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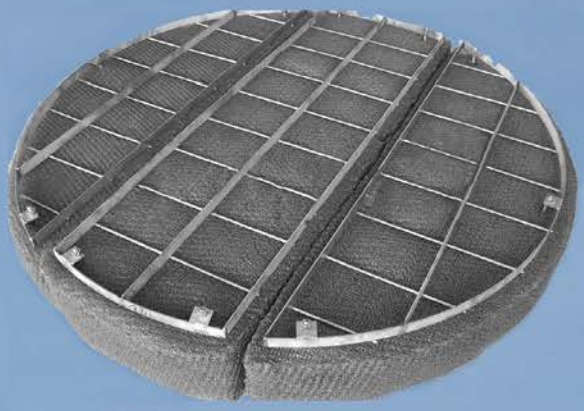

MIST ELIMINATOR

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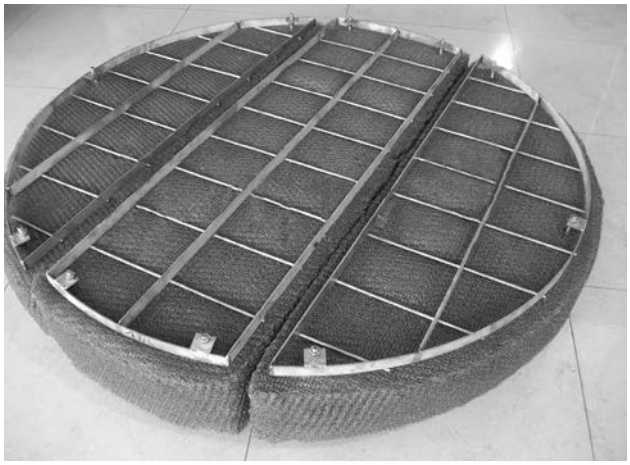
MIST ELIMINATOR

Mist eliminator is an important demisting devices in industrial applications. According to different types, it can be divided into two types:

- Knitted mesh demister pad
- Vane plate type mist eliminator

Mist Eliminator –Knitted Mesh Demister Pads



Knitted mesh demister pad, also called mist pad, wire mesh demister or wire mesh mist eliminator. It is a high efficient but economical separating device. It is commonly assembled in the towers or at the top of existing or new-built packed towers for high efficient gas and liquid separating.

Separate the gas in the droplets can improve the operating condition, optimize process indicators, reduce corrosion of the equipment, extend equipment life, increase the amount of processing and recovery of valuable materials, protect the environment, and decrease air pollution.

Working principle of knitted mesh demister pads

When vapor carrying entrained liquid droplets or mist rises and passes through the knitted mesh demister pad, the vapors passes freely through the multi-layer knitted mesh pads leaving droplets and mists trapped on the pad surface due to the greater inertia. As more droplets or mist collect, they will coalesce and grow in size. At last, the larger droplets will drain out from the outlet and the cleaned gases rise up from another outlet.

Materials of knitted mesh demister pads

Metallic material

- Stainless steel.
- Carbon steel.
- Copper.
- Titanium alloy steel.
- Other alloy materials.

Plastic material

- PP.
- PE.
- PVC.
- FEP.
- PTFE.

Stainless steel material

PP material

Shapes of knitted mesh demister pads

- Round shape.
- Ring shape.
- Rectangular shape.
- Customized shape.

Round shape

Rectangular shape

Ring shape

Special shape

Structures of knitted mesh demister pads

Knitted demister pads can be designed into different structures for high tensile strength, higher bearing capacity and better filtering efficiency.

- **Knitted mesh pad.** The knitted mesh pad is made of metallic or plastic materials, pad surface, side structure and overall size structure may be different according to customers' requirements.
  - **Pad surface.**
    - Smooth pad surface.
    - Ginning pad surface.
  - **Side structure.**
    - Standard side structure.
    - Knitted mesh sewing structure. For better appearance and more durable performance.
  - **Overall size structure.**
    - Integral structure. Suitable for small diameter packed tower.
    - Separated structure. Suitable for medium and large diameter packed towers.
  - **Appearance Structure.**
    - Flat pad.
    - Wavelike pad. Larger contacting area and higher filtering efficiency.

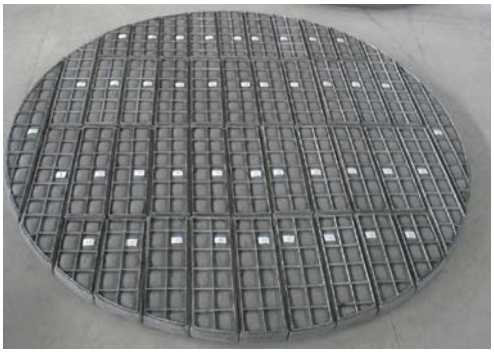
Smooth surface

Ginning surface

Standard side structure

Knitted mesh sewing side

Integral type



Separated type

Flat pad

Wavelike pad

- **Support grids.** As we all know, the basic structure of knitted mesh demister pads are mesh pad, supporting grid and distance rod. The support grid can be made into different structures.
  - **Round bar support grids.**
  - **Flat bar support grids.**
  - **Round and flat bar combination support grids.** Horizontal and vertical support grid has different types.
  - **Supporting mesh and support grid combination.** In the larger diameter demister pads, it will be added with supporting mesh between the mesh pad and supporting grid.

