

PRODUCT SPECIFICATION & EVALUATION



Product: Energy-Efficiency Screw Press

Reviewed By: SOLTECK Engineering Dept

DESCRIPTION & SPECIFICATIONS

The new screw press technology is the latest development in our search for excellence in best available technology. It has produced significant improvements in performance and energy efficiency. Energy savings of up to 80% are achievable versus comparable systems, such as belt press and centrifuge based technologies. The new Screw Press has successfully dewatered sludge with dry solids content, as low as 0.2% DS.

The capacity of the screw press is dependant upon the total solids content and dewatering characteristics of the sludge type being processed. In all cases, a thickened dried cake of no-flow quality will be produced, with a total solids content ranging from 12% to 42%. The screw press can dewater from 0.5m³/hr to 20m³/hr with a solids recovery of 98%. The unit can be attached to our sludge dryers, as part of an integrated fully-cycle process solution.

Screw Press used new technology designed for high-energy efficiency.

Fig.1 – Hydro Screw Press System HI-ST-402 Model

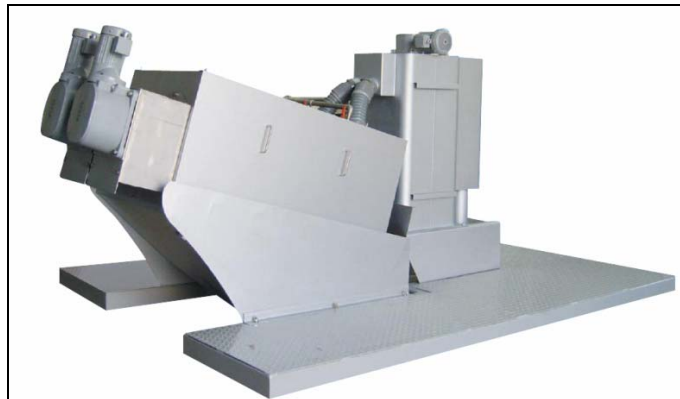
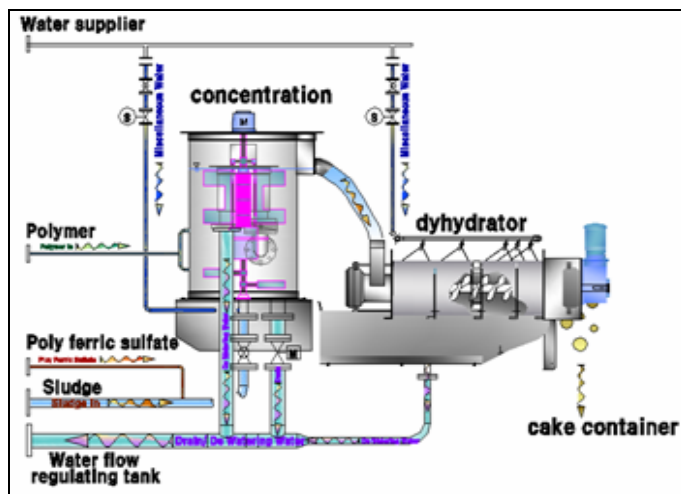


Fig.2 – Material Flow Diagram



PROCESS

Raw sludge is pumped from the customer's sludge tank or clarifier to the inlet of the Hydro press floc tank. Polymer/coagulant is added at the inlet as the polymer and sludge are mixed together in the lower section of the thickener a large floc is created.

The flocculated sludge travels upwards with the aid of the paddle mixer and overflows into the Hydro Screw Press.

The screw is rotating at a fixed speed and the filtering rings rotating in an oscillating movement.

The free drainage water filters through the rings, the sludge is moved forward from the thickening zone to the dewatering zone, a back pressure plate controls the pressure of the sludge between the screw and the pressure plate thus creating a cake sludge. The free drainage water flows back to the head works of the treatment plant.

STRENGTHS

- Low energy consumption, due to high energy-efficiency design
- Built in self cleaning system, no continuous water is used to clean the Screw press
- System can handle oily/greasy sludge types
- Fully automated
- On line dewatering from low sludge concentrations.
- Simple to operate
- Low maintenance

RECOMMENDED DEPLOYMENT SCENARIOS:

The product is designed to meet requirements for the following deployment scenarios and industry solutions:

- Volumes between 0.5m³/hr. to 20m³/hr are feasible with appropriate sizing of assemble units.
- The Screw Press can be used for the dewatering of biological sludge's, DAF sludge's Digested sludge's, food production sludge's, mixed sludge's aeration tanks.
- Screw Press can be attached to other drying equipment, and integrated in the full drying process.
- Suited for many types of applications food & beverages, brewing & distillery, public water utilities, dairy, meat, poultry, paper industry, pharmaceutical, petrochemical etc.

PERFORMANCE RESULTS IN LIVE OPERATION:

- The screw press dewatering sludge's in the food sector can dewater from 0.5% to 22% DS
- Paper plant from 1% input output 32% DS
- Meat Plant DAF sludge 3% input output 28% DS
- Pharmaceutical Sludge input 2.5% output 26% DS

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