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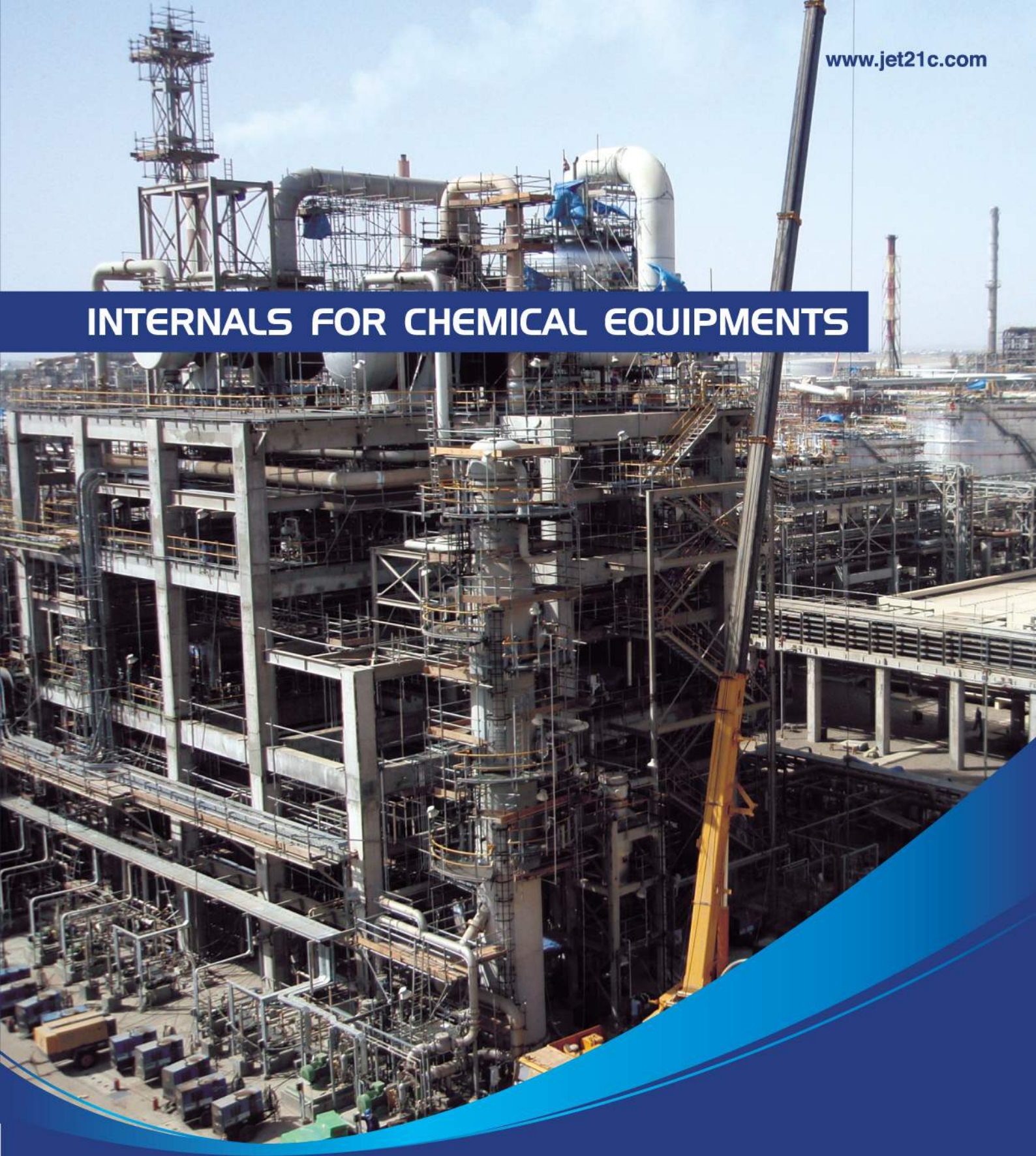
INTERNALS FOR CHEMICAL EQUIPMENTS



JEONJIN | 주 | 전진엔텍

We JEONJIN ENTECH LTD, have been delivering the state of technology to customer who wants it optimize process capacity and efficiency for petrochemical, chemical, Gas processing and desalination industries fields.
We provide and propose a various packing type and suitable distribution system in order to meet the condition which is required by customers

History of Company

2014
- ASME "U2" Certificate

2013
- Entering FRI(Fractionation Research Institute)

2012
- ASME "U","S" Certificate
- ISO 14001:2004, OHSAS 18001:2007 Certificate

2010
- Awarded for Presidential Commendation
- Designated as patent star enterprise

2009
- Branch Office Foundation in Ulsan
- Designated as an export promising small and medium company
- Designated as a leading enterprise for strategic business (Busan Metropolitan City)

2008
- Designated as a partner company by Busan Techno Park
- Obtained INNO-BIZ Certificate (Small and Medium Business Admininstration)
- Designated as a partner company by Korea Institute of Industrial Technology
- Designated as a promising small-medium company (Hana Bank)
- Established a research institute attached to the company
- Moved to own factory (275-35, Hakjang-dong, Sasang-gu, Busan-si)

2007
- Designated as a promising small-medium company (Industrial Bank of Korea)
- Obtained certificate as a venture company (Kibo Technology Fund)

2006
- ISO 9001:2000 Certificate

2005
- Changed to Jeonjin Entech Ltd.

2004
- Registered the factory
- Developed a high-speed opening and closing device

2003
- Established Jeonjin Entech

JEONJIN entech

PRODUCT INFO

COLUMN INTERNALS
- INTERNALS (DISTRIBUTOR, SUPPORT PLATE, BED LIMITER)
- PACKING (METAL, PLASTICS, CERAMIC, ALUMINA, CARBON)
- TRAY (SIEVE, VALVE, BUBBLE CAP), CHIMNEY

REACTOR INTERNALS
- DISTRIBUTOR TRAY, COLLECTOR TRAY
- CATALYST SUPPORT GRID, SCALE BASKET, OUTLET COLLECTOR
- CATALYST BASKET, INLET DIFFUSER
- STRAINER NOZZLE
- INERT BALL (CERAMIC BALL, ALUMINA BALL)
- CERAMIC PLUG