Round bar support

Flat bar support

Round and flat bar combination

Support grid and supporting mesh combination

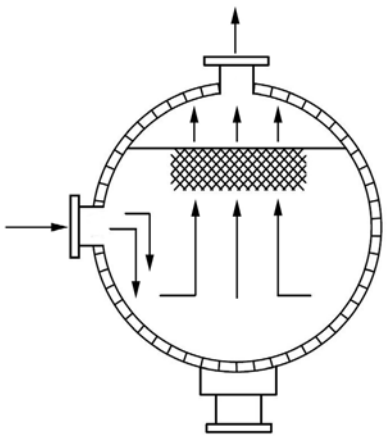
Feature

- Multiple materials and types to suit different applications.
- Excellent corrosion and rust resistance performance for durable life and complex environments.
- Unique structure for high filtering and separating efficiency.
- Upload, download installation type and components to be used in various packed towers and equipment.

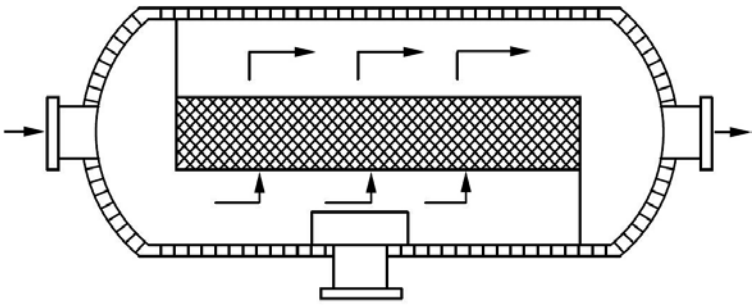
Application

The knitted mesh demister pad can be installed in different packed towers and equipment for different media and gas filtration and separation.

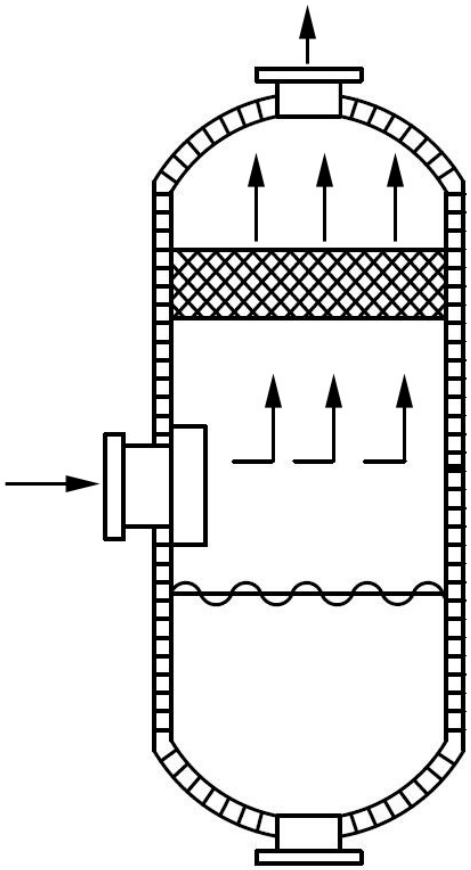
- Separation tower.
- Purification tower.
- Scrubber tower.
- Other specific towers.
- Distillation tower.
- Refining tower.
- Desulfuration tower.



