

Small WWTP for 4 - 50 inhabitants  
The air system

## AQUA-SIMPLEXair



WATER IS OUR ELEMENT

**Kordes** 

2023.130.0

## 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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www.kordes.de

 **MADE IN GERMANY**  
 **SINCE 1935**



## SBR small WWTP AQUA-SIMPLEXair only with air system



Treatment in 8-hour cycles, 3 times a day



### 1. Filling - Inlet

The wastewater is conveyed from the pre-treatment into the SBR reactor.



### 2. Aeration

The wastewater is enriched with oxygen from the air by means of a diffuser and circulated. The microorganisms that form as a result, are used to treat the wastewater as activated sludge.



### 3. Sedimentation

In the sedimentation (settling) phase, the aeration is switched off. The sludge in the plant settles to the bottom. A clear water zone is created in the upper area. This is where the treated wastewater is now located.



### 4. Clear wastewater discharge outlet

The treated wastewater is now pumped out of the clear water zone. The new cycle can begin.

## AQUA-SIMPLEXair for 4 - 50 inhabitants

- The small wastewater treatment plant for retrofitting and new construction
- Plug-in compressor with power and compressed air connection
- A compressor brings the necessary oxygen into the SBR reactor
- Including sampling module on the outlet pipe
- Treatment performance:

**C** Minimum requirement with removal of carbon (BOD<sub>5</sub>, COD).

**D** Here, nitrogen is biologically degraded by nitrification and denitrification.

- Available in plastic or concrete tank



in plastic tank

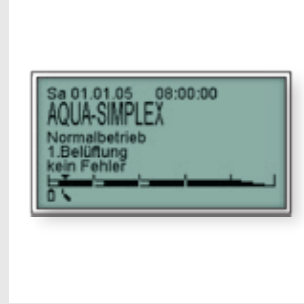
... or concrete tank



## Technical details



Control unit + compressor



Display



Level control



SBR technology



Screw tops



Tube set



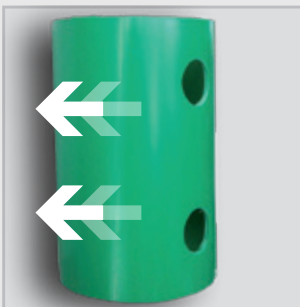
Sampling container



Sampler (optional)

### The AQUA-SIMPLEXair quick mounting system

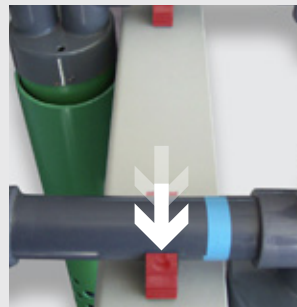
First, the sliding tubes are screwed to the partition wall



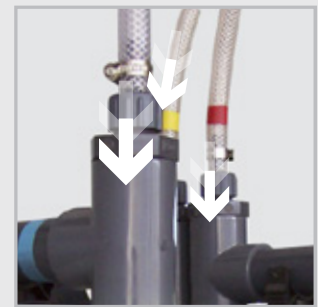
Then feed the air lift pump into the sliding tube



Securing is done by a clamp (shown here in red), which is fixed on the partition wall



In the last step, the compressed air hoses are screwed on - done!

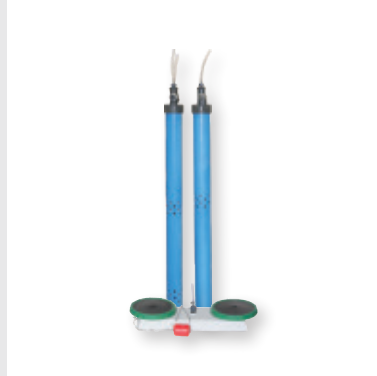


## Model variants

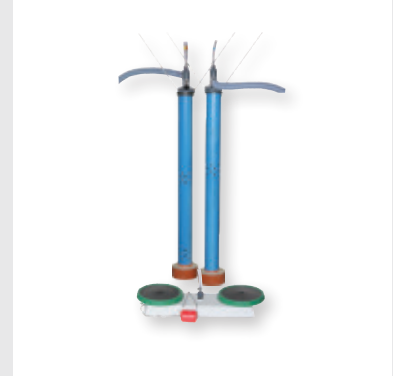
4-16 Pe  
Single tank - partition wall suspension



