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DEWATERING SCREW PRESS

Working Principles

The conditioned sludge flows into the filter zones from the flocculation tank and is pushed forward to the discharging end. With the gaps between the thread of the shaft is getting even narrower the pressure on the sludge is getting higher and higher. Than the water is separated from the sludge and flows out from the gaps between the moving rings and fixed rings. The movement of the moving rings will clean the gaps between moving and fixed rings and prevent the machine from blockage ..

The filtered sludge cakes will be pushed forward by the finally discharged from the end.

Dewatering Screw Press

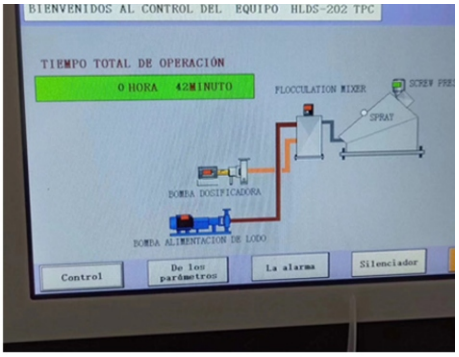
HLDS

Description:

HLDS Multi-Disc Sludge Dewatering Screw Press belongs to the screw press, it's clog-free and can reduce the sedimentation tank and sludge thickening tank, saving the cost of sewage plant construction. HLDS using screw and the moving rings to clean itself as clog-free structure, and controlled by the PLC automatically, it's a new technology that can replace the traditional filter press like belt press and frame press, the screw speed is very low, so it cost low power and water consumption in contrast to the centrifuge, it is a cutting edge sluge dewatering machine.

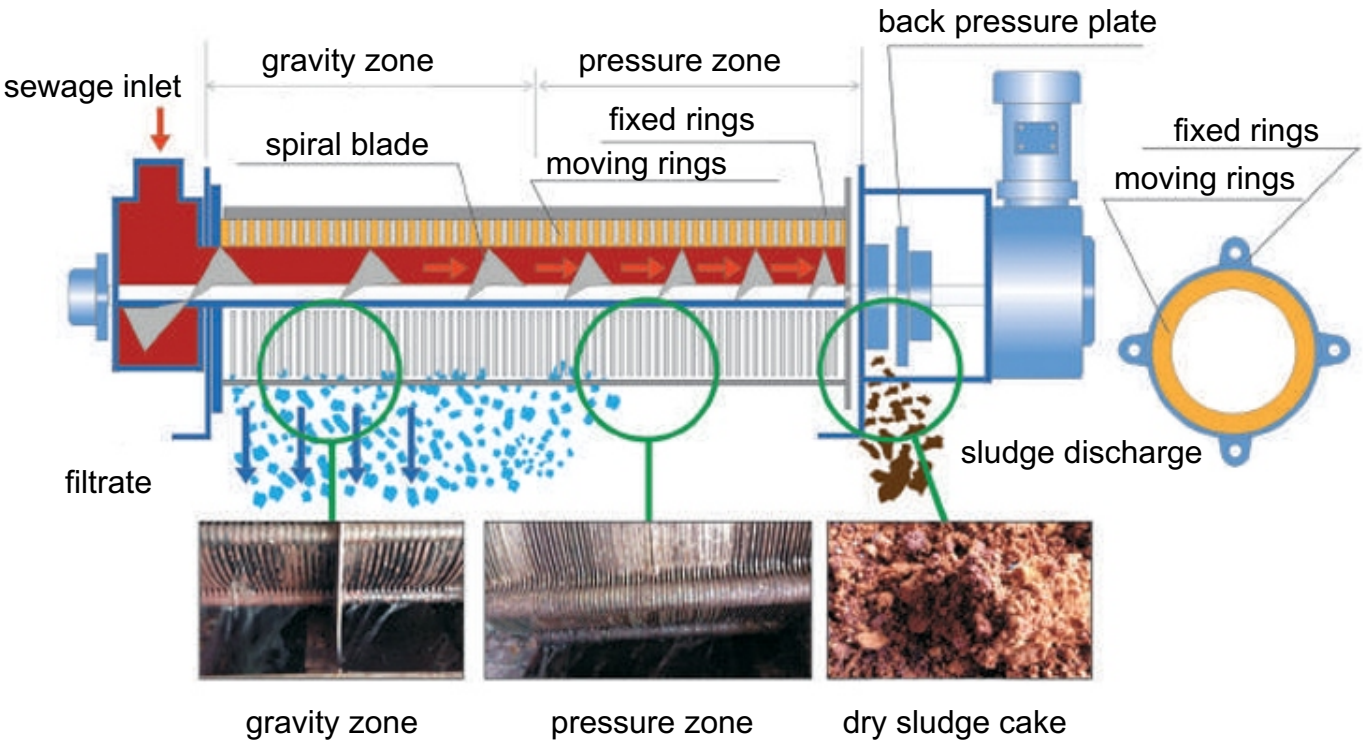
Applications:

