Operating instructions TRIPOND Center-Vortex

C-20
C-30
C-50
C-80
C-115

Stand: 03/2026

TRIPOND
Einfach schöne Teiche ...

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1. GENERAL INFORMATION

1.1 Foreword

These operating instructions describe the installation, commissioning, operation as well as cleaning and maintenance of the TRIPOND Center-Vortex multi-chamber filter system for pond and fish keeping systems. Please read the instructions completely before installing or commissioning the filter system. Keep these instructions for future reference.

1.2 Intended use

The TRIPOND Center-Vortex is a multi-chamber filter system for purification and treatment of water in:

- Garden and koi ponds
- Small-scale circuits in fish farming

The filter system can – depending on the system concept – be operated in pump installation or gravity installation. See Fig. 2 on page 13 and Fig. 3 on page 13.

1.3 Target group / Qualification

These instructions are aimed at pond operators and specialist businesses (e.g. landscaping, pond construction, specialist trade) who plan, install or maintain pond filter systems.

1.4 Product identification

Product: Center-Vortex pond filter series

- Serial number:
- Document: Operating instructions,
- Stand: 03/2026

1.5 Manufacturer / Contact

Aqualogistik GmbH
Delecker Weg 30
D-59519 Möhnesee
Tel.: +49 (0) 2924-8775-0
Email: info@aqualogistik.com

www.aqualogistik.com

2. SAFETY INSTRUCTIONS

2.1 General safety

⚠ CAUTION

Improper installation or incorrect operation can lead to property damage to the pond system and endanger people and animals.

- Install only on a load-bearing, level surface.
- Check all connections for secure fit before commissioning.
- The filter system must not be mechanically modified or converted.
- Children must not stay unsupervised in the area of the filter system.

2.2 Intended use

The TRIPOND Center-Vortex is intended exclusively for mechanical-biological water purification in pond systems.

Operation is designed for water temperatures typical of garden ponds in Central Europe.

Not permissible:

- Operation with liquids other than water
- Use in explosive atmospheres
- Operation under pressure (not a pressure filter system)
- Use as a load-bearing or walkable component

2.3 Electrical safety (pump operation)

⚠ CAUTION – Risk of electric shock

For pump or UV-C operation, the following points must be strictly observed:

- Only connect electrical devices to properly installed sockets with residual current device (RCD ≤ 30 mA).
- Before work on the filter or in the water: Disconnect pumps and UV-C units from the mains.
- Protect cables from mechanical damage.
- Do not make electrical connections in the splash water area

2.4 Installation height for gravity installation

NOTE

In gravity operation, the top edge of the filter must be approximately 2–3 cm above the maximum water level of the pond.

Incorrect height positioning can lead to:

- uncontrolled overflow,
- reduced flow performance or
- cause air ingress into the system

2.5 Transport and installation

NOTE

Do not lift the filter by pipe connections or slide valves.

- When relocating, only grip load-bearing housing parts.
- Check for horizontal alignment before filling.

2.6 Frost and weather influences

- Drain or operate frost-proof in case of frost risk.
- Residual water in chambers can lead to material stress in frost.
- Remove UV-C units in winter and store dry (if fitted).

3. PRODUCT DESCRIPTION AND OPERATING PRINCIPLE

3.1 Operating principle of multi-chamber filters

The TRIPOND Center-Vortex is a multi-chamber flow-through filter for mechanical-biological water treatment.

The pond water passes through several filter chambers arranged in series. Each chamber handles a defined cleaning task. The goal is the combination of:

- mechanical separation of coarse and fine particles
- biological breakdown of dissolved nitrogen compounds
- Stabilisation of water quality

The filter can be operated in pump or gravity mode. The basic operating principle is on Fig. 1 on page 13 illustrated.

3.2 Design of the TRIPOND Center-Vortex

The filter system consists of several functionally separated chambers.

3.2.1 Vortex chamber (sedimentation)

In the vortex chamber, the inflowing water is set into a rotating motion.

Function:

- Separation of heavy debris particles (e.g. food residues, leaves, excrement)
- Relief for downstream filter stages

Through sedimentation, coarse particles sink to the chamber floor and can be removed via the drain.

