

# AIR POLLUTION CONTROL PRODUCTS

## MIST ELIMINATORS



# AIR POLLUTION CONTROL

## MIST ELIMINATOR HPE SERIES

### - TYPICAL USES -

Maintaining effluent discharge standards and overcoming the energy cost rise can be a perplexing problem for industries involved in gas cleaning and process applications. Both problems, however, can be economically solved through the use of high efficiency mist eliminators designed to separate liquid from gas or vapor flow, effectively reducing condensate solids emission, thereby aiding in the recovery of the solids for energy reuse.

Savings attributed to recovery of condensates will offset the cost of the unit in a short period of time.

SCRUBBER MIST ELIMINATORS – In wet scrubbers, mist eliminators generally perform the important function of separating the liquid droplets entrained in the scrubbed gas. They must have high collection efficiency at low pressure drop in combination with low-clogging features.

RETROFIT – HEE Environmental Engineering mist eliminators with patented profiles are ideal for retro-fitting existing scrubbers to increase efficiency and solve compliance problems. On new installation units they can be designed smaller, because higher permissible velocities, thus reducing cost.

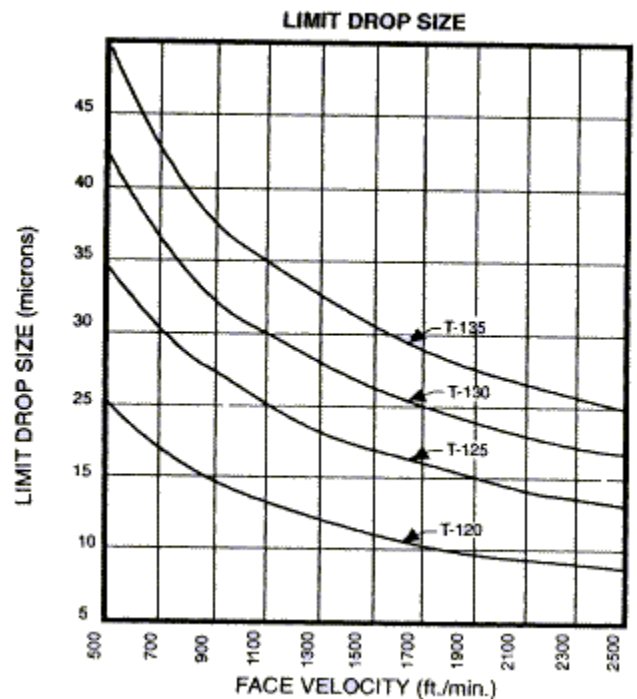
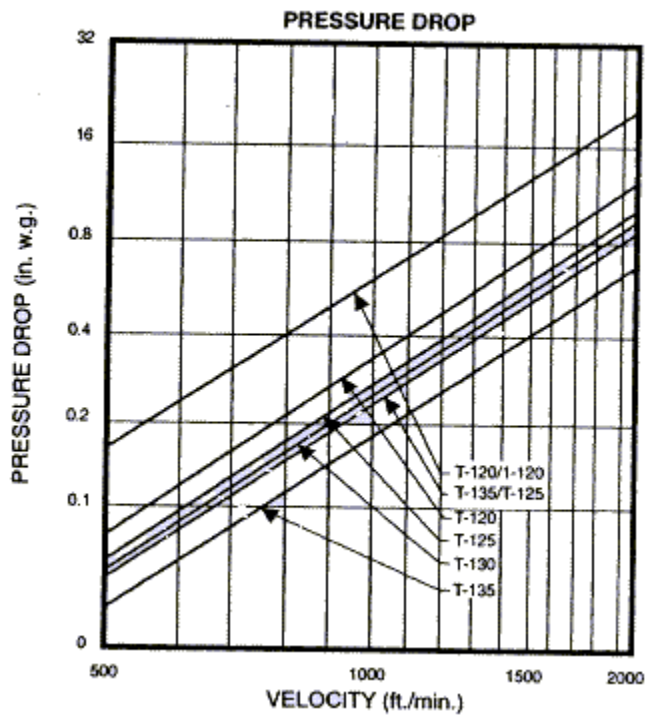
EXHAUST GAS CLEANING – Liquid is removed from the gas to control pollution and meet compliance standards.

- Chemical entrained in plating tank ventilation systems.
- Scrubbing of exhaust gas in fertilizer plants.
- Water from exhaust air in cooling towers.
- Sulfuric acid in the production of chlorine gas.
- Water from air in air conditioning installations.
- Drift from acid cooling towers to less than 1 ppm.

