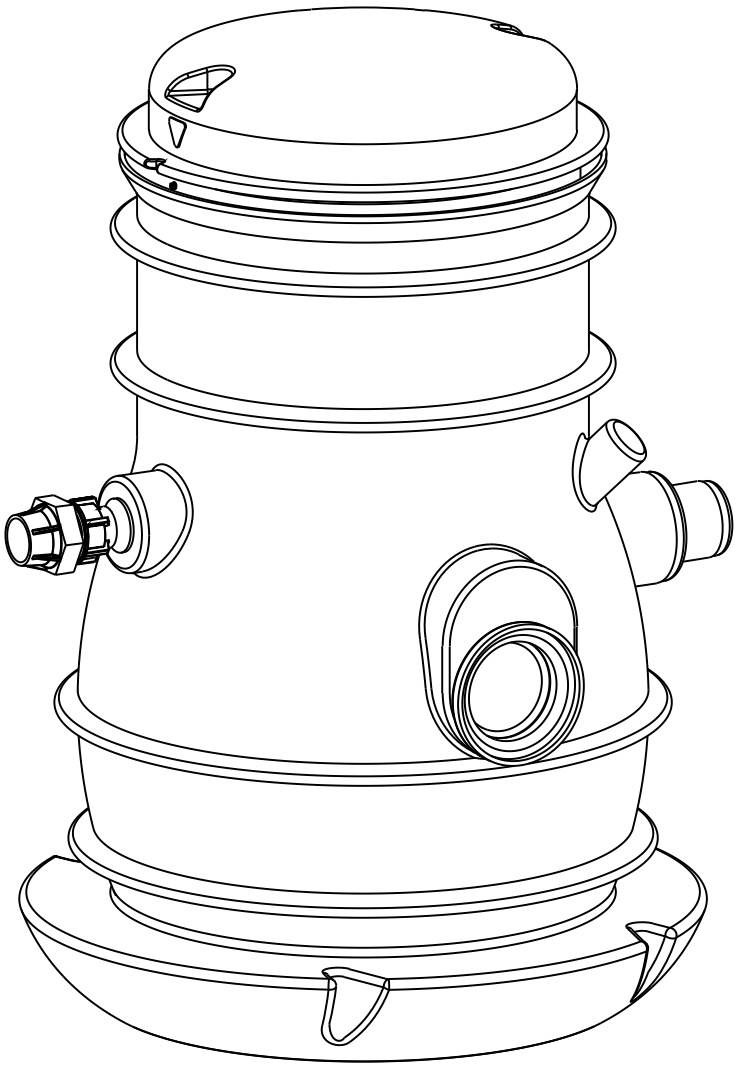
SULZER

Lifting Station Type ABS Synconta 801



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Installation and Operating Instructions

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Installation and Operating Instructions (Original Instructions)

Lifting Station Type ABS Synconta 801

Contents

1 General

1.1 Application areas

Synthetic, prefabricated, corrosion-resistant sump for Sulzer submersible pumps designed as a single pumping station for automatic pumping of wastewater and sewage in accordance with EN 12056 from locations and areas below the backwash level.

These lifting stations may not be used for the collection or pumping of flammable or corrosive liquids. Effluent containing grease, petrol, or oil should only be brought to the lifting station via a separation device.

1.2 Layout of the Synconta tank and installation example as single pumping station in accordance with EN 12056 for drainage of buildings and sites.

ATTENTION ***The regulations of DIN 1986/100 EN 12050 and 12056 should be observed!***

