apply some sealing paste to the inside of the seal. This also facilitates removal in case of maintenance.

**NOTE**

Do not touch the protective quartz pipe with bare hands.

- Touching it with bare hands will decrease performance.
- ▶ Use cotton gloves when installing the protective quartz pipe.

5. Insert the protective quartz pipe into the pressure pipe.



When installing the protective quartz pipe, make sure that the protective quartz pipe is inserted into the protective quartz pipe guidance inside the stainless steel vessel (UV reactor).

- ▶ Use supplied mounting aid for installation.

6. Plug on the stainless steel binding ring.

7. Tighten the brass screw connection hand-tight again.



Do not tighten the nuts excessively in order not to damage the quartz glass.

Due to the tolerance of the components, the UV system might be sealed even if the stainless steel binding ring does not touch the pressure pipe.

## 6.2 Installing the UV lamp



**DANGER**

Life-threatening voltage of 230 V



- Severe burns, cardiovascular failure, fatal electric shock.
- ▶ Only carry out work on the UV lamp when the mains voltage is switched off – switch off the mains switch on the system beforehand and pull the mains plug.



**WARNING**

Dangerous UV irradiation



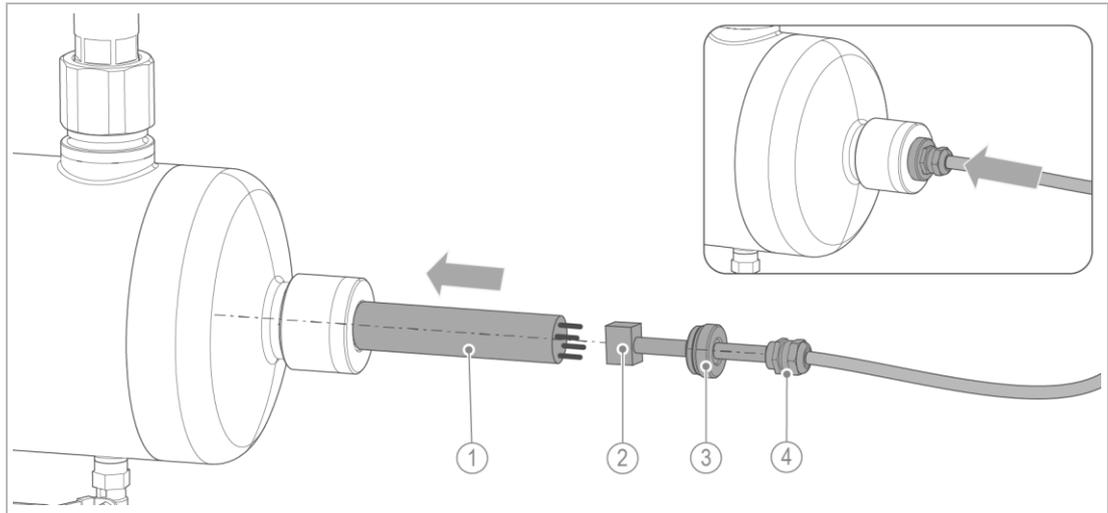
- Eye damage
- ▶ Never look directly into the UV lamp if the UV system is switched on.
- ▶ Use appropriate safety goggles against UV light (refer to chapter 3.5).



**NOTE**

Do not touch the UV lamp with bare hands.

- Touching it with bare hands will decrease performance.
- ▶ Use cotton gloves when installing the UV lamp.

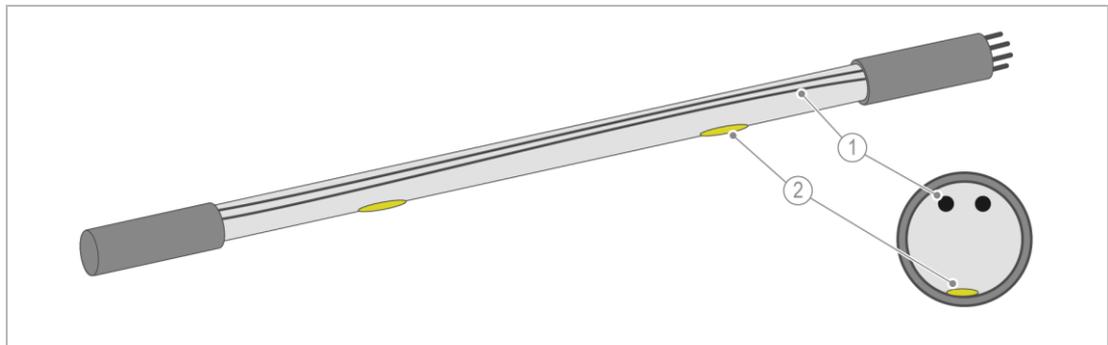


Designation	Designation
1 UV lamp	3 Screw-in part
2 Connector of the connection cable	4 Cable gland

1. Insert the UV lamp into the protective quartz pipe up to about 60 mm.
2. Connect the UV lamp with the connector of the connection cable.
3. Completely insert the UV lamp into the irradiation chamber.



- ▶ Make sure that the connecting cables that run alongside the UV lamp point upwards when inserting the UV lamp and the gold dots of the UV lamp point downwards.



Designation	Designation
1 Connecting cable in the UV lamp	2 Gold dots

4. In order to fix the UV lamp, pull the cables as far as they will go through the cable gland of the screw-in part.
5. Firmly tighten the cable gland.