SEPERATION SYSTEM
- CRINKLED WIRE MESH TYPE MIST-ELIMINATOR
- CHEVRON TYPE MIST ELIMINATOR
- STRUCTURED TYPE MIST ELIMINATOR
- COALESCER (METAL, NYLON, POLYPROPYLENE)
- INLET GAS DISTRIBUTION DEVICE

FIELD SERVICE
- INSTALLATION WORK FOR TRAY, PACKING & REACTOR INTERNALS

OTHER PARTS
- BUCKET STRAINER
- SPRAY NOZZLE
- AIR FILTERS
- HAXAGONAL MESH
- PERFORATED PLATE
- WIRE MESH
- SILENCER
- STATIC MIXER
- FERRULES (FOR HEAT EXCHANGER)
- VORTEX BREAKER
- STEAM EJECTOR
- CYCLONE

CERTIFICATION

ASME S

ASME U

ASME U2

ISO14001

OHSAS 18001

IOS 9001

Venture-Company

CompanyAttached Research Institute

Promising Company Accreditation

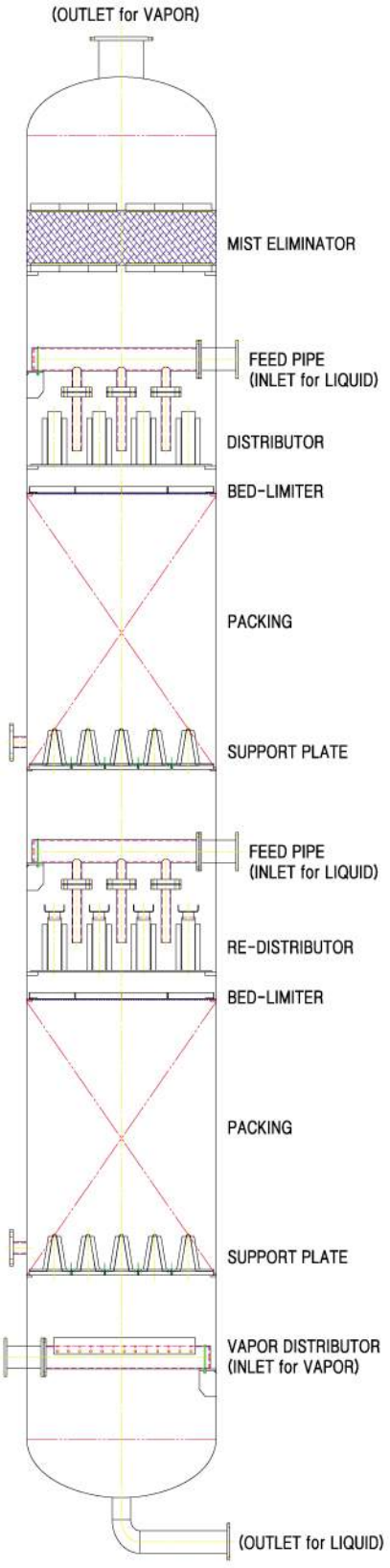
INNO-BIZ

COLUMN INTERNALS

PILOT PLANT

MECS DISTRIBUTOR

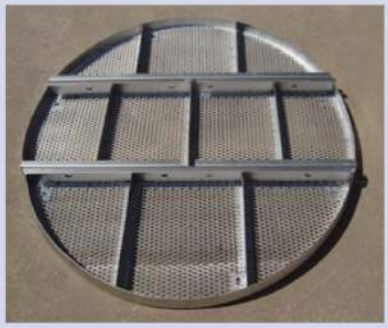
FEED DISTRIBUTOR



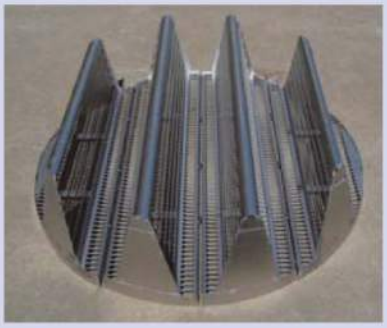
COLUMN INTERNALS

DISTRIBUTOR (PVC)

BED LIMITER (PVC)



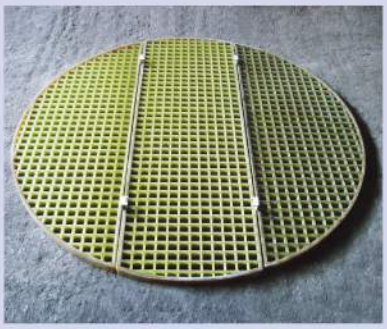
BED LIMITER



GAS INJECTION SUPPORT PLATE

GAS INJECTION SUPPORT PLATE (P.P)

SUPPORT GRID (PTFE)

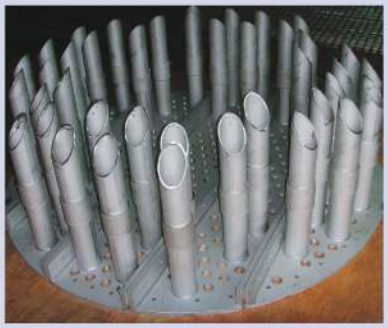


SUPPORT GRID (FRP)

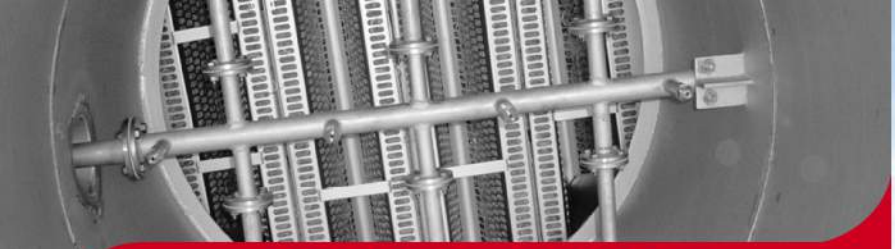
FINAL BOLT HOLE DRILLING FOR DISTRIBUTOR TRAY

DISTRIBUTOR TRAY

SPRAY TYPE DISTRIBUTOR



DISTRIBUTOR



COLUMN PACKING

PALL RING (METAL)

RASCHIG RING (METAL, CARBON, PLASTLC)

HY – PAK (METAL)

IMTP (METAL)

HI – FLOW RING, FLOATING BALL (PLASTLC)

