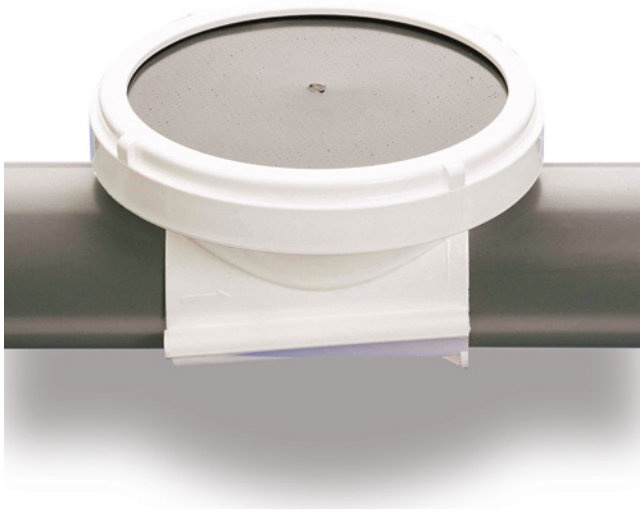
Disc diffuser system type ABS KKI 215

Membrane disc diffusers for reliable and energy-efficient finebubble aeration of tanks in wastewater treatment plants. Suitable for normal continuous aeration systems as well as where intermittent aeration is required, e.g. biological nutrient removal and SBR processes.



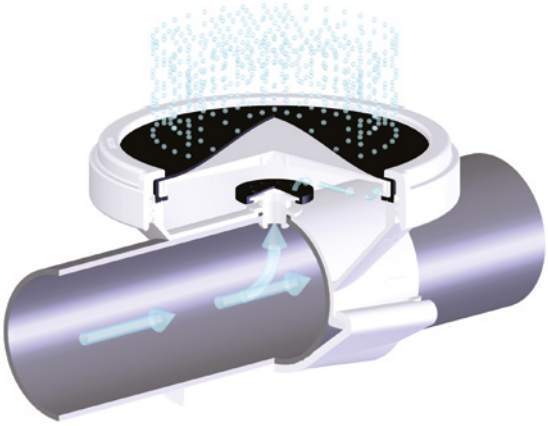
Features

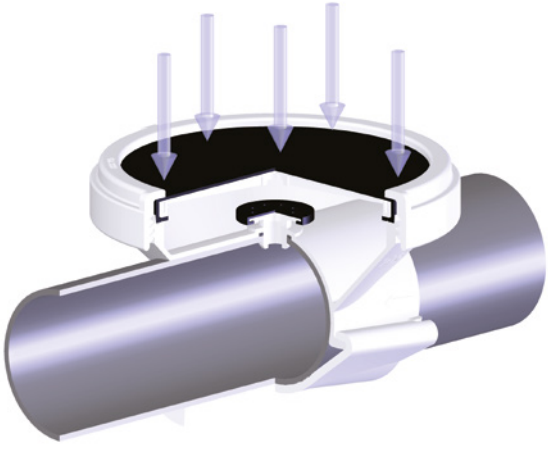
- Self-cleaning EPDM membrane with slits
- Membrane is fixed by a threaded screw-on ring
- Elastic non-return valve
- Wedge piece fixing to the pipe means that no glue, solvent or welding is needed in assembly
- Thread based fixing available as an option
- Wedge piece fixing makes it easy to increase, decrease or relocate diffusers when process requirements change
- Applicable to various pipe materials and dimensions
- Option for deep basins
- Possibility for future increase of aeration capacity by installing 300 mm PRF retrofit discs on existing KKI bodies.
- Inlet air temperature is up to 80°C

Working principle

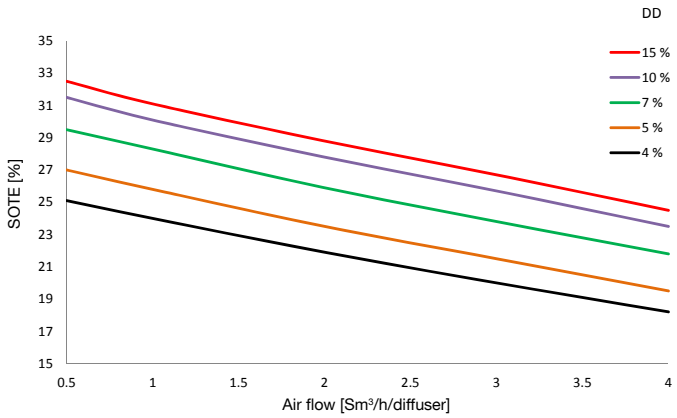
The membrane bulges and slits open during aeration by the pressure of compressed air. The support plate distributes the air evenly over the entire surface of the membrane. Air is spread into small bubbles, when released through the membrane.