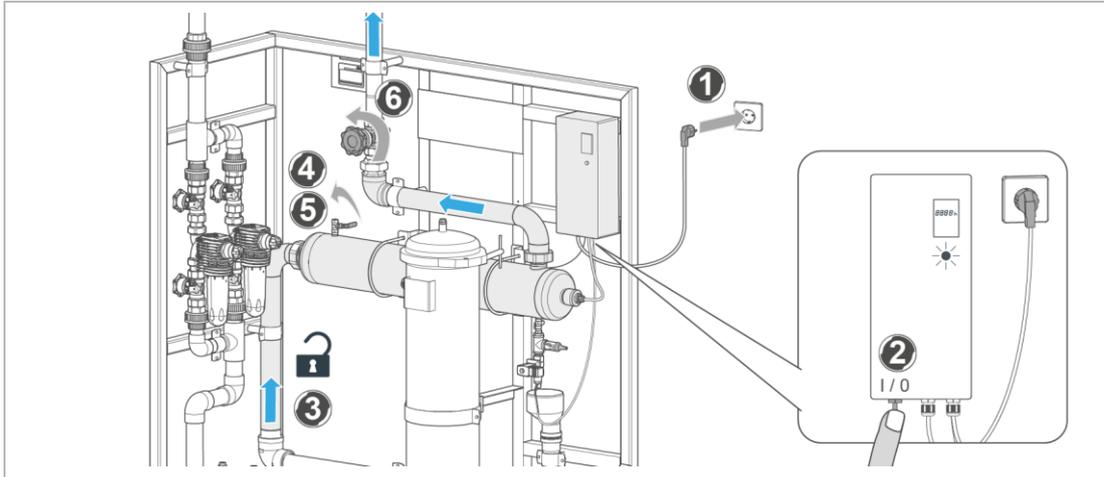
## 6.3 Venting, checking and putting the system into operation



### WARNING

Insufficiently disinfected water

- Contaminated water
- ▶ Prior to start-up disinfect the pipe system downstream of the UV system.



1. Plug the mains plug into the socket.
2. Switch on the mains switch.
  - » The signal lamp lights is illuminated.
  - » The operating hour meter starts counting.
3. Open the inlet shut-off valve upstream of the UV system.
4. Open the upper flushing valve to vent the pipe network.
5. Close the flushing valve when the UV system has been vented.
6. Open the outlet shut-off valve downstream of the UV system.
  - a Close the shut-off device of the possibly existing bypass.
7. Fill in the start-up/commissioning log (refer to chapter 13.1).

## 6.4 Handing over the product to the owner/operating company

- ▶ Explain to the owner/operating company how the product works.
- ▶ Use the manual to brief the owner/operating company and answer any questions.
- ▶ Inform the owner/operating company about the need for inspections and maintenance.
- ▶ Hand over all documents to the owner/operating company for keeping.

### 6.4.1 Disposal of packaging

- ▶ Dispose of packaging material as soon as it is no longer needed (refer to chapter 11.2).

### 6.4.2 Storage of accessories and spare parts

- ▶ Store accessories, spare parts and consumables in a safe place which is inaccessible to third parties.
- ▶ Make sure that required spare parts and consumables are available and reordered in good time (refer to chapters 8.5 and 8.6).

## 7 Operation



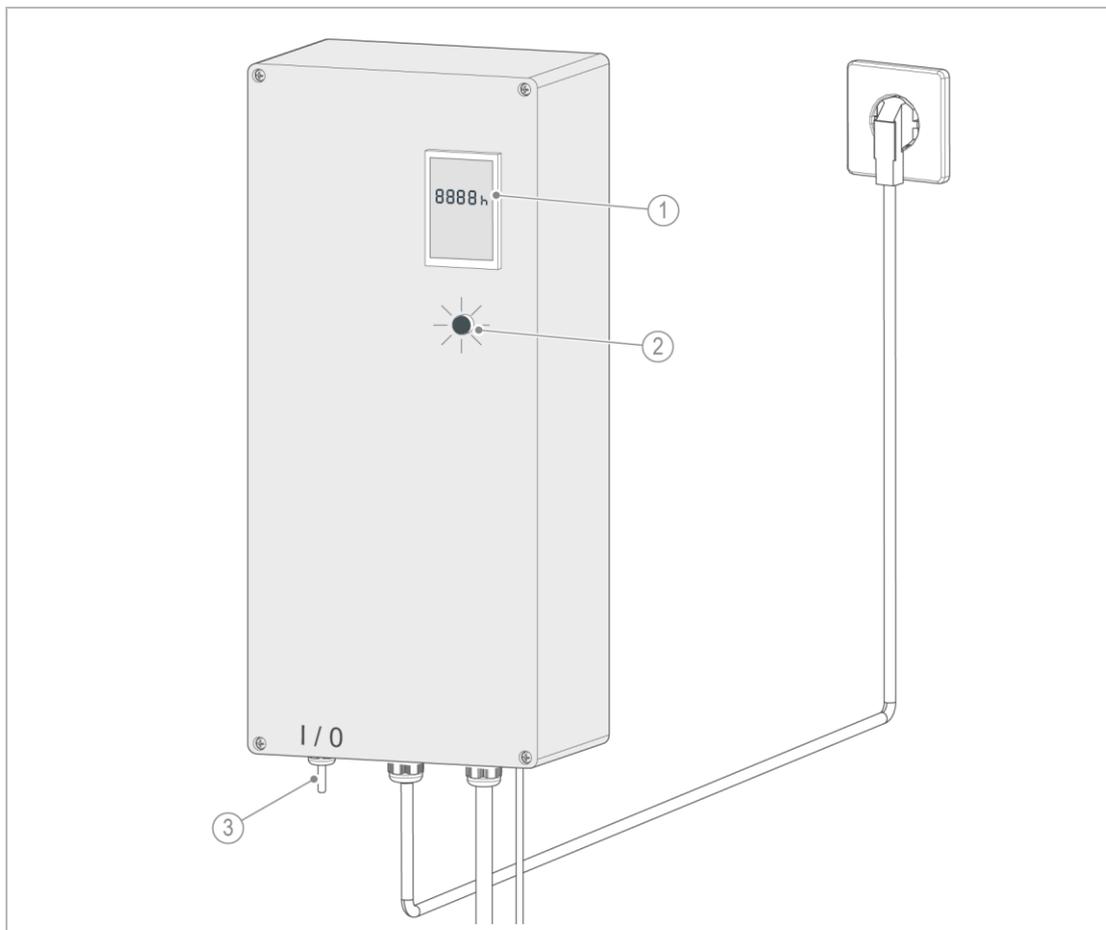
The UV disinfection systems must only be operated if all components are installed properly. Safety equipment must never be removed, bridged or otherwise tampered with or disabled.

