

# Column Internals



**PT. AREZDA PURNAMA LOKA**  
*Pressure Vessels & Sealing Technology Products Manufacturing*  
Produksi Dalam Negeri



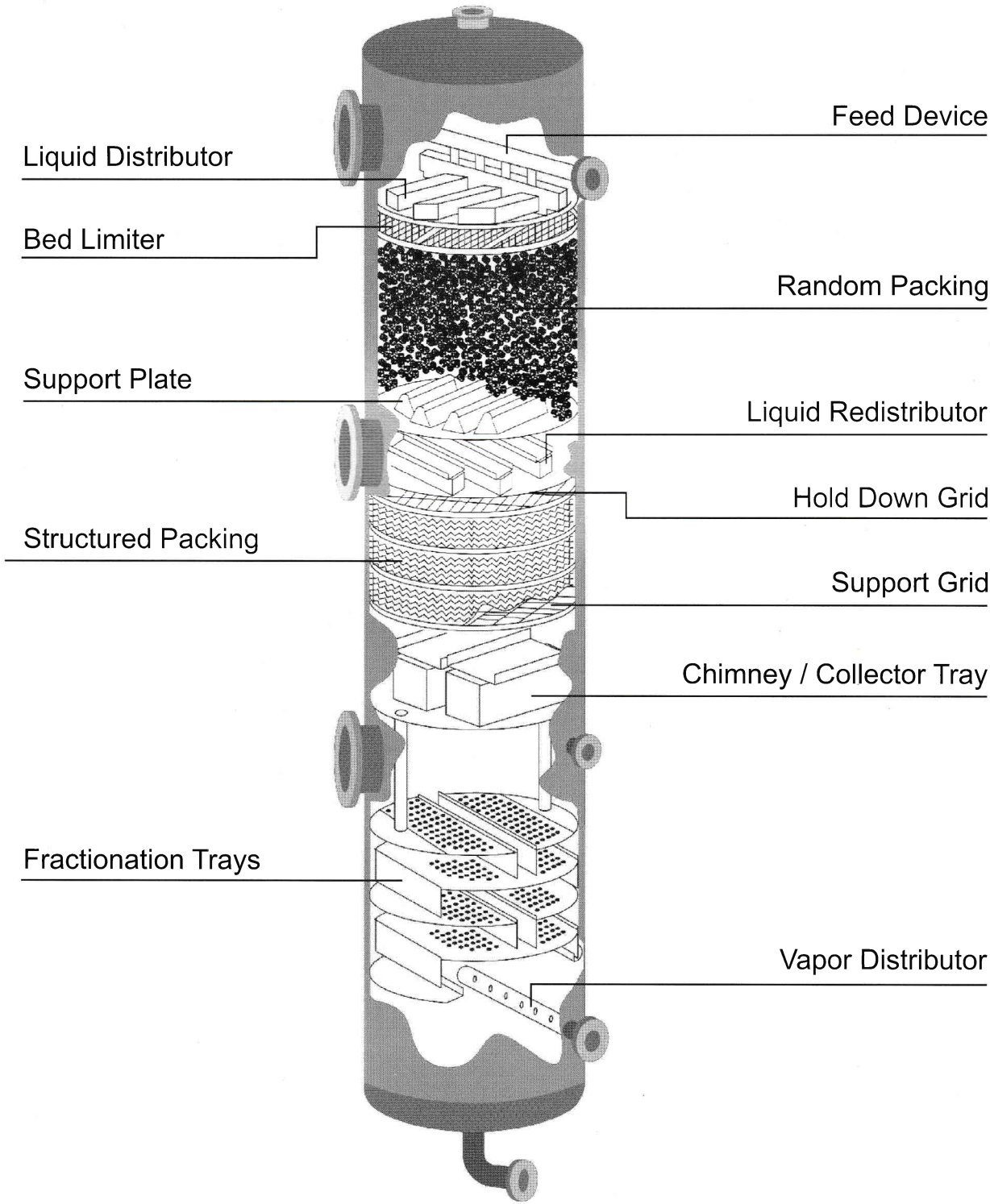
## Introduction

As a leading local manufacturer established in 1983, PT. Arezda Purnama Loka has been producing and supplying heat exchangers, boilers, finned tubes, sealing technology products, and compressed fiber jointing sheets to petroleum, petrochemical, chemical, power, and other process industries. Our <INGI>® products have since been widely used both in Indonesia and exported overseas.



