

**Model 25-48PP  
with optional pneumatic  
plate spreader**

## LIQUID / SOLID SEPARATION FOR:

**WASTE & SEWAGE TREATMENT  
BREWING / CEMENT / CERAMIC  
MINING & PLATING INDUSTRIES  
FOOD & VARNISH PROCESSING  
CHEMICALS**

- **MANUAL HYDRAULIC**  
0.6 to 3 cu.ft.expandable
- **SEMI-AUTOMATIC**  
1 to 50 cu.ft. expandable
- **AIR BLOWDOWN MANIFOLD**
- **CORROSION RESISTANT**
- **40-60% SOLIDS CONCENTRATION**
- **LOW ENERGY REQUIREMENT**
- **EASY DROPOUT CLEANING**

The **Recessed Plate Filter Press** will compact sludges to a dry cake with a density that is dependent upon the ultimate compaction pressure and the characteristics of the particular sludge.

Each pressload will require from 2-4 hours cycle time. To insure adequate time, the press should be sized for at least 8 hours working capacity. The table and formula below can be utilized to size your press. You can confirm your sizing and evaluate the process for your application with a laboratory-sized model.

Contact our Sales Dept. to arrange a pilot test.

Presses feature structural steel frame, coated with tough chemical resistant epoxy paint. The high-density molded polypropylene filter plates are light-weight, corrosion resistant and are fitted with special polypropylene quick cake release filter cloths. Presses also feature an air-actuated hydraulic system for opening and closing, automatic self-compensating hydraulic system and a conveniently located operator control console.

**TO SIZE YOUR PRESS**, the following information is required:

SLUDGE TYPE	% OF CAKE DRY WEIGHT SOLIDS	AVERAGE DRY WEIGHT/ CUBIC FOOT
Biological Sludge	15-25	15
Metal Hydroxide Sludge	25-40	25
Lime Treated Sludge	15-60	30

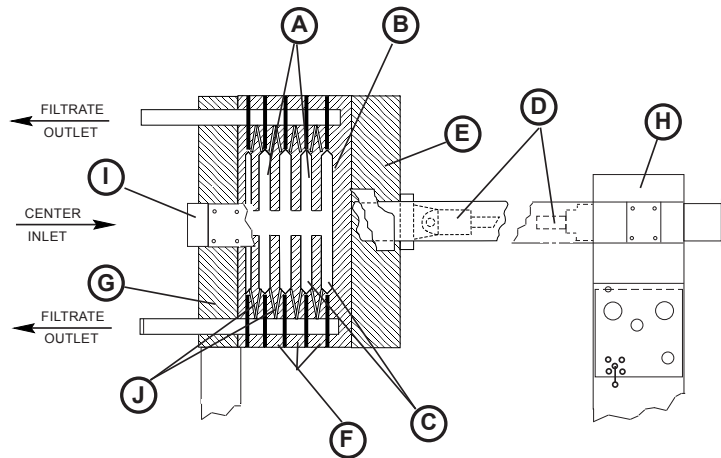
- A. Total gallons to be processed in selected press in specified period, e.g., U.S gals./8 hours. Twenty-four hours can be used to insure adequate capacity.
- B. Percent by weight of filterable suspended solids.
- C. Average dry weight per cubic foot for a particular sludge (obtained from table.)

### CALCULATIONS:

$$\frac{A \times B \times 8.33 \text{ LBS./GAL.}}{C} \text{ OR } \frac{(U.S. GALS./ 8 \text{ HRS.}) \times (\% \text{ SUSPENDED SOLIDS}) \times 8.33 \text{ LBS./GAL.}}{(\text{AVERAGE LBS. DRY WT. / CUBIC FT.})} = \text{CU. FT. CAPACITY FOR A DURATION}$$



*The Recessed Plate Filter Press incorporates modern materials and methods suited to dewatering applications in plating and other industries.*



## OPERATION

Dewatering is accomplished by pumping a slurry or sludge into chambers (A) surrounded by filter membranes (B). As pumping pressure is increased the filtrate is forced through the accumulated filter cake (C) and membrane until the chamber is full of solid filter cake.

The chambers are formed by two recessed plates held together under hydraulic pressure. The hydraulic ram (D) moves the follower (E) against the stack of filter plates (F) closing the press. The ram continues to apply sealing pressure of sufficient force to counteract the high internal compaction pressures. The head stock (G) and tail stock (H) are held in place by specially engineered side rail support bars (I).

The filtrate passes through the membrane and is directed by channels in the plates and drain ports (J) to the head stock for discharge. The filtrate typically contains less than 15 PPM suspended solids. The filter cake is easily removed by simply reversing the hydraulic ram, thus opening the press. The lightweight plates may then be moved apart, permitting the compacted cake to fall from the chambers.

The higher the internal pressure, the greater the solids compaction. The standard press is constructed to withstand 100 PSI compaction pressure producing a hard dry cake. A special high pressure press can withstand 225 PSI for sludge more difficult to dewater.