4-16 Pe  
Two tanks - partition wall suspension



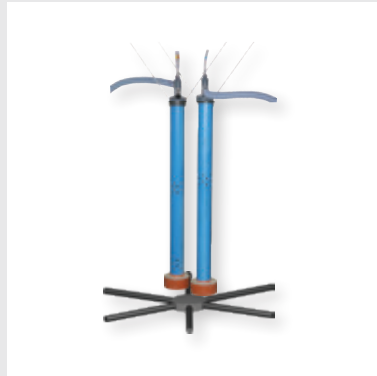
4-16 Pe  
Two tanks chain suspension



20-28 Pe  
Two tanks - partition wall suspension



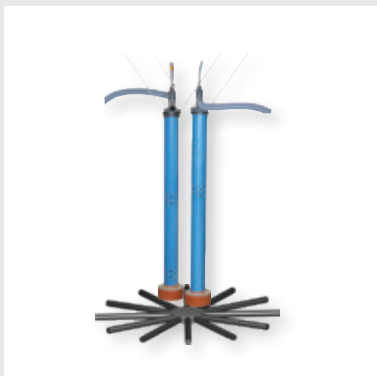
20-28 Pe  
Two tanks chain suspension



32-50 Pe  
Three tanks partition wall suspension



32-50 Pe  
Three tanks chain suspension



## The small wastewater treatment plant only with air operation for the single and multi-family

### ■ New plant

Supplied in concrete (ring or compact construction) or plastic tank

### ■ Retrofit

For the existing tank with a precisely prepared treatment technology

### ■ Air technology

The septic tank contains the membrane aerators for the oxygen supply and the air jacks for pumping water. Everything is supplied exclusively with compressed air!

### ■ Load fluctuations

With AQUA-SIMPLEXair the daily load fluctuations can be effectively handled. A permanent underload is possible to a small extent.

### ■ Water level measurement

The water level is measured via dynamic pressure. This is used to regulate the wastewater treatment plant for normal, economy and vacation operation.

### ■ Dynamic aeration

The dynamic aeration takes place according to demand. Here, energy savings of up to 30% can be achieved compared to conventional SBR treatment plants.

### ■ Energy demand

Demand for 4 Pe: 264 kWh/year  
 Demand for 8 Pe: 333 kWh/year  
 Demand for 12 Pe: 432 kWh/year  
 Demand for 16 Pe: 476 kWh/year

### ■ Expandability of the treatment plant

- Phosphate elimination with P-module
- Carbon dosing with C-module
- Remote data transmission for error messages via SMS

### ■ Completely ready to plug in

The control system and the individual units are connected with plugs and screwing locks. This makes it possible to replace spare parts quickly and inexpensively without the need for a service technician.

### ■ Long-term observation

The compressor has an operating time of approx. 18,000 hours.

Demand for 4 Pe: 2.714 kWh/year

Demand for 8 Pe: 3.482 kWh/year

Demand for 12 Pe: 3.935 kWh/year

Demand for 16 Pe: 4.355 kWh/year

### ■ Control unit

In addition to the process control of the wastewater treatment plant, operating hours and error messages are also stored. All operating data are clearly displayed via the full text display. The plug-in control unit also includes a serial interface (RS232) for PC connection. The standard cable length is 15 m. Optionally 25 m or 35m.

### ■ Maintenance

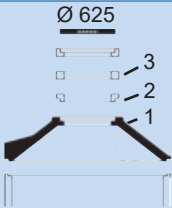
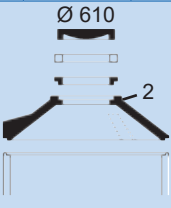
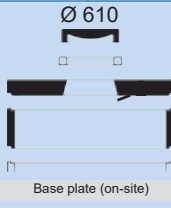

