Baretti®

EQUIPMENT FOR OIL AND CHEMICAL INDUSTRIES

Internal for Packed Towers

Innovation | Reliability | Dynamism

SINCE 1890 125 YEARS

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125 Years of History

Fabio Baretti Paleari

CEO

Baretti was founded in 1890 by my grandfather Giovanni Baretti.
Since then, Baretti has seen several transformations and gone through evolutions to meet the required market needs and the socio-economic changes. Among all, I would like to mention the most vital and successful ones.
During the fifties, inspired by Mr. Enrico Mattei, the President of ENI, we entered into the business of the equipment for the newly world-wide and growing hydrocarbon industry. Then, we added the construction and installation of Marine Loading Arms and special facilities for the berthing of oil super tankers.

In eighties, we started to design and to construct special high-precision mechanical manufacturing machines. Even, we manufactured components for nuclear plants, as per that period, the most advanced certified quality management system.

Today, our business is focused upon technologies for the hydrocarbon processing industry and separation components. But what we have learned and experienced in the course of the past 125 years still permeates the company. We learned the importance of our Customers and earned their respect. We value the importance of passionate Employees.
We still have the same enthusiastic entrepreneurial spirit, which took me to USA, almost 50 years back, to acquire license for tray' technologies creating new opportunities. We still strive for innovative technologies, products and applications. Nowadays, our products are present in almost every country having hydrocarbon processing industries but we still follow few basic but very important principles:

- Be humble and be curious: every day we can learn something new
- Act in good faith: leave up to our conscience with honest words and actions
- Struggle for Quality: Neither mistakes nor delays are allowed
- Meet Customer Satisfaction: Give the best product at the best price
- Practice Safety: life is the most important gift that God has given us

In the course of all these years, I am very proud of the results we have achieved and I personally present my gratitude to all our Customers and Employees.
However, every day we are working for a better future where we see Baretti growing into a more profitable company and expand its reach in every corner of the world with the wish of adding value to Customers and Civil-Society while keeping in harmony with the global environment.

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LIQUID DISTRIBUTOR

Liquid distributors are critical to the performance of the packed columns and the uniformity of the liquid flow is the main factor in designing these devices.
The distributor is normally supported from the column shell and it is located at a distance between 50 to 150 mm from the top of the bed.

The main characteristic for a distributor can be identified as follows :

Uniformity of the distribution (or max % maldistribution)

- **Holes pattern.** Holes punched in the distributor floor or in the sides of each trough are laid out in a square or equilateral pitch. The size of this pitch determines the number of drip points per square meter of the distributor. (most commonly 100). The higher is the specific surface of the packing, the higher should be the number of points. Particular attention is paid to the periphery of the distributor, in order to make sure that even at the periphery the num ber of points per square meter is the same as in the other tower sections.

- **Liquid flow**. The amount of liquid flowing through each hole should be the same. This depends mainly on the following factors:
    - Distributor planarity
    - Method of making the holes (Drilling, Punching or Other methods). In particular the drilling of holes should be avoided and only punching should be used.
    - Liquid level in the distributor, turbulences and high velocities.

Resistance to fouling.

This a very important characteristic because the blockage of some holes due to presence of scales, polymers or coking of the distributor can badly affect its performance. In particular the following points should be considered:

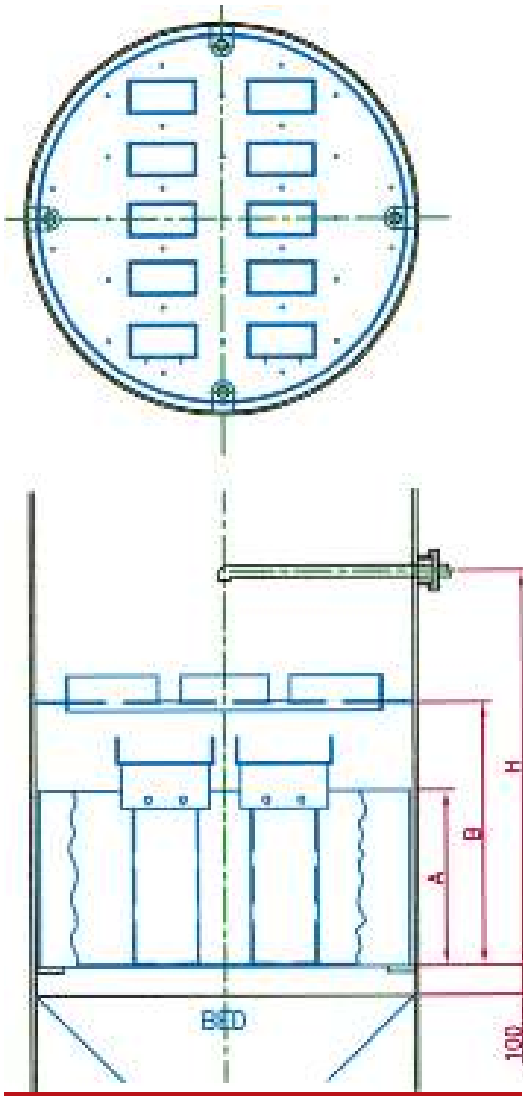
- **Trough type distributors**. These should be used for any fractionation bed where a low or medium specific liquid load is used. Under these conditions holes tend to be small and the possibility of plugging becomes important. For this reason holes must be punched at sides of the trough and should not be smaller than 5mm. The hole is positioned at minimum 50mm from the bottom of the trough.

- **Pan type distributors**. These can be used only for high liquid rate services (typically) Absorbers or heat transfer beds). In these cases the holes are large (10-20 mm) and can be located on the distributor deck without major problem of plugging.

Turndown

Turndown is normally limited to 50-110%, but higher ones (1:10) can be achieved by use of multiple levels of holes. Pan, V notched or spray distributors cannot have very high turndown due to the impossibility of having more than one level of holes.

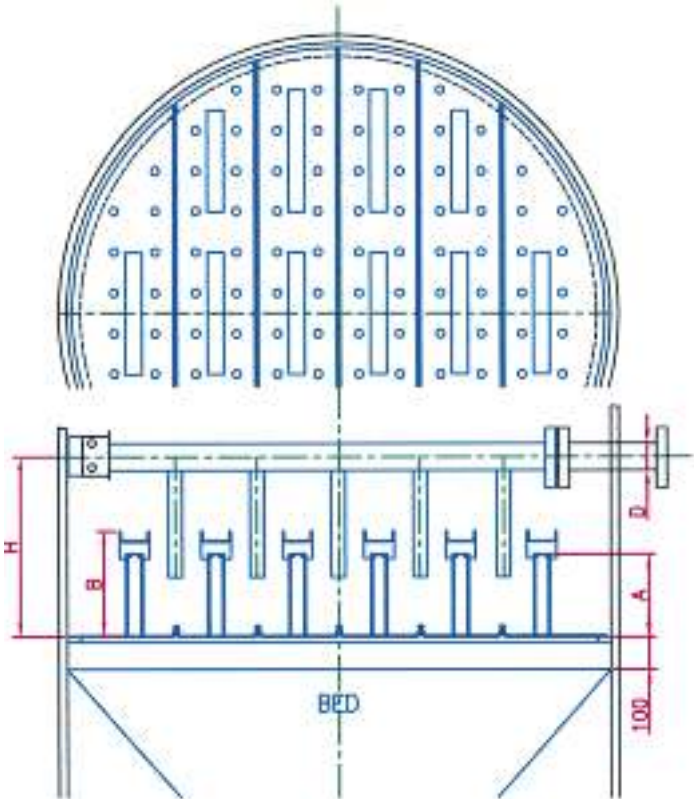
B - 106 / B - 107 DISTRIBUTORS



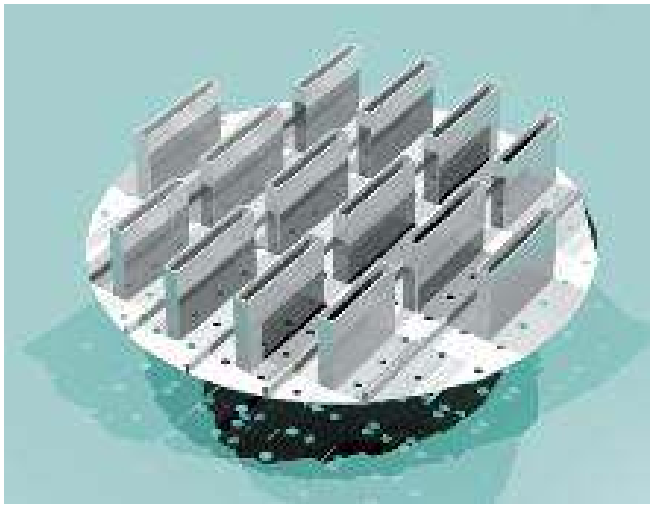
Diameter	300 - 800 mm
Liquid range	>5m³/h/m²
Resistance to fouling	Low
Standard turndown	2 : 1
A Standard	300 mm
B	A + 150 mm
H For feed at Top	A + 150 mm
For Intermediate Feed	B + 150 mm

Type	Pan type liquid Diastributor
Holes position	Square or triangular pattern punched in the pan floor
Drip points	60 - 100/ m²
Support at Shell	Nr 3 - 4 clips welded to shell or, in case of structured packing, supported on the bed
Construction Type	One piece
Levelling method	By washer at clip position
Liquid	Need of wall wiper
Redistributor	Welded at schell / Expandable / Inserted in shell flanges
Hats	Available wiyh redistributor model B- 107
Feed Device	Due to size of column, feed pipe should be extractable to allow distributor installation and dismantling

B - 106 / B - 107 DISTRIBUTORS

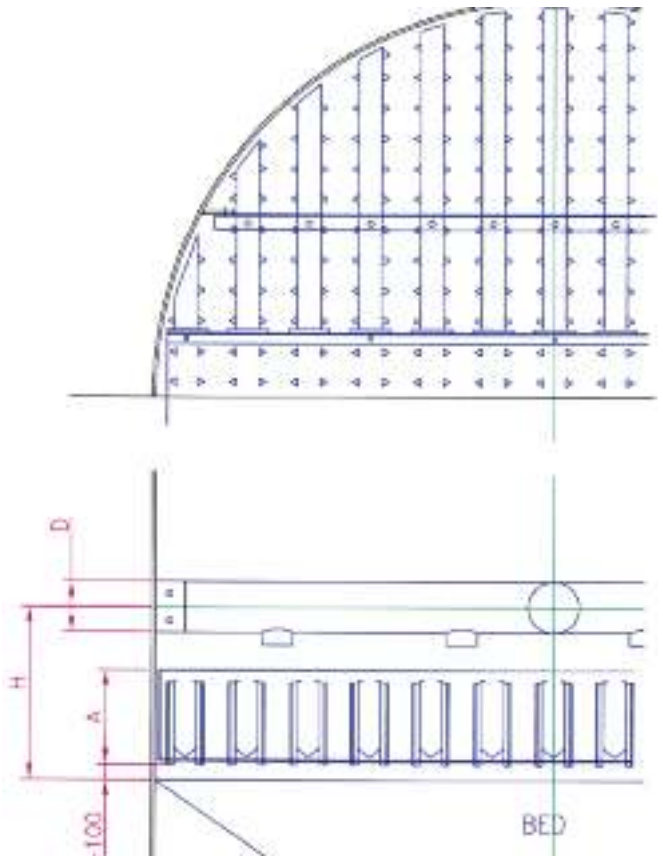


Diameter	900 mm
Liquid range	>30m³/h/m²
Resistance to fouling	Low
Standard turndown	2 : 1
A Standard	250 mm
B	A + 150 mm
H For feed at Top	A + D + 150 mm
For Intermediate Feed	B + D + 150 mm

