



SBR_{mad} PRESTIGE

OPERATION MANUAL

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**Conformity with
PN-EN-12566-3-A2:2013**

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1. TECHNICAL INFORMATIONS

SBRmad PRESTIGE complies with PN-EN 12566-3 A20:2013

1.1 PURPOSE AND EQUIPMENT

The Delfin SBRmad Prestige wastewater treatment plant is designed to treat domestic sewage within the range of raw sewage defined in this manual. Minimum amount of waste water and pollutant load at which it is possible to start the treatment process in this plant is respectively from a minimum flow rate :

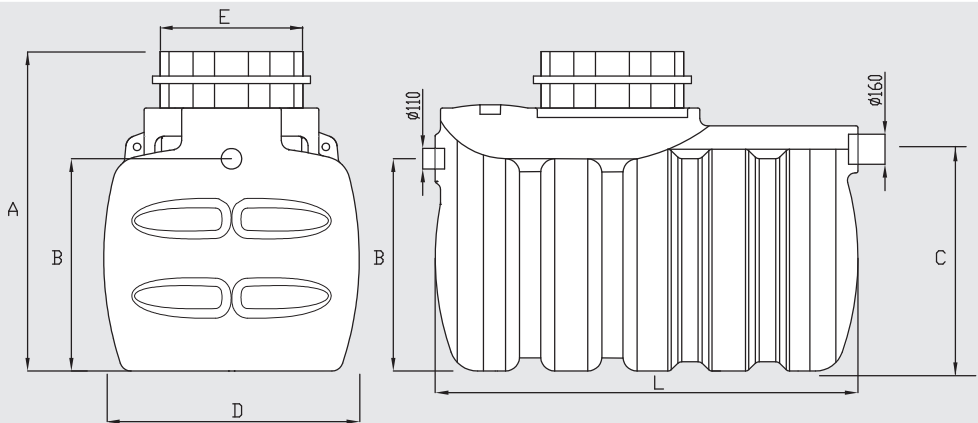
When using a pumping station upstream of a wastewater treatment plant, it must be sized appropriately, i.e. have a sufficiently low flow (small active volume of the pumping station or very low pumping capacity) so as not to disturb the operation of the plant. Access to the wastewater treatment plant must be restricted to unauthorized people (e.g. children)..

$Q_{dmin.} = 0,30 \text{ m}^3/\text{d}$ i $BZT5 = 0,12 \text{ kg O}_2/\text{d}$

Components of the wastewater treatment plant	Size	Quantity
PE-HD tank with molded baffle with:	2 700 dm³	1pc
1. Preliminary clarifier:	1 630 dm ³	1pc
a) with wastewater mixing device in pipe with deflector		1pc
b) with air-lift pump PM 50	-	1pc
2. Bioreactor:	1 070 dm ³	1pc
a) with a ballasted tubular diffuser AT/32/1000/B		1pc
b) with air-lift pump PM 50		2pcs
c) rings		1 set
3. Built-in inspection chamber with drain trap	-	1pc
4. Control cabinet	-	1pc
a) with a driver	-	1pc
b) with a 51W HP 60 blower	-	1pc
5. Operation manual	-	1pc
6. Biopreparation	-	1pc

2. TECHNICAL SPECIFICATION

Pic.1 – Technical drawing of the wastewater treatment

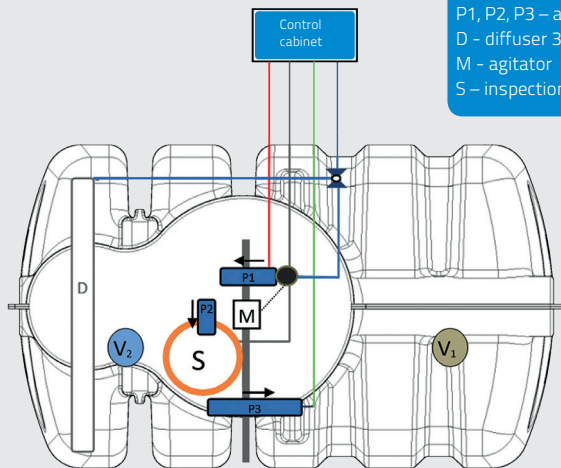


Tab.2 – Dimensions of the wastewater treatment plant

Symbol	Height [mm]	Outlet height [mm]	Inlet height [mm]	Width [mm]	Extension height [mm]	Lenght [mm]
	A	B	C	D	E	L
SBR _{madPrestige}	1 710	1 110	1 170	1 350	820	2 250

LEGEND:

V1 – preliminary clarifier
V2 – bioreactor
P1, P2, P3 – air-lift pump PM 50
D – diffuser 32/1000/B
M – agitator
S – inspection well, PA – emergency overflow



NOTE:

Hoses from the treatment plant to the control cabinet should be led through the seal in the extension and led in a casing pipe $\phi 110\text{mm}$ ending with a 90 grades elbow.

3. SBR-MAD WASTEWATER TREATMENT TECHNOLOGY

SBR (Sequence Batch Reactor) technology is based on sequential reactors where the purification process occurs in cycles. The unquestionable advantage of this solution is the much lower sensitivity to fluctuating inflow volumes. Purification processes occur in several phases making up one 8-hour cycle, so there will be 3 cycles per day. **With this technology there is no need for a secondary clarifier in the system, which makes the solution more economically and spatially attractive.**

The technology in question consists of several stages:

Phase I – FILLING: The reactor is filled with raw sewage by using an airlift – mammoth pump PM 50. In the preliminary clarifier in the chamber hypoxic conditions prevail. Raw wastewater in a Ø 200 mm pipe is put into motion using a diffuser "agitator" AT 50 Pg in order to prevent pre-sludge digestion and optimum averaging of the pollutant load.

Phase II – AREATION (continuous): organic carbon compounds are removed and the ammonia oxidation process is initiated by creating suitable oxygen conditions as a result of switching on the aeration equipment (blower + tubular membrane diffuser AT 32/1000/B).

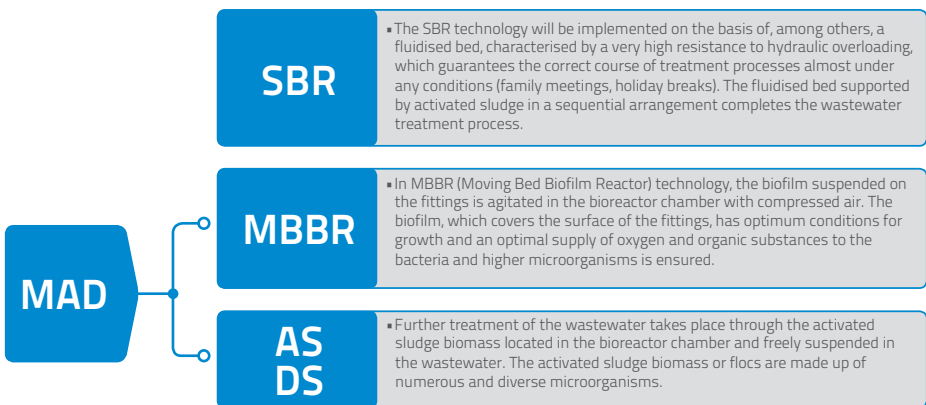
Phase III – DISCHARGE OF SURPLUS SLUDGE: Excess sludge from V2 chamber is discharged into cell V1 chamber.

Phase IV – AERATION (intermittent): removal of organic carbon and oxidation of ammonia takes place by creating suitable oxygen conditions as a result of switching on the aeration equipment

(blower + tubular membrane diffuser AT 32/1000/B). During aeration intervals, there are short-term hypoxic zones for denitrification. During aeration intervals, there are short-term hypoxic zones for denitrification.

Phase V – SEDIMENTATION/SETTLING: When the aeration devices are switched off, the accumulated activated sludge is sedimented in the lower part of the tank, treated wastewater is collected in the middle part of the tank and the biological bed floatates in the upper part of the chamber. During this phase there is a rapid loss of oxygen, thus creating temporary hypoxic conditions.

Phase VI – DECANTATION (drainage): wastewater devoid of pollutants is discharged from the bioreactor. The wastewater is pumped using an airlift (mammoth pump PM 50). The elevator is located in a place allowing to discharge only treated wastewater to the control manhole Ø 160 mm, and from there to the drain.



The SBR technology will be realised, among other things, on the basis of a fluidised bed, characterised by a very high resistance to hydraulic overloading, which guarantees the correct course of treatment processes almost under any conditions (family meetings, holiday breaks). The fluidised bed supported by activated sludge in a sequential arrangement completes the wastewater treatment process.

4. CONTROL

The control cabinet contains the necessary components and equipment for correct and automatic operation of the wastewater treatment plant:

- ⊗ Control box with timer, blower and alarm (light) signalling. The view of the control box is given on page 9.
- ⊗ The optimum amount of air is provided by the HP60 blower with a capacity of approx. 60 dm³/min. The power requirement per blower is 51 W;
- ⊗ The control system includes a timer with solenoid valves. Detailed information is provided in the controller manufacturer's operating manual. Wiring should be done according to colour coding – see point 10.
- ⊗ It is recommended that a powder extinguisher be provided in the vicinity (at a maximum distance of 30 m) of the control box.
- ⊗ A sign warning of dangerous electrical voltage should be displayed on the box.