3.2.2 Brush chamber (mechanical fine separation)

After coarse separation, the water flows through the brush chamber.

Function:

- Retention of fine suspended matter
- Increase of mechanical filter effect
- additional colonisation surface for microorganisms

The brushes are removable and can be cleaned separately.

3.2.3 Bio-chamber (biological cleaning)

In the bio-chamber, the biological breakdown of dissolved nitrogen compounds takes place.

Function:

- Colonisation of nitrifying bacteria
- Conversion of ammonium and nitrite to nitrate
- Stabilisation of water parameters

The effectiveness of the biological cleaning depends on:

- sufficient oxygen supply
- suitable flow rate
- stable water temperature

.

3.2.4 Fine filter chamber

The fine filter chamber serves for additional mechanical cleaning.

Function:

- Retention of remaining fine particles
- further clarification of water before return to the pond

3.3 Operating modes

3.3.1 Pump operation

In pump operation, the water is pumped into the filter by a pond pump "Fig. 2: Pump version" on page 13.

Features:

- Flexible positioning of the filter
- Easy retrofitting of existing systems
- Flow rate dependent on pump output

3.3.2 Gravity operation

In gravity operation, the water flows into the filter through bottom drains or skimmers "Fig. 3: Gravity version" on page 13.

Features:

- Coarse debris enters the filter chambers without being broken up
- Pump only returns cleaned water to the pond
- hydraulically calm operation

The top edge of the filter must be approximately 2–3 cm above the maximum water level of the pond (see chapter 2).

3.4 Hydraulic notes

For a functioning pond, a distinction must be made between:

- Circulation capacity of the pond and
- Flow velocity in the bio-chambers

to distinguish.

Excessively high flow velocity can reduce the biological cleaning performance. Insufficient circulation capacity can lead to deposits in the pond.

The pump output sizing should therefore be based on:

- Pond volume
- Fish stocking
- Feeding quantity

be adjusted.

4. INSTALLATION

4.1 General installation notes

Before starting installation:

- Check pond volume and planned flow rate.
- Determine location for filter and pipework.
- Plan sufficient access for future maintenance work.
- Check filter for visible transport damage

The term "bottom drain" refers to the drain in the pond floor. The drains on the filter are referred to as "waste outlets".

NOTE

The filter must remain accessible at all times. Slide valves and outlets must not be built over.

4.2 Location choice and substrate

The TRIPOND Center-Vortex must:

- stand on a load-bearing, level surface
- be permanently aligned horizontally
- be secured against subsidence

Suitable are e.g.:

- Concrete slab
- compacted gravel bed with concrete overlay

An uneven surface can lead to stress in the housing and leaks. The dimensions of the respective model can be found in chapter 8.3.

4.3 Gravity installation (recommended)

In gravity operation, the water flows from the pond into the filter via bottom drains or skimmers. An installation diagram is in Fig. 3 on page 13 illustrated.

Prerequisites

- Top edge of filter approx. 2–3 cm above maximum pond water level
- Pipework with adequate diameter
- Level or minimally inclined supply line

Installation steps

1. Prepare foundation and align filter horizontally
2. Connect supply line from bottom drain/ skimmer to inlet. (Optionally with a collection chamber, see Fig. 4 on pagee 13)
3. Connect drain chambers to the drainage system.
4. Install return pump in the last chamber.
5. Establish return line to the pond.
6. Fill system slowly with water and check for leaks.

Inlet and outlet are in Fig. 6 on page 13 illustrated.

⚠ CAUTION

All slide valves must be closed before initial filling.

4.4 Pump installation

In pump operation, the water is pumped into the filter via a pond pump. A schematic installation example is in Fig. 2 on page 13 illustrated.

Installation steps

1. Place filter on a level foundation.
2. Position pump in the pond (protected from coarse debris).
3. Lay pressure line from the pump to the filter inlet.
4. Establish return line from filter to pond.
5. Fill system and check all connections for leaks.

Inlet and outlet are in Fig. 6 on page 13 illustrated.

NOTE

The pump output must match the filter size. A permanently excessive flow rate can reduce the biological cleaning performance.