### OTHER USES –

- High efficiency following Venturi scrubbers.
- Removal of drops entrained in evaporators (Pulp and paper, sugar, chemical)
- Removal of drops entrained in synthesis and process gases.
- SO<sub>2</sub> scrubbing systems from for power plants.

**SPECIAL DESIGN WITH COALESCER** – In especially difficult cases it is possible that a great number of small droplets are contained in the gas. Unless special steps are taken, these could pass through the mist eliminator. In such case, experience has shown that a coalescer installed in front of the mist eliminator, causes the droplets to come together in large drops which can then be separated in the eliminator.



- GENERAL INFORMATION -

Available in 18 Standard Sizes, with capacities to 50,000CFM. Very low pressure loss, generally less than 1.5 inches water column, result in tremendous energy savings compared to conventional type scrubbers.

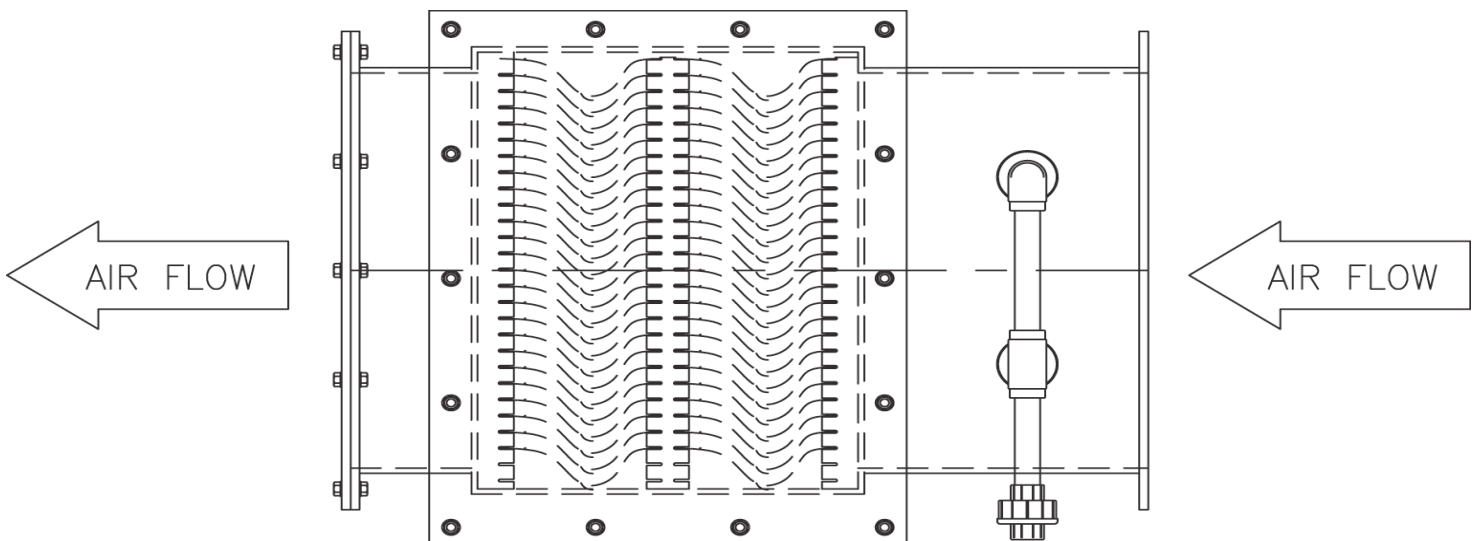
Low water usage. In most cases, water is used only periodically for wash down of the blade surface.

Eliminates large waste water treatment problems generally associated with air pollution control equipment.

Smaller, lighter than other type of air pollution control equipment. The air flow velocity through the HPE Series Mist Eliminator is almost four times greater than through a conventional packed bed unit, thus the over all size of the equipment is significantly reduced.