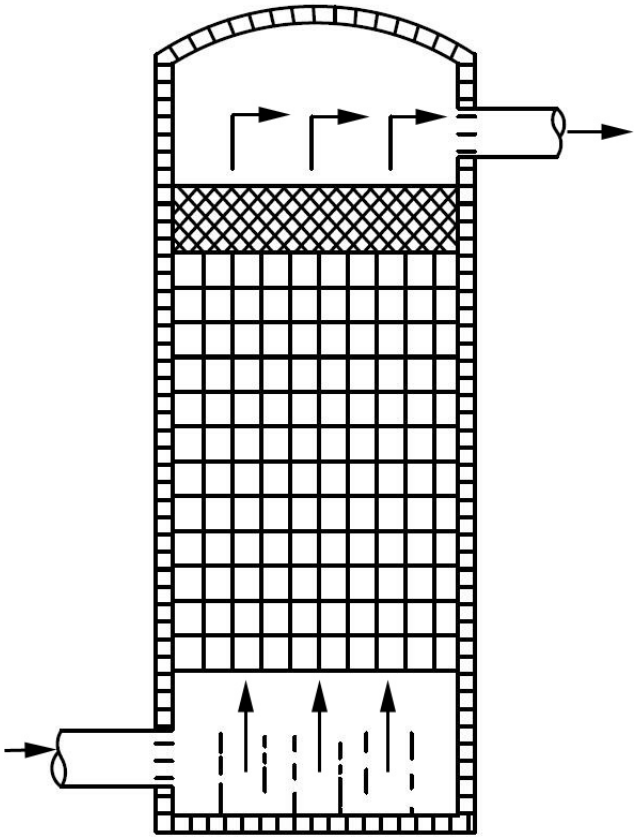
Horizontal separation tower



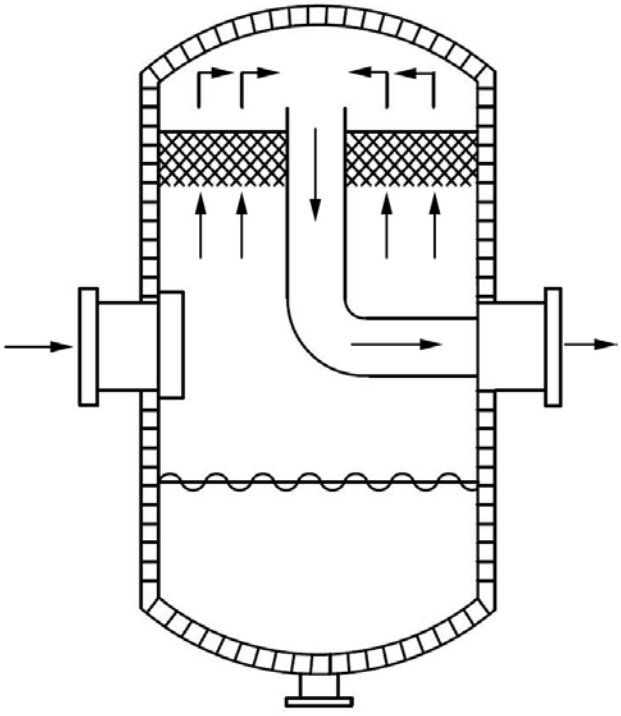
Spherical separation tower



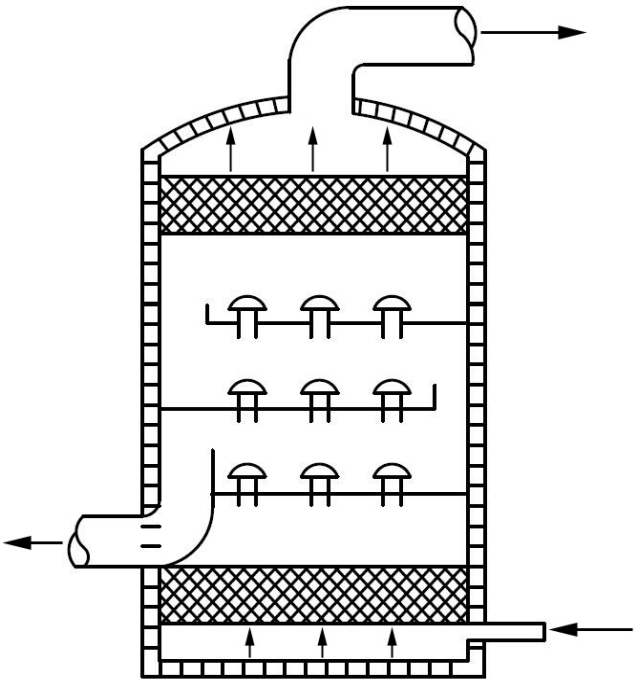
Vertical separation column



Packed tower



Scrubber

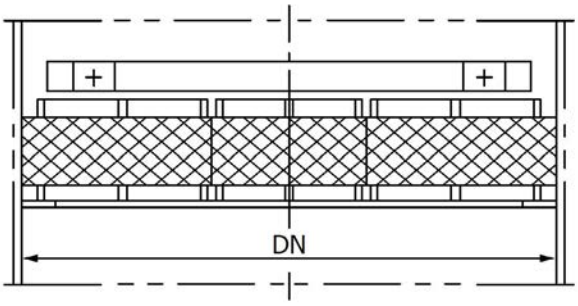


Distillation column

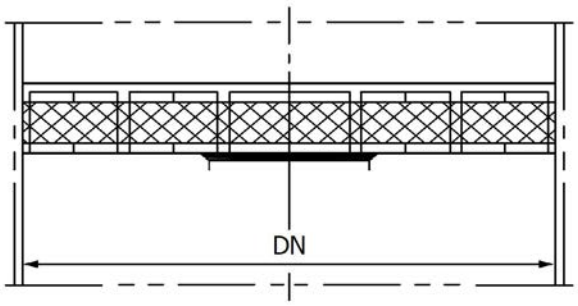
Installation types

The knitted mesh demister pad can be installed in the packed tower with upload type and download type. The download type installation needs more supporting grid and accessories than the upload types.

- **Upload type.** It is suitable for places, where the manhole is located above of the demister pad or places where there is no manhole but has flange.
- **Download type.** It is suitable for the places where the manhole is located below of the demister pad.