4.5 Combination with UV-C units

UV-C units are installed – depending on the system concept – on the pressure side of the pump.

The following must be observed:

- Installation according to UV-C unit manufacturer specifications
- Installation exclusively in a pressurised line
- Power connection via RCD-protected socket
- adequate accessibility for lamp replacement

4.6 Leak test

Before final commissioning:

1. Fill filter completely with water.
2. Check all chambers for uniform water level.
3. Check pipe connections.
4. Check waste outlets (drain valves) for leaks.

The pump may only be permanently switched on after a successful leak test.

5. COMMISSIONING

5.1 Preparation

Before switching on the system for the first time, the following points must be checked:

Scope of delivery and filter equipment

NOTE

Depending on the delivery condition, filter media may already be inserted or supplied separately. Before commissioning, check:

- Are all chambers accessible and the lids correctly fitted?
- Are all waste outlets on the filter closed (see Fig. 5 and Fig. 7)?
- Are inlet (right) and outlet (left) correctly connected (see Fig. 6)?
- Are the chambers equipped according to function (see Fig. 1 on page 13):
- 1 Vortex chamber: free for sedimentation (optional: vortex honeycomb – see chapter 9.1 and Fig. 8)
- 2 Brush chamber: Brushes inserted
- 3 Bio-chamber: biological filter media inserted
- 4 Fine filter chamber: Fine filter media inserted

Optional accessories (if applicable): Connection set (see Fig. 9 on page 13) / Bracket for UV-C units (see chapter 9.1)

General check before starting

1. All pipe connections are sealed.
2. All slide valves are in the intended operating position.
3. The filter is completely filled with water.
4. The pump is correctly installed and connected
5. Electrical devices are protected by a residual current device (RCD).

⚠ CAUTION

The pump must not run dry. Before switching on, the filter system must be completely filled with water.

5.2 Initial commissioning

1. Switch on pump.
2. Check water levels in all chambers.
3. Check flow for uniform current.
4. Check inlet and outlet areas for leaks.

In the first few minutes, there may be:

- slight air bubble formation
- fluctuating water levels
- initial turbidity

occur. This is inherent to the system and normal.

5.3 Setting the flow rate

The flow rate must be adapted to:

- Pond volume
- Fish stocking
- Feeding quantity

be adjusted.

NOTE

Excessively high flow velocity can reduce the retention time in the bio-chamber and impair the biological cleaning performance.

The goal is a uniform, calm flow through without overflow of individual chambers.

5.4 Run-in phase of the biological filter stage

After initial commissioning, the biological filter stage requires time to develop stable bacterial cultures.

During the run-in phase:

- Keep fish stocking and feeding moderate
- Monitor water parameters regularly
- do not carry out complete cleaning of bio-media

The duration of the run-in phase depends on:

- Water temperature
- Oxygen level
- Nutrient supply

off.

5.5 Monitoring water parameters

To ensure stable pond operation, the following should be checked regularly:

- Ammonium / Ammonia
- Nitrite
- Nitrate
- pH value

Abnormal values may indicate:

- insufficient run-in phase
- Overstocking
- Overfeeding
- unsuitable flow rate

indicate.

6. OPERATION

6.1 Continuous operation

The TRIPOND Center-Vortex is designed for continuous operation in pond systems.

Permanent filter operation is required to:

- to continuously separate debris particles
- to maintain stable bacterial cultures in the bio-chamber
- to avoid fluctuations in water parameters

Repeatedly switching off the filter system can impair biological stability.

6.2 Hydraulic principles

For stable pond operation, two factors must be distinguished:

1. **Circulation capacity in the pond**
   (Transport of debris to the filter system)
2. **Retention time in the bio-chamber**
   (biological breakdown of dissolved substances)

Excessively high pump output can:

- Increase flow in the chambers
- Stir up deposits
- reduce the biological cleaning performance

Insufficient pump output can:

- promote deposits in the pond
- cause oxygen deficiency
- promote local contamination

The pump output must therefore be matched to pond size and stocking.

6.3 Use of a circulation pump

In ponds with higher fish stocking or larger water surface, a separate circulation pump can be used in addition to the filter pump.