The control unit of the violiQ:UVi monitors the function of the UV lamp.

Malfunctions are evaluated via a fault signal contact (refer to chapter 9).

In standard operation, the UV disinfection system can be controlled by means of an external control unit (e.g. control centre).

### 7.1 Operating concept



Designation	Function
1 Operating hour meter	Indicates the total operating hours
2 LED operation indicator	Is illuminated during operation
3 Mains switch	To switch the UV system on and off

## 7.1.2 Switching on the UV system

- ▶ Switch on the mains switch.
- The LED operation indicator is illuminated.
- The operating hour meter starts counting.
- The electronic ballast preheats the UV lamp.
- After the preheating phase, the UV lamp ignites.

## 7.1.3 Switching off the UV system

In case of a power failure during standard operation, the UV system automatically resumes operation at the return of power.



Do not switch off the system for no reason as each switch-on operation reduces the service life of the UV lamp.

- ▶ Maintain a wait time of at least 60 seconds between switch-on and switch-off operations, otherwise the service life of the UV lamp will be considerably reduced.
- The normally closed solenoid valves (e.g. optional flushing solenoid valve) close (interruption of flow).

## 8 Maintenance and repair

Maintenance and repair includes cleaning, inspection and maintenance of the product.



The responsibility for inspection and maintenance is subject to local and national requirements. The owner/operating company is responsible for compliance with the prescribed maintenance and repair work.



By concluding a maintenance contract you make sure that all maintenance work will be carried out on time.

- ▶ Only use genuine spare and wearing parts from Grünbeck.

### 8.1 Cleaning



Have the cleaning work only carried out by persons who have been instructed on the risks and dangers that can arise from the product.



**WARNING** Damp cleaning of live components

- Risk of electric shock
- Sparking possible due to short circuit
- Switch off the voltage supply before starting the cleaning work
- ▶ Do not open any switch cabinets.
- ▶ Do not use any high-pressure equipment for cleaning and do not blast electrical/electronic devices with water.

**NOTE** Do not clean the system with cleaning agents containing alcohol/solvents.

- These substances damage the plastic components
- ▶ Use a mild/pH-neutral soap solution.
  
- ▶ Use personal protective equipment.
- ▶ Only clean the outside of the system.
- ▶ Do not use any strong or abrasive cleaning agents.
- ▶ Wipe the surfaces with a damp cloth.
- ▶ Dry the surfaces with a cloth.

## 8.1.1 Flushing the UV system

By flushing the UV system, deposits which have settled in the UV system during operation, are removed. These deposits consist for example of iron, manganese, copper, scale, etc.

For the flushing, a flushing kit and a cleaning agent are required (refer to chapters 3.5 and 8.5).

The flushing kit essentially consists of a flushing container, a pump, hoses and corresponding connection pieces.

The cleaning agent GENO-clean CP is an acid mixture developed to remove scale, iron, manganese and other residues.

For more detailed information, refer to the product and safety data sheet of the cleaning agent.



Proceed as follows to flush the system:

1. Close the shut-off valves upstream and downstream of the UV system.
2. Take the UV system out of operation.
3. Connect the flushing kit to the flushing valves (inlet at the bottom, outlet at the top).
4. Fill the flushing kit with water and add the correct amount of cleaning agent (GENO-clean CP) to the flushing container (regarding the amount of the agent, refer to the operation manual of the flushing kit).
5. Switch on the flushing pump for at least 30 min.
  - a In case of extensive contamination flush for at least 60 min.
6. Drain the UV system and neutralise the cleaning agent.
7. Flush the UV system several times (3 – 4 times the content of the system) with clear water through the outlet valve.
  - » The residues of the cleaning agent are removed.
8. Close the flushing valves.
9. Put the UV system into operation again.
  - a Open the shut-off valves upstream and downstream of the UV system.

## 8.2 Intervals



By way of regular inspections and maintenance, malfunctions can be detected in time and system failures might be avoided.

