3P Hydrosystem 1000

Instruction manual and installation instruction

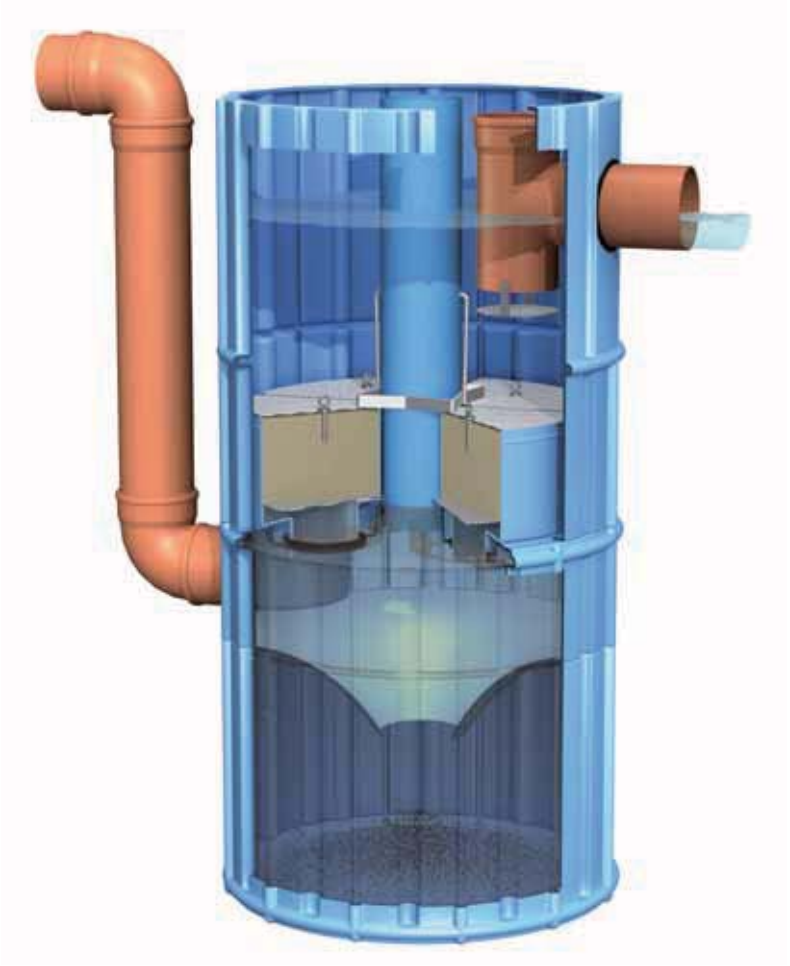
Information for handling, inspection and maintenance

Content:

Is the guarantee card missing?

Please directly ask the producer for it to
registrate your product
(address on the back side)

ADVICE!



Please check the following before installation:

The filter has to be installed with a so called "fall" This means that the tube (inlet rainwater) is led down shortly before the shaft and can be connected as described with the lower connection.

Ideally if the distance from the base of the inlet pipe to the base of the outlet should have an invert difference of 250 mm or more.

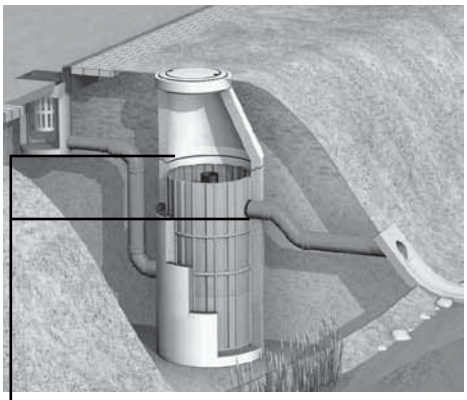
General Information

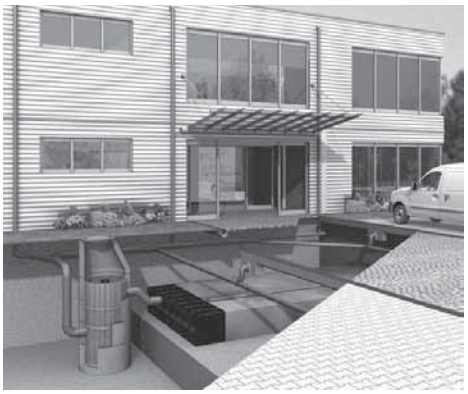
Location of the system	
Description of the object	
Street	
Postal code, city	
Telephone, Fax	
Operator of the system	
Company/Community/City	
Street	
Postal code, city	
Responsible person	
Telephone, Fax	
Execution of construction work	
Company	
Street	
Postal Code, city	
Responsible person	
Telephone, Fax	
Details	
Kind of connected areas	
Date of installation	
Date of beginning of operation	
Number of filter shafts	

