

Information Sheet

The new grooved design tube diffuser



2-grooved diffusers

In 2007 Jäger Umwelt-Technik developed a new kind of body to replace the 30 years successful, but old-fashioned tube diffuser of the TD63 series. Today in China we have installed more than 80.000 diffusers of the new type TD 65-2 with our special Silicon- and EPDM membranes. Our target was to develop a diffuser with optimised energy consumption in combination with a longer life-time. Long time studies have demonstrated that the special shape of this new body will reduce head loss between 10% and 25% compared to commercially available tube diffusers with a round body. The special design causes the membrane to lay flat around the body thus increasing fatigue resistance during intermittent operation. There are different options available: 1" threaded connection as well as 110 or 114 mm clamps for round headers.

The following schematic diagrams will demonstrate the differences between the old and new design in detail:

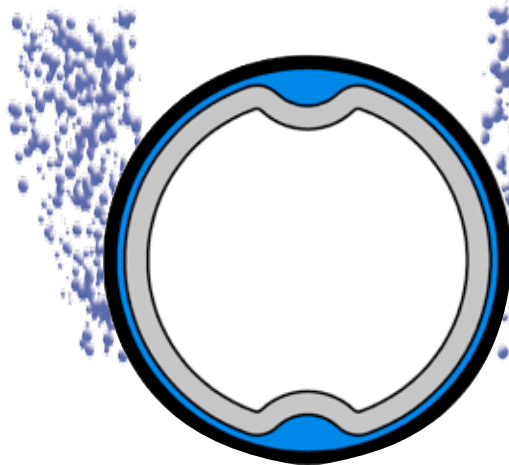


New diffuser body with grooves

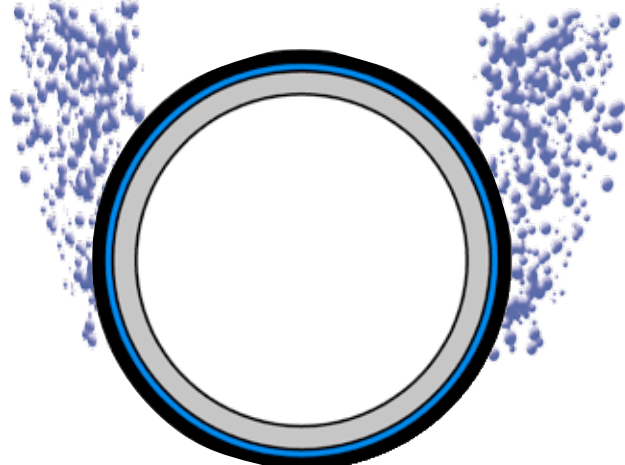


Old style round diffuser body

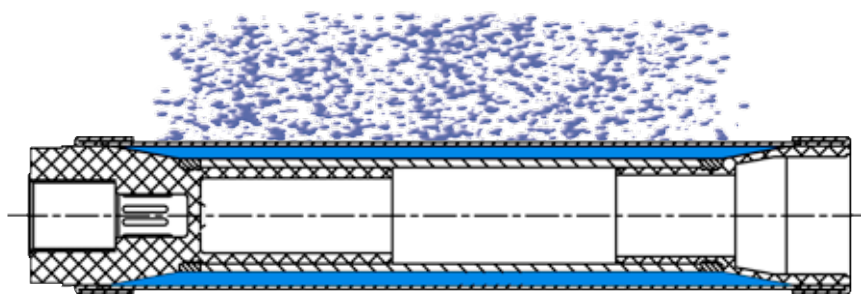
Aeration ON



Air (blue) flows easily through the grooves causing considerable lower headloss.



Air is squeezed through a narrow gap between sleeve and tube increasing headloss.

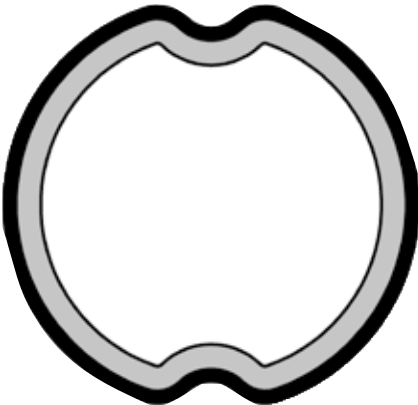


Grooves will evenly distribute air from front to end over years even in difficult to treat waste water.