The Sludge Dewatering Screw Press can be widely used for various wastewater treatment systems such as municipal, petrochemical, chemical fiber, paper making, pharmaceutical, leather and other industrial water treatment system. Also it can be used for Dairy Farm Manure Treatment, Palm Oil Sludge, Septic Sludge, etc. The practical operation shows that Dewatering Screw Press can bring considerable economic and social benefits for users.

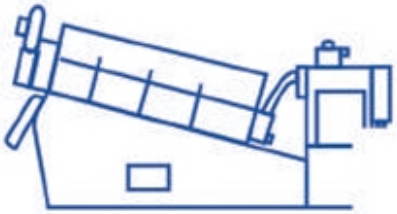


Advantages:

- Enclosed to minimize odors and noise
- Very low wash water usage (1/8 compared with belt press)
- Very low power consumption (1/20 compared with centrifuge)
- High cake solids
- Minimal operator requirement
- Easy to operate and maintain
- Auto Start-up, Run and Shutdown
- Touchscreen operation optional
- Sludge Flow and Cake Monitoring Systems
- Available with many other options like Dairy, Palm Oil, etc.



Technology Advantages



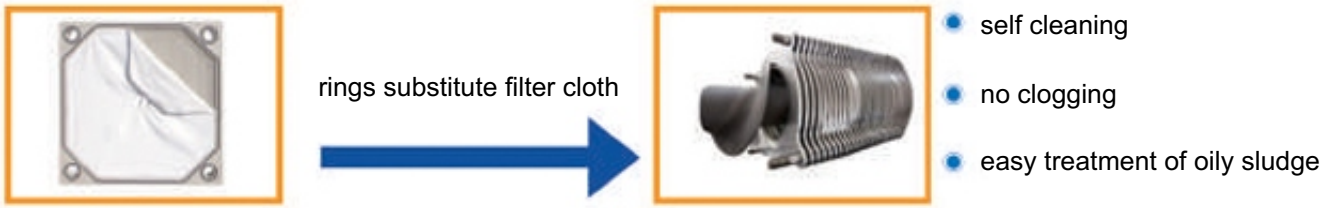
Sludge Concentration 2000mg/L-50000mh/L

Configurating exclusive spiral plate for pre-concentration and better for treating low concentration sludge.

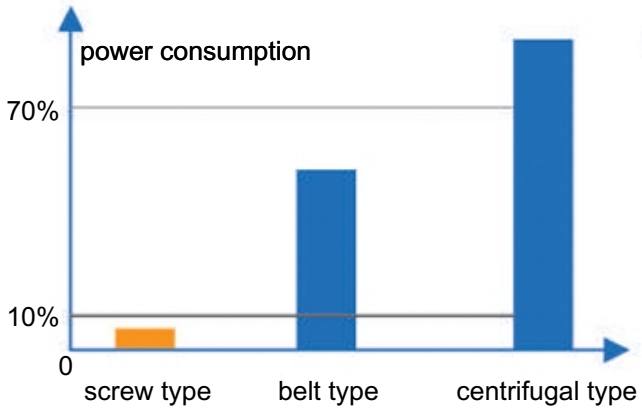
- Replacing gravity type dehydrator to realize efficient concentration of sludge.
- Flocculation and concentration operating together makes dewatering easy.
- Optimize concentration of slurry for dewatering with solenoid control valve.

