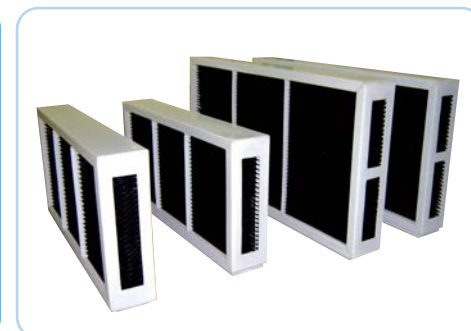


We produce "Mist Elimination equipment " for gas-liquid separation, liquid-liquid separation, as well as vapor flow conditioning devices for Industrial field.



**DEMISTER  
MIST ELIMINATOR  
TOWER PACKING  
MIST SEPARATION TECHNOLOGY**



**DAESHIN DEMISTER CO., LTD.**

A-1, Nam Dong Industrial complex (45 Block-6 Lot), 435-6 Non-Hyun Dong,  
Nam-Dong Gu, In Cheon, Korea (405-848)  
<http://www.dsdemister.com> E-mail : [dsdemister@naver.com](mailto:dsdemister@naver.com)



**DAESHIN  
DEMISTER CO., LTD.**



# ENVIRONMENT & MIST ELIMINATION TECHNOLOGY



ISO 9001:2000      ISO 14001:2004

## MESSAGE FROM THE CEO

Thank you very much for your visit to Dae Shin Demister Co., Ltd.

Dae Shin Demister as a specialized manufacturing company for a Mist Separation Equipment designs and manufacture Wire Mesh Demister, Mist Eliminator, Tower Packing and Tower Tray to supply for the industries of petrochemical, semiconductor, chemistry, food manufacturing, and power plant, steel plant..etc. We also provide engineering works as design and construction for change of Tower Internal and Packing facilities.

Since the established in 1990, Dae Shin Demister has devoted as its best efforts for environmental industrial facilities to prevent air pollution through development of technology, the best quality and maximized efficiency of the products. Now we are preparing to meet market requirements on global standard of quality and competitiveness with technological development of environment friendly mist elimination and higher efficient products.

We promise that the company shall provide best service to the customer, and shall be a trustful organization to the community through social contributions. Your continuous attentions on our activities would be highly appreciated.

Dae Shin Demister Co., Ltd.  
President **Sang-Jin, Jin**

## COMPANY INTRODUCTION

**Company Name** : DAE SHIN DEMISTER CO., LTD.

**Establishment** : February 1990 (Factory in Galsan-Dong, Bupyeong-Gu, Incheon)

**Extension** : Relocated in April 1992 (Factory in Lot 6, 45 Block, Namdong Industrial Park, Incheon)

**Main Business** : Design, Manufacturing and Installation of industrial facilities for Mist Separation equipment

**Major Products** : DEMISTER, MIST ELIMINATOR  
TOWER PACKING, AIR FILTER,  
OIL FILTER

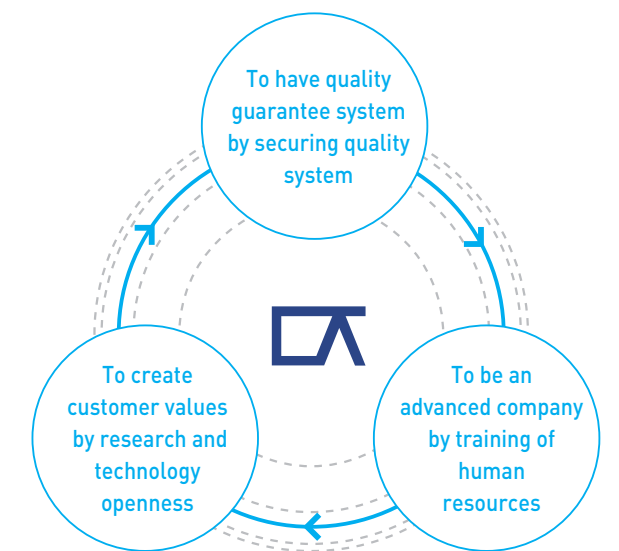
**Head Office and Factory** :  
A-1, Nam Dong Industrial complex (45 Block-6 Lot), 435 -6  
Non-Hyun Dong, Nam-Dong Gu, In Cheon, Korea (405-848)

