Demister is designed to collect liquid particles accompanying airborne droplets (2) in the vapor phase after boiling, vacuum evaporation or bubbling process (1).

Small droplets (1) (heavy mist) accompanying airborne droplets in the gas contact the wide surface of the filaments of the demister to gradually grow into large liquid droplets (2) and flow and drop by a special structure accelerating the coalescing of the liquid droplets.

Since the mesh of the demister is highly porous, the vapor gas (3) passing through the demister without hindrance is pure gas body only.

Since the size of the mesh is not specifically related to the size of the liquid droplets, this process is not a type of filtering. This condition is caused by the collision and sudden change resulting from the flowing speed of the small liquid droplets, and the coalescing of the liquid drips and gravity cause their descent.

This is a process where mechanical and physical phenomenon are combined.

(*) Bubbling process: A phenomenon where the gas in an air bubble state rises in the fluid layer.

(*) Accompanying airborne droplet: A phenomenon when steam is generated by boiling or air bubbles breaking on a liquid surface, small and large flying liquid droplets in an airborne state are included in the steam in the form of mist or fine liquid droplets, and the droplets are carried away together with the steam.

Applications

Low pressure rectifying column:
Demister increases the purification ratio, enabling a deep cut in residue oil to improve the quality of gas oil. Improved gas oil contains less carbon, asphalt and corrosive metals, increases decomposition capacity by the residue load in the regenerator, and maintains a higher contact reaction to produce a higher gasoline yield ratio.

Lubricant refinery tower:
Demister increases production volume and yield ratio and improves production quality. As a result, the refining of solvent and white clay is practically rationalized.

Distilling equipment:
Improved performance can be obtained in equipment for processing asphalt, organic intermediate substances, fine chemicals, vegetable oil, tall oil, fatty acid, glycerin, lubricant, benzene and propane.

Evaporator:
Demister prevents carryover (3) of valuable products, can be appropriately used for boiler feed water or processes, and produces high quality condensate.

Steam drum:
Demister produces clean and dry solids of less than 0.5ppm and prevents water from flowing back into the turbine.

Absorption tower:
Effective for completely removing all types of flying and accompanying liquids such as absorption oil, glycol and amine dissolution and discharges clean and dry gas. This also improves process efficiency.

 Knockout drum
Scraper
Separator container and other

(*) Carryover: When boiler water violently boils, air bubbles break and fly on the water surface and water drops fill the steam chamber. A large amount of boiler water is then carried out together with the steam from the steam chamber through the steam outlet pipe.
Wire demisters of various styles and materials are available for all applications. By selecting the style based on the application, the wire demister fully demonstrates its performance matching the work conditions.

**T-3346**

This is a for simple process or a process where the existence of products becomes problematic. Examples for when this is used are highly viscous liquid or liquid filled with solid particles, gas containing small dust, very large water drops (10 microns or larger) or large amounts of highly humid liquid.

Compared to other types, this wire demister provides gas speed higher than the average at a low cost, although efficiency is reduced to some extent. Normally, 150mm thick demister is used.

**T-3383**

This demister is most appropriate for general purposes. When data such as the amount of flying and accompanying liquid and the size of water drops are clear, the effect is excellent. The demister is highly efficient even when, to a certain extent, the air flow is changed. A 100mm thick demister is used for distillation tower, evaporator and scraper but the thickness can be increased to 150mm.

**T-3311**

Though the demister is deemed the standard type because it is used in many fields, this model is strong and highly efficient. The demister is used in places where it is necessary to reduce accompanying airborne droplets to a minimum. The demister safety functions because the design adapts to changes in gas or fluid flow rate. Generally, the 100mm demister is used, but the demister of greater thickness is used where the flow rate changes extensively, offering increased production.

**T-3320**

This model of super efficiency obtains the maximum separation involving airborne and accompanying fine particles. This demister is most appropriate for difficult-to-handle materials, such as highly pure boiler water for condensate production and radioactivity dispersion, glycol and amine. Normally, the thickness ranges from 100mm to 300mm.