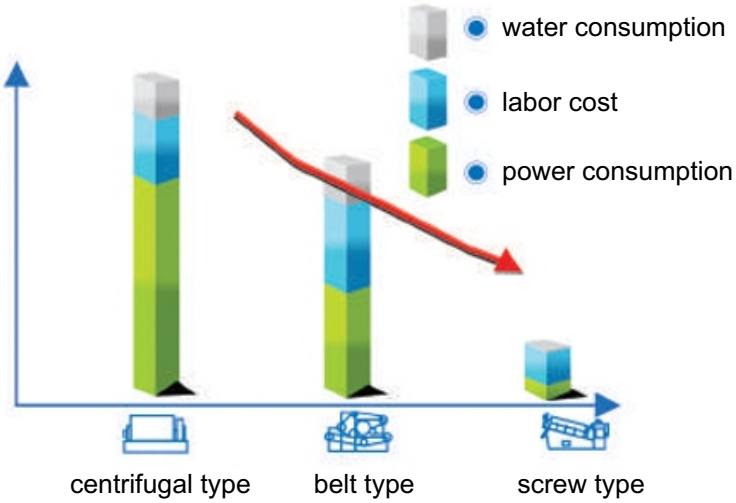
Rings substitute filter cloth, self cleaning, no clogging, easy treatment

The traditional dewatering equipment are easily got blocked while the dewatering screw press allows continuous operation with no clogging due to the moving of the fixed rings and moving rings cleaning itself. Therefore, it's especially good at oily sludge with excellent performance. Moreover, it doesn't need additional water for high-pressure cleaning so that no small or secondary pollution will be produced.



Low speed operation, low noise, low energy consumption, only 1/8 of the belt type, 1/20 of the centrifuge



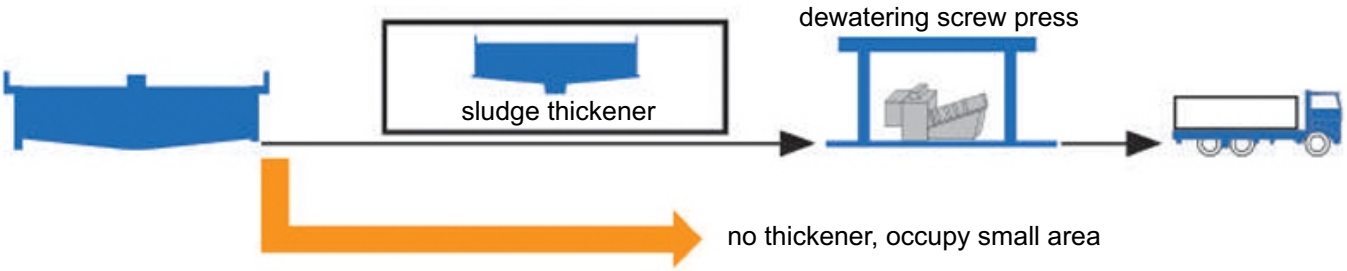


Comparison Chart

Items	Multi-disc Screw Press	Frame Filter Press	Belt Press	Centrifuge
Dewatering of Low Concentrated Sludge	✓	×	×	×
No need Thickener	✓	×	×	×
24 hour automatic operation	✓	×	×	×
Occupied Space	▲	▲▲▲	▲▲▲	▲▲
Energy Consumption	▲	▲▲▲	▲▲▲	▲▲▲▲
Labor Intensity	▲	▲▲▲	▲▲	▲
Noise	▲	▲▲▲	▲▲	▲▲▲▲
Maintenance	▲	▲▲	▲▲▲	▲▲▲
Running Cost	▲	▲▲▲	▲▲▲	▲▲▲▲

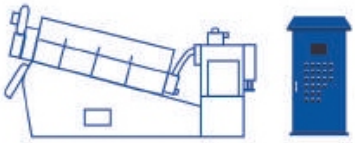
Reduce the cost of infrastructure investment, improved the result of treatment

- The dewatering screw press can directly treat the sludge from the aeration tank and the sedimentation tank so that the sludge thickening tank is not needed any more. Therefore, the construction cost can be greatly reduced and well avoided the phosphorus releasing problem.
- Saving the cost of sludge thickening tank and other equipments investment.
- Occupy smaller area, reduce construction investment for dewatering.

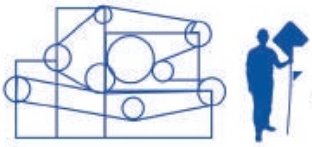


Fully automatic control, easy operation and maintenance

The dewatering screw press has no easy-blocking components like filter cloth or filtration pore inside. Its operation is safe and easy. It also can be set to operate automatically via the elec-control cabinet.



