Internally-fed Rotary Drum Filter

Introduction

The internally fed rotary drum filter is a screening device designed for continuous solid-liquid separation. Wastewater or process flow is introduced and evenly distributed inside a rotating screening cylinder, where solids are captured on the screen surface while liquid passes through.
This technology is widely applied in municipal and industrial wastewater treatment for removing settleable and suspended solids. Beyond water treatment, internally fed rotary drum filters are also used across a range of industries, including:

- Food & Beverage – clarification of juices, wine, brewery wastewater
- Pulp & Paper – fibre recovery and white water treatment.
- Mining & Minerals – dewatering mineral slurries and separating fine particles.
- Chemical & Pharmaceutical – filtration of process slurries, catalysts, and pigments.

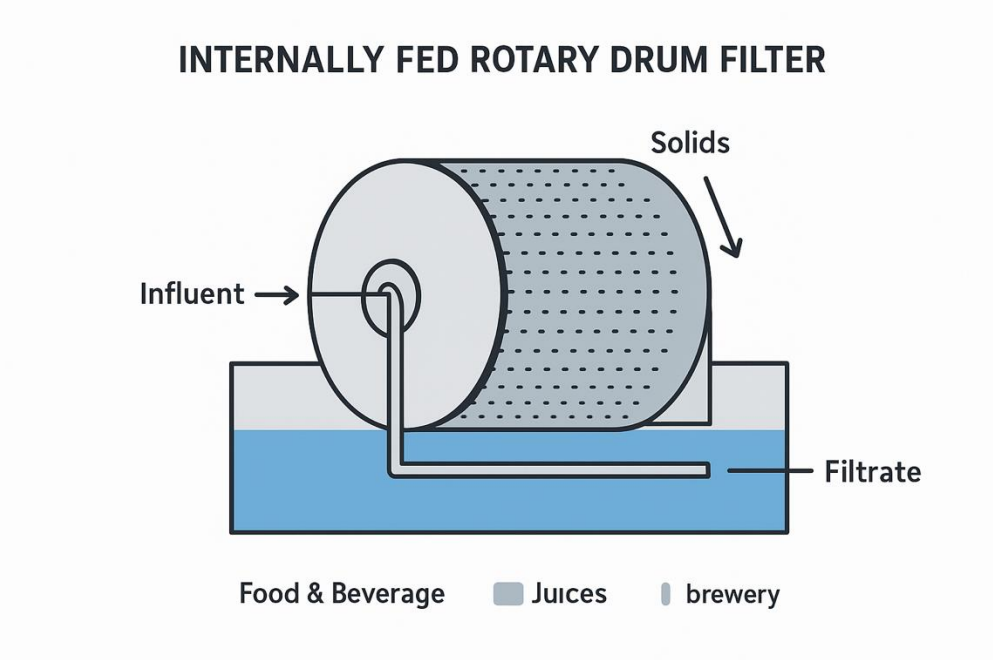
Advantages

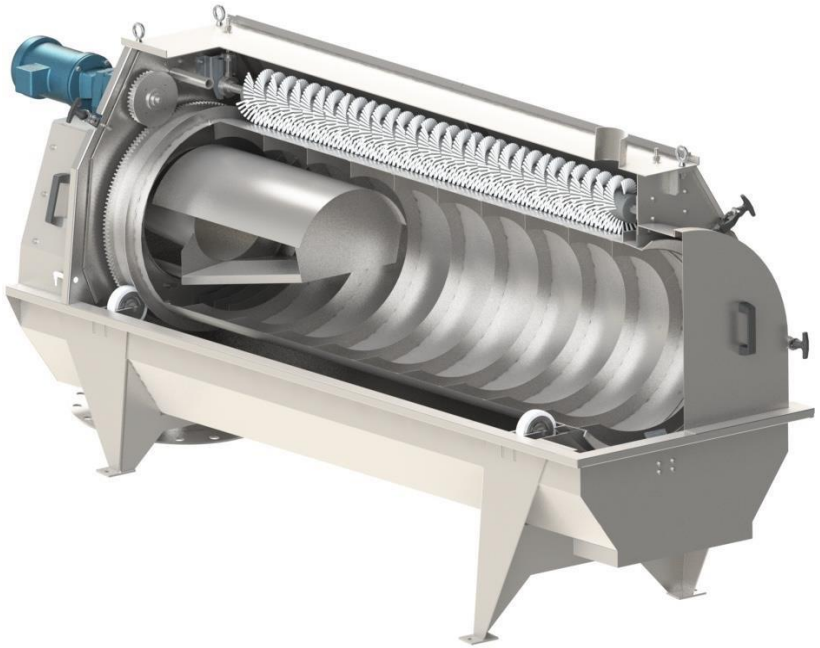
- Well-distributed water increase capacity.
- Simple structure, stable running, easy maintenance.
