**GN New Screw Press Sludge Dewatering Machine for Water Treatment**

Screw press dewatering machine is king of widely used sludge dewatering equipment used in municipal sewage treatment and wastewater treatment from other industries. It is structure compact and low energy consumption, making it more and more accepted by wastewater treatment contractors. Choosing a screw press dewatering machine with better quality and reasonable price would bring great profit for users.

HOUSTON (PRWEB) September 30, 2020 -- Screw Press Brief Introduction

In the process of waste water treatment, water-containing sludge of different properties is generally produced. The sludge dewatering equipment mainly reduces the water content of the sludge, and reduces the sludge volume, thereby bringing convenience to the subsequent treatment or disposal of the sludge. With the advantages of energy saving, stability, and high degree of automation, the screw press sludge dewatering machine, also named Multi-disc Dehydrator, occupies a place in the current sludge dewatering operation in the wastewater treatment industry, and it is still quickly recognized and accepted by the market.

Features of Screw Press Dewatering Machine

In the wastewater treatment industry, commonly used dewatering equipment can generally be divided into filter presses, decanter centrifuges and screw press. The filter press has relatively high operating requirements and requires a lot of water to rinse the filter cloth, but the discharged mud cake is relatively dry. When the labor cost is high, the site is limited, and the solid content of the material is high, the dewatering decanter centrifuge can be used as ideal equipment.

The screw press also has its advantages and characteristics, making it widely used in municipal sewage treatment projects and water treatment systems in food, oil, pharmaceutical, chemical, paper, leather and other industries.

1. Simple operation and maintenance - All-weather automatic unattended operation can be realized through various induction controls, and there are few daily maintenance items
2. Compact design and space saving - The dewatering body, flocculation mixing tank and electric control cabinet of the screw press adopt a three-position integrated design, which is convenient to install and small footprint.
3. Energy saving, water saving, low noise and low vibration - As the core component, the rotation speed of the screw shaft is 2~4 RPM, so the power consumption is very low. Its self-cleaning structure to prevent clogging of filter slits can save a lot of cleaning water. There is almost no noise and vibration during low-speed rotation, ensuring a comfortable and quiet working environment.
4. Strong resistance to oily sludge, easy to separate and non-clogging - The self-cleaning structure of the screw press dewatering machine is not easy to cause clogging of the filter slits, and even oily sludge can be easily processed. GN also has the oil sludge treatment system to recover the valuable from sludge and reduce the waste discharge.

It should be noted that the sludge needs to be flocculated in the mixing tank and then enters the dewatering body through overflow. Therefore, the sludge entering the screw press dewatering machine must have certain fluidity.

Screw Press Main Components and Working Principle

The screw press dewatering machine is mainly composed of a sludge premixing module, thickening & dewatering module and an electric control system. In the actual working process, the sludge is pumped to the metering tank by an external transfer pump. After rectification, the sludge further flows into the flocculation
tank, stirs by agitator and fully reacts with the flocculants to form stable alum, and then passes through the upper part of the flocculation tank enters the dehydration screw. Inside the dehydration body, the alum blossoms are concentrated by gravity in the thickening section and at the same time advance to the dewatering section. In the process of advancing, with the gradual reduction of the filter gap and the screw pitch, and the blocking action of the back pressure plate, the sludge receives increasing pressure in the dewatering section, and the volume is continuously reduced, thereby achieving the purpose of dehydration.

The main body of the screw press dewatering machine is a filtering device formed by multiple fixed rings and floating rings superimposed in sequence, and the screw shaft penetrates through it. The front section is the thickening section, and the rear section is the dewatering section. The sludge thickening and squeezing & dewatering work are completed in one cylinder. In the process of spiral rotation, the floating ring and the fixed ring will form a dislocation movement, and the water will be discharged from the gap between the floating ring and the fixed ring. This replaces the traditional filter cloth filtration method with a unique and subtle filter body mode. The screw press follows the principles of the same direction of force and water, thin-layer dewatering, proper pressure and extension of the dewatering path, which solves the problems of easy clogging, inability to treat low-concentration sludge and oily sludge, high energy consumption, and complicated operations. The dewatering goal of high efficiency and energy saving has been achieved.

