

VANE TYPE SEPARATOR



Processing the Future

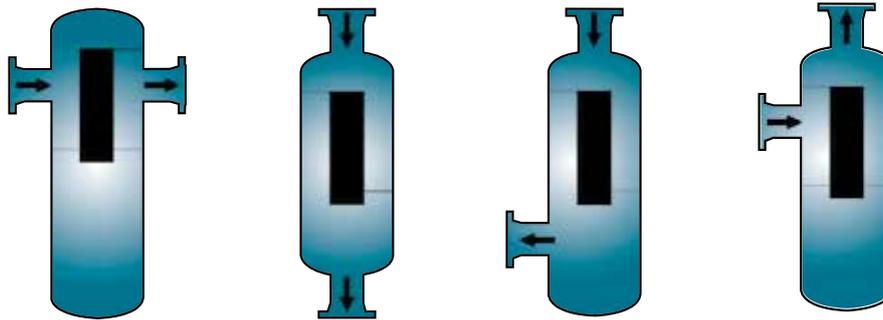
General Principle of Operation

REPCo's vane type mist extractor is the answer to problems concerning the removal of entrained liquids from gas or process vapor streams in critical applications – such as release into the atmosphere (pollution control) or incorporated in process design.

Application

Typical examples where the high performance design of vane type separators has proven to be effective are:

1. In the tops of vessels incorporating trays, etc., where a mist extractor is used to separate the liquid from the gas before going to other parts of the plant.
2. In air purification systems in plants – to remove the water following the cleaning of – air by water spray.
3. In air pollution control systems, where exhaust gases pass through a water spray systems, such as foundries, rolling mills, etc.
4. In the top of steam boilers and heat recovery units to improve the steam quality for a more efficient operation.
5. On air intakes to turbines where any intake of moisture could be a problem.



Principle of operation

REPCo's vane type mist extractor operates on an impingement principle. As the gas enters the unit, it is divided into many vertical ribbons. Each of these ribbons is subjected to multiple changes of direction as it passes through the unit. This action causes a rolling of the gas against the walls of the vanes. The entrained liquid adheres to the vane surfaces and moves to become trapped into the vane pockets and out of the gas stream. The collected liquid then drains via gravity down the vane pocket and into a liquid reservoir.

This last feature is very significant as the collected liquid is out of the gas stream and drainage is at right angles to the gas flow preventing re-entrainment of the collected liquid.



Fig. A
Cross section view of REPCo vane unit

Construction

Precision construction of welded components into a compact, rigid and structurally sound unit assures that the REPCo mist extractor has a long and maintenance free service life in even the most hostile of environments. Although carbon steel is the standard material of construction, the REPCo mist extractor can be fabricated in almost any type of material, including stainless steel, monel, and aluminum. Some synthetic materials are also available for caustic and corrosive services.

The vane spacing, pocket depth and size are very critical and the slightest variation in any of these dimensions materially decreases.

The capacity and performance of the vane type unit.

Efficiency

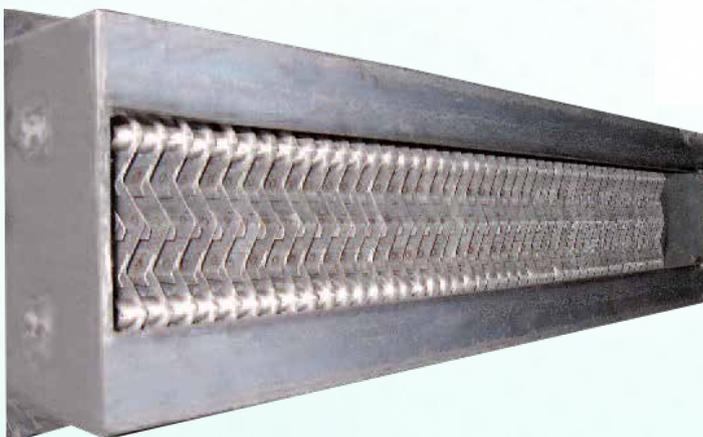
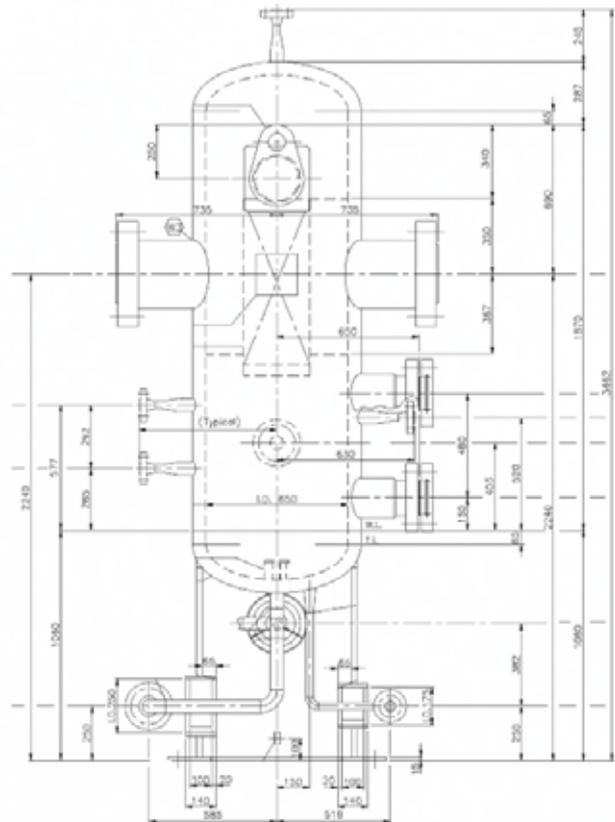
REPCo's mist extractor is guaranteed to remove 100% of all liquid particles from 8 to 10 microns and larger, maintained from virtually zero flow to maximum rated capacity.

Pressure Drop

The configuration of REPCo's vane type mist extractor provides a large open area with low-pressure drop characteristics. The Pressure drop range across REPCo's mist extractor is from 100 to 150 mm of water column, and lower, at recommended operating conditions.

Maintenance

REPCo's vane type mist extractor does not need any particular maintenance, only the occasional drain of collected condensate is recommended.





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