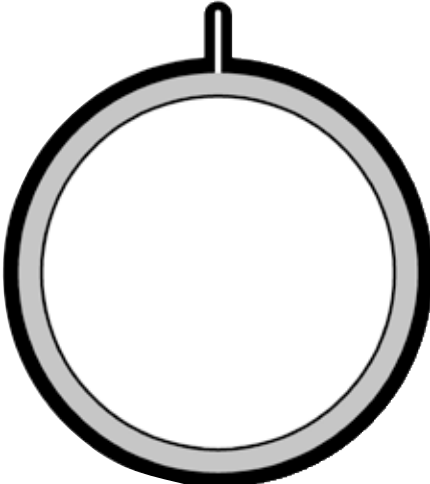


Aeration OFF

Regular Stop

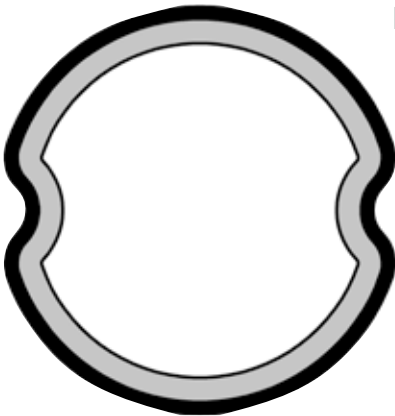


If airflow stops, sleeve will follow the outer contour of support tube, no kinks or wrinkles, almost zero stress on material.

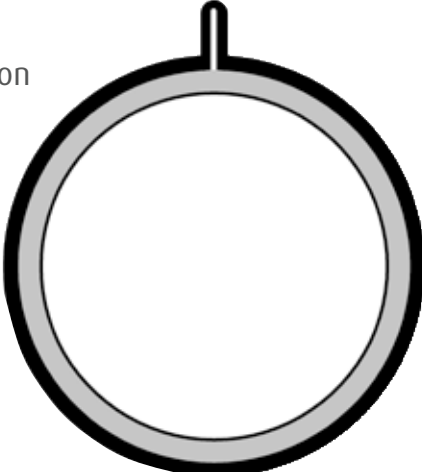


If airflow stops, water pressure sharply folds up the sleeve on top of diffuser inducing high mechanical stress in the membrane.

Imperfect Installation



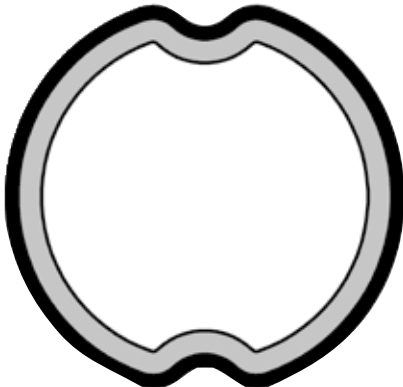
Even a 90° accidental misalignment does not influence the longevity of the sleeve. (SOTE is hampered though).



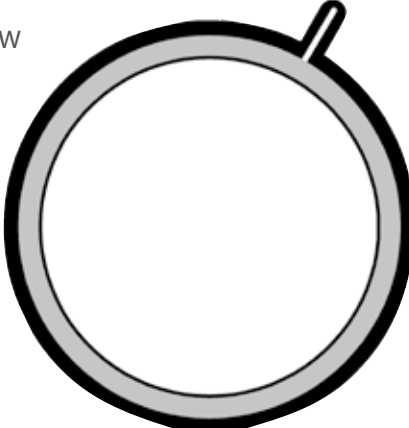
A 90° accidental misalignment will fold up the sleeve in the perforation, increasing stress even more and hampering SOTE.

Fault tolerant design: Maximum Lifetime!

Strong lateral flow



Strong water flow will not influence location of sleeve on support tube. Maximum Lifetime!



Strong water flow may shift the fold into the perforation, increasing stress again.



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