5. VENTILATION

- ⊗ Ventilation is a very important part of the wastewater treatment plant. Its solutions may vary from plant to plant, depending on the location of the plant and additional solutions used, e.g. raw sewage pumping station, which interrupts natural ventilation of the sewage system and facilities located on it.
- ⊗ The basic layout of the plant is ventilated by gravity sewerage. The solution of the ventilation is left to the designer who adapts the wastewater treatment plant, or to the wastewater treatment plant constructor, who has detailed knowledge about the specific conditions of the plant location. After the period of start-up and operation of the plant (e.g. when the amount of sludge has been accumulated), it is necessary to test the efficiency of ventilation. If, according to the tests, the accumulation of explosive gases (methane, hydrogen sulphide) is suspected, additional mechanical ventilation should be installed.

5. NUMBER OF RESIDENTS SERVED AND VOLUME OF WASTEWATER

Number of inhabitants served M:

$$M = 2 \div 5 \text{ P.E./d or } 2 \div 5 \text{ P.E.}$$

The assumed theoretical quantity of water consumed by one inhabitant per day (for domestic purposes) is: $q_{avg} = 0,15 \text{ m}^3/\text{d}$

Daily treatment capacity wastewater quantity: $Q = 0,75 \text{ m}^3/\text{d}$

Maximum daily waste water volume: $Q_{dmax} = 0,9 \text{ m}^3/\text{d}$

Minimum daily waste water volume: $Q_{dmin} = 0,30 \text{ m}^3/\text{d}$



Exceeding the daily maximum wastewater quantity will result in decreased treatment efficiency or even in a breakdown of the pollution reduction process.
Reducing the wastewater quantity below the minimum quantity will also result in a reduction in the efficiency of the treatment process or even its breakdown.

7. CONCENTRATIONS OF POLLUTANTS IN RAW SEWAGE

- ⌚ BOD5 = 400mgO₂/dm³ - max. BOD5 = 0,30 kgO₂/d
- ⌚ CODT = 800mgO₂/dm³ - max COD = 0.60 kgO₂/d
- ⌚ Total suspended solids = 467mg/dm³ - max Total suspended solids = 0,35kg/d



Exceeding the above-mentioned range of pollutant loads may result in reduced treatment efficiency and/or breakdown of the pollutant reduction process.

Raw sewage samples for quality testing should be taken upstream of the wastewater treatment plant.

8. CONCENTRATIONS OF POLLUTANTS IN TREATED WASTE WATER

Pollutant indicators in treated wastewater from the Delfin SBRmad Prestige wastewater treatment plant are no greater than:

- ⌚ BOD5 = 40 mgO₂/dm³
- ⌚ COD = 150 mgO₂/dm³
- ⌚ Total suspended solids = 50 mg/dm³

While maintaining the parameters for raw sewage inflow specified in points 6 and pkt. 7.

Raw sewage samples for quality testing should be taken upstream of the wastewater treatment plant.



9. INSTALLATION OF THE WASTEWATER TREATMENT PLANT TANK

The tank (DELFIN wastewater treatment plant SBRmad Prestige) should be located in a place unencumbered by traffic. The wastewater treatment plant should be installed at a safe distance from designed or existing structures in order to avoid asymmetric, one-sided increase of the load on the tank walls, transferred by the foundations of these objects. The cover of the tank must protrude above the ground surface and be accessible for the slurry tanker during periodic sludge pumping operations. The size of the excavation depends on the dimensions and shape of the tank.



The installation of the tank should be preceded by a thorough geological survey to determine the fluctuating groundwater level in the wetland. An assessment of the groundwater conditions allows for appropriate reservoir protection to be made

Below we present the method of DELFIN SBRmad Prestige tank installation depending on ground and water conditions.

OPTION I – FOR PERMEABLE SOILS

- Ⓢ backfill height above the tank, max. 40 cm
- Ⓢ tank bottom depth for 2*5 p.e., max. 171 cm
- Ⓢ allowable pedestrian traffic load, max. 2.5 kN/m²
- Ⓢ maximum level of groundwater table below the bottom of the reservoir

If all the above conditions are met, the following installation scheme should be used:

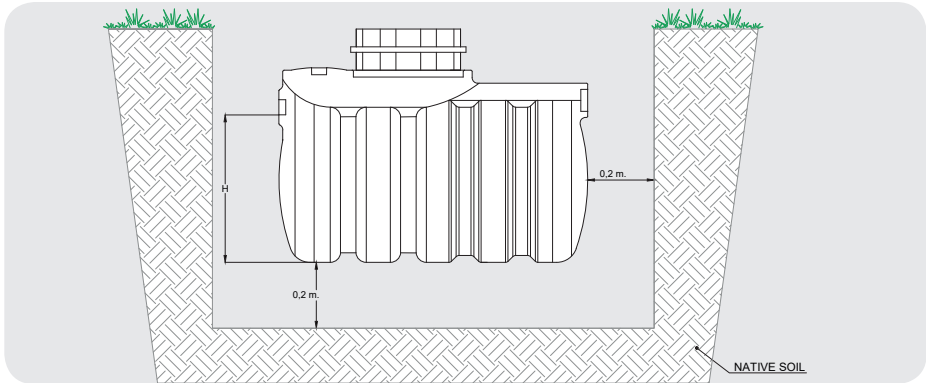
STEP 1: Dig a trench for the wastewater treatment plant tank. The tank must not be adjacent to the walls of the excavation and exposed to protruding stones and unevenness. Provide min. 20 cm around the tank for the cushioning layer.

STEP 2: After determining the foundation depth of the tank bottom, make a sand bed of min. 20 cm. This sand layer should be thoroughly compacted and levelled

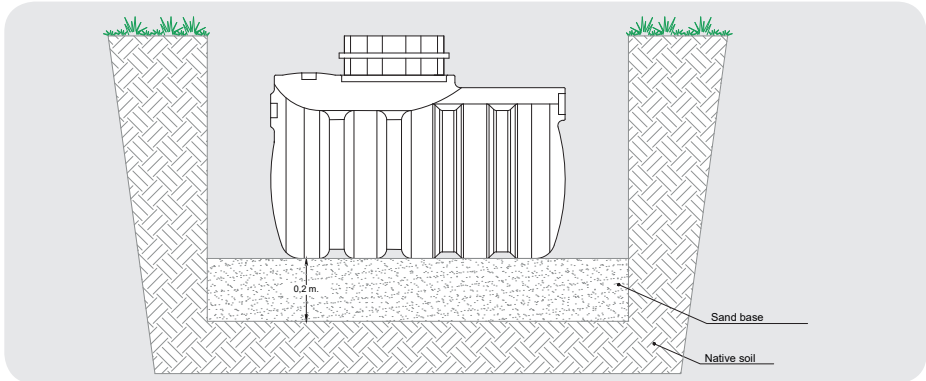
STEP 3: Place the tank on the prepared sand bed and check the leveling of the tank

STEP 4: Connect the 160 mm PVC inlet and 110 mm PVC outlet pipes. The direction of wastewater flow is indicated by the embossed "inlet" and "outlet" prints located under the PVC pipes. There are description in Polish on the tank for inlet: WEJŚCIE and outlet: WYJŚCIE.

Pic. Distance of the tank from the wall of excavation



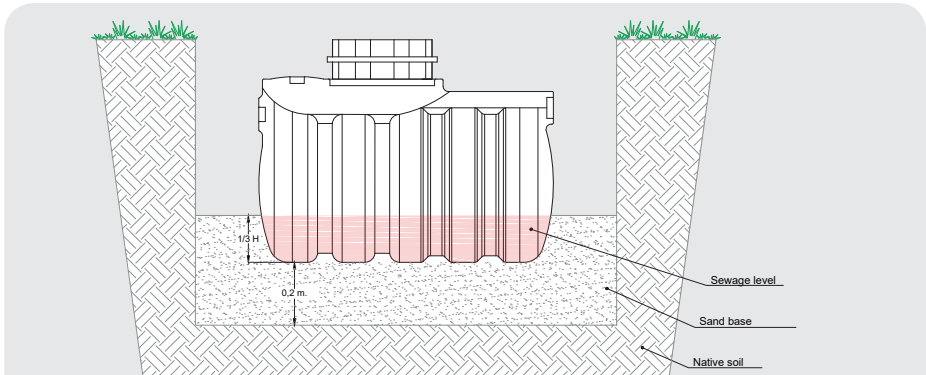
Pic. Setting the tank on the sand base



STEP 5: Begin filling the tank with water from the hose while backfilling the tank with sand. Fill each chamber of the tank with water to about 1/3 of its capacity, and then make an even sand filling around the entire tank circumference up to the tank water level.

Sand backfill should be applied in 20 cm thick layers and compacted with water (using mechanical compactors to harden the backfill around the tank is prohibited).