- Chain transmission ensures efficiency.
- Back-flushing prevents filter clogging.
- Spill-proof plates on sides avoid splashing water.

Working Principle

The **rotary drum filter** is a mechanical filtration system consisting of a drive unit, overflow weir distributor, rinse system, and stainless-steel wedge wire drum.

It is a reliable and efficient solution for removing solids from water. As water flows through the rotating drum, solids are captured and discharged, while clean water passes through. An automatic spray system keeps the filter clean, ensuring smooth and continuous operation.



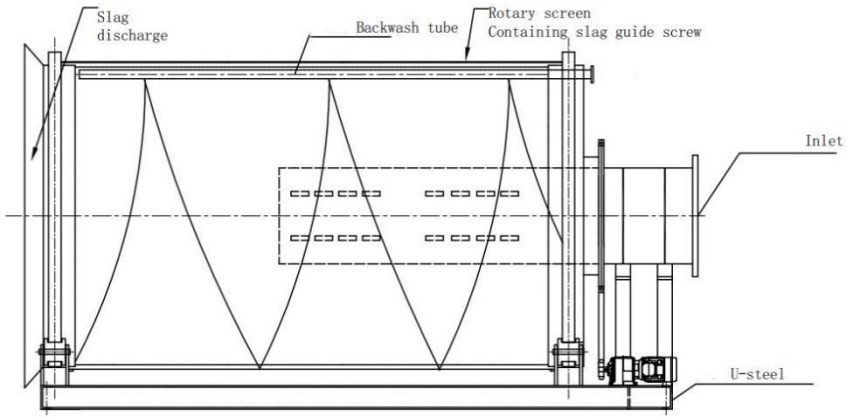


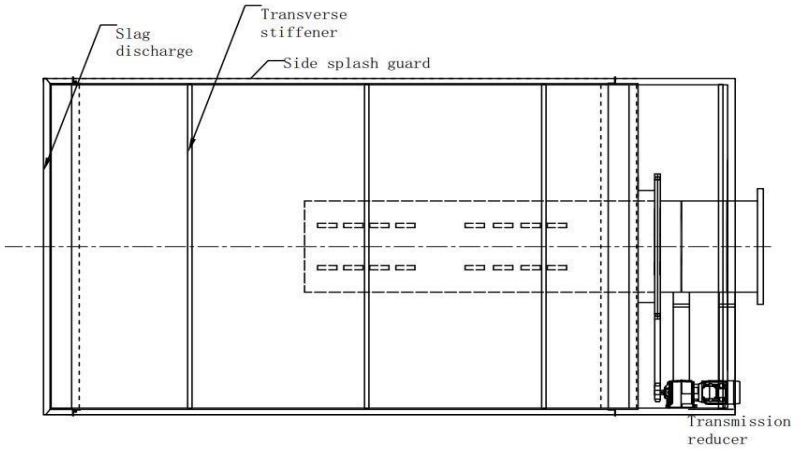
Model

Model	Drum dia (mm)	Slot size (mm)	Removal rate		Size (mm)
			Particle > 0.75mm	Particle > 0.37mm	
SP-600	600	0.2-2	95%	55%	2450x1000x960
SP-800	800				3000x1200x1200
SP-1000	1000				3400x1350x1250
SP-1200	1200				3500x1850x1450
SP-1500	1500				3650x1800x1880
SP-1800	1800				4800x2200x2300
SP-2000	2000				5500x2400x2500
S-2500	2500				7000x2800x3200

