Wastewater treatment plants up to 5,000 Pe for municipal use

SBR Treatment plant BIOclear vario

WATER IS OUR ELEMENT

Kordes

2023.102.0

Quality - Innovation - Reliability

Kordes is your reliable partner for wastewater technical products. The satisfaction of our customers is always our first priority, which is why we only use high-quality and durable components.

In the course of the company‘s history, now in its third generation, we have continuously optimized our products through innovative ideas, experience and a great attention to detail.

The know-how we have built up is the result of the engineering expertise of our employees and the practical experience of thousands of products supplied, which we subsequently look after for many years as part of maintenance contracts after successful completion of installation.

Active environmental protection with a perspective for the future is certainly one of the greatest challenges of our time. In the field of wastewater technology we contribute to keep our waters clean and to develop solutions for tomorrow.

We will be pleased to accompany you from planning to successful commissioning. An individual drawing especially for your project in 3D view, visualizes the product even before the start of production. Together we will find the ideal solution for your project and we are looking forward to a successful cooperation.

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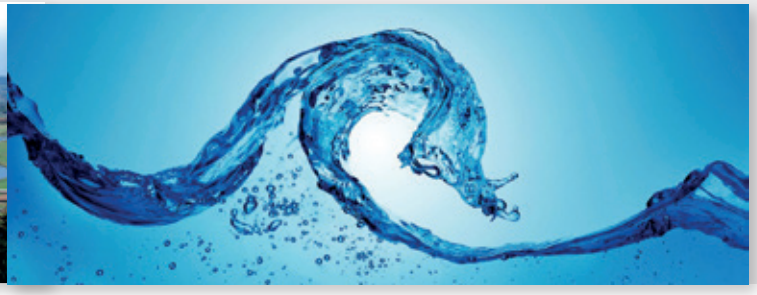
MADE IN GERMANY
SINCE 1935



SBR wastewater treatment plant BIOclear vario for optimal treatment of municipal wastewater

The functional principle of the SBR treatment plant BIOclear vario

The SBR (Sequencing Batch Reactor) process is a proven technology for the treatment of domestic wastewater. The treatment plant consists of the pre-treatment, buffer tank and SBR reactor. The pre-treatment consists of a primary sedimentation in the case of the BIOclear vario-B/T and a spiral screen in the case of the BIOclear vario-S. The wastewater is then stored in the buffer tank and further treated according to the set cycle program as follows:

1. feeding of the SBR reactor from the buffer tank.
2. aeration and mixing of the activated sludge in the SBR reactor for the biological process.
3. sedimentation phase to separate the clear water from the activated sludge.
4. clear water discharge of the treated wastewater.
5. excess sludge discharge from the SBR reactor. In the case of BIOclear vario-B/T, this is stored with the raw sludge in the pre-treatment and BIOclear vario-S in a sludge storage tank.

Applications of BIOclear vario

- For wastewater treatment in towns and residential areas with separate or combined sewerage systems, in commercial enterprises, office buildings, hotels, campsites, restaurants, service areas, sports facilities, and all comparable applications for the treatment of domestic wastewater.
- Also ideal for highly fluctuating load situations.
- Wastewater treatment with C-degradation, nitrification, denitrification and P-precipitation as a self-sufficient system with remote control system, as well as corresponding measuring and dosing technology.