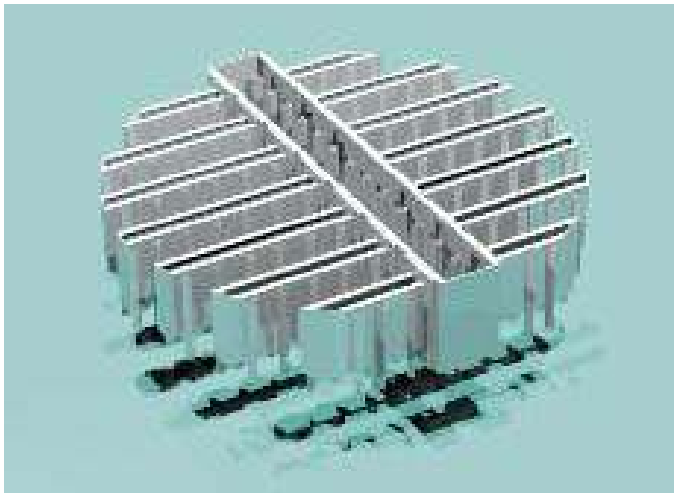


Type	Deck type Distributor
Holes position	Square pattern punched in the distributor deck
Drip points	70 / 100 Drip points / m²
Support at Shell	Support ring and gussets welded to shell for support beams if the diameter > 2500 mm
Design Type	Multiple parts bolted each other
Levelling	Distributor level depends on ring levelness
Hats	Available with redistributor model B - 117
Feed Device	**Liquid feed** : pipe distributror type B -119
Turndown	Flashing device type B -955 Standards is 2 : 1 Higher turndown can be achieved using higher raisers

B - 136 / B - 137 DISTRIBUTORS

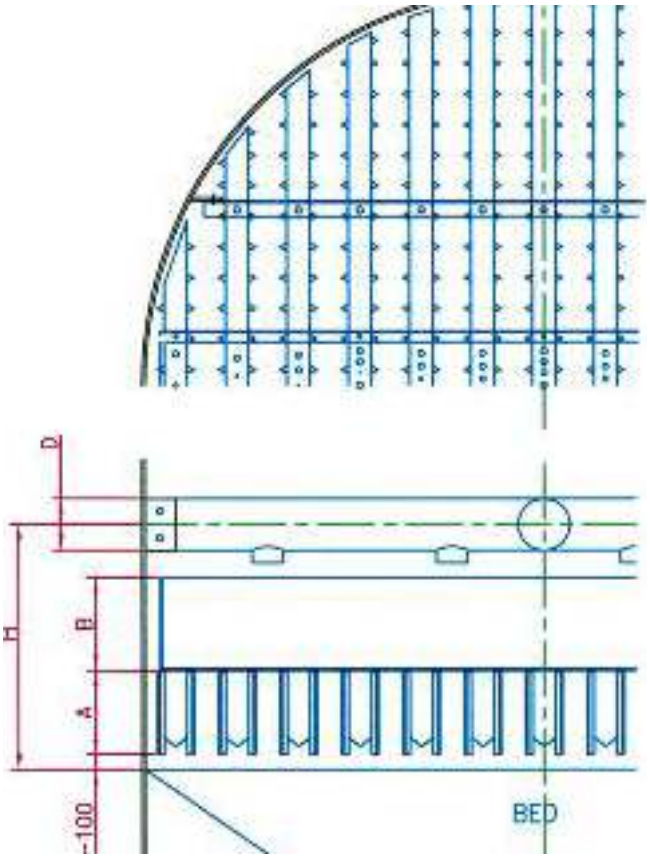


Diameter	1000 mm
Liquid range	0.8 - 30m³/h/m²
Resistance to fouling	Medium
Standard turndown	2 : 1 (10 : 1 max)
A Standard	325 mm
H	>100 + A + 2xDmm

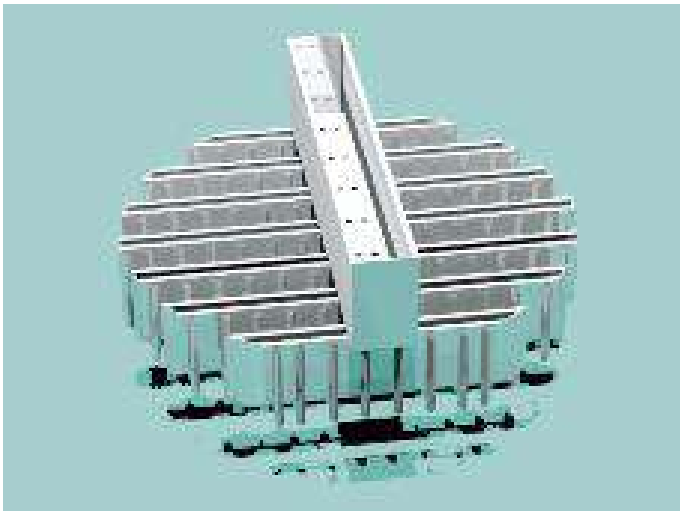


Type	Trhough type liquid Distributor
Holes position	Square pattern punched in the trough's sides. Multiple series of holes can be punched to increase the turndown
Drip points	Standard design is for 100 Drip points / m²
Supports	Gussets welded to shell for support beams
Design Type	Multiple parts boltedto main through
Levelling	Distributor can be levelled by levelling support beams
Hats	Available with redistributor model B - 137
Redistributor	Need of a wall wiper , welded at shell, expandable
Feed Device	**Liquid feed** : pipe distributror type B -119 **Flashing device** type B -955
Turndown	With multiple levels of holes > 4 : 1 can be reached

B - 186 / B - 186 L DISTRIBUTORS

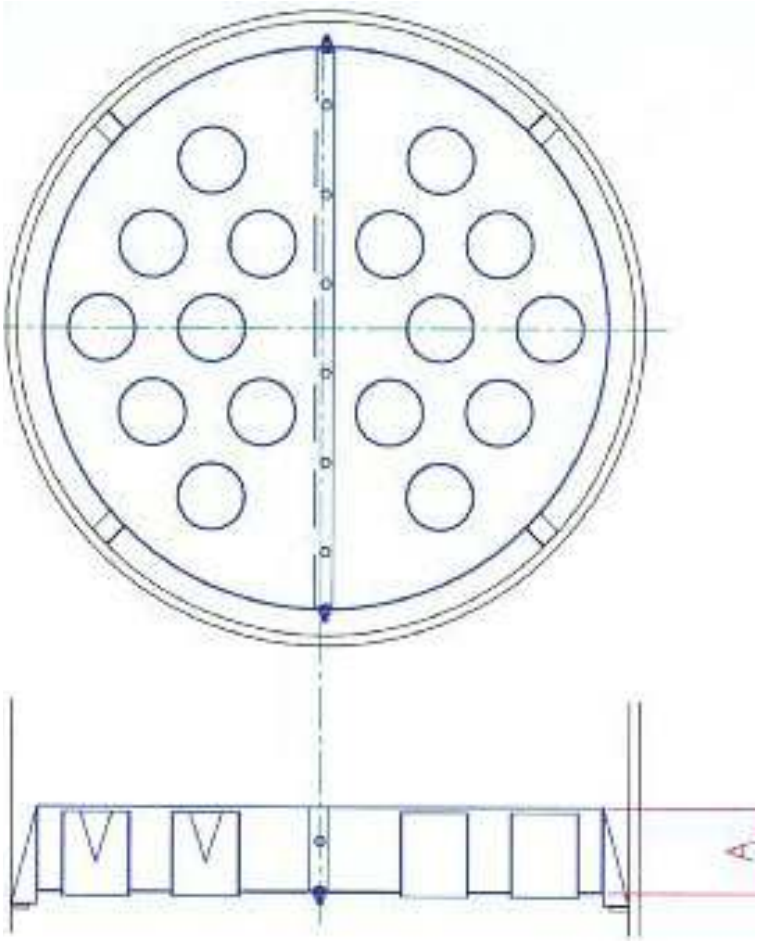


Diameter	>1000 mm
Liquid range	0.8 - 30m³/h/m²
Resistance to fouling	High
Standard turndown	2 : 1 (10 : 1 max)
A Standard	325 mm
B Standard	300 mm
H	100 + A+ B + 2xDmm

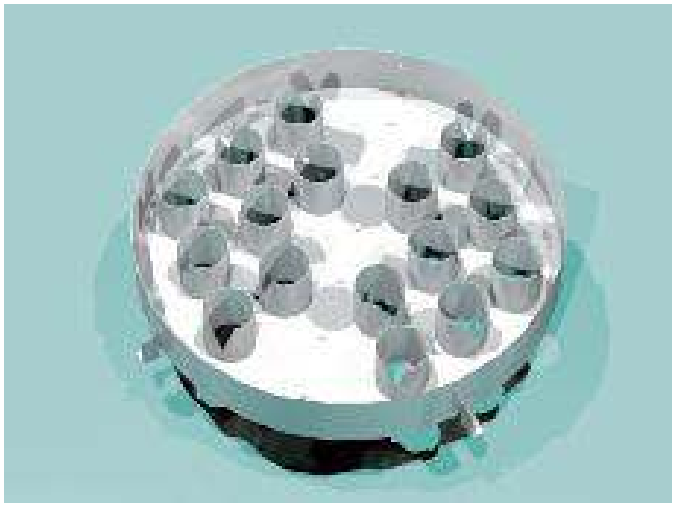


B - 186	Trhough type liquid Distributor
B - 186 L	Trhough type liquid Distributor with drip point multiper
Holes position	Square pattern punched in the trough's sides. Multiple series of holes can be punched to increase the turndown
Drip points	Standard design is for 100 Drip points / m²
Supports	clips welded to shell the support beams
Design Type	Two levels designed. the Parting Box is above the troughs and distributes the liquid to them. The distributor is supplied in parts to pass through the column manway
Levelling	Distributor can be levelled by levelling support beams
Redistributor	In case the distributor is receiving liquid from the bed above and there is an intermediate feed, a collector tray is needed (Type b-633 or b- 733)
Feed Device	**Liquid feed** : pipe distributror type B -119 **Flashing device** type B -955
Turndown	With multiple levels of holes > 4 : 1 can be reached

B - 798 PAN DISTRIBUTOR

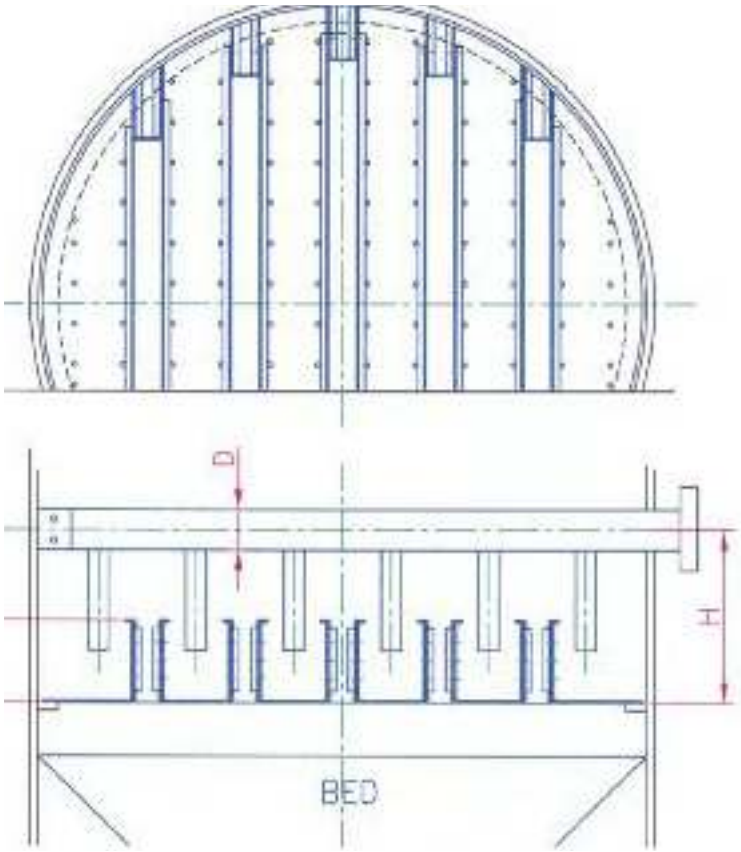


Diameter	>300 - 1200 mm
Liquid range	2 - 30m³/h/m²
Resistance to fouling	High
Standard turndown	3 : 1
A Standard	150 mm