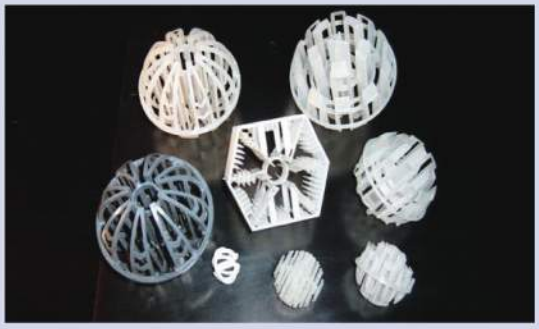
PALL RING (PLASTLC)

SUPER SADDLE, HEL – LEX (PLASTLC)

TELLERETTE (PLASTLC)

COLUMN PACKING

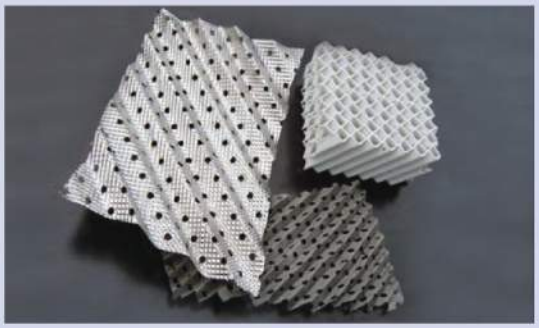
RASCHIG RING (ALUMINA)



TRI-PACK / LAN PACK (PLASTIC)

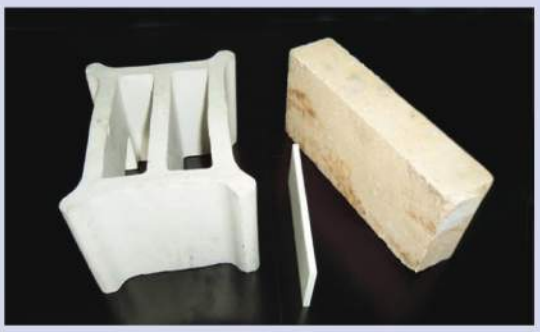
CROSS RING (CERAMIC)

SADDLE (CERAMIC)



STRUCTURED PACKING (METAL, CERAMIC)

CASCADE MINI RING (METAL,PLASTIC)



GRID BLOCK & BAR (CERAMIC,ALUMIND)

GLASS RASCHIG RING

COLUMN PACKING

DATA FOR PACKING

DESCRIPTION	SIZE (INCH)	PIECES (PCS/M3)	SURFACE AREA (M2/ M3)	FREE SPACE (%)
Metal Pall Ring	5/8"	234,000	366	90
	1"	51,000	210	92
	1-1/2"	15,000	136	93
	2"	6,500	110	94
	3"	2,000	73	94
Plastic Pall Ring	5/8"	234,000	360	83
	1"	51,000	210	90
	1-1/2"	15,000	129	90
	2"	6,500	102	91
	3"	2,000	90	91
	3-1/2"	1,200	85	92
Ceramic Pall Ring	2"	6,500	122	73.5
Metal Raschig Ring	1/2"	410,000	401	88
	5/8"	234,000	360	90
	1"	51,000	200	92
	1-1/2"	15,000	130	93
	2"	6,500	102	94
	3"	2,000	70	94
Ceramic Raschig Ring	1/4"	3,150,000	712	62
	1/2"	410,000	372	64
	1"	51,000	192	71
	1-1/2"	15,000	121	73
	2"	6,500	92	74
	3"	2,000	70	77
Carbon Raschig Ring	3/4"	111,000	246	67
	1"	46,800	187	74
	1 1/2"	13,800	123	74
Hy-PaK	NO.1	31,400	177	96
	NO.2	3,900	95	97
	NO.3	1,100	59	97
Hei-lex	#120	35,000	280	80
	#200	7,500	100	83
	#300	1,860	75	86
	#500	450	62	95
Tellerette	S-O	32,500	185	88
	S	25,000	180	89
	S-II	17,500	150	92
	M	8,000	127	89
	L	3,900	94	90
	LL	1,100	65	95
Metal Saddles (IMTP)	#15	347,000	291	94.7
	#25	135,000	230	96.7
	#40	51,400	150	97.3
	#50	14,700	96	97.8
	#60	8,700	85	98.3
	#70	4,600	60	98.1

COLUMN PACKING

DESCRIPTION	SIZE (INCH)	PIECES (PCS/M3)	SURFACE AREA (M2/ M3)	FREE SPACE (%)
Plastics Super Saddles	1"	58,300	207	91
	2"	7,800	108	93
	3"	1,520	189	94
Ceramic Saddles	1/4"	4,144,000	980	63
	1/2"	731,000	621	68
	3/4"	229,500	333	70
	1"	84,200	256	71
	1-1/2"	25,000	194	75
	2"	9,400	117	79
	3"	1,180	92	80
Ceramic Super Saddle	1"	52,600	253	79
	2"	6,400	105	81
	3"	1,100	55	82
Ceramic Berl Saddles	1/2"	572,000	466	62
	1"	77,000	249	68
Metal Structured Packing	1S	267/Layer	312.3	95.2
	2S	282/Layer	214.1	96.8
	3S	273/Layer	170.2	97.3
Ceramic Cross Ring	4"	1160	87.8	51.5
	6"	340	108.6	48.7

DATA FOR PACKING MATERIAL (PLASTIC)

Material	Max. Continuous Operating Temp.	Specific Gravity
Polypropylene	104	0.91
* LTHA P.P	127	0.97
PVC	66	1.46
C-PVC	85	1.55
PVDF1	143	1.77
ETFE	149	1.7
PFA	250	2.12

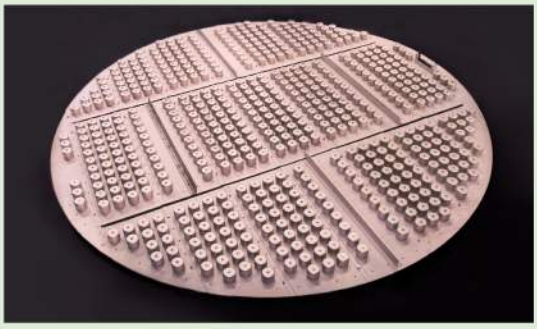
* (10% glass reinforced)