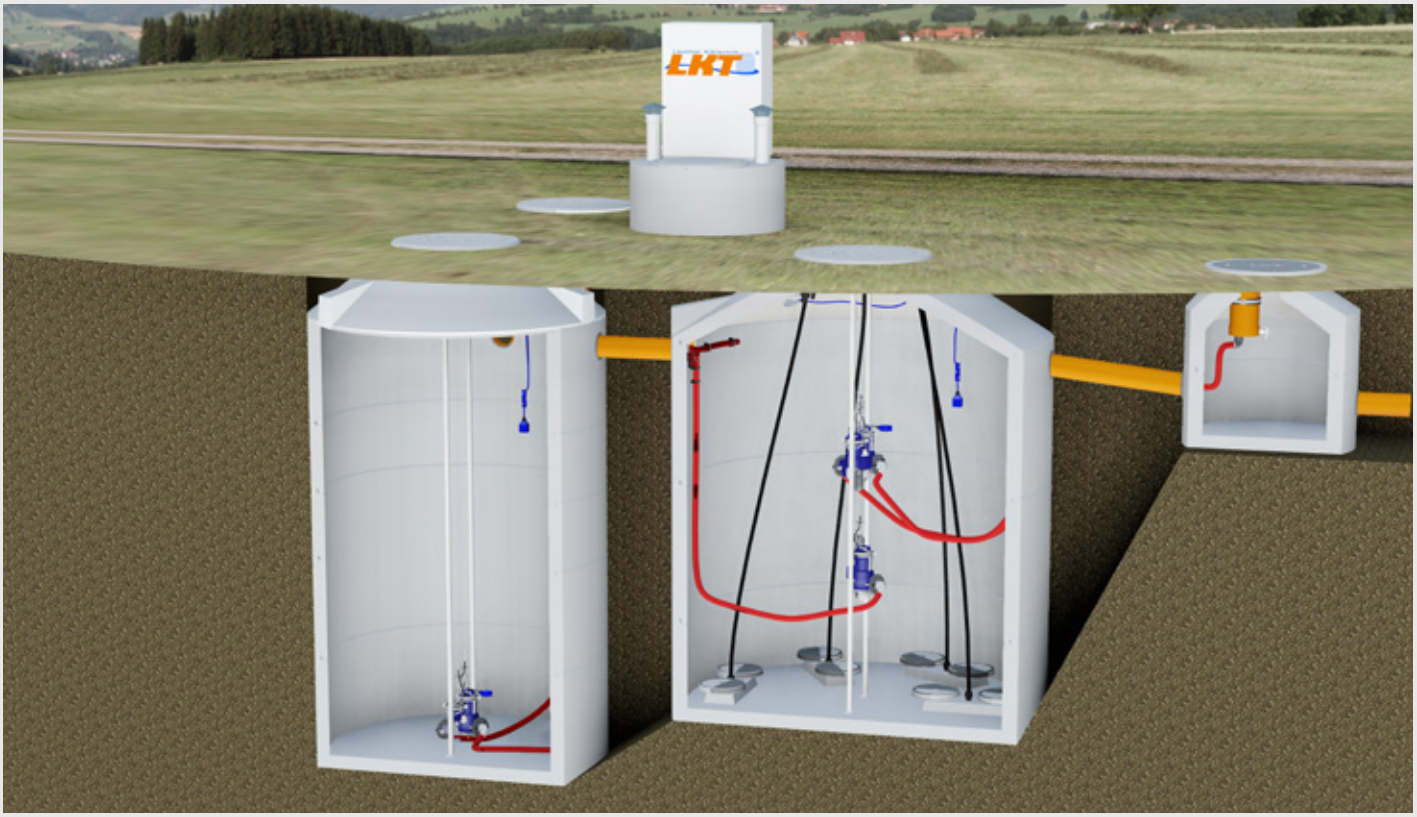
BIOclear vario-B/T

- Available with precast concrete up to a connection size of 650 Pe and with in-situ concrete tanks up to 1,000 Pe.

BIOclear vario-S

- Sludge treatment so that only contaminant-free stabilized surplus sludge is produced.
- Available up to a connection size of 5,000 Pe.

SBR wastewater treatment plant BIOclear vario-B/T for wastewater treatment up to 1,000 Pe



Advantages of BIOclear vario-B/T

- Re-adjustment possibility in case of underload and adjustability to the actual connection size
- Daily and weekly load fluctuations can be effectively absorbed
- Stability due to reliable control of the sludge volume in the SBR
- Redundancy of the essential plant components
- Tool-free removal of the aggregates from the treatment tanks
- PLC control with own programming
- Remote data transmission and remote parameterization
- Measurement technology for monitoring and control of the processes
- Dosing technology for optimization of the effluent values
- Wastewater treatment with: C-degradation, nitrification, denitrification and P-precipitation
- Possibility to extend the BIOclear vario-B with additional tanks

Applications

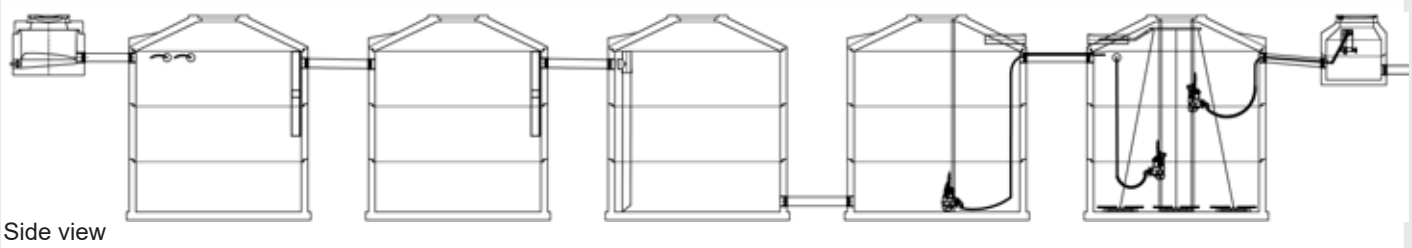
The BIOclear vario-B/T wastewater treatment plant is the ideal treatment system when different load situations occur when treating wastewater. This plant is used for wastewater treatment in villages and residential areas with separate or combined sewage systems, in commercial enterprises, office buildings, hotels, campsites, restaurants, service areas, sports facilities, as well as all comparable applications for the treatment of domestic wastewater. We supply the sewage treatment plant as a complete system with precast concrete parts or as technical equipment for existing tanks or newly constructed in-situ concrete tanks.