Purpose of a circulation pump:

- Support of debris transport to the bottom drain
- Prevention of dead zones in the pond
- Improvement of oxygen distribution
- Uniform water movement

NOTE

The circulation pump does not replace the filter pump. It serves exclusively for water movement in the pond.

The sizing should depend on:

- Pond shape
- Pond volume
- Position of the bottom drains
- Fish stocking

6.4 Checks during operation

To be checked regularly:

- Uniform water levels in all chambers
- Free flow between the chambers
- Visual check for unusual noises
- Condition of brushes and filter media

Different water levels may indicate:

- Blockages
- insufficient flow rate
- incorrectly set slide valves

indicate.

6.5 Sludge removal

Sediment collects on the chamber floor in the vortex and brush chambers.

Depending on:

- Fish stocking
- Feeding quantity
- Season

the sludge must be removed regularly via the waste outlets. The waste outlets are in Fig. 7 on page 13 illustrated.

A permanently high sludge content can:

- increase oxygen consumption
- disrupt biological processes
- cause odour formation

6.6 Influence of seasons

Spring

- Biology rebuilds after winter break
- Gradually increase feeding

Summer

- Higher metabolic activity
- Increased loading from feeding
- Regular monitoring of water parameters

Autumn

- Monitor leaf entry
- Carry out mechanical cleaning more frequently

Winter

- Drain or operate frost-proof in case of frost risk
- Do not allow the bio-chamber to dry out completely

6.7 Faults / Causes / Remedies

NOTE

Before work on the system: Switch off the pump and disconnect electrical devices from the mains. In gravity operation, additionally close the inlet from the pond (see chapter 7.1).

Fault: Filter overflows / Water escapes

Possible causes:

- Installation height for gravity operation not correct (see chapter 2.4)
- Return line to pond throttled or blocked
- Pump output too high

Remedy:

- Check installation height (chapter 2.4)
- Check return line and chamber transitions for free flow, clean if necessary
- Check slide valve positions
- Adjust pump output

Fault: Water levels in the chambers vary considerably

Possible causes:

- Brushes / Filter media soiled (see chapter 7.3–7.5)
- Blockage in pipework or chamber transition
- Waste outlets not fully closed (see Fig. 7 on page 13)

Remedy:

- Brushes and filter media according to chapter 7
- Check and clean pipework/chamber transitions
- Close waste outlets and check for leaks

Fault: Flow rate too low

Possible causes:

- Pump/intake soiled or blocked
- Inlets from the pond (bottom drains/skimmer) restricted
- Filter media heavily soiled

Remedy:

- Check/clean pump and inlets
- Clean filter media according to chapter 7
- Check slide valve positions

Fault: Air bubbles in return / Air in system

Possible causes:

- Leaks at connections or transitions
- Water level in the pump chamber too low (gravity operation)

Remedy:

- Check and seal connections
- Check water levels, verify flow rate/installation height

7. CLEANING AND MAINTENANCE

7.1 General notes

Regular maintenance ensures:

- uniform flow performance
- stable biological processes
- long service life of the system

⚠ CAUTION

Before all maintenance work:

1. Switch off pump.
2. Disconnect electrical devices from the mains.
3. Close water inlets if necessary.

In gravity operation:

4. close the slide valves in the inlet from the pond (bottom drains/skimmer).

7.2 Cleaning the vortex chamber

In the vortex chamber, heavy sediments collect on the floor.

Procedure for pump operation:

1. Switch off pump.
2. Open waste outlet.
3. Drain sludge completely.
4. Close waste outlet.
5. Restart the system.

Procedure for gravity operation:

1. Switch off pump.
2. Close slide valve in the inlet from the pond.
3. Open waste outlet.
4. Drain sludge completely.
5. Close waste outlet.
6. Reopen slide valve in the inlet.
7. Restart the system.

Cleaning is carried out regularly depending on the load.

7.3 Cleaning the brush chamber

The brushes retain fine suspended matter.

