

SSS PUMPING STATIONS



Product Range, pg 4

Installation, pg 9

Maintenance, pg 18

IWS

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100% reusable PE material



Resistant to Nordic climate



Safe to maintain



Resistant to mechanical damage



The PE material's guaranteed lifetime is 50 years



Dear customer!

Thank you for taking time review our SSS (Solids Separation Systems) pumping stations catalogue!

SSS pumping station is double-chamber, with dry installation pumps equipped with a solids separation system. The pumping station is intended for pumping waste water in places, where construction of gravity-flow piping is not possible or practical. Even the most demanding company will find a suitable pumping station, pumps and control cabinet from us.

Here you will find information about features of the pumping station, its installation, and maintenance tips.

Our development of pumping stations focuses on their long-term durability, ease of installation and safety of use.

In addition to SSS pumping stations, our product range includes also pumping stations with submersible pumps, booster pumping stations, tanks, septic tanks and other products of the same brand.

Detailed information about all our products is available at the address www.iwsgroup.ee/en.



CONTENT

PRODUCT DESCRIPTION	4
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TECHNICAL CHARACTERISTICS	5
----------------------------------	----------

ADVANTAGES OF SSS PUMPING STATIONS	8
---	----------

TRANSPORT AND STORAGE	8
------------------------------	----------

INSTALLATION	9
---------------------	----------

SAFETY	14
---------------	-----------

OPERATION	16
------------------	-----------

TROUBLESHOOTING AND POSSIBLE SOLUTIONS	17
---	-----------

MAINTENANCE	18
--------------------	-----------

WARRANTY	24
-----------------	-----------

PRODUCT DESCRIPTION

The pumping station is intended for pumping waste water in places, where construction of gravity-flow piping is not possible or practical.

SSS pumping stations are double-chamber well-type pumping stations with dry installation pumps. Pumping station is equipped with a solids separation system (SSS). Pumping stations include wet and dry chambers, pumps, solids separation system, pressure pipes and complete control cabinet. Two dry installation pumps are used in the pumping station, in order to ensure operation of the pumping station also in case of maintenance or failure of one pump. Pumps operate alternately and are controlled by complete control cabinet installed in the control board of the pumping station. Level sensor is used for setting water levels in the pumping station, which regulate starting and stopping of pumps.

WORKING PRINCIPLE OF THE SOLIDS SEPARATION SYSTEM (SSS)

The incoming waste water flows through the distribution chamber and into the wet chamber. Unacceptably large solid particles are separated using a screen and collected in a separator. Only the pre-treated waste water is directed through the pump into the wet chamber.

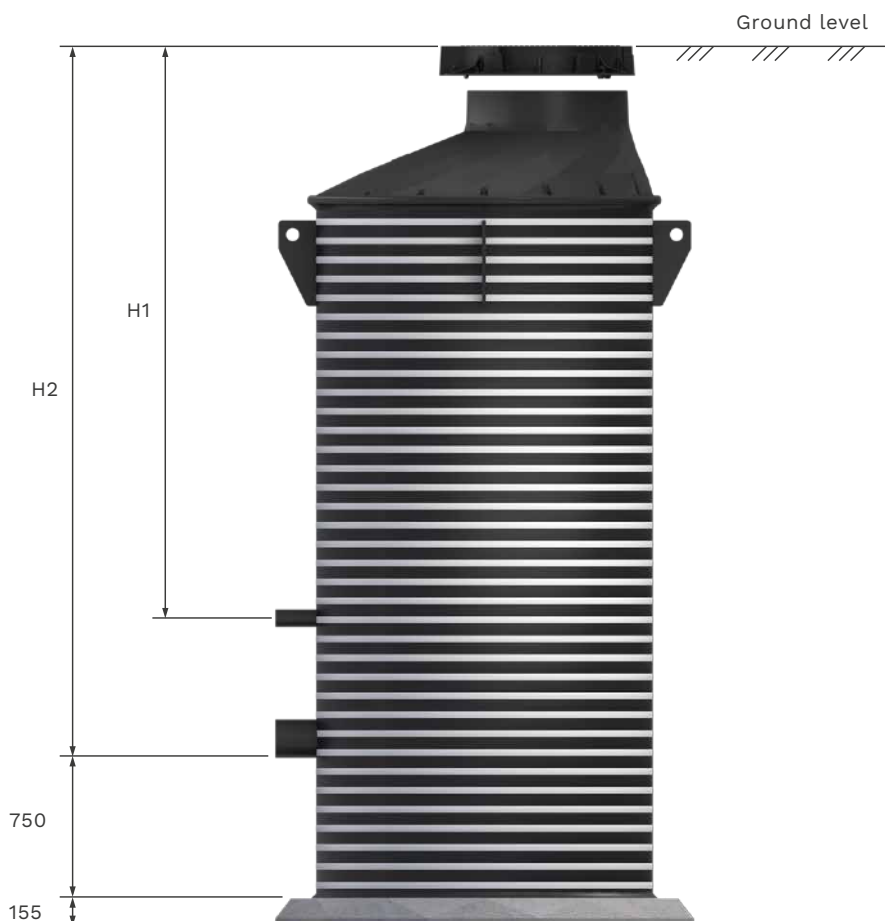
When the wet chamber is full, the pump starts according to the level sensor and the inflow to the separator closes. The pre-treated waste water is pumped through the solids separator, and the solid particles collected in the separator are directed to the outgoing pressure pipeline due to the flow rate.