2 x year

# Container

Type	Pe.	Article No.	Weight [kg]		Installation dimensions [m]				Volume [m³]	Water depth [m]	BIO-FUG bucket
			Total	Heaviest part	Inner diameter Length/ Width	Installation depth	Inlet depth	Outlet depth			
<b>Single tank - ring type concrete</b>											
ASBR 04/2000 EB	4	K4411	5.420	2.660	2,00	2,15	0,75	0,85	3,8	1,20	2
ASBR 06/2000 EB	6/8	K4412	6.920	2.660	2,00	2,90	0,75	0,85	6,1	1,95	3
ASBR 08/2500 EB	8	K4461	8.000	3.520	2,50	2,35	0,82	0,92	6,6	1,33	3
ASBR 12/2500 EB	12	K4463	9.660	3.520	2,50	2,95	0,82	0,92	9,5	1,93	5
ASBR 16/2500 EB	16	K4465	11.320	3.520	2,50	3,35	0,82	0,92	11,5	2,33	6
<b>Two-tank - ring type concrete</b>											
ASBR 12/2000 ZB	12	K4468	12.120	2.660	2,00	2,65	0,75	0,85	11,0	1,70	5
ASBR 16/2000 ZB	16	K4470	12.420	2.660	2,00	2,90	0,75	0,85	12,6	1,95	8
ASBR 16/2500 ZB	16/20	K4471	14.840	3.520	2,50	2,35	0,82	0,92	13,6	1,33	5
ASBR 24/2500 ZB	24	K4472	16.280	3.520	2,50	2,70	0,82	0,92	17,0	1,68	8
ASBR 28/2500 ZB	28	K4473	17.720	3.520	2,50	2,95	0,82	0,92	19,5	1,93	8
ASBR 32/2500 ZB	32	K4475	19.560	3.520	2,50	3,35	0,82	0,92	23,4	2,33	8
ASBR 36/2500 ZB	36	K4477	20.500	3.520	2,50	3,55	0,82	0,92	25,4	2,53	10
ASBR 40/2500 ZB	40	K4479	22.440	3.520	2,50	3,95	0,82	0,92	29,3	2,93	10
<b>Triple tank - ring type concrete</b>											
ASBR 44/2500 DB	44	K4486	26.190	2.830	2,50	3,35	0,82	0,92	35,6	2,33	12
ASBR 50/2500 DB	50	K4487	27.420	2.830	2,50	3,55	0,82	0,92	38,5	2,53	15
<b>Single tank - compact concrete</b>											
ASBK 04/2000 EB	4	K4610	6.260	5.000	2,00	2,21	0,80	0,90	3,6	1,16	1
ASBK 06/2000 EB	6/8	K4612	8.080	6.820	2,00	3,01	0,80	0,90	6,1	1,96	1
ASBK 08/2500 EB	8	K4617	8.060	6.310	2,50	2,40	0,82	0,92	6,5	1,33	1
ASBK 12/2500 EB	12	K4620	10.630	8.880	2,50	3,06	0,82	0,92	9,8	1,99	1
<b>Two-tank - compact concrete</b>											
ASBK 16/2000 ZB	16	K4622	14.960	6.820	2,00	3,01	0,80	0,90	12,6	1,96	2
ASBK 16/2500 ZB	16/20	K4625	15.660	6.310	2,50	2,40	0,82	0,92	13,6	1,33	2
ASBK 28/2500 ZB	24/28	K4630	19.770	8.880	2,50	3,06	0,82	0,92	20,0	1,99	2
<b>Triple tank - compact concrete</b>											
ASBK 32/2500 DB	32	K4640	24.810	6.720	2,50	2,60	0,82	0,92	23,8	1,53	3
ASBK 36/2500 DB	36/40	K4645	27.720	7.690	2,50	3,06	0,82	0,92	30,6	1,99	3
<b>Single plastic tank</b>											
ASBP 04/3700 EB	4	K5110	153	153	2,40 / 1,47	2,05	0,80	0,80	2,95	1,25	-
ASBP 06/4900 EB	6	K5113	185	185	2,50 / 1,70	2,38	0,80	0,80	4,30	1,57	-
ASBP 08/6500 EB	8	K5115	235	235	3,50 / 1,70	2,38	0,80	0,80	6,00	1,57	-
<b>Two plastic tank</b>											
ASBP 12/4900 ZB	12	K5220	324	162	2,50 / 1,70	2,38	0,80	0,80	4,30	1,57	-
ASBP 16/6500 ZB	16	K5225	424	212	3,50 / 1,70	2,38	0,80	0,80	6,00	1,57	-
Maße [m] und [kg] je Behälter							can be extended up to 0.25 m				
<b>Single plastic tank</b>											
ASBP 16/12000 EB	16	K5125	407	407	3,76 / 2,35	2,31	0,23	0,27	12,0	2,08	-
ASBP 28/20000 EB	28	K5130	815	815	6,28 / 2,35	2,31	0,23	0,27	20,0	2,08	-
ASBP 40/30000 EB	40	K5135	1.084	1.084	8,80 / 2,35	2,31	0,23	0,27	30,0	2,08	-
ASBP 50/40000 EB	50	K5140	1.554	1.554	11,32 / 2,35	2,31	0,27	0,31	40,0	2,04	-