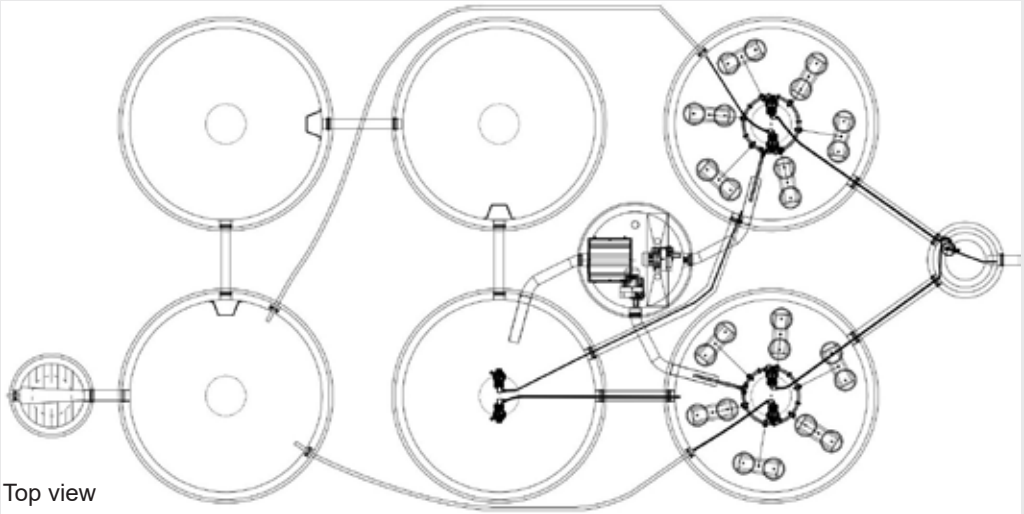
Technical equipment

As the first treatment stage, the wastewater first flows through the pre-sedimentation. Here, the raw sludge is settled together with the excess sludge as bottom and scum. As soon as the maximum sludge level is reached, discharge must take place.
For optimum adjustment of the biology, all pumps can be easily moved by means of a sliding pipe guide and always set to the correct height to suit the connection size. Underload operation can thus be effectively prevented.
The control of the wastewater treatment plant is carried out by a specially programmed PLC with display and operating options of a clearly arranged touch display. The measuring and dosing technology is individually selected according to the requirements in order to achieve the required treatment performance with the greatest possible reliability. For smooth operation management, we offer our own solution of remote data transmission and parameterization.
All fixing components and pipelines installed in the treatment tank are corrosion-resistant and made of stainless steel or plastic. The replacement of pumps and diffuser systems can be done during operation, so that they can be removed without having to get in.
When using disc diffusers, the air distribution can be controlled by means of sliders from the access opening, so that an optimal oxygen supply of the activated sludge is possible.
In accordance with this concept, our supplied plants run with high flexibility together with great operational reliability.

System BIOclear vario-B with precast concrete parts
System BIOclear vario-T with in-situ concrete tank

SBR wastewater treatment plant BIOclear vario-B


Side view

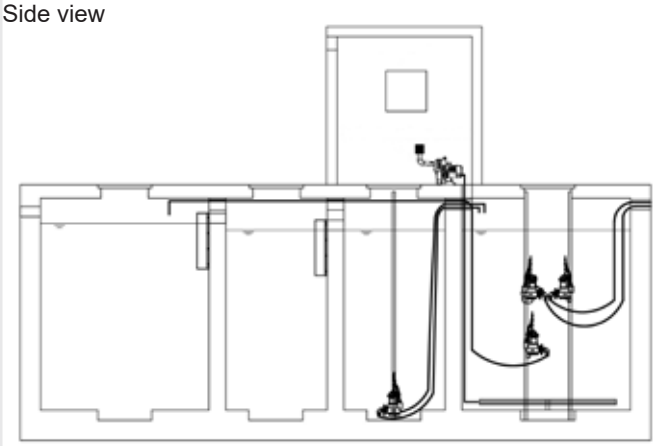

Top view

The system shown as an example with:
1 x expansion shaft
2 x pre-sedimentation tanks
2 x buffer tanks
2 x SBR reactors
1 x sampling shaft
1 x technical shaft

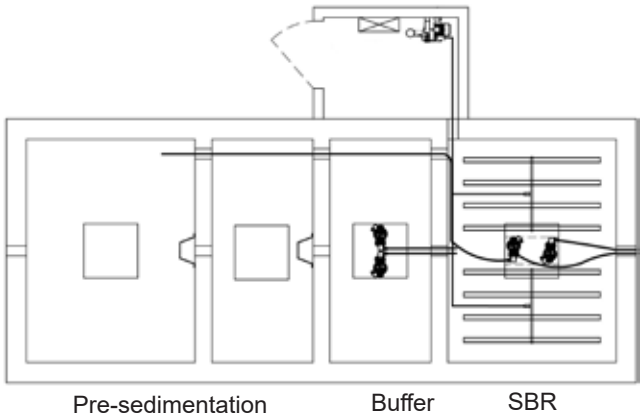
Options:
- Inlet pump station
- Dosing shaft
- Aeration system
- Operating building