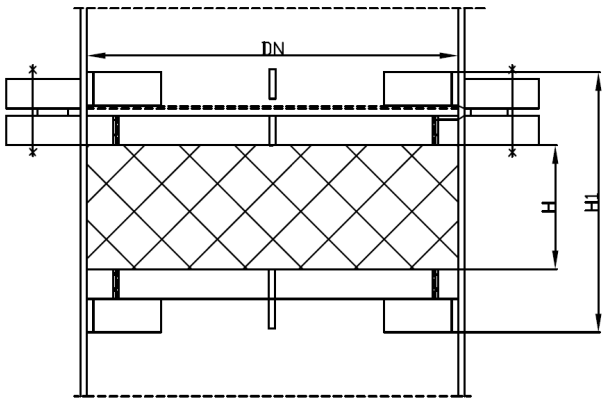


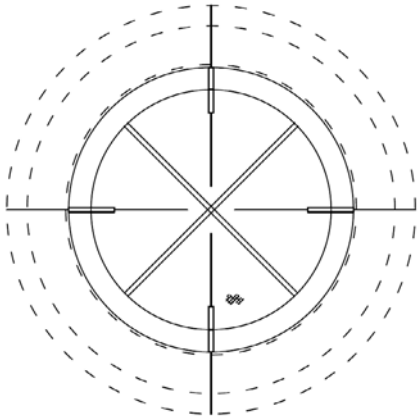
Upload installation



Download installation

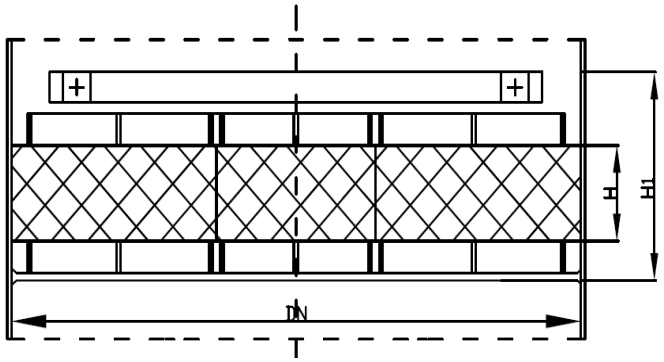
Table 1: Technical Parameters of Upload Type Knitted Mesh Demister Pad (DN 300 – DN 600)

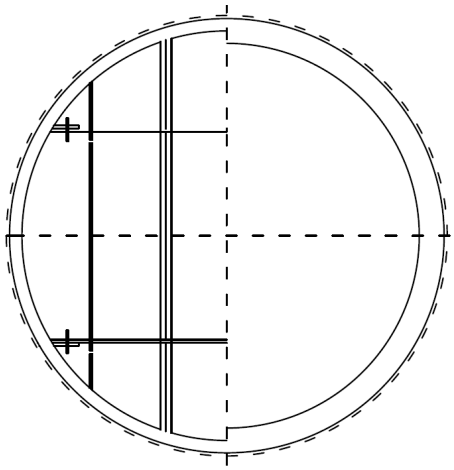




Item	Size (mm)			Weight (kg)		
	H	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-310	100	210	300	1.06	1.67	0.19
DU-315	150	260	300	1.59	1.72	0.19
DU-410	100	210	400	1.83	2.27	0.19
DU-415	150	260	400	2.75	2.32	0.19
DU-510	100	210	500	2.81	2.89	0.19
DU-515	150	260	500	4.22	2.94	0.19
DU-610	100	210	600	3.99	3.47	0.19
DU-615	150	260	600	5.99	3.52	0.19

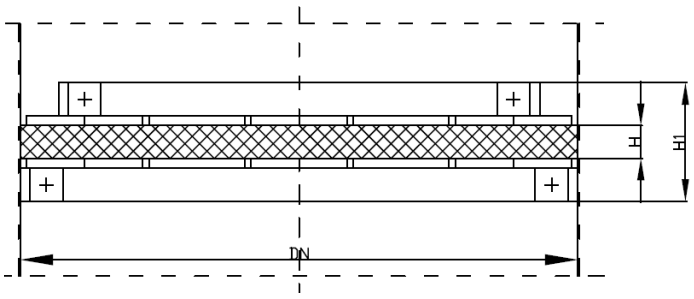
Table 2: Technical Parameters of Upload Type Knitted Mesh Demister Pad (DN 700 – DN 1600)

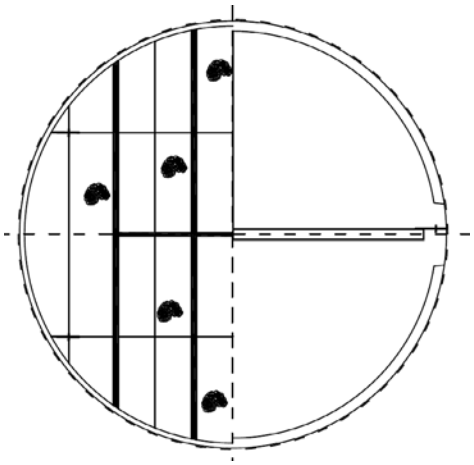




Item	Size (mm)			Weight (kg)		
	H	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-710	100	218	620	5.57	8.6	8.63
DU-715	150	268	620	8.67	8.78	8.63
DU-810	100	218	720	8.86	8.46	9.88
DU-815	150	268	720	13.3	8.63	9.88
DU-910	100	218	820	11.15	11.32	11.00
DU-915	150	268	820	16.73	11.49	11.00
DU-1010	100	218	920	13.69	12.42	12.12
DU-1015	150	268	920	20.55	12.61	12.12
DU-1110	100	218	1020	16.32	13.86	13.17
DU-1115	150	268	1020	24.48	14.05	13.17
DU-1210	100	218	1120	19.36	15.74	14.49
DU-1215	150	268	1120	29.46	15.93	14.49
DU-1310	100	228	1220	22.97	22.84	19.02
DU-1315	150	278	1220	34.47	23.15	19.02
DU-1410	100	228	1320	26.59	24.36	20.69
DU-1415	150	278	1320	39.9	24.58	20.69
DU-1510	100	228	1420	30.47	26.67	22.43
DU-1515	150	278	1420	45.72	26.99	22.43
DU-1610	100	228	1520	33.76	31.07	23.50
DU-1615	150	278	1520	50.64	31.43	23.50

