

Filter Press Operation

General Operation Of The Water and Wastewater Equipment Company Filter Press:

Operating the filter press is simple, and the operating process is easy to understand. The operator prepares the filter press for action by turning (1) the air supply "on," and (2) the hydraulic selector to "close." Wait briefly as the plates move together until they are tightly positioned against each other. When the plates are together, the filter press is closed.

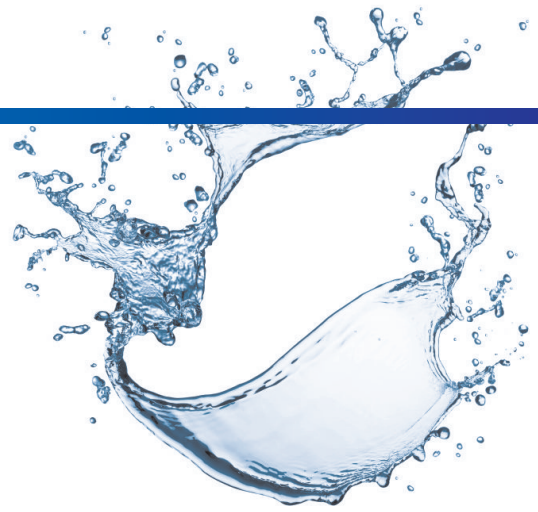
After checking the feed and manifold valves, the operator starts the feed pump. The feed pump forces the slurry into the center feed outlet and into the chambers. The chambers are designed so that the liquid cannot leave the filter press except by passing through the filter cloth. The solids remain between the plates in the chambers and form the filter cake. The filtered liquid, filtrate, leaves the filter press through the discharge manifold at the head end of the filter press.

The pumping, or feed, cycle continues until the available chamber space is filled and the terminal design pumping pressure is reached. At that point, the feed pump is stopped, either by the operator or by the hydraulic pump control system. The filter press may now be "blown-down" with compressed air to remove the remaining liquid.

Finally, the pressure is relieved and the plates are separated, either manually or with the plate shifter, optional, allowing the filter cakes to drop into a drum or cake cart. The operator sometimes needs to aid in the release of the filter cakes from the chambers by using a nylon-cleaning spatula. Once the operator closes the filter press, the filtration process can be performed again.

Operation Of Manual Hydraulic Filter Press:

Assure that the filter plates are arranged in the plate stack properly before filtering to maximize filtration performance (refer to the filter press assembly drawing to obtain the correct sequence).



Confirm that optional manual hydraulic isolation valve is open prior to operating manual hydraulic pump.

Switch the selector switch on the hydraulic pump to the close position.

Pressurize the hydraulic pump to the recommended pressure as indicated in the filter press specifications and close manual hydraulic isolation valve, if provided (all hydraulic pumps are dual speed to aid in the actuation of required pressure).

Slowly open all of the discharge valves on the manifold.

Slowly open the center-feed valve.

Introduce 25-psi air pressure to the feed pump. The feed pump cycling will slow as the filter press becomes filled. Steadily increase in 25-psi increments, when the pump stalls, until 100-psi maximum feed pressure is attained and the pump stalls.

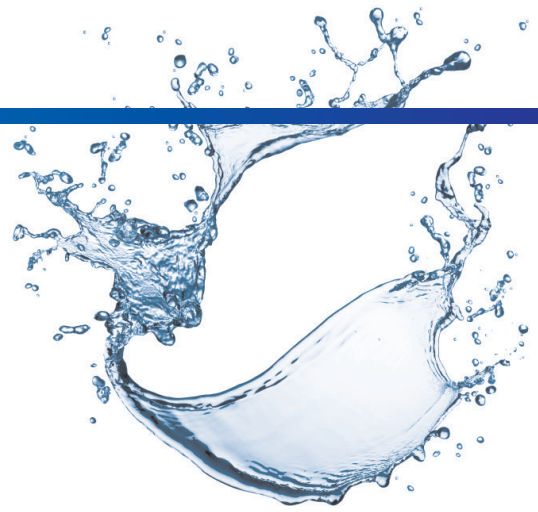
Turn off the air supply to pump.

