

# PACE ENTRAINMENT & DISPERSION SEPARATORS

For the Separation of entrained / dispersed Liquid droplets from Gas / Vapour / Liquid Streams

## (A) ENTRAINMENT SEPARATORS ( Demisters, Vane & Combination Mist Eliminators )

### Applications

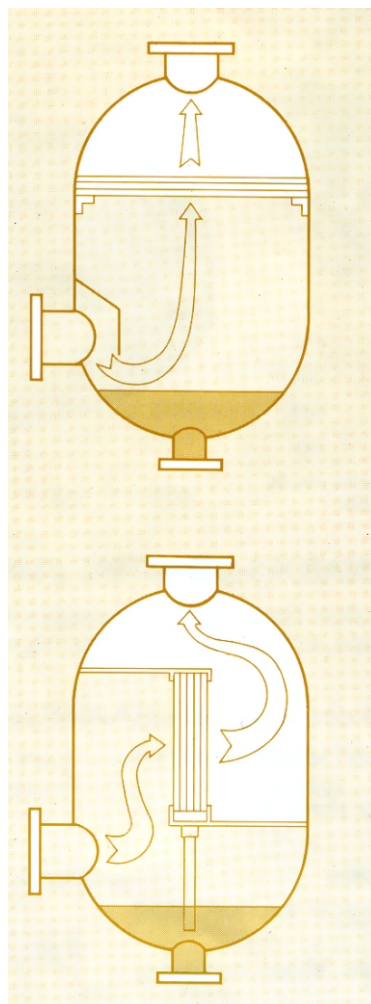
- Prevent costly liquid loss
- Protect online equipment
- Improve product purity
- Control air / water pollution
- Increase throughput

### Working

**PACE** Entrainment Separators work on the principle of the impingement of the liquid droplets due to higher inertia, their coalescence into large drops and fall back due to gravity

### Industries Served

- Chlor Alkali • Chrome Plating
- Desalination • Edible Oils
- Fertilizer • Food Processing • Metallurgy • Nitric Acid • Oil & Gas • Petrochemical • Petroleum • Pollution Control • Power • Pulp & Paper • Salt • Sugar • Sulfuric Acid



### Advantages

- Good efficiency
- Easy to install
- No moving parts
- High turndown ratio
- Low pressure drop

### Materials

Fabricated from Stainless Steel, Copper, Monel, Nickel, Alloy 20, Titanium, Inconel, Incolloy, Phosphor Bronze, Hastelloy, Polypropylene, Polyester, Teflon, Nylon and Fibreglass.

### Uses

- Absorber • Distillation Column
- Drying Tower • Flash Tower
- Evaporator • Prilling Tower
- Gas Turbine • Knockout Drum
- Extraction Column • Reactor
- Reboiler • Vacuum Tower
- Scrubber • Steam Drum

### Design Parameters

Though **PACE** Entrainment Separator is considered as a simple product, the design and / or selection of the same requires experience and judgement. Variables that affect the design / selection of **PACE** Entrainment Separators include gas / vapour flow rate, gas/vapour & liquid density, liquid loading, droplet size distribution, liquid viscosity and surface tension, content of dissolved and suspended solids, operating temperature and pressure, materials of construction, flow direction and vessel geometry and the required performance



## (1) PACE MESH MIST ELIMINATORS-DEMISTERS (TRADITIONAL STYLES)

### Construction

- It is an assembly of corrugated knitted wire mesh fastened to support grids
- Knifed wire mesh being flexible, the Mist Eliminator fits tightly in the vessel
- The Style differs in Wire dia, mesh opening, corrugation and number of strands

### Achievements

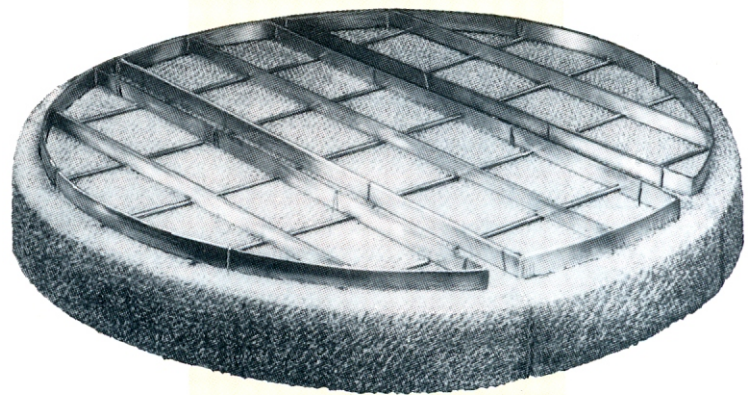
- Detailed Engineering of specialized elliptical, vertical, conical shapes
- Emergency rush deliveries for a number of Requirements
- Design & / or Supply of Separator Vessel-Housing

