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SANIFOS®

SANIFOS® 1600
SANIFOS® 2100
SANIFOS® 3100

(UK) **Packaged Pumping Station**
Operating instructions

(DE) **Fertig-Pumpstation**
Betriebsanleitung

(FR) **Station de pompage préfabriquée**
Mode d'emploi

(IT) **Stazione di pompaggio pronta all'uso**
Istruzioni per l'uso

(NL) **Geprefabriceerd pompstation**
Gebruikshandleiding

(ES) **Estación prefabricada de bombeo**
Manual de instrucciones

(PT) **Estação do bombagem**
Manual de instruções

CONTENTS

1. SAFETY

WARNING
This device can be used by children who are at least 8 years old and by people with reduced physical, sensory or mental capacities or those without knowledge or experience, if they are properly supervised or if they have been given instructions on safely using the device and the associated risks have been understood. Children should not play with the device. Children should not clean or perform maintenance on the device without supervision.

ELECTRICAL CONNECTIONS:

The electrical installation must be done by a qualified electrical engineer.
The device's power supply must be connected to ground (class I) and protected by a high sensitivity differential circuit breaker (30 mA). Devices without plugs must be connected to a main switch on the power supply which disconnects all poles (contact separation distance of at least 3 mm). The connection must be used exclusively to provide the power to the product.
If the power cord is damaged, to prevent possible danger, it must be replaced by the manufacturer, customer service team or a similarly qualified individual.

These operating instructions contain basic instructions which have to be observed during set-up, operation and maintenance. For this reason, these operating instructions must by all means be read before installation and commissioning by the installation technician as well as by the competent specialist staff / user, and must be permanently available at the location of the device.

Not only the general safety instructions mentioned in this main point on safety have to be observed, but also the special safety instructions mentioned in the other main points, for example for private use.

1.1 Labelling of notes in the operating instructions

DANGER	**Danger** This term defines a high risk of danger, which can lead to death or serious injury, if not avoided.
WARNING	**Warning** This term defines a hazard which could cause a risk to the machine and its operation, if it is not taken into account
	**Dangerous area** This symbol characterises hazards that could lead to death or injury.
	**Dangerous voltage** This symbol characterises dangers associated with the voltage and provides information on voltage protection.
ATTENTION 	**Property damage** This symbol, in combination with the keyword **ATTENTION**, characterises dangers to the machine and its proper operation.

Instructions attached directly to the machine, such as rotation arrow, marks for fluid connections, must be definitely observed and kept in fully legible condition.

1.2 Qualification and training of staff

The staff for operation, maintenance, inspection and installation must have the corresponding qualification for this work. For this reason, the area of responsibility, the competency and the supervision of the staff has to be precisely defined by the company. If the staff do not have the necessary knowledge, they must be trained and instructed. If and when necessary, this may be carried out by the manufacturer/supplier of the pump on behalf of the pump operator. Moreover, the operator has to ensure that the content of the operating instructions is understood completely by the staff.

1.3 Hazards caused by non-observation of safety instructions

The non-observation of the safety instructions may endanger persons as well as the environment, and may have consequences for the environment and machine. The non-observation of the safety instructions will result in the loss of all claims for damages.

In detail, the non-observation may cause the following hazards, for example:

- Malfunction of important functions of the machine/system
- Malfunction of the mandatory methods of maintenance and repair
- Danger to persons caused by electrical, mechanical and chemical effects
- Danger to the environment caused by leakage of dangerous substances

1.4 Safety-conscious work

The safety instructions mentioned in these operating instructions, the existing national regulations on accident prevention as well as potential in-company work, operating and safety instructions of the user must be observed.

1.5 Safety instructions for user/operator

- Hot or cold machine parts could becoming a hazard, these parts have to be protected against the handling of the user.
- Touch protection for moving parts (e.g. coupling) must not be removed from the machine being in operation.
- Leakage (of the tank seal, for example) of hazardous material conveyed (e.g. explosive, toxic, hot) must be removed in such a way that no danger is caused to persons and the environment. Legal regulations have to be observed.
- Hazards caused by electric energy must be excluded (for details here, please refer to the country-specific regulations and the regulations of the local energy supply companies).

