AIR DISSOLVING TUBE (ADT)

The KROFTA ™ Air Dissolving Tube (ADT) has been in use on Dissolved Air Flotation (DAF) clarifiers since the 1970s. Since that time, over 2500 ADTs have been put into operation, producing dissolved air in a recycle stream on a wide variety of applications and types of equipment.

Before Dr. Milos Krofta invented the ADT, his company had used large and cumbersome pressure vessels for production of the aerated water stream. Many competitors still use this design today. These pressure vessels often have one to one and one half minutes of retention time and operate at anywhere from 70 to 150 psi or more. This retention time is six to nine times longer than that required by the ADT.

The typical pressure vessel design has an upper zone containing air in which pressurized water is introduced and sprayed across or mixed in. The water then flows to the bottom of the vessel, which is filled with water to attempt to eliminate entrained undissolved air. Entrainment of air in a recycle stream will cause air hammer effects, coarse air bubbles, and turbulence in the flotation clarifier which will result in decreased efficiency. This traditional type of pressure vessel requires an ASME code or annual testing for safety purposes.

The ADT eliminates the need for large volumes of air and water used by typical pressure vessels by using air dispersion technology and centrifugal force in place of sheer volume and gravity. Compressed air is pumped into the ADT across the surface of an air panel. The panel material and design disperses the air across the entire surface of the panel. This allows for faster dissolution of air into the water and hence a retention time of only eight to twelve seconds. The flow pattern is a cyclone or vortex which produces a centrifugal force that eliminates undesirable entrained air. A specially designed inlet nozzle is sized specifically for each application and can be easily changed out if the recycle requirements of future waste streams change dramatically. In addition, a proprietary bleed-off outlet also assists in eliminating too much air in the tube itself. This ensures that the tube will never air bind or create a plug flow around the air panel.

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Features & Advantages

• Small Size: The ADT is six to nine times smaller than traditional style pressure vessels. This reduces footprint requirements and increases mounting possibilities. The ADT can be installed horizontally or vertically and can be easily retrofitted to any style DAF clarifier.

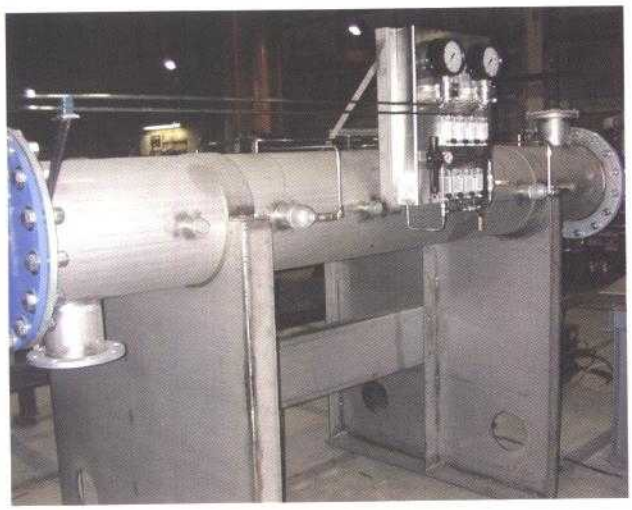
• Elimination of any entrained air from the outlet by centrifugal separation and 'bleed-off' capability.

• Simple Construction using standard piping components. Units can be fabricated in either 304 or 316 SS.

• Stainless Steel offers superior corrosion resistance over mild steel. It also offers a superior appearance and reduces maintenance since it does not need to be painted

• Inherently Safe Design with standard piping components and a moderate operating pressure (65-85 psi) eliminates the need for an ASME certification.

• Customized Inlet Nozzle designed to meet specific flow requirements that can be easily removed and changed should the requirements change significantly. Adding one or more additional ADTs accommodate applications requiring large flows.



• Simple Operation: The ADT requires minimal supervision and attention once it is brought on line. There are no moving parts within the ADT. The ADT also utilizes a standard pump.

• Low Air Consumption: The ADT consumes less than 1 SCFM/500 liters (132 gallons) of ADT capacity.

• Maximized Flotation: When the ADT is matched with a properly sized globe valve for pressure release, the ADT will produce a 30-70 micron air bubble which is well suited for dissolved air flotation.

• Installation Versatility: The ADT can be provided on a wide variety of platforms. In addition to the standard tube, options can be selected which have the ADT mounted on a skid or stand, pre-piped and / or wired to a pump or control system.

• Retrofit Capabilities: The ADT can be used on any type of DAF Clarifier.

TYPE ADT	CAPACITY gpm	AIR CONSUMPTION SCFM @ 85-90 psi
300	80	1 SCFM
500	130	1 SCFM
1000	260	2 SCFM
1500	400	3 SCFM
2000	530	4 SCFM
2500	660	4 SCFM
3000	800	6 SCFM
3500	930	6 SCFM