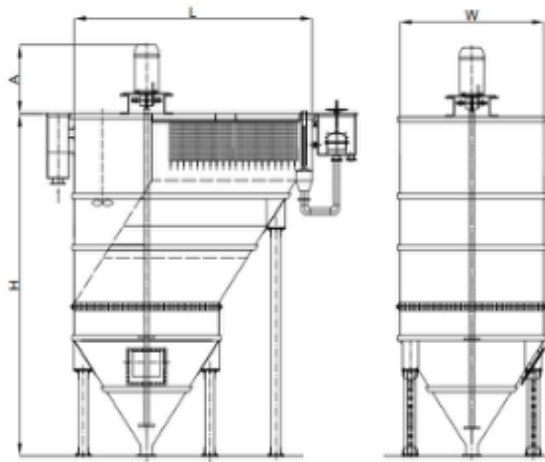


MICRO PLATE SETTLER

Model MP-S



Dimensions:

Model	H mm	L mm	W mm	A mm	Total Volume m ³	Sludge Volume m ³	Flocculator Volume m ³	Weight Empty kg
MP-S 15	4 785	2 640	1 345	1 800	8.1	1.1	0.8	2 290
MP-S 30	5 600	3 430	1 830	1 800	15.4	2.3	0.8	4 146
MP-S 50	5 950	3 865	2 230	1 800	24.2	4.2	2.0	5 546
MP-S 100	6 700	4 510	2 870	1 800	41.6	9.4	3.0	8 702
MP-S 150	7 250	5 540	3 100	1 800	58.6	14.5	4.0	11 909
MP-S 200	7 800	5 740	3 690	1 800	75.7	18.8	5.0	14 740
MP-S 350	9 400	6 910	4 500	2 000	136.8	47.8	7.0	26 161
MP-S 500	9 930	7 810	5 780	2 000	205.9	72.8	8.0	41 716

Weight including standard drive unit with lifting device and with flocculator agitator.
Empty weight has been taken on base model.

MICRO PLATE SETTLER

- Micro plate settlers are used for separation of liquid/water and solid suspension.
- Both recovered liquid and solid material can be re-used back in the process and process becomes cost saving.



- In Paper Industry, It is basically used to recover water and fiber from the **rich Machine back water/Deckers Filtrate/Wet Washing/ETP Water**.
- It can be used in **Food & Brewery, Textile, Sugar, Pharmaceutical etc**
- The recovered water can be re-used back into process which decreases the demand of fresh water and decreases the load on natural reservoirs.
- It decreases the fiber loss and makes it a cost saving process. **More Important reduces load on ETP.**
- SPIL'S Micro Plate settler has latest lamella design with latest technology.
- In India (Upgraded version) Micro Plate Settler is first time designed and manufactured by SPIL.
- SPIL Micro Plate Settler is economically designed and is import substitute saving the loss of foreign currency.

DESIGN

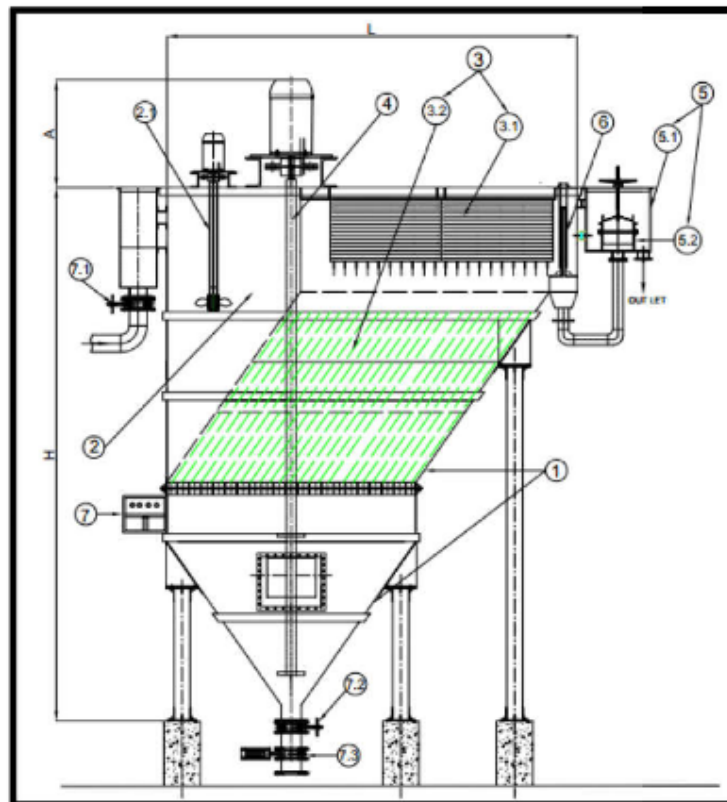
SPIL'S Micro Plate Settler:

- SPIL'S Micro Plate Settler is designed on the basis of latest lamella sedimentation & gravity technique.
- A cross flow passage is designed for liquid and solid flow.
- The inclined Plate is installed at specific angle subject to the application.
- Plates are made up of SS material.
- SPIL provides large entry plane for the fluid to enter in the MPS.
- MOC of the vessel is designed according to the fluid characteristics.
- SPIL'S MPS requires lesser space as compared to other.
- SPIL provides an economic MPS as compared to **DAF, Poly Disc Filter, Saveall & Clarifier etc.**

DESIGN

SPII'S Micro Plate Settler Components:

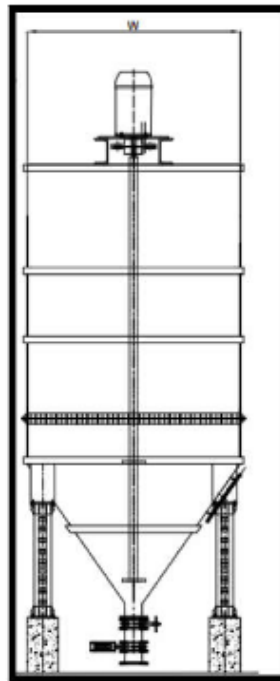
1. Main Body & Fibre/ Sludge Recovery Chamber
2. Flocculation Chamber
 - 2.1 Flocculation Chamber Agitator Assembly
3. Filtering Media
 - 3.1 Feed Duct Longitudinal Media/ Blade Separator cell
 - 3.2 Inclined Plate Media and Holding arrangement system
4. Sludge Chamber Agitator (Provision)
5. Adjustable Weir
 - 5.1 Outer Part
 - 5.2 Inner Part
6. Outlet Perforated Double Wall Pipes
7. Instrumentation & Control Panel
 - 7.1 Inlet Control Valve
 - 7.2 Manual Fibre/ Sludge Drain Valve
 - 7.3 Auto Fibre/ Sludge Drain Valve



WORKING

SPIL'S Micro Plate Settler:

- SPIL'S MPS works on the lamella sedimentation process. The fluid initially enters the flocculation chamber in a cross flow direction.
- In this chamber, flocs of suspended solids are formed by adding chemical so that efficient settling of solid can be achieved.
- After this fluid then passes through special type of inclined plates. In this area, solid/ flocs settled down and light flocs entrapped in feed duct longitudinally media, thin blade separation cell protects the escape of micro-flocs and rising sludge in the treated water and flocs goes back in settling zone at bottom by gravity. Clarified water is collected all across the Micro Plate Settler through perforated double wall pipes. Water level is maintained through external Adjustable weir. Suitable Flocculation aids are used to enhance efficiency of TSS removal.
- From sludge chamber and liquid collector, both sludge and liquid are reusable.



ADVANTAGES

SPIL'S Micro Plate Settler:

- Low Hydraulic retention times of only 30 min makes the unit very compact, light weight with high specific clarification. Volumetrically less than 1/5th size of Conventional Sedimentation Clarifier.
- SPIL'S MPS works on 90-97% efficiency.
- Low space requirement
- Low Retention Time eliminates chances of septicity of the fibre.
- Very low maintenance cost since there are no moving parts except Flocculation Chamber Agitator.
- Handles shock loads of flow without affecting effluent quality.
- Continuous operation without major down time.
- The cross flow fluid pattern provided by SPIL prevents the re-entrainment of solid particles in the carrier liquid which enhances the separation.
- Flocculation chamber has its own advantage. It helps in the separation of that suspended solids which have very less settling velocity and are smaller in size by making flocs.
- The inclination angle of plates almost covers the 50% of total projected area i.e. it provides the proper area for solids to suspend.
- By using maximum number of plates, it decreases the hydraulic dia, which in turn provides a laminar region. Max separation is always achieved in laminar region.
- Plates are made up of SS. So it provides a non sticky surface to the solids to flow, hence enhance the separation efficiency.

COMPARISON BETWEEN MICRO PLATE SETTLER / DISC FILTER/DAF

Description	Micro Plate Settler MP-S	Disc Filter	DAF
Application	To handle Paper Machine Back Water/ETP Water/ Wet Washing/Decker Water.	To handle Paper machine /Pulp Mill Excess Water	To handle paper machine excess water
Process	No Screen or Air is used, Unique Gravity Settling.	By Multiple stage screen.	By Flotation Air Dissolving system.
Power	2 – 5 HP (For Flow: 100 m3/hr).	50 HP (For Flow: 100 m3/hr).	70 HP (For Flow: 100 m3/hr).
Recovered Stock	Consistency is uniform throughout the operation.	Require thickener to maintain uniform consistency.	Consistency may vary with variation in air pressure & chemical dosing.
Outlet Consistency of Recovered fiber	3.0 – 4.0 %	3.0 – 4.0 %	2.0 – 3.0 %
Water Quality at outlet	Almost clear water (100%) with less than 100 ppm.	Water clarity in three streams 1) 55% clear water (100-250 ppm) 2) 20% cloudy water (400 ppm) 3) 25% super clear water (50-100 ppm)	Water with less than 100 ppm. No cloudy stream. Total outlet water clarity will be same.
Inlet Consistency	It can handle 0.1 to 0.7 %	It can handle 0.8 % (extra addition of sweetener for maintaining 0.8% consistency, If input consistency is 0.2- 0.3%)	It can handle 0.1 to 0.7 %
Installation	Installation is very easy (At ground level).	Required higher floor level of +10 m. And seal pit/chests are also required.	At Normal Floor. May be at 2-4.0 m height. Recovered fiber & clarified water are added directly to the chests by gravity.
Shower water	Not Required	Required- about 300 Lpm	Not Required
Chemical	Required for better results.	Not Required.	Required.
Consumable	No consumable (Media gives longer life), Almost zero maintenance.	Filter cloth need to be replaced.	No clothing required & ADT has to be changed
Installation Cost	Very Low cost	High cost	Low cost
Air Pressure	Not Required	Not Required	6 – 7.5 kg/cm2
Maintenance	Not Required or very less.	Required	Required
Man Power	Not Required	Required	Required
Advantage	All the fibre settles down and can be automatically (Pneumatic valve) recovered.	No sedimentation, Layer formation on membrane.	Sedimentation cum flotation.
Cost	Low Capital Cost	Very High Capital Cost	High Capital Cost