1.6 Safety instructions for maintenance, inspection and installation work

The user has to make sure that all maintenance, inspection and installation work is carried out by authorised and qualified specialist personnel only, who have sufficiently been informed by studying the operating instructions.

Basically, work on the machine may be carried out only when the unit is isolated and safe to do so. The procedure to shut down the machine described in the operating instructions must be observed at all times.

Pumps or pump assemblies, which convey media hazardous to health, must be decontaminated. Immediately after completing the work, all safety and protection devices have to be fitted again and/or have to be made functional again.

Before restart, the points listed in the chapter on initial commissioning have to be observed.

1.7 Unauthorised modification and spare parts production

Modifications or changes to the machine shall be permissible only after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer serve to ensure

safety. The use of other parts may results in the loss of liability for the consequences that may occur.

1.8 Impermissible operating modes

The operational safety of the machine supplied is ensured only when used as intended according to Section *2 - General aspects* of the operating instructions. The threshold values indicated in the data sheet must by no means be exceeded.

2. GENERAL ASPECTS

2.1 Affiliation

These operating instructions are valid for the packaged pumping station SANIFOS® 1600, 2100, 3100.

In case of non-observation to the operating instructions - in particular the safety instructions - as well as unauthorised modification of the device or the installation of non-original spare parts the warranty claims will automatically become void. The manufacturer assumes no liability for any damage resulting from this!

Construction sizes:

SANIFOS® - shaft installations for single or double system
Pumps with a pressure outlet of 2" and a performance of up to approx. 4 kW can be used.

2.2 Inquiries and purchase orders

Please send your inquiries and orders to your specialist dealer.

2.3 Technical data

Clear width	1000 mm
Maximum outer diameter approximately	1100 mm

Shaft heights

	Height of the basic body	Height with top piece and BEGU cover Class A	Height with top piece and BEGU cover Class B	Height with top piece and BEGU cover Class D
H2	1600	1730-1960	1775-2005	1810-2040
H3	2100	2230-2460	2275-2505	2310-2540
H5	3100	3230-3460	3275-3505	3310-3540

Specifications	
Opening of the shaft cover	Ø 625 mm
Weight	60 kg - 90 kg (without mounting parts)
Inlet	suitable for PVC DN 150
Inlet depth	675 mm (axis of pipe) from lower edge of shaft bottom
Pressure connection	PE HD DN 50 Øext.= 63 mm
Pressure connection depth	675 mm (axis of pipe) from lower edge of shaft bottom

Specifications	
Storage volume	approx 400 l
Switching volume	at least 150 l
Ventilation / cable conduit	2 x PVC DN 100
Depth of connection	1175 mm (axis of pipe) from lower edge of shaft bottom
Maximum media temperature	60 °C

The shaft is protected against buoyancy up to a groundwater level of 0.5 from the lower edge of the shaft!

Materials

Shaft	PE
Coupling system	Cast iron GG 20
Shut-off valve	Brass
Pressure line	PE, stainless steel
Check valve	GG 25

2.4 Field of application

The pumping stations of the series SANIFOS® serve to dispose of (collecting and conveying) domestic and industrial grey water and black water, which occur below the sewer backwater level. They are intended to be installed externally.

2.5 Scope of delivery

The packaged pumping station SANIFOS® basis is delivered complete with:

- boltless coupling system
- shut-off valve DN 50
- check valve DN 50
- complete pressure line with screw connections
- flushing connection prepared, closed with blind cap
- submersible motor pump(s)* DN 50 (see separate operating instructions)
- pneumatic level control/float switch* (see separate operating instructions)
- variable top piece with lip seal
- BEGU shaft cover*, Class A (walkable), B or D.

** optionally available*

3. TRANSPORT AND INTERMEDIATE WAREHOUSING

3.1 Transport

The packaged pumping stations from the series SANIFOS® must not be thrown or dropped. Moreover, they shall be kept upright during transportation (except SANIFOS® 3100).