Installation and filter description

of a 3P Hydrosystems 1000 in a concrete shaft according to DIN 4034-1

Area of operation:
Filter system for the cleaning of polluted rainwater of roof areas, metal roofs, street areas and special areas. For the different types of use there are different filter types.





Distance between inlet before the fall and outlet: Optimum 250 mm and more.

Please check the following before installation:
The filter has to be installed with a so called „fall". This means that the tube (inlet rainwater) is led down shortly before the shaft and can be connected as described with the lower connection. Ideally if the distance from the base of the inlet pipe to the base of the outlet should have an invert difference of 250 mm or more.

Installation of a 3P Hydrosystem 1000
in a concrete shaft according to DIN 4034-1

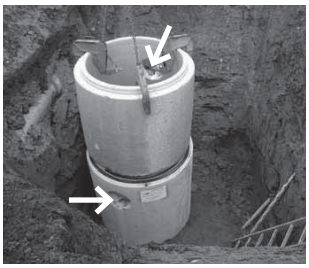
1. Excavation of the pit and support of the wall should be according to the local regulations. If in doubt consult an engineer.

Form of a horizontal bedding (between 10 and 150 cm) of sand and concrete.

2. Place the bottom section of the shaft and check it is in a horizontal position.

Adjust the opening of the inlet to the required position.

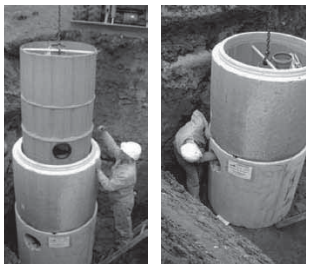
3. For placing the upper part of the shaft perfectly, we recommend to fix a mark on the upper and bottom part.



4. Put on the shaft ring with the outlet opening.

The angle between inlet and outlet must be exactly 180°.

All sections of the shaft have to be set with appropriate sealings. Consult your supplier or manufacturer.



5. Lower the PE filter shaft inside the concrete shaft.

Observe the correct location of the inlet and outlet, so that the tubes can be connected easily.

6. After installing the plastic shaft the transport lifting bar has to be removed.

To do this you have to remove both locking devices on the left and on the right and then remove the bar out of the openings.

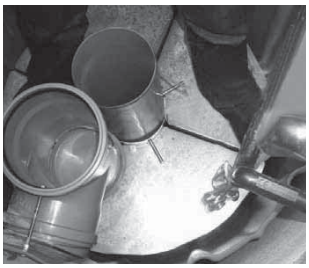
7. Connect the inlet pipe. Install the bend upwards.

Close the gap between shaft and tube with a special foam or other sealing mechanism, as appropriate for your shaft type.

8. You partly have to fill in and consolidate the building pit.

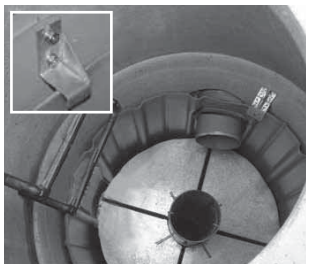
We recommend covering the filter so that dirt cannot get inside the filter whilst backfilling.

9. Connect the outlet pipe. Seal up the gap between outlet pipe and shaft with a special foam or other sealing mechanism, as appropriate.

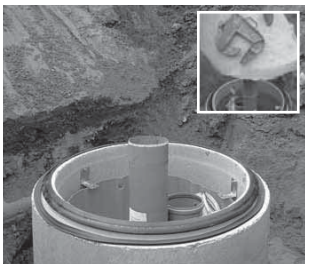


10. The T-piece (oil barrier) is set once again on the outlet pipe, please secure the T-piece with the threaded bolt.

Ensure by adjustment, at the inlet slots are located at the bottom side.