TEL : 032-814-0211    FAX : 032-814-0213

**HOME PAGE** : [www.dsdemister.com](http://www.dsdemister.com)

**E-mail** : [dsdemister@naver.com](mailto:dsdemister@naver.com)

### QUALITY TARGET



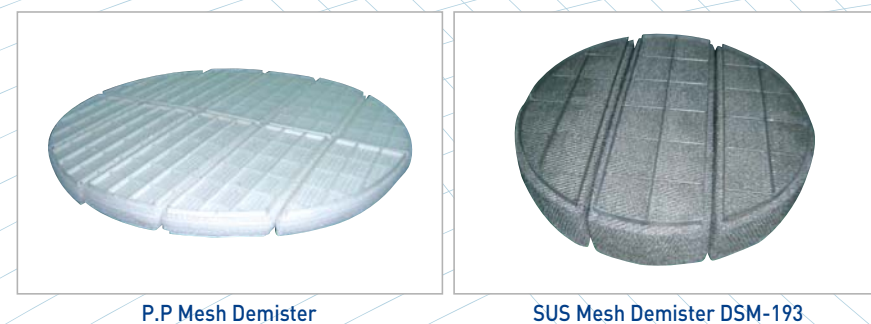
<http://www.dsdemister.com>

<http://www.dsdemister.com>

**INTRODUCTION**

Mist in Gas has bad impact in various aspects, including environmental pollution, corrosion, and loss of raw materials. mist that are mechanically generated from scrubber, cooling tower and vaporizing pipes, generally has relatively large mist with tens to hundreds of microns in diameter. Micro mist is generated by condensations or chemical reaction of gas.

We have been producing and supplying Mesh type of Demister ( DSM-Type ) and have completed localizing Baffled Mist Eliminator ( DSB-Type ) in our production line.



P.P Mesh Demister

SUS Mesh Demister DSM-193

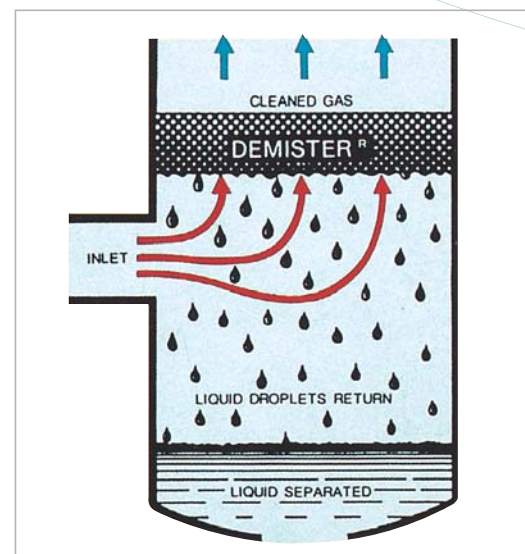
**OVERVIEW**

Demister is called as Mist Eliminator, Wire Mesh Separator and Wire mesh blanket. It is a type of Filter that separates and removes mist or dust from fluid and a chemical reaction accelerator. Demister can be semi-permanent. It had made of various materials according to condition of usage and its structure is very simple for convenient installation and repair.

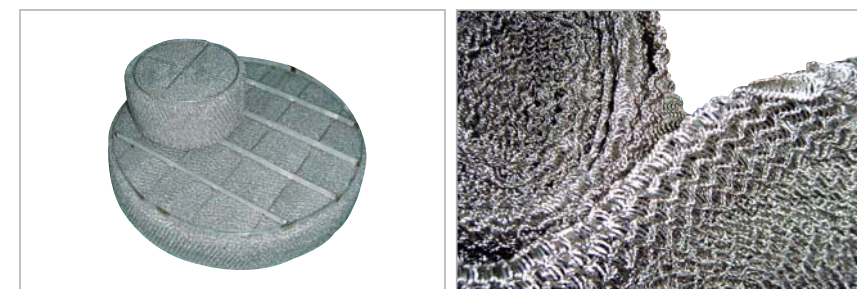
**OPERATION PRINCIPLE OF DEMISTER**

For example, gas from liquid (L) converts to vapors (V) in distillers. When vapors rise, the surface of liquid breaks to generate micro particles of liquid and deliver them with gas through demister. In this process, micro particles increases in volume due to inertial collision principle on the surface of pad.

Particles that contain impurities free fall due to the weight of impurities. Gas come through demister or contain liquid particles release as pure gas to the top of demister.