3.2 Intermediate warehousing / conservation

For intermediate warehousing and conservation, it is sufficient to store the system at a cool, dark, dry and frost-proof place. The system should be kept in an upright position.

4. DESCRIPTION

4.1 General aspects

The pumping station is completely assembled so that the pump has to be installed and the connections (inlet, pressure line, venting line, level control and power supply) be established only.

4.2 Design and functionality

On the shaft floor, a coupling system is mounted, to which the boltless pump is engaged. A guide pipe, which is attached to a crossbeam in the shaft neck, to guide the pump when being hung up is available. Engaged by means of a mounted chain, the pump can be lifted out of the tank without loosening screw connections in the shaft. Depending on the size of the pump, a lifting gear might be necessary to lift it out. After a long operating time, the pump could attach itself to the coupling base. To loosen the pump, the chain has to be gently pulled and the chain be shaken until the pump gets loose from the coupling base. Subsequently, the pump can be carefully pulled out. Too high tensile forces on the chain have to be avoided in order to prevent damage of the plastic tank. This way, maintenance and repair work on the pump is possible outside the tank. In order to prevent backflow of the water column being in the pressure line at the ball check valve during maintenance and repairing work, a shut-off valve is mounted before the check valve in the pressure line.

5. INSTALLATION

5.1 Producing the excavation pit

The excavation pit must be created with due regard to the regulations of the civil engineering (slope angle, possibly shoring up the tank etc.).

5.2 Inserting the shaft

Before inserting the tank, the excavation pit has to be backfilled with approx. 30 cm of crushed rock and condensed with 5 cm grit so that a horizontal supporting surface comes into being. Then, the PE tank has to be inserted into the excavation pit and aligned. Now fill up approx. 30 cm filling sand and condense.

WARNING

Check if the tank still stands level.

5.3 Connecting the shaft

Inlet

An inlet sleeve DN 150 with lip seal is available in the tank. The inlet line (pipe DN 150) is plugged approx. 1 cm into the inlet sleeve. Beforehand, a lubricant or grease has to be applied on the inside of the seal. The max. deviation of the axis of the inlet must not exceed 3°. Further inlets are possible as an option.

Pressure line

The pressure pipe line ends approx. 180 mm outside the tank with a pipe socket PE HD 63x5.8. PE HD pipe 63x5.8 should be installed as pressure line. Connection to the pipe socket which is available at the tank can take place by means of a commercial compression fitting, for example.

Ventilation / cable routing

2 sleeves with lip seal DN 100 are available for ventilation / cable entry. The ventilation pipe

(pipe DN 100) is inserted into the sleeve (see inlet). To avoid any bad odour, we recommend to guide the venting line over the roof. The cable empty pipe (pipe DN 100) is inserted into the other sleeve and guided further up to the switchgear. The pipe has to be closed at the outlet in the control cabinet or building (e.g. by a blind cover with cable glands). If a pipe connection is required, so it has to be closed using a commercial blind cover.

Electrical connection

The pump cable and the pneumatic hose/ float switch cables are guided in the cable empty pipe toward the switchgear.
The operating instructions of the pump and the circuit diagram apply for the electrical connection.

ATTENTION

The shut-down point and the run-on time have to be adjusted in such a way that the pumping process is completed prior to the pump housing emerging, but the pitot tube has already completely emerged. The pneumatic hose has to be guided rising steadily and without loops to the switchgear. The maximum length should not exceed 20 m.

5.4 Filling the excavation pit

Prior to filling the excavation pit, the lip seal for the top piece has to be inserted into the tank and the top piece be inserted and adjusted using the BEGU tank cover of the ground elevation

ATTENTION

Please note that the pressure test of the pressure line must not be carried out against the shut-off valve.
When all lines have been connected and checked for tightness, the excavation pit can be filled.

To fill the excavation pit, filling sand or gravelly sand has to be used in conformity with the civil engineering/relevant regulations.

WARNING

Use gravelly sand only up to a grain size of 32 mm, provided that the excavation ground does not correspond to the particle size group 0 to max. 32 mm.
Cohesive soil, rubble, rock and sharp-edged grain must not be used!