Procedure (both operating modes):

1. Switch off pump.
2. In gravity operation: Close inlet from the pond.
3. Remove brushes.
4. Rinse brushes with pond water.
5. Remove coarse deposits.
6. Reinsert brushes.
7. Reopen inlet (in gravity operation).
8. Restart the system.

NOTE

Do not clean with chlorinated tap water, as this can damage microorganisms.

7.4 Cleaning the bio-chamber

The bio-chamber contains the biologically active filter media.

NOTE

Complete cleaning should be avoided, as this is where the nitrifying bacteria colonise.

Recommended procedure (both operating modes):

1. Switch off pump.
2. In gravity operation: Close inlet from the pond.
3. Only remove filter media when necessary.
4. Rinse media exclusively with pond water.
5. Do not use high-pressure cleaners
6. Never clean all biological media at the same time.
7. Reinsert filter media.
8. Reopen inlet (in gravity operation).
9. Restart the system.

The goal is to maintain biological activity.

7.5 Cleaning the fine filter chamber

Depending on the version, fine sludge may accumulate here. Cleaning is carried out analogously to the procedure described in chapter 7.4.

Additionally to be observed:

- Mechanical cleaning when visibly soiled
- Rinse media with pond water
- Check flow rate after cleaning

7.6 Maintenance intervals (guideline values)

The maintenance frequency depends on:

- Fish stocking
- Feeding quantity
- Season
- Leaf entry

Typical:

- Vortex chamber: regularly
- Brushes: when visibly soiled
- Bio-chamber: only when necessary
- Fine filter: when flow rate decreases

7.7 Winter operation

Option 1: Continued operation

- Operate filter frost-free
- Maintain flow rate
- Avoid ice formation in the return line

Option 2: Shutdown

- Drain the system completely.
- Clean chambers.
- Remove residual water.
- Store slide valves in open position.

Store UV-C units dry and frost-free.

7.8 Recommissioning in spring

1. Check system for damage
2. Check pipe connections.
3. Fill filter slowly.
4. Carry out leak test.
5. Switch on pump.
6. Monitor water parameters regularly in the first few weeks.

8. TECHNICAL DATA

8.1 General construction

- Design: Multi-chamber flow-through filter
- Operating mode: pump or gravity operation
- Application: Pond systems for indoor and outdoor use
- Housing material: fiberglass
- Drainage: Waste outlets per chamber

8.2 Model overview

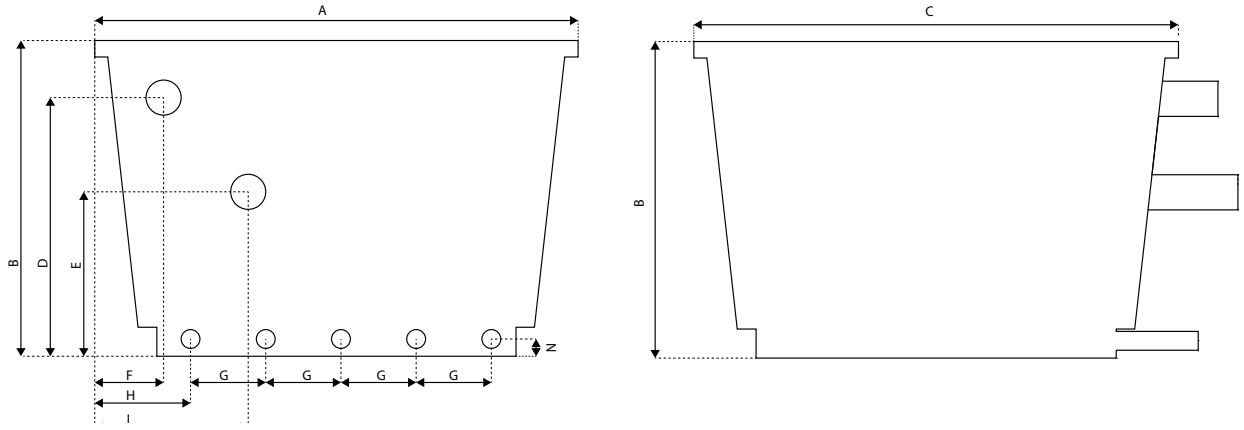
MODEL	RECOMMENDED POND SIZE*	MAX. FLOW RATE	INLET CONNECTION	OUTLET CONNECTION	WASTE OUTLET CONNECTION	NUMBER OF CHAMBERS
Center Vortex 20	**Natural**: 20,000 litres **Fish**: 13,000 litres **Koi**: 7,000 litres	4,000 l/h	110 mm pipe	110 mm pipe	5 x 50 mm	5
Center Vortex 30	**Natural**: 30,000 litres **Fish**: 20,000 litres **Koi**: 10,000 litres	8,000 l/h	110 mm pipe	110 mm pipe	5 x 50 mm	5
Center Vortex 50	**Natural**: 50,000 litres **Fish**: 34,000 litres **Koi**: 17,000 litres	10,000 l/h	110 mm pipe	110 mm pipe	5 x 50 mm	5
Center Vortex 80	**Natural**: 80,000 litres **Fish**: 50,000 litres **Koi**: 27,000 litres	15,000 l/h	160 mm pipe	160 mm pipe	5 x 63 mm	5
Center Vortex 115	**Natural**: 100,000 litres **Fish**: 65,000 litres **Koi**: 35,000 litres	18,000 l/h	160 mm pipe	160 mm pipe	5 x 63 mm	5