Close center-feed assembly valve.

Close all of the discharge valves on the manifold and slowly open the air supply valve on the upper left hand corner, introducing 30 psi of air to the manifold. This will evacuate all excess water that is trapped between the cloths and plates. Continue the air blow down procedure for 30 minutes. There should be very little liquid exiting from the lower right hand filtrate pipe.

After the air blow down procedure is complete, turn off the air valve slowly and open the discharge valves slowly and let the filter press gravity drain for 5 minutes.

Open manual hydraulic isolation valve, if provided.



Slowly flip the selector switch on the hydraulic pump to the open position.

The hydraulic ram will automatically return, the operator should then rotate the cylinder ram up and pull the tail plate back. This will allow the operator to separate the filter plates and use the non-abrasive edge on the nylon paddles to aid in the cake removal.

Caution: If flow to the filter press is interrupted for a period of time, such as overnight, it is recommended that the feed pump be restarted at a low pressure for 5 to 10 minutes, before slowly increasing to maximum pressure. When the feed to the filter press is interrupted, the sludge build-up will have a tendency to fall from the sides of the chamber and settle to the bottom, possibly blocking the center feed hole. Restarting with high feed pressures does not give the sludge time to soften and distribute itself in the chamber. Blockage of the center feed can cause uneven pressure build-up and result in plate breakage.

Operation Of Fully Hydraulic Filter Press:

Assure that the filter plates are arranged in the plate stack properly before filtering to maximize filtration performance (refer to the filter press assembly drawing to obtain the correct sequence).

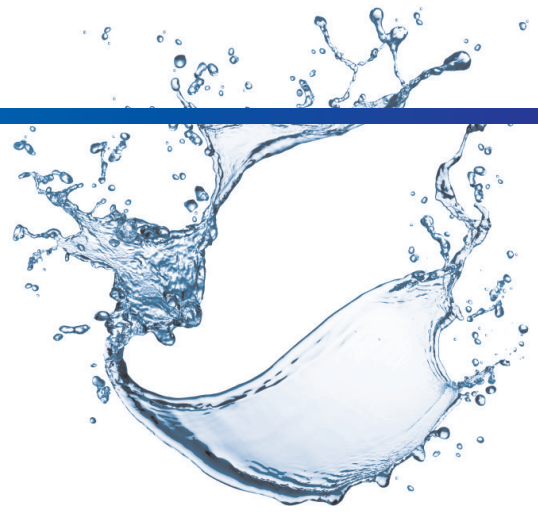
Move the selector valve on the hydraulic pump to the close position with the plant air turned on.

Pressurize the hydraulic pump to the recommended pressure as indicated in the Filter Press Specifications. Leave the control valve in the closed position the entire filling cycle.

Slowly open all of the 1 ½" valves on the manifold.

Slowly open the center-feed valve.

Introduce 25-psi air pressure to the feed pump. The feed pump cycling will slow as the filter press becomes filled. Steadily increase in 20-psi increments, when the pump stalls, until 90-psi maximum feed pressure is attained and the pump stalls.



Turn off the air supply to diaphragm pump.

Close center-feed assembly valve.

Close all of the 1 ½" valves on the manifold and slowly open the air supply valve on the upper left hand corner, introducing 30 psi of air to the manifold. This will evacuate all excess water that is trapped between the cloths and plates. Continue the air blow down procedure for 30 minutes. There should be very little liquid exiting from the lower right hand filtrate pipe.

After the air blow down procedure is complete, turn off the air valve slowly and open the 1 ½" valves slowly and let the filter press gravity drain for 5 minutes.

Slowly move the control valve on the hydraulic pump to the open position.

The hydraulic ram will automatically return, allowing the operator to separate the filter plates and use the non-abrasive edge on the nylon paddles to aid in the cake removal.