

Diffused Gas Technologies, Inc. Family of Gas



The Evolution of Diffused Gas Aeration

Basic Technology Spans Centuries

The origins of the gas diffusion aeration treatment of water and wastewater streams can be traced to the post-Industrial Revolution period of the late 19th century. Its impetus was the need for expansion and improvement in the integrity of the water supply being consumed and the wastewater treatment infrastructure caused by the rapid growth during that period. The diffused gas aeration principle offered great operating efficiencies. Additionally, diffusers allowed for easy manufacture, installation, operation and maintenance.... assuring widespread use and acceptance.

Modern Technology Spearheaded by DGT

Gas-to-liquid transfer technology with diffusers has evolved from crude perforated plates and tubes to high-performance devices which are designed to be application specific. Diffused Gas Technologies, Inc. is at the forefront of this technology. This family of diffusers can provide bubble sizes from coarse to extremely fine, with flow ranges from .5 to 50 CFM. This product versatility allows Diffused Gas Technologies, Inc. to meet any application criteria.

Diffused Gas Technologies, Inc. offers five different types of diffusers:

- DP and DS Series Hydro-Chek Coarse Bubble Diffusers
- SS Series Plenum Coarse Bubble Diffuser
- MTD Series Membrane Check Valve Fine Bubble Diffuser
- FBP and FBS Series Dome Ceramic Fine Bubble Diffusers
- FBT Series Tubular Ceramic Fine Bubble Diffusers

Diffuser Designs To Meet Every Need

Diffuser aeration systems are used in a wide range of process activities in the treatment of water and wastewater.

These processing capabilities include satisfying the biochemical oxygen demand in wastewater treatment systems by providing a sufficient supply of oxygen to the flow. These devices are used primarily in a wide range of aerobic biological treatment systems.

Oxygen is supplied to the wastewater flow in order to feed the biological activity. Diffusers are also used for the diffusion of digester gases such as hydrogen sulfide and sulphur dioxide.

Diffusers also act as the interfacing element for the diffusion of gaseous agents to potable water. They are used for the introduction of ozone for the purpose of the oxidation and destruction of bacterial and organic chemical contaminants. Carbon dioxide injection for recarbonization and pH adjustment are other applications.

The selection of the diffuser by the type of bubble it produces is contingent on a combination of factors. The type of the diffuser, the size of the bubble surface (area and its volume) are variables working in conjunction with the depth and configuration of the retention basin. Variables such as the amount of gas transfer required and degree of agitation needed are integral to the selection process.

The materials of diffuser construction range from high-performance plastics to durable ceramics and stainless steel for extreme duty applications.

The utility of diffusers extend beyond the diffusion of gases to water and wastewater flows. Other process capabilities include the agitation of the liquid flow. Diffusers can be used as a turbulent method of mixing where traditional methods are not suitable.

These multiple processing capabilities also enhance any biological or contaminate purging activities which may be taking place.