*The stated pond sizes refer to average fish stocking. With heavy koi stocking, a larger filter size is recommended.

8.3 Dimensions

MODEL	A / C	B	D	E	F	G	H	I	N
Center Vortex 20	850 mm	650 mm	510 mm	395 mm	120 mm	125–175 mm	125 mm	275 mm	60 mm
Center Vortex 30	1070 mm	750 mm	615 mm	440 mm	150 mm	180–200 mm	140 mm	345 mm	70 mm
Center Vortex 50	1400 mm	800 mm	690 mm	465 mm	160 mm	250–260 mm	150 mm	490 mm	75 mm
Center Vortex 80	1650 mm	1000 mm	805 mm	590 mm	190 mm	290–320 mm	140 mm	545 mm	85 mm
Center Vortex 115	1930 mm	1020 mm	845 mm	595 mm	200 mm	370–635 mm	160 mm	600 mm	105 mm

* Dimensions may vary due to production.



8.4 Hydraulic notes

- Designed for continuous operation
- Not suitable as a pressure filter
- Installation height for gravity operation: Top edge 2–3 cm above maximum pond water level
- Flow rate dependent on pond volume and stocking

9. ACCESSORIES AND SPARE PARTS

9.1 Optional accessories

The following components are available for the TRIPOND Center-Vortex:

Vortex honeycomb

The vortex honeycomb can optionally be installed in the vortex chamber. The honeycomb is in Fig. 8 on page 13 illustrated.

Function:

- Improvement of flow guidance
- Support of dirt separation
- Reduction of turbulence

Install according to separate instructions.

Connection set

The connection set is in Fig. 9 on page 13 illustrated. Pre-fabricated connection set for:

- Connection between chambers
- safe installation of inlet and outlet
- uniform pipe connections

The use of suitable pipe dimensions must be ensured.

Bracket for UV-C units

For integrating a UV-C unit into the filter system.

To note:

- Installation according to UV-C unit manufacturer specifications
- Electrical connection via RCD-protected socket
- Regular lamp replacement according to UV-C manufacturer

9.2 Spare parts

Only original spare parts may be used.

Available spare parts include among others:

- Slide valve
- Seals
- Brushes
- Filter media
- Chamber lid

When ordering spare parts, please specify:

- Model designation
- Serial number
- Year of manufacture (if known)

9.3 Service and support

For technical questions or spare part requirements:

Aqualogistik GmbH
Delecker Weg 30
D-59519 Möhnesee
Tel.: +49 (0) 2924-8775-0
Email: info@aqualogistik.com

10. WARRANTY AND LIABILITY

10.1 Warranty

The statutory warranty provisions apply to the TRIPOND Center-Vortex.

The warranty covers material and manufacturing defects with proper:

- Installation
- Commissioning
- Use
- Maintenance

Prerequisite is the observance of these operating instructions.