- ▶ As owner/operating company determine which components must be inspected and maintained at which intervals (load-dependent). The intervals are subject to the actual conditions such as: water condition, degree of impurities, environmental impacts, consumption, etc.

The interval table below shows the minimum intervals for the activities to be carried out.

Task	Interval	Activities
Inspection	6 months	<ul style="list-style-type: none"> <li>• Visually check all system components for leaks</li> <li>• Check the control unit for fault messages</li> <li>• Clean the UV system and flush it with clear water, if needed.</li> </ul>
Maintenance	Annually or every 4,000 operating hours	<ul style="list-style-type: none"> <li>• Check all system components for their condition and for leaks</li> <li>• Check seals and replace them, if necessary</li> <li>• Check the (optional) temperature-controlled flushing unit for function</li> <li>• Clean the UV system and flush it with clear water, if needed</li> <li>• Clean the protective pipes, if needed</li> </ul>
	Every 24 months or after 16,000 operating hours	<ul style="list-style-type: none"> <li>• Replace wearing parts</li> </ul>
	load-dependent	<ul style="list-style-type: none"> <li>• Replace UV lamp after max. service life has been reached</li> </ul>

## 8.3 Inspection

Regular inspection is mandatory and you as an owner/operating company can carry it out yourself.

- ▶ Carry out an inspection at least every 6 months.
1. Check all system components for leaks.
  2. Check the control unit for fault messages (refer to chapter 9).
  3. Clean the UV system and flush the UV system with GENO-clean CP, if needed (refer to chapters 8.1 and 8.5).

## 8.4 Maintenance

Regular work is required in order to ensure the proper functioning of the product in the long term. DIN 19294-1 stipulates regular maintenance to ensure trouble-free and hygienic operation of the product.



Annual maintenance work requires expert knowledge. The maintenance work must be carried out by technical service personnel only.

### 8.4.1 Service work annually or every 4.000 operating hours

1. Check the outside of the entire UV system for damage, corrosion and leaks.
2. Check the mains cable and the mains plug for damage and a tight fit.
3. Check all electrical connecting lines for damage and a tight fit.
4. Check all hose connections for leaks.
5. Check the lamp connector – replace it, if needed.
6. Check the seals – replace them, if needed.
7. Check the optional temperature-controlled flushing unit for function.
8. Flush the UV system with GENO-clean CP, if needed (refer to chapters 8.1 and 8.5).
9. Clean the protective pipes, if needed.
10. Enter the data and work, including repairs, into the operation log and checklist.

### 8.4.2 Maintenance every 24 months or after 16,000 hours of operation

In addition to the service work:

1. Replace the UV lamp and all wearing parts (refer to chapter 8.7)
2. Check the condition and presence of warning labels and type plates – replace them if they are worn/illegible.
3. Enter the data and work, including repairs, into the operation log and checklist.
  - ▶ Hand over the system and the operation log to the owner/operating company.

## 8.5 Consumables

Product	Quantity	Order no.
Cleaning agent GENO-clean CP	10 x 1 bottle)	170 022

## 8.6 Spare parts

For an overview of the spare parts, refer to our spare parts catalogue at [www.gruenbeck.com](http://www.gruenbeck.com). You can obtain the spare parts from your local Grünbeck representative.



Only use genuine spare parts from Grünbeck for proper and safe operation of your UV system. The operational safety of the system can be impaired if spare parts purchased from other manufacturers are used.

Illustration	Product	Order no.
	<b>Protective quartz pipe with sealing ring</b>	
	violiQ:UV33i	523 620
	violiQ:UV80i	522 627
	violiQ:UV120i	522 628

## 8.7 Wearing parts



Wearing parts must be replaced by qualified specialists only.

The parts listed below are considered to be wearing parts:

Illustration	Product	Order no.
	<b>Spare UV lamp</b>	
	The UV lamps (UV-C) have a service life of up to 16,000 hours	violiQ:UV33i 523 112
		violiQ:UV80i 523 122
		violiQ:UV120i 523 132
	<b>Sealing ring for UV lamp</b>	520 153
	id =27 mm, EPDM	

# 9 Troubleshooting



## WARNING

Contaminated water due to stagnation.

- Infectious diseases
- ▶ Have malfunctions eliminated immediately.

The control unit of the UV disinfection systems violiQ:UVi monitors the function of the UV lamp.

Malfunctions are evaluated by means of a fault signal contact.

## 9.1 Messages

- ▶ Eliminate the malfunction (refer to table).

Display	Explanation	Remedy
LED operation indicator is off	Mains switch is switched off	▶ Switch on mains switch
	Power supply is interrupted (integrated fuse, supply line)	▶ Replace fuse and/or restore power supply



If a malfunction cannot be eliminated, the technical service personnel can take further measures.

- ▶ Contact technical service (refer to inner cover sheet for contact data).

## 9.2 Checking the UV lamp



For removal and check of UV lamp refer to chapter 6.2.



## DANGER

Life-threatening voltage of 230 V



- Severe burns, cardiovascular failure, fatal electric shock.
- ▶ Only carry out work on the UV lamp when mains voltage is switched off – switch off the mains switch on the system beforehand.





**WARNING**

Dangerous UV irradiation



- Eye damage
- ▶ Never look directly into the UV lamp if the UV system is switched on.
- ▶ Check the function of the UV lamp only while using appropriate safety goggles against UV light (refer to chapter 3.5).

