ABS lifting station Synconta

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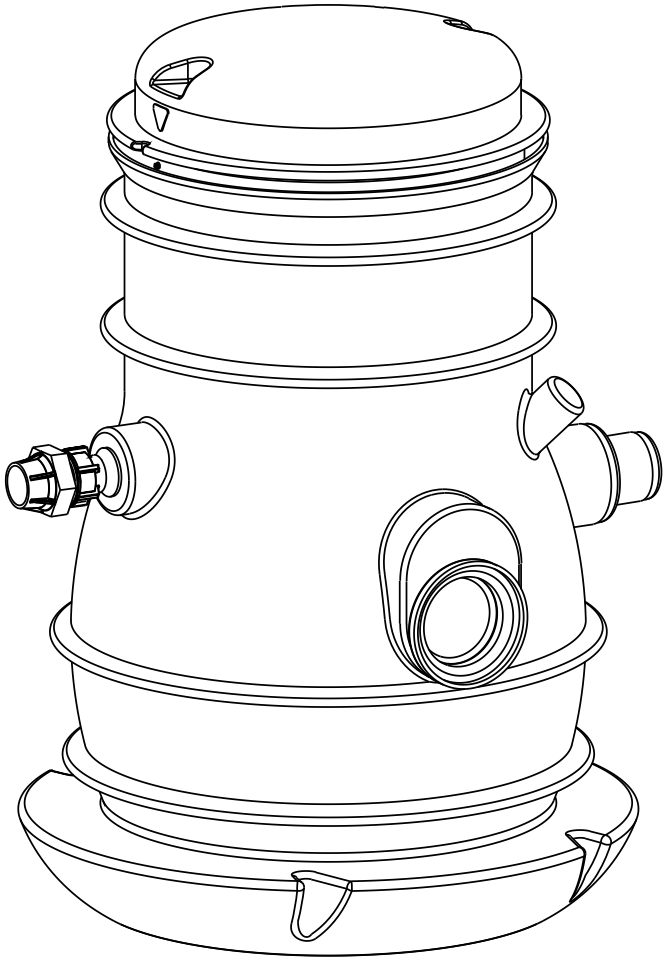

GB

Installation and Operating Instructions

www.absgroup.com

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ABS lifting station Synconta

601	801	901 902	901L 902L

Contents

1 General

1.1 Application areas

Synthetic-prefabricated, corrosion resistant sump for ABS submersible pumps designed as single pumping station for automatic pumping of wastewater and sewage in accordance with DIN/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.