Type	Pan Liquid distributor
Holes position	Liquid is distributed through V notches cut in the risers
Drip points	Up to 50 / m²
Supports at shell	Nr 4 clips welded to shell or, in case of structured packing, supported on the bed
Contruction Type	One piece for flanged towers. Multiple pieces for towers with manway (Tower diameter > 800mm)
Levelling method	By washers at clip position
Feed Device	When the distributor is in one piece, the feed pipe has to be extractable to allow distributor installation and dismantling

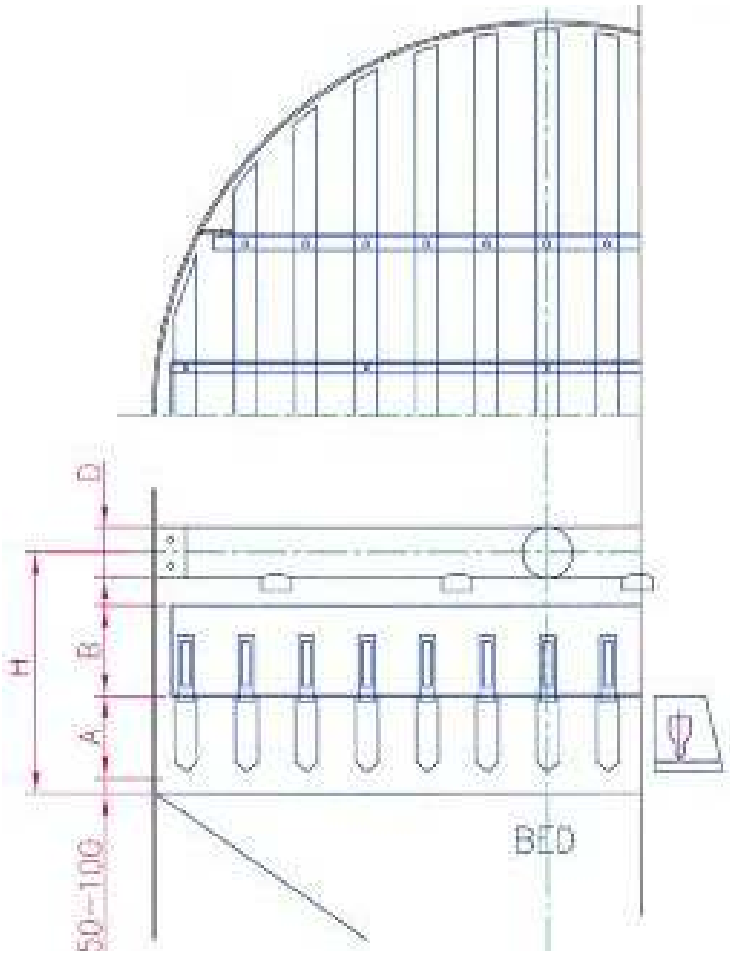
B - 816 / B- 817 DISTRIBUTORS



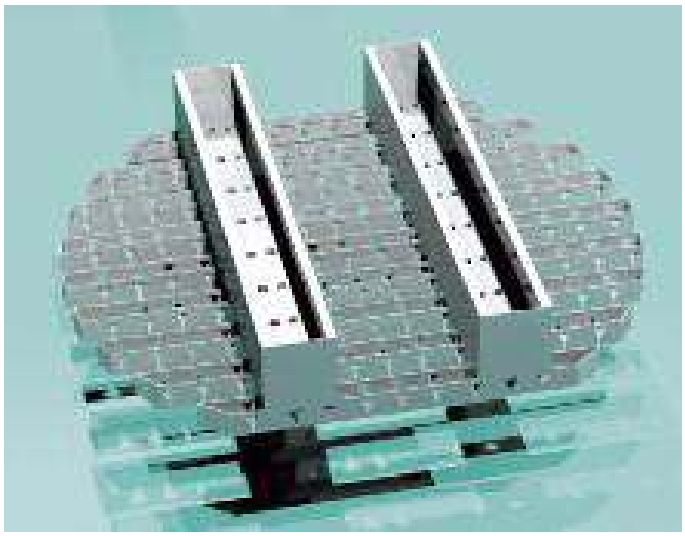
Diameter	>800 mm
Liquid range	4 - 150m³/h/m²
Resistance to fouling	Medium
Standard turndown	2 : 1
A Standard	250 mm
H For feed at Top	A + 150 + D/ mm

Type	Deck type Distributor
Holes position	Square pattern punched in the distibutor deck
Drip points	70 Drip points / m²
Supports	Support ring and gussets welded to shell for support beams if the diameter > 2500mm
Design Type	Multiple parts bolted each other
Levelling	Distributor level depends on ring levelness
Heats	Available with Redistributor model B - 817
Feed Device	**Liquid feed** : pipe distributror type B -119 **Flashing device** type B -955

B - 806 TROUGH TYPE DISTRIBUTORS

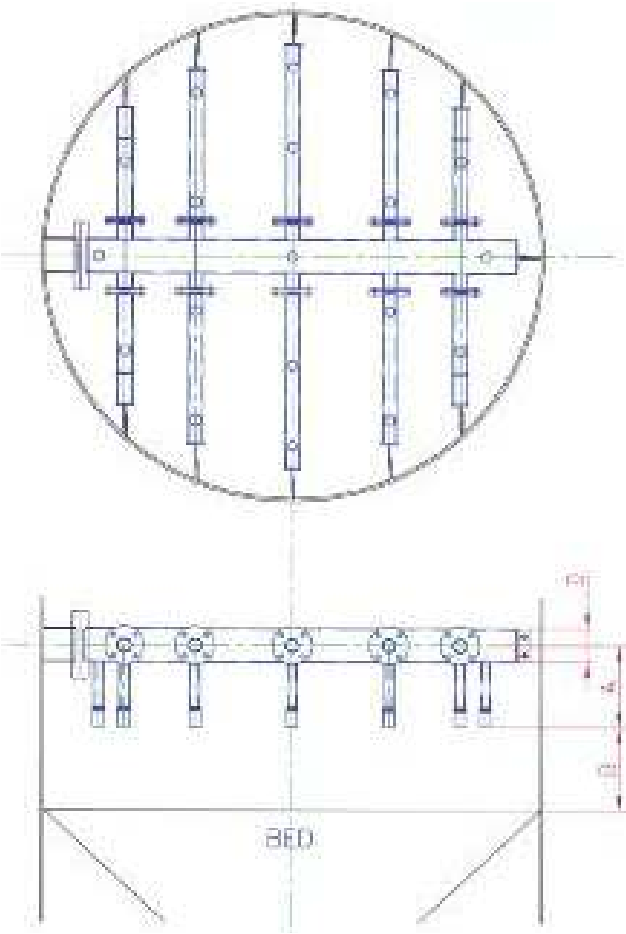


Diameter	>1000 mm
Liquid range	4 - 150 m³/h/m²
Resistance to fouling	High
Standard turndown	3 : 1
A Standard	200 mm
B Standard	250 mm
H for feed at Top and Intermediate Feed	>A+B+100+2xD mm

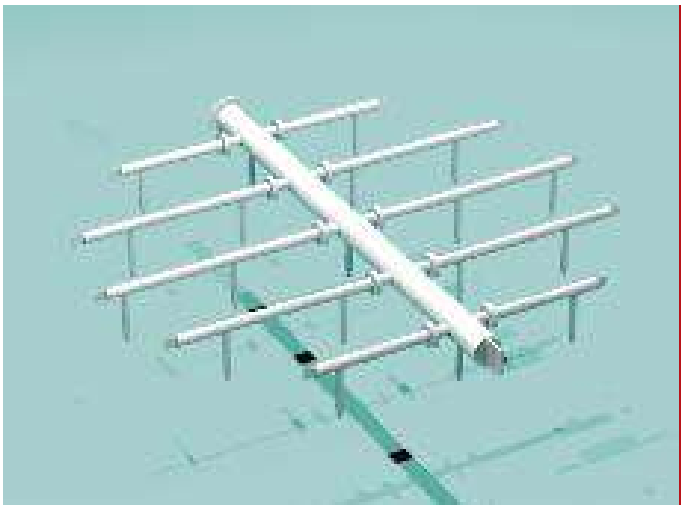


Type	Weir noch, trough Type Distributor
Holes position	V shaped notches punched on distribution channels sides
Drip points	Up to 60 Drip points / m²
Supports	Support ring and gussets welded to shell for support beams if the diameter >2500mm
Design Type	Multiple distribution channels fed by one/two parting boxes. The typical use of this distributor is for fouling services. The distribution quality is low and it should be used mainly for heat transfer and washing services
Levelling	Distributor depends on ring levelness
Feed Device	**Liquid feed** : pipe distributror type B -119 **Flashing device** type B -955

B - 1044 LIQUID SPRAY DISTRIBUTORS



Diameter	>1000 mm
Liquid range	0.5 - 150m³/h/m²
Resistance to fouling	Medium
Standard turndown	2 : 1
B	>500 mm
A	> 2 x D



Type	Composed by a main header and secondary flanged branches with spray nozzles
Design Type	Four Standards are available for different diameters and liquid flows Number of Nozzles / Tower Diameter 7 — 1000 - 3000 19 — 2500 - 6000 37 — 3500 - 8000 61 — 5000 - >10000
Nozzle type	Spray nozzle are characterised by: Spray angle (60 - 120°) Liquid flow (liters/ min) Pressure drop across the nozzel (std 1.5 bar)
Support	The main header and the secondary branches are supported at shell by means of gussets
Application	Main application is for Heat Transfer beds. Due to poor liquid distribution it should not be used for distillation beds

SUPPORT GRIDS AND PLATES

The type of support plate depends on:

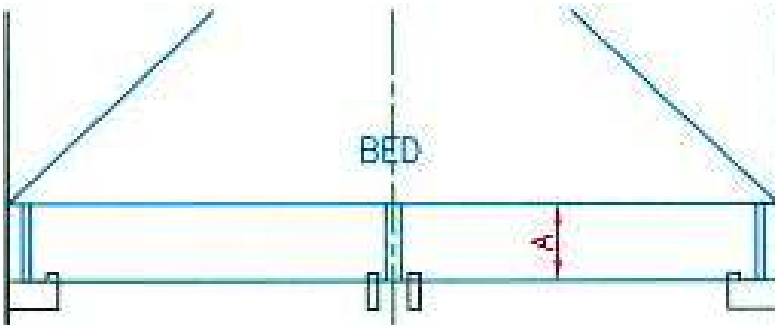
- **Type of Packing**
  - Random Packing. A gas injenction type offers an higher mechanical resistance compared with a support grid and it allows a better gas feed into the bed due to the injenction effect of the suppor.
  - Structured packing. This type of packing requires only an open grid supported by beams

- **Open area required**
  - Most of the gas injenction type support plates offer an open area grater than 100% of the column area. Different heights are available.
  - The support grid for structured packing has an open area greater than 96% of the column area.

- **Size of the column**
  - For columns up to 1000 mm the gas injection plate can be in one or two pieces and the height is less than 120mm (Type B - 818)
  - For columns greater than 1000 mm the type B - 804 should be used. This can be provided in different heights depemding on strength or open area requirements.