When the air flow is turned off, the pressure of the water above presses the membrane disc tightly to the support plate closing the small slits on the membrane. The non-return valve closes and makes sure that no water enters the pipeline.

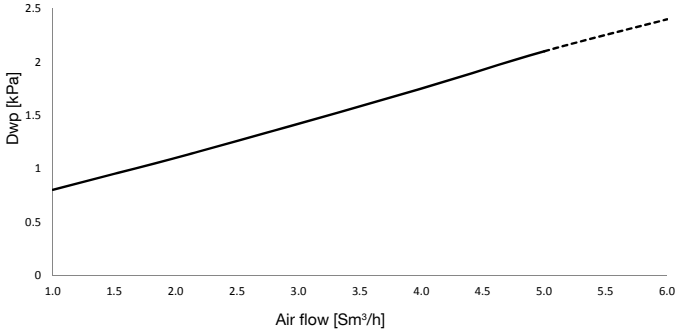




Standard oxygen transfer efficiency, SOTE

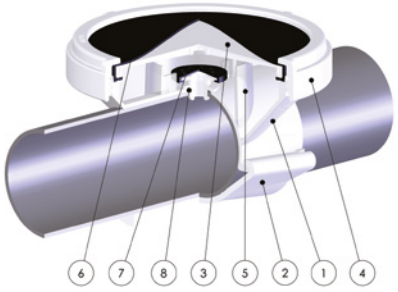


Wet pressure loss



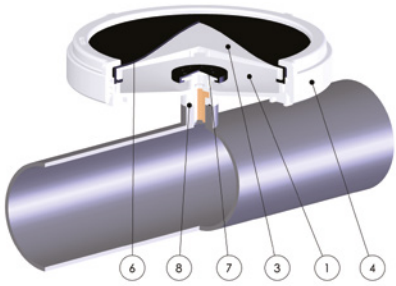
Clean tap water, standard conditions (+ 20 °C, 101,3 kPa), TDS level 1000 mg/l, submersion depth 4 m, diffuser density, DD = total diffuser area / total bottom area

Components and materials



Wedge attachment

	Description	Material
1	Main body	uPVC
2	Wedge piece	uPVC
3	Support plate	Glass fiber reinforced polypropylene
4	Screw-on ring	uPVC
5	Support part	uPVC
6	Membrane disc	EPDM
7	Non-return valve	EPDM
8	O-Ring	NBR



Thread attachment

Model range (wedge attachment)

	KKI 215 D90	KKI 215D D90	KKI 215 D88,9	KKI 215 4*
Pipe	90mm PVC	90mm PVC	88,9mm SS	NS4" PVC
Main body	HSA 215	HSA 215	HSA 4	HSA 4
Wedge piece	HSK 215	HSK 215	HSK 215	HSK 4
Support plate	HTL 215	HTL 215	HTL 215	HTL 215
Screw-on ring	HKR 215	HKR 215	HKR 215	HKR 215
Support part	-	HTO 215	-	-
Membrane disc	HIK 215	HIK 215	HIK 215	HIK 215
Non-return valve	HVK 215	HVK 215	HVK 215	HVK 215
O-Ring	HOR 19	HOR 19	HOR 18	HOR 19

*) Available as spare parts

Model range (thread attachment)

	KKI 215 R½*	KKI 215 R½K*	KKI 215 BSF½*
Fitting	R½ cylindrical thread (ISO 228/1)	R½ taper thread (ISO 7/1)	BSF½ thread (½"-16 BSF)
Main body	HSA 215 R½	HSA 215 R½K	HSA 215 BSF½
Support plate	HTL 215	HTL 215	HTL 215
Screw-on ring	HKR 215	HKR 215	HKR 215
Membrane disc	HIK 215	HIK 215	HIK 215
Non-return valve	HVK 215	HVK 215	HVK 215
O-Ring	HOR 19	HOR 19	HOR 19

*) Available as spare parts

Diffuser data

Design air flow range	0,5-4,0 m³/h/diffuser [1] (+20 °C; 1 013 mbar)
Diffuser level	250 mm [2]
Air temperature, max	+ 80°C
Max/min assembly depth	3 - 8 m (optimal) [3]
Diffuser diameter	215 mm
Disc surface area	0,025 m²
Size of bubbles	1 - 3 mm
Diffuser weight	0,770 kg
Max/min interval, c/c	1,0 / 0,35 m

1) When waste water contains chemicals harmful to EPDM or when water temperature is >30°C or air temperature is close to 80°C, a lower maximum air flow should be used. A peak value of 5 m³/h can be used for max. of 15 min only e.g. for cleaning the membrane.

2) Recommended measure from basin bottom to diffuser top.

3) Model KKI 215D D90 is suited for deeper basins. Consult Sulzer on depths outside the range.