STRUCTURED PACKING

WIRE GAUZE PACKING

INSTALLATION

COLUMN TRAY

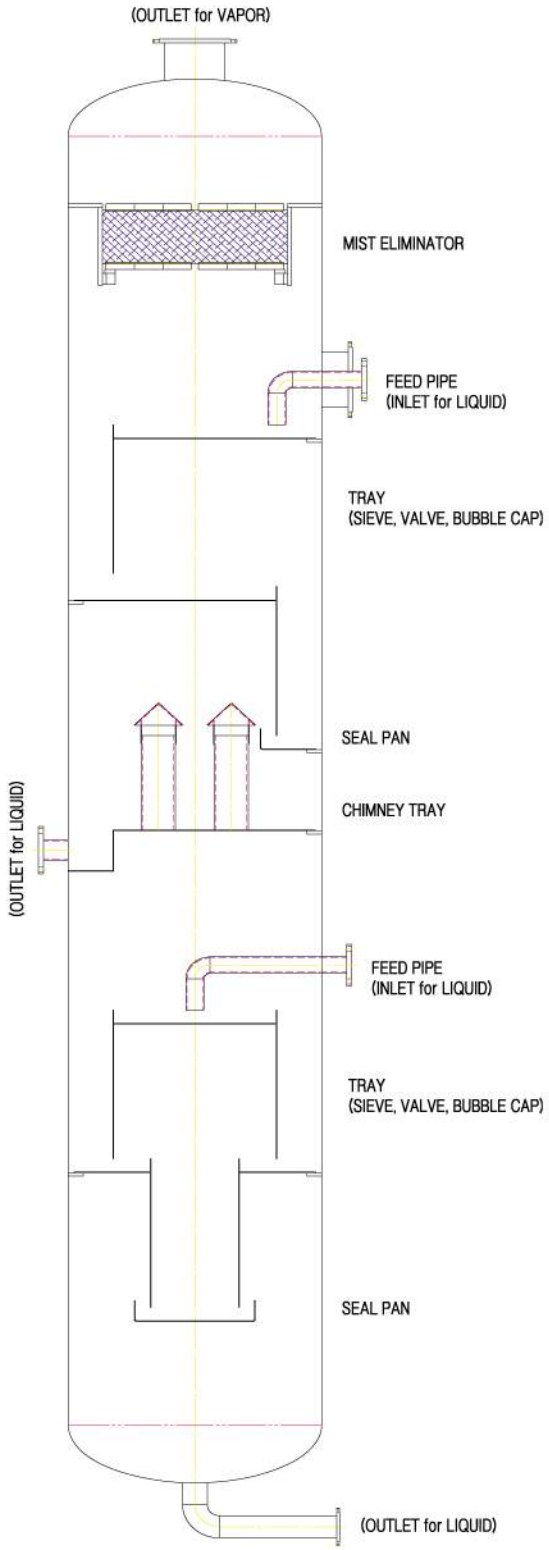


BUBBLE CAP TRAY

VALVE CAP UNIT

SOLVAY SIEVE TRAY

CARTRIDGE TYPE TRAY



COLUMN TRAY

BUBBLE CAP TRAY

The operating range of this tray, the oldest one in history, covering 10:1 is so wide that one can operate it very eas Also if this tray is sealed completely without weeping, it's duration period can be lengethed along with sufficnet hydraulic head, enabilng it to be operated with a hgh contact efficiency. It is also recommended for operating a column with a wide operating range at a low load condition.
Becasue of its structual particulars, it needs to be of bigger diameter than any other trays for treating vapor of same quantity, In other word, its capacity is comparatively small, its pressure drop is high and its maintenance cost is high

BUBBLE CAP TRAY

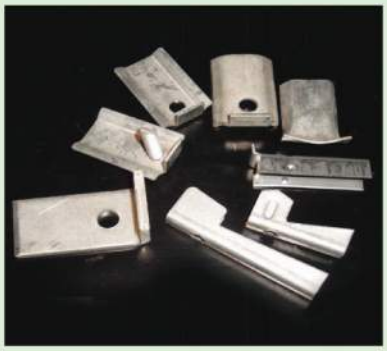
SIEVE TRAY

Developed in 1950th, this tray has a less capacity but higher efficiency than the bubble cap tray.
Its capicity is similar to the valve tray. As its pressure drop is lower than other trays, it can be used for the vacumm tower. In case of liquid with bad fouling, one can resolve the fouling problem with a hole of 3/4" ~1".
Because of its simple structure, it does not need a big investment at the early stage.
This tray has some demerits. its operating range is small(2:1), its efficiency is decreased in case of weeping and it may face with severe vibration when operated for low vapor.
As the space of this tray is not big enough for safe opration, one should be aware of any load changes of liquid and vapor.

SIEVE TRAY

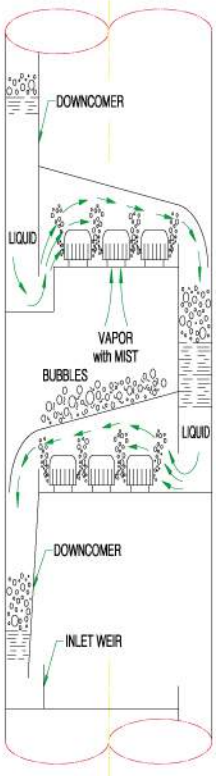
VALVE TRAY

This is the tray most favorite to its users these days. Developed to improve the samll operating range of the sieve Tray.
this valve has its operating range covering 7:1. Compared to the sieve tray, it is made of higer efficency, lower pressur drop. Its capacity is bigger than any others and its cost is less expensive than the bubble cap tray.
As its demerits , it could face with plugging and thereafter, very difficlut to be cleaned.