SBR wastewater treatment plant BIOclear vario-T

Side view



Top view

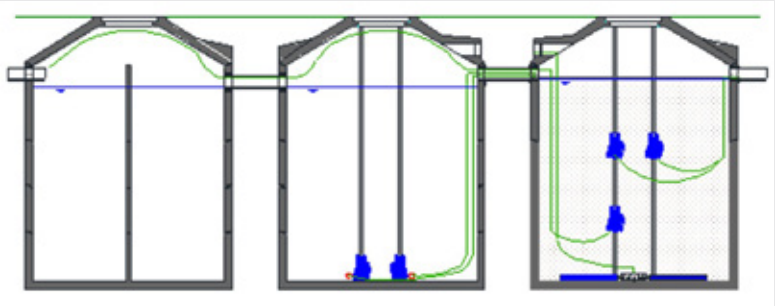


We can adjust the tank dimensions according to your individual construction site.

Outdoor column with control cabinet mounted on the technical shaft

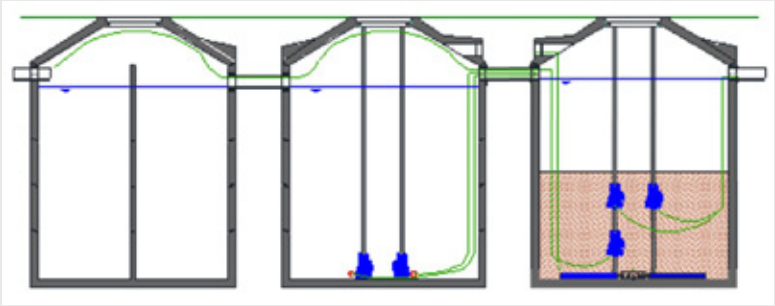
Side channel compressor in the technical shaft

Regulation at underload



SBR reactor in underload operation due to low flow load

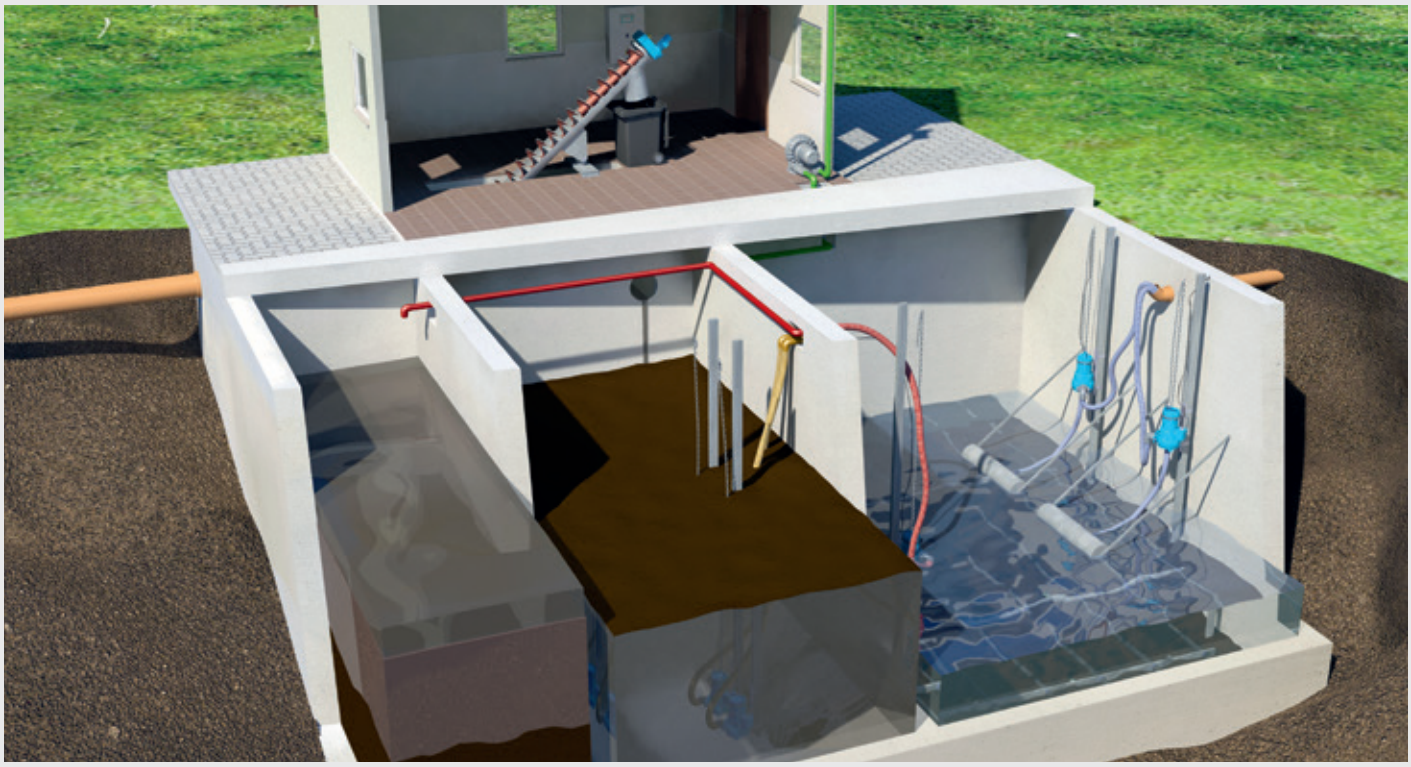
Aeration system with disc diffusers in the SBR reactor