*Above parameters only for reference, customised available for detailed requirements

Schematic Diagram





Externally-fed Rotary Drum Filter

Introduction

The Externally Fed Drum Screen is designed for small to medium wastewater treatment plants and a variety of industrial applications, including food & beverage, pulp & paper, textiles, aquaculture, and chemical processing.

It removes 30–60% of organic and inorganic floating solids during pretreatment, significantly reducing the load on downstream processes and improving overall treatment efficiency

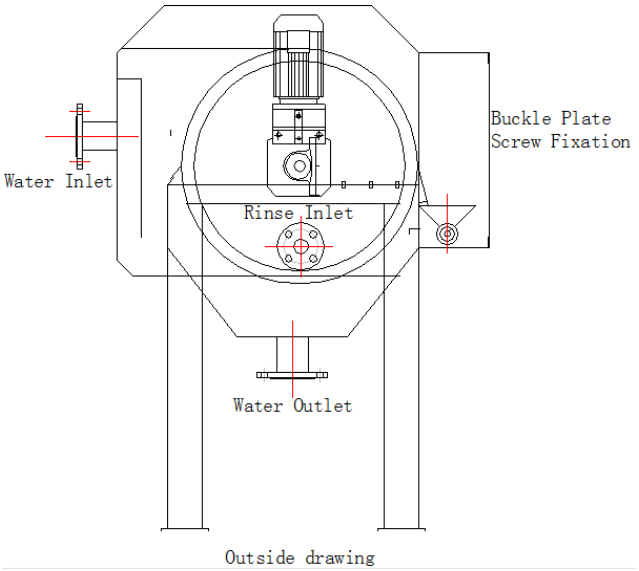
Working Principle

Sewage enters the tank through the inlet valve and rises above the filtering waterline via the buffer box clapboard. A speed-regulating motor, connected through a speed reducer to the drive shaft, rotates the cylinder. Purified water passes through the grid mesh slots at the bottom of the cylinder and flows out.

During this process, the grid mesh is simultaneously cleaned. Impurities and organic matter larger than the mesh slots are trapped and transferred to the opposite side of the grid. Finally, these collected solids are discharged into the slag hopper by the unloader.

Advantages

1. Material: stainless steel, corrosion resistance, compact structure and easy installation;
2. With the inverted trapezoidal section, the grid makes the slag not easy to jams mesh filters;
3. Adopted control motor, the externally fed rotary drum filter can maintain the best working condition according to the water flow;
4. Special flusher device can brush away a small amount of impurity on the surface of the grid mesh;
5. Compact structure, the smallest amount of space when the same amount of processing;
6. The drum surface is made of a moulded grid and has excellent hydraulic characteristics.



Outside drawing

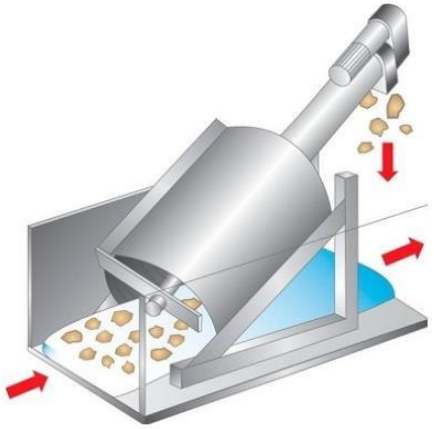
Model	QA-600	Rotating speed (r/min)	Power (Kw)	Backwash water	
				Flow rate (m^3/h)	Pressure (Mpa)
SPLW-600	600*1000	4-20r/min	0.75	2.5-3	≥0.4
SPLW -800	800*1200		1.1	2.5-3	≥0.4
SPLW 1000	1000*1400		1.5	3.5-4	≥0.4
SPLW -1200A	1200*1500		1.5	3.5-4	≥0.4
SPLW -1200B	1200*2000		2.2	4.5-5	≥0.4
SPLW-1500	1500*2000		3	4.5-5	≥0.4