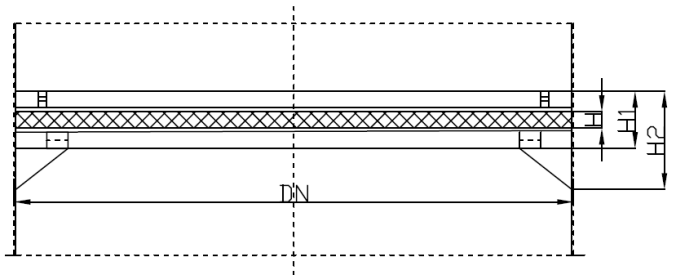
Table 3: Technical Parameters of Upload Type Knitted Mesh Demister Pad (DN 1700 – DN 3200)

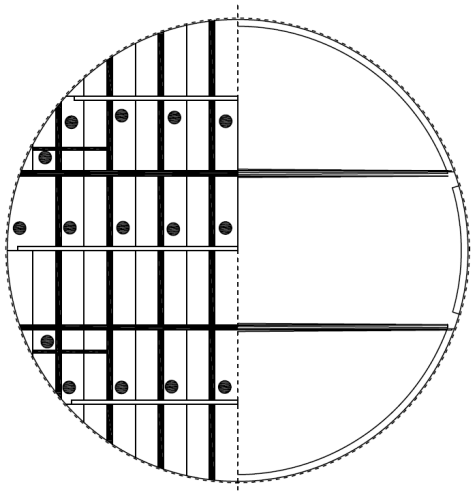




Item	Size (mm)			Weight (kg)		
	H	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-1710	100	360	1600	39	35	67
DU-1715	150	410	1600	53	36	67
DU-1810	100	360	1700	44	36	71
DU-1815	150	410	1700	66	37	71
DU-1910	100	360	1800	49	40	75
DU-1915	150	410	1800	73	41	75
DU-2010	100	360	1900	54	43	79
DU-2015	150	410	1900	81	44	79
DU-2210	100	360	2100	65	56	87
DU-2215	150	410	2100	98	57	87
DU-2410	100	360	2300	78	67	95
DU-2415	150	410	2300	118	68	95
DU-2610	100	360	2500	91	73	103
DU-2615	150	410	2500	136	74	103
DU-2810	100	385	2700	106	85	139
DU-2815	150	435	2700	158	86	139
DU-3010	100	385	2900	121	99	149
DU-3015	150	435	2900	182	100	149
DU-3210	100	385	3100	138	111	159
DU-3215	150	435	3100	207	112	159

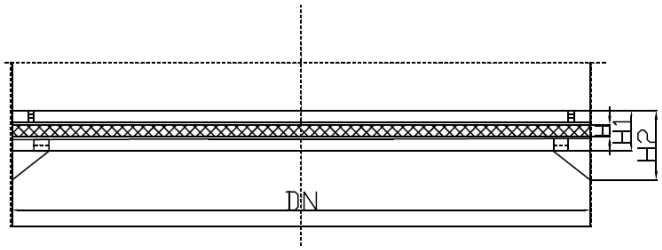
Table 4: Technical Parameters of Upload Type Knitted Mesh Demister Pad (DN 3400 – DN 4800)

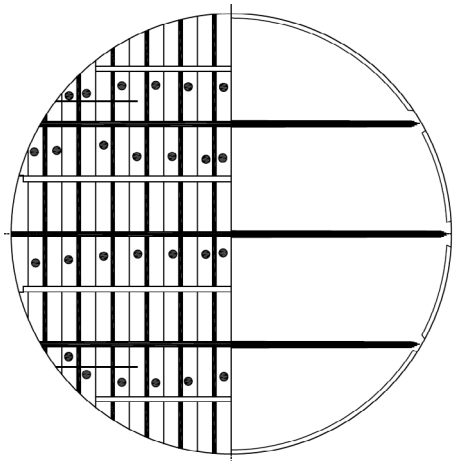




Item	Size (mm)				Weight (kg)		
	H	H1	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-3410	100	350	600	3280	156	126	312
DU-3415	150	400	650	3280	234	127	312
DU-3610	100	350	600	3480	175	139	315
DU-3615	150	400	650	3480	262	141	315
DU-3810	100	350	600	3680	194	159	329
DU-3815	150	400	650	3680	292	162	329
DU-4010	100	350	600	3880	216	176	345
DU-4015	150	400	650	3880	323	177	345
DU-4210	100	350	600	4080	239	189	359
DU-4215	150	400	650	4080	359	192	359
DU-4410	100	350	600	4280	259	202	374
DU-4415	150	400	650	4280	391	204	374
DU-4610	100	350	600	4480	285	224	401
DU-4615	150	400	650	4480	427	227	401
DU-4810	100	350	600	4680	310	243	414
DU-4815	150	400	650	4680	465	245	414

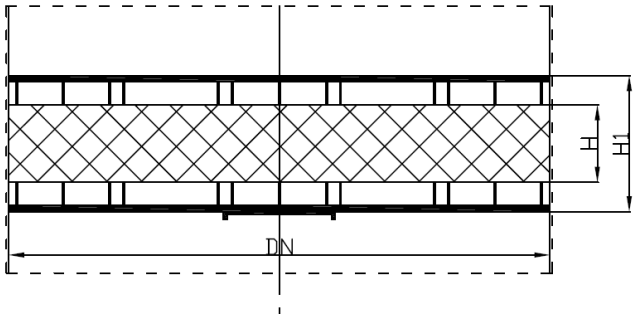
Table 5: Technical Parameters of Upload Type Knitted Mesh Demister Pad (DN 5000 – DN 5200)