MAIN INITIAL DATA OF PUMPING STATION:

- pump parameters - flow rate (Q, l/s) and head (H, mVs)
- height of outflow pressure pipe d90mm (H1, mm)
- height of inflow pipe d200 from ground (H2, mm)
- cover selection - cast iron cover 40T for a paved area or plastic cover for a green area



Simultaneous operation of both pumps is prohibited!



TECHNICAL CHARACTERISTICS

The pumping stations are made of PE-HD (high-density polyethylene), an elastic and durable plastic. Nowadays, PE is the main material for pumping stations, tanks, wells and pressure pipes because it can withstand the northern climate exceptionally well. The tank cylinder of SSS pumping stations are always made with a ring stiffness of at least SN4 (4kN/m²), which is resistant to mechanical damage that may occur during installation and operation. This is important to prevent wastewater from leaking into the soil or groundwater penetration into the pumping station.

- Internal diameter of the pumping station: 1600 mm
- Pressure piping: DN80
- Inflow rate: up to 20 m³/h
- Effective volume of wet chamber: 300 L
- Waste water temperature: 3 up to 40 °C
- Ambient temperature: 3 up to 40 °C
- Maximum water level in case of failure, measured from the bottom of the tank: 5 m up to 3 hours
- Maximum permitted pressure in the pressure pipeline of the device: 6 bar
- The pumps are selected according to the waste water flow rate and the desired lifting head

Pumping stations are certified according to the European Union pumping stations standard EN 12050-1 and marked with the CE mark.



Cover: cast iron, 40T,
water tightness 0,5 bar

Cover and service opening: PE,
50 mm of thermal insulation

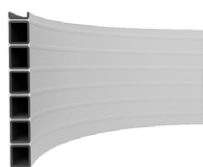
Service opening: PE,
50 mm of thermal insulation



Tank cylinder: PE100, SN4,
EN 13476

Handrail: AISI316,
telescopic, EN 14396

Ladder: AISI316,
non-slippery, EN 14396



Solids separator:
PE100 SDR17

Separator screen: AISI316,
self-cleaning

Anchoring bottom: PE100/
reinforced concrete C35/45 XC2



1. Pressure pipe tee DN80 (AISI316, 120°)
2. Gate valve DN80 (cast iron, epoxide coating)
3. Check valve DN80 (cast iron, epoxide coating, NBR ball)
4. Knife gate valve (cast iron, epoxide coating)
5. Distribution chamber (PE)
6. Retention tank (PE)
7. Maintenance cover of retention tank (PE or PC)
8. Solids separator (PE100, SDR17)
9. Flushing piping (PE100, SDR11)
10. Gate valve DN80 (cast iron, epoxide coating)
11. Sewage pump



- 12. Cast iron cover DN800 40T or PE DN700
(50 mm of thermal insulation)
- 13. Service opening (PE, 50 mm of thermal insulation)
- 14. Handrail (AISI316, two-sided and telescopic)
- 15. Ladder (AISI316, with non-slip steps)
- 16. Tank cylinder ID1600 (PE100, ring stiffness min SN4)
- 17. Ventilation pipe d110mm (PE)
- 18. Anchoring bottom (PE100 / reinforced concrete
C35/45 XC2)

Free flanges (PP / steel)
Bolts, nuts, washers (A4)
Lifting chains (AISI316)
Gaskets (EPDM or NBR)



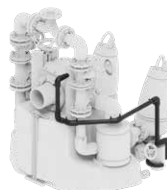
ACCESSORIES:

Flowmeter: cast iron,
inductive

Light of pumping station:
LED, IP65

Drainage pump: with float
switch PE100 SDR11 piping

Base of control cabinet:
PE100, with cable
protection pipes





ADVANTAGES OF SSS PUMPING STATIONS

ENERGY SAVINGS

Thanks to the separation of solid particles, the pumps are protected against clogging and this allows using pumps with a smaller free opening. Such pumps have higher efficiency and use less power.

RELIABILITY

The solids separation system protects the pumps against clogging, thus ensuring their long-term problem-free operation.

INCREASING PUMP HEAD

Pumps with a smaller free opening allow increased pump head. This means that a single pumping station is able to pump waste water further away.

EASY TO MAINTAIN

All important components are in the dry chamber and can be removed, so the pump station can be maintained and repaired while in operation.

SAFE TO MAINTAIN

The pumps and the piping are located in the dry chamber. The dry chamber is separated from the wet chamber with a watertight and airtight barrier; this allows maintenance of the pumping station in a clean and safe environment.



TRANSPORT AND STORAGE

DELIVERY

After the pumping station arrives, it must be checked immediately whether it is undamaged and complete. In case of possible defects, the transport company or the manufacturer must be notified immediately on the day of arrival, otherwise the right to submit compensation claims will be lost. The occurrence of damages must be noted on the shipping or delivery documents.

TRANSPORT

During transport, it is must to use the appropriate fixing, transport and lifting equipment. These must have sufficient load-bearing capacity and load-bearing strength so that the pumping station can be transported safely. Personnel must be qualified for this work and follow all applicable safety regulations during the work.

STORAGE

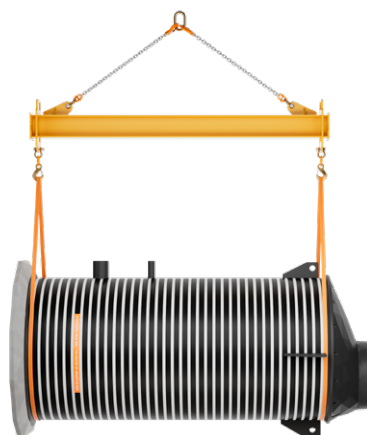
The pumping station must be placed safely on a firm, level surface and secured against tipping and shifting. The pumping station is generally stored horizontally.

