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**RESPONDENT PRECISION
ENGINEERING (P) LTD.**

SLUDGE HANDLING TECHNOLOGY

FOR WASTE WATER SLUDGE TREATMENT

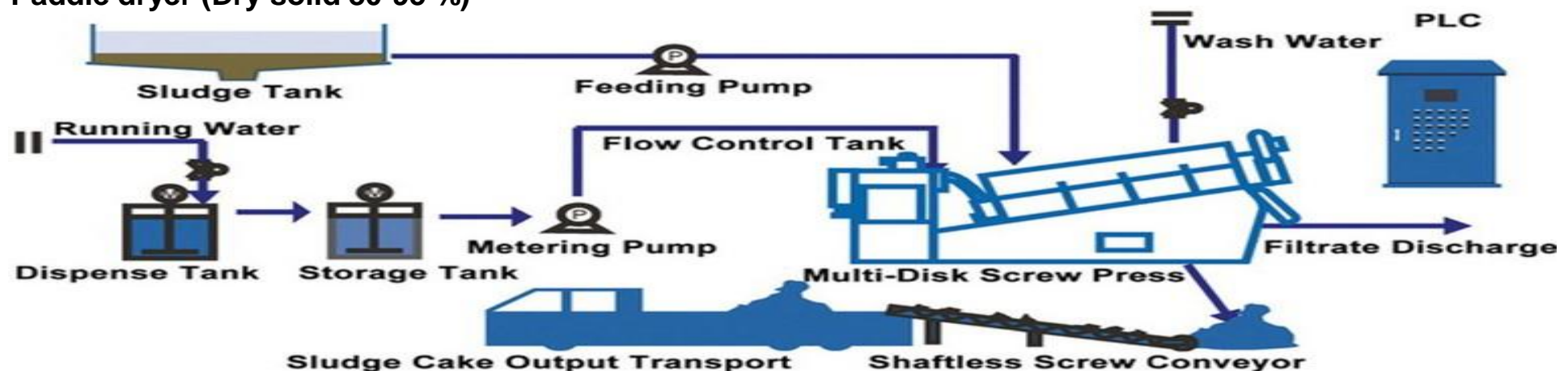
SLUDGE HANDLING SYSTEM

The residue that accumulates in sewage treatment plants is called sludge (or bio solids). Sewage sludge is the solid, semisolid, or slurry residual material that is produced as a by-product of wastewater treatment processes.

This residue is commonly classified as primary and secondary sludge. Primary sludge is generated from chemical precipitation, sedimentation, and other primary processes, whereas secondary sludge is the activated waste biomass resulting from biological treatments. Some sewage plants also receive septage or septic tank solids from household on-site wastewater treatment systems. Quite often the sludge are combined together for further treatment and disposal. Treatment and disposal of sewage sludge are major factors in the design and operation of all wastewater treatment plants. Two basic goals of treating sludge before final disposal are to reduce its volume and to stabilize the organic materials. Stabilized sludge does not have an offensive odor and can be handled without causing a nuisance or health hazard. Smaller sludge volume reduces the costs of pumping and storage.

The treatment of the sludge generated in wastewater treatment processes is regulated under specific legislation. Once treated properly, it can be used in the agricultural sector as a fertilizer (Sewage sludge) and Filling of lands (Industrial sludge). The quality of the sludge varies according to the composition of the starting residual water.

For sludge handling system we use two types of machine:-
sludge dewatering machine/Multi-Disk Screw Press (Dry solid 18-25 %)
Paddle dryer (Dry solid 80-95 %)



1.SLUDGE DEWATERING MACHINE

Sludge Dewatering Machine reduces the sludge volume and mass by removal of sludge water from interstices between sludge particles. The sludge cake so produced, has moisture content of about 15-25%. Main purpose of this machine is to minimize sludge handling and its disposal.