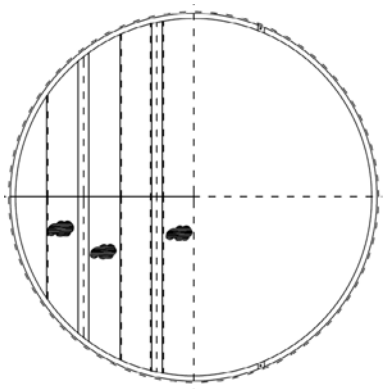




Item	Size (mm)				Weight (kg)		
	H	H1	H2	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-5100	100	350	600	4880	337	266	550
DU-5015	150	400	650	4880	505	269	55
DU-5210	100	350	600	5080	364	283	569
DU-5215	150	400	650	5080	546	286	569

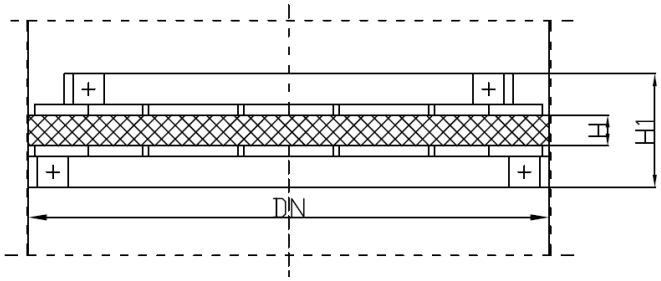
Table 6: Technical Parameters of Download Type Knitted Mesh Demister Pad (DN 700 – DN 1600)

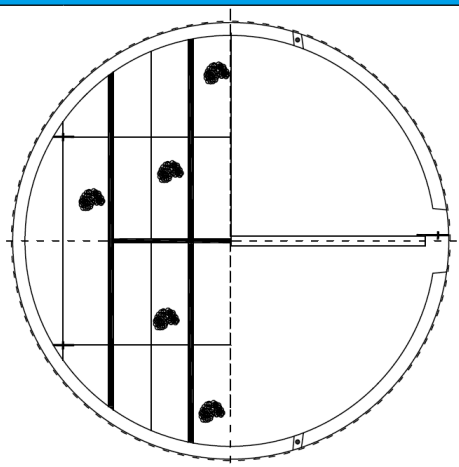




Item	Size (mm)			Weight (kg)		
	H	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-710	100	176	620	5.57	8.6	12.47
DU-7015	150	226	620	8.67	8.78	12.47
DU-810	100	176	720	8.86	8.46	14.54
DU-815	150	226	720	13.3	8.63	14.54
DU-910	100	176	820	11.15	11.32	16.11
DU-915	150	226	820	16.73	11.49	16.11
DU-1010	100	176	920	13.69	12.42	17.78
DU-1015	150	226	920	20.55	12.61	17.78
DU-1110	100	176	1020	16.32	13.86	19.27
DU-1115	150	226	1020	24.48	14.05	19.27
DU-1210	100	176	1120	19.36	15.74	20.85
DU-1215	150	226	1120	29.46	15.93	20.85
DU-1310	100	176	1220	22.97	22.84	22.6
DU-1315	150	226	1220	34.47	23.15	22.6
DU-1410	100	176	1320	26.59	24.36	24.19
DU-1415	150	226	1320	39.9	24.58	24.19
DU-1510	100	176	1420	30.47	26.67	25.76
DU-1515	150	226	1420	45.72	26.99	25.76
DU-1610	100	176	1520	33.76	31.07	26.98
DU-1615	150	226	1520	50.64	31.43	26.98

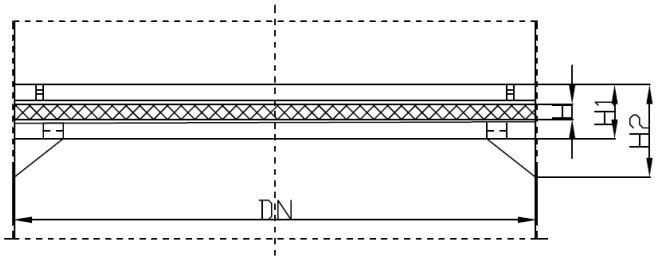
Table 7: Technical Parameters of Download Type Knitted Mesh Demister Pad (DN 1700 – DN 3200)

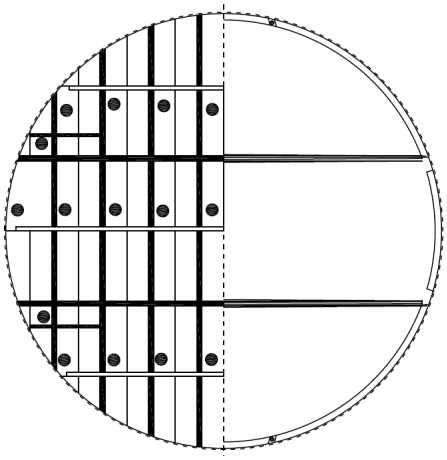




Item	Size (mm)			Weight (kg)		
	H	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-1710	100	370	1600	39	35	91
DU-1715	150	420	1600	53	36	91
DU-1810	100	370	1700	44	36	97
DU-1815	150	420	1700	66	37	97
DU-1910	100	370	1800	49	40	101
DU-1915	150	420	1800	73	41	101
DU-2010	100	370	1900	54	43	107
DU-2015	150	420	1900	81	44	107
DU-2210	100	370	2100	65	56	118
DU-2215	150	420	2100	98	57	118
DU-2410	100	370	2300	78	67	128
DU-2415	150	420	2300	118	68	128
DU-2610	100	370	2500	91	73	138
DU-2615	150	420	2500	136	74	138
DU-2810	100	395	2700	106	85	177
DU-2815	150	445	2700	158	86	177
DU-3010	100	395	2900	121	99	189
DU-3015	150	445	2900	182	100	189
DU-3210	100	395	3100	138	111	201
DU-3215	150	445	3100	207	112	201