We are proud to introduce our new division, specialized in manufacturing column internals. All of these parts are fabricated in our own 5-hectare factory in Citeurep, Bogor, West Java, from procurement to packaging and delivery of products. Moreover, careful inspection is carried out at all stages of production to ensure quality consistency and conforming finished products according to customer requirements.

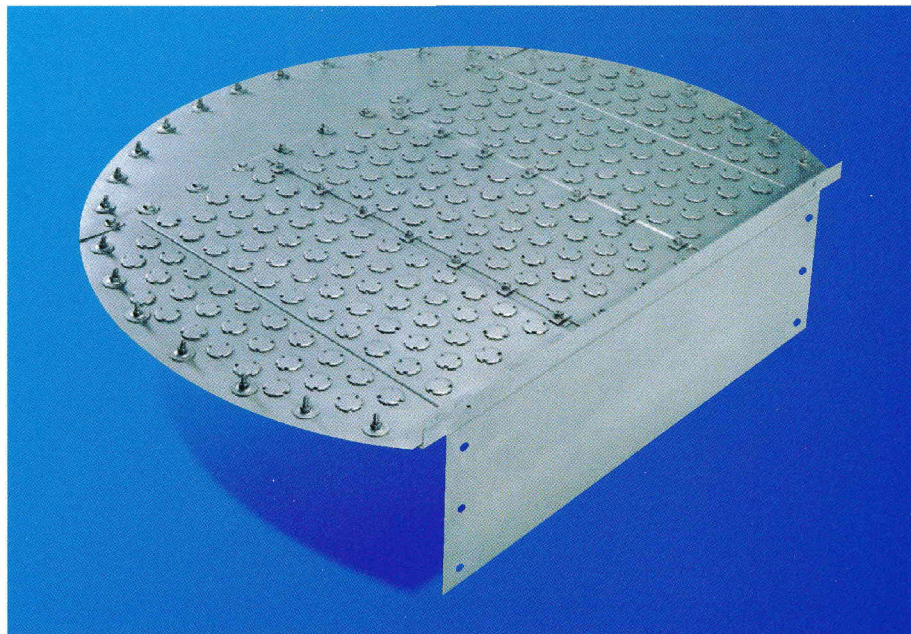
# Column Internals



## Fractionation Trays

Trays are used in mass-transfer operations, such as in moderate to high pressure distillation where pressure drop is not critical.

### Valve Trays



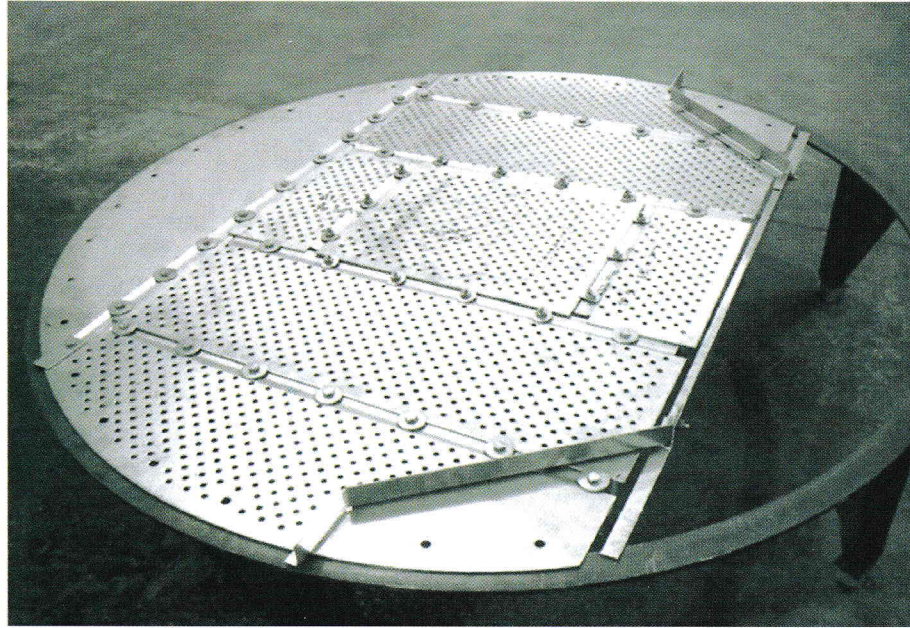
Valve Trays are flat, perforated plates with downcomers where the perforations are covered by discs called valves. Valve trays are conventional, high capacity and high efficiency trays.