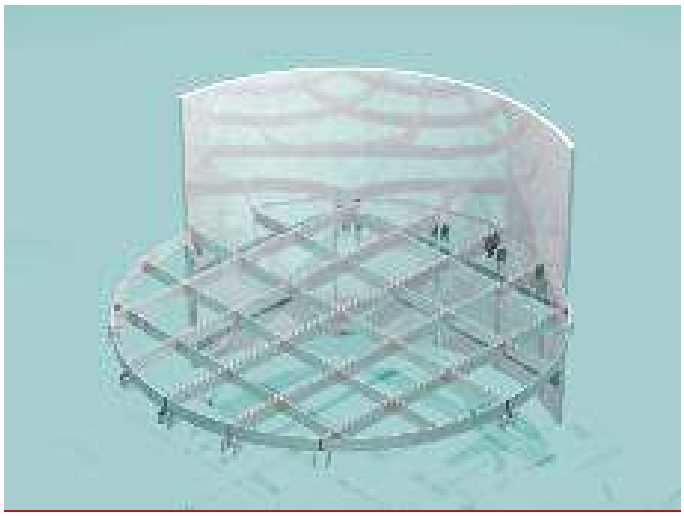
B - 134 STRUCTURED PACKING SUPPORT GRID

Diameter	>1000 mm



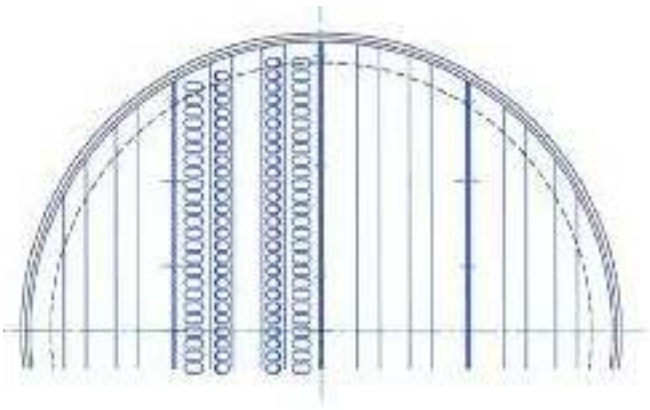
Beam height (A) as function on the load for a grid span of 2000mm

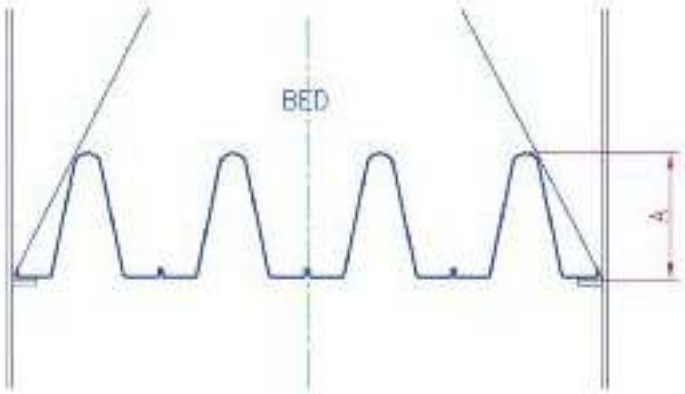
Grid Height (mm)	Specific Load (Kg./m²)
50	200
80	600
100	1000



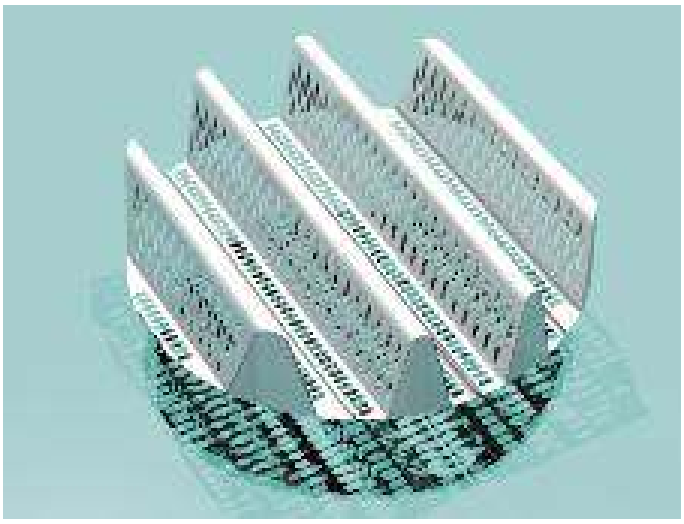
Type	Flat bars type. Panels are approximately 400 mm wide and bolted together. Bars height is variable and depends on the specific load
Supports	The grid is supported at each other panel joint by two clips welded to shell. For diameters >2000mm a major beam colud be necessary. In this case additional gussets welded to the shell are required to support the beam.
Design Type	The support plate is supplied in parts to pass through the column manway to be bolted each other. The beam rests on the supports with no need of clamping

B - 804 RANDOM PACKING SUPPORT PLATE



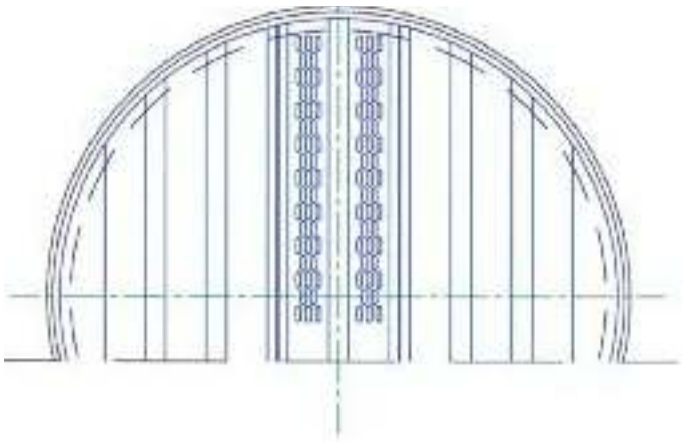


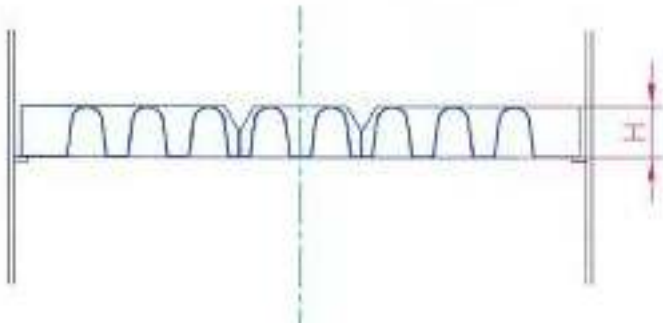
Diameter	>1000 mm
Liquid range	0.8 - 150 m³/h/m²
Resistance to fouling	High
Standard turndown	NA
Available elements heigh A	200 mm
	250 mm
	300 mm



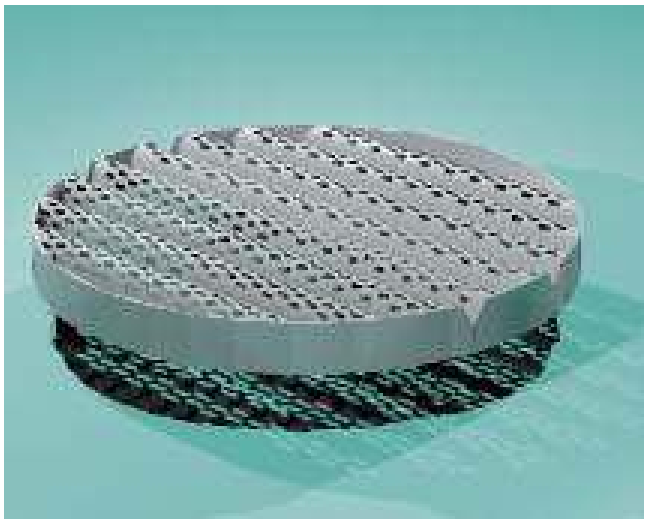
Type	Gas injenction type, is supplied in different heights depending on loan or specification
Holes position	Perforation for gas is on the side of the supporting elements while the perforation for liquid drainage is on the bottom flange. Pe rforation size is adequate to retain 1 “ rings. Total open area can exceed 100% of tower area
Supports	Support ring and gussets welded to shell for support beams (if needed
Design Type	Two support plate is supplied in parts to pass through the column manway to be bolted each other and clamped to the suppor ring

B - 818 RANDOM PACKING SUPPORT PLATE





Diameter	300 - 1200 mm
Liquid range	0.8 - 150 m³/h/m²
Resistance to fouling	High
Standard element height	120 mm



Type	Gas injenction type, is supplied in one standard design.
Holes position	The entire surface is perforated to maximize the opening of the support plate.
Supports	Support ring and gussets welded to shell for support beams (if needed)
Design Type	The support plate is supplied in parts to pass through the column manway to be bolted each other and clamped to the support ring
Application	It can be used for any size of metal and plastic random packing

BED LIMITERS

There are different types of bed limiters in function of the type of packing used in the bed.

- **Random packing**

  - **Ceramic packing:** In this case the hold- down device must be heavy and rest onto the bed in order to avoid the movement of the rings that otherwise could brake

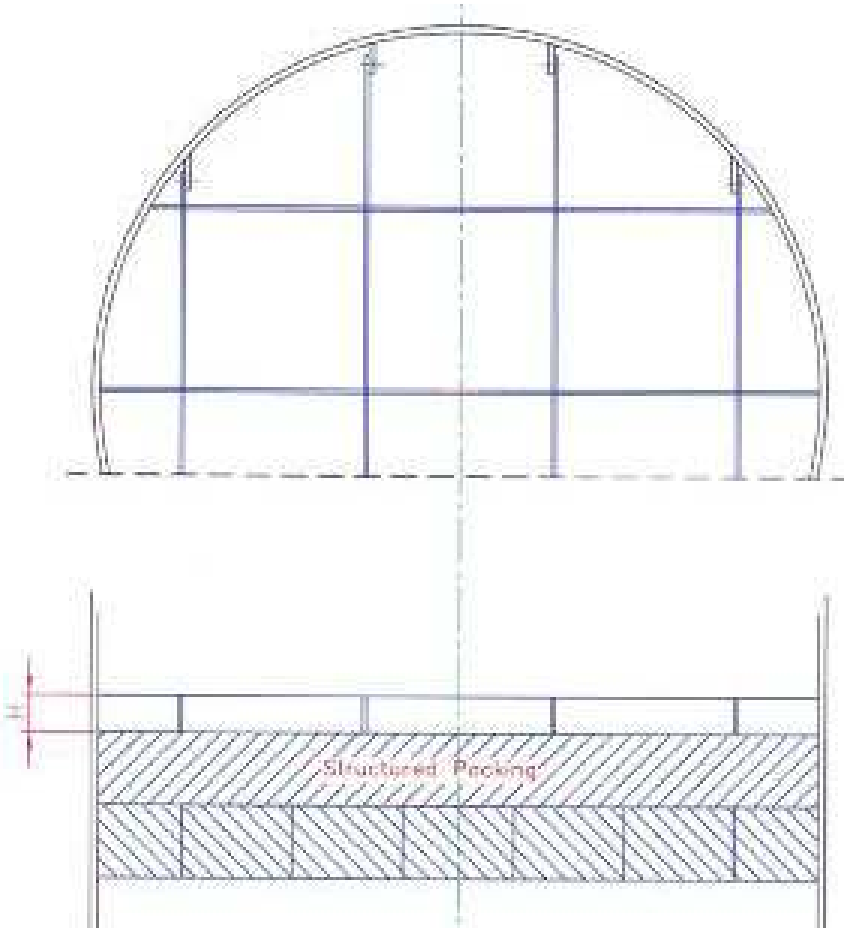
  - **Metal Random Packing:** In this case the bed limiter normally rests on a support ring and beams in case of large towers. The function on the hold-down device is to mantain the top of the bed flat enough to avoid possible vapor or liquid channeling. Most bed limiters can be designed to be integral with the distributors.

