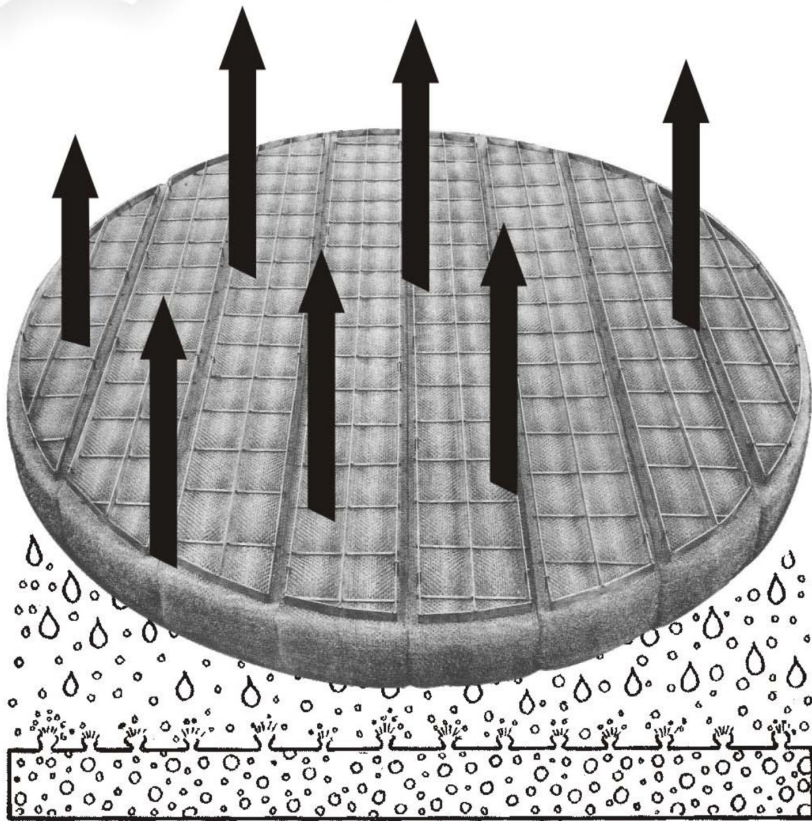


AIR POLLUTION CONTROL
(Improve productivity and cut operational costs)

ULTRA HIGH PERFORMANCE CANDLE FILTERS AND DEMISTER PADS (CLASSIFIERS)



FROM
CONTINENTAL PROFILES LTD
(EXPERTS SINCE-1970)

THE NEW FIBRE CANDLE FILTER FROM CONTINENTAL PROFILES....

MECHANISM

The mechanism of fibre filters is well known and is basically a combination of impingement for particles greater than 1-2 microns in diameter and diffusion for the finer, particles when Brownian motion becomes increasingly predominant. As the gas passes through the filter bed the small mist particles are bombarded by the gas molecules surrounding them, causing them to move in various directions, towards and away from the surface of the fibres making up the filter.

Each filter is composed of millions of fibres and although the efficiency of each individual fibre is low the cumulative effect is very high. Low approach velocities are necessary in order to mask the diffusion velocities associated with Brownian movement.

The candles are installed vertically and gases pass horizontally through the filter wall, the trapped particles coalescing and draining down through the filter bed

Gas flow through candles can be either inside/outside or outside/inside depending upon the siting of the installation and the method of securing the candles in place.

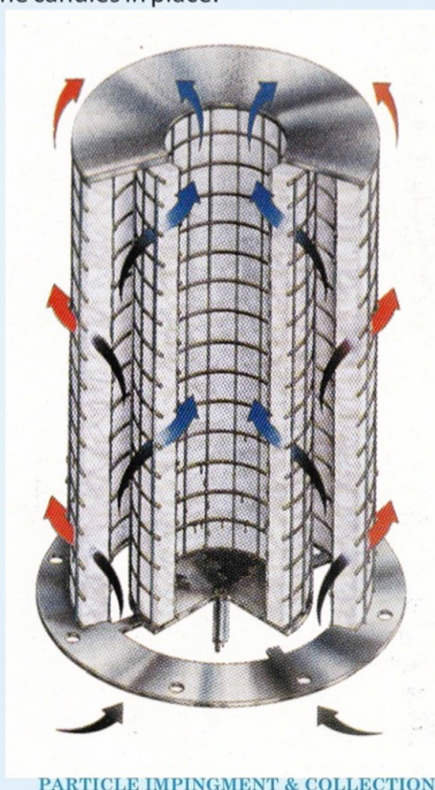
1-Filter Vessel- Contains filters, channels gas flow, can provide some storage for liquids.