**PRODUCT FEATURE**



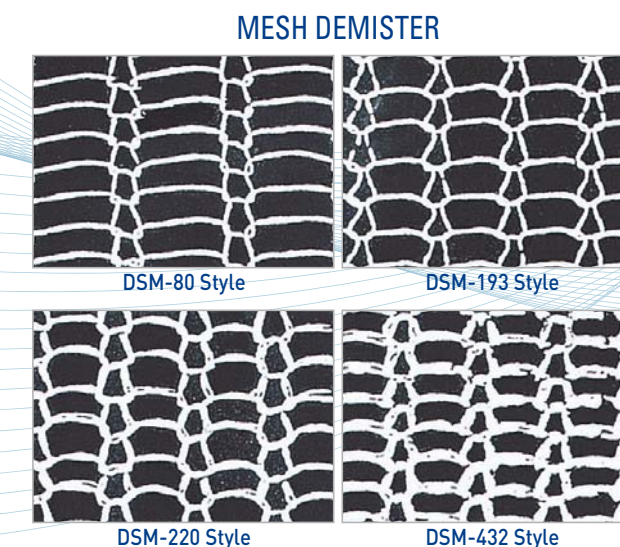
SUS Mesh Demister DSM-432

Structure of DSM-432

1. High collection efficiency of up to 99% of fluid at velocity of 1 to 8m/sec
2. Provides free area of up to 98% for operation and low pressure drop (0.1" ~ 1.0" W/G)
3. A variety of materials in accordance with temperature and corrosion resistance
4. Easy to install by using manhole. Usable without any restriction and replaceable with existing facilities
5. Designed for self - cleaning (semi - permanent and economical)

**PRODUCT SPECIFICATION / MODELS CONSTRUCTION**

Consists of a mat with overlapping knitted metal or plastic wire meshes, which are assembled in accordance with density for each style and disposed alternately. The assembled mat provides complex and refined structure for inertial impaction, so it provides free area of 98% for operation and low pressure drop



DSM-80 Style

DSM-193 Style

DSM-220 Style

DSM-432 Style

STYLE	APPLICATIONS
DSM-80	Provides low pressure drop at high velocity and general collection efficiency. Used for collecting larger particles.
DSM-144	Mainly used in the field of petrochemical plants. Provides relatively low pressure drop and collection efficiency of up to 90-99%
DSM-193	Most commonly used. Provides collection efficiency of up to 98-99% on 5-10 microns at velocity of 1-5m/sec.
DSM-390	Provides high pressure drop at low velocity of 1m/sec and collection efficiency of up to 90% or greater.
DSM-220	Used for collecting minute particles sized for 1 micron, Thicker is better in case of minute particles with low density (approximately 10g/M <sup>3</sup> )
DSM-432	Used for collecting sub-micron particles 0.05-1 micron More effective than DS-220 Style

## MATERIAL

Offers DEMISTER in a variety of stainless steel and plastic material such as

1. Stainless steel ( SUS316L, SUS316, SUS304)
2. P.P (POLY PROPYLENE), P.E (POLY ETHYLENE)
3. GLASS FIBER

## SELECTION OF DEMISTER

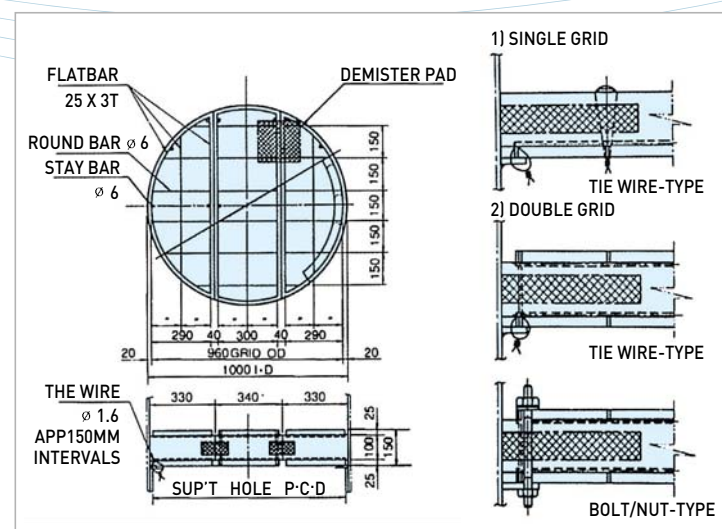
The below table as standard style has selected through referred articles, practical consumers and the company research for most suitable type according to the broad ranges of usage for DEMISTERSMS recently. It helps to identify basic type for use and refer to change of specifications as standards.

