

MULTI COLUMN DISTILLATION :**Description:**

Multi Column Distillation Plant available from 80 ltrs. / hr. to 1500 ltrs. / hr. capacity produces 100% pure, pyrogen free, sterile distillate at unmatched low operational cost which confirms to Pharmacopoeia standards for WFI. All contact parts are made out of S.S. 316/316L and all the tubes are seamless.

Salient Features:

- Pure sterile, pyrogen free distilled water.
- Compact space saving design.
- High operational reliability.
- Meets GMP & FDA norms.
- Easy and silent operation.
- Excellent energy efficient.
- Easy to maintain and operate.
- Fully automatic operation*
- High degree of finish.
- Auto dumping of sub-standard distillate.*
- Special sanitary fittings.

Operation :

Multi-Stage distillation is use of a number of water evaporators arranged in series with stepwise reducing temperature and pressure conditions.

The system works on the principle of inter stage heat exchange and use intrinsic heat to supplement consumption need of heating energy and cooling water.

Due to surface film evaporation, a part of the feed water on the inside of the heat exchange tubes is converted to steam.

A controlled amount passes through the column which results in rapid cooling of boiler steam (external source) thus creating vapors at high velocity under pressure. Because of centrifugal force, the vapors rising through the entrained section are subjected to a 180° turn.

The pure vapor rises upward through a vertical section outside the heat exchanger (inner column) due to spiral motion. The unique centrifugal separation removes impurities such as pyrogens and endotoxins which flow out as they are blown down. The purified steam then moves towards upper end of the column. Condensing vapor from the previous stage is used as the heat source for the next. Since system needs heat to vaporize only 30% of the feed water, heating energy requirement is reduced by 70%.

Technical Details :**Distillate:**

Meets I.P. / B.P. Specifications.

Temperature : 95°C

Conductivity : Less than 1 Microsiemen /cm.



Feed Water :

De-ionised water with max. conductivity of 5 Microsiemens/cm.
5 Microsiemens /cm.
Pressure : 1 Kg/cm² higher than the infeed steam pressure.
Temperature : ambient.

Cooling water :

Normal tap water
Hardness: less than 90 PPM of CaCO₃.
Temperature : ambient.

Steam :

Saturated, dry free from oil and other impurities.
Pressure : minimum 3 Kg/cm²

Electricals :

Main supply : A. C. 415V, 3 phase, 50 cycles. Max. load - 5 KW.

Scope of Supply :

- Multi stage " Grundfos" make feed pump made out of S.S. 316 (Max. pressure : 10 Kg. /Cm²).
- Stainless steel centrifugal pump for cooling water.
- S.S.316 surge tank with float valve and low level controller.
- S.S. filter with S.S. housing for feed water.
- Pressure reducing calves and safety valve for higher capacity models.
- S.S. 316 dumping valve.

Consumption Data :

MCDP Model	Distilled water Output Ltr / hr.				Steam Consumption Kg/ hr.				D. M. Water Consumption (Feed Water) Ltr/hr				Cooling Water Consumption Ltr / hr				Dimension in mm		
Ltrs / Columns	Steam Pressure Kg / cm ²				Steam Pressure Kg / cm ²				Steam Pressure Kg / cm ²				Steam Pressure Kg / cm ²				L	W	H
	3	4	5	6	3	4	5	6	3	4	5	6	3	4	5	6			
80/4	80	90	105	120	40	45	50	58	95	104	130	140	100	120	140	160	1000	600	1950
150/4	150	180	200	230	50	60	70	80	171	206	240	265	170	200	245	270	1880	870	3030
300/4	300	350	400	450	98	121	145	165	345	415	485	530	300	380	400	460	1980	975	3050
500/5	500	600	700	760	130	160	192	220	575	695	795	890	580	700	800	910	2630	975	3960
1000/5	1000	1200	1400	1600	240	300	355	455	1150	1390	1600	1955	1280	1570	1780	1970	3025	2500	3975

Note : Images Shown here are illustrative. As the design & manufacturing of Machines are subject to improvement, the product supplied will be as per our Techno-Commercial offer.