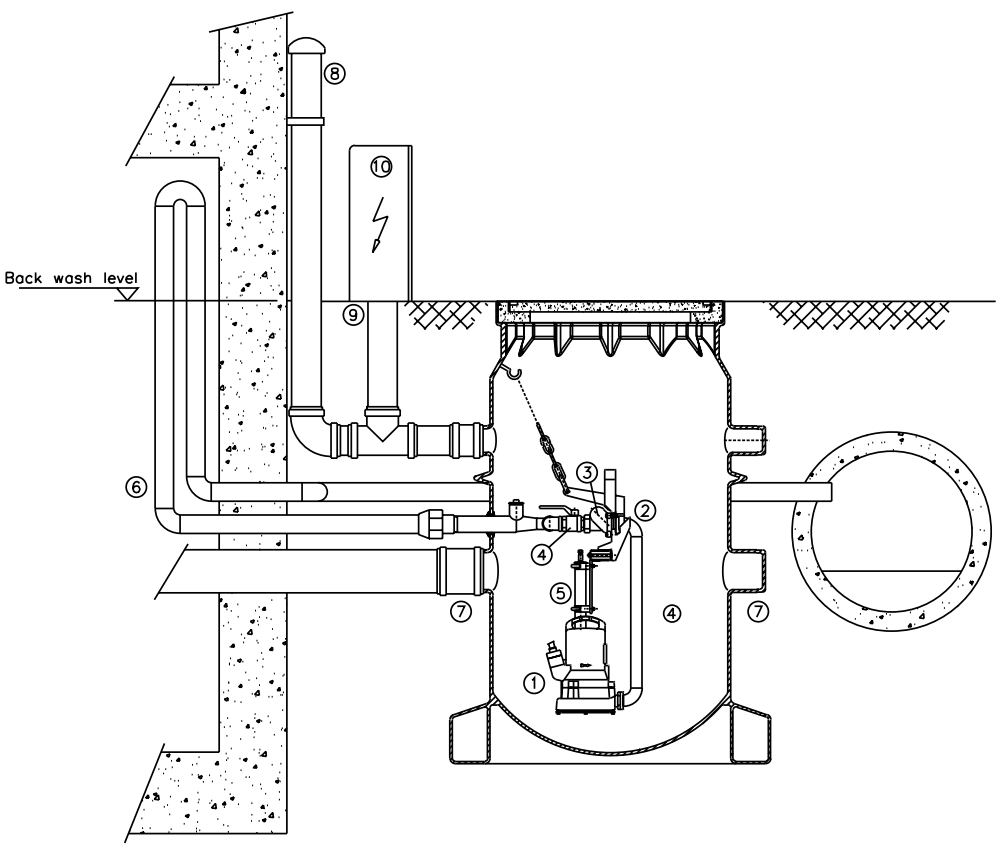

Figure 1 Installation example

Legend

1 ABS submersible pump
2 ABS coupling above water level, self sealing
3 Ball check valve
4 Ball shut-off valve
5 Measuring device (submerged tube) for pneumatic level control
6 Pressure line
7 Four inlet pipes DN 150
8 Vent/cable pipe DN 100, lead to above roof level
9 Cable duct
10 ABS control unit, can be chosen with cabinet

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

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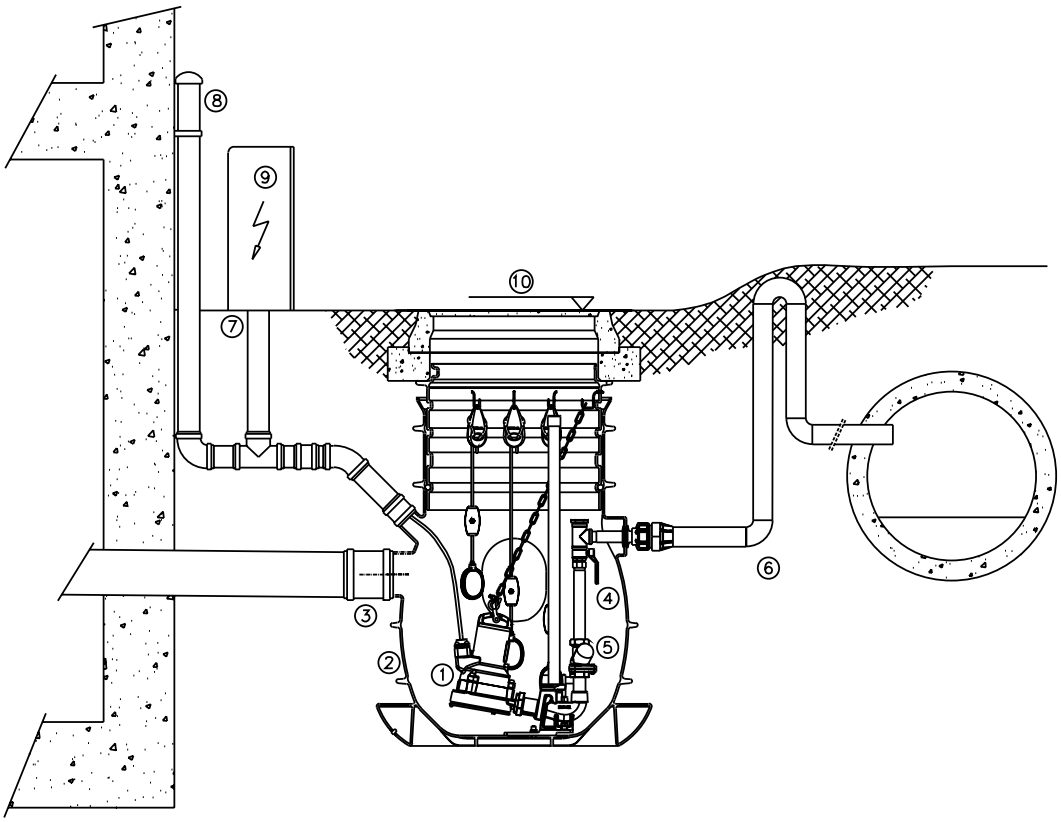

