

ABS Nopon disc diffuser system PIK 300

Membrane disc diffusers for reliable and energy-efficient fine-bubble 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

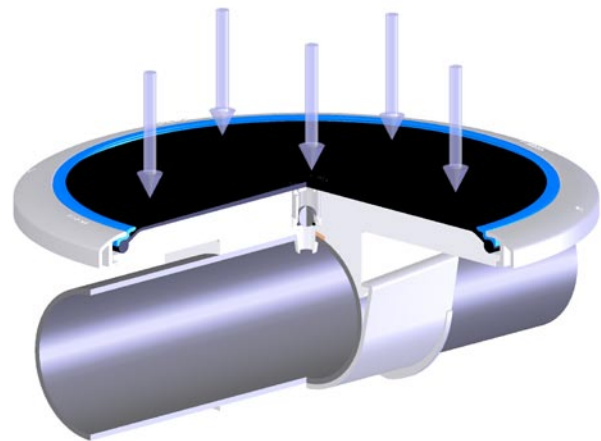
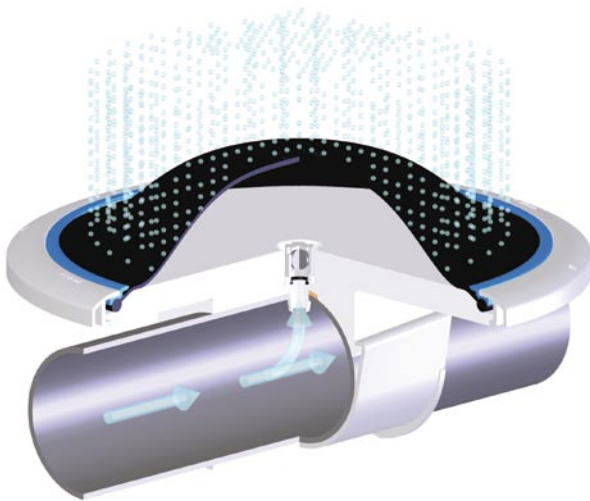
- Self-cleaning EPDM membrane with slits
- Membrane is fixed by a bayonet type screw-on ring
- Sliding ring of antifriction material helps in expansion and contraction of the membrane
- Heavy duty stainless steel ball non-return valve
- ABS Nopon wedge piece fixing to the pipe means that no glue, solvent or welding is needed in assembly
- Sliding ring aids in opening the diffuser for maintenance after many years of operation
- Wedge piece fixing makes it easy to increase, decrease or relocate diffusers when process requirements change
- Applicable to various pipe materials and dimensions
- Inlet air temperature is up to 100°C

Working principle

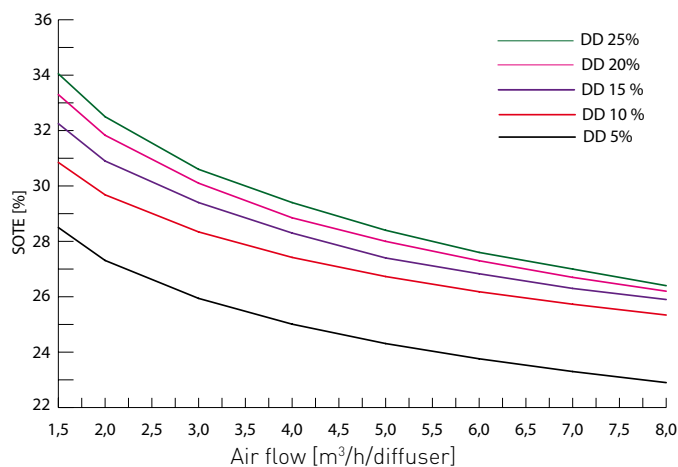
The membrane bulges and slits open during aeration by the pressure of compressed air. The main body distributes the air evenly over the entire surface of the membrane. Air is spread into small bubbles, when released through the membrane.