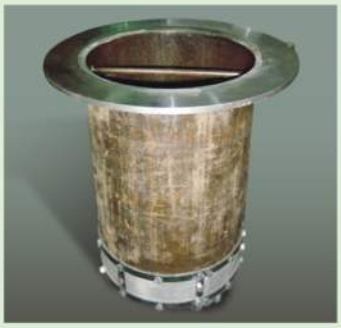


ACCESSORY (CLAMP)

PVDF BUBBLE CAP



REACTOR INTERNALS



TOP DISTRIBUTOR

SCALE BASKET

CATALYST SUPPORT GRID

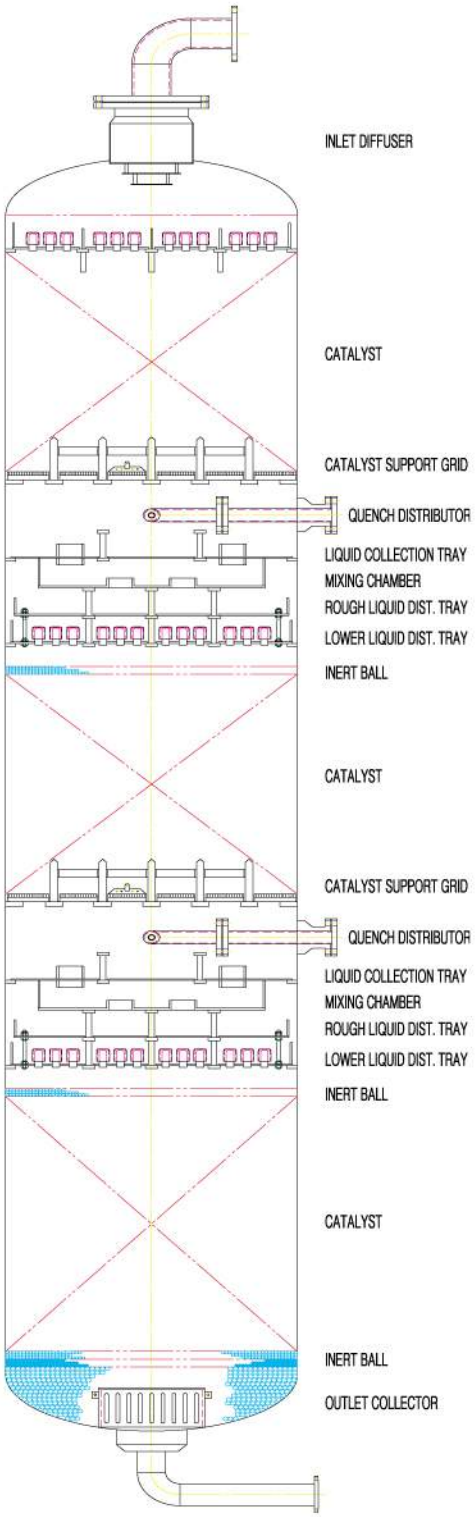
OUTLET COLLECTOR (PROFILE WIRE)

CERAMIC FIBER PLUG

OUTLET COLLECTOR (WIRE MESH TYPE)

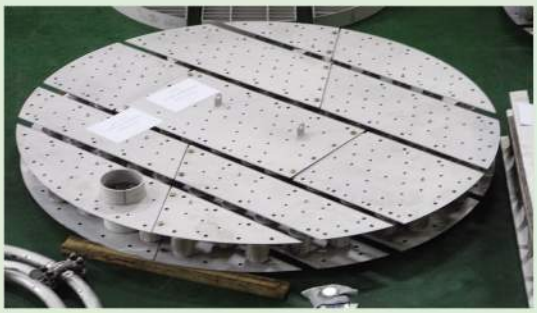
PROFILE WIRE SCREEN

FEED DISTRIBUTOR

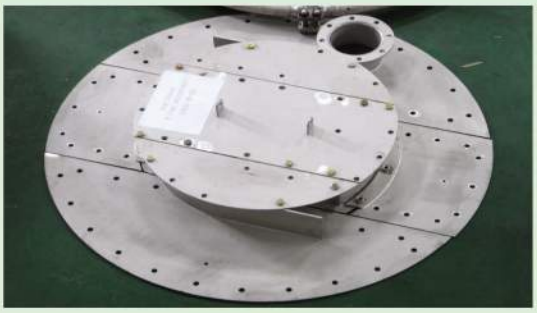


REACTOR INTERNALS

REACTOR INTERNAKS

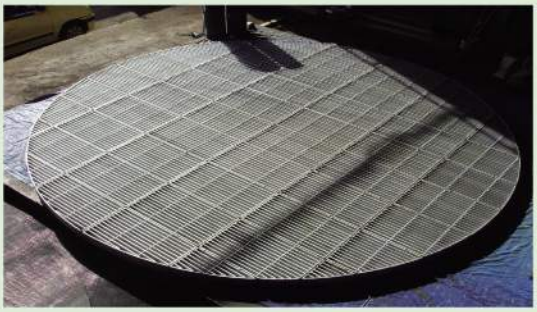


ROUGH LIQ. & LOWER LIQ. DISTRIBUTOR TRAY



MIXING CHAMBER

QUENCH DISTRIBUTOR RING



SUPPORT GRID(GRATING TYPE)

DISTRIBUTOR TRAY

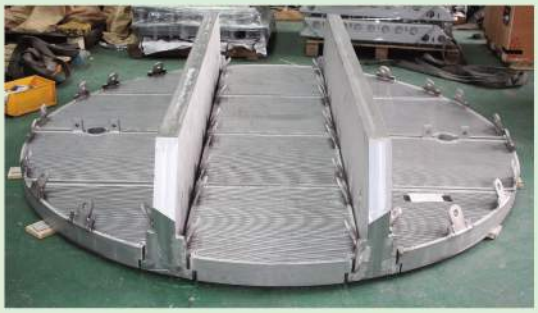
OUTLET COLLECTOR

OUTLET COLLECTOR

REACTOR INTERNALS

QUENCH TRAY / HD TRAY

SCALE CATCHING TRAY / HD TRAY



CATALYST SUPPORT (VEE WIRE TYPE)

FILTER TRAY / HD TRAY

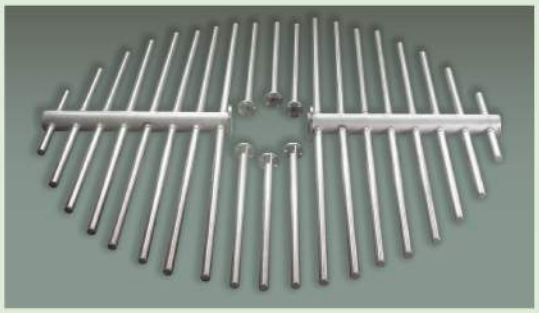
CATALYST SUPPORT (VEE WIRE TYPE)