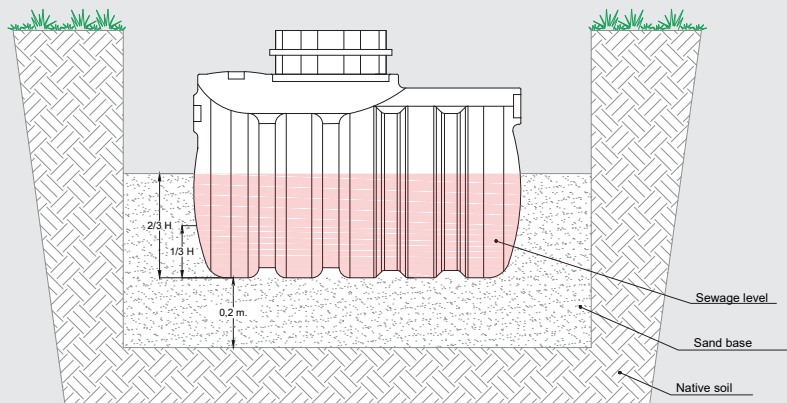
Pic. Filling the water to the tank



STEP 6: Fill the tank chambers with water to 2/3 of its volume and proceed as above. After filling to the level of 2/3 of the tank volume, add water again and then fill the next layers of backfilling.

STEP 7: After filling the chambers with water, check the tightness of the inlet and outlet pipe connections from the tank.

Pic. Filling the tank with the water and covering the excavation with the sand



STEP 8: A control cabinet should be installed in a suitable place near the tank according to the design. For wastewater treatment plants of 2•5 PE, the control cabinet should be placed max. 4 m from the tank. The power supply of the wastewater treatment plant should be commissioned to an electrician and performed as per a separate study. Installation of the power supply cable for the wastewater treatment plant and the control cabinet should be done in compliance with the low voltage connection conditions.

STEP 9: Air pipes inside the wastewater treatment plant tank should be laid in a shallow trench in a 110 mm diameter casing pipe between the tank and the control cabinet. The air pipe ends should be connected to the appropriate closing valves located in the control cabinet according to the pipe installation diagram (point 10). The outlets of the casing pipe should be sealed to prevent unwanted migration of process gases, e.g. with insulating foam with reduced expansion capability.

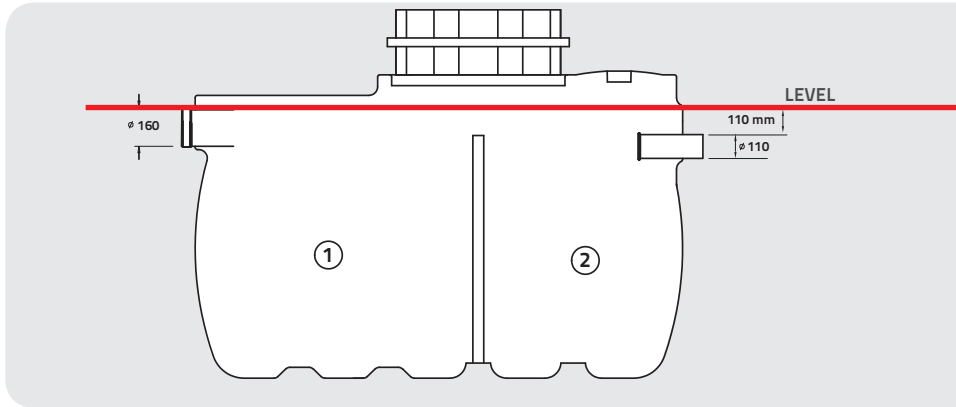
STEP 10: Start backfilling the tank, inlet pipe, outlet pipe and air pipes with a layer of sand and earth. The backfilling layer above the wastewater treatment tank should not be thicker than 80 cm.



Proper foundation of the wastewater treatment plant tank

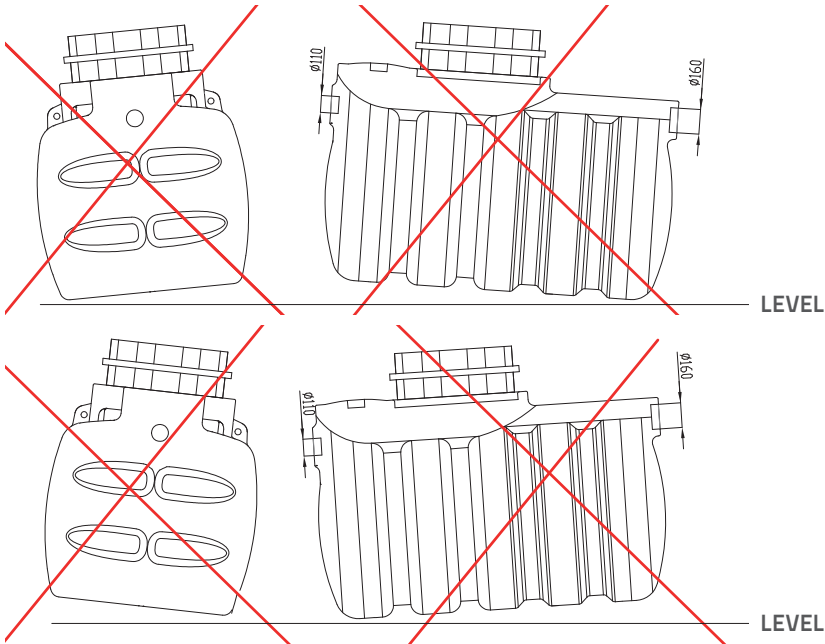
The wastewater treatment plant tank should be precisely levelled - a distance of 110 mm between the upper edge of the PVC pipe $\varnothing$ 160 mm at the inlet and the upper edge of the PVC pipe $\varnothing$ 110 mm at the outlet measured with a leveler or spirit level. Tolerance for leveling of the treatment tank of 10 mm between inlet and outlet. Tolerance of leveling of the tank across 5 mm checked with a spirit level on the baffle or extension.

Pic. Proper foundation of the wastewater treatment plant tank



ATTENTION: It is forbidden to install the wastewater treatment plant without levelling the tank and to install it with a slope, against a slope or tilted to the side.

Pic. Wrong leveling of the tank

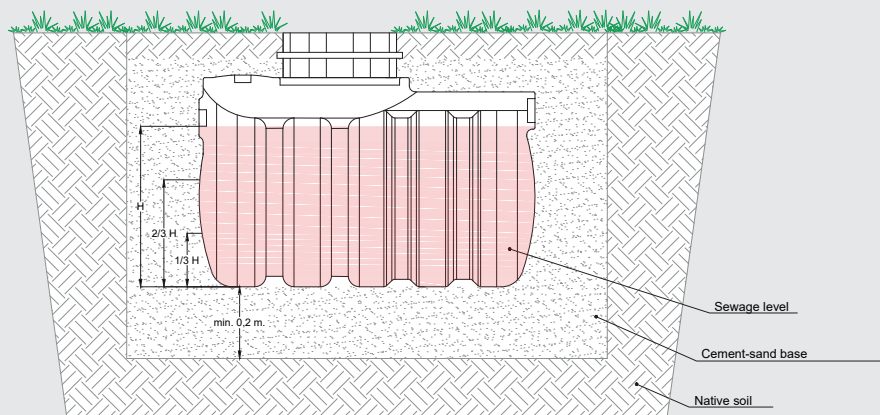


OPTION II – For Poorly Permeable Soils

- ④ height of backfill above the tank, maximum 80 cm
- ④ depth of tank bottom for 2+5 PE, maximum 201 cm
- ④ allowable pedestrian traffic load, maximum 2,5 kN/m²
- ④ maximum level of groundwater table below the bottom of the reservoir

The procedure is the same as for option 1. The difference is that instead of sand for the base and filling of the tank it is necessary to use a sand-cement mixture in the proportion of at least 150 kg of cement for 1m³ of sand. You can order a ready mix from a concrete batching plant or prepare a carefully dry mix on site.

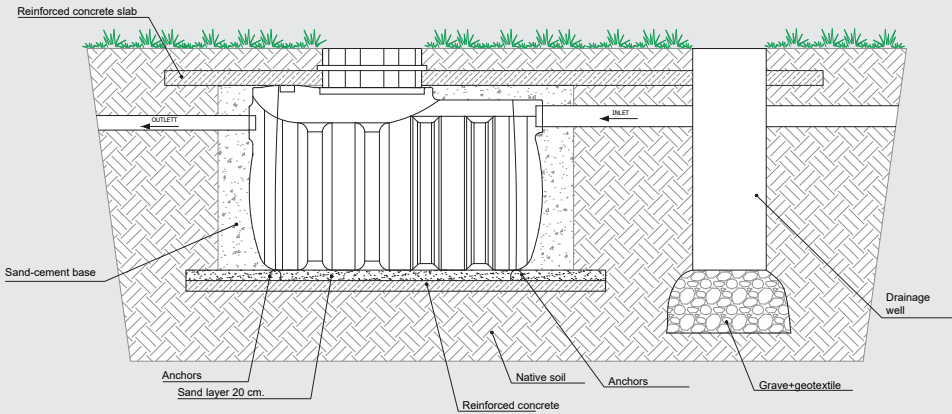
The sand/cement backfill does not need to be compacted by pouring water. The total thickness of the backfilling layers above the tank for the Option II of installation should not be greater than 80 cm.



