

COARSE BUBBLE AERATION & MIXING SYSTEMS

“A Maintenance Free System for the Most Difficult Process Fluids”

Tideflex Technology's Coarse Bubble Aeration Systems provide the operators with extreme flexibility in operational methods for their process systems. Now the process requirements of the system can drive the operational methods not the limitations of the equipment within the tank. Tideflex's innovative check valve diffuser is not dependant upon maintaining a positive system pressure or continuous blower operation nor is it affected by the increase in solids concentration of the process fluid.

For Waste Sludge Holding Tanks and Aerobic Digesters, further Denitrification is desirable and can be achieved by providing extended anoxic periods through the holding process. This requires discontinuing the airflow (oxygen supply) to the tank resulting in a loss of the positive pressure within the air distribution system subjecting the diffuser unit to backflow conditions of the process sludge. The Tideflex Coarse Bubble Diffuser is inherently a check valve where hydrostatic head against the exterior of the unit produces closure of the discharge opening preventing the waste sludge from entering the diffuser and piping system.



When the airflow to a mixing system is discontinued the solids within the process will settle to the bottom of the tank creating a concentrated blanket typically three times the density of the fluid during the mixing periods. Re-suspension of these settled and compacted solids after the anoxic period is critical to prevent solids accumulation within the tank. Solids remaining on the bottom for extended periods will move from an anoxic state to an anaerobic state and produce less desirable by-products such as hydrogen sulfide gas and methane gas. The Tideflex diffusers are oriented with the tip of the

diffuser close to the tank bottom so that the air discharged from the units provides an educted upward path and a complete mixing loop from the floor of the tank to the liquid surface.



Unique Performance Features

- Prevents backflow of process fluids and solids into the diffuser and manifold piping.
- Airflow is discharged at the tank floor to eliminate solids accumulation.
- Special High Performance EPDM elastomer resists the effects of high blower temperatures to maintain closure memory.

Tideflex Technologies / Red Valve Company holds the patent for elastomer duckbill diffusers and their incorporation into a multipoint 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