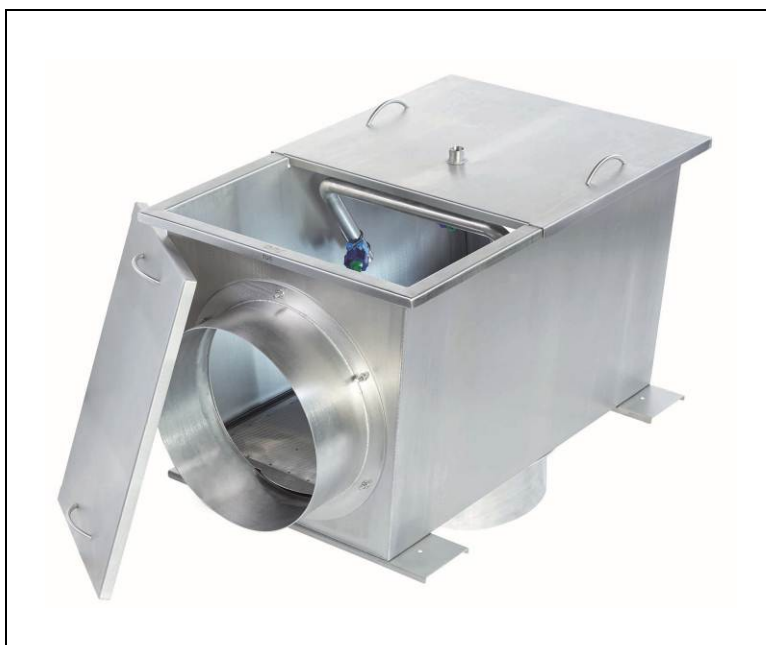


## Installation and maintenance instructions GRAF Optimax-XXL Filter external

### Optimax XXL Filter external Item no. 340096

**DN300 (12") connection kit (USA)**  
Item no. 340098

**DN400 (16") connection kit (USA)**  
Item no. 340100



The points described in these instructions must be observed under all circumstances. All warranty rights are invalidated in the event of non-observance. Separate installation instructions are enclosed in the transportation packaging for all additional articles purchased from GRAF.

Missing instructions must be requested from us immediately.

The tank must be checked for any damage prior to insertion into the trench under all circumstances.

Missing instructions can be downloaded on [www.graf.info](http://www.graf.info) or can be requested from GRAF.

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## 1. General information

### 1.1 Safety

The relevant accident prevention regulations according to BGV C22 must be observed during all work. Particularly when walking on the tanks, a 2nd person is required to secure the tank.

The relevant regulations and standards must additionally be taken into consideration during installation, assembly, servicing, repair, etc. Relevant notes can be found in the corresponding sections of these instructions.

During all work on the system or parts of the system, the entire system must always be rendered inoperable and secured to prevent unauthorised reactivation.

GRAF offers an extensive range of accessories, all of which are designed to match each other and which can be extended to form complete systems. The use of other accessories may lead to impediments to the system's functional capability, therefore invalidating liability for resulting damage.

### 1.2 Identification obligation

All service water pipes and outlets must be identified in writing with the words "**Not drinking water**" or in the form of images (DIN 1988 Part 2, Para. 3.3.2.), this is to avoid inadvertent connection to or with the drinking water mains even after a number of years. Mix-ups, e.g. by children, may still occur even in the case of correct identification. All service water extraction points must therefore be installed with valves that have **child-proof locks**.

## 2. Installation conditions

### 2.1 Optimax XXL Filter external

The GRAF Optimax XXL Filter external is designed for filtering rainwater within rainwater harvesting systems. The low-maintenance, self-cleaning filter technology is patented and has a water yield of over 95%. Contaminants are automatically routed to the sewer via the sieve surface. The filter fabric can be cleaned using the filter cleaning unit incorporate within the product, without the need to disassemble the Optimax XXL Filter.

- The Optimax XXL Filter external is designed for installation in a pilot shaft or a cistern
- Direct installation in the ground without protection is not permitted
- Ensure that the inflow pipe is long enough to slow down the inflowing water.
  