## Concrete parts accessories

Class A 15 Walkable max. 1,5 t	Class B 125 car driveable max. 4 t wheel load			Class D 400 truck passable max. 12,5 t wheel load			car driveable max. 600 kg wheel load
possible for concrete tank							possible for plastic tank
Series: <input type="text"/> Accessory : <input type="text"/>	Ø	Construction dimension to class A [m]	Article No.	Ø	Mounting dimension to class A [m]	Article No.	Article No.
	2,00	+0,175	099-MP-0021	2,00	+0,28	099-MP-0041	099-MP-0028
	2,50	+0,175	099-MP-0022	2,50	+0,33	099-MP-0042	
							
			Article No.	Total weight [kg]	Inside diameter [m]	Height [m]	Volume [m³]
Cover Ø 625 Cl. A			S0011	50	-	-	-
Cover Ø 625 Cl. A with aeration			S0012	48	-	-	-
concrete casting cover Cl. B			S0111	110	-	0,125	-
concrete cast cover Cl. B with aeration			S0112	108	-	0,125	-
Concrete cast cover Cl. D			S0113	160	-	0,16	-
Concrete cast cover Cl. D with aeration			S0114	158	-	0,16	-
Strainer galv. for Cl. B and D with aeration			S0077	8	-	-	-
1) Compensation ring Ø 625/50 -U-			S0053	40	-	0,05	-
2) Compensation ring Ø 625/100 -N-			S0052	55	-	0,10	-
3) Compensation ring Ø 625/100 -O-			S0051	40	-	0,10	-
4) Compensation ring Ø 1000/500			S1021	370	-	0,50	-
Cone Ø 2.000/550 mm A-B			S0580	1.210	2,00	0,55	-
Cone Ø 2.000/550 mm A-B With inlet			R0567	1.210	2,00	0,55	-
Cone Ø 2.500/600 mm A-B			S0588	1.700	2,50	0,60	-
Cone Ø 2.500/600 mm A-B With inlet			R0568	1.700	2,50	0,60	-
flat cover Ø 2.000/120 mm A-B			S0531	1.220	2,00	0,12	-
flat cover Ø 2.000/170 mm A-D			S0532	1.590	2,00	0,17	-
flat cover Ø 2.500/120 mm A-B			S0551	1.920	2,50	0,12	-
flat cover Ø 2.500/170 mm A-D			S0552	2.480	2,50	0,17	-
Ring element Ø 2.000/500 mm			S1041	725	2,00	0,50	1,57
Ring element Ø 2.000/750 mm			S1047	1.090	2,00	0,75	2,36
Ring element Ø 2.500/600 mm			S1111	1.220	2,50	0,60	2,95
Ring element Ø 2.500/750 mm			S1107	1.520	2,50	0,75	3,68
Ring element Ø 2.500/1.000 mm			S1126	2.030	2,50	1,00	4,91
Ring element with cross Ø 2.000/750 mm			S1048	1.440	2,00	0,75	2,36
Ring element with cross Ø 2.500/600 mm			S1113	1.660	2,50	0,60	2,95
Ring element with cross Ø 2.500/1.000 mm			S1133	2.690	2,50	1,00	4,91
Bottom element Ø 2.000/850 mm			S1061	2.100	2,00	0,85	2,40
Bottom element Ø 2.500/750 mm			S1121	2.830	2,50	0,75	3,20
Bottom element with cross Ø 2.000/850 mm			S1063	2.340	2,00	0,85	2,67
Bottom element with cross Ø 2.500/750 mm			S1124	3.520	2,50	0,75	3,19
Buoyancy protection for compact tanks Ø 2.000		099-ZK-0720		550	2,00	-	-
Buoyancy protection for compact tanks Ø 2.500		099-ZK-0725		690	2,50	-	-
New opening / relocating an opening DN 100		099-MP-3140		-	-	-	-
New opening / relocating an opening DN 150		099-MP-3150		-	-	-	-
Joint mortar Bio Fug (bucket 18 kg)		V1180		18	-	-	-