OPTION III GROUNDWATER TABLE

If there is a ground water table, lower the ground water level and use an anchor kit to secure the tank to the concrete base as shown below. Fix a threaded rod through a chemical anchor in the concrete base or hook a steel wire to the reinforcement of the concrete base. Install a 315 mm diameter PVC drainage well in the embankment as close to the tank as possible to visualise the ground water table.

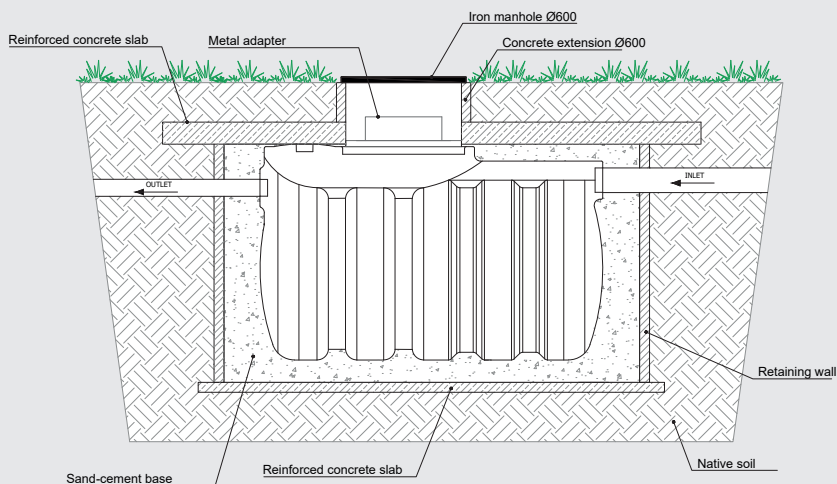
During maintenance operations, especially emptying, the ground water level can be lowered by pumping out of the drainage well.



OPTION IV SLOPING OR UNSTABLE TERRAIN OR VEHICULAR TRAFFIC IN THE CLOSE AREA OF THE WASTEWATER TREATMENT PLANT

Build a retaining wall to protect the tank from lateral pressures. In cases where a relief slab, retaining wall or concrete base is required, a thorough study should be carried out which takes into account external factors such as:

load weight, frequency of rolling loads, lateral thrust, height of the water table, etc.





ATTENTION: DO NOT EMPTY THE WASTEWATER TREATMENT PLANT TANK !

All other installation conditions than Option 1 and 2 require an individual tank foundation design to be carried out by an authorised person (calculation of additional reinforcement in the form of ballast plates, anchor belts, concrete slab on the bottom of the excavation, retaining wall and concrete slab above the unit).

Alternatively, in the case of high groundwater or deep foundation of the tank, the DELFIN SP 800 pumping station with raw sewage pump should be used, and the wastewater treatment plant tank should be placed in the embankment.



ATTENTION: Installation of the DELFIN SBRmad Prestige wastewater treatment plant is prohibited if the thickness of the backfilling above the tank exceeds 80 cm without any protection. Installation in waterlogged soil (underground water table above the tank bottom) without special protection is prohibited. It is forbidden to locate the wastewater treatment plant in a place exposed to traffic loads. In case of poor ground and water conditions, it is necessary to consult a distributor of DELFIN Sp. z o.o.

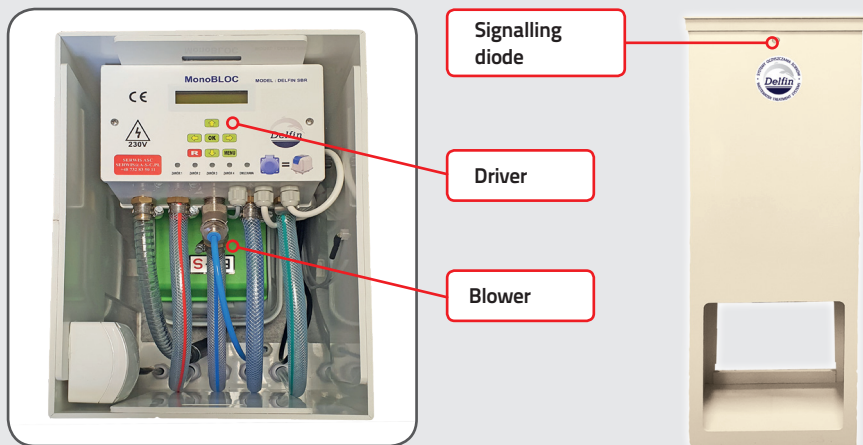


10. INSTALLATION OF CONTROL CABINET

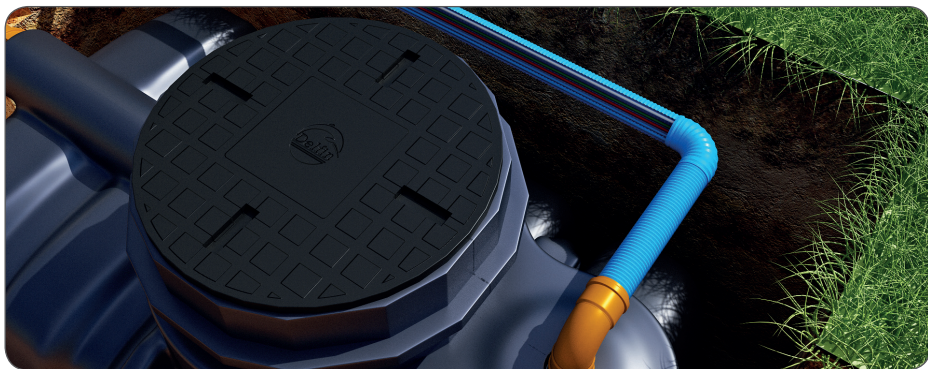
As a standard, the power/control cabinet is to be installed at a distance of no more than 4 m from the tank (the length of the air ducts is 5 m). Further installation of the box is only permissible with the authorisation of an authorised installer/service technician.

The power/control cabinet should be buried in the ground to a height marked on the control cabinet.

- box with visible diode (green colour – OK, red colour – FAILURE)
- driver
- blower
- 230V power socket



The air ducts should be led out of the wastewater treatment plant tank as shown in the picture to the control cabinet in 110 mm diameter PVC pipe.



Once the control cabinet has been positioned next to the wastewater treatment plant, no more than 4 m away, it is necessary to:

1. Loosen the two screws with a 10 spanner on both sides of the cabinet and remove the cover



2. Insert the power cable into the control cabinet through the opening in the bottom plate of the cabinet to the socket at the top.

! Attention: On the cable underneath and above the bottom plate of the enclosure before plugging it into the socket, leave slack on the cable (one coil or "S"-shaped excess)

3. Connect the cable to a 230V socket
4. The air ducts from the wastewater treatment plant in the $\varnothing$ 110 mm casing pipe should be led to the base of the control cabinet and the end of the casing pipe should be sealed with low expansion foam.
5. Insert the 12 mm diameter air hoses from the treatment plant through the holes in the bottom plate of the cabinet, colour-coded as below.

Socket 230 V

Entry hole for a three-wire cable for connection to a 230 V socket





Attention: On all air ducts under and above the bottom plate of the enclosure, leave slack in the ducts before screwing them together (S-shaped excess, paying attention that the duct is not kinked).

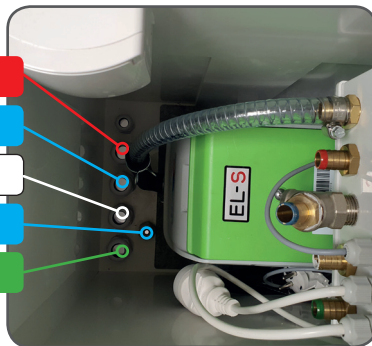
Air duct marked in red colour

Air duct marked in blue colour

Air duct marked in white colour

Air duct marked in blue colour

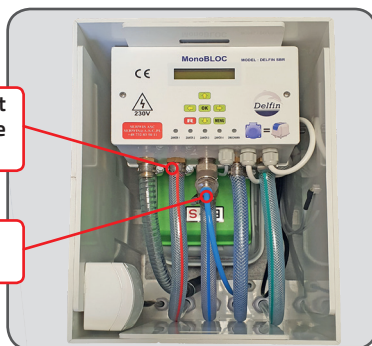
Air duct marked in green colour



6. Connect the air ducts to the colour-coded connection nipples on the driver and secure them against slipping with stainless steel clamps by screwing them together. Connect the blue wire with a diameter of 6mm to the connect or on the driver by pressing it into the opening at the T-piece.