	DENSITY(kg/m <sup>3</sup> )		FREE AREA(%)		SURFACE AREA(m <sup>2</sup> /m <sup>3</sup> )		EQ.STYLE		
	SUS	P.P	SUS	P.P	SUS	P.P	YORK	NIHON MESH	GOTO SHOJI
DSM-80	80	30	98.9	96.7	155	495	931	H	H155
DSM-120	120	-	98.5	-	210	-	631	L	-
DSM-128	128	-	98.4	-	460	-	326	SN	-
DSM-144	144	38	98.2	95.8	275	630	431	N	S275
DSM-193	193	42	97.6	95.4	378	690	421	SL	S370
DSM-300	300	-	96.2	-	575	-	-	SM	-
DSM-390	390	-	95	-	740	-	-	SH	S740
DSM-220	220	-	97.2	-	905	-	-	T	M905
DSM-432	432	-	94.5	-	1,780	-	800	R	M1740
DSM-GRASS	160	80	96.7	94.7	5,000	-	-	G.S/G.P	-

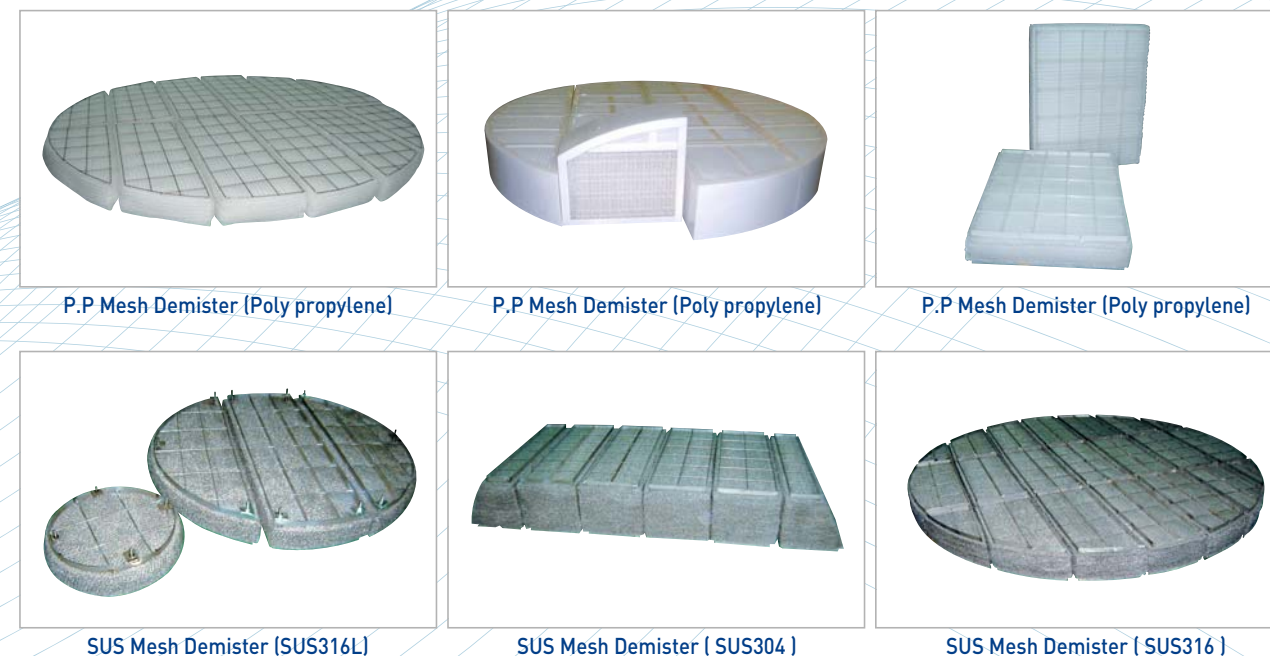
## INSTALLMENT AND GRID

DEMISTER in tower must be fixed and supported at level and Support Grid is commonly used for fixing bottom side or the upper and lower sides, which was made by welding FB 25x3t. RB6 φ (the same material with DEMISTER PAD) at regular intervals (APP 150mm).

In addition wire of diameter 1 φ or 1.6 φ is used for fixing GRID and PAD and how to fix them as follows.



DEMISTER collect essentially 100% of all liquid particles 2 to 5 microns in diameter, depending on design parameters. Available in virtually any size of shape, in a broad range of metals or plastics, individual styles of DEMISTER can be supplied to meet specific customer needs. DEMISTER has high collection efficiency, lowest installed cost, low pressure drop.