There are following features :-

- Suitable for sludge of 0.2%-10% solid consistency at Input and achievable Outlet consistency of 15-25 Dry solids.
- Our machine can handle wide flow rate from 0.5 m³/Hr up to 150 m³/Hr and sludge concentration from 0.2 to 10% and can easily handle oily/sticky sludge.
- Extremely low power consumption(90-95% less than decanter centrifuge)

It is the most cost effective and time saving method for sludge handling. Sludge Dewatering is achieved by passing the polymer enriched slurry into the dewatering chamber, wherein, the slurry get compressed by a screw inside the compression cylinder. At the outlet we get the cake which can be further reduced in volume with the help of a dryer.

The main purpose of sludge dewatering machine is to minimize the sludge handling and disposal. sludge dewatering machine is most cost- effective method of dewatering and hence to sustain the environmental objectives of the company.

Basically both the public & private sectors are required to disposal the which is approved by industries. Sludge dewatering is totally focused on reducing weight as well as volume of sludge & also on cost & transportation services. First step of sludge dewatering machine is removing water from it so by removing water it will impact on reducing volume & weight of sludge.

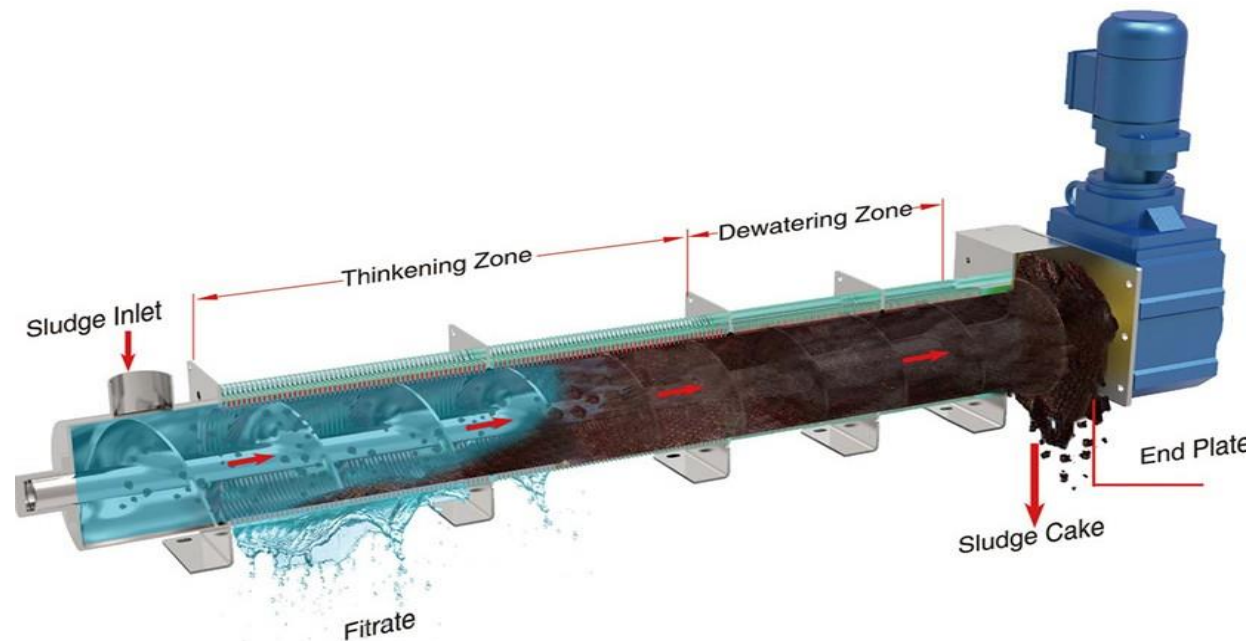
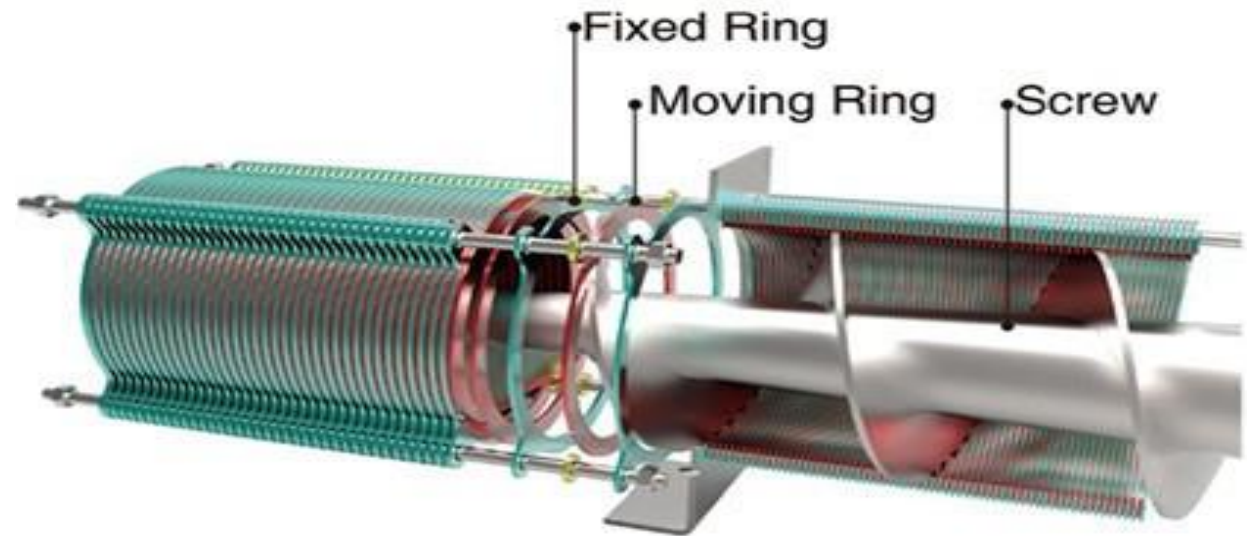
WORKING PRINCIPLE