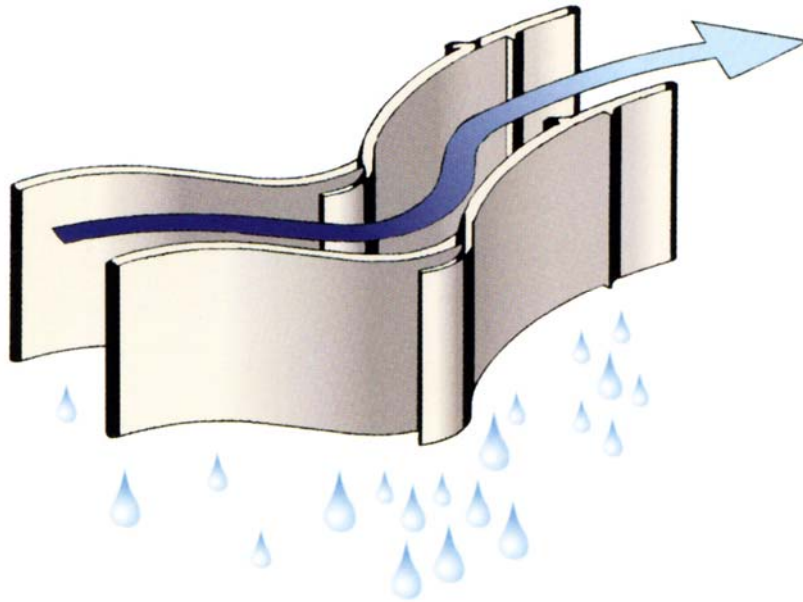
Corrosion resistant. The housing is fabricated from the highest quality, premium polyester resin to assure superior corrosion resistance in a wide variety of chemical applications. The eliminator blades, support angles, and internal wash-down piping are manufactured from either polyvinyl chloride or polypropylene, depending on application.

HEE Environmental Engineering has wide experience in exhausting corrosive fumes, vapors, and gases from processing equipment used by such diversified industries as: steel, aluminum automobile, electronics, plating pharmaceutical, paper, glass, and governmental agencies.



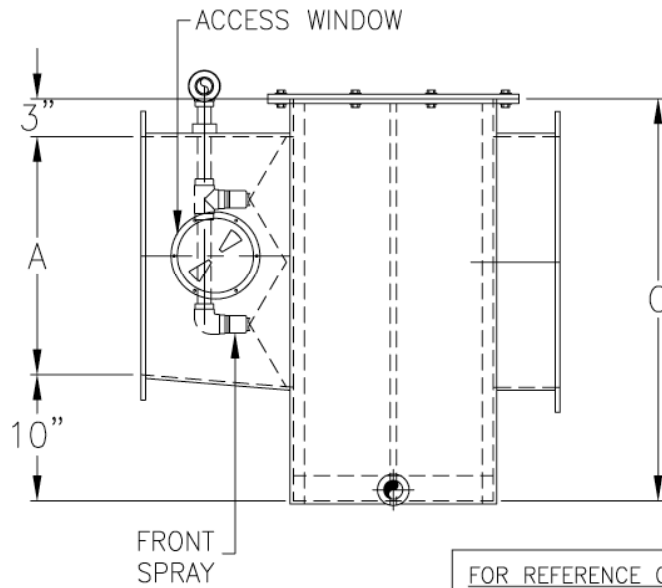
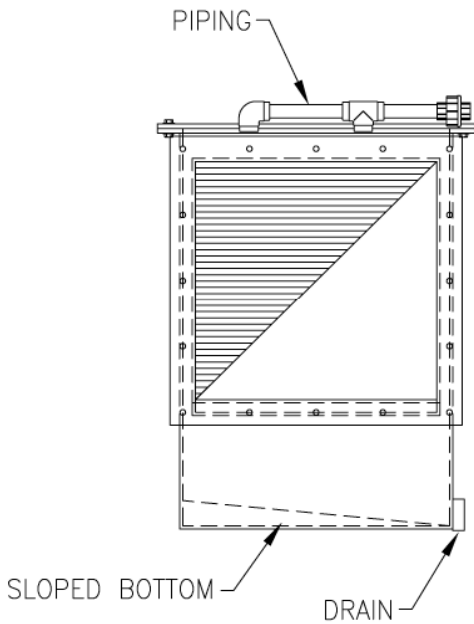
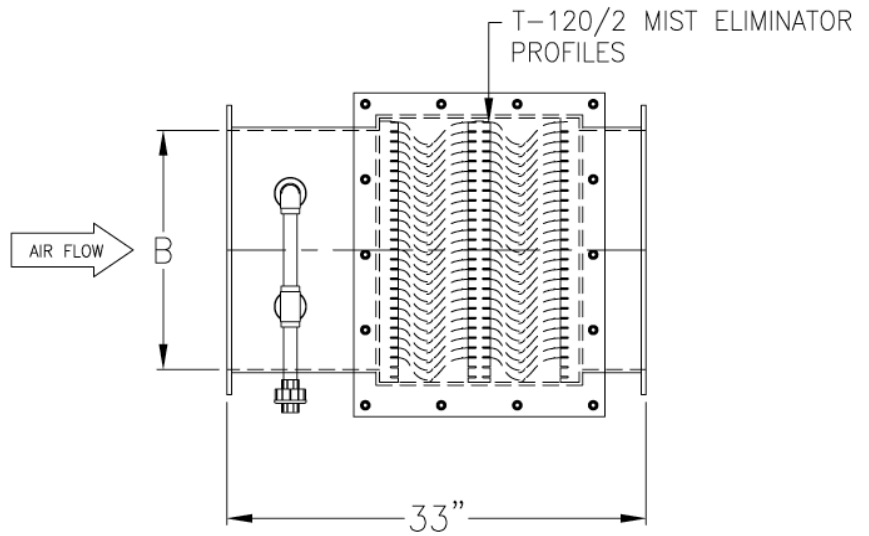
- ELIMINATOR DESIGN -