2-Outer Filter- Complete filter assembly including filter media and retaining cage.

3-Inner Filter- Second complete filter assembly nested inside the outer filter.

4-Coalescing Liquid- particles of mist that contact the filter surface are collected and coalesce- then drain by gravity into the vessel's reservoir.

5-Emission Source - From process exhaust. Contains particles which are collected by the filter.



6-Clean exhaust- from inner and outer filters is directed to atmosphere or recycled to process.

7- Inner Filter Drain- Liquid collected by the inner filter is channeled to the vessel collection area. Filter is channeled to the vessel collection area.

8-Filter Retaining Cages- Secures filter media. Made of wide variety of materials depending upon process gases and particle chemistry.

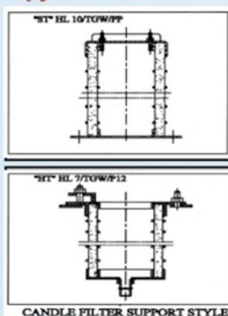
9-Spacers- Ensure proper spacing between inner and outer filters for optimum gas flow and performance.

10-Cover Plate- Covers bottom of Inner Filter to force gas to pass through the space between inner and outer filters.

NEW 2 PACK CANDLES

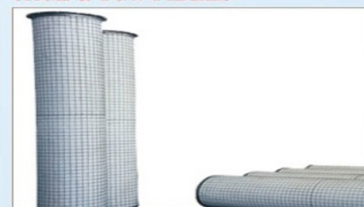
With the innovative 2 Pack design CPL provides inexpensive solution to mist emission control problems.

Types of Filters



Style	Removal Efficiency	Pressure Loss (m/m W.G.)	Typical Service
HL 10/TGW/PP	High Efficiency 100% above 1 Micron 98% above 0.5 Micron	150-350	Acid Plants High Pressure Systems Plasticiser Mists.
HL 8/TGW	High Efficiency 100% above 3 Microns 95% above 1 Micron 80% above 0.5 Micron	100-250	Acid Plants Soluble Fume
HL /P12	High Efficiency 100% above 3 Microns 95% above 1 Micron 90% above 0.5 Micron	100-250	Corrosive Services Soluble Fume
HL 12	High Efficiency 100% above 3 Microns 95% above 3 Microns	100-300	Wet Chlorine Systems

FILTERS WITH SS-316L CAGE & TGW FIBRES



Typical Candle Filter Applications :

Sulphuric Acid Mist.
Phosphoric Acid mist.
Hydrochloric Acid mist.
Wet chlorine gas
Dry chlorine gas
Plasticiser mist.
Compressed air and refrigerant gases (Oil mist Removal)
Fertiliser Prill towers
Ammonium Chloride mist.
Chromic Acid Mist

CLASSIFIERS

WHAT IS CLASSIFIER

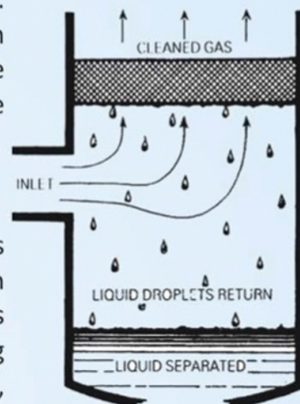
The Classifier is a tailor made product of Hein Lehmann (India) Limited, specially designed and manufactured out of knitted wires. It consists of wire elements sandwiched between a bottom support and top hold down grid. Properly applied it achieves 99.9% and over separation of entrained liquid in a vapour stream. It is individually engineered for specific process conditions and can be made of any shape or size. It can be installed in new as well as in existing vessels.



A TYPICAL CLASSIFIER

OPERATIVE PRINCIPLES OF CLASSIFIERS

The separation action of a classifiers mainly that of knitted mesh elements but entrained liquid droplets with greater Inertia contact the extensive wire surface of elements and are briefly held. These droplets flow downwards collecting on adjacent wires, flowing downwards again when these collecting points are overloaded. The drops grow in size until they are large enough for the force of gravity to exceed the combined forces of velocity and surface tension when they fall down. The resultant stream is pure vapour containing no liquid.