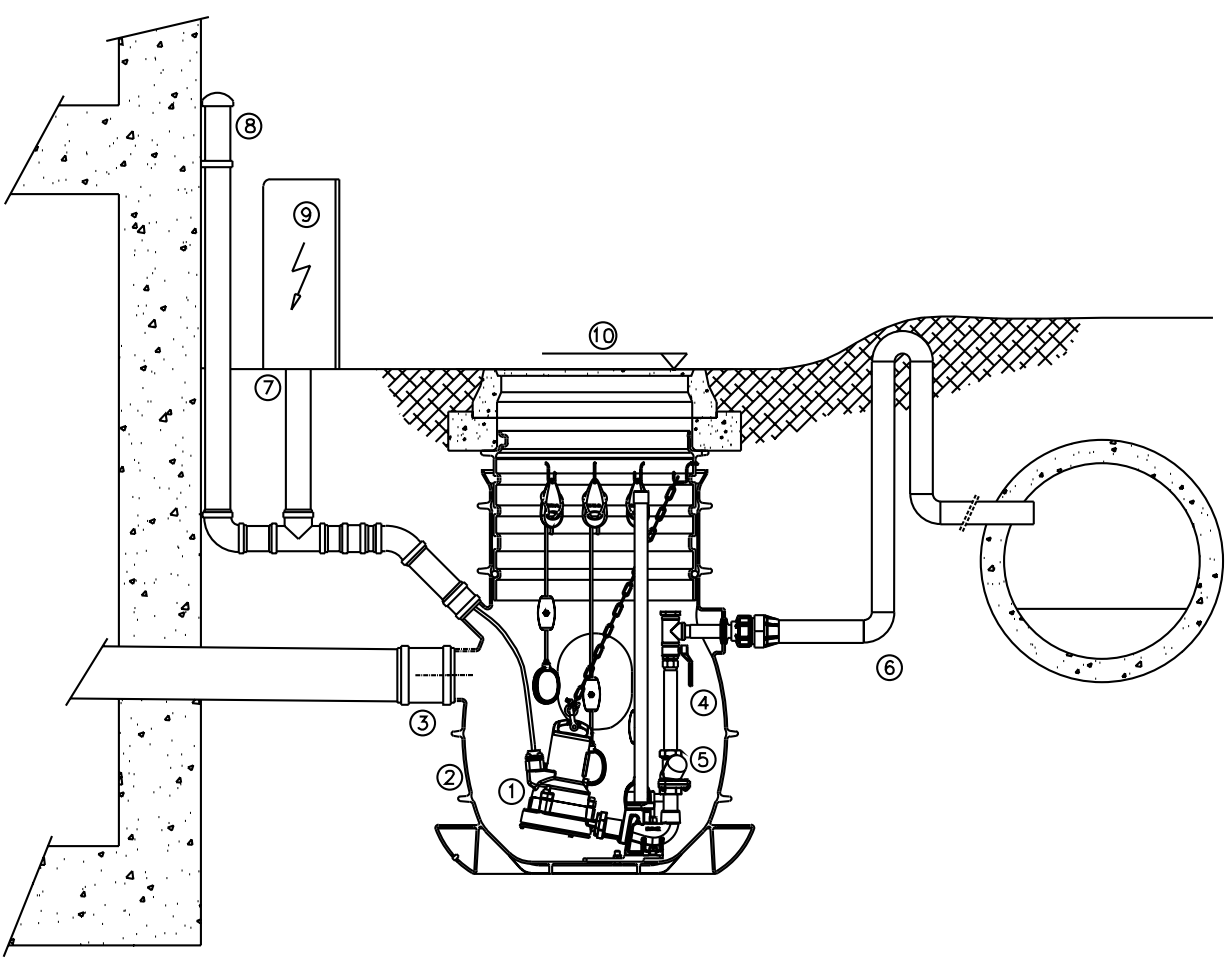


Figure 1: Installation example Synconta 801. Version with manhole cover suitable for light vehicular traffic.

Legend

1	Sulzer submersible pump	6	Discharge line
2	Synthetic collection tank	7	Cable duct
3	Three DN 150 inlet ports, one DN 100 inlet port	8	Vent/cable pipe DN 100, lead to above roof level
4	Ball shut-off valve	9	Control unit
5	Ball checkvalve	10	Backwash level

1.3 Commentary on the legal DIN EN regulations covering the use of lifting stations for the pumping of effluent containing faecal matter.

Automatically operated lifting stations are prescribed if:

- the water level in the odour lock of the effluent source lies below the sewer backwash level.
- rainwater gullies are present where the upper edge of the inlet grid lies below the sewer backwash level.

The sewer backwash level is the maximum possible water level in the public sewer network. Information on this can be obtained from your local authority. If the backwash level has not been fixed by the local authority, then the surface level of the roadway at the connection point is taken to be the level.

The regulations also require that all wastewater which can cause offensive odours must be collected in closed, odour-tight, and free-standing collection tanks.

The collection tanks must be vented by vent pipes which are brought above roof level.

1.4 Description

The fully equipped prefabricated synthetic Synconta tank can be used where a medium amount or steady flow of waste water is present.

The Synconta is intended for wastewater disposal in buildings, which are built below the back-flow and cannot depend on the natural gradient to allow the wastewater to flow directly into the sewage system.

The tank is installed outside the building on open ground and is an effective, quick and economical solution to the sewage problems of the contractor and architect. Suitable for vehicular traffic if used with appropriate lid.

ATTENTION As with all electrical devices, this product may fail due to operating errors, absence of mains voltage, or even a technical defect. Such a failure may result in medium or water escaping. If damage may occur due to the specific usage, measures are required to avoid such damage arising. In this respect, taking account of the conditions in question, particularly use of an off-grid alarm system, use of an emergency generator, and provision of an additional and appropriately connected second unit are to be considered.