11. Begin installing the buoyancy control system exactly above the outlet, then locate the remaining three plates at quarter circle positions around the shaft. 4 angles are included in the delivery. Fasten them to the wall of the cistern with strikerplates.



12. Locate the additional bypass pipe into its correct position. After that place any shaft rings, cone and chamber covering.

Important advice!
Please note!

The 3P Hydrosystem must be protected against dirt ingress during installation.

1. There must not be any contamination above the filters. Please cover or remove the filter elements. Do not allow contaminated water and dirty water into the connected system after the installation of the filter shaft. Dispose of it professionally (pump out the shaft).

2. Take care: Should the pavement be treated on the area which has to be drained, please note that no joints mut or mortar droppings enter the system. This leads to an immediate blocking of the filter elements, which have to be cleaned extensively or exchanged. The costs will have to be borne by the site management. Remove the filter elements before and dispose of the foul water (generated from flushing the surface area) with pumps. The Hydrosystem surface area shaft can be cleaned with a high pressure cleaner.

3. The sealing rings that the filter elements rest upon have to be cleaned before installing the filter elements.

How it works:

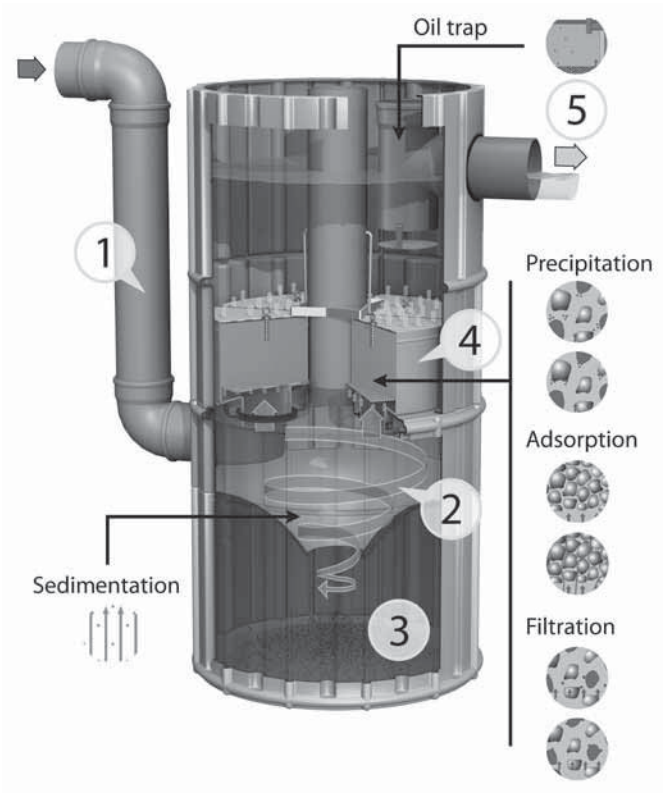
1. The runoff from the connected area is directed into the basal section of the filter housing. The angled inlet generates a radial flow pattern.

2. The hydrodynamic separator converts turbulent waters into a radial laminar flow pattern, generating particle sedimentation, particularly of the sand fraction.

3. This takes place over an inlet to the lower section of the filter shaft. The sediment is retained in a silt trap chamber below the separator. The silt trap has to be emptied in intervals (see printout of maintenance).

4. 4 filter elements heavy traffic are situated in the central section of the filter housing. The filter element removes the fine particles in an up-flow process and dissolved substances are precipitated and adsorbed. The filter is backwashed from above. When exhausted the filter can be easily exchanged.

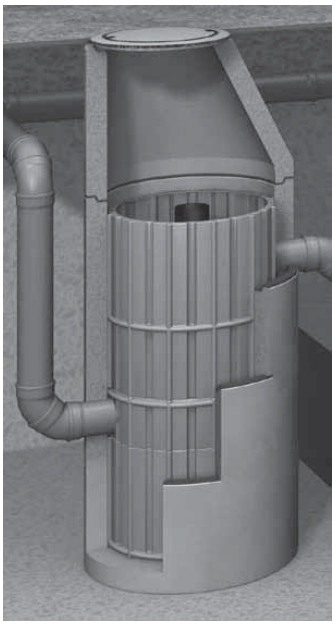
5. The clean water is stored above the filter elements. It passes via an oil separator and is discharged via the outlet into soakaways, receiving waters, infiltration facilities or rainwater tanks.