There are two types of valves, i.e. fixed and floating valves. Floating valves offer a higher sustained efficiency over a wider operating range as the valves can move up and down while controlling vapor flow according to pressure.

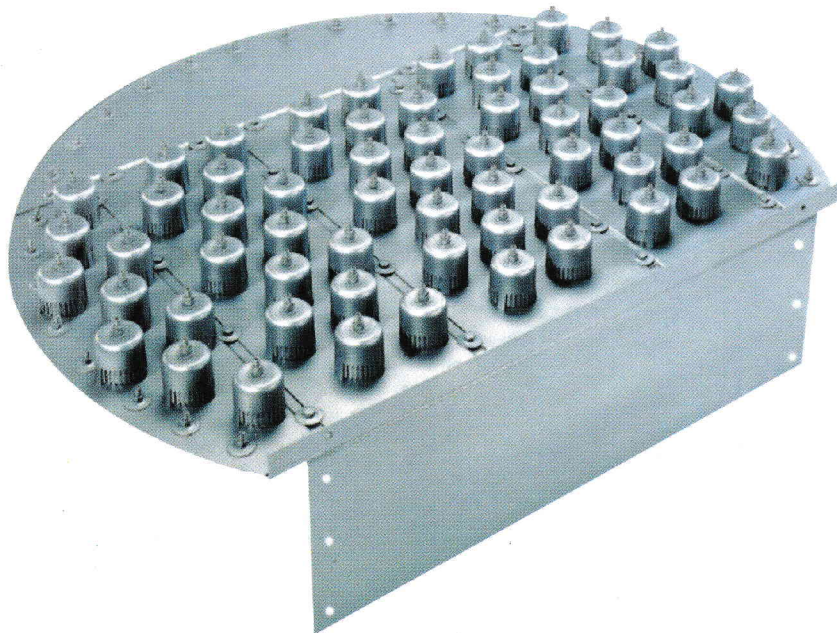
## Fractionation Trays

### Sieve Trays



Sieve trays are flat perforated trays with downcomers like valve trays, where vapor rises through the holes on the deck and liquid flows across the tray and comes down through the downcomer. Sieve trays offer low maintenance costs and low fouling tendencies.

### Bubble Cup Trays



Bubble cap trays consist of risers for vapor on the deck that are covered by caps. The riser cap assembly prevents weeping at very low flow rates.