## PRESSURE DROP

When using demister, pressure drop is thought to be about 0.1"~1.0"W/G. Theoretically, it is calculated by the following formula.

$$\Delta P = \alpha \cdot P_g (V_g)^2$$

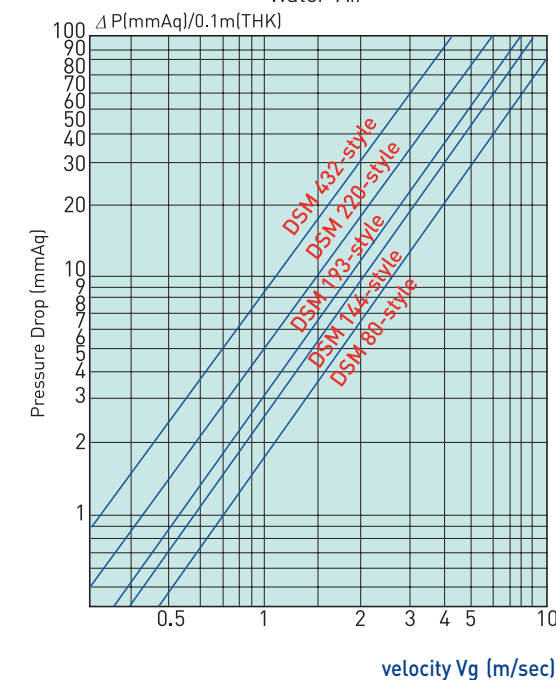
$V_g$  = Air current Velocity (m/sec)  
 $D$  = Diameter (m)  
 $P_g$  = Gas Density (kg/m<sup>3</sup>)  
 $g_c$  = Acceleration of Gravity (9.8M/sec<sup>2</sup>)  
 $X$  = Thickness (m)  
 $f$  = Friction Coefficient (generally 1.5)  
 $E$  = Space Ratio

When simplified, the formula is  
 $\Delta P = \alpha \cdot P_g (V_g)^2$   
 Its  $\alpha$  values are shown below.

STYLE	$\alpha$
DSM-80 H 155 STYLE	0.65
DSM-144 S 275 STYLE	1.1
DSM-193 S 370 STYLE	1.5
DSM-390 S 740 STYLE	3.0
DSM-220 M 905 STYLE	3.6
DSM-432 M 1,740 STYLE	7.0

## CORRELATION BETWEEN FLUIDITY AND GAS DENSITY

Water-Air



# BAFFLED MIST ELIMINATOR

# BAFFLED MIST ELIMINATOR

## PRODUCT CHARACTERISTICS

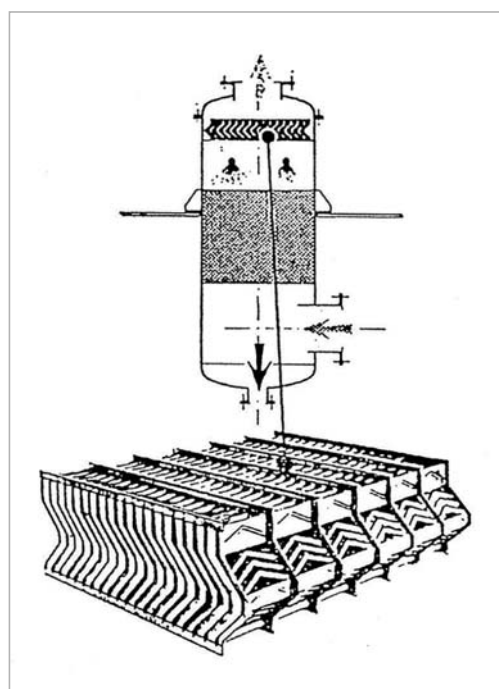
1. No clogging occurs when separating and eliminating large amounts of dust in liquid or mist with viscosity. Suitable for separating relatively rough water drops.
2. Eliminator structure can be reduced resistance loss and to be low pressure drop in high gas flow.  
Horizontal Type: 5-7 M/S  
Vertical Type: 4-6 M/S
3. It's stable for large capacity gas processing and High efficiency for space and affordable cost.
4. Appropriate heat - resistant and corrosion - resistant materials can be selected by gas conditions. Mostly made with SUS (stainless steel), P.P (polypropylene), FRP.
5. Good turn down characteristics.