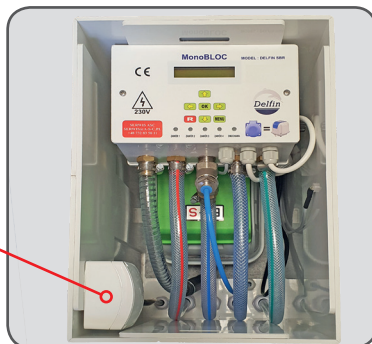
Metal clamp to be screwed onto each air duct after it has been inserted into the connection port of the driver according to the colour coding

Air duct $\varnothing$ 6 mm pressed into the connection port of the driver as colour-coded



7. Connect a blower to the driver by inserting the plug into the socket on the driver cable marked DMUCHAWA MAX = 150 VA

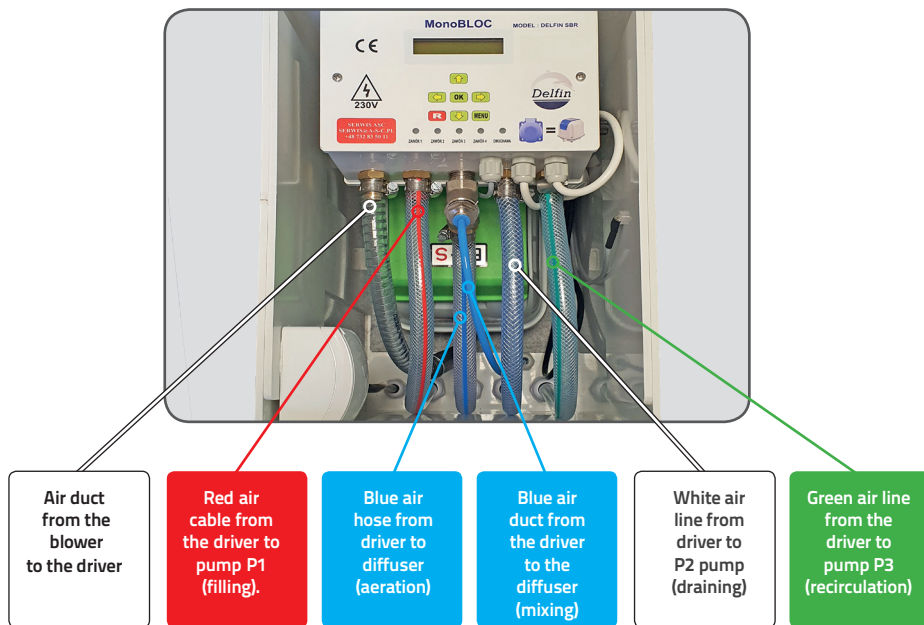
Connect the plug on the driver cable to a socket in the cabinet



8. The driver should be connected to the socket by inserting the plug and proceed with the start-up.

9. The mounted control cabinet must be backfilled with soil to the height marked on the control cabinet and levelled.
10. After commissioning, close the cabinet by placing the cover on top and tightening the two screws that secure it.

The method and sequence of connecting the air piping supplying the wastewater treatment plant equipment is shown in the picture below:



ATTENTION: Run the hoses exiting the wastewater treatment plant to the control cabinet through an elbow in the upper part of the chamber and lead in a casing pipe $\varnothing 110\text{mm}$. Outlets of the casing pipe should be sealed in order to prevent unwanted migration of process gases, e.g. with insulating foam with reduced expansion capacity. Connect the air hoses to the driver by plugging them into the connections shown above and secure them with stainless steel screw clamps.

Pneumatic connection:

Red	Filling P1 – pump PM 50
Blue	Aeration diffuser
Blue	Agitator in the preliminary clarifier
White	Decanting P2 – PM 50 pump
Green	Excess sludge P3 – PM 50 pump

10.1. ELECTRICAL SUPPLY OF THE WASTEWATER TREATMENT PLANT - CONTROL CABINET AND START-UP

The electrical supply of the wastewater treatment plant - 230 V power/control cabinet - must be performed by a service engineer (with the appropriate authorization) and completed by presenting the results of electrical measurements to the owner of the wastewater treatment plant.
The supply/control cabinet should have electrical protection in the form of a residual

current circuit breaker and a B10 fuse installed in the electrical switchgear supplying the cable led to the treatment plant box.
When assembling the cabinet, follow the manufacturer's additional description.
The next final step is to proceed to start-up. The wastewater treatment plant assembled in accordance with pt. 9 can be put into operation.

10.2. COMMISSIONING OF THE WASTEWATER TREATMENT PLANT

The commissioning of the wastewater treatment plant consists of the following steps:

1. Start the driver as follows.

- a. plugging the driver's plug into a 230 V socket
- b. the installer/service engineer sets the correct number of served persons in the driver, i.e. 3 PE, 4 PE or 5 PE, as follows:

ALGORITHM 3 P.E.	Message 3 will flash. Using   set the number of users to 3 P.E., 4 P.E. or 5 P.E. by confirming 
------------------	---

- c. setting up a start-up mode (lasting 45 days) in the driver by the installer/service engineer as follows:

Driver display message:

SET DATE DD/MM/YYYY	To change the date, press  and enter the correct date using the   during setting by validating the data  and move on to the next settings 
SET TIME HH:MM	To change the time, press  and enter the correct time using the   during setting by validating the data  and move on to the next settings 
MANUAL MODE	To enter the manual mode submenu press  and by using   select the receiver and switch it on/off using the button  to exit the submenu, press the 
VALVE 1 OFF	To check filling (the pump pumps raw sewage from chamber one into chamber two) press  and valve 1 on, if the pump is pumping valve 1 off by pressing  and move on to the next settings 
VALVE 2 OFF	To check the aeration (disc diffuser mixes the wastewater in chamber one and tube diffuser aerates the wastewater in chamber two) press  and valve 2 on, if the diffuser mixes wastewater in the first chamber and aerates wastewater in the second chamber, turn valve 2 off by pressing  and move on to the next settings 

VALVE 3 OFF	To check the emptying (the pump pumps the treated wastewater from chamber two into the effluent column of the wastewater treatment plant) press OK and valve 3 on, if the pump is pumping valve 3 off by pressing OK and move on to the next settings 
VALVE 4 OFF	To check recirculation (the pump pumps surplus sludge from chamber 2 into chamber 1) press OK and valve 4 on, if the pump is pumping valve 4 off by pressing OK and exit manual mode settings by pressing MENU and enter the boot mode by pressing OK

If it is necessary to change the settings for the number of users of the wastewater treatment plant, or to reactivate the start-up mode, this can be done by the installer, service technician or user as follows:

- A - switch off the driver and wait 1 minute by removing the plug from the socket;
- B - press and hold the **OK** button and then connect the power supply to the drive;
- C - after the first beep, the driver switches to the start-up screen, where you can set the number of inhabitants (P.E.) or the start-up mode;

2. **Starting the sewage inflow to the wastewater treatment plant**
3. **Use of a biopreparation** – at start-up, 80% of the package contents (supplied with the wastewater treatment plant) should be dosed into chamber 2 (bioreactor) during aeration and 20% into chamber 1 (settling tank). Follow the health and safety instructions of the manufacturer of the biopreparation
4. **Verification by the installer/service engineer of the correct connection and operation of all wastewater treatment plant equipment on the incoming wastewater.**
5. **To instruct the owner of the wastewater treatment plant by the installer/service technician in the basic functions and operations of the wastewater treatment plant**

The wastewater treatment plant can be put into operation if the daily flow of wastewater is at least $Q_{dmin}=0,30m^3/d$ and the concentrations of pollutants in the raw wastewater are within the range shown in point 6 and point 7 of this book, and the minimum BOD5 load is at least $0.12kgO_2/d$. Less than the minimum or more than the maximum amount of effluent can significantly hinder or even prevent the proper start-up of the wastewater treatment plant.

After the start-up period, biopreparations can be used according to their manufacturer's recommendations.



ATTENTION:

1. Too little or too much wastewater and pollutant load may cause difficulties or make start-up impossible.
2. Start-up of the wastewater treatment plant in winter at very low temperatures may be difficult due to cooling of the ground and wastewater.

11. OPERATION OF WASTEWATER TREATMENT PLANT

11.1 BASIC INFORMATION

During the warranty period, the wastewater treatment plant must be serviced once every 12 months, and individual devices must be serviced in accordance with the manufacturer's instructions. Failure to meet these deadlines will result in loss of warranty.

The proper operation of the wastewater treatment plant depends on the factors listed below.

It is forbidden to throw or pour into sanitary facilities (e.g. sink, washbasin, toilet bowl, bathtub, shower, etc.) and directly into the wastewater treatment plant and sewage system:

Lp.	Solids or liquids which must not be disposed of down the toilet, sink, drains and wastewater treatment plant	What do these substances do	Handling of substances
1.	solvents, paints, varnishes and others	pollute sewage	collection and transfer to a suitable landfill site
2.	construction materials such as cement, gypsum including water mixed with them	clog up the sewer system, settle in the wastewater treatment plant and do not decompose	
3.	ash	clog up the sewer system, settle in the wastewater treatment plant and do not decompose	collection and transfer to a suitable landfill site
4.	litter/sand (including for animal faeces)	clog up the sewer system, settle in the wastewater treatment plant and do not decompose	collection and transfer to a suitable landfill site
5.	grease, petrol, oils and other petroleum-derived products and waste containing oil	pollute sewage	collection and transfer to a suitable landfill site
6.	wet wipes, panty liners, condoms, nappies, plasters, cotton buds, plastic wrap, cigarette butts and other solid waste	clog sewers, settle in the wastewater treatment plant and decompose very slowly	collection and transfer to a suitable landfill site
7.	ground waste e.g. bones, vegetable waste, fruit waste (in grinders in sinks and macerators),	they clog sewers, settle in the wastewater treatment plant and decompose very slowly	collection and transfer to a suitable landfill site
8.	disinfectants	pollute sewage	do not use
9.	large quantities of detergents	pollute sewage	do not use
10.	medicines (especially antibiotics)	pollute sewage	collection and transfer to a suitable landfill site
11.	cleaning agents with the exception of chlorine-free preparations	pollute sewage	do not use
12.	pesticides	pollute sewage	do not use
13.	waste cooking oils	they clog sewers, settle in wastewater treatment plants and cause odour nuisance	collection and transfer to a suitable landfill site
14.	food leftovers	they clog sewers, settle in the wastewater treatment plant and decompose very slowly	collection and transfer to a suitable landfill site
15.	condensate from condensing boiler	kill bacteria	separate container
16.	water treatment plant washings	kill bacteria	separate container
17.	phytosanitary measures	kill bacteria	collection and transfer to a suitable landfill site
18.	regular toilet blocks	pollute sewage	do not use
19.	water disinfectants, photochemicals and other chemical preparations	pollute sewage	do not use

If in doubt, consult a distributor of Delfin Sp z o.o..