- **Structured packing**

  - This type of packing in many cases doesn't require an hold - down device. In services where the operation of the column could be subject to surges or upset, it is advisable to use a bed limiter. In these cases it coul be used an hold- down that does not interfere with the liquid distribution, like the type B-133-R

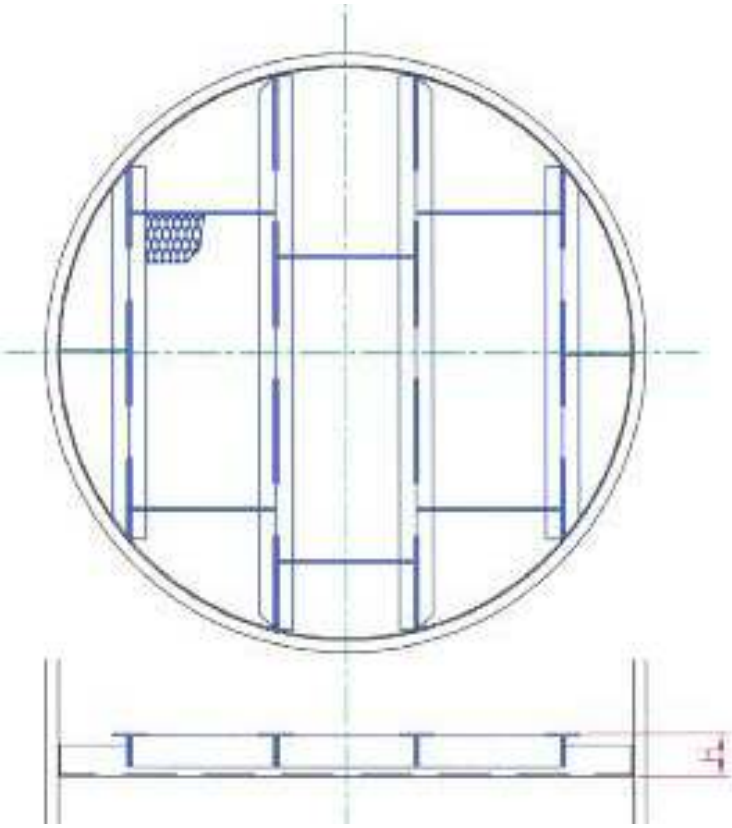
B -133 STRUCTURED PACKING BED LIMITERS

Diameter	>1000 mm
B - 133 elements Height H	50 mm
	100 mm
B - 133 - R	10 mm rod

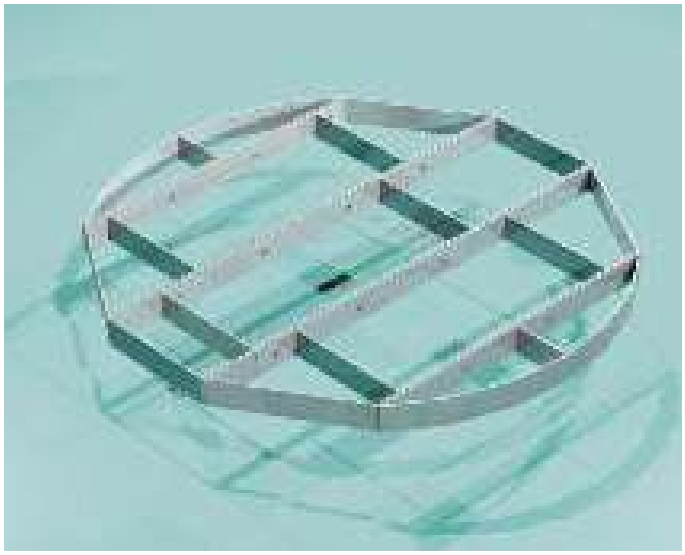


Type	Metal bars
Supports type B - 133	Support ring and gussets welded to shell for support beams if needed
Support type B - 133 - R	Clips welded to sheel
Design Type	It can be provided in two styles: • Metal bars connected each other and to clips welded to the tower shell. This design is very similar to the support grid type B - 134 • Metal rods B- 133 - r unning perpendicular to the structured packing panels and attached to clips welded to the tower shell
Applications	It is mainly used to mantain in position a bed of structured packing. Mainly the second style (Rods) is purposely designed to offer the least disturbance to the irrigation of the bed . Futhermore the rod design is very resistant and it avoids the need of major structural members to hold-down the bed.

B - 823 RANDOM PACKING BED LIMITER



Diameter	>300 mm
Available elements heigh A	50 mm
	100 mm
	1500 mm



Type	Metal bars and expanded metal
Design Type	It can be provided into two style: • As separate item in panels to be installed on tower support ring and beams for diameter >3000 • Integral with the upper liquid distributor, mainly for diameters<1000 and flanged towers
Support	• Support rings and gussets welded to shell for support beams (if needed)
Application	• It is mainly used to mantain flat the surface of a random packing bed. Without the bed limiter the rings could move and get out of level. It has to be considered that the use this type of device could affect the proper liquid distribution since the elements of this device could disturb the liquid irrigation pattern

INLET FEED DEVICE

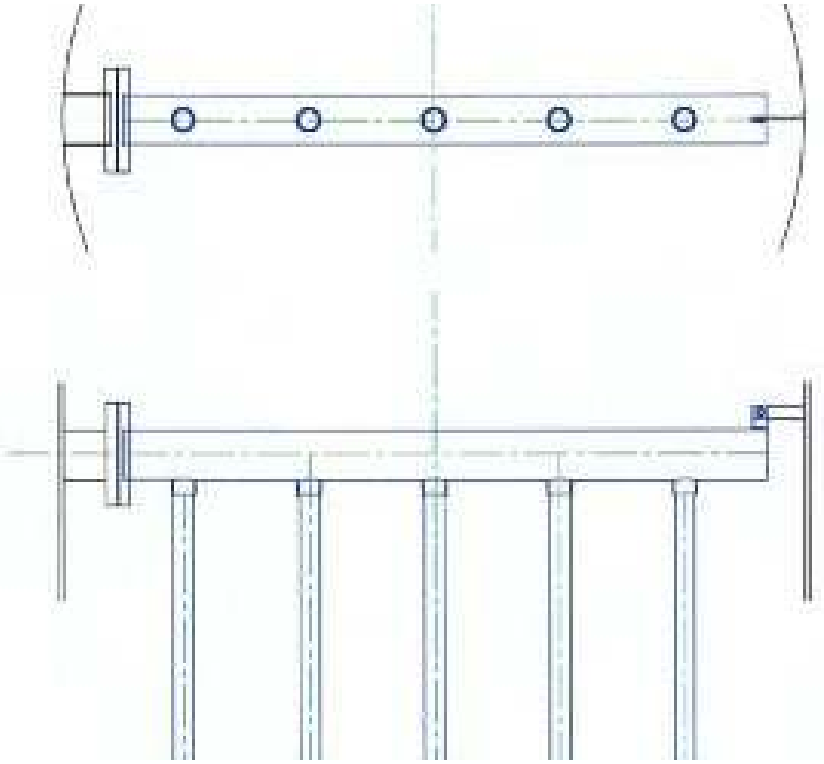
Feed device are mostly piping systems that help to distribute the inlet liquid and vapor flow to the distributors or beds.

This can be classified as follows:

- **Liquid feed entraining a maximum of 1 % vapor**
    - These feed pipes allow the liquid being fed to a distributor to be pre-distributed to make easier the distributor operation. These are always used with trough or pan distributors. The type depends mainly from the required turndown
- **Flashing feeds above and between packed beds**
    - These feeds require special attention since their selection depends on actual flow and type of flow
- **Vapor distributors below a bed**
    - The distribution of the vapor entering a bed is as important as the liquid distribution on top of it. The vapor has to be controlled so to dissipoate its kinetic energy and making it flowing uniformly to the bed
    - A vapor distributor plate could be necessary in certain occasion to create a pressure drop that forces the vapor to spread throughout the column section

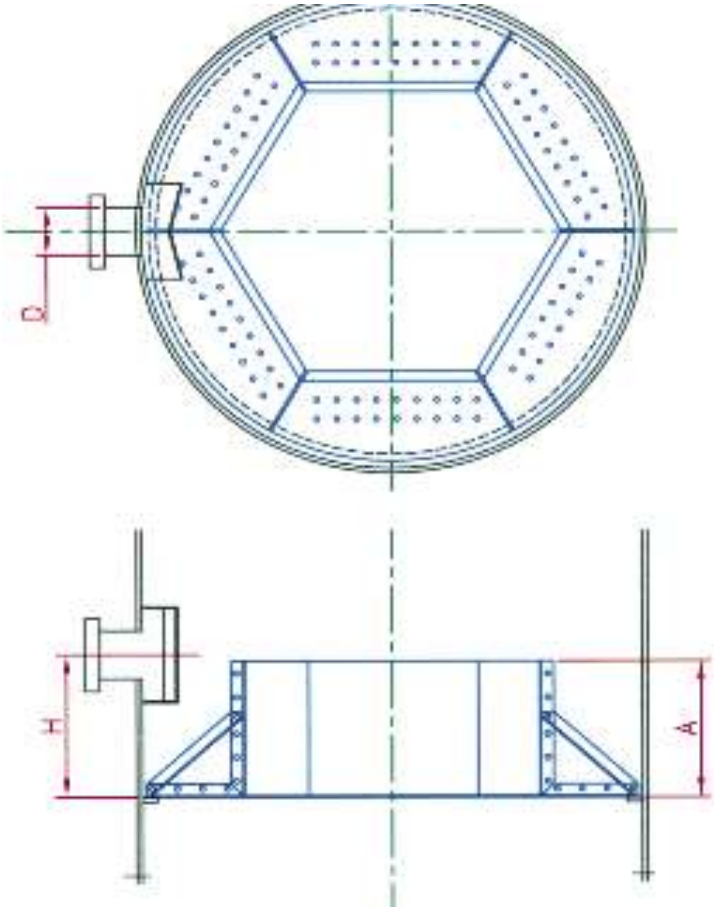
B - 119 / B - 129 LIQUID FEED PIPES

Diameter	>800 mm
Turn down	3 : 1



Type	Composed by main header and secondary flanged branches
Application	Main use of these liquid feed devices is for Baretti type distributors. Each feed nipple brings the correct amount of liquid to each part of the distributor.
Design	Two standards are available for different diameters and liquid flows: • 119 Main Header only (To feed mainly trough type disributors) • 129 With branches (to feed mainly pan type distributors)
Support	The main header and the secondary branches are supported at shell by means of gussets

B - 755 FLASHING FEED GALLERY



Diameter	>1000 mm
Resistance to fouling	Medium
A	> = H
H	> = 2 x D

Type	Two phases feed device
Design	The liquid is fed to the column through a nozzle and a deflector that discharges the flashing feed into the annual area. The residence time is designed to allow the gas to disengage from the liquid. The clear liquid flows through the holes in the deck on the liquid distributor positioned below the B - 755
Holes position	The perforation in the device deck is designed so that the holes diameter is > 10 mm to avoid possible plugging
Support	Support ring and gussets welded to shell for support beams (if needed)
Design type	The Flash Gallery is supplied in parts to pass through the column manway to be bolted each other and clamped to the support ring

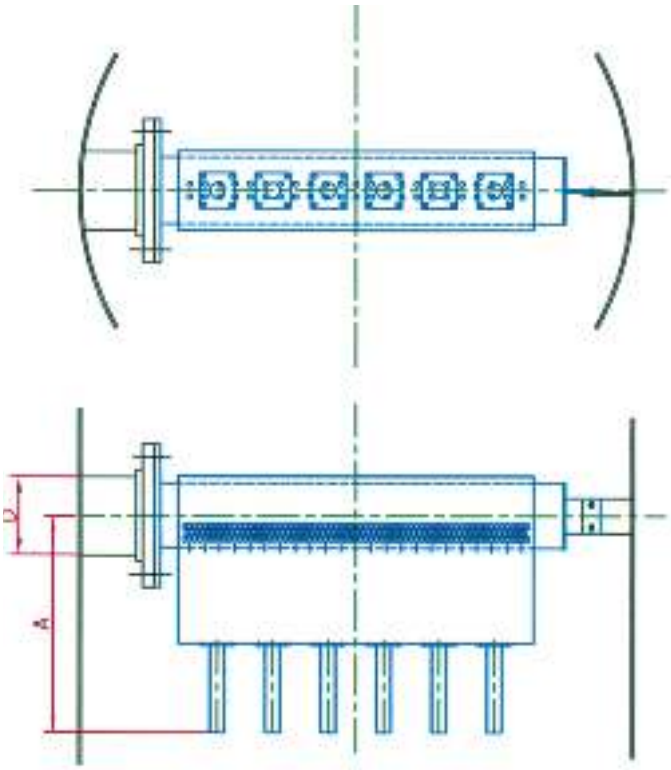
B - 855 FLASHING FEED CHAMBER

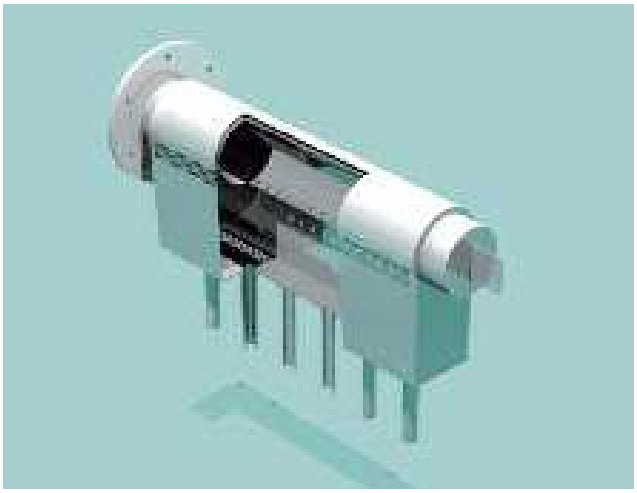
Diameter	<1000 mm
Resistance to fouling	High

