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OPERATING AND MAINTENANCE MANUAL

BATCH PRESSURE FILTER 3 GALLON CAPACITY

Installation

The 3 gallon batch pressure filter may be operated with either a side or bottom discharge, since the base of the filter is furnished with both side and bottom discharge drain ports. A 1/4" plug is furnished for placing into the drain outlet NOT being used. The filter cover has two 1/4" NPT ports, one is for the air coupling; the other is for the air regulator assembly, consisting of a petcock valve, air gauge, and pop type safety relief valve.

The filter should be mounted to a firm table, capable of withstanding 140 Lbs. dead load, and resistant to water and any other chemicals that may be present. It is recommended to bolt the filter to a table for safety reasons, to prevent the filter from tipping over during filling or discharge, but it is not necessary to operate the filter. The table height should be at a height comfortable for the operator, normally 2' to 2-1/2' (61 cm to 76 cm). The filter should be placed near water drainage, preferably a floor drain. Alternate drainage would be a sink type drain, with the filter mounted on the counter sloping towards the sink.

A water line with a short length of hose should be available near the filter, for cleaning the filter in between batch filtering, and general washing. A compressed air source, with at least the capacity for 1 cfm @ 40 psi, should be connected to the quick connect hose coupling on the filter lid. A short length of pressure hose should be used, since it is necessary to have a flexible air coupling to the filter. The filter should not be opened without dis-connecting the quick dis-connect coupling and opening the petcock valve to release any pressurized air inside of the filter. Maximum operating pressure of the filter is 75 psi, as the pressure relief valve is set to this pressure. (Units are tested at 100 psi, but for a larger safety factor, we only recommend 75 psi).

Operation of the Pressure Filter

A. Assuming that the filter is in the closed position, (the lid securely clamped by the hand wheel clamping device), shut off the air supply. Open the petcock valve and allow the pressurized air to exit the filter chamber, when the pressure gauge reads zero and no more air is exiting the filter, release the lid by loosening the clamping screw. Tilt the yoke-lid and lift the cylinder off of the base. Clean all parts thoroughly.

B. Place the filter cloth over the backing screen (10 mesh stainless steel screen on the filter base), wet filter cloth thoroughly. (This helps cloth, paper to seal) Place piece of filter paper on top of cloth and wet filter paper thoroughly.

C. Lift the filter chamber and set it firmly on the base, being certain that it is in the proper position. Note there are position centering pins in the base to assist in setting the chamber on the base correctly. If necessary, cut a slot in the cloth and/or filter paper to allow for the positioning pins.

D. Pour the pulp to be filtered into the filter chamber, being careful to add it slowly until the filter paper is completely covered, then it may be added faster. This prevents damage to the filter paper. After all pulp has been added to the filter, rinse the pouring vessel with the solids being added to the filter chamber. Spray a small stream of water into the filter chamber to wash accumulated solids from the filter chamber walls.

E. Carefully place the cover on the filter by raising the yoke/lid into position and tightening firmly by means of the hand clamping screw mechanism. Connect the air hose coupling.

F. Slowly turn the air supply valve to the open position, allowing air to enter the filter chamber. Inspect the base of the filter for leaks. (If leaks are detected, de-pressurize the chamber and re-tighten the clamping mechanism, or use a hi-seal filter cloth).

G. The filtrate should begin to exit through the drain in a small amount initially, increasing to maximum flow and then decreasing to a trickle then nothing. When the filtrate ceases to flow, the process is over.

H. Opening the filter is the same process as described in the foregoing step (A). When the cover has been removed, run a spatula between the filter cake and lift the filter cake off of the base by picking up the filter cloth. Discharge the filter cake into a drying pan. If a small amount of the filter cake adheres to the filter chamber, it can be removed with a spatula onto the filter paper to avoid any loss of solids.

I. Wash the filter chamber, cover and base with water and the filter is now ready for re-use.

Vacuum Filtration

The pressure filter can be used to vacuum filtration of pulps by leaving top plate (cover) off the filter and attaching a vacuum line to the filtrate port. If many vacuum filter tests are to be conducted, is it better to use the specially designed Sepor Vacuum Filtration Batch Unit, 10” diameter by 6” height.

Operation Information for Pressure Filtration

Time can sometimes be saves by flocculating the pulp (slurry) using anionic and/or cationic flocculants to increase the filtration rates on fine material.

The sample to be filter should be thoroughly mixed and poured through the filter. This helps to prevent blinding of the filter by disseminating the larger particles among the fines. If only very fine material is being filtered, the filtration rate slows down; flocculation may be required to prevent blinding and to achieve filtration. Several major manufacturers of flocculants, such as Nalco, Allied Colloids and Betz can supply all of the flocculants and information on their application required.

A good, solid seal between the filter medium, plate and filter chamber is essential. A rubber gasket is in a machined groove in the filter base of all filters manufactured after October, 2010, to ensure this seal. The yoke, when tightened firmly, should produce a tight seal. When sealing the chamber, the torque readings can give an accurate indication that the chamber is sealed. For filtering with filter paper (no filter cloth), a torque reading of foot-pounds should be adequate for sealing the filter. When filter cloth and filter paper of only filter cloth is used, a torque reading of foot-pounds should be adequate sealing of the filter. Normally, it is recommended that the bottom filter plate be tightened with the filter empty.