## Metal Pall Ring



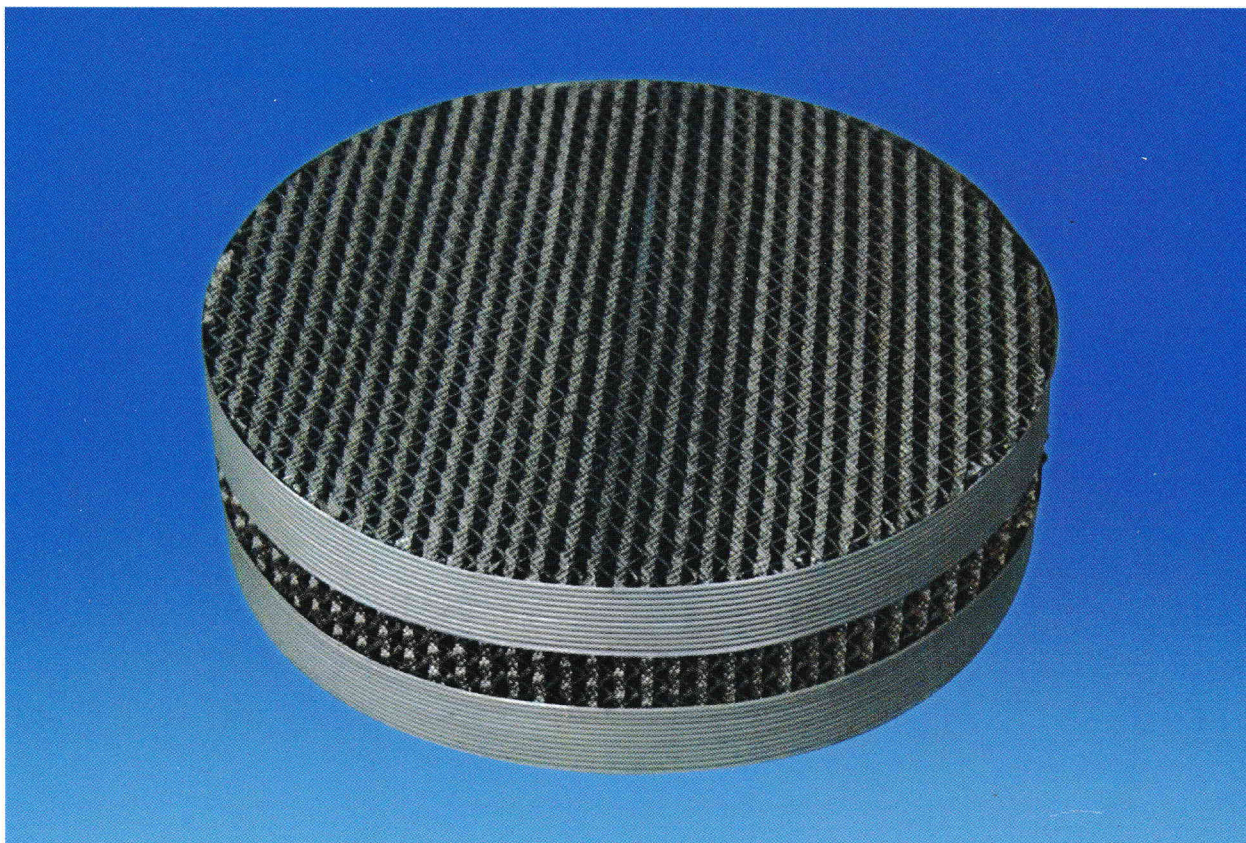
**Table 1: Pall Ring**

Material : Stainless and carbon steel, aluminium, bronze, 304L, 316L and other alloys.

Product Number	Specification DxHxT (mm)	Surface Area m <sup>2</sup> / m <sup>3</sup>	Void m <sup>3</sup> / m <sup>3</sup>	Quantity per m <sup>3</sup>	Weight per m <sup>3</sup>
INGI16	16x16x0.5	339	0.93	235000	595
INGI25	25x25x0.6	233	0.937	52000	480
INGI38	38x18x0.8	176	0.945	13000	365
INGI50	50x50x1.0	134	0.95	6800	313
INGI76	76x76x1.5	96	0.96	2000	218

\* Other shapes and sizes available upon request

## Structured Gauze Packing



Structured packings are textured and corrugated metal sheets providing high surface area, but low gas flow resistance, with the sole purpose of mixing and spreading of liquid uniformly.