Type	Double centrifugal expansion type
Pipe Design	vapor is fed in the double chamber and the centrifugal effect separates the two phases
Supports	It is normally flanged to the inlet nozzle
Installation	The unit is supplied in one piece

B - 955 FLASCHING FEED PIPE

Diameter	>1000 mm
Resistance to fouling	High
A	> 3 x D

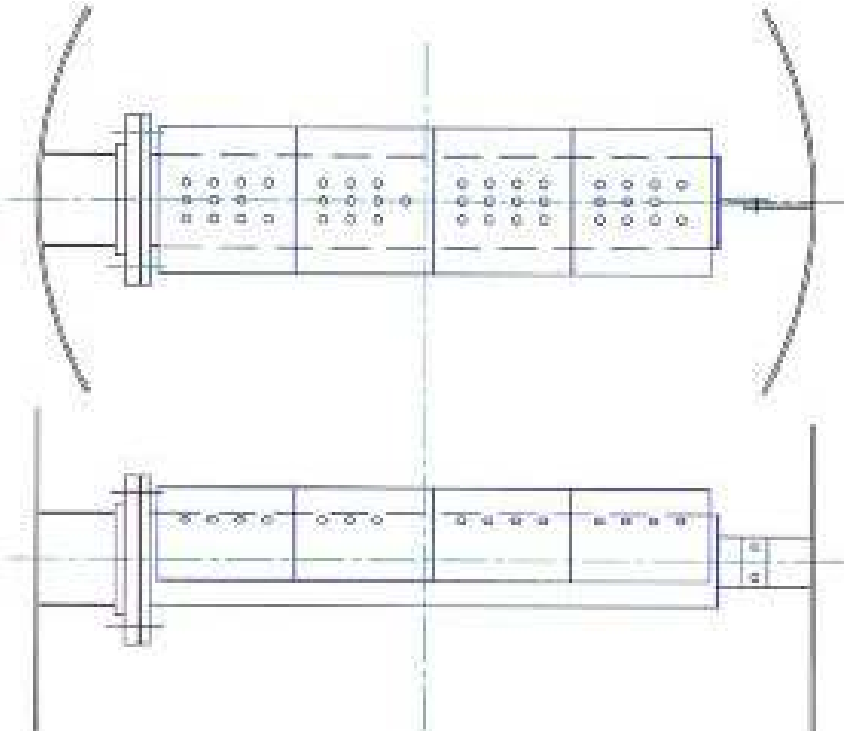




Type	Double chamber expansion type. Vapor is released from the sides and liquid flows from the down pipes into the distributor.
Pipe Design	The mixed phase enter the internal pipe and the vapor is discharged from the upper slots while the liquid flows throuh the holes in the bottom of the pipe
Supports	A gusset welded to shell is necessary to provide additional resistance against possible vibration
Installation	The unit can be supplied in one piece if it passes through the column manway. Otherwise the nipples are bolted to the bottom of the main body and can be dismantled to insert the device into the column

B - 196 VAPOR FEED DIFFUSER

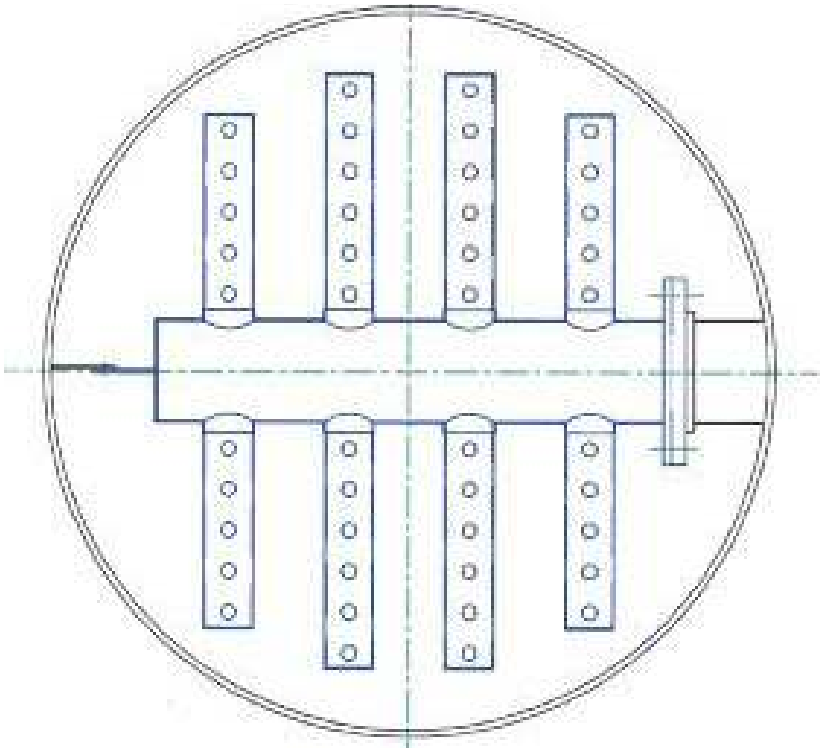
Diameter	>1000 mm
Resistance to fouling	High



Type	Main feed pipe with perforations in the upper part. Yhe incoming vapor is deflected and expanded to dissipate its energy
Supports	A gussets welded to shell is necesssary to provide additional resistance against possible vibration
Installation	The unit can be supplied in one piece if it passes through the column manway. Otherwise the hat can be designed to be removable in order to reduce the overall size
Application	Typical application may be the return from a side stripper between two trays

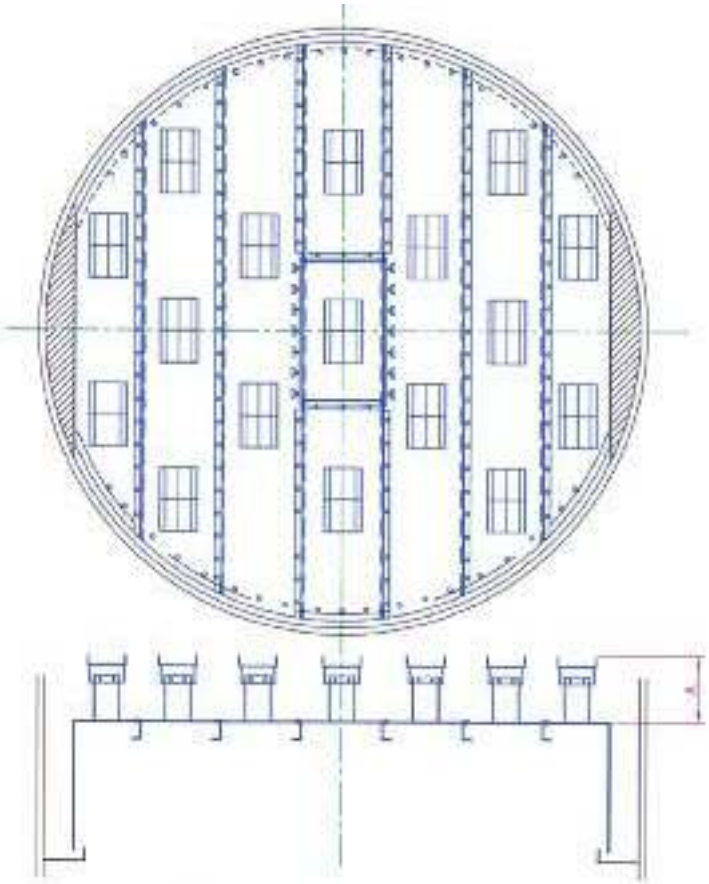
B - 198 VAPOR DISTRIBUTOR

Diameter	>1000 mm
Resistance to fouling	High

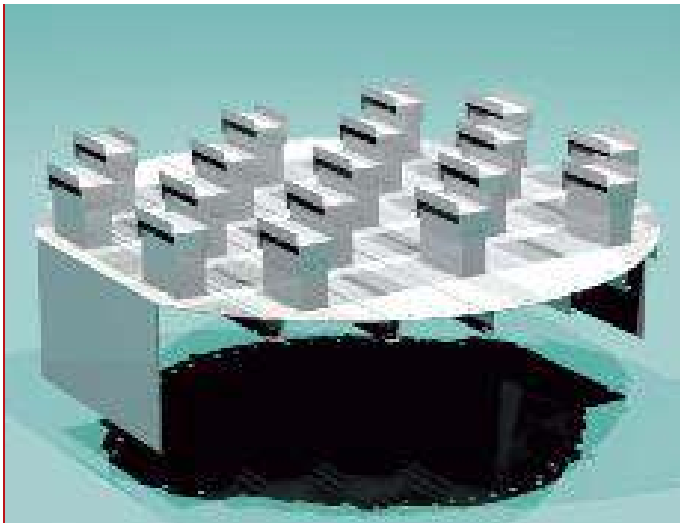


Type	Pipe arm vapor distributor
Supports	Gussets welded to column shell
Design	The distributor is normally designed with a main header and secondary branches perforated to distribute the vapor uniformly throughout the column section
Application	Typical application may be at the bottom of a packed column in order to have the vapor approaching the bed above uniformly

B - 896 VAPOR DISTRIBUTOR TRAY



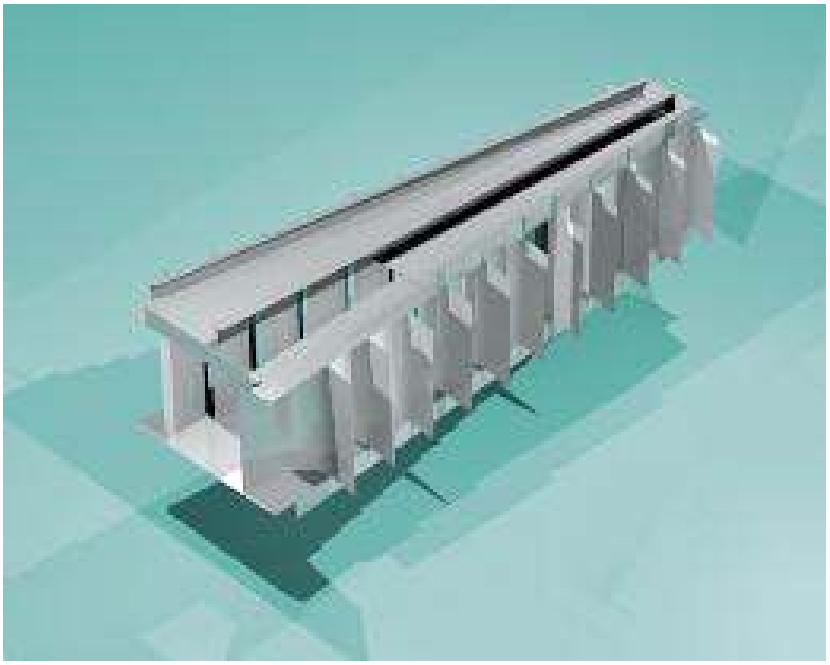
Diameter	<1000 mm
Liquid Range	20.5 - 100 $m^3/h/m^2$
Standard turndown	2 : 1
A Standard	250 mm