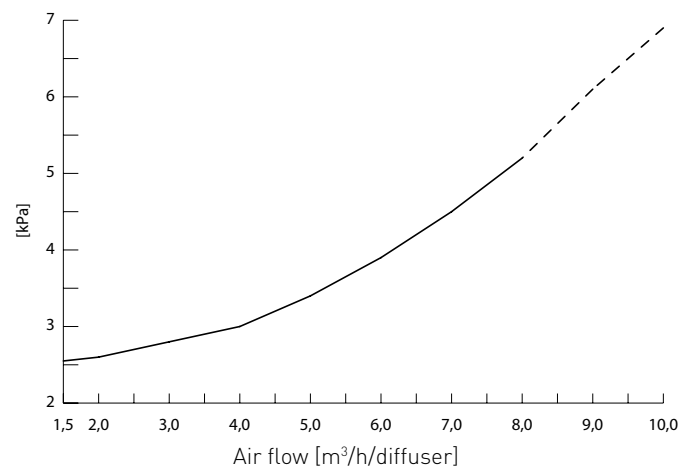
When the air flow is turned off, the pressure of the water above presses the membrane disc tightly to the main body closing the small slits on the membrane. The non-return valve with a stainless steel ball pushed down firmly to an o-ring seal inside makes sure that no water enters the pipeline. During normal operation the non-return valve also works as a control orifice.



Standard oxygen transfer efficiency, SOTE

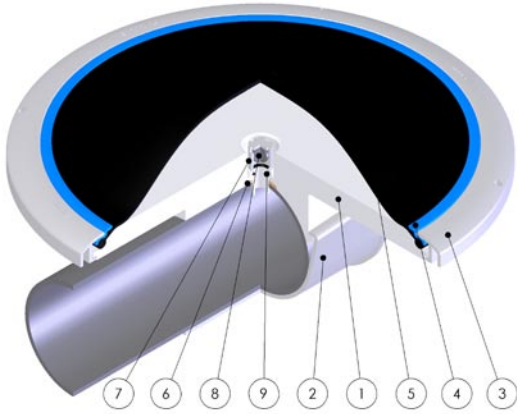


Wet pressure loss



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



Description	Material	
1	Main body	PP (polypropylene)
2	Wedge piece	PP
3	Screw-on ring	PP
4	Sliding ring	POM (polyacetal)
5	Membrane disc	EPDM
6	Flat seal	EPDM or SIL (silicone)
Non-return valve		
7	Valve body	PP
8	Ball	SS (stainless steel)
9	O-Ring	EPDM

Model range

	PIK 300 V D90	PIK 300 D90	PIK 300 S D88,9	PIK 300 4"
Pipe	90mm PVC	90mm PP	88,9mm SS NS3" PVC	NS4" PVC
Main body	PSA 300	PSA 300	PSA 300	PSA 300-4
Wedge piece	PSK 90	PSK 90	PSK 90	PSK 4
Screw-on ring	PKR 300	PKR 300	PKR 300	PKR 300-3
Sliding ring	PVR 300	PVR 300	PVR 300	PVR 300-3
Membrane disc	HIK 300	HIK 300	HIK 300	HIK 300
Flat seal	PLT 15/4	PLT 15/4 SIL	PLT 15/5	PLT 15/4
Non-return valve	PTV 15 L	PTV 15 L	PTV 15 L	PTV 15-3

Diffuser data

Design air flow range	1,5-8,0 m ³ /h/diffuser ^{ix} (+20 °C; 1 013 mbar)
Diffuser level	250 mm ^{lxx}
Air temperature, max	+ 100°C
Max/min assembly depth	3 – 8 m (optimal) ^{lxxx}
Diffuser diameter	336 mm
Membrane surface area	0,060 m ²
Size of bubbles	1 - 3 mm
Diffuser weight	0,795 kg
Max/min interval, c/c	1,25 / 0,4 m

x) 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 10 m³/h can be used for max. of 15 min only e.g. for cleaning the membrane. Using air flow less than 1,5 m³/h must be consulted with ABS.

xx) Recommended measure from basin bottom to diffuser top

xxx) Consult ABS on depths outside the range