**NOTE**

Do not touch the UV lamp with bare hands.

- Touching it with bare hands will decrease performance.
- ▶ Use cotton gloves when installing the UV lamp.

1. Switch off the UV system using the mains switch.
2. Remove the screw-in part and pull out the UV lamp about 50 mm.
3. Switch on the UV system after a wait time of 60 s using the mains switch.
  - » Spiral-wound filament at lamp connection must start glowing.
  - » The UV lamp ignites after a few seconds.
4. Switch off the UV system using the mains switch.
5. If necessary, replace a defective UV lamp by a replacement UV lamp (refer to chapter 8.7).
6. Switch on the UV system after a wait time of 60 s using the mains switch.
7. If the UV lamp once again does not start after a few seconds:  
Contact Grünbeck's technical service.
8. In case of a successful start:
  - a Switch off the UV system using the mains switch.
  - b Insert the UV lamp completely and remount the screw-in part.
  - c Make sure that the connecting cables that run alongside the UV lamp point downwards.
9. Switch on the UV system after a wait time of 60 s using the mains switch.
10. In case of no start:  
Contact Grünbeck's technical service.

## 9.2.1 Mechanical destruction of the UV lamp



### WARNING

Mercury escaping from a destroyed UV lamp

- Health risk
- ▶ Store fragments of the lamp in an air-tight container until they can be disposed of.
- ▶ Store a replaced protective quartz pipe or a cleaning agent used for cleaning in an air-tight container until they can be disposed of.
- ▶ Take into consideration that a suitable disposal company must be used for disposal, e.g. a collecting point for problem substances (refer to chapter 11).

In case of a mechanical destruction of the UV lamp, the steps below must be carried out:

1. Disconnect the UV system from the water installation.
2. Drain the UV system.
3. Remove the protective quartz pipe.
4. Remove the fragments of the UV lamp from the protective quartz pipe.
5. Replace the protective quartz pipe, or at least clean it thoroughly with GENO-clean CP.



Mercury residues in the protective quartz pipe have a highly negative impact on the UV light generated by the UV lamp.

6. Bind free mercury with adequate means in order to be able to dispose of it.

## 9.2.2 Mechanical destruction of the lamp and the protective quartz pipe



### WARNING

Water contaminated with mercury in the UV system due to defective protective quartz pipe and defective UV lamp

- Health risk
- ▶ Collect the contaminated water in a container and store it in an air-tight manner until the water can be disposed of.
- ▶ Store a replaced protective quartz pipe or a cleaning agent used for cleaning in an air-tight container until they can be disposed of.
- ▶ Take into consideration that a suitable disposal company must be used for disposal, e.g. a collecting point for problem substances (refer to chapter 11).

In case of a mechanical destruction of the UV lamp and the protective quartz pipe at the same time, the steps below must be carried out:

1. Disconnect the UV system from the water installation.
2. Completely remove the UV system.
3. Remove the fragments of the UV lamp and of the protective quartz pipe through the mounting orifice of the quartz pipe.
4. Collect the water remaining in the UV system as well as the fragments of the quartz pipe to properly dispose of them.
5. After remounting the UV system, flush it with GENO-clean CP in order to remove mercury residues from the system.
6. Bind free mercury with adequate means in order to dispose of it.

## 10 Decommissioning

It is not necessary to take your product out of operation.

### 10.1 Temporary shutdown

- ▶ Switch off the control unit using the mains switch.
- ▶ Leave all shut-off valves open.
- If a longer standstill of the system is planned, the system must be decommissioned.

### 10.2 Decommissioning the system

1. Switch off the control unit using the mains switch.
2. Pull the mains plug.
3. Close the shut-off valves of the water pipe upstream and downstream of the system.
4. Vent and drain the system.

### 10.3 Restart/Recommissioning

1. Flush the system (refer to chapter 8.1.1).
2. Put the system into operation and check it for function (refer to chapter 6.3).

# 11 Dismantling and disposal

## 11.1 Dismantling



The work described herein represents an intervention into your water system.

- ▶ Have this work carried out by qualified specialists only.

  1. De-energise the system (discharge possible residual voltage).
  2. Close the shut-off valves upstream and downstream of the system.
  3. Vent and drain the system.
  4. Disconnect the system from the water installation.
  5. Disconnect the electric connections.
  6. Remove individual components such as accessories, if necessary.
  7. Transport the system secured on a pallet.

## 11.2 Disposal

- ▶ Obey the applicable national regulations.

### Packaging

- ▶ Dispose of the packaging in an environmentally sound manner.

### NOTE

Danger to the environment due to incorrect disposal

- Packaging materials are valuable raw materials that can be reused in many cases.
- Incorrect disposal can cause hazards to the environment.
- ▶ Dispose of packaging materials in an environmentally sound manner.
- ▶ Obey the local disposal regulations.
- ▶ If necessary, commission a specialist company with the disposal.

### Free mercury residues

If free mercury has escaped from the UV lamp, it must be bound, collected in an air-tight container and stored until it can be disposed of.

- ▶ Only use standard binding agents such as Mercurisorb (Flucka), Mercurisorb-ROTH (Roth) or Chemisorb-Hg (Merck) and proceed as indicated in the operating instructions.
- Conversion by means of sublimed sulphur, iodised activated carbon and metal powders would take years to complete.