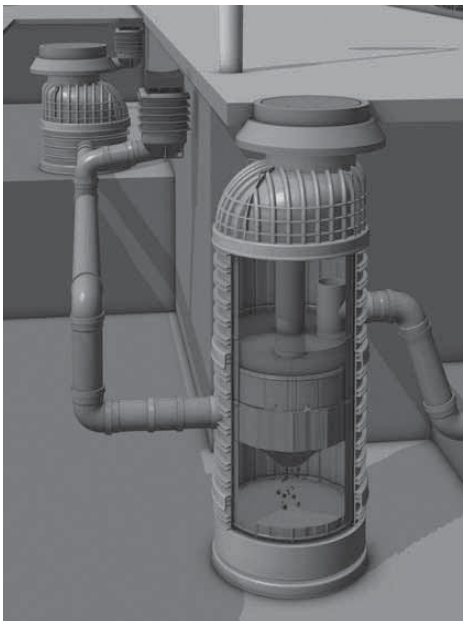
Installation situation

The filter shafts are normally installed within standard concrete shafts Ø 1000 mm according to DIN 4034-1 or within a plastic shaft Ø 1000 mm.

3P Hydrosystem 1000 within a concrete shaft



3P Hydrosystem within a plastic shaft



You will find further installation instructions in the specific installation manual.

Product structure

1.Rainwater inlet (DN 200)

2.Elbow

3.Separator

4.Collecting repository for sedimentation

5.Filter element

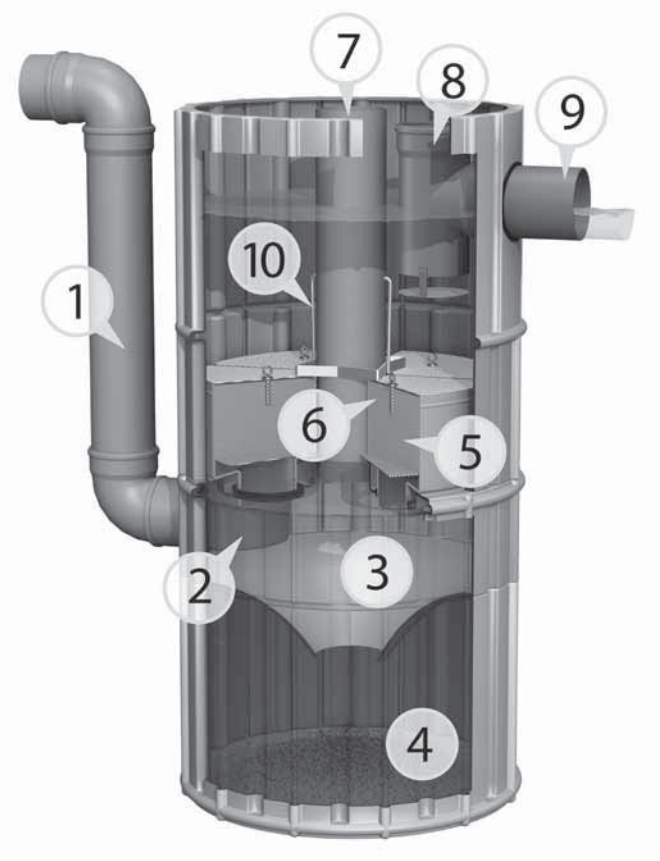
6.Removal handle for filter element

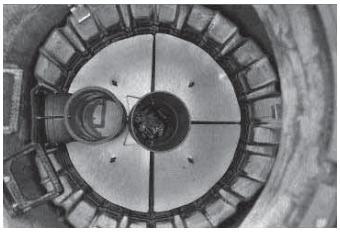
7.Overflow pipe = Bypass and cleaning shaft

8.Oil separator

9.Outlet to rainwater tank, infiltration system or receiving waters (DN 200)

10.Lifting security for filter elements





Top view on a 3P Hydrosystem 1000.