11.2 OPERATION OF THE AVERAGING CHAMBER/PRELIMINARY CLARIFIER

The operating activities for the averaging chamber/preliminary clarifier - V1 consist of:

- ④ visually check the chamber and the mixing of the waste water in the deflector pipe. If the mixing does not work, steps should be taken quickly to determine the cause (control failure or air pipe leakage). To do this, call the service department or a suitably trained person. If you notice other disturbing phenomena, e.g. overflow of wastewater through the baffle or overflow into chamber V2, accumulation of very large dross, you should check the proper functioning of the mammoth pump filling chamber V2 and the patency of the emergency overflow;
- ④ sludge removal from chamber V1 should be carried out at least once a year;



This period can be extended or shortened after periodic inspection (every 6 months) of the service and checking the level of filling of chamber V1 with sediments. Checking can be done by slowly immersing the pole in the V1 tank. The appearance of gas bubbles indicates that the pole is filled with sludge. The maximum filling of the V1 chamber with sediment is 40% of the height, i.e. approx. 40cm from the bottom. When this level is reached the sediment should be removed from the chamber.

All activities connected with sludge removal from V1 chamber should be performed by staff who are appropriately trained, also in terms of occupational health and safety:

- ④ the preliminary clarifier may be emptied to the bottom only when the ground is dry. Emptying the chamber and leaving it empty during rainfall may cause crushing of the tank, therefore after emptying the chamber should be immediately flooded with water in order to compensate the stress;
- ④ do not enter the settling tank under any circumstances and do not inhale the vapours produced in it;

If necessary, contact DELFIN distributor, an authorised installer or a wastewater treatment specialist.

11.3 BIOREACTOR OPERATION

Operational activities for the bioreactor - V2 consist of:

- ④ visual check of the operation of the waste water aeration. If the aeration does not work (in the driver mode: aeration), quickly take steps to find out the cause (failure of the driver, blower or unsealing of the air pipes);
- ④ the diffuser membrane may need to be washed after a few years of operation;
- ④ visual assessment of the treated wastewater in the control manhole (treatment quality and patency of the outlet);
- ④ sewage must not be pumped out of the bioreactor chamber - it should be flooded with sewage all the time except when activated sludge:
 - odies - black, smelly sludge and cloudy filtrate;
 - completely swollen - activated sludge light-coloured hardly settling clear supernatant;
 - the amount of sludge taken from the bioreactor chamber during aeration into a 1000 ml measuring cylinder will be more than 750 ml 30 minutes after collection

If the symptoms described above occur, both chambers of the wastewater treatment plant should be emptied at the same time, flooded with water and the wastewater treatment plant should be restarted, i.e. the start-up mode should be set on the control unit and the preparation for activated sludge multiplication should be applied in the aeration chamber.

These phenomena can be assessed by the service and recommend emptying the bioreactor including the preliminary clarifier chamber and starting up the wastewater treatment plant. This can occur e.g. due to too high content of incoming chemicals in the wastewater or too low amount of wastewater (prolonged lack of nutrient solution).



ATTENTION:

When emptying the V2 bioreactor chamber with a slurry truck, a sieve with a mesh spacing smaller than 50 x 50 mm should be installed on the suction hose so that the bed rings are not removed from the chamber when emptying the effluent. It is forbidden to enter the bioreactor chamber under any circumstances or to inhale the vapours generated in it.

Any irregularities noticed in the operation of the bioreactor must be remedied immediately, but in compliance with all health and safety conditions. If necessary, contact a DELFIN distributor, an authorised installer or a wastewater treatment specialist.

In the case of the treatment process failure: rotting of the activated sludge (black, brown-black colour), swelling of the activated sludge (the activated sludge does not want to fall down, a small amount of the supernatant liquid is transparent), washing out of the activated sludge, it is necessary to call the installation technician.

11.4 OPERATION OF CONTROL CABINET, CONTROL SYSTEM, BLOWER



Control cabinet

The operation of the control cabinet is to check the correct functioning of the devices inside it and to visually inspect it for leaks, dampness and leakages. If you notice such symptoms you should contact the service.

Control system

The control system requires periodic visual inspection. It is necessary to pay attention to the correct functioning of the control unit, i.e. there are no errors on the control unit and pay attention to the colour of the LED, if it does not glow red indicating a failure.

Blower

Check the condition of the filter located under the upper cover of the membrane blower once a quarter. Check the cleaning or replacement of the blower filter in accordance with the instructions of the blower manufacturer. It is included in the package with the wastewater treatment plant.

11.5. OPERATION OF WASTEWATER TREATMENT PLANT VENTILATION

Ventilation of the wastewater treatment plant must be checked by a competent person (company) with authorization. The gravitational installation will require different inspection, the one with the dynamic-wind fan, and the one with the mechanical fan. Every month you should visually check (while inspecting the settling tank, aeration chamber), whether the wastewater treatment plant inlet or outlet pipe is not clogged - if the sewage is piling up and reducing the possibility of ventilation.

In the event of offensive odours, the cause should first be identified. If this is the result of poorly functioning ventilation, the cause should be remedied - contact Delfin Service or a suitably trained person.

Check the following:

- ⊗ ventilation, e.g. if a duct is clogged;
- ⊗ preliminary clarifier (pH) and if necessary add lime (0.1kg of lime mixed with water for 3 days);
- ⊗ aeration in the aeration chamber;
- ⊗ correct functioning of recirculation and discharge of surplus sludge (pump operation);
- ⊗ the surface of the primary clarifier to ensure that no large dross accumulates;



Symptoms	Possible cause	Solution
Controller diode flashing red	- Driver failure - Blower failure	- Resetting the driver - Calling a service technician
Waste water overflowing the septum between chambers V1 and V2	- Failure of mammoth pump filling chamber V2 or failure of mammoth pump emptying chamber V2 - Clogging of emergency overflow - Driver failure - Blower failure - No power supply to the control cabinet	- Calling a service centre to replace a broken pump, controller or blower, or to clear an emergency overflow - Checking the electrical supply at the control cabinet socket, restoring electrical supply
Checking the electrical supply at the control cabinet socket, restoring electrical supply	- Too much wastewater inflow to treatment plant in one cycle - Clogged, non-functioning mammoth pump in tank V1 - Clogged, non-functioning mammoth pump in V2 tank - Driver failure - Blower failure - No power supply to the control cabinet	- Reduce waste water discharge in an 8 hour cycle - Call for service to repair or replace the mammoth pump, blower or driver - Checking the electrical supply at the control cabinet socket, restoring electrical supply
Wastewater treated cloudy and unpleasant odour	- Control failure - Failure of aeration equipment - Failure of mammoth pumps - Too much waste water - Activated sludge died - The dross in chamber V2	- Call a service centre to determine the cause - Remove sludge from chamber V1 with a slurry vehicle - Verification of correct operation of ventilation
Foam in chamber V2 - a small amount of foam - medium and high foam	- Short-term normal symptom at start-up - Too much detergent in the waste water	- Wait until the start-up phase is complete - If foam persists, reduce the amount of detergent used - Reduce the amount of detergent used
No or very little activated sludge in V2 chamber	Failure of any wastewater treatment plant equipment (e.g. driver, etc.), long period of no raw sewage inflow (holiday), sludge flushing due to excessive sewage discharge	Contact service
Black or very dark deposit in chamber V2	Failure of any of the wastewater treatment plant equipment (e.g. aeration diffuser, etc.)	Contact service
Activated sludge does not drop during sedimentation - colour of sludge light	Sludge swelling	Contact service - immediately empty the wastewater treatment plant of sewage and sludge or try to improve the condition of the sludge by dosing lime for e.g. 1 day 0.15 kg of lime and the next 7 days 0.05 kg/d to the preliminary clarifier and 1 day 0.2 kg of lime and the next 3 days 0.1 kg of lime to the bioreactor.

11.6 HOLIDAY PERIOD - NO RAW SEWAGE INFLOW TO THE WASTEWATER TREATMENT PLANT

Immediately on the day of departure for leave, the user must activate the holiday mode.

