



# MANUAL FILTER PRESS

## MODEL 18PPMH

### SAFETY PRECAUTIONS BEFORE STARTING

1. Read Operating Instructions thoroughly, study diagrams, become familiar with all instruments and controls.
2. Refer to Chemical Resistance Data Chart in **SERFILCO** product catalog for compatibility of materials in unit with solution to be used.
3. Personnel should always wear suitable protective clothing: face mask or goggles, apron and gloves.
4. Ensure that all fittings and connections are properly tightened.

### BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in item 3 above.
2. Flush unit thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in item 2 above.

### TO INSTALL FILTER PRESS

**CAUTION:** Use care in handling. A filter press is a TOP-HEAVY piece of equipment. Lifting lugs are provided to lift and transfer the press.

1. Provide service access clearance all around the press and a sludge container removal route.
2. Anchor bolt only the head end of the press. The tail end should be vertically secure but free to float horizontally due to expansion.
3. Install piping to outlet of discharge manifold.
4. If air blowdown is to be used, connect air supply with a manual shut-off valve. Install regulator if air pressure exceeds 80 psi.

### OPERATION CLOSING THE PRESS

1. Push the follower and filter plates forward.
2. Un-pin the jack and swing it down into the horizontal position.
3. Turn the release valve clockwise with the jack handle.
4. Pump the hydraulic jack ram forward until the pressure gauge reads between 7,000 and 10,000 lbs.

### FILTRATION SEQUENCE

1. Open the four corner discharge valves.
2. Open inlet valve.
3. Start feed pump.
4. Turn off feed pump and close inlet valve.

**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 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 pressure does not give the sludge time to resoften and redistribute itself in the chamber. Blockage of the center feed can cause uneven pressure build-up and result in plate breakage.

The feed pump cycling will slow as the press fills with solids. When the pump cycles slow to approximately every 5-10 seconds it indicates a dense cake has formed and the liquid flow through the cake is very slow. Experience will dictate when an optimum sludge cake has been formed.

### AIRBLOW-DOWN SEQUENCE

1. Close the inlet valve.
2. Open the four corner discharge valves.
3. Open the air valve on the blow-down standpipe.
4. When free water is no longer being discharged, close off three corners to allow discharge from the fourth. Repeat this procedure until all four corner passages have been cleared.
5. Close air valve.
6. Open all four corner valves.

### OPENING PRESS SEQUENCE

1. Be sure liquid and air inlet valves are closed and no residue pressure is inside the filter chamber.
2. Open the jack release valve.
3. Retract the jack ram about one inch by pulling back on the follower plate.
4. Push the follower plate fully forward, swing the jack up and pin in position for plate cleaning.
5. Slide the steel follower plate back to release the filter plates.

### CLEANING THE FILTER PLATES

1. Manually separate the plates one at a time. NOTE: new gaskets have a tendency to stick. Use care in separation of plates so as not to damage them. A silicone spray may minimize this condition. Non-gasketed presses which use latex cloths may also experience sticking; this can be eased by putting talcum powder or sludge on the latex edges of the cloth.
2. Use a non-abrasive or wood paddle to remove any cake that has not fallen free. NOTE: Failure to thoroughly clean the plates can cause cracking due to excessive unbalanced internal pressure build-up.
3. The sealing surface of the plates should be thoroughly cleaned. Residues left in this area may prevent proper sealing of the plates. Cloths should be flat (without wrinkles) on the plate surface, otherwise a leak will develop.
4. With the plates thoroughly cleaned the press should be closed to reduce dry-out and inadvertent plate damage.

## GENERAL MAINTENANCE

**HYDRAULIC SYSTEM:** See jack information in the following manufacturer's section.

### Filter Plates, Cloths and Gaskets

The filter plates are constructed of a high density polypropylene which is extremely resistant to deterioration. Because of this construction, the plates need replacement only if they are damaged by mishandling or abuse.

Cleaning of the cloths, even with the supplied spatula, will cause the cloths to become worn and holes will develop after a period of time. The filter pores of cloths may slowly become contaminated with fine solids. When this condition causes the cycle time to become too long to make an acceptably dry cake, the cloth must be replaced or cleaned.

### GASKET REPLACEMENT (gasketed plates only)

1. Find the original gasket end joint or cut gasket carefully with something similar to an X-Acto knife.
2. Insert a small flat-bladed screwdriver into the joint and carefully pry upwards and pull the gasket out of the recess. NOTE: Avoid making indentations on the plate surface.
3. Use a length of gasket rope sufficiently long to go around the recess without stretching.
4. Cut gasket rope end with a slight bevel. (When the rope is fully inserted the opposite end should be cut to match.)
5. Start the end of the gasket rope into the recess in one of the straight sides, not in a corner.
6. When the gasket rope is at the meeting point, cut the end to match the bevel of the beginning cut. There should not be a gap upon completion.