- The roof area for connection to DN 300 (12") = 3.000 m<sup>2</sup> (32.300 ft<sup>2</sup>), DN 400 (16") = 6.000 m<sup>2</sup> (65.000 ft<sup>2</sup>)
- The height difference between inlet and outlet is 45 mm (1,7")
- The mesh width of the stainless steel sieve insert is 0.35 mm (0,01")
  
- Larger filter designs are available upon request.

### 3. Transport and storage

#### 3.1 Transport

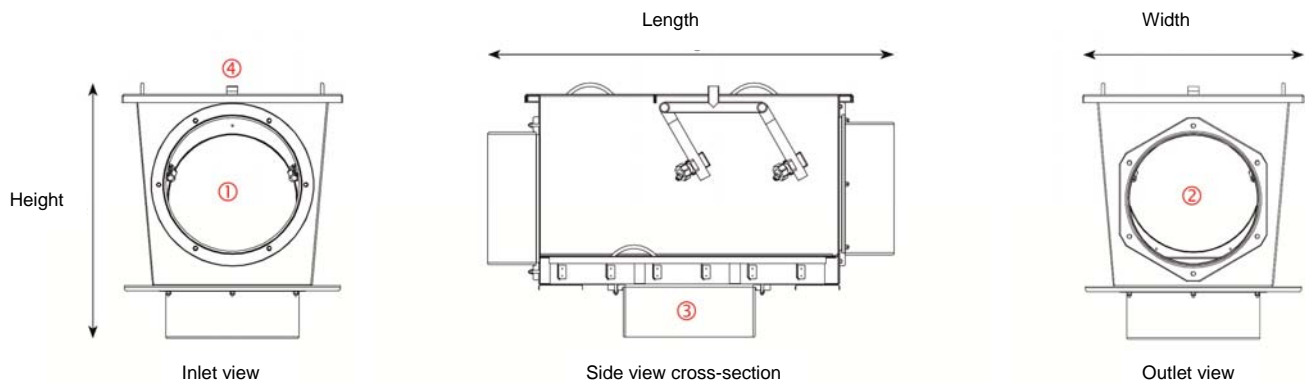
The filters must be secured to prevent shifting and falling during transport. If the filters are secured for transport using tension belts, make sure that the filters remain undamaged.

Stress caused by impacts must be avoided. The filters must in no event be rolled or dragged across the ground.

#### 3.2 Storage

If the filters require intermediate storage, this must be done on suitable level ground. During storage, damage caused by environmental or external factors must be avoided.

### 4. Technical data



Description	DN 300 (12") connection	DN 400 (16") connection
Max. roof area	3.000 m <sup>2</sup> (32.300 ft <sup>2</sup> )	6.000 m <sup>2</sup> (65.000 ft <sup>2</sup> )
Max. throughflow	100 l/sec (27 US gal./sec)*	200 l/sec (53 US gal./sec)*
Water yield	over 95%	over 95%
Sprayer through flow	80 l/min (21 US gal./min)	80 l/min (21 US gal./min)
Length	1225 mm (44,3")	1225 mm (44,3")
Width	675 mm (26,5")	675 mm (26,5")
Height	770 mm (30,7")	770 mm (30,7")
Height offset/inlet and outlet	45 mm (1,7")	45 mm (1,7")
① Inlet connection	DN 300 (12")	DN 400 (16")
② Sewer connection	DN 300 (12")	DN 400 (16")
③ Filtered water connection	DN 300 (12")	DN 400 (16")
④ Cleaning unit connection	1"	1"