LIQUID COLLECTOR TRAY

SPRAY DISTRIBUTOR

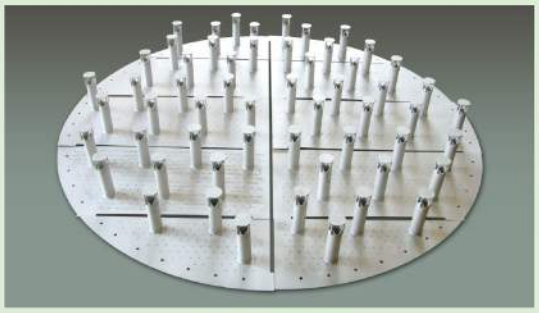
DISTRIBUTOR TRAY

REACTOR INTERNALS

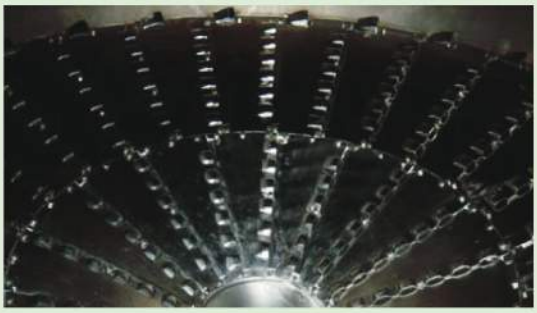


LADDER TYPE DISTRIBUTOR

DISTRIBUTOR



DISTRIBUTOR TRAY



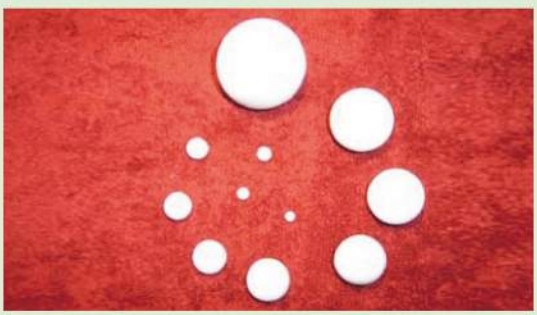
VAPOR DISTRIBUTOR

INERT BALL

Tipical Properties of Ceramic Ball and Alumina Ball

Model No.	Sphere Size	Crush Strength (Kg)	Bulk Density (kg/m³)	Al_2O_3 (%)	SiO_2 (%)
JET - 19	1/4" 1"	73 795	1344	19	74
JET - 24	1/4" 1"	55 635	1440	24	67
JET - 99	1/4" 1"	75 500	1712	>99	<0.2
Size : 1/16", 1/8", 1/4", 3/8", 1/2", 5/8", 1", 1-1/2", 2"					

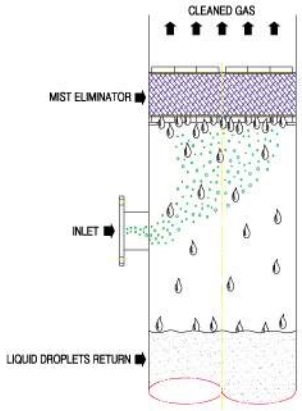
CERAMIC BALL

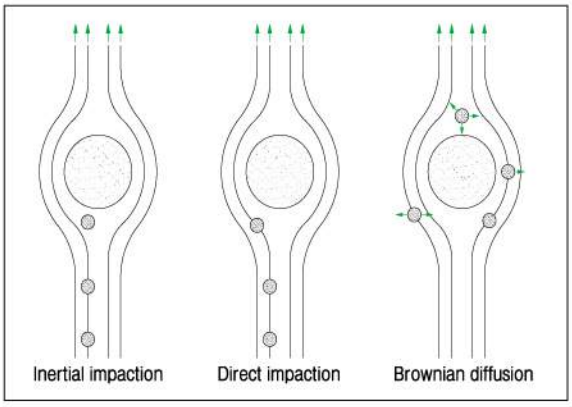


ALUMINA BALL

SEPARATION SYSTEM

CRINKLED WIRE MESH TYPE MIST ELIMINATOR





DESIGN PARAMETERS

$V = K\sqrt{(\rho_L - \rho_V) / \rho_V}$

V : DESIGN VELOCITY (m/sec)

K : CAPACITY FACTOR (m/sec)

ρ_L : LIQUID DENSITY (Kg/m^3)

ρ_V : VAPOR DENSITY (Kg/m^3)

How Mesh Type Mist Eliminator Work

When vapor and entrained liquid pass the Mist eliminmator pad, the liquid droplets from the gas stream contact the wire surfaces and stick there and grows unit it can not be held there because of its size, and fall off. In the mean time the vapor goes through the Mist eliminator pad is pure, containing no liquid, no dirt and no dust.

DEMISTER(MONEL-400)

DEMISTER

- Vacuum Tower
- Absorber
- Knock-Out Drums
- Gas Seperator vessel
- Compressor Suction Drums
- Evaporator
- Scrubber
- Distallation Column
- Concentrators
- Dust Collectors

STYLE	DENSITY	SURFACE AREA	VOID SPACE	OTHER COMPANY STYLE				
	kg/m3	m2/m3	%	YORK	NIHON MESH	UOP TYPE	ACS	VICO TEX
JET-80	80	158	99.0	931	H	B	7CA	160
JET-120	120	210	98.5	631	L	-	-	-
JET-128	128	460	98.4	326	SN	-	3BF	415
JET-144	144	280	98.2	431	N	A	4CA	280
JET-192	192	375	97.6	421	SL	C	4BA	380
JET-300	300	575	96.2	346	SM	-	-	-
JET-390	390	750	95.0	-	SH	-	-	-
JET-220	220	905	97.2	-	T	-	-	-
JET-330	330	1395	95.8		ST			
JET-432	432	1780	94.5	333	R	-	X100	800
JET-220	220	428	97.2	-	W	-	-	-
JET-GS	160	5000	94.0	371	GS	-	-	-
JET-117N	117	213	98.5	483	-	G	-	-
JET-64T	64.1	410	97.0	221	-	-	8T	-
JET-64P	64.1	492	97.0	241	-	-	8P	-

JET-80 Style
A popular, improved construction which proviedes for high throughput capacity and low solids retention.
Used for good separation efficiency with viscous or dirty liquids, and permit higher than average vapor velocities.
A low cost style used 6" thick or more.

JET-128 Style
An ultra efficient style preferred for use with fine particle entrainment for the maximum degree of separation.
Recommened for producing high purity condensate in boiler feed water use, for radioglycols, amines, etc.
Generally used 4" ~ 12" thick depending upon performance requirements..