APPLICATION

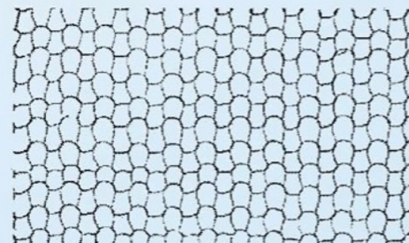
The highly efficient method of entrainment separation by employing classifiers is widely used in liquid gas process operations in petroleum refining, chemical distillation and evaporation, distillation plants and nuclear power plants. The important vessels where classifiers are fitted are distillation columns, vacuum towers, fractionating towers, lube oil towers, flash drums, knock-out drums, steam drums, scrubbers, strippers, absorbers, evaporators, cooling towers.

SUPERB ADVANTAGES OF CLASSIFIER

1. It is a highly efficient entrainment separator which operates at velocities which can vary 8-10 times.
2. It has no moving parts and does not require operating attention.
3. It is automatic in its operation. No auxiliaries are needed- no instrumentation; once installed it works.
4. It is inexpensive to purchase and easy to install.
5. It combines very high efficiency with very low pressure drop.
6. It has no operating costs other than periodic replacement after an extended period of operation.
7. It can be made from a wide variety of materials to suit any unusual process or corrosive condition.
8. It reduces solvent and product losses.
9. It is self cleaning because of the scrubbing action of the coalesced droplets.
10. It can be designed for operation at high efficiency even during violent surging condition.
11. It pays for itself in a very short time because of its high efficiency and low cost.

STYLES

Classifier style	Free volume % age	Surface area m ² /dm ³	Typical service conditions
HC 16	99.0	0.15	Minimum pressure drop, dirty service.
HC 28	98.2	0.28	Standard-general purpose
HC 38	97.6	0.37	Heavy duty heavy entrainment loading
HC 41	98.4	0.46	High efficiency for fine entrainment
HC 61	96.0	1.48	Distillation media



KNITTED MESH

MATERIAL OF CONSTRUCTION

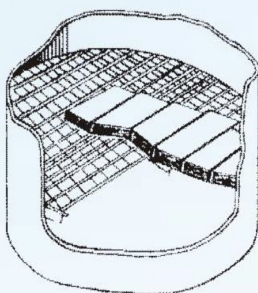
The classifiers are made of finest quality materials. Wires are smooth, clean and bright for rapid liquid drainage and are stress relieved to resist stress corrosion. They are made in wide range of materials. The important are given below:

Material	Where Used
AISI 304 stainless steel	Water Solns, Nitric Acid, Reduced Crude, Petroleum fractions etc.
AISI 316,317 stainless steel inconel	Fatty Acids, Reduced crude containing Naphthenic Acid and other Corrosives
AISI 430 stainless steel	Water, Nitric Acid, Steam
Nickel	Caustic Soda, food products.
Monel	Caustic Soda and other Alkalies, dilute Acids
Copper	Freons, Alcohol
Carbon Steel	Dry, non-corrosive Hydrocarbons
Polypropylene, Polyethelene	Corrosive fluids at moderate tempratures.
Teflon	Highly corrosive conditions

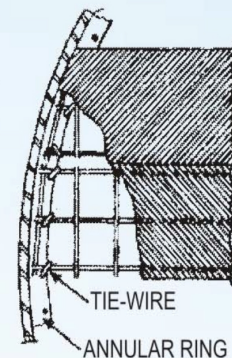
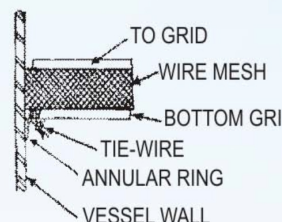
CLASSIFIER SELECTION

For proper selection and design of classifiers the detailed information regarding process conditions should be supplied to Hein Lehmann. Please indicate the following Wherever possible:

- | | | |
|----------------------|--|-------------------------------|
| (a) Vapour Velocity | (e) Surface Tension | (h) Material of Construction. |
| (b) Vapour Density | (f) Liquid Particle size and quantity or | (i) Performance requirements. |
| (c) Liquid Density | Process and System Description. | |
| (d) Liquid Viscosity | (g) Operating Temperature and Pressure. | |



A TYPICAL CLASSIFIER
SECTIONAL TYPE
DEMISTER COMPLETE
WITH TOP AND
BOTTOM GRIDS,
SHOWING
CONSTRUCTION
DETAILS



MECHANICAL DESIGN DETAILS

Classifier elements are securely tied to individual grid sections. The element and grids are made of proper curvature to suit the vessel. The knitted wire mesh is resilient and will provide a snug fit in the vessel. Only requirement for the user is to provide a support ring welded to vessel wall with holes to fasten grid section with tie wires.

For Further details please contact :



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