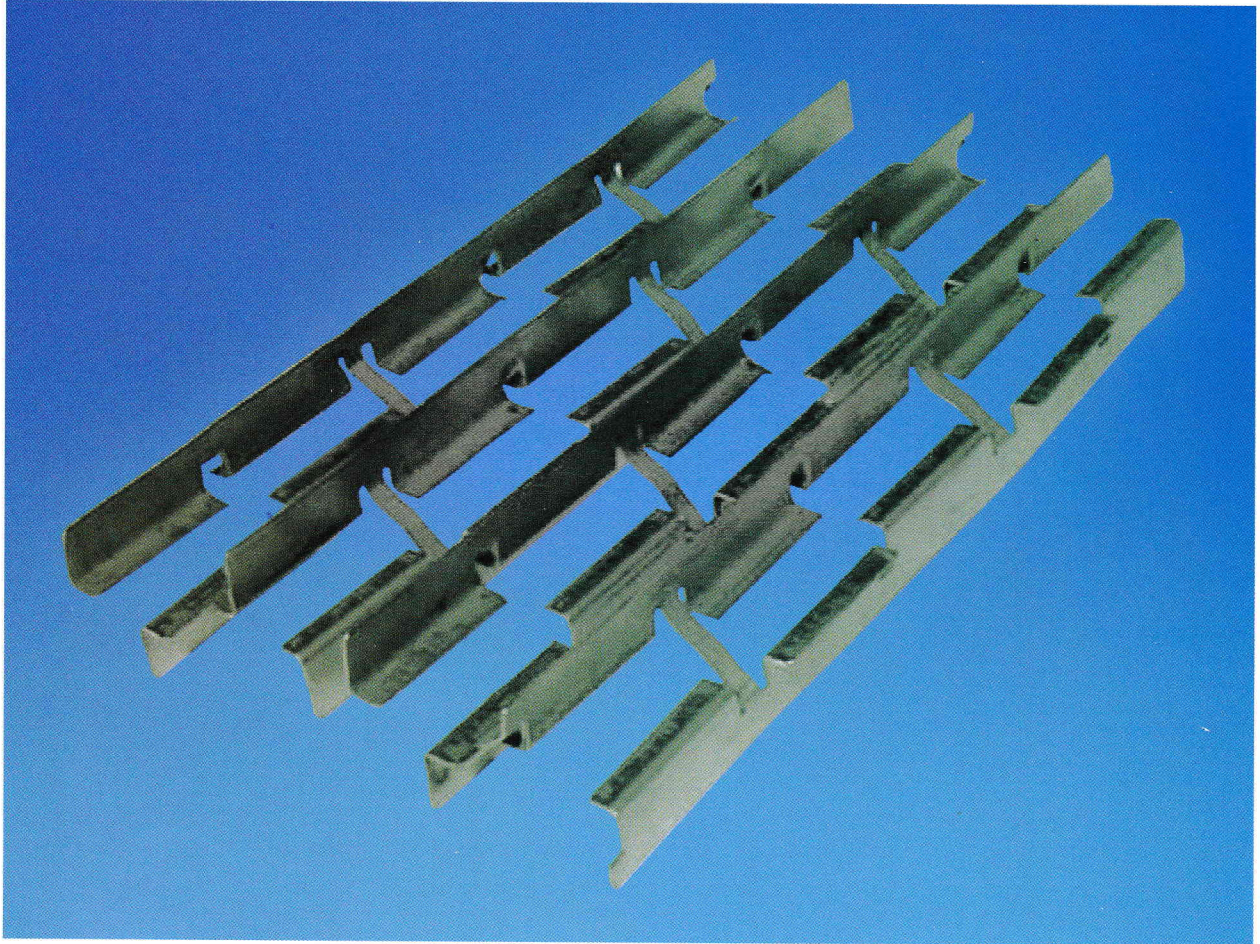
**Table 2: Structured Gauze Packing**

Model	Surface Area $\text{m}^2 / \text{m}^3$	Void $\text{m}^3 / \text{m}^3$	Declined Angle Degree ( $^\circ$ )
INGI 125X/Y	125	98.5	30 / 45
INGI 250X/Y	250	97	30 / 45
INGI 350X/Y	350	96	30 / 45
INGI 450X/Y	450	93	30 / 45
INGI 500X/Y	500	92	30 / 45

\* Custom specification packing may be available upon request



## Structured Grid Packing



Structured grid packing is a good choice for applications that have coking, fouling or erosion because it is structurally very durable and can withstand very high temperatures. Due to its rapid drainage, structured grid packing reduces coking and fouling and, for the most part, makes it self-cleaning.