The filling material has to be introduced in layer thicknesses of max. 30 cm and be equally condensed. In the event of a lowering of groundwater level of the excavation pit, condensation of the filling material can take place by covering with mud and by adding water with simultaneous operation of the draw-down device.

WARNING

Use friable filling material!

To ensure buoyance safety with the soil type of clay, the tank must be filled with sand, clay or concrete from outside. In order to exclude deformation of the PE tank, high filling from one side must be avoided by all means.

Only after final completion of the tank, including filling and condensing the excavation pit, the potentially used water table drawdown system may be switched off.
The protruding piece of the top piece has to be well back-filled and condensed.
In order to ensure safe function of the system, it is necessary that the tank is levelled after filling.

Absolutely observe the notes in the plant when using a Class D shaft cover.

6. COMMISSIONING

Before commissioning, all connections must be checked again for correct installation and tightness. The shut-off valve must be open.

To commission the pump, please read the separate operating instructions of the pump as well as the switchgear.

7. MAINTENANCE / SERVICING

DANGER

Prior to carrying out any work on the system, it has to be disconnected from the mains supply!

Maintenance includes regular visual inspection of the complete system. During the process, switching cycles of the pumps are observed and all piping parts and fittings are checked for function and tightness. Please refer to the operating instructions of the pump with regard to the maintenance instructions. After maintenance has been carried out, the maintenance interval indicator of the control can be reset. Maintenance should be carried out only by authorised specialist companies.

8. MALFUNCTIONS; CAUSES AND TROUBLESHOOTING

Prior to carrying out any DANGER **stem, it has to be disconnected from the mains supply!!**

In the event of malfunctions of the pump, please refer to its operating instructions. In case of leaks of the piping or failure of the fittings, the relevant parts should be replaced (exchanged).

9. WARRANTY

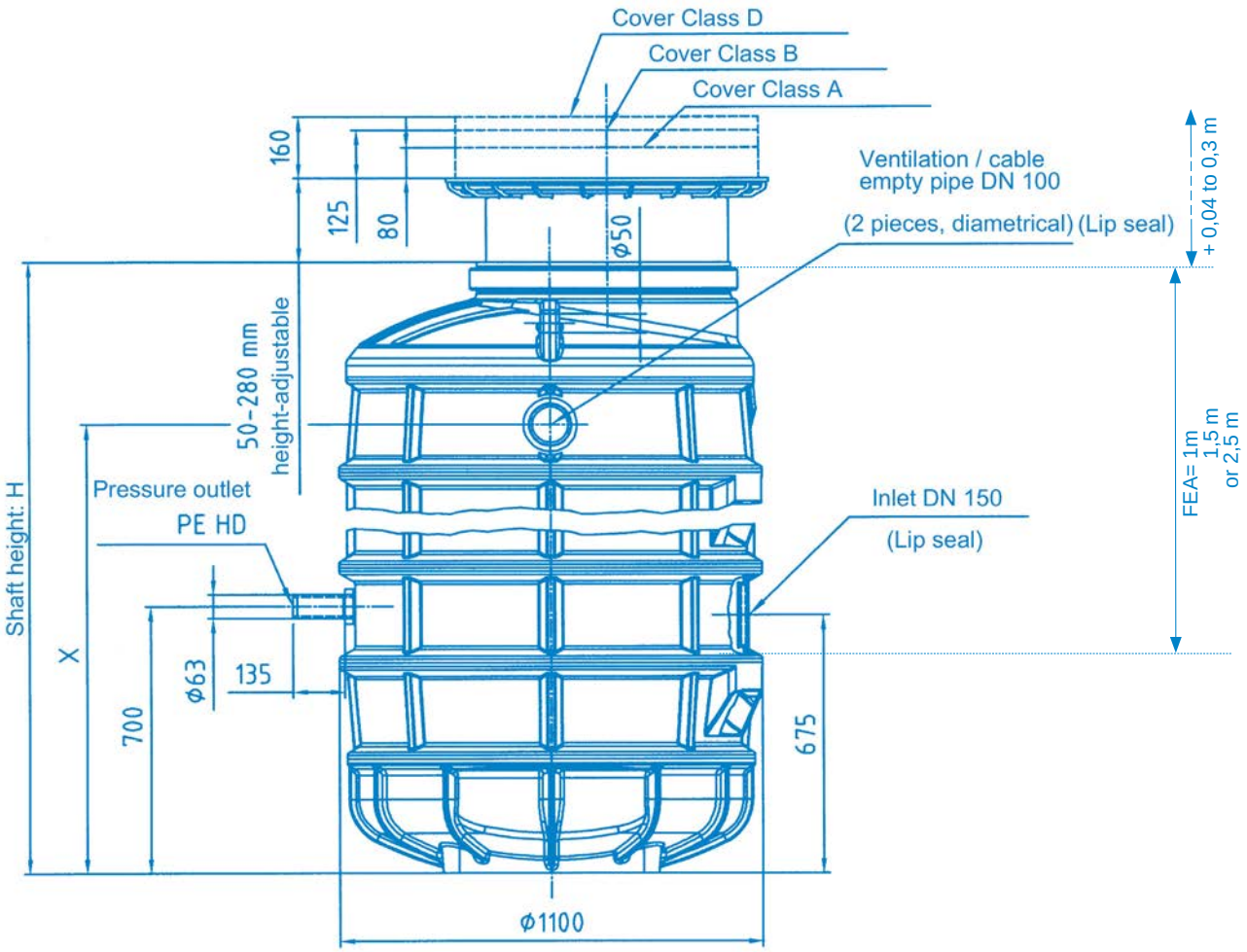
As manufacturer, we provide for this product a warranty of 24 months from the date of purchase providing it has been correctly installed as per operating installation instructions.
The sales receipt is considered proof regarding the warranty. Within this warranty period, we will at our discretion, either by means of repair or replacement, correct free of charge all defects