Figure 2 Installation example shows version with manhole cover suitable for light vehicular traffic.

Legend

1 ABS 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 check valve	10 Backwash level

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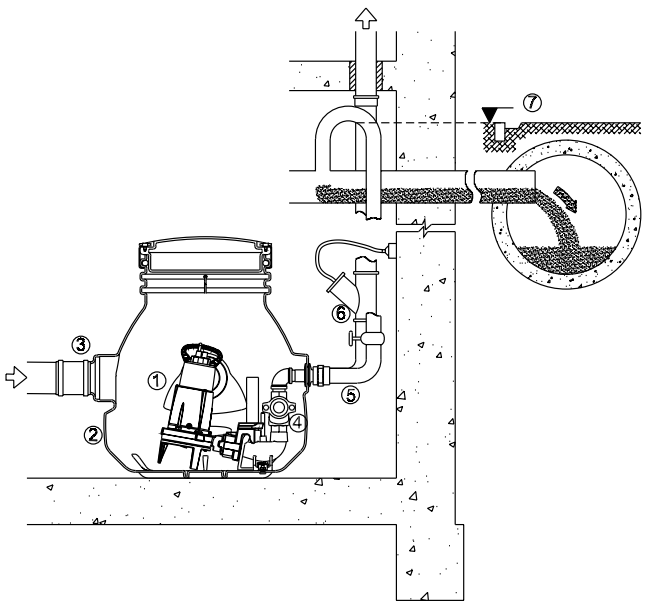
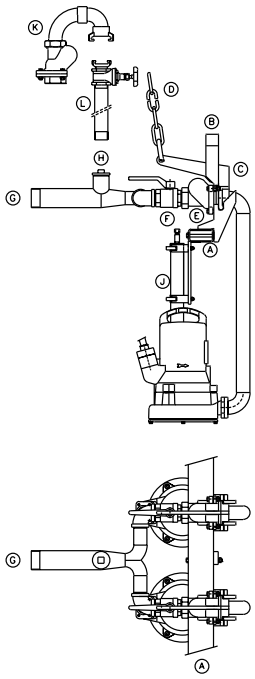


Legend

1 ABS Submersible pump
2 Synthetic collection tank
3 Two DN150/DN100 inlet ports
4 Ball shut off valve
5 Discharge line
6 Vent/Cable pipe DN70
7 Backwash level

Figure 3 Installation of Synconta 601 above ground version

1.3 ABS high level coupling with discharge pipe pump suspension. (Synconta 901-902 only)



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Legend

The ABS high level coupling ensures a quick and easy installation. The special connection unit with coupling piece is installed and secured in the sump together with the valves before the sump itself is installed. The complete pump unit is lowered with a chain by hand down the guide tube. The unit automatically aligns and locates itself in the correct position, effecting a seal on the ABS high level discharge coupling, without the need to enter the sump. This automatic coupling process is especially useful where checking or inspection work is needed. The pump unit can be lifted out and lowered down even if the sump is flooded

- A Bracket fixed installation
- B Guide tube
- C Bracket with guide claws
- D Chain to withdraw and lower pump for inspection
- E Ball-type non-return valve
- F Shut-off valve
- G Discharge line connection G 2”
- H Flushing connection
- J Pneumatic level control

Figure 4 ABS high level coupling with discharge pipe pump suspension

1.4 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 waste-water 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.

1.5 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 waste water disposal in buildings, which are built below the back-flow and cannot depend on the natural gradient to allow the waste water 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.