Channel Rotary Drum Screen

Introduction

Channel Drum Screens are widely used in wastewater treatment of municipal wastewater, industrial wastewater, food processing, paper-making, etc.

This equipment can remove the scum, short fibre, and suspended solids from the water intake and then discharge them after pressing.



Operation

Solids within the incoming flow will enter the drum screen and progressively collect onto the screen mesh and causing it to gradually blind. The upstream water level will rise, and at a predetermined level, the drum screen and screw conveyor will activate and rotate, immersing a clean section of the screen into the effluent. During rotation, the solids or screenings will become inverted and then fall into the screw conveyor. Spray nozzles and a roller brush fixed to the drum screen's periphery will clean away any residual solids from the mesh surface. The screenings are conveyed, compacted, and dewatered. Depending upon the solid properties, a volume reduction of around 40% DS or greater can be achieved before disposing of the screenings into a skip or holding vessel. A jet wash facility in the compaction zone will break down and remove faecal and other semi-solid or soluble matter and return it to the inlet flow. Additional jets can be installed in the transport zone to meet higher specifications of organic solids removal. Faecal matter washing efficiencies greater than 90% and screenings weight reduction of 50% can be achieved. The compactor and wash system can be omitted to suit requirements such as CSO applications, where the screenings are returned to the downstream sewer.

Advantages

1. High quality and reliability at low cost;
2. Reduced disposal costs because of the screenings press;
3. High solids capture;
4. Easily installed onto an existing or new treatment works;
5. Non-clogging even with fibrous materials;
6. Protection of downstream plant and drains;
7. Improved Health & Safety with optional continuous bagging;
8. Enclosed drum screen to prevent wastewater splash.

Application

- Process liquor or fluid screening
- Municipal wastewater treatment works
- Industrial effluent discharges
- MBR Membrane pre-screening
- Commercial Outlet Discharges
- Storm Flows
- Sea Outfall Discharges

Model Selection

Model			SPCR-600	SPCR-800	SPCR-1000	SPCR-1200	SPCR-1400	SPCR-1600	SPCR-1800	SPCR-2000
Drum dia.			600	800	1000	1200	1400	1600	1800	2000
Standard mesh L			650	850	1000	1200	1400	1500	1650	1850
O.D. of conveying pipe			159	219	219	273	273	325	325	325
Highest water level H3			400	520	670	820	950	1100	1250	1350
Standard installation angle			35°							
Average channel depth H2			600-800	700-1000	900-1200	1100-1400	1200-1600	1400-1800	1600-2000	1800-2100
Average slag discharging depth H1			1000mm							
Min. Installation length A			3000	3300	3600	4000	4300	4700	5000	5300
Max. Flowrate (m^3/h)	slot	0.5	80	135	235	315	450	585	745	920
		1	125	215	370	505	720	950	1205	1495
		2	190	330	555	765	1095	1440	1830	2260
		3	230	400	680	935	1340	1760	2235	2755
		4	235	430	720	1010	1440	2050	2700	3340
		5	250	465	795	1105	1575	2200	2935	3600