The pumping station can be stored completely drained of water at a temperature of up to -15 °C. We recommend storing in a dry, frost-proof room at a temperature of 5 °C to 25 °C.

INSTALLATION

LIFTING OF PUMPING STATIONS

Use lift belts to lift a pumping station. If necessary, use a spreader bar. It is important to make sure that the lift belts do not damage any protruding parts. Do not put steel cables or chains around the pumping station.

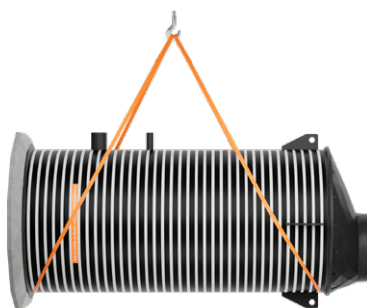


UNLOADING

or horizontal lifting



When lifting the pumping station in a horizontal position, the weight of the concrete anchoring bottom 1.5T and due to the location of the center of gravity must be taken into account.



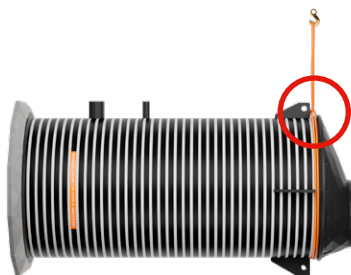
The location of the center of gravity is marked with a sticker:

RASKUSKESE ASUB SIIN / THE CENTER OF GRAVITY IS HERE

LIFTING TO AN UPRIGHT POSITION



Place the ribbon sling knot around the pumping station so tightly that it cannot slip off.



INSTALLATION

LIFTING INTO THE TRENCH

or vertical lifting



Lifting the pumping station into the trench, use all available lifting eyes.

REQUIREMENTS FOR THE FILLING MATERIAL

Sand, gravel, and crushed stone are suitable filler materials. The filler must be clean, freely flowing, and must not contain ice, snow, clay, organic substances, or too large or heavy objects that may damage pumping station when falling onto it. Minimum required bulk density is 1,500 kg/m³.

Gravel

Gravel particle size must not be less than 3 mm or more than 20 mm.

Crushed stone

Crushed stone particle size must not be less than 3 mm or more than 16 mm.

Sand

The particle size must not exceed 3 mm.

Sand/gravel mixtures

Sand and gravel mixtures can be used if the components comply with the above requirements for gravel, crushed stone, and sand. Sand and gravel mixtures must be compacted as instructed below.



INSTALLATION

ANCHORING

Lifting force of groundwater

In order to neutralise the lifting force of groundwater and to ensure that the pumping station remains securely in place, the pumping station must be anchored. The anchoring base plate weight plus the pumping station's weight and the weight of the soil on the base plate edges extending beyond the pumping station's edges must be at least equal to the lifting force. Friction between the pumping station's outer wall and the soil is usually not taken into account (it is left as a reserve). Calculated counterweight depends

on maximum groundwater level (the safest bet is to consider groundwater level up to the ground surface as the maximum level) and the weight of an empty pumping station. Then the lifting force equals.

Concrete anchoring base plate

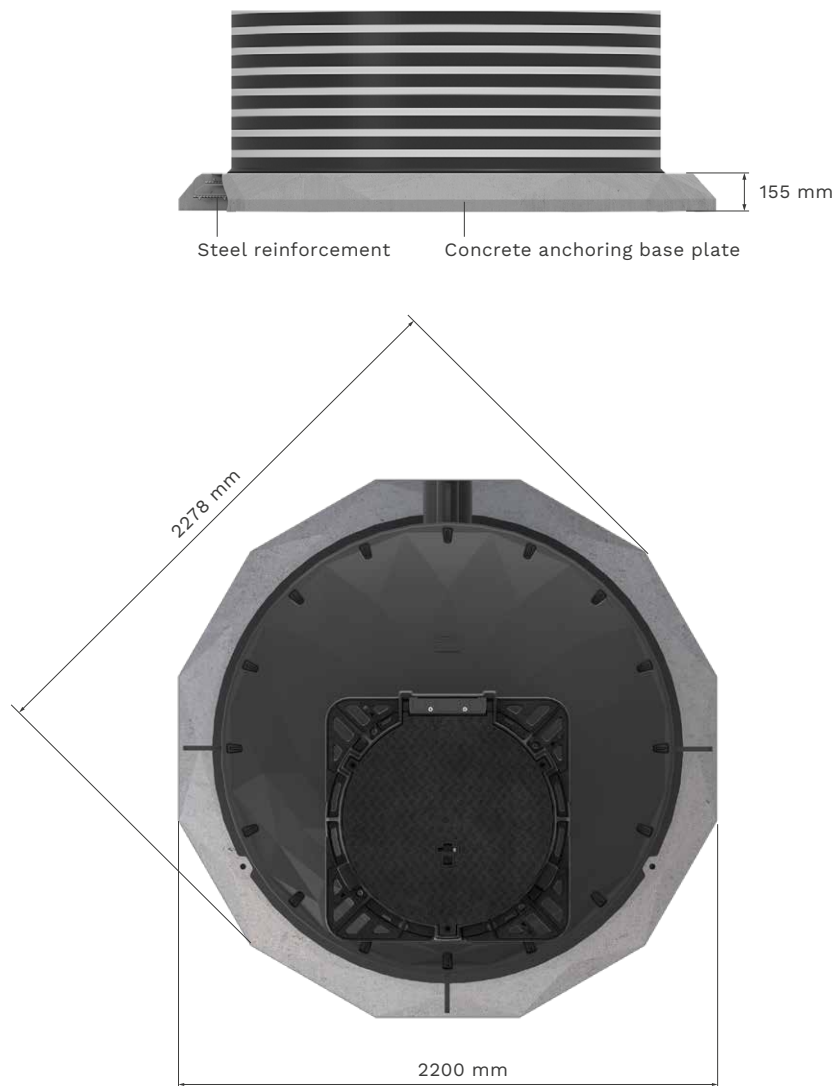
Reinforced concrete anchoring plates have already been added to the STRONG pumping stations ID1400, 1500 and 1600 mm in production. The dimensions and reinforcement of the anchoring plate are designed taking into account that the pumping station, if properly installed, remains firmly in the ground to the maximum possible extent at groundwater level.