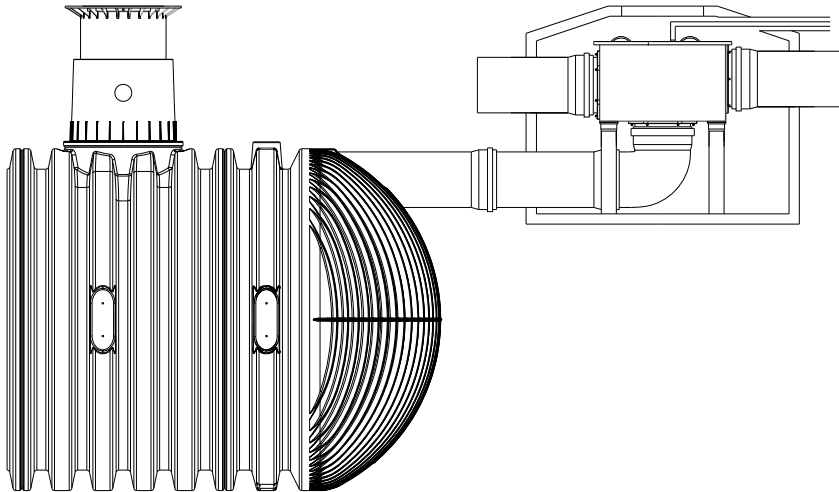
\* Dimensioning according to DIN 1986 for horizontal pipelines for a max. partial pipe filling of 0,7 at 1,5% slope

## 5. Installation and assembly

### 5.1 Preparing the filter and piping

The Optimax XXL Filter external is designed for installation in a pilot shaft or a cistern. Direct installation in the ground without protection is not permitted.

#### Application example (simplified representation):



#### **Important:**

The surface upon which the filter is installed must be completely level in order to ensure optimal function. A suitable lubricant must be used to connect the piping. The positions of the relevant connections can be found in "Technical data" on page 3.

Before assembly, the filter's stainless steel pipe fittings must be sealed using the silicone supplied. Before putting into operation the provided sealing tape is to be fixed on the inner frame between the case and cover of the filter. Thus the connection between filter cover and case is leak proof after the screwing.

### 5.2 Insertion and establishing connections

The filter is inserted into the prepared shaft and is connected to the corresponding pipes. Make sure that all pipes are laid with an incline of at least 1% in the flow direction, without sagging.

#### **Important:**

DIN 1986 must be observed, i.e.  $\varnothing$  inlet =  $\varnothing$  outlet (No cross-section constriction)!

### 5.3 Connecting the filter cleaning unit

To connect the filter cleaning unit included within the Optimax XXL Filter, the pressure pipe is connected to the filter's 1" thread connection. Lay a 1" pipe (on-site) from the filter's thread connection via an empty pipe to the supply point, and connect this to the existing pressure pipe outlet.

#### **Important:**

In order to ensure an optimal cleaning performance, please set the jet angle of the flat jet cone nozzles on the sieve surface according to the throughflow.

- The optimal throughflow is approx. 20 l/min (5 US gal./min) per cleaning nozzle
- The minimum required pressure for the filter cleaning unit is 2.5 bar (36 psi)

## 6. Start-up and maintenance

### 6.1 Start-up

Before start-up, the sieve surface must be cleaned thoroughly using a brush and a fat-dissolving cleaning agent. Alternatively, it may also be cleaned using a fat-dissolving cleaning agent and a strong jet of water (high-pressure cleaner 40°C (104° F) - max. 60°C (140° F)). Dirt that entered the filter housing during assembly must be removed.

### 6.2 Maintenance

The entire system must be checked for tightness, cleanliness and stability at least once every three months. The filter insert must be cleaned approx. every three months (or more often depending on the amount of dirt).

### 6.3 Cleaning

If the filter fabric becomes clogged due to a large amount of dirt, and cleaning is no longer possible using the filter cleaning unit, the sieve insert is to be disassembled and cleaned as described below.

#### To disassemble and clean the filter insert:

- Remove the filter insert
  - Remove the cover of the pilot shaft/cistern
  - Remove the connection of the filter cleaning unit
  - Remove the cover of the filter housing
  - Pull the sieve insert upwards to remove it
- Clean the filter fabric
  - Scrub the sieve surface thoroughly using a brush and a fat-dissolving cleaning agent
  - Clean with a strong jet of water (high-pressure cleaner 40°C (104° F) - max. 60°C (140° F))
  - Remove all dirt from the filter insert
- Insert the filter insert
  - Insert the sieve insert in the filter housing
  - Check the surrounding seal for proper positioning
  - Fit the cover on the filter housing
  - Connect the filter cleaning unit
  - Fit the cover back on the pilot shaft/cistern

#### **Important:**

Avoid damaging the filter insert (**DO NOT** use wire brushes).