Table 8: Technical Parameters of Download Type Knitted Mesh Demister Pad (DN 3400 – DN 4600)





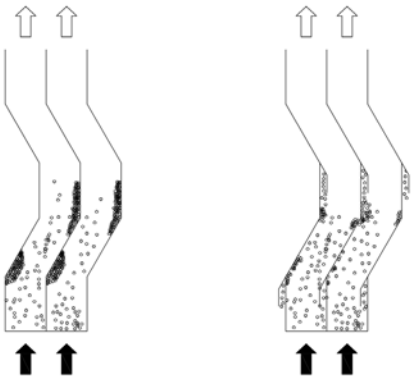
Item	Size (mm)				Weight (kg)		
	H	H1	H1	DN	Mesh Pad	Grid and Distance Rod	Support Component
DU-3410	100	350	600	3280	156	126	369
DU-3415	150	400	650	3280	234	127	369
DU-3610	100	350	600	3480	175	139	372
DU-3615	150	400	650	3480	262	141	372
DU-3810	100	350	600	3680	194	159	389
DU-3815	150	400	650	3680	292	162	389
DU-4010	100	350	600	3880	216	176	428
DU-4015	150	400	650	3880	323	177	428
DU-4210	100	350	600	4080	239	189	434
DU-4215	150	400	650	4080	359	192	434
DU-4410	100	350	600	4280	259	202	443
DU-4415	150	400	650	4280	391	204	443
DU-4610	100	350	600	4480	285	224	473
DU-4615	150	400	650	4480	427	227	473

Mist Eliminator – Vane Plate Mist Eliminator

Vane plate mist eliminator, also called chevron mist eliminator, vane type mist eliminator, is a widely used and economical industrial devices for gas and liquid separating. Vane plate mist eliminator supplies multi-channels and large contacting area for higher separating and filtering efficiency in chemical, petroleum, pharmacy, coal gas, environmental protection and other fields.

Working principle of vane plate mist eliminator

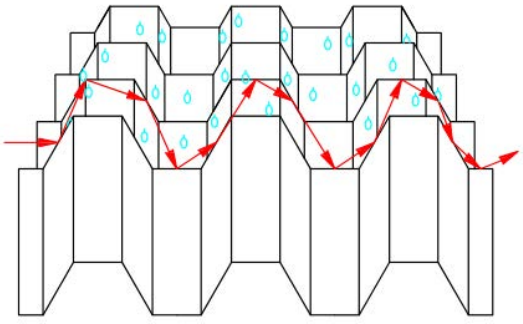
Vane plate mist eliminator has similar but different working principle with knitted mesh demister pads. When the gases with particles or droplet mists rises and passing through the cane channels, the gas will change rising direction. The mist droplets momentum forces it to impact on the blades and coalesces to larger droplets and eventually drains off the blades when the gravity is larger than the gas lifting force and surface tension of liquid. The multi-channel structure improves separating and filtering efficiency during many times filtering and blocking.



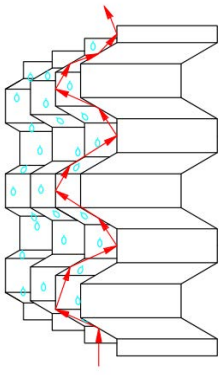
Working principle

Gas Flow Configuration

When installing, the vane plate type mist eliminator flow configuration is either for vertical or horizontal gas flow through the chevron mist eliminator. No matter what directions, it can remains high separating efficiency. In some specific applications, an inclined arrangement can facilitate the drainage of liquid or particles. Normally, the capacity of horizontal gas flow is 30% greater than in for vertical flow.



Horizontal gas flow



Vertical gas flow

Materials and shapes of vane plate mist eliminator

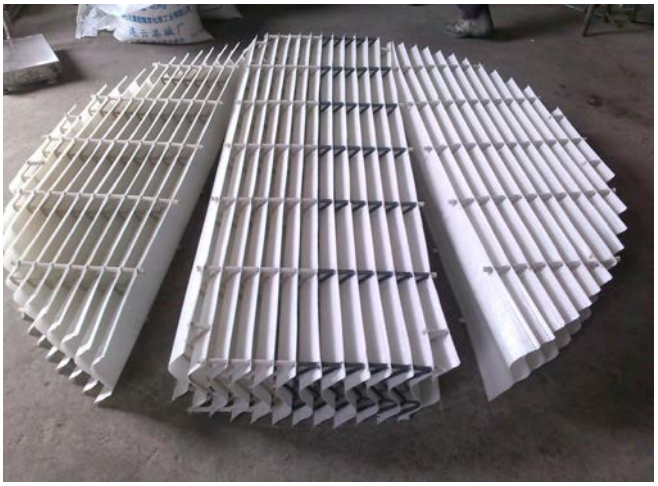
As we all know, the vane plate mist eliminator is made of several lines of corrugated plates in certain space. The corrugated plates can be made of stainless steel, carbon steel and other alloy steel. Besides, it can be made of plastic materials for economical and lightweight. They all have excellent corrosion and temperature resistance performance.