- ▶ Contact a suitable waste management company such as a collecting point for problem substances.



Never and under no circumstances discharge residues of mercury and its compounds to the sink/floor drain or drain connection– formation of amalgam in the lead siphon and environmental poisoning.



#### Product

If this symbol (crossed-out wheeled bin) is on the product, this product or its electrical and electronic components must not be disposed of as household waste.

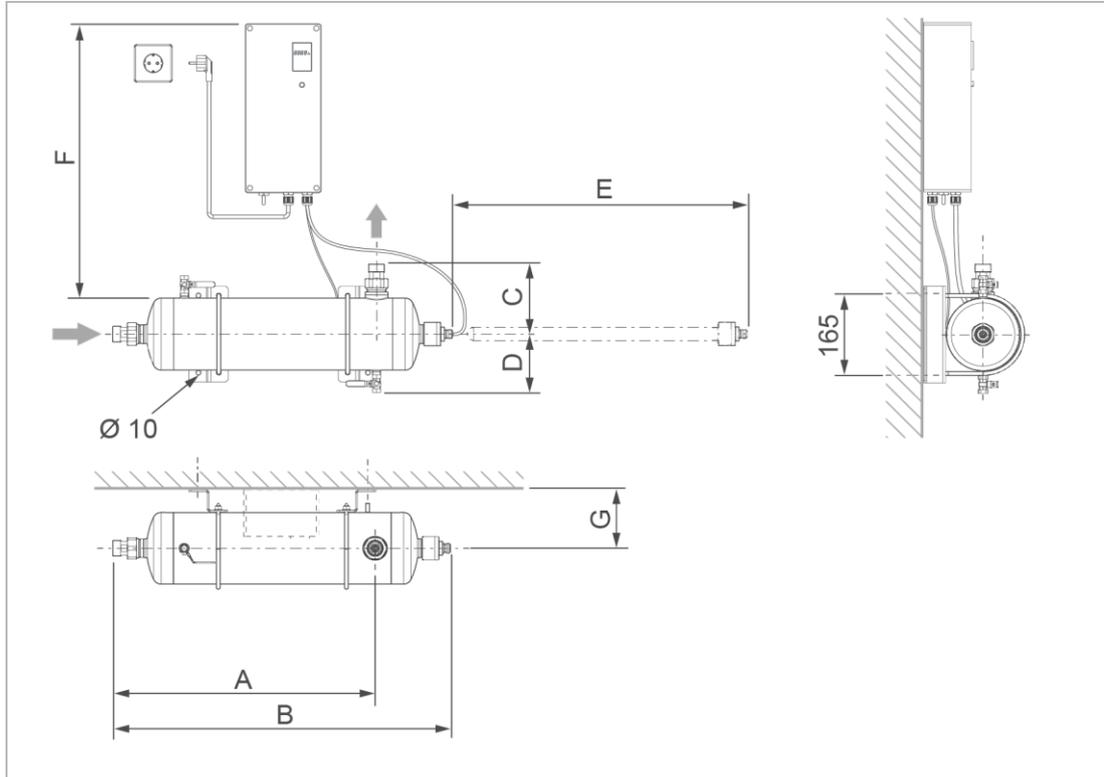
- ▶ Dispose of electrical and electronic products or components in an environmentally sound manner.
- ▶ If your product contains batteries or rechargeable batteries, dispose of them separately from your product.



For more information on take-back and disposal, go to [www.gruenbeck.com](http://www.gruenbeck.com).