Occasionally it may be advisable on the mild steel model to lightly sand paper the bottom surface of the filter chamber to dislodge any rust accumulation. Your Sepor Pressure Filter will give you many years of service. After the equipment is put into service, we suggest extra paper, filter cloth and gaskets be kept on hand. Sepor filter paper is a 25 micron pore opening, high wet strength for filter paper.

For maximum blowout or leak prevention, the Hi-Seal Filter Cloth should be used. The Hi- Seal Filter Cloth has a rubber gasket sewn onto the periphery of the filter cloth, creating a very good seal in the batch filter. If leaking becomes a problem, it is suggested that the Hi- Seal Filter Cloth be used.

8 inch Stainless Steel Bench Filter

Number	Item ID	Item Description	QTY Needed
1	070B-T010SS	8" Pressure Filter Base SS	1
2	070B-T011SS	8" Pressure Filter Tube SS	1
3	070B-T012SS	8" Pressure Filter Lid SS	1
4	070B-T013SS	Upright Poles 3/4"x21" SS	2
5	070B-T014	Gasket	2
6	070B-T018	3 Bolt Flange (bolts not included)	1
7	070B-T020	Yoke	1
8	070B-T023	Clamping Screw	1
9	070B-T024	Handle Bar	1
10	070B-T022	Half Ring	1
11	100ST018	1/4"-20 x 7/8" Screw	3
12	100ST288	1/4"-20 x 1/2" Set Screw	1
13	100ST193	10-32 x 1/2" Screw SS	1
14	600ST075	5/16" x 3/4" Spring Pin SS	2
15	600ST079	3/16" x 1-3/4" Spring Pin SS	2
16	100ST635	3/4"-10 Hex Nut	4
17	705ST110	Ball Knob	2
18	070B-T026	Mesh Screen 316SS	1
19	070B-011	10" Filter Cloth	1
20	070B-012	10" Filter Paper	100

8 inch Mild Steel Bench Filter

Number	Item ID	Item Description	Qty Needed
1	070B-T010MS	8" Pressure Filter Base MS	1
2	070B-T011MS	8" Pressure Filter Tube MS	1
3	070B-T012MS	8" Pressure Filter Lid MS	1
4	070B-T013SS	Upright Poles 3/4" x 21" SS	2
5	070B-T014	Gasket	2
6	070B-T018	3 Bolt Flange (bolts not included)	1
7	070B-T020	Yoke	1
8	070B-T023	Clamping Screw	1
9	070B-T024	Handle Bar	1
10	070B-T022	Half Ring	1
11	100ST018	1/4"-20 x 7/8" Screw	3
12	100ST288	1/4"-20 x 1/2" Set Screw	1
13	100ST193	10-32 x 1/2" Screw SS	1
14	600ST052	5/16" x 3/4" Spring Pin	2
15	600ST072	3/16" x 1-3/4" Spring Pin	2
16	100ST635	3/4"-10 Hex Nut	4
17	705ST110	Ball Knob	2
18	070B-T026	Mesh Screen 316SS	1
19	070B-011	10" Filter Cloth	1
20	070B-012	10" Filter Paper	100