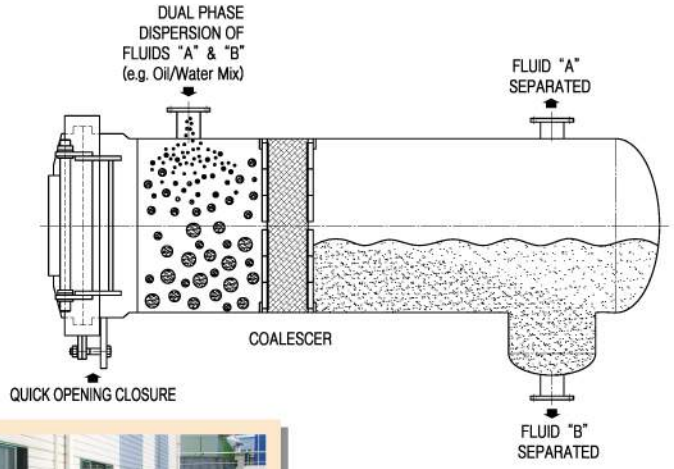
JET-144 Style
A good, all around style for effient performance.
Gives excellent servie in distillation towers, evaporators, scrubbers, compressor suction drums, etc.
Usually used 4" ~ 6" thick or thicker for higher performance requirements.
In case 5 ~ 8 micron particle size , velocity 1 ~ 5m/sec, effiency 98 ~ 99%

JET-192 Style
A heavy duty, high efficiency style used where entrainment must be reduced to an insignificant quantity.
Has high hydraulic shock capacity, and is recommended for heavy entrainment loading.
Often used 4" thick; greater thickness may be used where higher sepation efficiency is required, or for wide fluctuations in the vapor rate.
In case below 3 micron particle size , velocity 1 ~ 6m/sec, effiency 95 ~ 98%

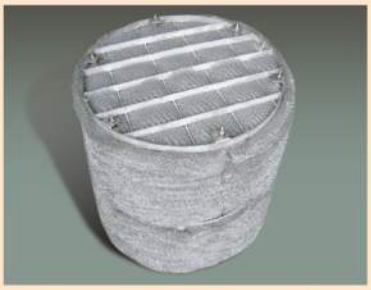
Pressure Drop
The pressure drop due to an applications of wire mesh type mist eliminator is usa negligible, ranging from less than2.54mm to 25.4mm water gauge, depending on the combined vapor and liquied loading.
However, in case of the pad's thickness is greater than 6" and fiberous material, it may increase to 50 ~ 75mm water gauge.

COALESCER

Liquid / Liquid Separation



Heavy Phase Outlet

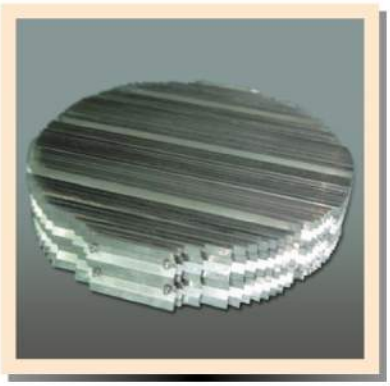


COALESCER MEDLA (METAL)

COALESCER MEDLA (NYLON, PP, FIBER GLASS)

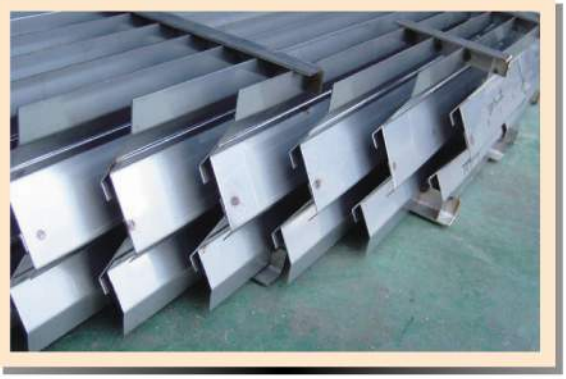
SEPARATION SYSTEM

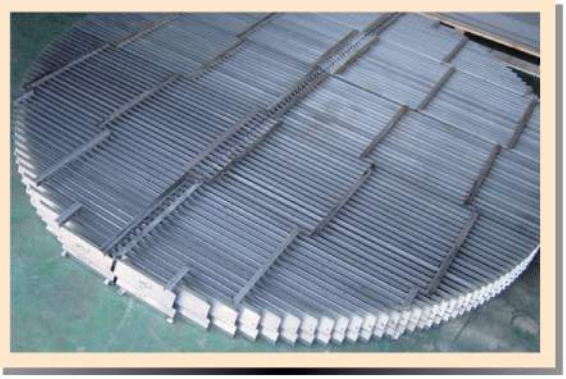
CHEVRON TYPE MIST ELIMINATOR



How Chevron Mist Eliminators Work

Gases with entrained liquid droplets flow between the zig-zag baffles. The gas can easily make the turns while the liquid droplets impinge upon the walls of the baffles and coalesce to a size such that they drop downward, being too heavy to be carried in the gas.

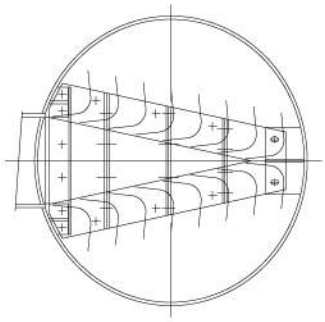


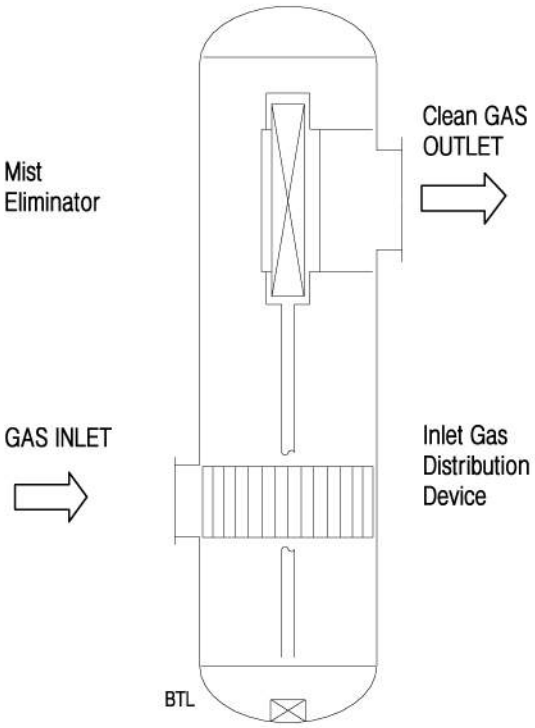


Material

Stainless Steel (304, 304L, 316, 316L, 410)
Alloy (Monel, Titanium, Hastelloy, Ni, Alloy-20)
Plastics (P.P, P.E, ABS, Compouned P.P, PVC, PVDF)