The Synconta 901 is suitable for installations according to DIN EN 124 Group 1 permissible traffic tonnage 5 kN/m2. Maximum permissible outside pressure 0.4 bar.

2 Safety

The general and specific health and safety hints are described in detail in the separate booklet Safety Hints. If anything is not clear or you have any questions as to safety make certain to contact the manufacturer ABS.

3 Transport

During transport the unit should not be dropped or thrown.

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, 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 achieved by setting the bottom area of the tank in concrete. (see Fig. 5)***

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 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 edge inside and outside.

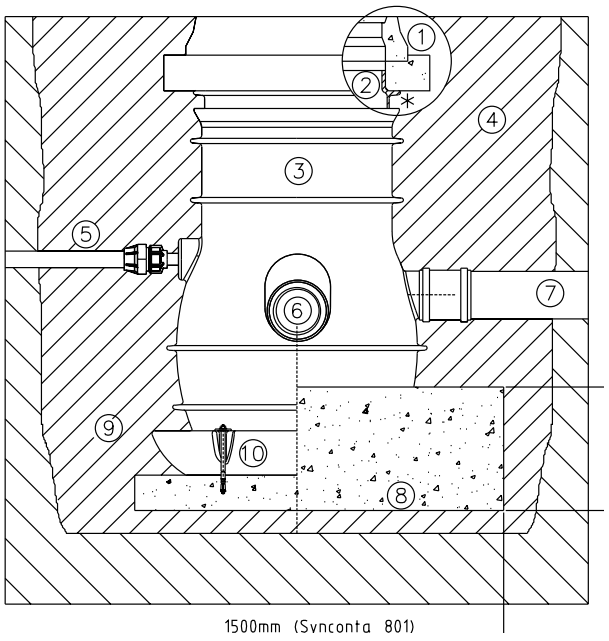
4.3 Filling in of the pit

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 side 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 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. (Synconta 801 only)***



Legend

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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 (Synconta 801 only)
11	Discharge cap

Figure 5 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 Level control (Synconta 901 and 902 only)

The level control is a pneumatic device with a submerged tube for measuring and control line. (Plastic tube to control panel).
The measuring vessel is built into the Synconta tank, the required switch and control units are mounted outside in the control unit.

ATTENTION ***When apply a static level control (without compressor or aeration) the height of the submerged tube for measuring should be adjusted, so that it is 20 cm above the middle of the volute of the pump. The run on time, set at 30 seconds when delivered, is to be set so that the submerge tube measuring is empty when the pump is switched off.***

4.6 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 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 gates 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 "Hand". After commissioning the lifting unit is normally operated with the selector switch in position "Auto".***

6 Maintenance

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 works service department will guarantee you the best technical service under all circumstances.***

6.1 Commentary on 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

ABS 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.

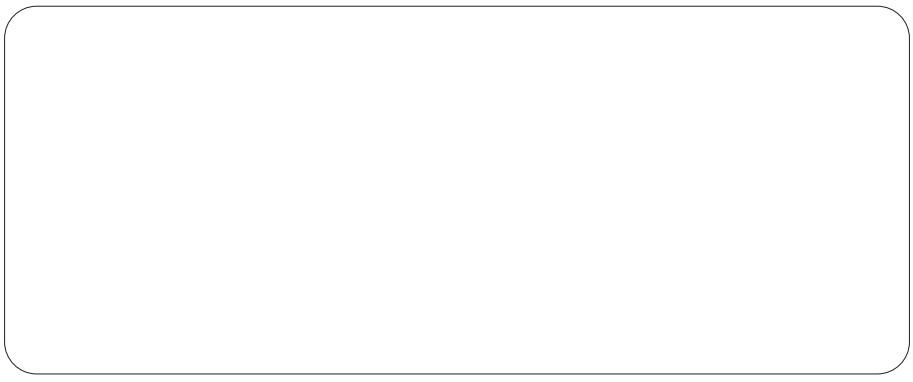
Should, nevertheless, a malfunction occur, do not improvise but ask your ABS customer service department for assistance.

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



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