due to material or manufacturing defects of the pump.
The warranty excludes all damage attributable to improper use or wear and tear. We do not assume any liability for consequential damages which occur due to a failure of the device.
In case of guarantee, please get in touch with your specialist dealer.

10. TECHNICAL CHANGES

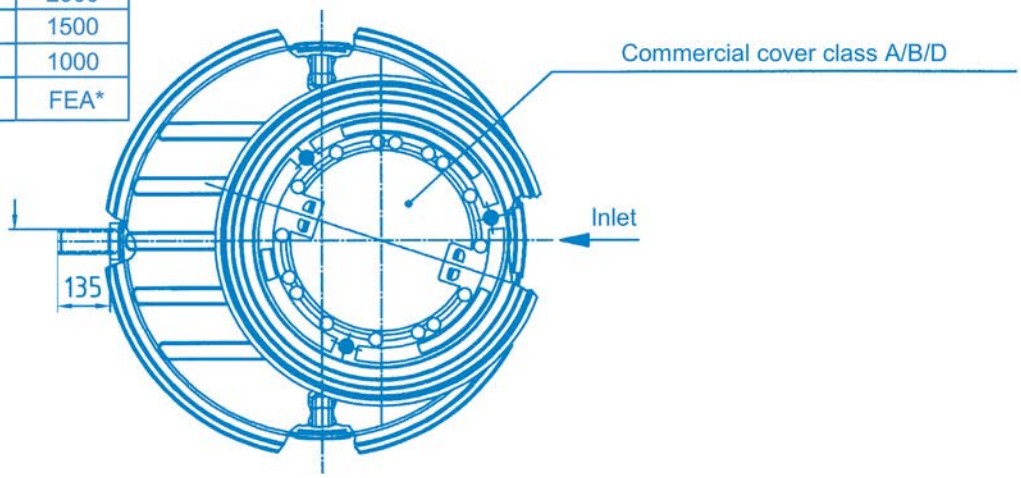
We reserve the right to make technical changes in terms of progress.