To suit different packed towers and equipment, the chevron mist eliminator is available in round and rectangular shapes. They can be used in the small, medium and large diameter tower columns. When the mist eliminators are used in the large diameter tower columns, they will be divided into several parts for easy manufacturing, transporting and installation.

Metal vane plate mist eliminator

Plastic vane plate mist eliminator

Integral structure

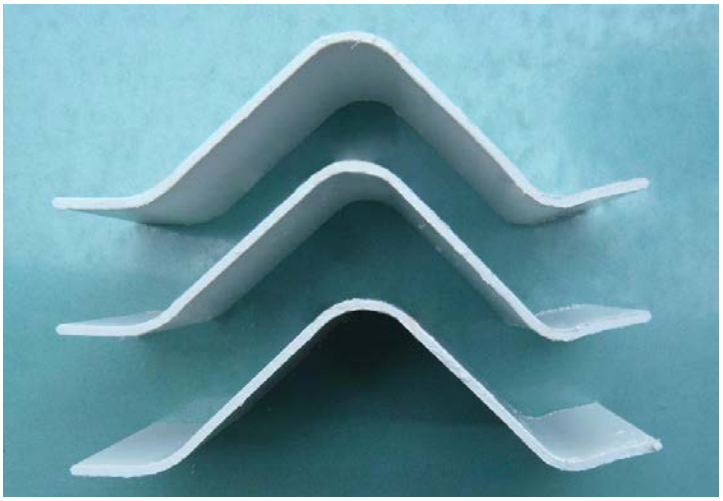


Separated structure

Main types of vane plate type mist eliminator

The vane plate type mist eliminator can be made into one to four channel types in wavy line or modified zig-zag line structure. The two-channel and three-channel vane plate mist eliminator is the most widely used and popular types.

- **Wavy line type.** This type of vane plate type mist eliminator is commonly made into two-channel line. The structure can be with or without hook structure.
  - **Mist eliminator without hook type.** It is the most widely used type. It has better self-cleaning performance than the mist eliminator with hooks. It is widely used in the wet desulphurization applications.
  - **Mist eliminator with hooks.** This type mist eliminator owns highest separating and filtering efficiency. Benefit from the hook structure, it can improves filtering and separating efficiency. But it is difficult to clean up when there are particle retention. So it is suitable for the environments where has low scaling possibility but high demisting requirements.
- **Modified zig-zag line.** This type of chevron mist eliminator is commonly designed with smooth and without hook structure. The channel can be made into two channels and three channels.
  - **Two-channel type.** This type has similar performance than the wavy line type two-channel type and it is gradually replaced by that.
  - **Three-channel type.** The pressure drop of this type mist eliminator is lower than 200 Pa, but it is a bit higher than other mist eliminator types. The demisting performance is higher than the two-channel types because of more complex and chevron structure. But it is also difficult to clean up, so it is suitable for the low scaling possibility environments.

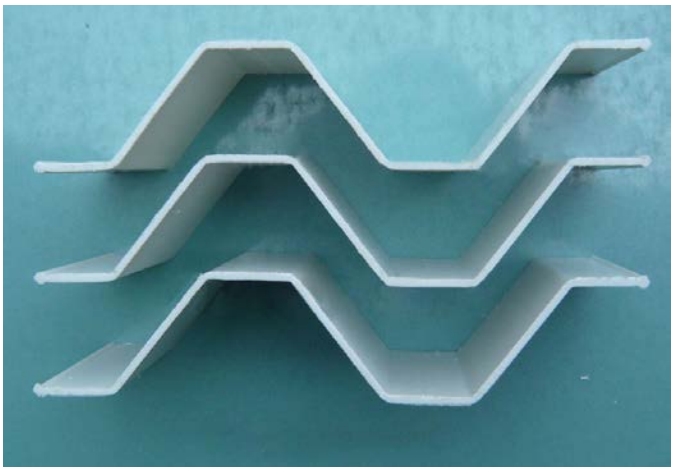


Wavy line without hook

Wavy line with hook

MIST ELIMINATOR

Modified zig-zag line two-channel



Modified zig-zag line three-channel

Specification

- **Material:** metal or plastic.
- **Plate span:** 1/2", 3/4", 3/8", 1", 1-1/2", 2" and others.
- **Wave height:** 5" or 8".
- **Plate thickness:** 0.46 mm and other customized specs.
- **Profile depth:** 1/2" to 3/8".

Feature

- Excellent particle plugging resistance.
- Multi-channel structure supplies large contacting area and high separating performance.
- 30% to 100% higher capacity than the wire mesh demister pad.
- High temperature resistance and excellent chemical stability.
- Excellent self-cleaning performance and low maintenance cost.

Application

- Refineries
- Petrochemicals
- Coal-gas absorption
- Flue gas desulfurization
- Chemicals
- Pharmaceuticals
- Sulfuric acid plant
- Environmental protection

MIST ELIMINATOR

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