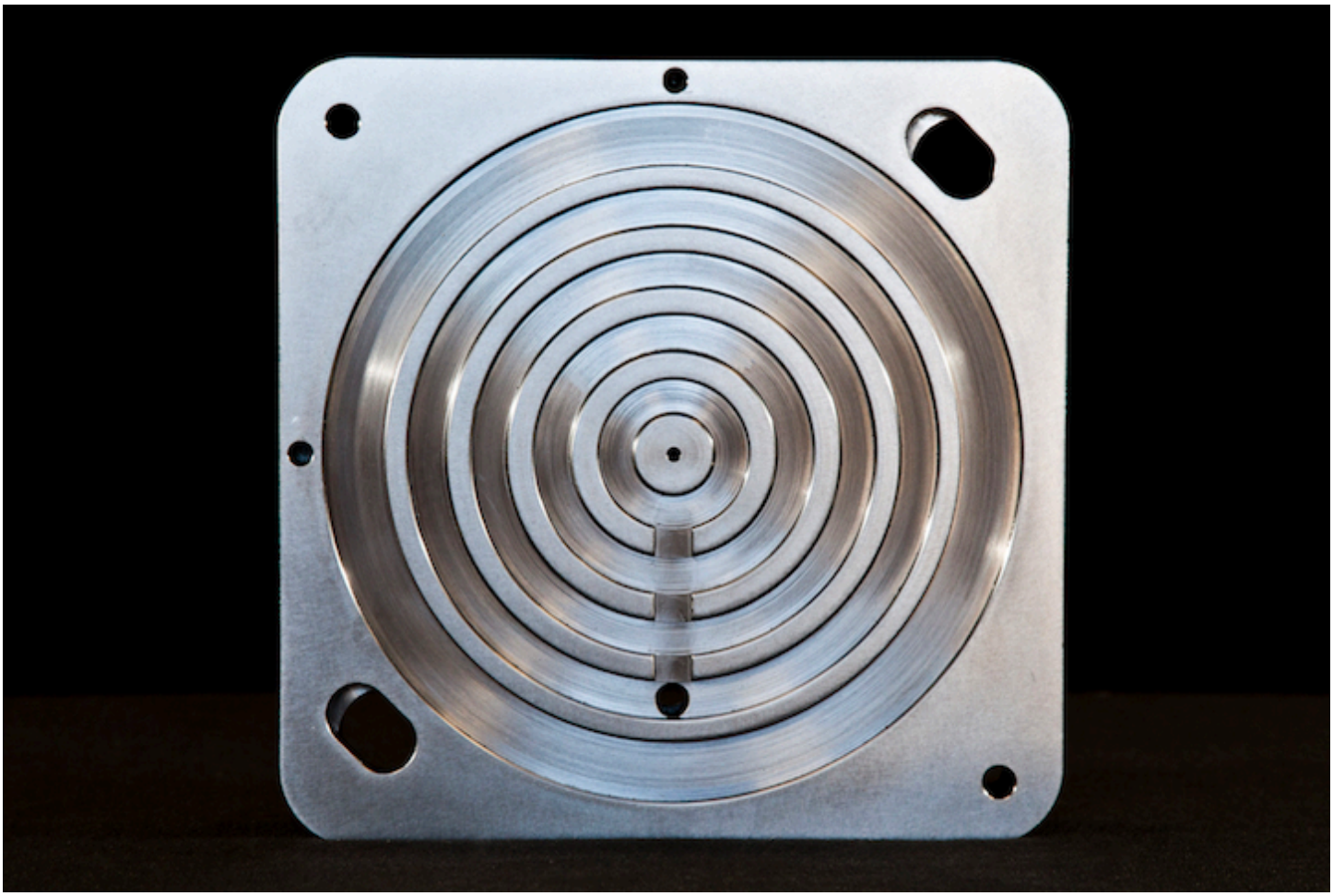
Stain Steel Sub Air Assembly

Number	Item ID	Item Description	QTY Needed
1	400ST021SS	1/4" Pipe Cross SS	1
2	400ST040SS	1/4" x 2" Pipe Nipple SS	4
3	400ST060	1/2" : 1/4" Pipe Coupling SS	1
4	400ST102	1/4" Pipe Plug SS	2
5	500ST035SS	1/2" Pressure Relief Valve SS	1
6	500ST012	1/4" Ball Valve SS	2
7	500ST015	1/4" Petock Valve	1
8	500ST049	Coupler Body	1
9	500ST048	Coupler Plug	1
10	500ST227	1/4" Pressure Gauge	1

Mild Steel Sub Air Assembly

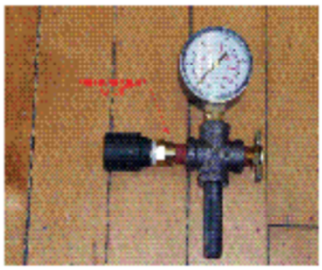
Number	Item ID	Item Desciption	QTY Needed
1	400ST022	1/4" Pipe Cross	1
2	400ST041	1/4" x 2" Pipe Nipple	4
3	400ST051	1/4" Pipe Plug	2
4	500ST020	1/4" Pressure Relief Valve	1
5	500ST013	1/4" Ball Valve	2
6	500ST015	1/4" Petock Valve	1
7	500ST049	Coupler Body	1
8	500ST048	Coupler Plug	1
9	500ST227	1/4" Pressure Gauge	1

All batch pressure filters manufactured since October, 2010, have had the gasket installed in a machined groove in the base. This prevents leaking and these types of filters do not need the hi-seal filter cloth, for difficult to filter applications.

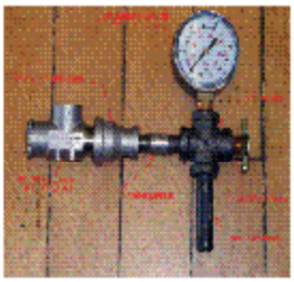


The 8 inch, carbon steel batch pressure filter.

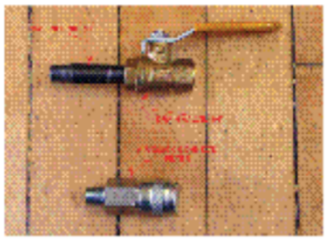
Valves, Fittings, 3 Gallon Pressure Filter



At left, the pressure relief valve furnished with the mild steel pressure filter, and assorted fittings and pressure gauge



At left, the pressure relief valve furnished with the stainless steel pressure filter, and assorted fittings and pressure gauge



At left, the drain valve and pressure filter quick connect fitting for compressed air

The gauge may be installed either on the top as shown above or on the side, as shown in the filter to the right. Stainless steel filters have SS piping and pressure relief valve. Carbon steel filters have carbon steel piping, brass relief valve.