The pumping station with anchoring plate is installed at a horizontal thickness of 300 mm from the standard density on mechanically compacted sand foundations to at least 95%. If soil conditions require so, sulphate-resistant concrete must be used. The need to change the environmental class of concrete must be notified and the conditions agreed before ordering the pumping station.

Concrete anchoring base plate data:

Concrete class: C35/45

Environmental class: XC2



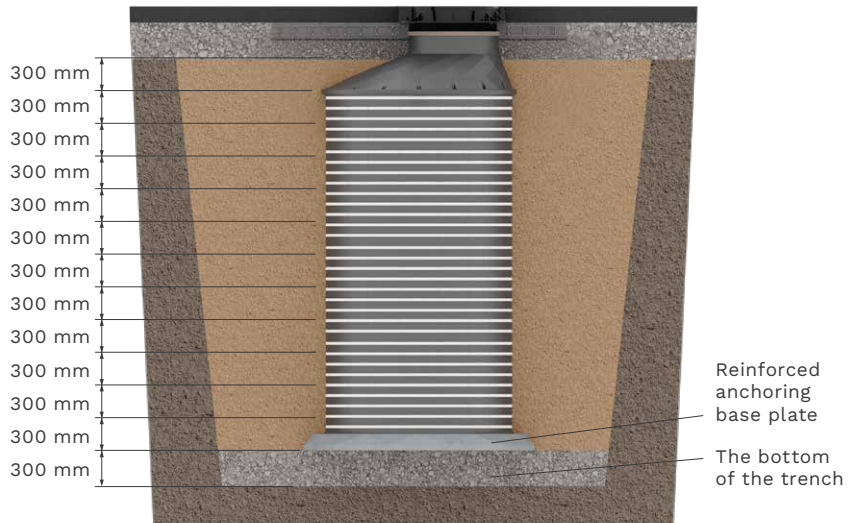
INSTALLATION

BACKFILLING

The pumping station trench is filled on all sides in 300 mm thick layers of gravel, crushed stone or sand, compacting each layer to 95% of the soil's natural density.

In case of high groundwater level or otherwise wet and heavy soil (e.g. clay soil), use only gravel or crushed stone as backfill material. During backfill works, keep the pumping station filled with water to the level of the current backfill layer. Take special care when compacting near the pumping station's pipe connections to avoid any empty spaces remaining there.

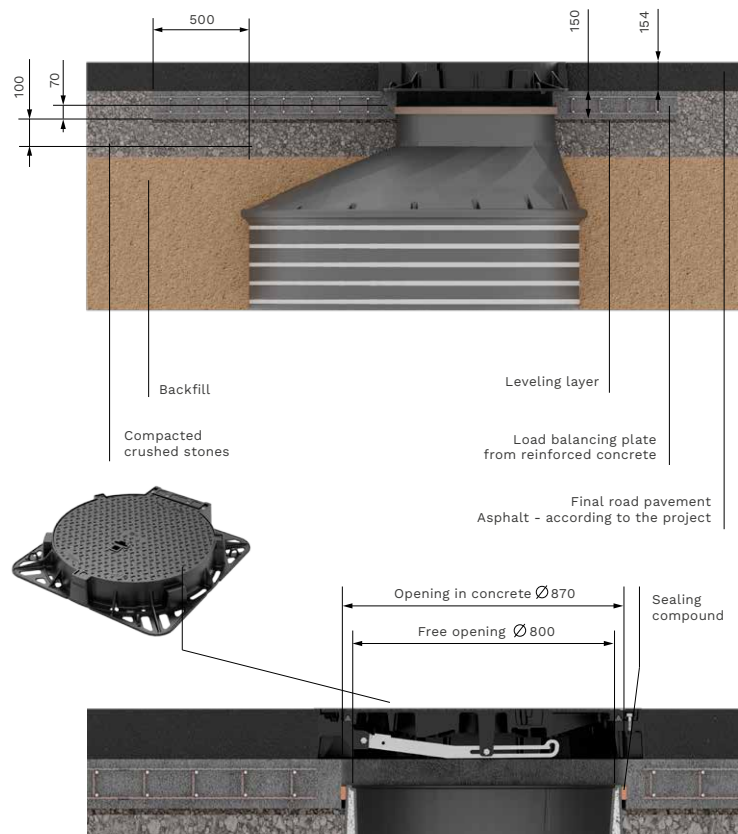
When installing the pumping station to a green area, make sure the cover reaches at least 100 mm above the ground, preferably even 200 mm, in order to prevent stormwater from entering the pumping station.



A pumping station installed without full backfilled topsoil layer may shift due to the impact of groundwater. Therefore, in the event of interruptions in trench filling, it must be ensured that groundwater does not enter the trench!