At the end of the holiday, the user must switch off the holiday mode and return to the settings, i.e. nominal mode. During the start-up mode, the holiday mode cannot be activated and the continuous flow of wastewater to the wastewater treatment plant must be maintained.

If the holiday will last more than 14 days, both chambers of the wastewater treatment plant should be emptied, flooded with water and raw sewage and the wastewater treatment plant should be restarted. To do this, the number of users (p.e.) must be set in the driver, the start-up mode activated and the preparation applied to the activated sludge.

Switching holiday mode on and off at the driver.

Press the button  and with  we move to the message on the driver's display:

HOLIDAY MODE OFF	This submenu contains all settings related to holiday mode. To enter, press  using   switch holiday mode on or off by confirming  then exit the settings by pressing 
-----------------------------	--

Changing the settings on the driver:

If it is necessary to change the settings for the number of users of the wastewater treatment plant, or to reactivate the start-up mode, the installer, service technician or user can do so as follows:

- A - switch off the driver and wait 1 minute;
- B - press and hold the OK button, and then connect the driver's power supply (plugging into the socket;
- C - after the first beep, the driver switches to the start-up screen, where you can set the number of inhabitants (P.E.) or the start-up mode

11.7 NOTES ON HEALTH AND SAFETY, FIRE SAFETY

When operating the wastewater treatment plant, the regulations resulting from the relevant country-specific directive should be respected.

During the wastewater treatment process - mainly in the sludge basin - poisonous and flammable gases (fermentation products) are produced. Their concentration must not be high, therefore the wastewater treatment plant must have efficient gravitational ventilation, and in some cases mechanical ventilation. Mechanical ventilation will be decided by the research after the start-up and operation of the wastewater treatment plant.



Smoking and the use of open fire is strictly prohibited close to the wastewater treatment plant. Caution is required when operating any of the facilities (pumping station, settling tanks, aeration chamber, settling tank) or manholes. Open manholes and ventilate the facilities and manholes for at least 15 minutes. It is necessary to test the electrical installation once a year. The wastewater treatment plant must be equipped with a powder or snow extinguisher.

11.8 INSPECTION AND MAINTENANCE CARD*

Installation date Start-up date: from to

Lp.	Date	Observations / Research	Actions taken	Signature
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

*To be completed by the user

12. OPERATING INSTRUCTIONS FOR THE DRIVER

12.1. EQUIPMENT PARAMETERS

DRIVER MONOBLOC 1.10	
Power supply voltage	230 V AC 50Hz
Stand-by power consumption	1.5 W
Maximum blower power	150 VA
Degree of watertightness	IP54 / IP65 (opcja)
Operating temperature	- 25°C do + 50°C
Alarm output	3-colour diode
Clock	RTC with battery back-up
Protection of the driver and output circuits	3A fuse
Overvoltage protection	275 V AC
Valve island	See manual / operating instructions the manufacturer of the household wastewater treatment plant. Each controller may differ in the colour of connectors, their number, purpose and cross-section. 1 – Air supply to the island maximum 150 l/min 500mBar 2 – mammoth filling pump - red, 3 – aeration (diffuser) - blue colour, 4 – mammoth pump out - white, 5 – mammoth recirculation pump - green,

12.2 SAFETY INSTRUCTIONS

Both the power supply and the output circuits of the driver operate at 230 V AC.

In these instructions the driver is referred to as the main control box or container with its connected external electrical circuits connected to it.

During start-up and operation it is necessary to follow the instructions in this manual instructions for use. Before installation, repair or maintenance, as well as during any connection work, it is essential to disconnect the mains supply and to ensure that the terminals and electric cables are not under voltage!

Installation and maintenance of the driver may only be carried out by qualified personnel with the necessary knowledge and the legally required electrical authorisation.

Modification of the driver parameters may only be carried out by persons/companies holding the relevant certificate from the manufacturer of MONOBLOC drivers.

The driver is to be connected to the mains in accordance with current regulations and standards relating to electrical installations, in particular relating to protection against electric shock.

The driver must not be misused.

The driver is not an intrinsically safe device, i.e. during failure it may be the source of a spark or high temperature, which in the environment of flammable gases or dust may cause fire or explosion. Therefore the driver should be separated from flammable gases and dust, e.g. by appropriate installation.

Use only in wastewater treatment plants constructed in accordance with applicable regulations.

Under no circumstances must the design of the driver be modified.

Children must be prevented from having access to the driver.

Violation of the labels or seals of the driver or its sockets will void the warranty on the unit.



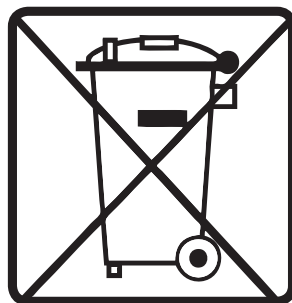
12.3 UTILISATION OF THE DEVICE

In accordance with the 2002/96/EG Waste Electronic Equipment Directive and the legislation in force in your country, the disposal/landfill of this product and its electrical/electronic accessories with your household waste is strictly prohibited. The owner of the equipment is responsible for the proper utilisation of used equipment, i.e. it must be returned to the appropriate collection points free of charge.

Dispose of packaging and product at the end of its useful life at a suitable recycling company.

Do not dispose of the product with normal waste.

Do not burn the product.



ATTENTION !!! Before replacing the fuse, unplug the driver from the mains.

OVERVOLTAGE PROTECTION OP1

User must remember that overvoltage protection is not designed to protect the driver against overvoltage in the electrical network (protection of electronics and other components), but against the possible consequences of the overvoltage! The driver after activation of the protection is not suitable for further operation, poses a danger to life and property!

12.4. SETTINGS IN THE DRIVER'S MENU

FILLING
005:55

The main screen can display:

- current time;
- operation mode and cycle of the wastewater treatment plant;
- failure and service statuses;

The menu is navigated using a keyboard consisting of:



Increases values



Reduces values



Moves the menu to the previous view



Moves the menu to the next view



Used to enter sub-menus, confirm or change data



Enters menu / exits menu / sub-menu



Deletes some failures and services

- ⌚ Each click is signalled by a short beep. If the screen remains in the menu without user intervention, it automatically exits the menu after 10 minutes returning to the main window without saving the changes made. The LCD backlight operates for 2 minutes after each click.
- ⌚ The driver performs an initialisation of the consumers at least once a day, i.e. checks the status and connection of the blower and the valves and performs an internal simulation of the correctness of the electronics.
- ⌚ Each entry of a value or parameter in the service menu is signalled by flashing of the parameter/value to be changed
- ⌚ Changes made in the service menu are always saved after exiting the service menu with the message "DATA RECOR PLEASE WAIT".
- ⌚ The alarm signalling, when switched on, only signals malfunctions between 8 a.m. and 8 p.m. By pressing the "R" button the external signalling will be silenced for 24 hours if there is still a problem.
- ⌚ The driver has a summer/winter time change function.
- ⌚ Please note, when current measurement is off, the driver will not detect disconnection or damage of the blower and valves.
- ⌚ When operating the system with current measurement switched off and the blower disconnected or damaged, there is a risk of damage to the valve island. Measurement are taken every 5 seconds.
- ⌚ The MONOBLOC driver has an energy-saving valve island, i.e. energy is consumed at the moment of opening/closing the respective section.
- ⌚ If the driver is equipped with a level sensor it switches itself between the operating modes. . If it is not equipped with a level sensor, start-up and holiday mode are activated via a menu item.
- ⌚ Holiday and start-up mode are switched off automatically after a suitable time has elapsed.
- ⌚ The manufacturer of the driver does not provide a password for the service menu, only the manufacturer of the domestic wastewater treatment plant can do so.
- ⌚ When changing parameters in the service menu, it is important to remember that they affect the operation of the entire wastewater treatment process and the overall performance of the wastewater treatment plant. Changes should be made carefully and thoughtfully.

12.5 MENU DISPLAY LAYOUT

12:00 01/01/2022 DELFIN SP. Z O.O.	The appearance of the display during normal operation of the driver. Failure messages and services are also displayed.
SET UP A DATE DD/MM/YYYY	To change the date, press OK and enter the correct date using   during setting by validating the data OK
SET UP TIME HH:MM	To change the time, press OK and enter the correct time using   during setting by validating the data OK
BLOWER SERVICE 15000 H	Information for the user on how much time is left until the service / maintenance of the blower. When the counter counts down to 0 H, it can be reset and its value restored until the next service by pressing R
WASTEWATER TREATMENT PLANT SERVICE 365 DAYS	Information for the user on how much time is left until the service / maintenance of the wastewater treatment plant. When the counter counts down to 0 days, you can reset it and restore its value for the next inspection by pressing R
PRELIMINARY CLARIFIER 365 DAYS	Information for the user how much time is left before the primary settling tank is pumped out. When the counter counts down to 0 days it is possible to delete it and restore its value for the next inspection by pressing R
HOLIDAY MODE OFF	To switch holiday mode on or off, press OK , then the message will flash Using   set the mode by confirming OK
MENU SERVICE	Tab for service technician, press OK to enter a password using to enter a password using     and validate the code OK The password can be made available only to the manufacturer of the wastewater treatment plant.