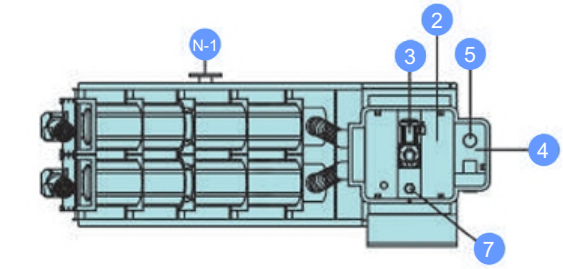
24 hours of contious automatic operating



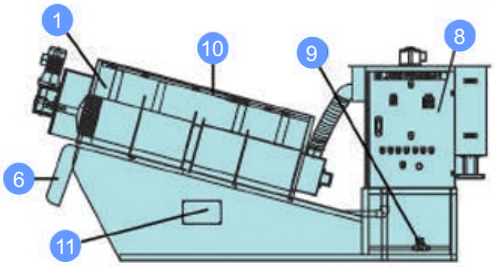
Need manual operation

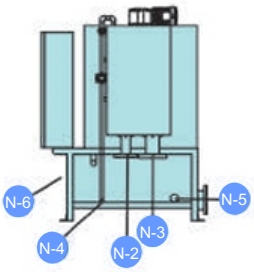
Integral construction

Main parts	
1	dewatering zone
2	flocculation tank
3	Mixer
4	V-type metering tank
5	level controller
6	discharge chute
7	level electrode
8	control panel
9	solenoid valve
10	spray nozzle
11	filtrate tank



Connectors	
N-1	filtrate outlet
N-2	sludge inlet
N-3	overflow
N-4	dosing port
N-5	spray water outlet
N-6	sludge outlet