Type	Vapor distributor and collector tray
Support at Shell	Support ring and clips for major beams if the diameter is >3000 mm
Construction type	Like a chimney tray it is designed in oarta to pass through the column manway and to be bolted and gasketed together
Design	The distributor is designed to generate a controlled pressure drop through the chemneys that makes the vapor spreading across the entire section of the column. Normally the design pressure drop ranges from 10 to 50 mm H_2O
Levelling method	The operation of this device is not affected by a possible out of levelness of the support ring
Applications	Typical application is below packed beds, to distibute the vapor and collect the liquid to be drawn-off or redistributed to a lower bed

B - 960 INLET VANE DISTRIBUTOR

Diameter	>1000 mm
Resistance to fouling	High



Type	Vane type inlet distributor for mix feeds
Design	The mixed phase enters the flashing device and the lateral blades deflect the mixed phase by 90° separating by centrifugal effect the liquid from the gas. The chamber is tapered to maintain equak velocity in each section
Supports	A support welded to shell at the nozzle entrance and a gusset at the opposite side are necessary to provide adequate resistance against vibrations.
Installation	The unit can be supplied in one piece if it passes through the column manway. Otherwise the blades can be supplied in prewelded groups to be bolted to the casing
Construction	The size of the device is approximately 50 mm larger than the inlet nozzle external size. The length of the inlet vane can be as the tower diameter or shorter up to 50% of the tower diameter
Application	Typical application is for any flashing feed device. It is used as feed inlet for crude vacuum towers for its efficiency in separating the mix and because it requires a radial opening as compared to the traditional tangential entry

LIQUID COLLECTORS

Liquid collectors are available in different designs depending on:

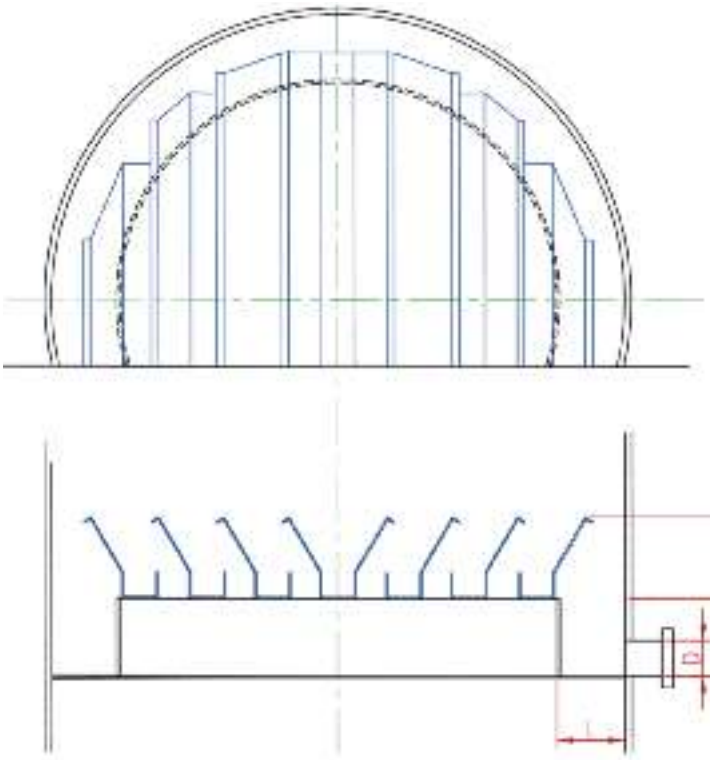
- High volume Collectors. These are typical of pump-around or total fraw-off services. Their characteristic is the large amount of liquid hold-up required. The typical design is the B - 833 where the amount of liquid is proportional to the stacks height.

- Partial draw-off collectors. The design to be used depends again on the hold-up required and the allowable pressure drop. For vacuum services the type B - 633 could be used due to its high open area and low pressure

- Low -hold-up Collectors. The type B - 733 is typical of services where the hold-up could generate liquid cracking or polymerization. This type pf collector is purposely designed to have a fast drainage into the draw-off sump.

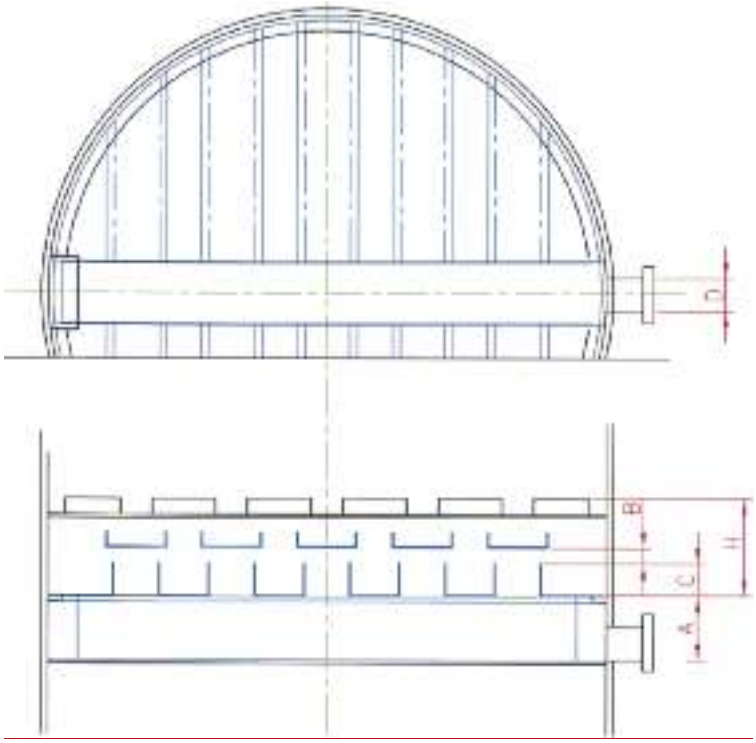
B - 633 CHEVRON LIQUID COLLECTOR

Diameter	>1000 mm
Liquid Range	0.5 - 50 m³/h/m²
A standard	250 mm
L and H	depend on service

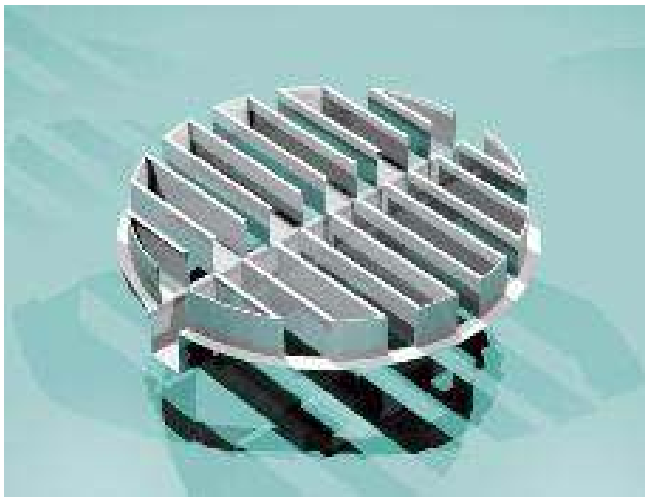


Type	Low pressure drop liquid collector tray
Support at shell	A circular trough is welded to the column shell. This acts as support of the chevron collecting devices that bring the liquid into the channel
Construction Type	Like a chimney tray it is designed in parts to pass through the column manway and to be bolted to the support
Design	Two types of design are available: • Light gage metal collector acting only as liquid collector • Heavy duty design to act both as collecting device and support of a structured packing bed above it • The open area is extremely high and results in a very low pressure
Application	Typical apllication is below packed beds to collect the liquid coming from the bed. It cannot be considered a vapor distributor since the pressure drop is minimal and not enough to uniform the gas flow.

B - 733 TROUGH LIQUID COLLECTOR



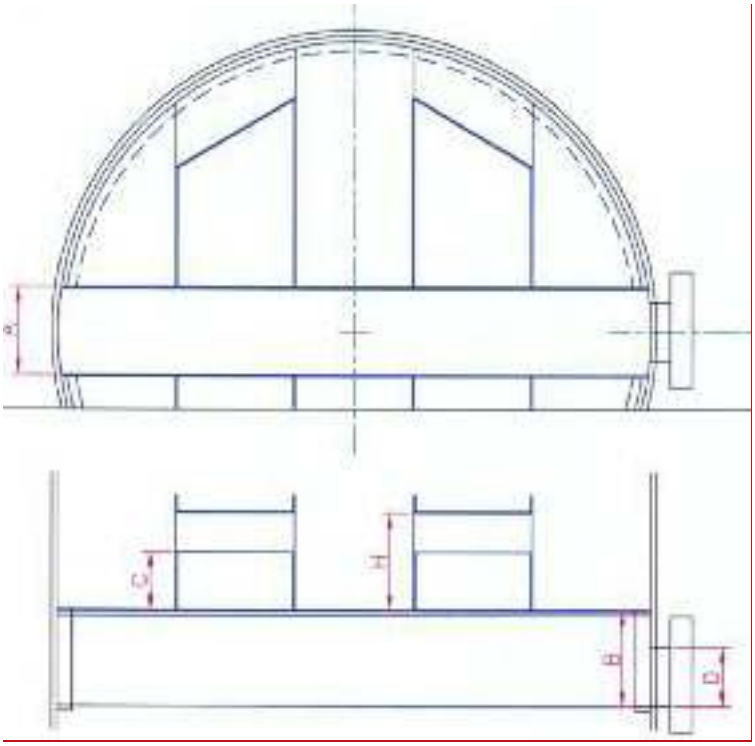
Diameter	>1500 mm
Liquid Range	0.5 - 100 m³/h/m²
A	> D x 1,5
B standard	75 mm
C standard	200 mm
H	> C + B + 200mm



Type	Channel type liquid collector
Support at Shell	A support ring and bars for the center draw-off trough are required
Construction type	The main trough is in one or more pieces depending on the tower diameter. The side collecting channels bring directly the liquid into the main trough and they are bolted to the main trough and clamped to the support ring
Design	This collector tray can be used in all cases where the welding inside the column has to be minimized. In fact the channels do not need any seal welding. In order to collect the liquid falling on the tower shell a WALLWIPER device has to be installed. This can be welded to shell (Similar to a support ring) or designed to be expandable without need of welding
Applications	Typical application is below packed beds to collect the liquid coming from the bed

B - 833 LIQUID COLLECTOR TRAY

Diameter	>1000 mm
A =	B> 1.5 x D
C =	RISER HEIGHT
H=	C + 200



Type	Deck type liquid collector
Support Shell	A support ring and bars for the center or side draw-off trough are required
Construction type	The standard design foresees a seal welding of the tray for tightness. It is designed in parts passing through the column manholes and the hats can be used as internal manways.
Design	The open area of these collector can range from 20% for pressure applications, to 40% for vacuum applications. A gasketed design is also available, but it is recommended to seal weld the collector to minimize the leakage.
Applications	Typical application is below packed beds for total draw-off of the liquid coming from the above bed

