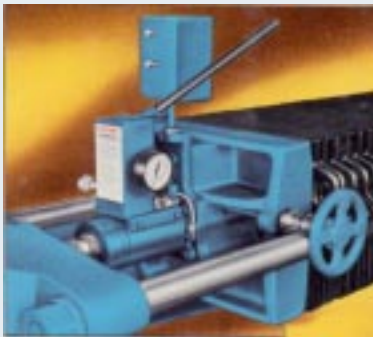




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LABORATORY PLATE & FRAME FILTER PRESS

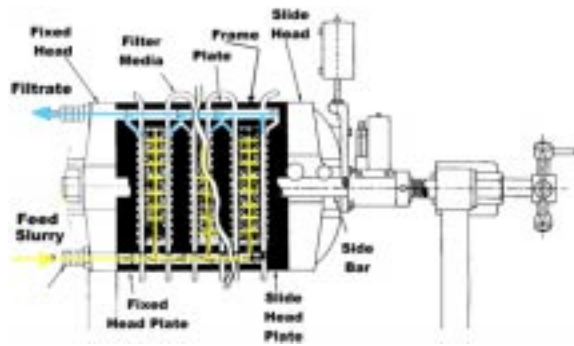
The Model MC 12" Plate & Frame Filter Press has 3.9 Ft² of filter area, 0.15 Ft³ of filter cake volume and includes one No. 27 polypropylene parallel plate with 5/8" recess; one No. 28 polypropylene parallel plate with 5/8" recess; one No. 27 polypropylene fixed head plate with 5/8" recess; one polypropylene slide head plate with 5/8" recess, one set of polypropylene head connections; inlet pressure gauge; set of polypropylene filter cloth; stainless steel drip pan; feed manifold; feed pump; manual hydraulic closing device. Larger capacities are available, up to over 500 square feet of filter area.



Manual Closing Device

The laboratory plate and frame filter press is an economical, fabricated filter press designed to give reproducible results, and is rugged enough to last in a laboratory setting. The recessed plates used on this press are designed for recovering solids from slurry. The recessed plates will allow up to a 1-1/4" thick filter cake to form. The recessed plates have center feed, with corner discharge. The filter media is caulked into the plates and has a sewn center design for non-leak operation.

Capacities of the plate & frame filter press depend upon the filtration rate of the material to be filtered. For instance, a gold cyanide zinc precipitation may have a filtration rate of 1/2 gallon per minute of slurry per square foot of filtration area, which would give the capacity on this press of 2 GPM for this particular application. Other applications, such as minerals dewatering, may have filtration rates ranging from 0.2 to 1 GPM/square foot of filter area.



The Plate & Frame Filter Press operates to remove liquids from a slurry feed. The feed enters the bottom port(s) of the filter and travels up between the filter plates, and follows the path of least resistance, which is through the filter cloth and up to the ports on the top of the filter plate. The solids are deposited on the cloth, leaving the filtrate liquid to be discharged. This series for plate and frame filters have a maximum recessed cake thickness of 1 1/8" inch (2.9 cm). The filtered cake may be washed, by injecting a liquid or clean water into the feed line, washing the cake as it passes through the filter cake to the discharge ports in the top of the plates. Compressed air is blown through the filtered cake prior to discharge, to remove any last bit of liquid.

The hydraulic plate closing device then opens the plates and the solid filter cake drops either to a conveyor belt below the press, or to a receptacle or chute beneath the press. The filter cake solids are removed.

The filter cloth may be washed down periodically, by using a water hose and washing the cloth over the plates while the filter is open, removing any material that may tend to blind the cloth.



Photos of two types of recessed filter plates used in plate and frame filters. The top is a recessed plate, without caulking, and the bottom plate is a recessed plate with caulking. The caulking seals the plate and prevents it from leaking any liquids. Optional Air Blow Down Manifolds connect the two top filtrate ports together, and the two bottom feed ports together, and allow for separate connections for the feed, wash water, and filtrate discharge in a single manifold.



At left, is a illustration of a Automatic Plate Shifter, used for discharging the cake material. The automatic plate shifter moves the plates back, after the filter is open, thereby allowing the solid filter cake to drop from between the filter plates. If no automatic plate shifter is used, the plates must be moved manually, by pulling each plate apart by hand.