

MOVING MEDIA MIXING AND AERATION SYSTEMS

“Mixing Moving Media with a Maintenance Free Diffused Aeration System”

The demand for wastewater treatment facilities that operate more efficiency and require less square footage of property is higher today than ever before. One of the most appealing technologies is Moving Media processes because of its low implementation cost, high performance rate per reactor volume, and can be easily retrofitted into many existing treatment processes and structures. Medium density media is utilized to provide an adherence surface for the bio-film and microbial colony present within the biological process. This medium density media will float in the process liquid but has enough density to move through the fluid when subjected to small amounts of mixing energy. The floating biomass colony provides the same conditions that a complete mix system would provide where the MLSS is maintained in a homogenous state.



For standard complete mix bioreactors, diffused aeration systems not only provide the oxygen requirements they also provide the mixing required to maintain the MLSS in solution. When denitrification is desired to occur in the process an anoxic environment must be achieved and supplemental mechanical mixing is required when the aeration system is turned off. Moving Media processes with the suspended bio-colony eliminate the need for supplemental mechanical mixing – the aeration system can simply be turned off during the anoxic periods.

The only concern with Moving Media processes is that the equipment for the oxygen supply system is not easily accessible for maintenance because it is located below the suspended media bed. Fortunately, the process is efficient enough that high rate oxygen transfer provided by fine bubble diffusers is not required because these diffuser units have inherent maintenance requirements. Coarse bubble diffused aeration provides the adequate transfer rate as well as the turbulence energy required to move the media bed. Tideflex Technology's Coarse Bubble Diffusers are the perfect solution for this application because the check valve design prevents backflow of the biomass into the air distribution piping (which is the primary cause of maintenance and failure with typical coarse bubble systems).

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Unique Performance Features

- Provides Excellent Turn-Over of Moving Media
- Delivers Proper Agitation of the Media to release Waste Biomass
- Eliminates Maintenance Requirements of the Submerged System
- Proven Mixing Arrangement Patterns for Moving Media

Tideflex Technologies / Red Valve Company holds the patent for elastomer duckbill diffusers and their incorporation into a multiport diffuser piping system. Any suppliers of systems incorporating duckbill diffusers would need authorization from Tideflex Technologies / Red Valve Company. Soliciting of systems incorporating Tideflex diffusers by others without the consent of Tideflex Technologies constitutes intent to violate the patent protection of this product and is subject to the penalties defined within the Patent Protection Laws of the United States.

*US Patent No. 6,016,839 / 6,193,220 / 6,372,140 / 6,702,263
Canada Patent No. 2,366,252 / 2,385,902; United Kingdom Patent No. 2,326,603*