NOTE: If you have stretched the gasket rope to insert it easily, it will begin to slide back leaving a gap between the two ends which will cause a leak.

### CLOTH REMOVAL (gasketed plates only)

1. The edge of the cloth is wrapped and sewn around a rope and is pressed into the recess.
2. Tap a small screwdriver into the rope at a corner. The cloth can be pried from its recess allowing it to be pulled away from the plate.
3. The intermediate plates will have this done on both sides so that the cloth can be removed through the center hole.
4. The tail plate has only one side to be replaced.
5. The head plate has only one side to be replaced, but a center clip nut must be removed. This center clip nut seals the cloth from the internal passages of the plates.

### FILTER CLOTH INSTALLATION (gasketed plates only)

1. Bunch up one end of the new cloth then push it through the center hole. Pull it through and lay the plate down.
2. Take a corner of the cloth and line it up with an appropriate corner in the plate. Smooth the remaining cloth evenly across the plate.
3. A. Place a wood or plastic wedge on the corner you chose to start and strike with a hammer. This will push the cloth, which surrounds a gasket rope, into the recess. Continue with this until the cloth is entirely installed, then go to the next side.  
B. The tail plate will have only one side to be done.  
C. The head plate will have only one side to be done.  
Replace the securing nut on the center feed tube.

NOTE: Non-gasketed cloths are simply draped over each plate and hung with pins. The center securing nut is still required for the head plate cloth.

## TROUBLESHOOTING

<b><i>PROBLEM</i></b>	<b><i>POSSIBLE CAUSE</i></b>	<b><i>REMEDY</i></b>
Water leaks out between plates.	<ol style="list-style-type: none"> <li>1. Gaskets loose or torn.</li> <li>2. Low hydraulic pressure.</li> <li>3. Too high pumping pressure.</li> </ol>	<p>Reinstall or replace.</p> <p>Increase to required PSI.</p> <p>Reduce supply pump pressure.</p>
Filter cloths pull out of grooves during cleaning.	A full cake was not developed before wash or blow-down causing cloth to be pushed out of caulking groove.	<p>Be sure chambers are completely full before wash or blow-down. The filter cake will then support the cloth.</p> <p>Increase cycle time.</p> <p>Increase pump pressure.</p>
Filter cloths pull out of grooves even though full cakes are being built.	Improper size sash cord for cloth or application.	<p>Future cloths should be made with a slightly larger sash cord. Contact <b>SERFILCO</b> for recommendations.</p> <p>Increase cycle time.</p>
Filter cake not fully compacted.	<ol style="list-style-type: none"> <li>1. Inadequate cycle time.</li> <li>2. Supply pump pressure.</li> <li>3. Filter cloth is blinded.</li> </ol>	<p>Increase pump pressure.</p> <p>Clean or replace cloths.</p>



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Refer to Master Price List F-800.

ITEM	DESCRIPTION	QUANTITY	PART NO.
1	Structural frame	1	43-0868
2	Inlet pipe	1	43-0869
3	Inlet stand pipe assembly	1	43-0870
4	Inlet valve	1	43-0871
5	Inlet pipe nut	1	43-0872
6	Head plate clip-nut	1	43-0873
7	Corner drain pipe	4	43-0874
8	Corner drain pipe nut	4	43-0875
9	Drain valves	4	43-0876
10	Head plate (470mm) Gasketed Non-gasketed	1	43-0877G 43-0877
11	Head plate cloth Gasketed Non-gasketed	1	43-0878G 43-0878
12	Tail plate (470mm) Gasketed Non-gasketed	1	43-0879G 43-0879
13	Tail plate cloth Gasketed Non-gasketed	1	43-0880G 43-0880
14	Intermediate plates (470mm) Gasketed Non-gasketed	1 set	43-0881G 43-0881
15	Intermediate plate cloths Gasketed Non-gasketed	1 set	43-0882G 43-0882
16	Follower plate	1	43-0883
17	Follower plate rollers	3	43-0884
18	Hydraulic jack mounting assembly	1	43-0885
19	Hydraulic jack	1	43-0886
20	Hydraulic jack operating handle	1	43-0887
21	Hydraulic jack safety pin	1	43-0888
22	Filter plate gasket material (for CGR models only)	1 set	43-0889