## USE AND APPLICATIONS

1. Elimination of impurities in gas (To prevent Air pollution)
2. Elimination of impurities in gas (To improve product purity)
3. Prevents scattering of raw materials (saves cost)
4. Mist collection and separation during plant processing before or after and it makes to extend Eliminator life and to save energy

### VERTICAL FLOW TYPE



Usable in either Vertical or Horizontal flow type



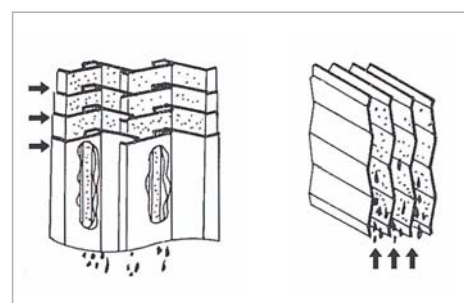
modified zig-zag



zig-zag

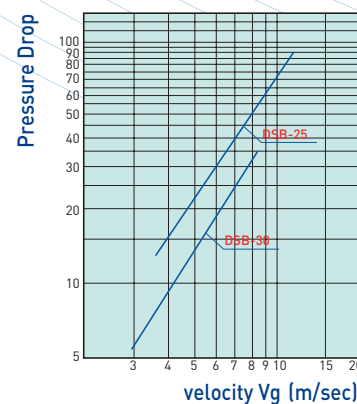
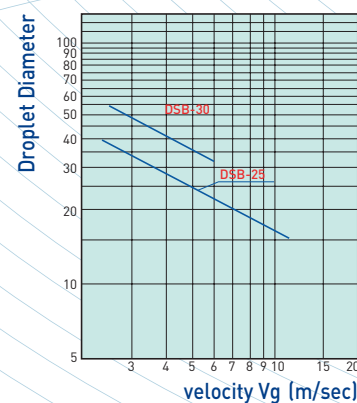


Lamellar type



▲ Horizontal flow design

▲ Vertical flow design



Baffled Mist Eliminator is baffle or zigzag blade modules tailored for either vertical or horizontal flow installations. These Mist Eliminators collect essentially 100% of all particles greater than 8 to 40 micron in diameter depending on design parameters.

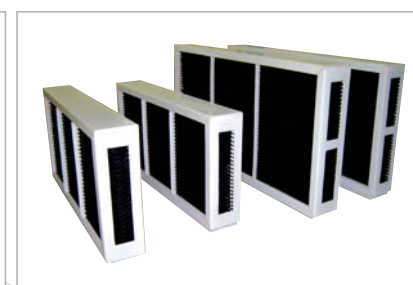
Baffled Mist Eliminators can be manufactured in  
 • Stainless steel (SUS316L, SUS316) • P.P (Poly propylene) • FRP



Baffled Mist Eliminator ( P.P ) Circle type



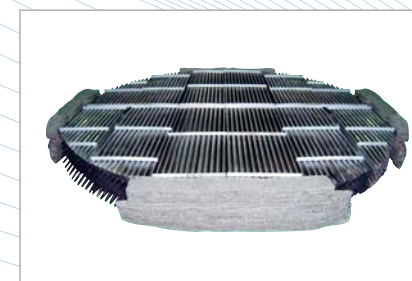
Baffled Mist Eliminator (P.P) Box type (DSB-25)



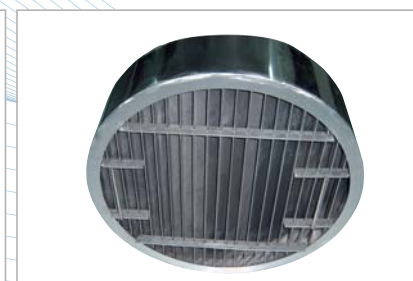
Baffled Mist Eliminator (P.P) Box type (DSB-30)



Baffled Mist Eliminator (P.P) Box type (DSB-25)



Baffled Mist Eliminator (SUS316) DSB-30



Baffled Mist Eliminator (SUS304) DSB-25



Baffled Mist Eliminator (SUS316L)

## AIR FILTER

**1. Structure**  
 It's assembled Demister with wire mesh both side or expanded metal part into a Air filter

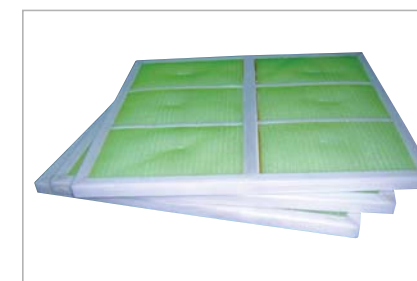
**2. Characteristics**  
 ① Low resistance and High efficiency of dust collection  
 ② Made with various materials to be suitable for any condition  
 ③ Light weight for easy installation and repair  
 ④ Semi-permanent and economic.