INLET GAS DISTRIBUTION DEVICE





OTHER PARTS

GAS DISTRIBUTOR (24T×3Ø)

SHOWER PIPE

CYCLONE

FILLER

OTHER PARTS

WIRE MESH

BUCKET STRAINER

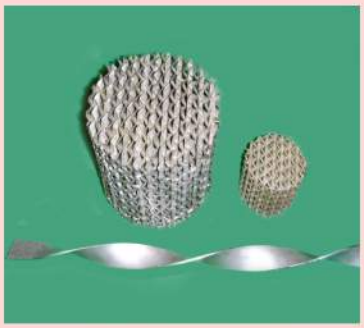
STEAM EJECTOR

SILENCER

STRAINER ELEMENT

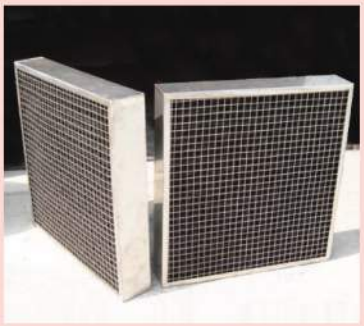
VORTEX BREAKER

FERRULE



STATIC MIXER (LIQUID)

HEXAGONAL MESH



AIR FILTER

STATIC MIXER (VAPOR)

OTHER PARTS

ROD BAFFLE

ROD BAFFLE

SPRAY DISTRIBUTOR

BURNER

FEED DISTRIBUTOR

SEAL STRIP

LOUVER (CHEVRON / SARAN FILTER TYPE)

CYCLONE (STEAM DRUM)

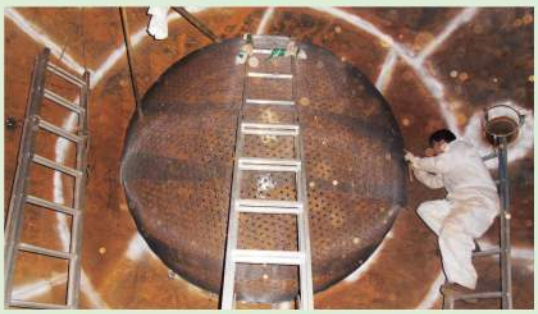
FIELD SERVICE INSTALLATION WORK AND SUPERVISION

CATALYST CHARGE WORKS

CHIMNEY TRAY

SIEVE TRAY

SIEVE TRAY(SOLVAY)

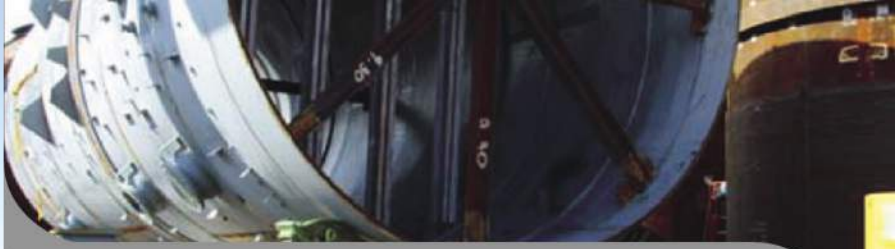


OUTLET COLLECTOR

DISTRIBUTOR TRAY

ANGLE TRAY (WELDED TYPE)

DOUGHNUT TRAY(CARTRIDGE TYPE)



FIELD SERVICE

INSTALLATION WORK AND SUPERVISION

• Tray • Packed Tower • Reactor • DEMISTER

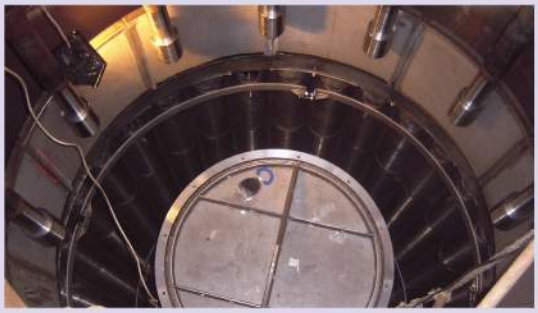
DEMISTER

CARTRIDGE TRAY

PACKING

CHIMNEY TRAY

VALVE TRAY



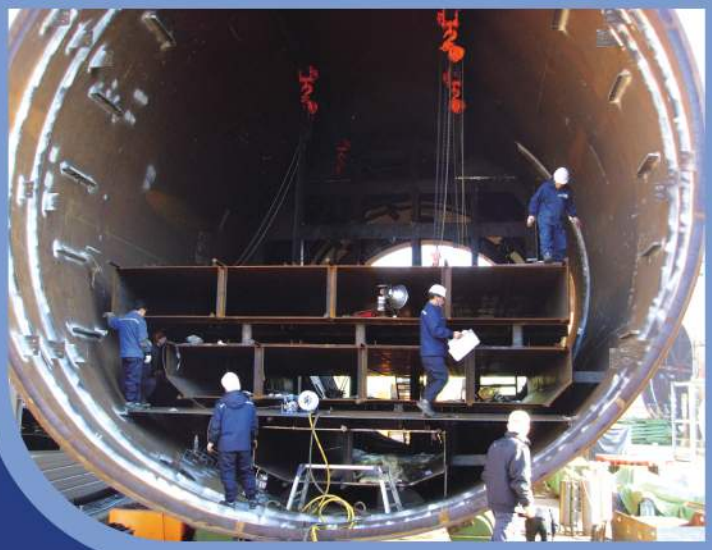
SCALLOP

DISTRIBUTOR

FEED PIPE

▲ SETTLER

CHIMNEY TRAY ▼



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