The HEE Environmental Engineering HPE Series Mist Eliminator is an impingement separator designed for horizontal gas flow. It is designed utilizing patented, sine shaped flow contours assembled with phase separating chambers. The profiles are manufactured by an extrusion process enabling their surfaces to be adapted to the separation problem. They are mounted in a corrosion resistant frame with a sump and form a separation module. The profiles split the gas flow into single stream. The profiles turn the gas stream, but liquid drops cannot make the short radius as easily as the gas molecules. Therefore, inertia forces the liquid drops against the wall where the drops agglomerate the fall by gravity in area of low gas velocity. When a drop contacts the profile surface, it is transformed into liquid film, which is pushed along and drained as a film. Drop reformation is prevented. The liquid film is draining at 90 degrees relative to the gas flow-cross flow. Since the drops do not have to flow back against the gas flow (countercurrent flow) the liquid draining capacity is greater, the pressure drop is less, the allowable velocities are greater, and the limit drop is smaller. Because the drag coefficient is low, higher velocities are permissible without excessive pressure drop. At higher velocity smaller drops are removed due to the increased inertial force. This results in greater overall efficiency.





## MIST ELIMINATOR STANDARD HPE SERIES



FOR REFERENCE ONLY, REQUEST  
CERTIFIED DRAWING FOR  
CONSTRUCTION PURPOSES.

MODEL	CFM	A	B	C	SPRAY-GPM	PIPE	NOZZLES	REQ'D	DRAIN
HPE-5	500	6	6	19	.25-.50	1/2	1/4HH6.5	1	1 1/2
HPE-10	1,000	9	9	22	.50-1.0	1/2	1/4HH6.5	1	1 1/2
HPE-20	2,000	12	12	25	1.0-1.5	1/2	1/4HH6.5	1	1 1/2
HPE-30	3,000	15	15	28	1.5-2.5	1/2	1/4HH6.5	4	1 1/2
HPE-40	4,000	17	17	30	2.0-3.0	3/4	1/4HH6.5	4	1 1/2
HPE-50	5,000	19	19	32	2.5-4.0	3/4	1/4HH6.5	4	1 1/2
HPE-60	6,000	21	21	34	3.0-4.5	3/4	1/4HH6.5	4	1 1/2
HPE-70	7,000	22	22	35	3.5-6.0	1	1/4HH10	4	2
HPE-80	8,000	24	24	37	4.0-6.0	1	1/4HH10	4	2
HPE-100	10,000	28	28	41	5.0-7.5	1	1/4HH10	4	2
HPE-125	12,500	30	30	43	6.0-9.0	1	1/4HH10	9	2
HPE-150	15,000	33	33	46	7.5-10.0	1	1/4HH10	9	2
HPE-175	17,500	36	36	49	9.0-14.0	1	1/4HH10	9	2
HPE-200	20,000	38	38	51	10.0-15.0	1 1/4	1/4HH10	9	2
HPE-250	25,000	42	42	55	12.0-18.0	1 1/4	1/4HH10	9	2
HPE-300	30,000	46	46	59	15.0-23.0	1 1/4	1/4HH10	16	3
HPE-350	35,000	50	50	63	17.0-26.0	1 1/2	1/4HH10	16	3
HPE-400	40,000	54	54	67	20.0-30.0	1 1/2	1/4HH10	16	3



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