SBR reactor in normal operation after adjustment of the pump height

Pump on sliding pipe / level measurement pressure sensor

SBR treatment plant BIOclear vario-S for wastewater and sludge treatment up to 5,000 Pe



Advantages of BIOclear vario-S

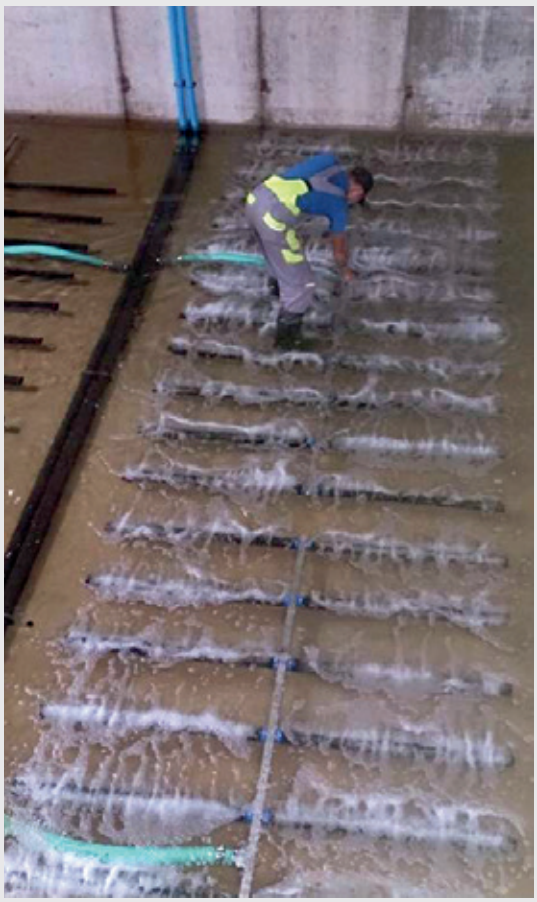
- Re-adjustment possibility in case of underload and adjustability to the actual connection size
- Daily and weekly load fluctuations can be effectively absorbed
- Stability through reliable control of the sludge volume in the SBR
- Separation of impurities in the inflow of the wastewater treatment plant to protect the plant technology
- Sludge treatment through sludge stabilization in the SBR reactor
- Redundancy of the main plant components
- Tool-free removal of the aggregates from the treatment tanks
- PLC control with own programming
- Remote data transmission and remote parameterization
- Measurement technology for monitoring and control of the processes
- Dosing technology for optimization of the effluent values
- Wastewater treatment with: C-degradation, nitrification, denitrification and P-precipitation

Aplications

The BIOclear vario-S wastewater treatment plant is the ideal treatment system when sludge treatment is required in addition to wastewater treatment. This plant is mostly used in larger units for towns and residential areas with separate or combined sewage systems, in commercial, industrial and vacation facilities, as well as all comparable applications for the treatment of domestic wastewater. For the sewage treatment plant we supply the technical equipment for already existing tanks or newly constructed in-situ concrete tanks.