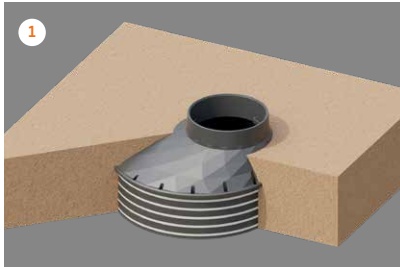
INSTALLATION UNDER TRAFFIC AREA

To avoid traffic load on a pumping station installed under traffic area, the pumping station must be covered by a 150 mm thick reinforced concrete load balancing plate. The plate must extend at least 500 mm beyond the pumping station in all directions. The cover must be selected for the corresponding traffic load class (A15 to F900), the standard selection is D400 (40 T). The cover must rest on a reinforced concrete load balancing plate to avoid the load from being transferred to the pumping station.

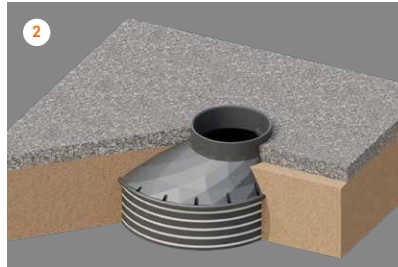


Reinforced concrete load balancing plate shall not remain lie to the service opening of pumping station.

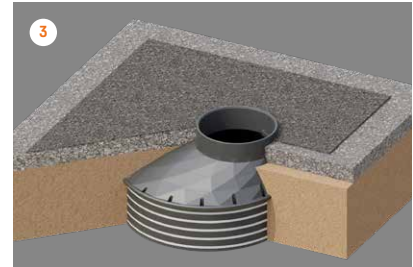
INSTALLATION OF DN800 CAST IRON COVERS IN AREA WITH TRAFFIC LOAD



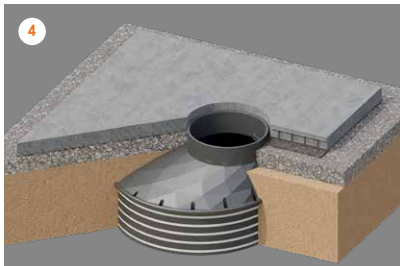
1 Trench compacted with backfill material.



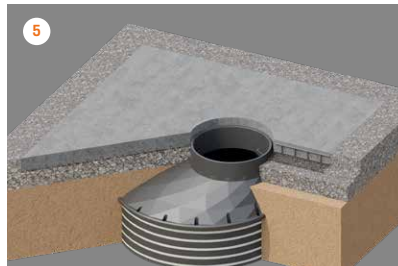
2 Add a layer of compacted crushed stone.



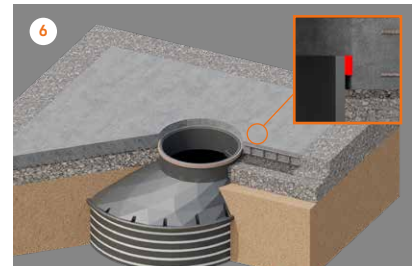
3 Install a leveling layer.



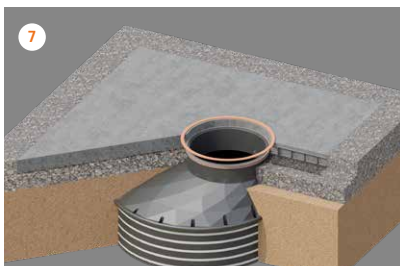
4 Add load balancing plate from reinforced concrete.



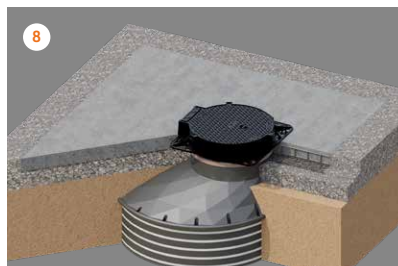
5 Add a layer of crushed stone around the load balancing plate.



6 Install the sealing compound between the reinforced concrete plate and the service opening of the pumping station.



7 Install the sealing compound on top of the reinforced concrete plate (under the cast iron cover).



8 Install the cast iron cover.



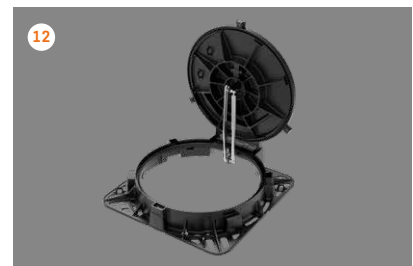
9 During installation, check the opening direction of the cast iron cover in relation to the service ladder.



10 Fasten the cast iron cover at the corners with anchors bolts.



11 Install the final road pavement.



12 Cast iron cover in open position.



SAFETY

This chapter contains basic safety instructions. In addition, specific safety and technical instructions are also provided in other chapters. When handling pumps in all situations (installation, maintenance, transport, etc.), all regulations and instructions must be considered and followed!

It is the operator's responsibility to ensure that employees adhere to these policies and guidelines.

APPLICATION LIMITS

The following application limits must be observed strictly:

- Maximum inflow rate: 20 m³/h
- Maximum water level in the retention tank case of failure, measured from the bottom of the tank: 5 m up to 3 hours
- Maximum permitted pressure in the pressure pipeline of the device: 6 bar
- Maximum fluid temperature: 40 °C
- Maximum ambient temperature: 40 °C

DANGER DUE TO OVERPRESSURE

Exceeding the application limits can result in excessive pressure in the retention tank. As a result, the retention tank may break! There is a health risk due to contact with waste water containing faeces. Always comply with the application limits and ensure that the inlet is blocked if the system malfunctions.