Technical Parameters

Type	Raw wastewater/Waste actived sludge/Chemically precipitated sludge		Dissloved-air sludge		Mixed raw sludge
Sludge concentration (TS)	0.20%	1.00%	2.00%	5.00%	3.00%
HLDS-131	~4kg-DS/h (~2.0m³/h)	~6kg-DS/h (~0.6m³/h)	~10kg-DS/h (~0.5m³/h)	~20kg-DS/h (~0.4m³/h)	~26kg-DS/h (~0.87m³/h)
HLDS-132	~8kg-DS/h (~4.0m³/h)	~12kg-DS/h (~1.2m³/h)	~20kg-DS/h (~1.0m³/h)	~40kg-DS/h (~0.8m³/h)	~52kg-DS/h (~1.73m³/h)
HLDS-133	~12kg-DS/h (~6.0m³/h)	~18kg-DS/h (~1.8m³/h)	~30kg-DS/h (~1.5m³/h)	~60kg-DS/h (~1.2m³/h)	~72kg-DS/h (~2.61m³/h)
HLDS-201	~8kg-DS/h (~4.0m³/h)	~12kg-DS/h (~1.2m³/h)	~20kg-DS/h (~1.0m³/h)	~40kg-DS/h (~0.8m³/h)	~52kg-DS/h (~1.73m³/h)
HLDS-202	~16kg-DS/h (~8.0m³/h)	~24kg-DS/h (~2.4m³/h)	~40kg-DS/h (~2.0m³/h)	~80kg-DS/h (~1.6m³/h)	~104kg-DS/h (~3.47m³/h)
HLDS-203	~24kg-DS/h (~12.0m³/h)	~36kg-DS/h (~3.6m³/h)	~60kg-DS/h (~3.0m³/h)	~120kg-DS/h (~2.4m³/h)	~156kg-DS/h (~5.20m³/h)
HLDS-301	~20kg-DS/h (~10.0m³/h)	~30kg-DS/h (~3.0m³/h)	~50kg-DS/h (~2.5m³/h)	~100kg-DS/h (~2.0m³/h)	~130kg-DS/h (~4.33m³/h)
HLDS-302	~40kg-DS/h (~20.0m³/h)	~60kg-DS/h (~6.0m³/h)	~100kg-DS/h (~5.0m³/h)	~200kg-DS/h (~4.0m³/h)	~260kg-DS/h (~8.67m³/h)
HLDS-303	~60kg-DS/h (~30.0m³/h)	~90kg-DS/h (~9.0m³/h)	~150kg-DS/h (~7.5m³/h)	~300kg-DS/h (~6.0m³/h)	~390kg-DS/h (~13.0m³/h)
HLDS-304	~80kg-DS/h (~40.0m³/h)	~120kg-DS/h (~12.0m³/h)	~200kg-DS/h (~10.0m³/h)	~400kg-DS/h (~8.0m³/h)	~520kg-DS/h (~17.3m³/h)
HLDS-351	~40kg-DS/h (~20.0m³/h)	~60kg-DS/h (~6.0m³/h)	~100kg-DS/h (~5.0m³/h)	~200kg-DS/h (~4.0m³/h)	~260kg-DS/h (~8.67m³/h)
HLDS-352	~80kg-DS/h (~40.0m³/h)	~120kg-DS/h (~12.0m³/h)	~200kg-DS/h (~10.5m³/h)	~400kg-DS/h (~8.0m³/h)	~520kg-DS/h (~17.3m³/h)
HLDS-353	~120kg-DS/h (~60.0m³/h)	~180kg-DS/h (~18.0m³/h)	~300kg-DS/h (~15.0m³/h)	~600kg-DS/h (~12.0m³/h)	~780kg-DS/h (~26.0m³/h)
HLDS-354	~160kg-DS/h (~80.0m³/h)	~240kg-DS/h (~24.0m³/h)	~400kg-DS/h (~20.0m³/h)	~800kg-DS/h (~16.0m³/h)	~1040kg-DS/h (~34.68m³/h)
HLDS-401	~70kg-DS/h (~35.0m³/h)	~100kg-DS/h (~10.0m³/h)	~170kg-DS/h (~8.5m³/h)	~340kg-DS/h (~6.5m³/h)	~442kg-DS/h (~16.0m³/h)
HLDS-402	~135kg-DS/h (~67.5m³/h)	~200kg-DS/h (~20.0m³/h)	~340kg-DS/h (~17.0m³/h)	~680kg-DS/h (~13.6m³/h)	~884kg-DS/h (~29.5m³/h)
HLDS-403	~200kg-DS/h (~100m³/h)	~300kg-DS/h (~30.0m³/h)	~510kg-DS/h (~25.5m³/h)	~1020kg-DS/h (~20.4m³/h)	~1326kg-DS/h (~44.2m³/h)
HLDS-404	~266kg-DS/h (~133m³/h)	~400kg-DS/h (~40.0m³/h)	~680kg-DS/h (~34.0m³/h)	~1360kg-DS/h (~27.2m³/h)	~1768kg-DS/h (~58.9m³/h)

Technical Parameters

Type	Discharge height(mm)	Dimension			Weight(kg)		Total power (kW)	Washing water consumption (L/h)
		L(mm)	W(mm)	H(mm)	Empty	Operation		
HLDS-131	250	1860	750	1080	180	300	0.2	24
HLDS-132	250	1960	870	1080	250	425	0.3	48
HLDS-133	250	1960	920	1080	330	580	0.4	72
HLDS-201	350	2510	900	1300	320	470	1.1	32
HLDS-202	350	2560	1050	1300	470	730	1.65	64
HLDS-203	350	2610	1285	1300	650	1100	2.2	96
HLDS-301	495	3330	1005	1760	850	1320	1.3	40
HLDS-302	495	3530	1290	1760	1300	2130	2.05	80
HLDS-303	495	3680	1620	1760	1750	2880	2.8	120
HLDS-304	495	3830	2010	1760	2300	3850	3.55	160
HLDS-351	585	4005	1100	2130	1100	1900	1.3	72
HLDS-352	585	4390	1650	2130	1900	3200	2.05	144
HLDS-353	585	4520	1980	2130	2550	4600	2.8	216
HLDS-354	585	4750	2715	2130	3200	6100	3.55	288
HLDS-401	759	4680	1110	2100	1600	3400	1.65	80
HLDS-402	759	4960	1760	2100	2450	5200	2.75	160
HLDS-403	759	5010	2585	2100	3350	7050	3.85	240
HLDS-404	759	5160	3160	2100	4350	9660	4.95	320

Note: quick-wear change period is a rough value, actual time is according to the kind of sludge treatment debugging condition and working time per day