SERFILCO®

SPECIFICATIONS
RECESSED PLATE FILTER PRESS

MODELS:
Manual Hydraulic ·18PP
Semi-Automatic - 24PP
Semi-Automatic - with rapid traverse
- 31 PP, 40PP, 48PP

GENERAL

We shall provide a recessed plate filter press to dewater sludge at the rate given In the design specifications. The design shall permit the press to operate at a maximum of 130 PSI operating pressure.

The press Is expandable up to specified maximum by installing additional filter chambers.

MECHANICAL

The basic filter described in the proposal consists of a structural frame, filter plates, filter cloths, follower plate & hydraulically actuated closure system. The head stock contains the center feed port and four corner discharge ports. The center feed port Is equipped with a shut off valve & pulse dampener chamber equipped with an air blowdown connection point. Piping from the four comer discharge ports Includes four shut off valves & manifold piping to a single discharge point. The tall stock supports the hydraulic closing cylinder. The side bars connect the head stock to the tall stock and support the filter plates. The plate Is mounted on guide rollers supported by the side bars.

Manual units utilize a hand operated hydraulic jack to provide the required clamping force for the filter plate stack.

Semi-automatic units have an air over hydraulic pump and control mounted In the tail section, to effect opening/closing of the press and clamping of the filter plate stack.

The filter press frame consists of the head stock, tail stock assembly, side bars legs with floor mounting pads.

The follower plate shall be guided over the side rails by anti-friction rollers.
The side bars are constructed of ASTM A 500-B steel conservatively rated at 58,000 PSI tensile strength. Other steel components are made of A36 material.

Welding shall be in accordance with AWS standards D1.1.

SURFACE PREPARATION

The exterior surface is ground free of weld splatter and the welding fillets are ground uniform, then sand blasted to a SSPC-SP-6 finish, primed and finish painted with acid resistant epoxy. Standard color Is green.

CLOSURE MECHANISM MANUAL

A manual hydraulic jack to maintain a closure pressure during the dewatering phase Is mounted In the tall stock. All high pressure components are designed for 10,000 PSIG operating pressure.

SEMI-AUTOMATIC & SEMI-AUTOMATIC W/RAPID TRAVERSE

1. One hydraulic cylinder to open and close the press and to maintain a closure pressure during the dewatering phase Is mounted In the tall stock. 011 piping and fittings for connection to the high pressure hydraulic power pack are supplied. All high pressure piping components are designed for 5000 PSIG operating pressure.
2. One air-oil hydraulic booster pump shall provide a closure pressure of 4500 PSI. A constant pressure Is maintained throughout the dewatering cycle to compensate for pressure and temperature changes that may contract the plate stack. An air breather, sight gauge and muffler are also Included.
3. An in-line air pressure safety valve mounted in the pump air supply line is provided to limit pressure not to exceed 4500 PSI.
4. A hydraulic oil reservoir is constructed integrally into the tall stock leg.
5. (For Rapid Traverse only) Rapid open and close is provided by direct application of the supply

CONTROL PANEL

For Semi-Automatic Model 24PP

Filter press control panel is mounted on the tail stock and includes the following:

1. Hyraulic pressure gauge
2. On/Off air control valve
3. Four way high pressure hydraulic valve to control hydraulic cylinder.
4. Concise panel nomenclature cover plate with specific operating directions.

For Semi-Automatic w/ rapid traverse Models 31PP, 40PP, 48PP

Filter press control panel is mounted on the tail stock and includes the following:

1. Hydraulic pressure gauge
2. On/off, open, close, clamp air control selector valve
3. Concise panel nomenclature cover plate with specific operating instructions.

FILTER PLATES

1. Square
2. Designed to hold pressure tight against 130 PSIG filtration and capable of forming a sludge cake of nominal thickness 1.25". The thickness of plate web shall be a minimum of 1" with ribbed drainage surfaces equipped with stay bosses to stabilzie chamnbers against pressure deifferentials acorss the press. Stay bosses shall be an integral part of the plate. The plat filtration surface shall have grooves to provide flow area beneath the filter media. Flow passages shall be of adequate size to permit operation uniformly over the surface of the plate.
3. Each filter plate shall be supported by handles which slide on the side bars.
4. The end filter plates in the filter assembly, installed on the head stock and on the movable follower, shall contain slude cake recesses only on the side facing the adjacent filter plates.
5. The filter plates shall be constructed with top and bottom internal drain ports with a four valve discharge to permit effective use of an air blowdown manifold which will expel excess filtrate before opening the press.

FILTER MEDIA

The filter media shall be selected to provide good cake release and optimum solids capture without the use of precoat material. Standard media is woven polypropylene.

The material shall be of heavy duty yarn with adequate strength to provide long life in excess of 1000 filter cycles, with normal operator attention. Filter media shall not deteriorate if acid washed.

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