DANGER OF EXPLOSIVE FLUIDS!

It is strictly prohibited to pump explosive fluids (oil, gasoline etc). The pumping station is not designed for these fluids!

The pumping station must not be used to pump the following fluids:

- crushed stone, debris, ash, garbage, glass, sand, plaster, cement, lime, mortar, fibrous materials, textiles, paper towels, napkins, diapers, cardboard, coarse paper, polymers (synthetic resins), tar, kitchen waste, grease, oils;
- slaughterhouse waste, disposal of slaughtered animals and animals waste;
- liquids containing toxic and corrosive substances such as heavy metals, biocides, pesticides and acids;
- a large amount of cleaning agents, disinfectants,
- dishwashing and laundry detergents;
- explosive media;
- drinking water.

SAFETY

GUIDELINES AND SAFETY INSTRUCTIONS

In order for the safety instructions to be clearly understood, explanations regarding property and personal damage are given below.



Danger! Can cause serious injury or death!

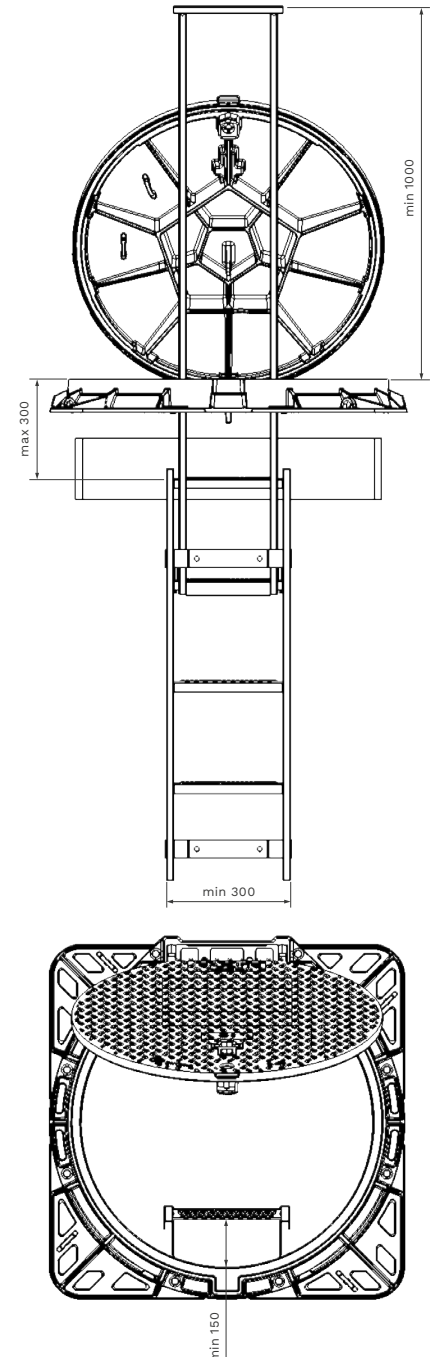


Warning! May cause personal injury and significant property damage.

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE OF THE PUMPING STATION

1. The employer of the pumping station's maintenance personnel must instruct the maintenance employees about electrical hazards and toxic exhaust gases and must provide them with necessary protective equipment.
2. It must be ensured that personnel have read and understood the instructions in this use and maintenance manual.
3. It is categorically forbidden to carry out works related to the pumping station alone, another person must always be present!
4. When servicing the pumping station and the pumps, disconnect the pumps from the power supply via the control cabinet! All rotating parts must be stopped.
5. During maintenance, close the inlet(s) to the pumping station!
6. The power cable of pumps without a plug must be connected by a specialist with the appropriate qualifications. Electrical work may only be carried out by a qualified electrician.
7. CAUTION! Danger of burning! The tank cylinder of pumping station can heat up to 100°C during operation.
8. Before entering the pumping station, the pumping station must be ventilated for at least 5 minutes!
9. Only one person at a time may stand on the pumping stations service ladder and a single person must not carry along any items that are not lightweight and easy to use.
10. Before starting the pumping station, properly qualified personnel must verify that all applicable safety regulations are fulfilled. The ground circuit, the neutral line and the equipotential connections must comply with regulations for electrical installations and must be inspected by qualified personnel.
11. Only the manufacturer's original spare parts may be used for replacement, additions and rebuilds. Unauthorized additions and rebuilds or the use of non-original spare parts may result in serious damage to the pump and/or serious personal injuries.
12. If safety requirements are ignored, no damage claims will be accepted.
13. The pumping station is serviced by people and needs to be entered from time to time, so special attention must be paid to safety. The requirements for ladders and handrails must be strictly observed. These are defined in the European Union standard EN 14396.

Requirements of the Standard EN 14396



OPERATION

SSS pumping stations are double-chamber well-type pumping stations with dry installation pumps. Pumping station is equipped with a solids separation system (SSS).

Pumping stations include wet and dry chambers, pumps, solids separation system, pressure piping and complete control cabinet.

Two dry installation pumps are used in the pumping station, in order to ensure operation of the pumping station also in case of maintenance or failure of one pump. Pumps operate alternately.

The operation of the pumps is controlled by the complete control cabinet, installed in the control board of the pumping station. Level sensor is used for setting water levels in the pumping station, which regulate starting and stopping of pumps.

More information on pump control and monitoring can be found in the control cabinet manual.