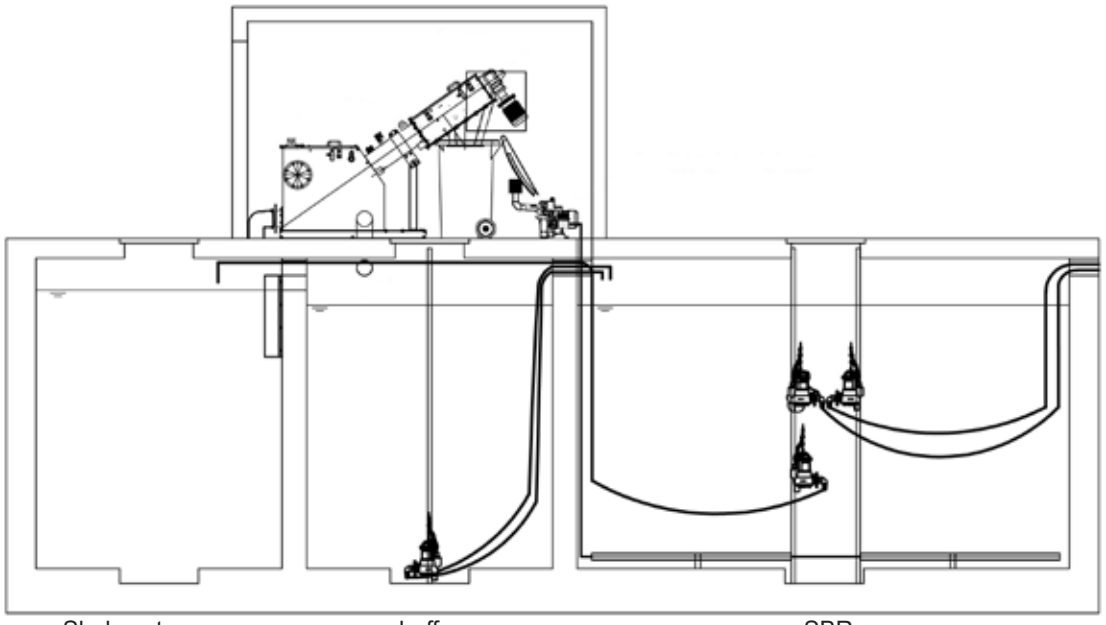
Technical equipment

In the inlet of the wastewater treatment plant, impurities are mechanically separated by a spiral screen. The subsequent plant technology is thus protected and it can be guaranteed that there will be no impurities in the sewage sludge later. Primary sedimentation is not provided for the BIOclear vario-S, as the treatment of the entire sludge takes place together with the biological process in the SBR reactor. Subsequently, the treated sludge is pumped into a separate sludge storage tank by the excess sludge discharge. The sludge pre-thickened here can then be easily further dewatered in a subsequent stage.
The wastewater treatment plant is controlled by a specially programmed PLC with display and operating options of a clearly arranged touch display. The measuring and dosing technology is individually selected according to the requirements in order to achieve the required treatment performance with the greatest possible reliability. For smooth operation management we offer our own solution of remote data transmission and parameterization.
All fixing components and pipelines installed in the treatment tank are corrosion-resistant and made of stainless steel or plastic. The replacement of pumps and diffuser systems can be done during operation, so that they can be removed without having to get in.
In accordance with this concept, our supplied plants run with high flexibility together with great operational reliability.

