CHEMION ENGINEERING

AN ISO 9001:2015 CERTIFIED COMPANY

"TWIN RAPID"

FULLY AUTOMATIC DEMINERALISER

CHEMiON™

Efficient water for you

“TWIN RAPID”DM PLANT“

OUR UNIQUE DESIGN..

- ✓ Skid-Mounted, Pre-Commissioned
- ✓ Low installation costs
- ✓ Minimal start-up time
- ✓ Small footprint
- ✓ 100% Corrosion free FRP skid

“TWIN RAPID” –UNIQUE FEATURES

- Maximized production time
- Reduced treated water storage costs
- Enhanced bacterial control
- Minimizes waste handling
- Short regeneration (30–35mins)
- Acid & Alkali proof tiling for drain not required.
- PLC Controlled with "TOUCH SCREEN”
- Flow rate starts from 1.75 m3/hr up to 35m3/hr

WE ALSO HAVE-”TWIN RAPID”-HQ

- Integrated polishing unit
- USP conductivity requirements
- PRINT OUT FACILITY FOR AUTOMATIC PRINTING OF WATER ,QUALITY, FLOW ,AND VOLUME etc
- 100% recirculation of water during no demand to avoid stagnancy.

EFFECTUALNESS

- Counter-Current Regeneration
- Low operating costs
- Consistent water quality
- Conductivity < 1.3µS/cm
- Highly efficient use of chemicals
- Low waste water generation
- Low Maintenance

MECHANICAL FEATURES

- 100% CORROSSION FREE FRP SKID
- HIGH QUALITY CORROSION RESISTANT IMPORTED UPVC PIPING, FITTINGS FOR LEAK PROOF PERFORMANCE
- MAINTENANCE FREE PNEUMATICALLY OPERATED VALVES
- INTEGRATED CONTROL PANEL EPOXY COATED TO IP-54
- HIGH QUALITY SS 316 VERTICAL GRUNDFOS PROCESS PUMP

“TWIN RAPID”- CONTROL SYSTEM

OUR CONTROL SYSTEM CONTAINS

- IP-54 POWDER COATED M.S CABINET/SS 304 CABINET
- MAINS ON/OFF SWITCH
- PLC WITH TOUCH SCREEN
- COMPACT 24 V DC PENUMATIC SOLENOID BANK WITH MANUAL OVER RIDE
- ONLINE CONDUCTIVITY SENSOR WITH 4-20mA OUTPUT
- OPTIONAL PRINTOUT FACILITY
- PASSWORD PROTECTED PARAMETER SETTINGS
- ALARM HISTORY
- HOOTER

“TWIN RAPID” RANGE

Model -TWIN RAPID	TR 1+	TR 2+	TR 3+	TR 4+	TR 5+	TR 6+	TR 7+	TR 8+
Max Flow (m3/h)	2.25	3.75	5.25	7.5	12.00	16.00	25.00	35.00
TREATED WATER QUALITY								
Conductivity (µS/cm)	1-.01	1-0.1	1-0.1	1-0.1	1-0.1	1-0.1	1-0.1	1-0.1
Resistivity (MΩ-cm)	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
pH	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7
CAPACITY DATA								
Output/Regeneration(m3) (100 PPM Total Anions as CaCo3 inc SiO2)	14	21	28	35	63	84	155	192
REGENERATION DATA								
Regeneration Time (approx) (min)	35	35	35	35	35	35	35	35
Chemicals Per Regeneration								
32% Hydrocloric Acid (ltrs)	7.4	11	14.8	18.4	33.2	44.2	85	109
32% Sodium Hydroxide (ltrs)	6.9	10.4	13.9	17.3	31.3	41.6	87	111
Effluent Volume Per Regeneration (m3)	0.48	0.82	1.04	1.22	2.1	2.75	5.3	6.8
Max. effluent Flow (m3/h)	2.5	4.4	5	6.5	11.2	14.6	18.25	25.5
Bulk effluent pH	6 TO 8	6 TO 8	6 TO 8	6 TO 8	6 TO 8	6 TO 8	6 TO 8	6 TO 8
Feed Water Data Supply Quality	Suitable Portable water free from suspended solids, max temp 40°C							
Inlet/outlet Connections (Pvc Socket union) (mm)	32/25	40/32	50/32	50/40	80/50	80/50	100/80	100/80
drain Connections (mm)	20	25	32	32	40	50	80	80
ELECTRICAL DATA								
Supply 415 V 3PH 50HZ								
Power Consumption (kw)	1.5	1.5	2.2	3	5.5	5.5	7.5	11
Air Supply Data								
Min./Max Pressure (bar)	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5
DIMENSIONS								
Width (mm)	1600	1600	1700	1700	2080	2080	3500	3500
Height(mm)	2000	2000	2100	2100	2500	2500	3000	3000
Depth (mm)	900	900	950	950	1300	1300	2000	2000
Headroom Required (mm)	1000	1000	1000	1000	1000	1000	1000	1000
WEIGHTs (Approx)								
Delivered Wt. (kg)	475	500	1000	1000	1100	1300	1500	1600
Working Wt. (kg)	625	725	1350	1450	1850	2050	2700	3000