10.2 Exclusion of warranty

The warranty expires in the event of:

- improper installation
- non-intended use
- structural modifications to the filter system
- Use of unsuitable spare or accessory parts
- Frost damage from improper overwintering
- Operation outside normal pond conditions

10.3 Liability

The manufacturer is liable within the framework of statutory regulations.

Liability for:

- Consequential damage
- indirect damage
- loss of profit
- Damage caused by faulty water parameters

is excluded to the extent permitted by law.

The operator is responsible for:

- regular monitoring of water parameters
- proper operation of the system
- Compliance with installation specifications

10.4 Technical modifications

Technical modifications in the interest of product improvement are reserved.

11. PERSONAL SYSTEM DATA / NOTES

System data

Pond size:.....

Installation date: .....

Pump type/output: .....

UV-C unit: .....

Set flow rate: .....

Serial number:.....

Personal notes

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12. LIST OF FIGURES

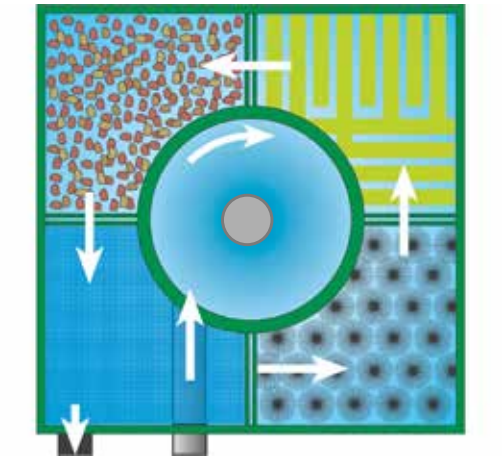

Abb. 1: *Center-Vortex schematic*

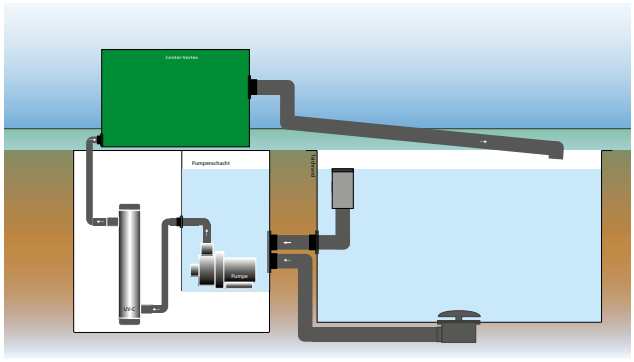

Abb. 2: *Pump version*

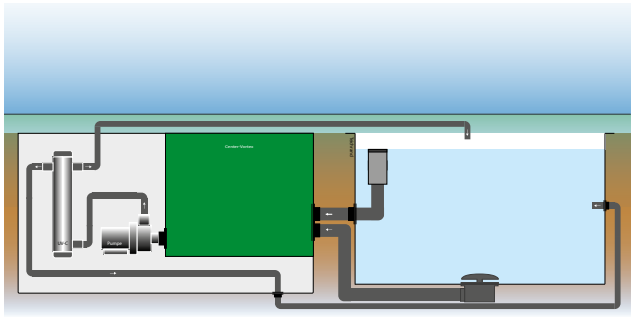

Abb. 3: *Gravity version*

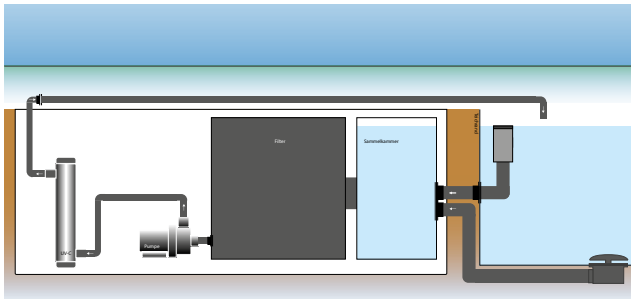

Abb. 4: *Collection chamber*

Abb. 5: *Center-Vortex underside*

Abb. 6: *Inlet (right) and outlet (left)*

Abb. 7: *Waste outlets*

Abb. 8: *Honeycomb*

Abb. 9: *Connection set*