12.6 SIGNAL LIGHT COMMUNICATIONS TABLES

EVENT HISTORY	PROBABLE CAUSE	SOLUTION
NO EVENTS		
FUSE FAILURE	230V AC power jump, short circuit in the control or output circuit of the blower or valves	Fuse replacement (value 3A)
BLOWER POWER	Blower disconnected or current defective	Check the blower for correct operation, reset the error with the "R" button
POWER FAILURE	No power supply to the driver 230V AC 50Hz	Check the 230V AC supply line to the driver
POWER RETURN		
SERVICING OF WASTEWATER TREATMENT PLANT	The service counter of the wastewater treatment plant has deducted the set value	Service the wastewater treatment plant in accordance with the recommendations of the plant manufacturer
BLOWER SERVICE	The blower service counter has counted down to the set value	Have the blower serviced in accordance with the wastewater treatment plant manufacturer's recommendations
PRELIMINARY CLARIFIER	The service counter of the preliminary clarifier has counted down the set value	Pump out the preliminary clarifier as recommended by the manufacturer of the wastewater treatment plant and delete the message (described above in the menu)
POWER RECEPTOR	A device other than a blower approved by the manufacturer has been connected to the blower socket	Warranty for the driver is lost

SIGNALLING COLOUR	EVENT HISTORY	PROBABLE CAUSE	SOLUTION
Lights up 	NO EVENTS		
Flashes 	BLOWER POWER	Blower disconnected or faulty	Check the blower for correct operation
Does not light up 	POWER FAILURE	No power supply to the driver 230V AC 50Hz	Check the 230V AC supply line to the driver
Lights up 	POWER RETURN		
Flashes 	SERVICING OF WASTEWATER TREATMENT PLANT	The service counter of the wastewater treatment plant has deducted the set value	Service the the waste water treatment plant as recommended by manufacturer and reset the meter 
Flashes 	BLOWER SERVICE	The blower service counter has counted down to the set value	Service the blower as recommended by manufacturer and reset the meter  on the relevant tab
Flashes 	PRELIMINARY CLARIFIER	The service counter of the settling tank has counted down the set value	Pump out the settling tank as recommended by the manufacturer and reset the meter 
INDICATION		REASON	
Black top line of the display		- humid processor in the driver	
Driver does not start		- faulty 3A fuse - power failure 230V AC - the internal plug connecting the printed circuit boards is pulled out	
Blower and/or valves not working		- faulty 3A fuse - faulty relay of the respective receiver - burnt PCB tracks - damaged receivers	
OP1 varistor on the PCB bottom side burst, fuse blown, driver switched off		- overvoltage in 230V AC mains, loss of warranty	
Strange characters appear on the display, bad contrast of characters		- the driver is damp due to badly plugged holes or badly screwed housing. There is a risk of rotting from toxic fumes from the wastewater treatment plant	
The driver displays a strange date and/or time, e.g. 35:68 55/15/2098		- humid real-time circuit - defective or discharged 3V battery	

12.7 MAINTENANCE OF THE UNIT AND INSPECTION OF THE DRIVER

MONOBLOC 1.10 must be serviced at least once every 12 months.
During inspection and maintenance, the following must be checked:

Date of inspection / name of inspector	Valve function [tight / leaks]	Electrical / pneumatic system condition [good / bad]	Counter status "BLOWER SERVICE" [..... h]	Counter status " DRIVER" [..... h]

13. WARRANTY CONDITIONS

Thank you for purchasing a wastewater treatment plant from the wide range of DELFIN Sp. z o.o. based in Kielce. We are convinced that it will meet your expectations and provide comfort of use. We guarantee smooth operation of the device, in accordance with the technical and operating conditions described in the Operation Manual.

SBRmad PRESTIGE wastewater treatment plants in Poland are covered by a guarantee of proper operation according to their technical and operational specification on:

- a period of 10 years from the date of sale (all components of the unit made of polyethylene);
- other devices included in the kit of the wastewater treatment plant, including the control cabinet, are subject to warranty according to the rules specified by the manufacturer proper for the device;

The guarantee covers physical defects inherent in the device, i.e. material or assembly defects.

1. The warranty service will be provided only upon presentation of a properly completed Warranty Card together with the original proof of purchase
2. The guarantor will not be held liable if the device is incorrectly selected for use or used in a way inconsistent with the recommendations.
3. The warranty covers only DELFIN Sp. z o.o. products purchased from DELFIN Sp. z o.o. partners or those supplied by DELFIN Sp. z o.o.
4. The condition for the warranty period specified above is:
 - a) the execution of the assembly in accordance with the posted instructions and the art of construction,
 - b) the correct operation of wastewater treatment plant:
 - according to the inspection and maintenance schedule;
 - keeping a Water Consumption Card;
 - c) documented emptying of the wastewater treatment plant once every 10 months or as specified in point 4.1 of the Operation Manual.

d) commissioning of the wastewater treatment plant by the installer in order to check the correctness of the specified wastewater discharge parameters.

5. In order for the Buyer to exercise his rights under this guarantee, he must present:

- a) correctly filled in Warranty Card, being an appendix to these Warranty Terms and Conditions;
- b) the original proof of purchase of the product;
- c) the latest invoice or document evidencing the removal of sludge from the wastewater treatment plant complained of;
- d) a detailed description of the defect;
- e) a technical description of the wastewater treatment plant including ground and water conditions;
- f) a copy of the Water Consumption Card;
- g) a copy of the Record of Warranty Repairs at the Wastewater Treatment Plant;
- h) analyses of raw and treated sewage carried out not earlier than 14 days before the date of the claim.
- i) analyses must be performed in an accredited laboratory - 24-hour mean samples **

*** -in the event of a claim concerning the effectiveness of the wastewater treatment plant

This information is necessary for the proper investigation of the complaint, and in particular for determining whether the installation has been carried out in accordance with the construction documentation and the manufacturer's recommendations.

6. The guarantee shall ensure that spare parts are replaced free of charge in accordance with the conditions specified in this guarantee within the shortest possible time.

7. The guarantee does not cover:

- a) products that have been installed in a manner contrary to the instructions described in the Operation Manual;
- b) products which, according to the Warranty Card, show signs of alteration, damage or changes;
- c) damage caused by:

- improper use, alterations and structural changes by the user or third parties;
- use of non-original spare parts use of equipment without the required inspection by the installer;
- periodical use of accessories other than those manufactured by DELFIN Sp. z o.o.;
- inadequate protection during transport

d) damage to the device due to mechanical, thermal, chemical and other factors caused by the user's action or by external forces;
e) parts that are subject to natural wear and tear as a result of their endurance;
f) products without a completed Warranty Card, during the warranty period.

8. The warranty does not cover costs related to disassembly, excavation, reinstallation and commissioning of the product.

9. A defect must be reported in writing to the Seller immediately after the discovery of the defect.

10. All defective products or parts replaced under the guarantee shall become the property of DELFIN Sp. z o.o.

11. The User is entitled to exchange the purchased device for a device free from defects, if DELFIN Sp. z o.o. finds that the existing defect is impossible to remove..

12. DELFIN Sp. z o.o. and DELFIN's Trade Partners will not be liable to the Buyer for loss, damage or destruction of the product resulting from other reasons than defects inherent in the product and will not be liable for damage caused by product defects.

13. The rights under the guarantee do not extend to the Buyer's right to claim reimbursement of lost profits or refunds of losses incurred as a result of product failure.

14. DELFIN Sp. z o.o. is not responsible for incorrect operation of the wastewater treatment plant or failures caused by poor selection of equipment due to too low/high volume of wastewater discharge or by throwing objects into the wastewater treatment plant that are not biodegradable in the short term.

15. The Seller's liability under the warranty for physical defects of the products is excluded .

10 YEARS

warranty on
the tank

2 YEARS

warranty
on technical
equipment



16. WARRANTY CARD

PRODUCER	DELFIN Sp. z o.o., Poland ul. Chorzowska 22 25-852 Kielce NIP 959-10-41-58 tel. +48 41 27 83 555 www.delfin-polska.pl	
SELLER	Signature and stamp of the Seller	Sale date
PRODUCT NAME		
MODEL		
FACTORY NUMBER		
INSTALLATION		
Signature and stamp of the installer		Place and date of installation
		Start up Date
Purchaser		
Name of Purchaser	Address (town, postcode, street, number)	
	e-mail	
	phone nb.	
PURCHASER'S DECLARATION		
I declare that I am aware of the WARRANTY TERMS. I have been informed of the safe way to use the purchased device.		
Location and date		Purchaser signature

NOTES

[illegible]



Thank you for purchasing the wastewater treatment plant DELFIN SBR mad Prestige.

Delfin Sp. z o.o. is one the market leaders in wastewater treatment systems. Since its establishment in 1993, the company has focused on environmental protection and water resources. It operates its own research laboratory for wastewater analysis and treatment process control. A focus on quality and innovative technology ensure that Delfin products are durable and reliable, meeting the expectations of both residents of detached houses and owners of hotels, guest houses, restaurants, petrol stations and car washes. The manufactured devices are CE marked and meet the criteria of the European harmonised standards: PN-EN 12566-1:2004/A1:2006 and PN-EN 12566-3-A2:2013.

Further information: www.delfin-polska.pl