Certificate of a specialised company

For installation or changing of rainwater harvesting systems

Company / Specialist

Street

Postal code, city

Constructor

Street

Postal code, city

Location of the system

Street

Postal code, city

1. I have

❑ installed ❑ changed

❑ checked as an expert

the filter system on the site mentioned above with

❑ the rainwater downpipes, rainwater collecting pipes and rainwater main pipes

❑ the overflow pipes

❑ the shaft system

3. The pipes, parts and components are conform to the respective product norms. Certificate of a specialised company For installation or changing of rainwater harvesting systems.

2. The drainage system is conform to the requirements of the norm series DIN EN 752 and DIN 1986-100

The filtered rainwater is led into

❑ an infiltration system

❑ a receiving water

❑ a storm sewer

❑ a combined sewer

❑ _____

4. I have received the installation instructions of the manufacturer and installed the system according to these instructions.

The action executed/checked by me is subject to public law and corresponds to the general approved regulations of technics.

Date/Signature Company, Specialist

Installation and instruction protocol
Hydrosystem 1000

Construction project

Owner represented by

Specialised company represented by

No.	Characteristic	Observation
1.	The filter was connected with a downfall, see picture and product composition (1).	
2.	The Bypass (7) is conforming to the required 1000 mm	
3.	The lifting security (metal brackets which are screwed on the wall of the concrete tank) is installed (not necessary when the filter shaft is inserted in the AWA-plastic shaft).	
4.	There are 4 filter elements situated in the sealings. The lifting securities (10) for the filter elements are situated above the filter elements according to the regulations, the removal handles are situated easily accessible in the upper part of the shaft.	
5.	The oil separator device (8) is mounted and sits correctly.	
6.	The filter elements had not been inside the filter shaft during the installation phase, therefore they are clean and without any damage.	
7.	The filter system is correctly connected with the consecutive system (infiltration, recipient, rainwater harvesting system, or the like).	

The instructions regarding the operation of the system were given; the required operating documents and existing instruction and maintenance manuals according to the list were handed over.

Signature specialist

Signature owner

Installation and maintenance manual
Hydrosystem 1000

Because of the pollutants and harmful substances within the rainwater, rainwater systems have to be controlled and cleaned in regular intervals like all stormwater treatment facilities.

Therefore the following maintenance is necessary for the 3P Hydrosystem:

Inspections every year

- In intervals between 1 – 5 years the silt trap under the filter has to be emptied and the filters have to be flushed or exchanged - With street areas the interval is rather one year, with roof areas rather five years
- These intervals can vary according to untypical low or high solids flux in the rain flow. This is pointed out in the first few operating years. An obvious indication therefore is a frequent working of the overflow, this is generating a clouding of the water

Necessary tools and materials:

- Suction and flushing vehicle or submersible mud pump with pipes
- Power generator if there is no connection for power supply available
- High pressure cleaner
- Rescue tripod with 2 winches (for rescue of people and filter exchange)
- Rescue dressing
- Gas detector
- Box for filter

Please note

- The water pumped out from the shaft and the silt trap can only be led into a sewer, a combined sewer or a lawn area. It must not get into waters, a rainwater channel, a cistern or in an underground French drains.
- If there is no possibility you can use a mobile water treatment system. The water treated can be let into waters or rainwater channel.

Maintenance instructions

Preparations for maintenance

1. Position the rescue tripod above the opened shaft

2. Check the atmosphere in the shaft with the gas detector and observe it constantly

3. With metal roof systems take out the sample of water above the filter elements

4. Put on the rescue dressing

5. Hook it into the rescue winch

6. Go down into the shaft and position on the filter elements

Preparations for filter demounting

1. Pull the overflow out of the bushing and lift it out of the shaft

2. Disconnect the screw nut on the T-piece and take it off

3. Take out the T-piece completely and lift it out

Maintenance instructions

4. Pull the locking device on both sides outwards

5. Take out the locking device and lift it out of the shaft

6. These three mounting parts are now beside the shaft

Taking out the filter elements

1. Hook the wire rope into the filter ear and pull out the filter completely out of the shaft

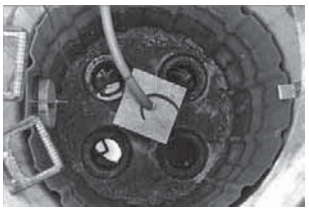
2. Put the filter in the provided box

3. Put the other filter elements into the box

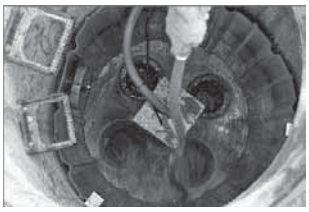
Flushing the inner shaft

1. Lower the pump through the outlet tube into the shaft

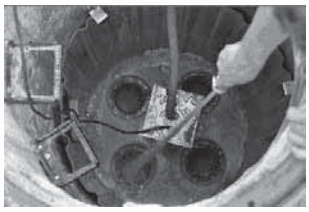
2. Turn on the pump and pump out the water, please observe the specifications for the draining