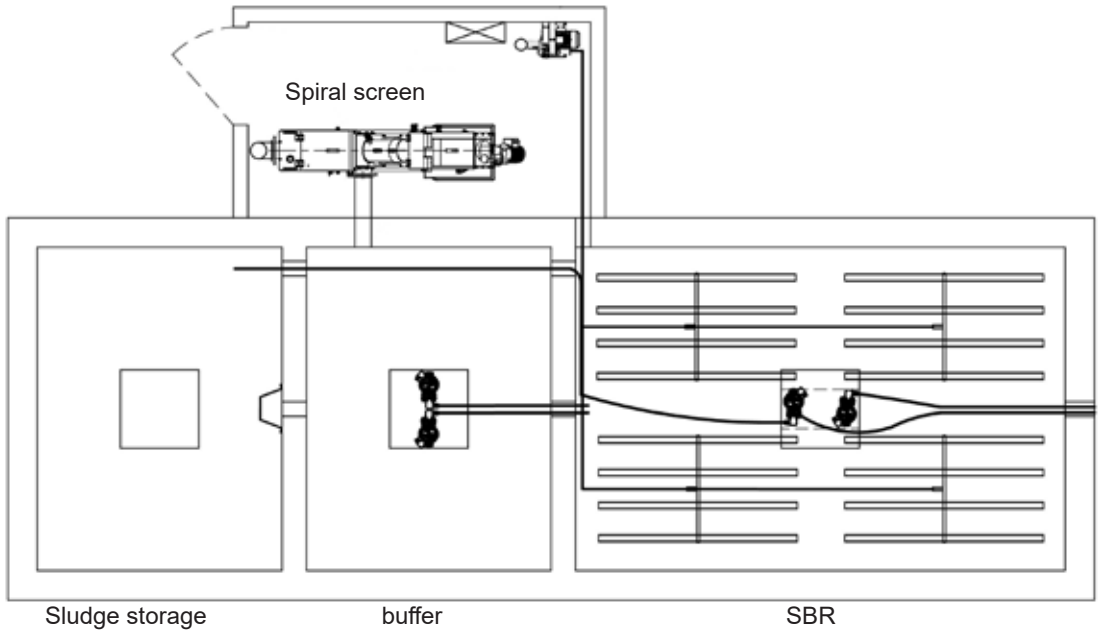


SBR treatment plant BIOclear vario-S
System for in-situ concrete tanks

Side view



Top view

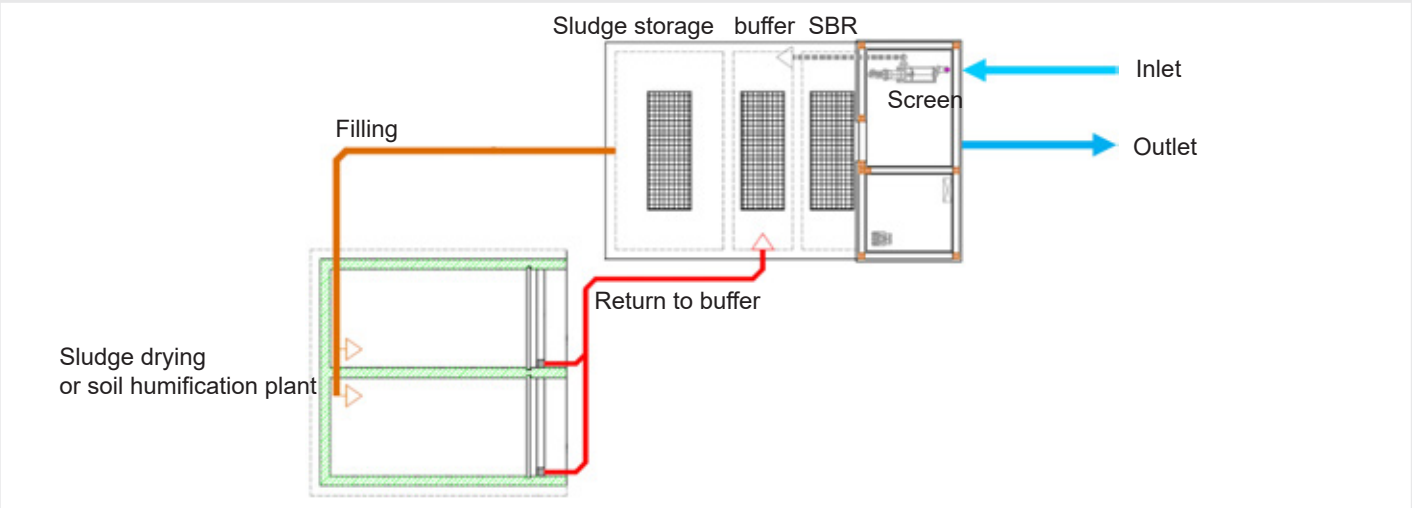


We can adjust the tank dimensions according to your individual construction site.

Control technology in the operating room

Aeration grid with membrane tube aerators in SBR

Proposal of a wastewater treatment plant with complete sludge treatment and sludge dewatering



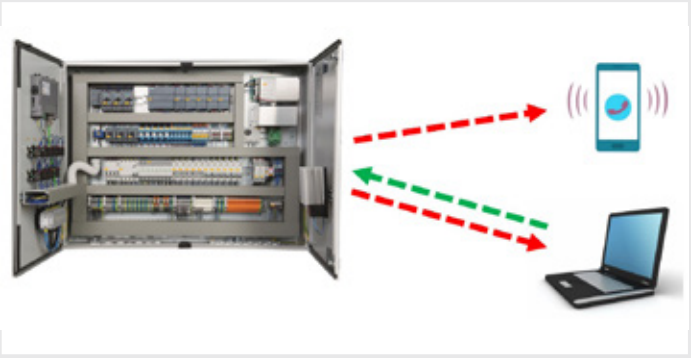
Sludge treatment and dewatering is performed in the following steps:

1. Separation of the impurities through the spiral screen.
2. Sludge stabilization in the SBR reactor together with wastewater treatment.
3. Pre-thickening of the sludge in the sludge storage tank. The overflow water flows back into the buffer tank.
4. Dewatering takes place in the sludge drying unit. The leachate flows back into the buffer tank.
5. After one to two years, the maximum filling level and complete dewatering is reached, so that emptying can take place.

Equipment variants of the wastewater treatment plant

View of the control cabinet

Structure of the control technology



Data connection of the control unit

EX-protection of the wastewater treatment plant with complete documentation and testing

Variants of control technology:

- Siemens SPS Touch Display
- Manual / automatic switching
- Ex-protection
- Telemetry for remote data transmission
- Integration of an inlet pump station

Variants of the aeration system:

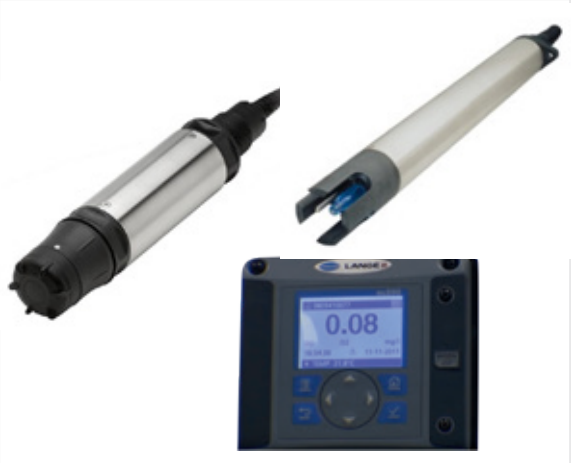
- Plate aerators for round tanks
- Aerator grid with tube aerators for rectangular tanks