**T-4060**

Appropriate for collecting very fine particles (1µ~3µ) and effective for evaporator, washing equipment, compressor and absorption can, etc. Normally, used for 200mm to 300mm thickness.

**T-4012**

Weaved parallel and is most appropriate for fine liquid particles, especially of materials with fewer liquid droplets. (Collection of fine particles of 1µ~0.8µ) When making high purity condensate from evaporator for processing hot solutions, this model is used at gas plants as the gas washer to remove liquid droplets. This is also used as a distillation tower for processing material involving airborne droplets.

Normally, the 100mm to 300mm thick model is used to obtain higher efficiency than the T-4060 model.

---

### Equipment details

Meshes are securely tied to each grid. Meshes and grids are manufactured with the size and curvature to snugly fit into the inside of the container, and meshes are resilient and securely installed in the container.

Adjacent portion for joining is not necessary. Where 50mm to 75mm wide supporting rings are provided, drill a 3mm or 6mm diameter hole into the supporting ring. This hole is used to fix the grid to the ring supporting portion, using the binding wire provided with the demister.

---

### Mesh specifications

<table>
<thead>
<tr>
<th>Style No.</th>
<th>Open area %</th>
<th>Spacing (µ)</th>
<th>Density (#/m²)</th>
<th>Specifications of other company</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>YORK</td>
<td>KOCK</td>
<td>METEX (Old)</td>
<td>METEX (New)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-3346</td>
<td>99</td>
<td>156</td>
<td>80</td>
<td>101</td>
<td>9310</td>
</tr>
<tr>
<td>T-3383</td>
<td>80.2</td>
<td>283</td>
<td>144</td>
<td>431</td>
<td>4310</td>
</tr>
<tr>
<td>T-3311</td>
<td>97.6</td>
<td>375</td>
<td>182</td>
<td>421</td>
<td>4210</td>
</tr>
<tr>
<td>T-3320</td>
<td>97</td>
<td>750</td>
<td>390</td>
<td>101</td>
<td>4012</td>
</tr>
<tr>
<td>T-4060</td>
<td>97.2</td>
<td>905</td>
<td>216</td>
<td>4012</td>
<td>4012</td>
</tr>
<tr>
<td>T-4012</td>
<td>94.5</td>
<td>1989</td>
<td>432</td>
<td>330</td>
<td>5540</td>
</tr>
</tbody>
</table>

---

### Style details

- **T-3346**
  - Open area: 99%
  - Spacing: 156 µ
  - Density: 80 (#/m²)
  - Hi-Through
  - 33 rolled wire 4.6 pm/µm (thickness)

- **T-3383**
  - Open area: 80.2%
  - Spacing: 283 µ
  - Density: 144 (#/m²)
  - Nu-Standard
  - 33 rolled wire 8.2 pm/µm (thickness)

- **T-3311**
  - Open area: 97.6%
  - Spacing: 375 µ
  - Density: 182 (#/m²)
  - Xtra Dense
  - 33 rolled wire 11 pm/µm (thickness)

- **T-3320**
  - Open area: 97%
  - Spacing: 750 µ
  - Density: 390 (#/m²)
  - 33 rolled wire 30 pm/µm (thickness)

- **T-4060**
  - Open area: 97.2%
  - Spacing: 905 µ
  - Density: 216 (#/m²)
  - 40 rolled wire 6 twist

- **T-4012**
  - Open area: 94.5%
  - Spacing: 1989 µ
  - Density: 432 (#/m²)
  - 33 rolled wire 12 twist

---

### Binding wire details

- **Circular ring**
- **Upper grid**
- **Mesh**
- **Lower grid**
- **Binding wire**
- **Container wall**

---

**TAIYO WIRE CLOTH CO., LTD.**

http://www.twc-net.co.jp