Dewatering Principle

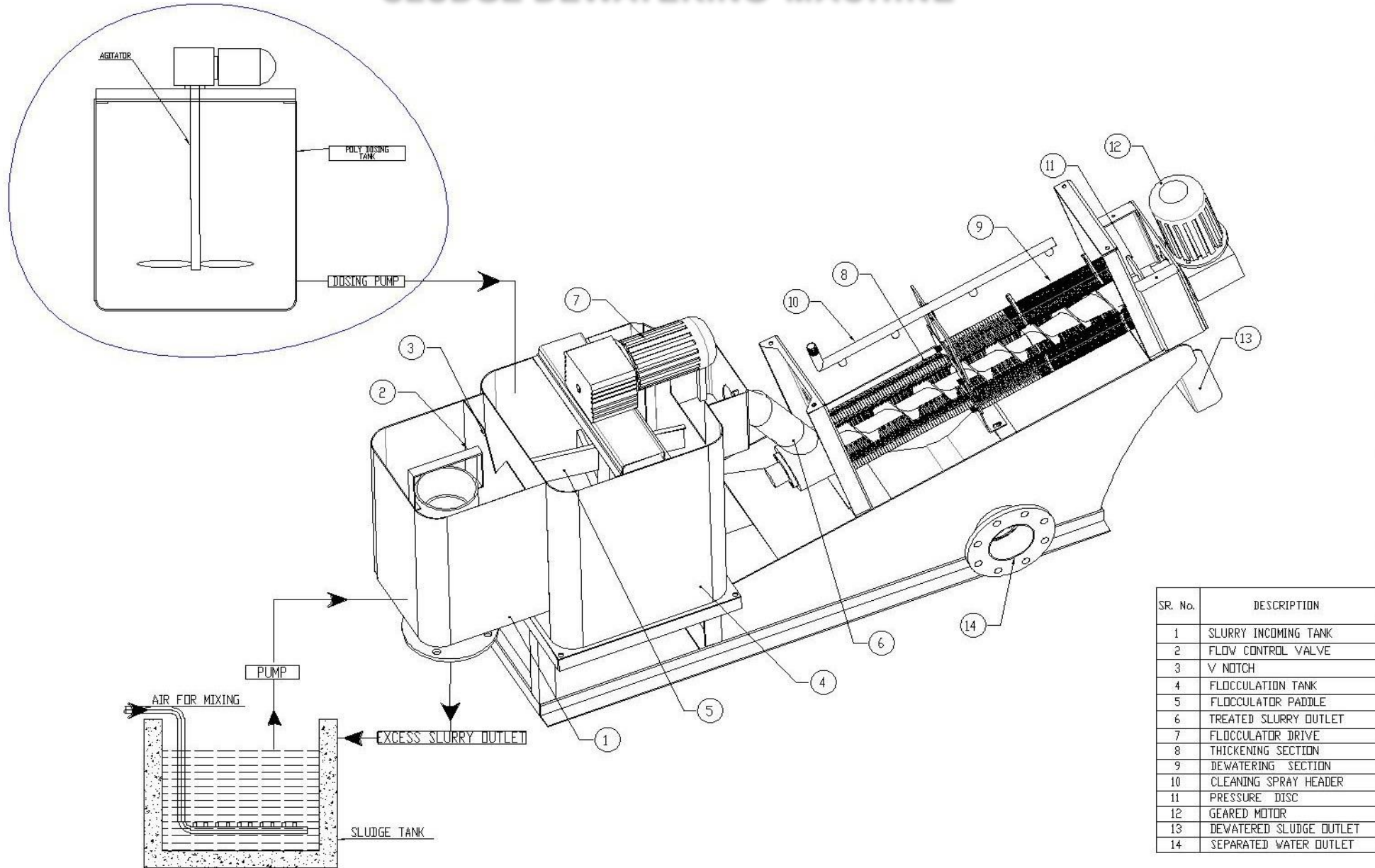
The initial section of dewatering drum is the thickening Zone, where the solid-liquid separating process takes place and where the filtrate will also be discharged. The pitch of the screw and the gaps between the rings decrease at the end of dewatering drum, hence increasing its internal pressure. At the End Plate further increases the pressure, so as to discharge dry sludge cake.