From planning to operational management of the plant

- Offer after clarification of the first technical questions
- Wastewater treatment calculation according to DWA M 210
- Drawing for approval
- Tender texts in GAEB format
- Contract award, delivery, installation
- Maintenance or operating contract

Dosing technology for:
- P-precipitation
- neutralization
- C dosing

Pressure sensors for level measurement, used to control the wastewater treatment plant and display the daily water volume



Measurement technology with probes for:
- Oxygen measurement
- pH-value
- redox
- conductivity

Variants of online analysis:

- Oxygen measurement
- pH measurement
- Redox
- Conductivity measurement
- Turbidity measurement in the effluent
- Quantity measurement

Additional treatment steps:

- P precipitation
- Neutralization
- Defoamer
- C-dosing
- UV disinfection

From order to approval

- Creation of the order confirmation
- Creation of a drawing
- Approval of the drawing by the customer
- Delivery of the concrete tanks
- Civil engineering and moving of the concrete tanks by the construction company
- Leakage test
- Installation of the plant technology
- Functional test, acceptance and handover of the wastewater treatment plant

Service

Spare parts

You need a spare part? Due to our extensive component archive and with corresponding stock-keeping, we will find the right spare part for you, so that your system is quickly ready to work again.

Installation and commissioning

After you have received the delivery and the on-site preparations have been completed, we will be pleased to come to the technical assembly. After a successfully completed test run, everything is ready for commissioning. As a preparation for professional operation management, you will receive a detailed technical briefing from us.

Maintenance

Your Kordes system has been running trouble-free so far and you are satisfied with the product. To keep it that way, we recommend regular and qualified maintenance. As part of the maintenance contract, we check the entire systems technology and adjust everything to the current conditions. We then document the status of the system, including the measures carried out, and provide you with a clear report. A permanently reliable operation of your treatment plant is thus guaranteed.

Contact
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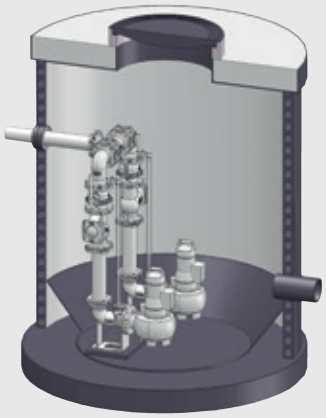
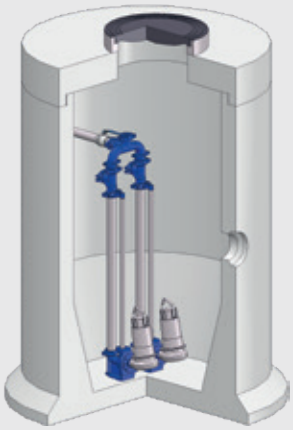
Products

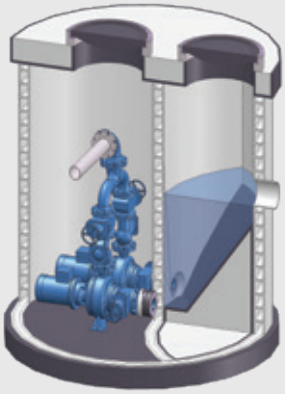
DORANT with PE-HD tank



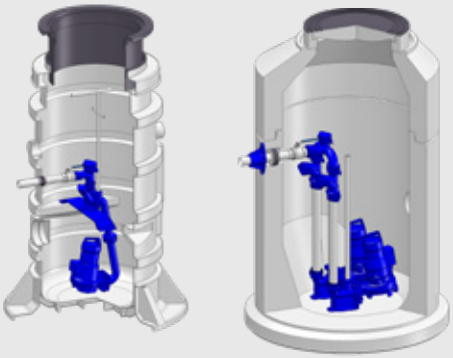
GARANT with reinforced concrete tank



HEKANT with dry-installed pumps

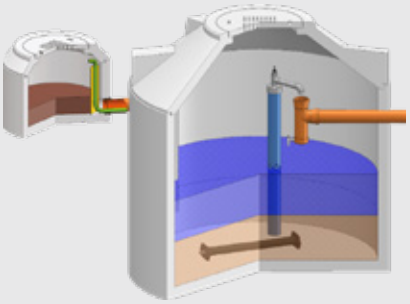


VARIANT Pressure drainage



BIOclear vario wastewater treatment plant up to 5,000 Pe

Small wastewater treatment plants up to 50 Pe



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