COMPARISION …

FULLY AUTO "TWIN RAPID" D.M.PLANT	CONVENTIONAL MANUAL ONCE A DAY REGENERATION D.M.PLANT
Very little manpower attention required for the operation of the plant.	Full-fledged team of man power required for operation.(1 Unskilled+1 Operator + 1 Supervisor per shift). No of valves to be operated 27.
Premium grade resin will give longer service life.	Conventional heterogeneous resin is having shorter life
Resin replacement cost is low	Resin replacement cost is very high
Service cycle minimum 3 hours and hence can handle higher feed water ionic load. Can operate 24 hours continuously and practically you can go for 6 regenerations per day to meet your increased water need.	Service cycle minimum 8 hours and hence cannot handle higher ionic load without compromising on flow rate and output per regeneration.
Maintenance is very easy since composite FRP vessels are used.	Vessels are difficult to open, require platform and ladder, takes longer time for maintenance.
Smaller vessels are easier to maintain and smaller quantity of resin is easy to remove	Heavy vessels, requires special material handling equipments during maintenance.
Mixed bed quality of water without a mixed bed unit. Cumbersome MB operation is totally eliminated.	Mixed bed unit is required.
On start-stop of the plant, water is recirculated internally till the quality is achieved. Thus water savings achieved.	Unit has to be drained for 10-15 minutes till the conductivity is achieved resulting in wastage of water.
Regeneration time is 35-45 minutes maximum.	Regeneration time is 5 hours minimum. (3 hours for CA and 2 hours for MB but practically it can go up to 6-8 hours.)
During regeneration the final rinse water is recirculated within the plant to save water.	Final rinse water is drained.

Waste water generation per regeneration is Very less.	Effluent generation will be approx 14 times higher. This is as per the recommended procedure. However practically the effluent generated is much more since it is operator dependent.
Waste water is self neutralising and hence no need for acid/ alkali proof lining for drain, no additional capital investment for neutralisation sump and thus no need for pH controller, dosing pumps etc.	Additional capital investment required to the tune of 2.5-3.0 lakhs. Chemicals required for neutralisation is difficult to calculate at this stage and hence cannot be quantified.
No civil work required.	Plant requires foundation, drain sump etc. Additional civil cost Rs.0.75 L
D.M water storage capacity required is 1 hour capacity. Savings in space and investment can be justified only when the consumption of treated water is continuous and can be as high as 60-70% of a manual plant.	D.M water storage capacity required is 3-5 hour capacity.
Other intangible benefits are listed below. Space occupied by the plant is very less.	
➢ Labour cost negligible.	3 people per shift.
➢ Lower waste water generation and hence savings in raw water pumping and treatment cost.	No benefit.
➢ Lower waste water generation and hence hydraulic and chemical loading on the ETP is less. Lesser pumping cost in to ETP. Safe operation of ETP.	No benefit.
➢ Lesser chemical consumption means lesser TDS in effluent and hence **easy to meet pollution regulation.**	No benefit.

ENQUIRY?... CONTACT US

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