Process Introduction

Sludge is first flow into the Control Tank and then flows down into the Flocculation Tank, Where polymer coagulant is added. From there, the flocculated sludge overflows into the dewatering drum where it is filtered and compressed. The entire operation sequence, including sludge feed control, polymer makeup, dosing and sludge cake discharge are controlled by the built-in timer and sensors of the PLC



LAYOUT OF SCREW PRESS SLUDGE DEWATERING MACHINE



SITE PHOTOS



Model	Flow Rate(LPH)	Dry Solid at outlet of M/C per Hour	No. of Cylinder (Nos.)	Rinsing Water Consumption	Electric Power (HP)	Dynamic Weight(Kg)
<i>RPE-0.5SDM1C</i>	500LPH	5Kg/hr	01	30LPH	0.5 HP	200
<i>RPE-1.5SDM1C</i>	1500LPH	15Kg/hr	01	50LPH	0.5 HP	300
<i>RPE-3.0SDM2C</i>	3000LPH	30Kg/hr	02	150LPH	0.75 HP	450
<i>RPE-6.0SDM1C</i>	6000LPH	60Kg/hr	01	200LPH	0.75 HP	650
<i>RPE-9.0SDM1C</i>	9000LPH	90Kg/hr	01	220LPH	1.0 HP	900
<i>RPE-12.0SDM2C</i>	12,000LPH	120Kg/hr	02	300LPH	1.25 HP	950
<i>RPE-18.0SDM3C</i>	18,000LPH	180Kg/hr	03	360LPH	1.75 HP	1050
<i>RPE-20.0SDM1C</i>	20,000LPH	200Kg/hr	01	400LPH	2.0 HP	1800
<i>RPE-40.0SDM2C</i>	40,000LPH	400Kg/hr	02	500LPH	3.5 HP	3000
<i>RPE-60.0SDM3C</i>	60,000LPH	600Kg/hr	03	650LPH	6.0 HP	4500

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For More Details, call us or write to us

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