**3. Use**  
 ① Cooling/Heading Devices ② Ventilation/Air Conditioning

**4. Specification**  
 Mostly 500 X 500 X 50T, but may be customized for special needs.



▲ Air Filter ▼



# TOWER PACKINGS INTERNALS

# SOME EXAMPLES OF THE INSTALLATIONS

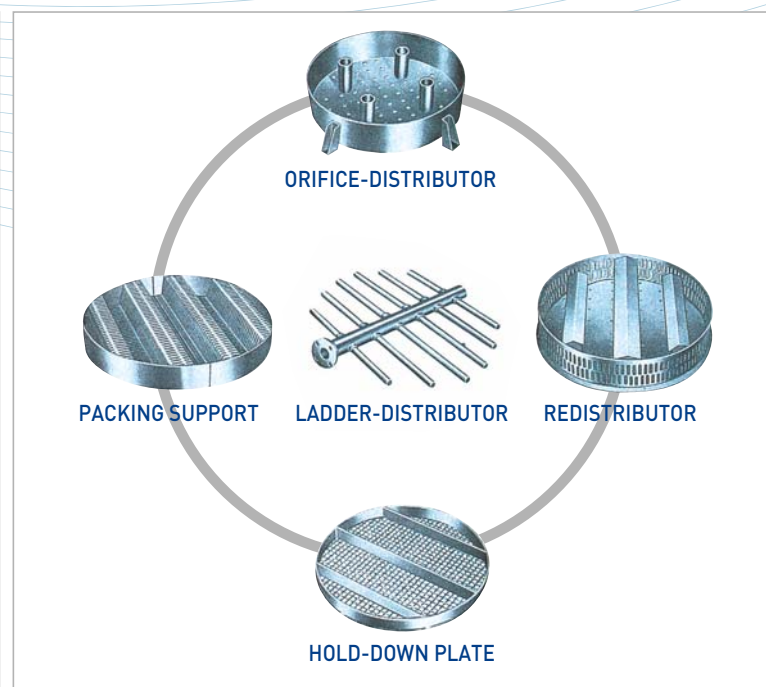
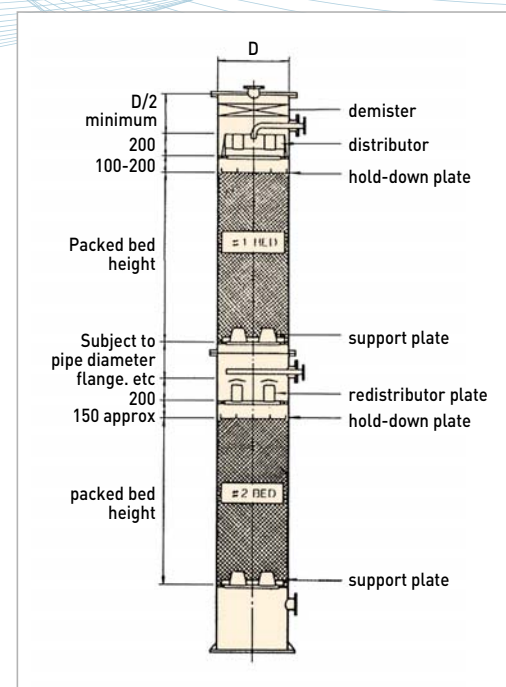
## TOWER PACKING



## MATERIAL PROPERTIES OF TOWER PACKINGS

Tower packings	Material	Dimension (in)	Thickness	Filling Value per 1m <sup>3</sup> (l/m <sup>3</sup> )	Weight per 1m <sup>3</sup> (kg/m <sup>3</sup> )	Surface Area per 1m <sup>3</sup> (m <sup>2</sup> /m <sup>3</sup> )	Porosity (kg/m <sup>3</sup> )
Pallings	Stain less Steel	5/8	0.4mm	234,000	465	361	0.902
		1	0.8mm	50,900	513	207	0.938
		1 1/2	1.6mm	13,300	376	129	0.953
	P.P (Poly propylene)	2	-	6,630	353	102	0.964
		5/8	-	234,000	72.1	361	0.88
		1	-	50,900	72.1	207	0.90
Hi-Lex	P.P (Poly propylene)	1 1/2	-	13,300	67.3	128	0.95
		2	-	6,500	67.3	102	0.91
		1 (25)	-	38,000	88	260	90
		2 (50)	-	8,000	64	100	93
Tellerette	P.P (Poly propylene)	3 (75)	-	1,850	48	75	95
		SO (47)	-	32,500	110	185	82
		S (51)	-	25,000	103	180	89
		S (59)	-	17,500	529	118	0.79
		M (73)	-	8,000	102	127	85
		L (85)	-	3,800	90	102	89