Simultaneous operation of both pumps is prohibited!



In order to stop using the pumping station during the winter period, the wet chamber and pressure piping of the pumping station must be drained of water to prevent freezing.



Before starting the pump for the first time, bolted connections of pressure pipes inside of pumping station should be checked and over tightened if necessary.

STARTING THE PUMPS

1. Before starting the pumps, make sure the valves on pressure pipes located in the pumping station and exiting the pump are open.
2. When setting the pumping station's switching levels, make sure that the pump switches off before the water level reaches the pump's suction opening and the pumps run dry.
3. For pumps with a 3-phaser motor, check the rotor's rotation direction before starting the pump! As a rule, the rotation direction is marked on the pump's casing. If

the pump rotates in wrong direction, the order of connecting the phases is wrong.

4. Turn on the pumps via the control cabinet and check that the pumps are in automatic mode.
5. When the pump is put into operation for the first time, a test run must be performed. The test run must include a full pump cycle for both pumps.



Pumps must never run dry. If that happens, stop their automation immediately!

TROUBLESHOOTING AND POSSIBLE SOLUTIONS

In order to prevent damage or serious injury when remedying malfunctions on the pumping station, the following points must always be observed:

- The fault can only be eliminated by qualified personnel and electrical work must be carried out by an electrician.
- The pumping station must be disconnected from the mains and secured against unintentional starting.
- Follow the installation and operating instructions you are using.
- Unauthorized modification of the pumping station is at one's own risk and releases the manufacturer from any warranty claims.

OVERVIEW OF POSSIBLE MALFUNCTIONS

Fault	Identifier for cause and remedy
Pumping station does not pump	1, 3, 4, 5, 6, 7, 9
Flow rate too low	1, 2, 3, 4, 6, 7, 9
Current consumption too high	1, 2, 3, 4, 6
Lifting head too small	1, 2, 3, 4, 6, 7, 9
The pumping station runs roughly / loud noise	1, 2, 3, 8

OVERVIEW OF POSSIBLE CAUSES AND THEIR REMEDIES

Identifier cause numbers:

1. Piping or impeller is clogged. Remove deposits from distribution chamber, retention tank, solids separator and/or pump.
2. Incorrect direction of pump impeller rotation. Exchange 2 phases of the current feed.
3. Wear of inner parts of pump (e.g. impeller, bearing etc), Replace worn parts.
4. Operating voltage too low or running on two phases. Fuses, mains and electrical connections must be checked.
5. The pump motor does not start because there is no voltage. Check fuses and electrical connections.
6. The pump motor winding or electrical cable is defective. Take the pump to an authorized service provider.
7. The non-return valve is clogged. Clean the non-return valve.
8. Water level dropped too low in the retention tank or failure of the level sensor. Check the level control device and replace if necessary.
9. The gate valve in the pressure pipe is closed or is opened too little. Fully open the gate valve.



MAINTENANCE

Maintenance of pumping stations outside the building must be based on maintenance schedules and tasks according to standard EN 12056-4.

- **pumping stations used for industrial and public buildings - every three months**
- **pumping stations for residential quarter - every six months**
- **pumping stations for single-family house - once a year**

GENERAL MAINTENANCE

1. Visual inspection of the tank cylinder and constructions of pumping station.
2. Visual inspection of watertightness of connections.
3. Inspect the functioning of the valves inside the pumping station. Close and open the valves once.
4. Visually check the condition of the power cables of pumps, the equalization of the potentials of the metal parts (ladder, etc) of the pumping station.
5. Check the ventilation pipes. Remove possible obstacles.
6. Repair or replace faulty elements.

MAINTENANCE OF THE DISTRIBUTION CHAMBER

7. Check and, if necessary, clean the inflow distribution chamber and the overflow filter. If overflow operates regularly, it may require monthly cleaning.

MAINTENANCE OF THE SOLIDS SEPARATOR

8. Inspect and clean solids separators, their screens and float balls.

MAINTENANCE OF CHECK VALVES

9. Check and, if necessary, clean the check valves from the accumulated debris.

MAINTENANCE OF THE RETENTION TANK

10. Check and, if necessary, clean the walls and bottom of the retention tank from sediment.

MAINTENANCE OF LEVEL SENSORS

11. Check the position and, if necessary, clean the level sensors from sediment.

MAINTENANCE OF PUMPS

12. Servicing the pumps, refer to the factory manual supplied with the pumps. If the pumps work below their stated productivity or emit sounds that were not heard when the pumps were new, we recommend taking steps to eliminate the faults in order to prevent the pumps from possibly becoming unusable in the future. Contact a company providing pump maintenance services. As a rule, the pump body and constructions do not need more maintenance.

SPARE PARTS

Only original spare parts from the manufacturer may be used for replacement. Unauthorized additions and conversions or the use of non-original spare parts may result in serious damage to the pump and/or serious personal injuries.