### Specifications\*

PACE STYLE	BULK DENSITY K.G./CU.M.	SURFACE AREA SQ.M/CU.M.	FREE VOLUME %	YORK EQVLNT
AA-08	600	1200	92.5	801
AA-24	173	360/314	97.8	421
AA-34	145	300/264	98.2	431
AA-35	112	220	98.6	531
AA-39	82	160/150	99.0	931
AB-14	195	422/405	97.5	412
AC-33	450	2000/1700	94.4	333
AD-46	100	216/200	98.75	644
AF-23	120	460/393	98.5	326

Many other styles can be offered for specific needs.

□The above Table pertains to S.S. materials.



## (2) PACE MESH MIST ELIMINATORS-DEMISTERS (IMPROVED STYLES)

The traditional Mesh Mist Eliminators no longer yield satisfactory results in many applications. New advances have taken place in the design and configuration/geometry, viz:

### Higher efficiency

- Reduced makeup of solvents like amines, glycols etc.
- Lower droplet size removal in sulphuric acid drying towers and separator vessels
- Improved steam & condensate purity in terms of reduction in dissolved solids

### Lower solids fouling and pressure drop

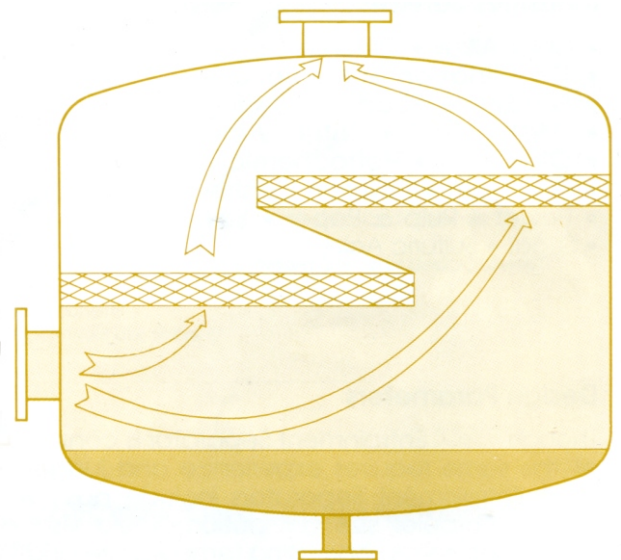
- Extended service life in metallurgical sulphuric acid plant drying towers.
- Reduced pressure drop in new styles replacing common traditional styles

### Increased throughput capacity

- Increases capacity upto 30% by retrofitting existing knockout drums
- Reduced size and weight of new plant equipment

### Safety & Installation convenience

- Drawer system for installation in acid drying towers



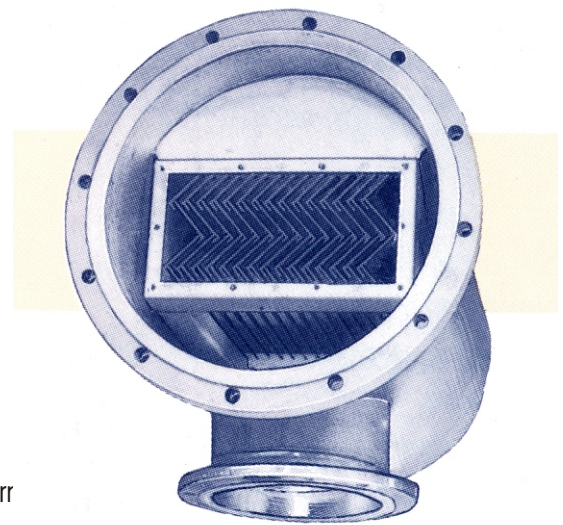


### (3) PACE VANE MIST ELIMINATORS

- Composed of multiple parallel blades, They are assembled with wide clear channels to minimise fouling, provide good draining and enhance cleanability. Rugged construction
- Blade spacing, Number of passes and the presence or absence of drainage hooks affect the performance and are engineered for specific process requirements

