

**TRI-MER® CORPORATION
ENGINEERING
TECHNICAL BULLETIN**

WHIRL/WET® PARTICULATE COLLECTOR

The Tri-Mer® WHIRL/WET® Particulate Collector is one of the most unique wet collection systems available on the market today. It can simultaneously handle both soluble and insoluble particulates as well as fumes.

The unit is manufactured in a wide-variety of materials in addition to mild steel to include corrosion resistant plastic such as polypropylene and PVC, as well as stainless steel of 304 and 316 grades.

There are no internal moving parts in this unit or external recirculation pumps required.

The entire collection process depends on the high-efficiency whirl chamber. In this whirl chamber a dual opposed blade system is interfaced in such a way that a high-energy effect is obtained with low energy power requirements. The WHIRL/WET® with only 8" of internal static pressure can obtain very high efficiency numbers on particles as low as 2 microns in size. Even particles as small as one micron can be handled with the WHIRL/WET® Unit with reasonably high efficiency numbers.

Since the unit has no internal moving parts, maintenance is a very simple matter. This is extremely important when operating a wet particulate scrubber. Compared to dry forms of collection such as baghouses, where maintenance is always a problem, the wet particulate system becomes a very effective unit.

Dust collection takes place within the whirl chamber where the particulates and liquid are driven under high centrifugal force against the dual opposed blade system. Particles are driven into the water then fall out into the liquid sump below.



A variety of designs are available for particulate collection in the bottom of the WHIRL/WET® chamber.

A manual removal unit is available where particulates can be dragged out by hand. A hopper design is available where an automatic valve can be actuated to drain the unit periodically and/or a sludge pump can be interfaced to remove particulates.

Finally, an automatic conveyor machine is available to drag particles out of the unit on a continuous basis into a collection hopper located underneath the conveyor discharge.

Liquid level control is a very simple mechanical matter and does not involve complex electrical mechanisms that can foul up.

The unit comes in a wide variety of sizes as small as 500 CFM of air up through 50,000 CFM of air in standard operational units.

Since the system is applicable to soluble and insoluble particulates, and since the unit will not plug up due to energy generated inside the unit, it is very popular on applications where agglomeration and sticky residues are common problems with dry collectors or lower energy wet collectors.

Paint spray booths and silica applications are difficult to handle with most collection devices but is easily handled with this unit.

The WHIRL/WET® Unit operates most efficiently under these conditions and without a doubt offers the user the most efficient system available for particulate control. In all cases, efficiencies in the 98 percent to 99 percent level are common. When coupled with the low operating and maintenance costs, this unit is very attractive for particulate control.