Air diaphragm type pumps provide very efficient compaction of the sludge. The maximum pressure can be set with the air supply regulator and the pumping rate set with the volume of air flow. The pump will run rapidly during the initial phase of the cycle, slowing steadily as back pressure increases due to cake formation. Low initial back pressure induces rapid pumping and shortens the overall cycle time. When the pump attains the desired pressure and the flow rate slows, the compaction cycle is complete. An air blowdown manifold allows influent to be purged from piping before the press is opened.

Overall cycle time is dependent upon the concentration of the influent sludge. Higher concentrations dramatically reduce cycle time. Typical cycle time is two to four hours. Typical cleaning time is less than 30 seconds per plate.

## NON-GASKETED AND GASKETED PLATES

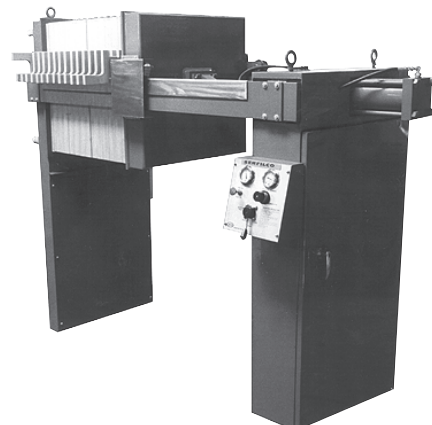
The filter cloth forms the seal between the plates. Latex tacking can be applied to the cloth to limit the leakage of the filtrate. The high internal filtration pressures will, however, force a small quantity of the filtrate from between the plates. Gasketed plates are available which retain valuable filtrate and also prevent leakage.

## MANUAL HYDRAULIC

These models have a manually operated turbo air pump to close the hydraulic ram. They are available in the smaller sizes for an economical press without sacrificing solids concentration or press quality.

## SEMI-AUTOMATIC

The follower is moved into the operating or pressure position and back to the cleaning position with a heavy duty air powered hydraulic ram. This self-compensating hydraulic system prevents over pressurization and automatically prevents loss of closure pressure from thermal expansion/contraction of the polypropylene filter chambers. All components are mounted inside the tail stock. A check valve prohibits loss of hydraulic pressure if air pressure is lost.