#### Comparison

TYPE	MESH	VANE
COST	Lower	Mm. 2 times
EFFICIENCY	=100% > 2 $\mu$	=100% > 10 $\mu$
PRESSURE DROP	< 25mmWC	< 15mmWC
GAS CAPACITY	Good	Best
LIQUID CAPACITY	Good	Best
SOUDS CAPACITY	Good	Best



#### Common Applications

- Entrainment from wash oil zones where cooking is a concern
- Minimise carbon & metal levels in side draws for deeper
- Handle high liquid loads in evaporators
- Improve wellhead separation of crude, gas & water
- Remove viscous liquids in deasphalting
- Prevent fouling in blast furnace and coke oven scrubbers
- Particulate removal in flue gas scrubbing systems

### (4) PACE COMBINATION MIST ELIMINATORS

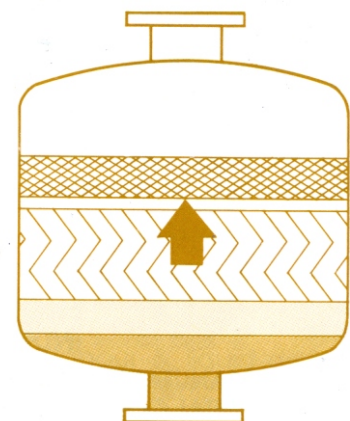
There are applications where a better solution is needed. This two stage design combines the efficiency of the Mesh with the throughput capacity of the Vanes

#### Advantages

- Drastic reduction in size for new knockout drums or gain upto 50% more capacity
- Increased separation efficiency with solids handling and higher liquid loading

#### Applications

- Compressor knockout drums for ethylene etc
- Flash zones in lube oil vacuum towers
- Increase allowable gas capacity in urea prilling towers
- Black liquor and other pulping chemical evaporators



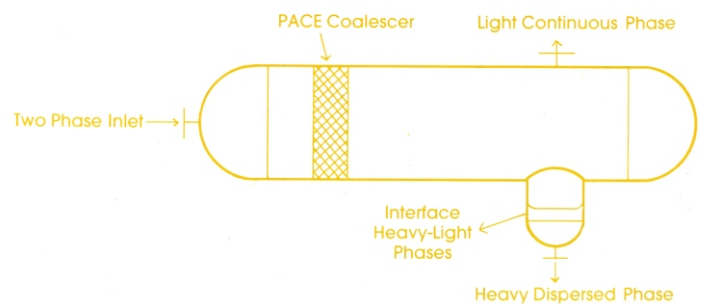


## (B) PACE DISPERSION SEPARATORS (LIQUID COALESCERS)

- For Separation of immiscible liquids by breaking liquid dispersions and emulsions, so that subsequent gravity setting becomes effective
- Used for the removal of hydrocarbon droplets from water or for the removal of water droplets from hydrocarbon
- Reduce Separator vessel cost / increase the capacity of existing Separators while improving purity

### Common Coalescers

PACE STYLE	DROPLET SIZE (MICRONS)	PRESSURE DROP (MM WC)
BW	> 100	100
BC	50-100	250
BA	10-50	1500



### Achievement

- Engineering of specialised Liquid Coalescers for an oil refinery extraction columns

### Applications

- Reduce water content in fractionator reflux
- Improve efficiency of extraction columns
- Reduce caustic content in hydrocarbons
- Improve blending time
- Reduce VOC emissions
- Eliminate product haze
- Reduce load on wastewater treatment
- Reduce corrosion on tank bottoms



### PROFILE

- Launched to manufacture specialized wire products in the year 1985
- Our product range also includes Screens-Mesh, Conveyor Belts, Mist Eliminators-Coalescers, Compressed Knitted Wire Mesh / Products
- We offer emergency rush deliveries at reasonable prices
- Our esteemed clients include a large number of leading industries and E&C companies
- We believe in constant updating of knowledge and training
- We have broad experience in handling innovative designs and engineering
- We have machinery-equipment and skills to offer international specifications
- Reputed inspection agencies and engineering consultants have approved our shop
- We have customer oriented long term approach with emphasis on superior service and quality



## **PACE** ENGINEERING INDUSTRIES PVT. LTD.

MANUFACTURERS OF ENTRAINMENT SEPARATORS, STRUCTURED COLUMN PACKINGS, METAL CONVEYOR BELTS AND WIRE SCREENS

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