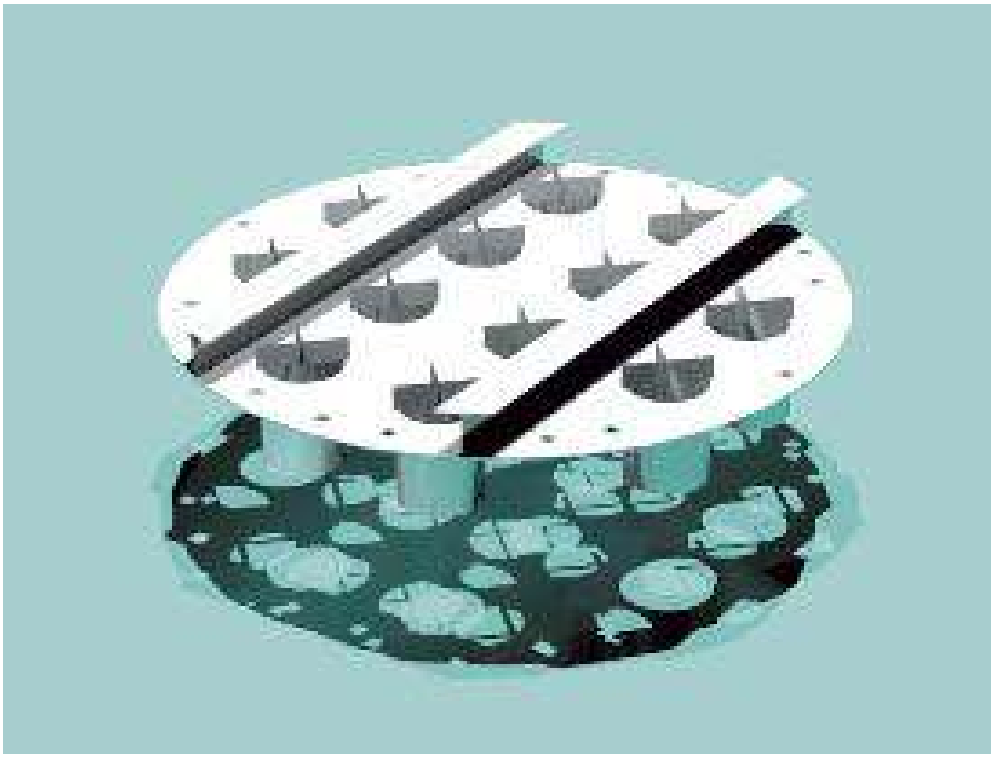
B - 834 DISPENSER AND SUPPORT PLATE

FOR LIQUID / LIQUID EXTRACTOR

Support plate B - 834 has two function s:

- To mechanically support the random packing bed
- To distribute the light phase into the heavy one

Diameter	>300 mm
Resistance to fouling	medium



Type	The device acts as support of a random packing bed and as a dispenser of a light phase
Design	The light phase accumulates under the deck and it is dispensered by the holes punched in the tray floor. The heavy phase flowing from the bed is channelled through the down pipes.
Supports	It is supported by a ring welded to the shell and beams, depending on the total load.
Installation	It is supplied in parts to be bolted and clamped to the support ring. Beams can be used for high loads

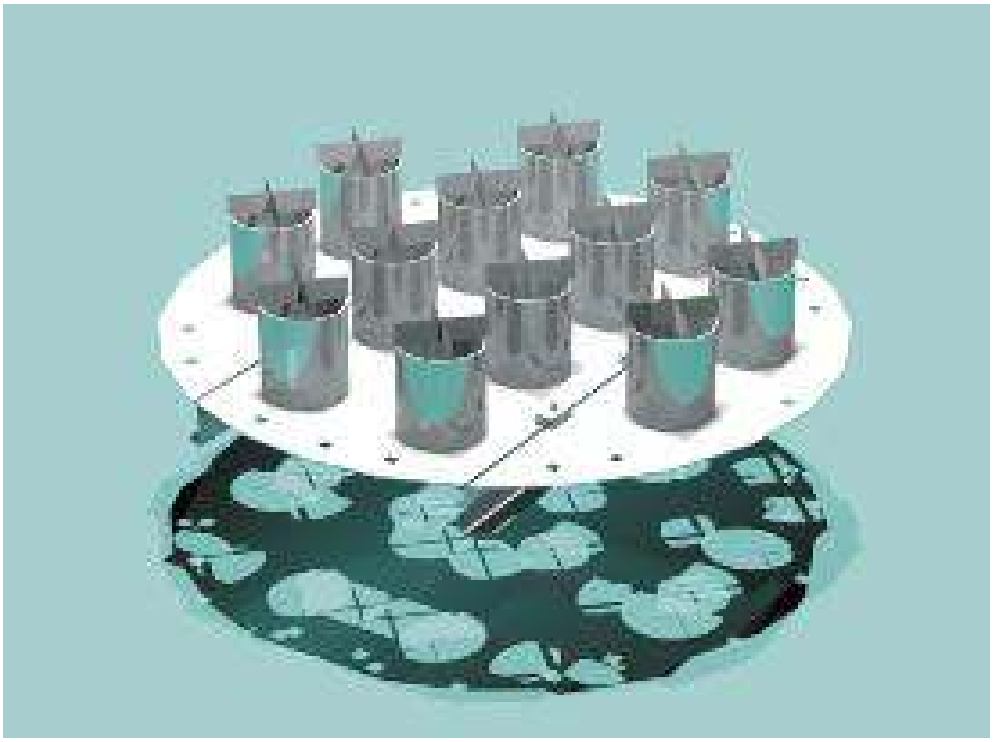
B – 835 DISPENSER AND SUPPORT PLATE

FOR LIQUID / LIQUID EXTRACTOR

Heavy phase Dispenser B - 835:

- This has the only function of distributing the heavy phase into the continuous light one and it is located at the top of each bed
- In case of more beds the same B - 835 can be used as support plate of the bed above and redistributor for the lower be

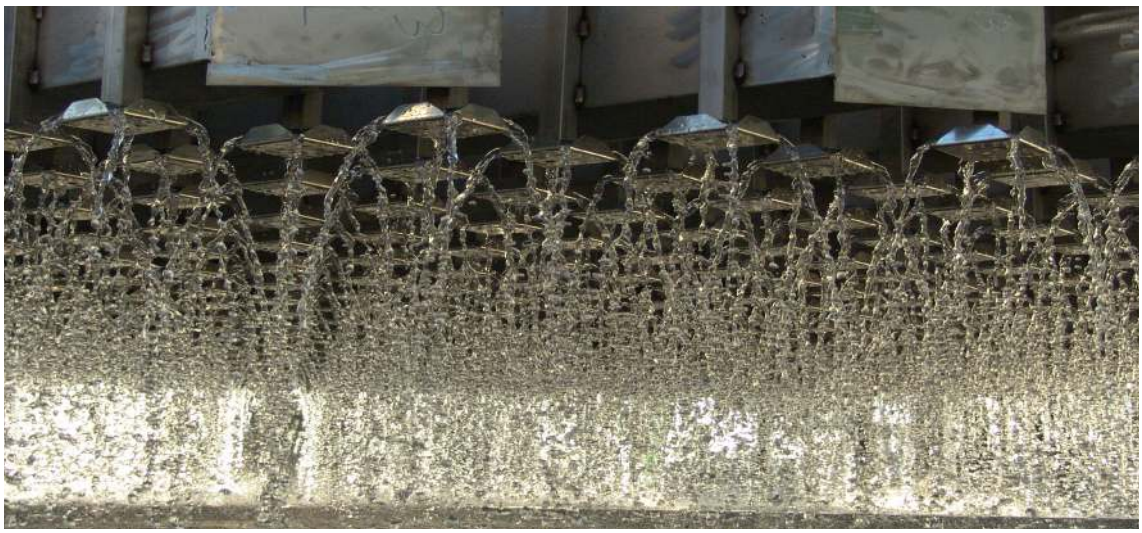
Diameter	>300 mm
Resistance to fouling	Medium



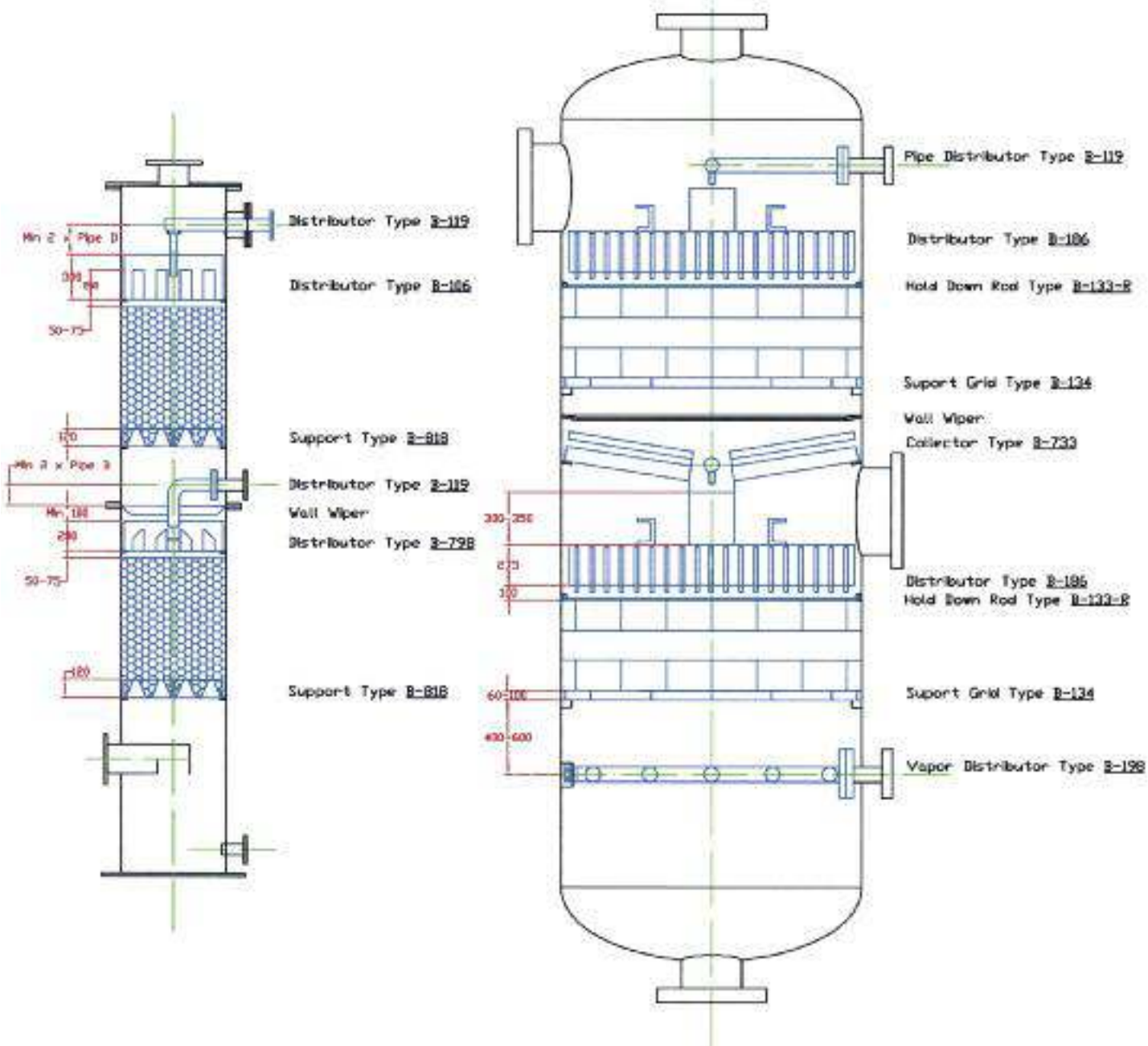
Type	When used on top of a packed bed it can be used as dispenser of the heavy phase. When used as support of a random packing bed it can act as dispenser of the heavy phase to the lower bed.
Design	The heavy phase accumulates on the deck and it is dispersed by the holes punched in the tray floor. The light phase flowing from the bed below is channelled trugh the upcomers.
Supports	It is supported by a ring welded to the shell and beams, depending on the total load
Installation	It is supplied in parts to be bolted and clamped to the support ring. Beams can be used for high loads

DISTRIBUTOR HYDRAULIC TEST

In light of a complete costumer service Baretti could also perform liquid distribution test.
In our workshop we have test RIG that can manage Distributor ID up to 12 mt with a liquid load more than 500 [m^3/hr]



TYPICAL TOWER ELEVATIONS



TOWER I. D < 800

TOWER I. D > 800

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