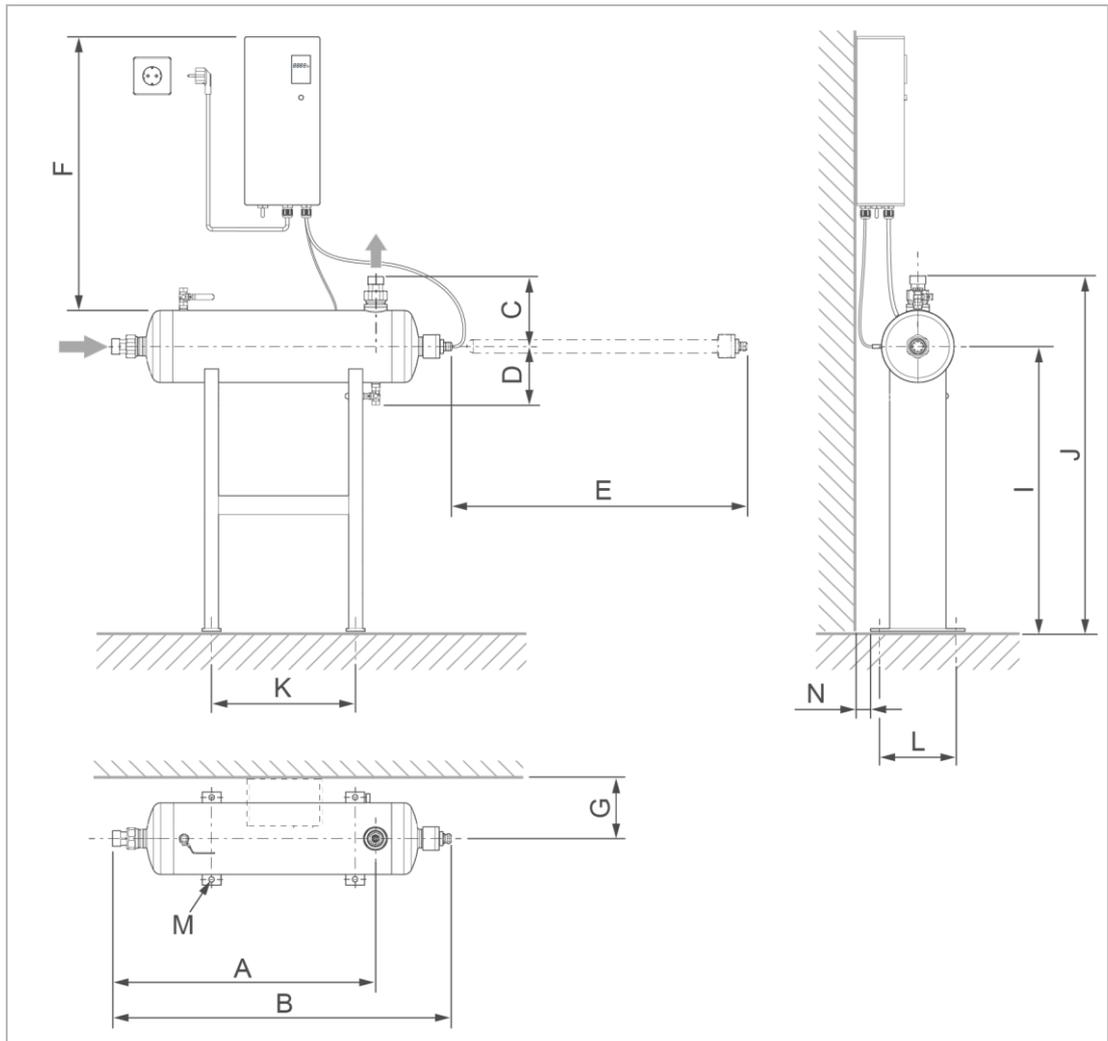
## 12 Technical specifications

### 12.1.1 Installation with wall mounting



Dimensions and weights			violIQ:UV33i	violIQ:UV80i	violIQ:UV120i
A	Installation length with screw connection	mm	560	960	1212
B	Total length with screw connection	mm	795	1185	1430
C	Overall height above centre of connection with screw connection	mm	149	168	168
D	Overall height below centre of connection	mm		130	
E	Clearance required on the right of system for lamp replacement	mm	560	950	1200
F	Clearance required above the system	mm		≥ 580	
G	Distance to wall from centre of connection	mm		≥ 125	
	Empty weight	kg	12	19	21
	Volume	l	10	16	21

## 12.1.2 Installation with floor rack



Dimensions and weights			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
A	Installation length with screw connection	mm	560	960	1212
B	Total length with screw connection	mm	795	1185	1430
C	Overall height above centre of connection with screw connection	mm	149	168	168
D	Overall height below centre of connection	mm		130	
E	Clearance required on the right of system for lamp replacement	mm	560	950	1200
F	Clearance required above the system	mm		≥ 580	
G	Distance to wall from centre of connection	mm		≥ 125	
	Empty weight	kg	12	19	21
	Volume	l	10	16	21

Dimensions of floor rack (accessories)			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
I	Overall height centre of system with floor rack	mm		610	
J	Overall height with screw connection, with floor rack	mm		791	
K	Distance between holes to fasten floor rack, width	mm	306	550	800
L	Distance between holes to fasten floor rack, depth	mm		180	
M	Diameter of bores on the floor rack	mm		Ø 12	
N	Distance of floor rack to wall	mm		≥ 30	

Connection data			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
Nominal connection diameter			DN 25 (1")	DN 40 (1½")	DN 50 (2")
Drain connection			≥ DN 50		
Installation position			horizontal, outlet at the top, self-deaerating		
Rated voltage range	V~		230 (15/+10 %)		
Rated frequency	Hz		50		
Power input	VA		75	145	215
Protection/protection class			IP 54/⊕		
Performance data			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
Nominal pressure			PN 10		
Operating range (operating pressure)	bar		2 – 10		
Spectral attenuation coefficient SSK <sub>254</sub>	m <sup>-1</sup>		refer to the diagram with flow rates in chapter 3.2		
Nominal flow (at a room irradiation of 400 J/m <sup>2</sup> and an SSK <sub>254</sub> of 3.2 m <sup>-1</sup> )	m <sup>3</sup> /h		≤ 3.3	≤ 8.0	≤ 12.0
Max. flow	m <sup>3</sup> /h		refer to the diagram with flow rates in chapter 3.2)		
Pressure loss at nominal flow	bar		< 0.2		
Assemblies			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
Pressure pipe (irradiation chamber)	Material		W 1.4404		
	Length	mm	560	950	1200
Protective quartz pipe	Ø	mm	28	28	28
	Wattage	W	65	125	205
UV lamp	Max. service life	h	16,000		
	Nominal diameter		DN 8 (R ¼")		
2 Ball valves	Material		W 1.4301		
Control unit			violiQ:UVi		
Housing	h x w x d	mm	360 x 160 x 99		
	Material		Aluminium		
Cable glands	Mains cable	mm	2000		
	UV lamp cable	mm	1650		
	Grounding cable for UV reactor	mm	1500		
Display			operating hours, LED operation indicator		
Outputs			voltage-free relay contact (24 V-230 V AC, 50–500 mA / 5 V-24 V DC, 50–500 mA)		
General data			violiQ:UV33i	violiQ:UV80i	violiQ:UV120i
Water temperature	°C		5 – 70		
Ambient temperature	°C		5 – 40		
Humidity (non-condensing)	%		≤ 70		
Order no.			523210000000	523220000000	523230000000

# 13 Operation log



- ▶ Document the initial start-up/commissioning and all maintenance activities.
- ▶ Copy the maintenance report.