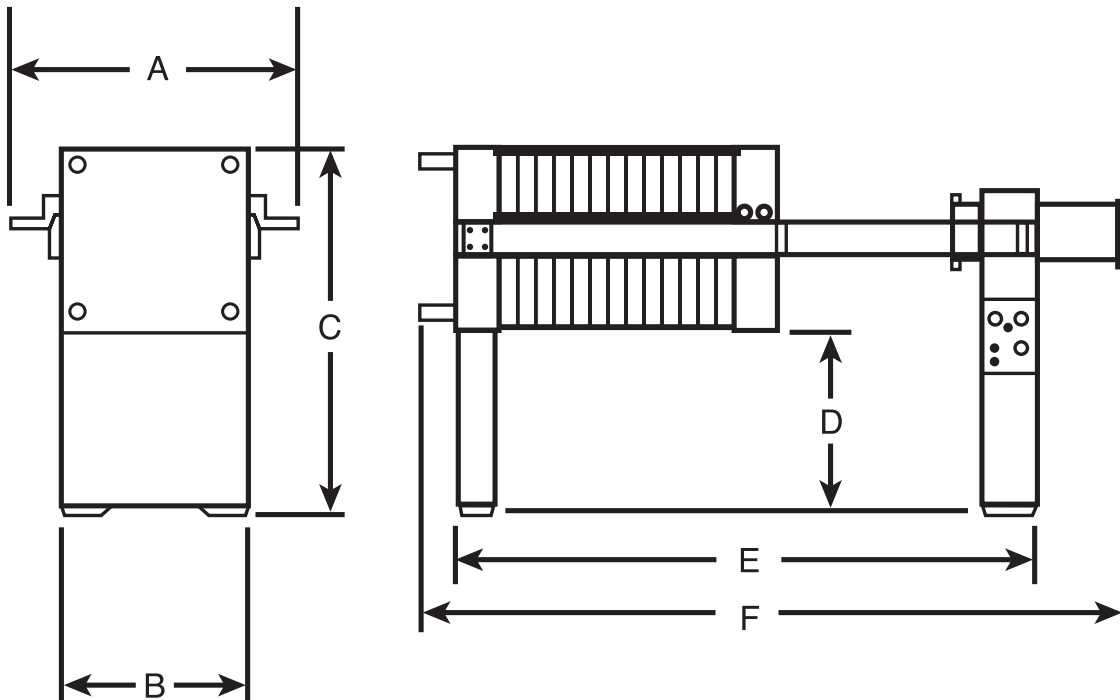




## SPECIFICATIONS

SIZE	MODEL	NOMINAL CAPACITY (CU. FT.)	IN-OUT NPT & SQUARE PLATE SIZE	NO. OF CHAMBERS	SLUDGE HOPPER (CU FT.)	DIMENSIONS (IN.)						APROX. WEIGHT (LBS.)
						A	B	C	D	E	F	
<b>MANUAL HYDRAULIC</b>												
AA	0.6-18PPMH	0.6		4	6					37	52	800
	1-18PPMH	1	1½" x 1"	7	6					41	56	850
	2-18PPMH	2	(470mm)	13	6	32	24	61	48	55	70	940
	3-18PPMH	3	18.5"	20	6					73	87	1060
<b>SEMI-AUTOMATIC</b>												
A	1-24PP	1		3	6					57	84	1700
	2-24PP	2	2½" x 1½"	7	14					67	93	1900
	3-24PP	3	(630mm)	10	14	39	31	56	30	74	100	2050
	4-24PP	4	24.8"	14	14					80	107	2150
	5-24PP	5		17	14					89	116	2300
B	6-31PP	6		12	14					82	109	4200
	8-31PP	8	3" x 2"	16	17					92	119	4450
	10-31PP	10	(800mm)	20	17	48	40	63	30	102	129	4900
	15-31PP	15	31.5"	30	2 X 14					127	154	5500
	20-31PP	20		40	2 X 14					152	179	6000
D	25-48PP	25		19	60					105	133	11,380
	30-48PP	30	4" x 2"	23	60					116	144	11,850
	40-48PP	40	(1200mm)	30	60	66	58	97	49	141	169	13,100
	50-48PP	50	47.2"	38	2 X 60					163	191	14,000

## DIMENSIONS





## TO ORDER, use Price Code Number

MODEL	CUBIC FEET	PRICE CODE NUMBER	
		NON-GASKETED	GASKETED
0.6-18PPMH	0.6	43-0804	43-0804 G
1-18PPMH	1	43-0805	43-0805 G
2-18PPMH	2	43-0806	43-0806 G
3-18PPMH	3	43-0807	43-0807 G
1-24PP	1	43-0601	43-0601 G
2-24PP	2	43-0602	43-0602 G
3-24PP	3	43-0603	43-0603 G
4-24PP	4	43-0604 A	43-0604 AG
5-24PP	5	43-0605 A	43-0605 AG

MODEL	CUBIC FEET	PRICE CODE NUMBER	
		NON-GASKETED	GASKETED
6-31PP	6	43-0606	43-0606 G
8-31PP	8	43-0608	43-0608 G
10-31PP	10	43-0610	43-0610 G
15-31PP	15	43-0615 A	43-0615 AG
20-31PP	20	43-0620 A	43-0620 AG
25-48PP	25	43-0625 A	43-0625 AG
30-48PP	30	43-0630 A	43-0630 AG
40-48PP	40	43-0640	43-0640 G
50-48PP	50	43-0650	43-0650 G

## OPTIONAL EQUIPMENT

Other options such as high-pressure units, pre-coat and body feed systems, catwalks, platforms and ladders are available and will be quoted upon request.

DESCRIPTION	PRICE CODE NO.
Air diaphragm pump, ½" - 14 GPM	55-7287
Polypropylene w/nitrile 1" - 40 GPM	55-7602
See Bulletin P-605 1 ½" - 130 GPM	55-7615
Drum disposal system <sup>1</sup> - w/extended legs & chute Semi-automatic 24"	43-0648
Self-dumping sludge hopper 6 cu. ft. (36" L x 42" W x 27" H)	43-0641
14 cu. ft. (48" L x 42" W x 27" H)	43-0643
17 cu. ft. (60" L x 42" W x 27" H)	43-0681
60 cu. ft. (60" L x 60" W x 48" H)	43-0682
PRESS-FULL indicator	43-0668

DESCRIPTION	PRICE CODE NUMBER			
FOR PLATE SIZE	18"	24"	31"	48"
Pneu. plate spreader	-	43-0680	43-0656	43-0658
Safety light curtains	-	-	43-0659	43-0661
Replacement cloth Non-gasketed	SF-U18*	SF-U24*	SF-U31*	SF-U48*
Gasketed	SF-U18*G	SF-U24*G	SF-U31*G	SF-U48*G
Expander piece (For the future addition of up to 10 plates) <sup>2</sup>	43-0672	43-0673	43-0674	43-0675
Additional plates (each)	43-0676	43-0677	43-0678	43-0679
Automatic pump control <sup>3</sup> 3 stage	43-0662			
4 stage	43-0670			
Hydraulic interlock for feed pump air supply	43-0671			

<sup>1</sup> AA Size - Manual Hydraulic units are designed to drop sludge directly into 55 gal. drums.

<sup>2</sup> Standard press allows for the addition of 4 plates.

<sup>3</sup> Allows progressively increasing air pressure on diaphragm pump to attain a denser, drier cake.

\* To designate cloth position, add to Price Code Number:  
H Head T Tail M Intermediate