3. Pump out the water until below the intermediate level flushing the filter



4. Flush the inner of the shaft thouroughly with water



5. Flush the sealings for the filter elements thoroughly

6. When the shaft is clean, the pump can be pulled out

Flushing the filter elements

1. With the small maintenance only flush the filter elements from outside, outherwise you have to install new ones

2. Flush the filter from inside so that the perforated plate will be clean

3. Finally flush the filter element thoroughly from above

Preparing the installation of the filter elements

1. This is how the shaft looks now from inside

2. All is prepared for the installation of the filter

3. If the filters will be exchanged, the old filters are packed in a box

Maintenance instructions

Insert filter and fastening of the accessory

1. Let down the filter elements into the shaft and put them into the sealings

2. Start with the two filters beneath the outlet then fasten the other ones

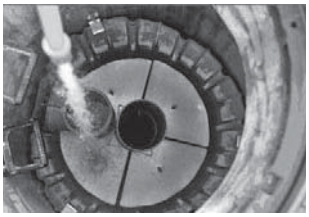
3. Insert T-piece (oil barrier) after all four filters have been installed

4. Tighten the screw nut on the oil barrier

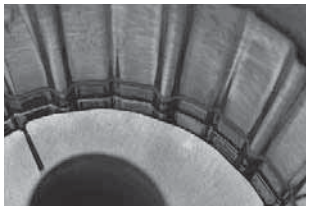
5. Put in the locking device until it is shut

6. Put the overflow on the middle tube

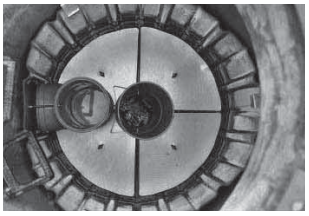
Leak test



1. Let in water in the space between the filters and the shaft



2. Check if the water level remains constantly



3. This is how the shaft looks like after the completed maintenance

Maintenance printout

Please use as master

Maintenance interval	**Actual state/ Observation**	**Maintenance work**	**Name and signature of assayer**
Date:		❑ Visual inspection of the filter of visible external damage ❑ Filter elements cleaned ❑ Filter elements changed ❑ Silt trap sucked dry ❑ A water analysis has been arranged for (metal roof)	

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Date:		❑ Visual inspection of the filter of visible external damage ❑ Filter elements cleaned ❑ Filter elements changed ❑ Silt trap sucked dry ❑ A water analysis has been arranged for (metal roof)	

3P Technik

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hydrosystem@3ptechnik.de
www.3ptechnik.de

Sender:

Company/name

Street

Postal code/city

Telephone

E-Mail

Installation of the system (date)

YOUR ADVANTAGES AFTER THE REGISTRATION OF YOUR FILTER SYSTEM:

- ✓ We inform you about all legal changes and adapt the system to the actual state.
- ✓ You will be informed if there is a maintenance to be made or if a filter has to be exchanged.
- ✓ You always have a filter which complies to the legal specifications.

3P Technik Filtersysteme GmbH
Öschstr. 14
D - 73072 Donzdorf
Germany

Guarantee card for the plant operator

With the buying of a filter system for rainwater you are active protecting our waters and helping us to save our potable water for the next generations.

According to § 7a of the German Federal Water Act a permission for sewage disposal of rainwater can only be given if „the contamination of this sewage is so small like it is possible by compliance with each process in accordance with the state of the technology."

So that your new filter system can comply with this requirements it is important that your system is registrated. So we can assure that your system always meets with the state of the technology and that it can the maintenance can be made regularly.

ATTENTION: without registration no guarantee.
The guarantee card has to be returned to the manufacturer.