## Service

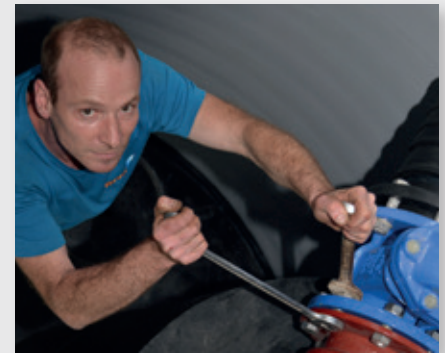
### Spare parts

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.

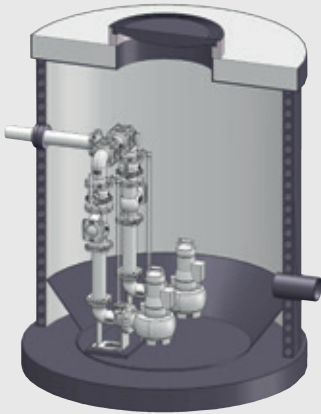


### Contact

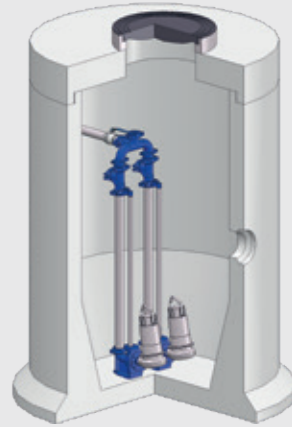
Tel: 05733 / 9908 - 402  
[wartung@kordes.de](mailto:wartung@kordes.de)

## Products

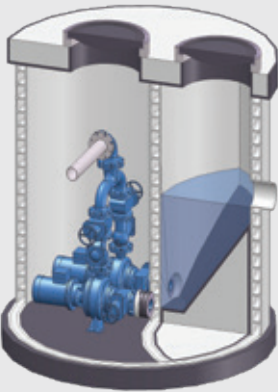
DORANT with PE-HD tank



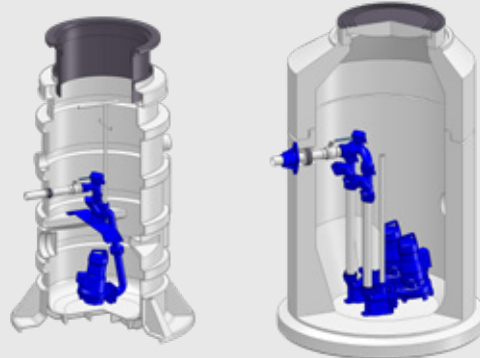
GARANT with reinforced concrete tank



HEKANT with dry-installed pumps



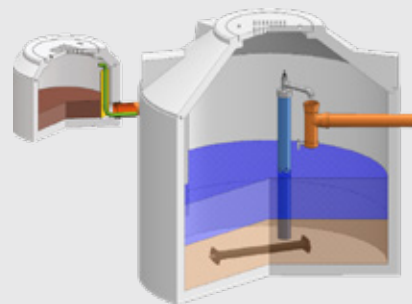
VARIANT Pressure drainage



BIOclear vario wastewater treatment plant  
up to 5,000 Pe



Small wastewater treatment plants up  
to 50 Pe



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