2 Safety

The general and specific Health and Safety conditions are described in detail in the “Safety Instructions for Sulzer Products Type ABS” booklet. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer Sulzer.

This unit can be used by children aged 8 years and above, and persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, when they have been given supervision or instruction concerning the safe use of the device and understand the hazards involved. Children must not play with the appliance. Cleaning and user maintenance should not be performed by children without supervision.

3 Lifting and transport

During transport the unit should not be dropped or thrown.

ATTENTION! ***Observe the total weight of the Sulzer units and their attached components! (see nameplate for weight of base unit).***

ATTENTION ***Lifting equipment must be used if the total unit weight and attached accessories exceeds local manual lifting safety regulations.***

The total weight of the unit and accessories must be observed when specifying the safe working load of any lifting equipment! The lifting equipment, e.g. crane and chains, must have adequate lifting capacity. The hoist must be adequately dimensioned for the total weight of the Sulzer units (including lifting chains or steel ropes, and all accessories which may be attached). The end user assumes sole responsibility that lifting equipment is certified, in good condition, and inspected regularly by a competent person at intervals in accordance with local regulations. Worn or damaged lifting equipment must not be used and must be properly disposed of. Lifting equipment must also comply with the local safety rules and regulations..

NOTE! ***The guidelines for the safe use of steel chains, ropes and shackles supplied by Sulzer are outlined in the Lifting Equipment manual provided with the items and must be fully adhered to.***

4 Set-up and installation

4.1 Installation of the collection tank

The inlet lines must be laid in such a manner that there is a continuous fall of the prescribed magnitude to the inlet ports of the collection tank.

ATTENTION ***The regulations for underground engineering work should be observed.***

The pit must be approximately 30 cm deeper than the unit and care taken that no soil can slide back in.

The pit is to be filled with sand (grain size up to 2 mm) up to the point where the unit is installed.

ATTENTION ***The unit is secured against floating up, to a water table of 0,5 m above the tank floor. If the water table is higher, additional protection against floating up is necessary. This can be achieved by setting the bottom area of the tank in concrete (see Fig. 2).***

Lower the unit into the pit and align on the prepared foundation.

NOTE ***The foundation must be free of stone or other large objects. Additional filling may be required.***

Fill the pit with sand to the upper edge of the tank bottom. Put on tank cover, connect inlet ports and discharge lines.

4.2 Opening of the collection tank inlet ports

Only open the inlet ports that are to be used. Only saw off as little as possible so that as much neck as possible is left for the plug connection (note the notch on the port neck).
File down sharp edges inside and outside.

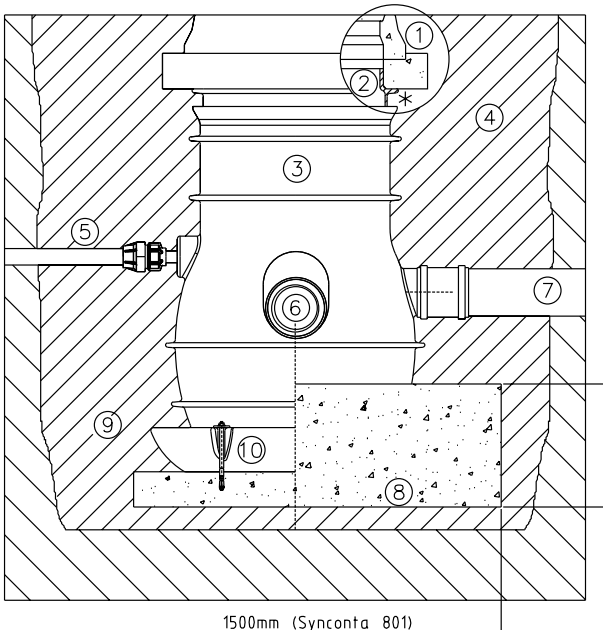
4.3 Filling in of the pit

ATTENTION ***The filling material should be filling sand or sand from a gravel pit. Maximum particle size is 32 mm. Marly soil, rubble, stones or sharp particles should not be used. Care should be taken that the pit is filled in evenly from all sides in order to avoid pushing in the side of the tank.***

The material should be filled in layers of maximum 30 cm. The individual layers should be evenly compacted using a hand rammer. Do not use a mechanical compactor. If the surrounding area is a marl soil or the water table is high the unit should be secured in position with sand or concrete in order to stop it from floating up. The concrete should only be used for securing the base section of the tank. Any device for lowering the water table should only be switched off after the pit has been filled and compacted.