Annex A : Main dimensions



3100	2675	2500
2100	1675	1500
1600	1175	1000
Shaft height: H	X (mm)	FEA*

* Incoming Water Flow (FEA), without top piece

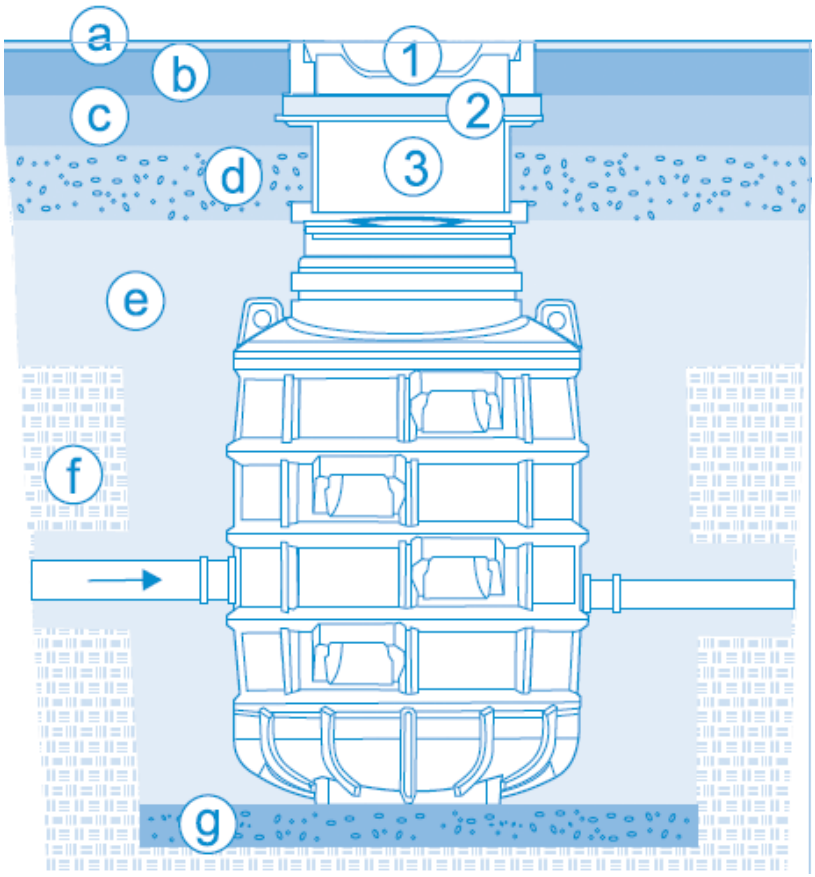


Annex B : Installation proposal for the shaft cover, class D

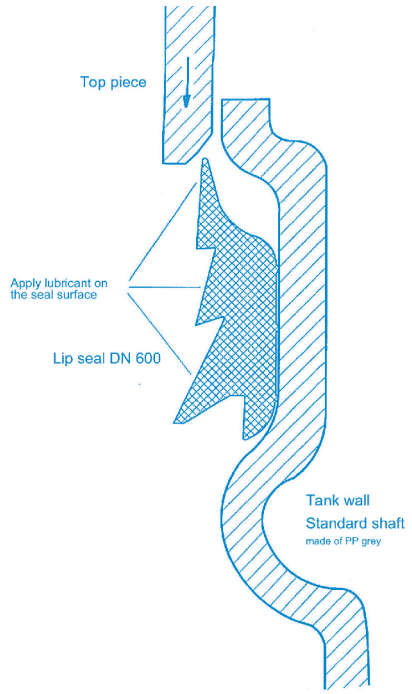
Installation proposal according to standard road structure.

①. Commercial BEGU cover - Cover Class D
②. Commercial concrete rings for height levelling
③. Top piece made of plastic, height adjustable from 40 to max. 300 mm

ⓐ Wear layer approx. 3 cm
ⓑ Bituminous base layer approx. 8-12 cm
ⓒ Clean layer approx. 10 cm
ⓓ Crushed rock approx. 20 cm
ⓔ Antifreeze gravel approx. 25-30 cm
ⓕ Soil
ⓖ Grit



Position of the lip seal for the top piece



ATTENTION

Safety Instructions!
Installation, mounting, operation and maintenance may be carried out by a specialist company only.