MAINTENANCE

7. MAINTENANCE OF THE DISTRIBUTION CHAMBER

- 7.1** • Visual inspection of the distribution chamber through the cover



- 7.2** • Remove the cover fixing bolts



- 7.3** • Remove the distribution chamber cover
• Check the cover gasket
• If necessary, clean the gasket



- 7.4** • Clean the overflow filter
• Clean the inlet and outlet openings of the distribution chamber



- 7.5** • Put the distribution chamber cover back in its original position
• When installing the cover, make sure that the gasket is correctly positioned
• Tighten the cover bolts with a torque of **8 Nm**





MAINTENANCE

8. MAINTENANCE OF SOLIDS SEPARATORS (2 PCS)

- 8.1** • Visual inspection of the watertightness of both solids separators



- 8.2** • Remove the quick-connection coupler clamp bolts
• Remove the quick-connection coupling clamp
• Visual inspection of the quick-connection coupling clamp
• Remove the flange adaptor bolts



- 8.3** • Remove the circuit between the solids separator and the pump
• Remove the gasket of the quick-connection coupling
• Check the gasket visually
• If necessary, clean or replace the gaskets



- 8.4** • Remove the screen of solids separator
• Check the screen visually and clean if necessary



- 8.5** • Clean the bottom of the solids separator tank





MAINTENANCE

8. MAINTENANCE OF SOLIDS SEPARATORS (2 PCS)

- 8.6**
- Clean the float ball
 - Visually inspect the float ball



- 8.7**
- Reinstall the screen, the quick-connect coupling gasket, the circuit between the pump and the solids separator, the flange fixing bolts and the quick-connect coupling clamp..
 - The flange bolts must be tightened with torque of **65 Nm**



9. MAINTENANCE OF PRESSURE PIPE CHECK VALVES (2 PCS)

- 9.1**
- Visual inspection of the check valve
 - Open the check valve cover fixing bolts



- 9.2**
- Clean the inside of the check valve and the rubber ball



- 9.3**
- Close the check valve cover
 - Fasten the bolts





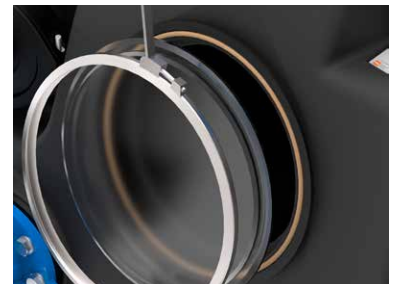
MAINTENANCE

10. MAINTENANCE OF THE RETENTION TANK

- 10.1** • Visual inspection of the retention tank maintenance cover



- 10.2** • Remove the quick-connection clamp of the maintenance cover
• Remove the maintenance cover
• Visually check the gasket of the maintenance cover
• Clean the gasket if necessary



- 10.3** • If necessary, empty the retention tank by opening the drain plug



- 10.4** • Visual inspection of the inside of the retention tank
• Clean the inner surfaces of the retention tank
• When cleaning with pressurized water, the level sensors located in the retention tank must not be damaged. Do not point the water jet directly to the level sensor



- 10.5** • Reinstall the retention tank maintenance cover
• When installing the cover, make sure that the gasket is correctly in the slot
• Close the drain plug of the retention tank
• Maximum tightening torque **15 Nm**





MAINTENANCE

11. MAINTENANCE OF LEVEL SENSORS (USUALLY 2 PCS)

- 11.1**
- Remove the quick-connection clamp of the maintenance cover from the retention tank
 - Remove the maintenance cover
 - Visually check the gasket of maintenance cover
 - Clean the gasket if necessary



- 11.2**
- Clean the level sensor
 - If necessary, replace the level sensor
 - After cleaning the level sensor, make sure that the sensor is located at the specified height
 - Reinstall the retention tank maintenance cover
 - When installing the hatch, make sure that the gasket is correctly in the slot



12. DISASSEMBLY OF THE PUMP

- 12.1**
- Visual inspection of the pump



- 12.2**
- Remove the bolts from the flange
 - Remove the mounting bolts of the pump auto-coupling



- 12.3**
- Remove the pump
 - Pump maintenance should be carried out according to the pump manufacturer's instructions
 - Check the gaskets on the pump flange
 - Clean the inlet and outlet pipes of the pump
 - Reinstall the pump after maintenance
 - The flange bolts are to be tightened with torque **65 Nm**



Servicing the pumps, refer to the factory manual supplied with the pumps. If the pumps work below their stated productivity or emit sounds that were not heard when the pumps were new, we recommend taking steps to eliminate the faults in order to prevent the pumps from possibly becoming unusable in the future. Contact a company providing pump maintenance services. As a rule, the pump body and constructions do not need more maintenance.



WARRANTY

Innovative Water Systems undertakes the responsibility for the equipment's properties and for elimination of shortcomings becoming apparent during the equipment's use. The warranty terms stem from the legislation of the Republic of Estonia, and the warranty is first and foremost based on the manufacturers' warranties as long as they do not conflict with the laws of the Republic of Estonia. The warranty includes shortcomings of the equipment's or its individual elements' manufacture, materials or design.

1. General terms of warranty

- 1.1. The warranty is valid for 2 years i.e. 24 months in case of the product's purposeful use.
- 1.2. The warranty period starts from the product's handover date.

2. Warranty's validity terms

- 2.1. The prerequisite is the regulations in force and the installation and operation manuals required to be followed upon installation, use and maintenance of the equipment. The warranty will be valid if the equipment has been maintained regularly and used according to the manufacturer's instructions.
- 2.2. If the fault's identification requires that the equipment be dug out, this must be done in the presence of the manufacturer's representative.
- 2.3 The warranty does not include damage caused to third parties because of a faulty product; it also does not include loss of revenue or any other similar loss.
- 2.4. In case of a fault becoming apparent, the equipment shall be repaired, not replaced as a whole.

3. The warranty does not include

- 3.1. training for installation, maintenance and use of the equipment;
- 3.2. repairs of transport damage and other mechanical damage (caused by vandalism, lightning, fire, etc.).

The warranty does not cover shortcomings caused by insufficient maintenance, incorrect installation and repairs, or normal wear. The warranty is also void if the equipment has been reconstructed.



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