Mechanical Bar Screen

Introduction

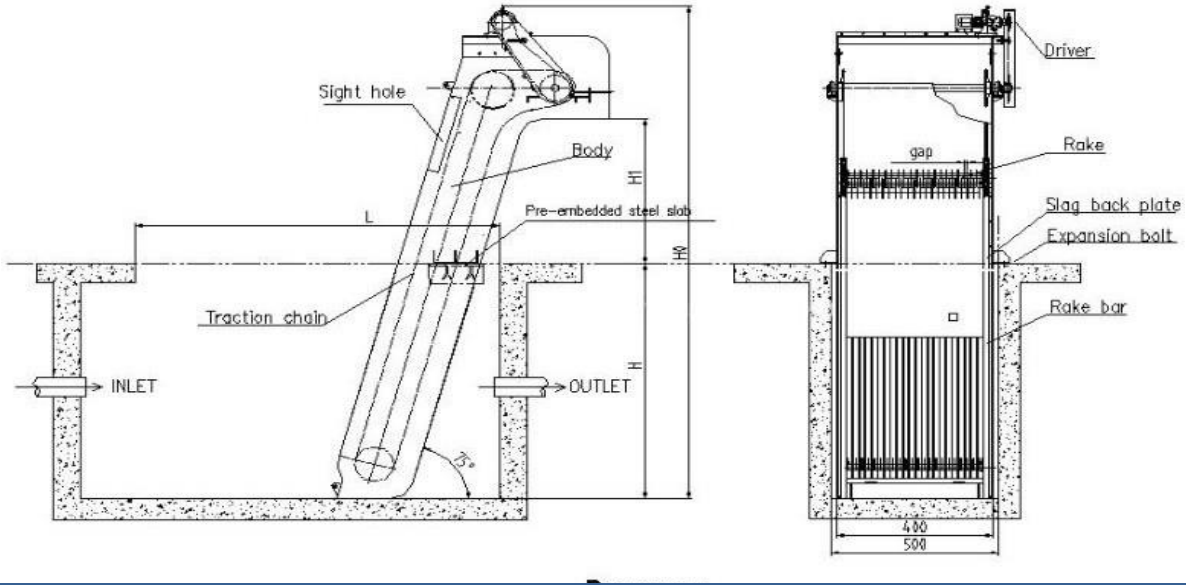
The mechanical bar screen is specifically designed to quickly and efficiently remove large slugs of debris from the channel. This heavy-duty screen uses a reciprocating rake to clean the automatic bar screen and pull out debris in headworks and pump stations. This wastewater bar screen's robust design makes it ideal for dealing with massive storm flows that can overwhelm a lesser mechanical bar screen.

Main Structure

Drum, driving mechanism (motor reducer), unloading device, backwashing pipe, seal assembly, inspection door, frame, etc.

Advantages

1. High flow rate with small heat loss and a high interception rate;
2. With a compact structure, it integrates filtration and slagging into one.
3. The unique filter screen design allows the device to effectively remove fibres, hair and other materials in the water;
4. Low energy consumption, low noise and long service life;
5. A fully enclosed structure design with no odour leakage ensures an excellent operating environment.



Model Selection

Model	SPGF-300	SPGF-400	SPGF-500	SPGF-600	SPGF-700	SPGF-800	SPGF-900	SPGF-1000	SPGF-1200	SPGF-1250	SPGF-1300
Install angle α											
Motor power (KW)	0.37-0.75		0.55-1.1			0.75-1.5		1.1-2.2		1.5-3	
Screen running speed (m/min)	About 2										
Width of equipment (mm)	300	400	500	600	700	800	900	1000	1200	1250	1300
Total height of equipment (mm)	The depth of channel+ Height of foot to the top of discharge+1350										
Total width of equipment (mm)	650	750	850	950	1050	1150	1250	1350	1550	1600	1850
Width of channel (mm)	400	500	600	700	800	900	1000	1100	1300	1350	1600
Depth of channel (mm)	1000-2000(Customized)										
Length of diversion channel (mm)	1500+Hxctgα										
Upper limit temperature of media (℃)	<=80 ℃										
Height of foot to the top of discharge (mm)	400-1000(Customized)										