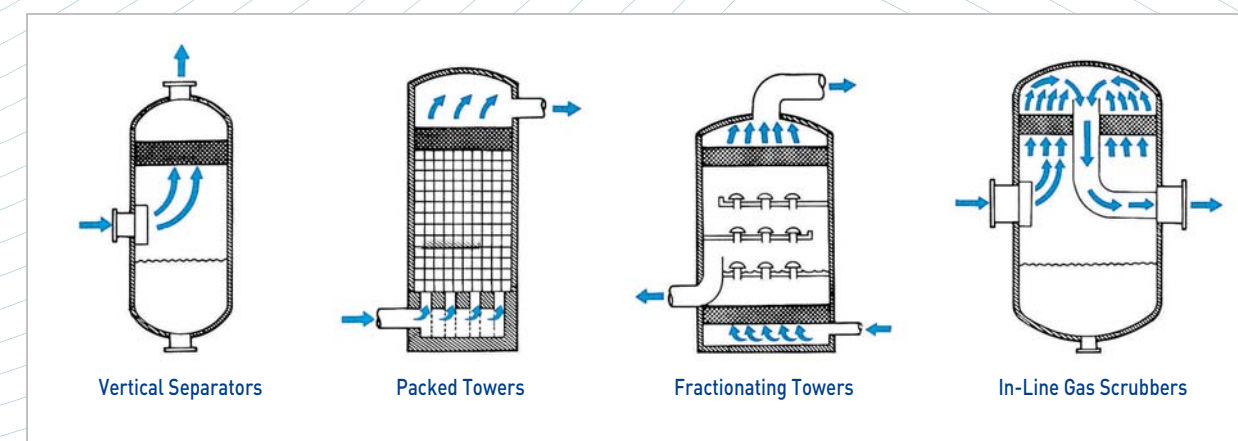
## STYLE



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## APPLICATIONS BY INDUSTRIES

- PETROLEUM FILTERING
- CHEMICAL FERTILIZER PLANTS
- SUGAR FACTORIES
- FOOD FACTORIES
- OXYGEN PLANTS
- PETROCHEMICAL PLANTS
- LACTIC ACID PLANTS
- PULP FACTORIES
- STEEL PLANTS
- CHEMICAL PLANTS
- NATURAL GAS/CITY GAS PLANTS
- SALT FACTORIES
- ALCOHOL FACTORIES
- ABSORBERS
- CATCH-ALLS
- DEODORIZERS
- EVAPORATORS
- GAS CLEANERS
- VACUUM TOWERS
- AIR WASHERS
- CRYSTALLIZERS
- DISSOLVER TANK
- FLASH TOWERS
- KETTLES
- SEPARATORS
- AIR CONDITIONS
- COOLING TOWERS
- DUCTS
- GAS ABSORBERS
- KNOCKOUT DRUMS
- STACKS
- AIR FILTERS
- FRACTIONAING COLUMNS
- SCRUBBERS
- STEAM SEPARATORS



## USAGE OF DEMISTER

1. VACUUM TOWER - Treatment volume has increased 35% by demister, and quality of oil shall be increased.
2. ABSORBER - A gasoline plant has saved costs within 1 month by glycol absorber (DEMISTER installation).
3. KNOCKOUT DRUMS AND SEPARATORS - It is enough to use with small size of drum by DEMISTER
4. GAS SEPARATOR VESSELS - Purified gas of 1/100,000,000 by collection of hydrocarbon from gas.
5. EVAPORATOR - lower product loss and distinctive higher purity.
6. SCRUBBER - Caustic soda factory use demister to protect air pollution as an example.
7. DISTILLATION COLUMN - Distillation ratio shall be increased by DEMISTER, and it has 20% of increased treatment volume and maximized purity.
8. DUST COLLECTORS - It has advanced capacity to collect dust as Wet Type of Dust Collector.