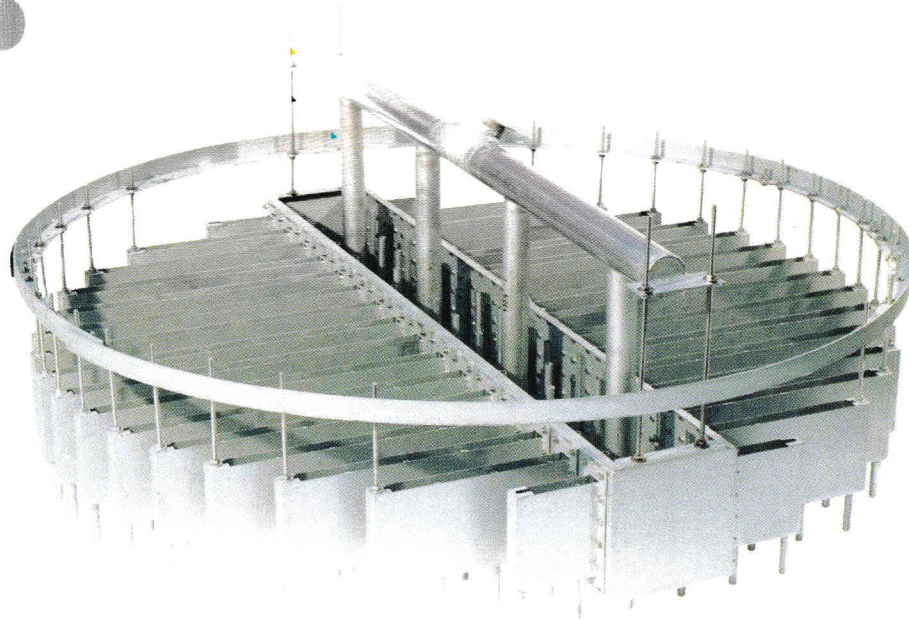
**Table 3: Structured Grid Packing**

Size (D x H x T) mm	Surface Area m <sup>2</sup> / m <sup>3</sup>	Packing Weight kg/m <sup>3</sup>	Void m <sup>3</sup> /m <sup>3</sup>
60 x 57 x 2	45	263	0.95
60 x 57 x 1.5	45	331	0.95

Materials: Carbon steel, stainless steel, aluminium  
Other sizes may be available upon customer's request