How to Evaluate the Configuration of Screw Press

The wastewater treatment industry has a large demand for screw press dewatering machines, and the market is also flooded with numerous OEM manufacturers and re-sale suppliers. Therefore, with a limited budget, how to choose a screw press that can meet user requirements is particularly important. In addition to the budget, the user must understand the sludge condition, the expected treatment target, and the most important thing is to know the configuration of the equipment to be purchased. Under the condition of asymmetric information between the seller and the buyer, the buyer may wish to understand the configuration of the equipment from the following aspects.

1. The pre-mixing module and dewatering body of the screw press dewatering machine are all parts in contact with the sludge, according to the supplier's standard, the sludge situation, and the different requirements of the equipment user. Usually these parts are made of stainless steel. The conventional material on the market is stainless steel 304, followed by stainless steel 316, and even duplex stainless steel 2205. Better materials have better corrosion resistance, but also mean higher prices.

2. There are many washers between the floating ring and the disc support screw rod, which can prevent the floating ring from generating excessive friction with the screw during long time up and down reciprocating movements, thereby prolonging the working time of the floating ring. The material of the washers can be stainless steel or plastic, and the difference in material will greatly affect the price. According to the size of the equipment model, usually a screw press machine will install hundreds or even thousands of washers.

3. The power of the floating ring to move up and down during the dewatering process comes from the squeezing of the floating ring by the internal screw, so the edges of the spiral blades need to be protected against wear. Whether the screw blade is protected by a wear-resistant coating will affect the service life of the screw. There are also manufacturers that connect all floating rings together with independent screw rods, and use a power source different from the main screw drive device to provide power to prevent the floating ring from contacting the screw blade, thereby protecting the screw and floating ring.

4. In choosing of motors, speed reducers, and electrical components, manufacturers and users have different preferences for different brands and origins. Usually manufacturers will provide solutions according to their own standard configuration, but they can also provide customized solutions according to user requirements.

5. The electric control cabinet centralizes all the operation control of the screw press dewatering machine. According to the conditions of the working site such as temperature, humidity and sunshine, the user can choose the control cabinet of carbon steel sprayed or stainless steel. In order to achieve more automated control,
users can also ask the manufacturer to design PLC control and display design to detect running conditions.

Screw Press Integrated or Modularized Dewatering System
As the core equipment of dewatering work, the screw press dewatering machine requires upstream and downstream conveying equipment to supply sludge and assist in slag discharge during work. At the same time, it needs the assistance of chemical preparation and dosing equipment to perform dewatering. According to customers' preferences, site restrictions, and transportation flexibility requirements, GN can provide a multi-in-one integrated skid-mounted system to install all related equipment on one skid, which is convenient for transportation and space saving. Module design can also be carried out to facilitate the flexible layout on work site.

1. Screw Pump - The processing capacity of the screw press is calculated based on the DS content of the sludge. Therefore, the pump that feeds to the screw press needs to be able to deliver a certain amount of sludge according to actual operating requirements. The screw pump has the characteristics of uniform and stable flow, strong self-priming ability, reversibility, and ability to transport liquids containing solid particles. It is used for quantitative transportation of various sludge.

2. Chemical Dosing Unit - GN dosing device has standard three-box automatic powder chemical configuration system and single-barrel preparation device normally for liquid chemical. According to the type of medicine and the user's budget, GN can provide the most suitable customized solution. In the choice of dosing metering pump, diaphragm pump or screw pump can also be configured.

3. Screw Conveyor - The screw conveyor is used to receive the mud cake discharged from the slag discharge port of the screw press, and then transport it to the corresponding storage area. The design of the screw conveyor needs to consider the height of the slag discharge port of the screw stacker, the width of the slippery board, and the inclination angle of the equipment installation.

Being a solid liquid separation solution provider, GN Separation is with rich experience in design and manufacturing the dewatering screw press machine. More important, GN is able to provide overall solution for separation and conveying with the rich product line and strong fabrication and assembly capabilities.

**GN Solids Control** is one of GN brand mainly focusing on various drilling muds recycling and drilling waste sludge dewatering, any interesting, can go to the website for more information.

Any industrial solid liquid separation requirement aroused, please feel free to contact GN Separation. You can find our contact on GN official website www(dot)gnseparation(dot)com.
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