UV disinfection system violiQ:UV \_\_\_\_\_

Serial no.: \_\_\_\_\_

## 13.1 Start-up/Commissioning log

Customer				
Name				
Address				
Installation/Accessories				
Drinking water filter (make/type):				
Drain connection acc. to DIN EN 1717	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Floor drain	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Water pipe upstream of the disinfection system	<input type="checkbox"/> Galvanised steel	<input type="checkbox"/> Copper	<input type="checkbox"/> Plastic	<input type="checkbox"/> Stainless steel
Operating values				
Water pressure				bar
Water meter reading				m <sup>3</sup>
Remarks				
Start-up/Commissioning				
Company				
Service technician				
Work time certificate (no.)				
Date/signature				

# Maintenance no.: \_\_\_\_\_



Enter the measured values and operating data.  
 Confirm the checks with **OK** or record any repairs carried out.

Operating values	
Operating time	h

Maintenance work	OK (YES)	NO
<b>Visual check</b>		
Outside of the entire UV system checked for damage, corrosion and leaks	<input type="checkbox"/>	
Mains cable and mains plug checked for damage and a tight fit	<input type="checkbox"/>	
All connecting lines checked for damage and a tight fit	<input type="checkbox"/>	
<b>Functional check</b>		
Lamp connector checked	<input type="checkbox"/>	
Seal of quartz glass checked	<input type="checkbox"/>	
Protective quartz pipe checked	<input type="checkbox"/>	
UV lamp replaced	<input type="checkbox"/>	<input type="checkbox"/>
UV system flushed	<input type="checkbox"/>	
Hose connections checked for leaks	<input type="checkbox"/>	
Function of UV system checked by withdrawing water	<input type="checkbox"/>	

Remarks

Carried out by		
Company:		
Service technician:	Date	Signature

Maintenance no.: \_\_\_\_\_



Enter the measured values and operating data.  
Confirm the checks with **OK** or record any repairs carried out.

**Operating values**

Operating time \_\_\_\_\_ h

**Maintenance work**

OK (YES) NO

**Visual check**

Outside of the entire UV system checked for damage, corrosion and leaks	<input type="checkbox"/>	
Mains cable and mains plug checked for damage and a tight fit.	<input type="checkbox"/>	
All connecting lines checked for damage and a tight fit	<input type="checkbox"/>	

**Functional check**

Lamp connector checked	<input type="checkbox"/>	
Seal of quartz glass checked	<input type="checkbox"/>	
Protective quartz pipe checked	<input type="checkbox"/>	
UV lamp replaced	<input type="checkbox"/>	<input type="checkbox"/>
UV system flushed	<input type="checkbox"/>	
Hose connections checked for leaks	<input type="checkbox"/>	
Function of UV system checked by withdrawing water	<input type="checkbox"/>	

**Remarks**

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**Carried out by**

Company:		
Service technician:	Date	Signature

# Maintenance no.: \_\_\_\_\_



Enter the measured values and operating data.  
 Confirm the checks with **OK** or record any repairs carried out.

Operating values	
Operating time	h

Maintenance work	OK (YES)	NO
<b>Visual check</b>		
	<input type="checkbox"/>	
Mains cable and mains plug checked for damage and a tight fit.	<input type="checkbox"/>	
All connecting lines checked for damage and a tight fit.	<input type="checkbox"/>	
<b>Functional check</b>		
Lamp connector checked	<input type="checkbox"/>	
Seal of quartz glass checked	<input type="checkbox"/>	
Protective quartz pipe checked	<input type="checkbox"/>	
UV lamp replaced	<input type="checkbox"/>	<input type="checkbox"/>
UV system flushed	<input type="checkbox"/>	
Hose connections checked for leaks	<input type="checkbox"/>	
Function of UV system checked by withdrawing water	<input type="checkbox"/>	

Remarks

Carried out by		
Company:		
Service technician:	Date	Signature

Maintenance no.: \_\_\_\_\_



Enter the measured values and operating data.  
Confirm the checks with **OK** or record any repairs carried out.

**Operating values**

Operating time \_\_\_\_\_ h

**Maintenance work**

OK (YES) NO

**Visual check**

Outside of the entire UV system checked for damage, corrosion and leaks	<input type="checkbox"/>	
Mains cable and mains plug checked for damage and a tight fit	<input type="checkbox"/>	
All connecting lines checked for damage and a tight fit	<input type="checkbox"/>	

**Functional check**

Lamp connector checked	<input type="checkbox"/>	
Seal of quartz glass checked	<input type="checkbox"/>	
Protective quartz pipe checked	<input type="checkbox"/>	
UV lamp replaced	<input type="checkbox"/>	<input type="checkbox"/>
UV system flushed	<input type="checkbox"/>	
Hose connections checked for leaks	<input type="checkbox"/>	
Function of UV system checked by withdrawing water	<input type="checkbox"/>	

**Remarks**

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**Carried out by**

Company:		
Service technician:	Date	Signature





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