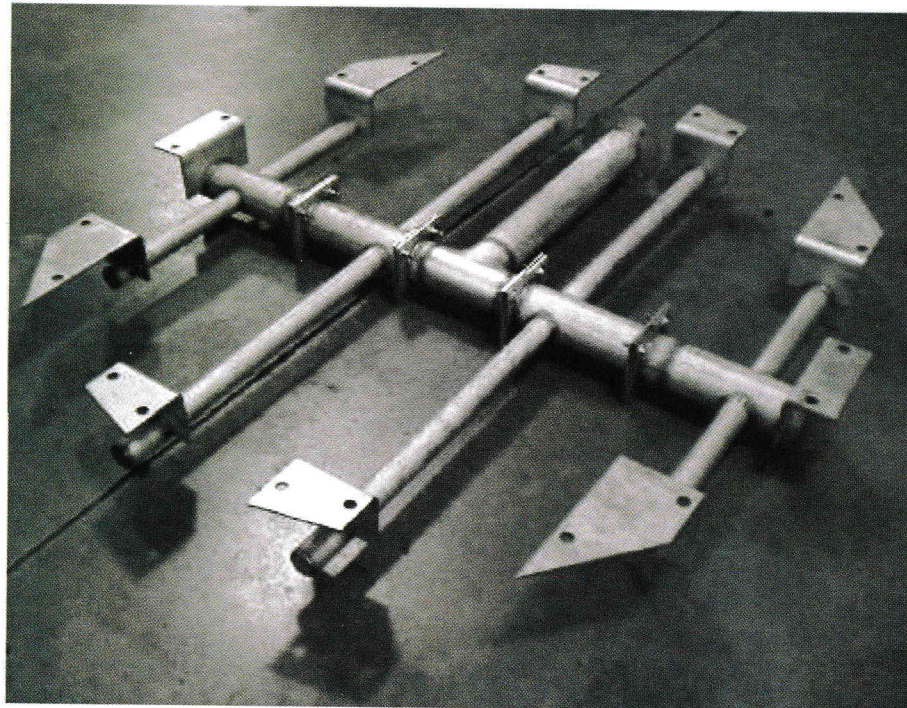
# Distributors

## Liquid Distributor



Liquid distributor has the sole purpose of evenly distributing liquid over a cross-sectional area of a column. A good liquid distributor can achieve high separation efficiency of a packed bed.

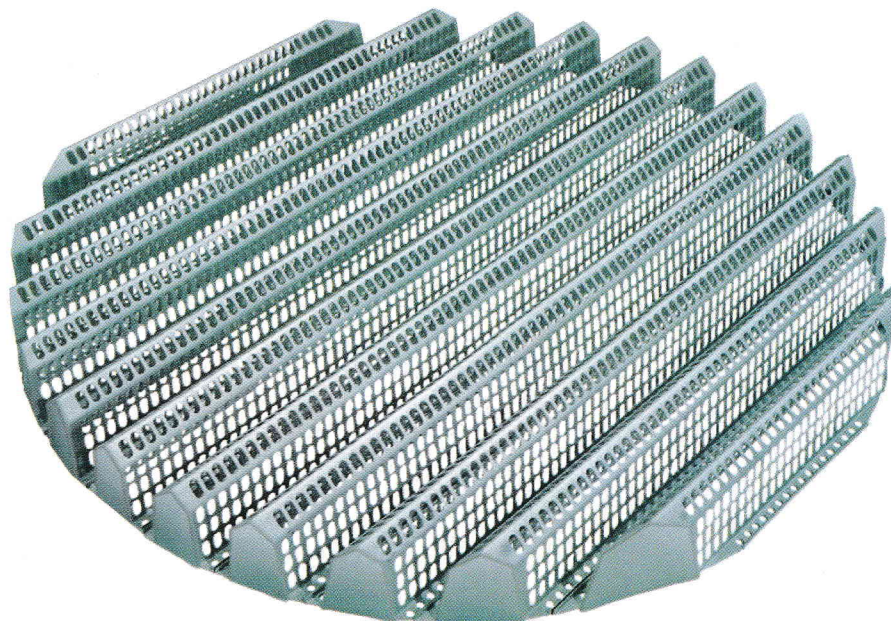
## Vapor Distributor



Vapor distributor is used when vapor enters the bottom of the column with very high kinetic energy. This distributor will cause some pressure drop while reducing the vapor's kinetic energy and also provide even distribution below the packed bed.