ATTENTION ***Do not use more than one extension. The maximum allowable depth is 2200 mm. Do not compress the filling sand with a vibrator plate.***

ATTENTION ***A minimum gap of 100* mm must be maintained between the extension sleeve and the top of the tank. This is required to prevent surface loading through the tank.***



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Legend

1	Tank cover with support ring
2	Extension sleeve*
3	Tank
4	Pit
5	Discharge line
6	Inlet port
7	Inflow line
8	Floatation protection
9	Filling sand
10	Anchor bolts
11	Discharge cap

Figure 2: Synconta tank installation

4.4 Discharge line

The discharge line must be installed in compliance with the relevant regulations.
DIN 1986/100 and EN 12056 applies in particular to the following:

- The discharge line should be fitted with a backwash loop (180° bend) located above the backwash level and should then flow by gravity into the collection line or sewer.
- The discharge line should not be connected to a down pipe.
- No other inflows or discharge lines should be connected to this discharge line.
- Where provided the discharge cap must be fitted between the coupling and the tank.

ATTENTION ***The discharge line should be installed so that it is not affected by frost.***

The vent line is connected by means of a push-on sleeve to the vertical outlet at the top of the collection tank. It should be of constant cross-section (min. DN 70) and should have a continuous rise to above roof level.

4.5 Installation of the control unit

ATTENTION ***The control unit should be fitted above possible flood level in a well ventilated room and in an easily accessible position. Protection Class of the control unit is IP 54.***

The control unit should be secured at all fixing points. The fixing holes are accessible after unscrewing the lower housing cover.

ATTENTION ***Do not drill through the housing of the control unit itself.***

NOTE ***The mounting location of the control unit should be chosen in such a manner that the control line rises in a continuous manner to the control unit. The control line must not be kinked.***

NOTE ***A number of different control box models exist. Please check the wiring diagram/ instruction manual in the control box.***

5 Commissioning

The safety hints in the previous sections must be observed!

Before commissioning, the unit should be checked and a functional test carried out. Particular attention should be paid to the following:

- Have the electrical connections been carried out in accordance with regulations?
- Have the thermal sensors been connected?
- Is the seal monitoring device (where fitted) correctly installed?
- Is the motor overload switch correctly set?
- Have the power and control circuit cables been correctly fitted?
- Was the sump cleaned out?
- Have the inflow and outflows of the pump station been cleaned and checked?
- Is the direction of rotation correct, even if run via an emergency generator?
- Are the level controls functioning correctly?
- Are the required gate valves (where fitted) open?
- Do the non-return valves (where fitted) function easily?
- Have the hydraulics been vented in the case of dry-installed pumps?

ATTENTION ***Before commissioning, the collection tank should be cleaned of any large particles and filled with water. If the control line (rubber hose) was connected to the retaining pipe after the collection tank was fitted the collection tank has to be emptied manually once by setting the selector switch to “Hand”. After commissioning, the lifting unit is normally operated with the selector switch in position “Auto”.***

6 Maintenance and service

To avoid danger if the power cable is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person.

Servicing must only be carried out by qualified personnel.

Before commencing any maintenance work the unit should be completely disconnected from the mains by a qualified person and care should be taken that it cannot be inadvertently switched back on.

When carrying out any repair or maintenance work, the safety regulations covering work in enclosed areas of sewage installations as well as good general technical pratices should be followed.

NOTE ***The maintenance hints given here are not designed for "do-it-yourself" repairs as special technical knowledge is required.***

NOTE ***A maintenance contract with our Service Department will guarantee you the best technical service under all circumstances.***

6.1 Maintenance of lifting stations in accordance with EN 12056

It is recommended that the lifting station be inspected monthly and its function checked.

In accordance with EN regulations, the lifting station should be maintained by a qualified person at the following intervals:

- in commercial premises every three months.
- in apartment blocks every six months.
- in a single family home once a year.

In addition we recommend that a maintenance contract be taken out with a qualified company.

6.2 General maintenance hints

Sulzer submersible pumps are reliable quality products, each being subjected to careful final inspection. Lubricated-for-life ball bearings, together with monitoring devices, ensure optimum pump reliability provided that the pump has been connected and operated in accordance with the operating instructions.

Should nevertheless a malfunction occur, do not improvise but ask your Sulzer Customer Service Department for assistance.

This applies particularly if the unit is continually switched off by the current overload in the control panel, by the thermal sensors of the thermo-control system, or by the seal monitoring system (DI).

Regular inspection and care is recommended to ensure a long service life.

NOTE ***The Sulzer Service Organisation would be pleased to advise you on any applications you may have and to assist you in solving your pumping problems.***

NOTE ***The Sulzer warranty conditions are only valid provided that any repair work has been carried out in a Sulzer approved workshop and where original Sulzer spare parts have been used.***

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