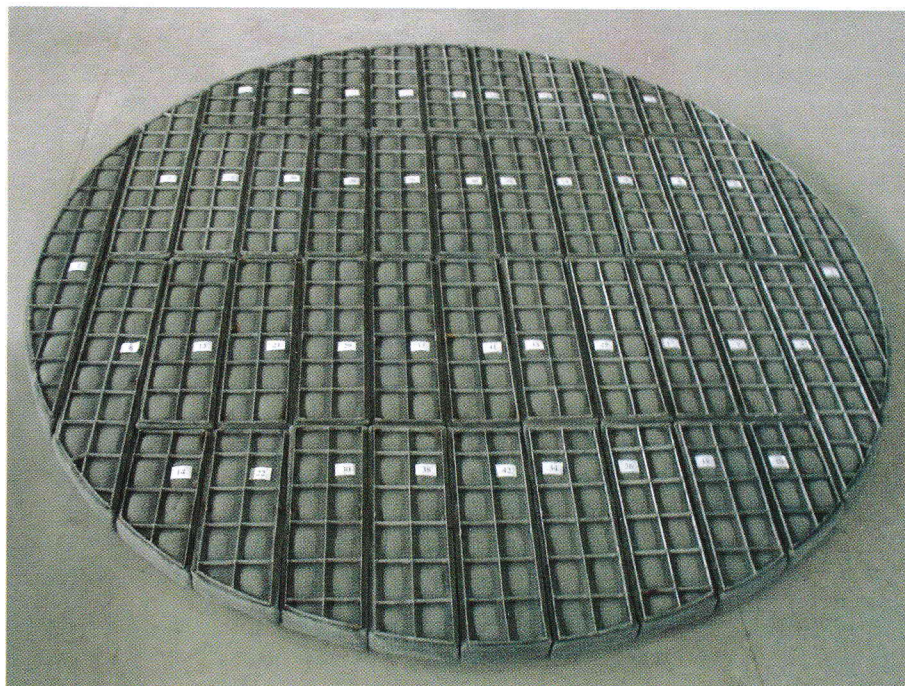
## Support Plate & Demister

### Support Plate



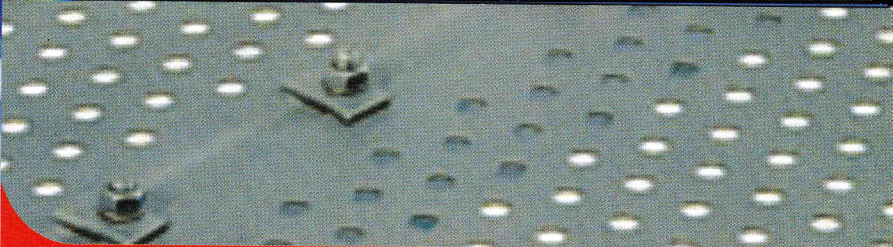
Support plates are used to physically support the cumulative weight of the structured packings and the liquid inside. It is designed to have maximum open area so that pressure drop is minimized.

### Demister



Demisters retrieve valuable liquid from vapor and remove impurities such as dirt and dust by passing it through a wire-mesh structure with large surface area, while maintaining low pressure drop.

## Column Internals



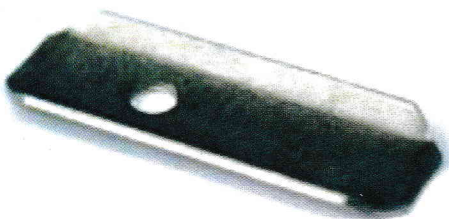
## Accessories



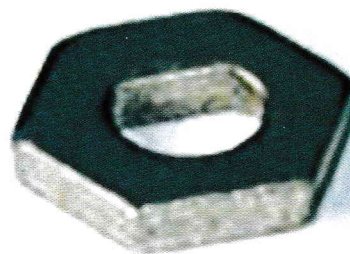
Bolt



Stud



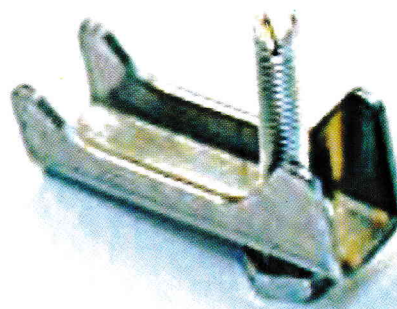
Seal Plate



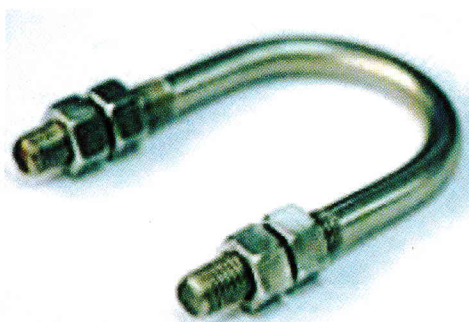
Hexagonal Nut



Clamp 1



Clamp 2



Hook



Ring Washer



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