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OPERATING & MAINTENANCE MANUAL

11.5 GALLON PRESSURE FILTER



Installation

The filter should be bolted to the floor. Ideally, the filter location should be selected in an area of the laboratory in which there is a concrete floor with a floor drain and a source of water nearby. A water line with a short length of hose on the end should be available near the filter, since cleaning the filter between batch processing will be necessary.

The supplied piping, fittings, valves, and gauges should be assembled per the sketch supplied. The filter should be connected, at the quick connect air supply valve, to an air supply of at least 3 CFM with operating pressures of 50-60 psi. The pressure filters are factory tested at 100 psi, however operating pressure is not recommended to exceed 75 psi. **(At 60 psi, there is a total force of 6,782 pounds acting against the top and base plates)** The safety relief valve is factory set to open at 75 psi. The safety relief valve may be reset to open at lower pressures, by manually adjusting the screw mechanism inside of the valve.

To Operate The Filter

A. Lower and open the base (bottom plate) by turning the hand wheel enough to enable the installation of a wetted filter cloth and/or a wetted high strength filter paper, on the waffle grid base. If both filter cloth and filter paper are used, first place the wetted filter cloth on the waffle grid, then place the wetted filter paper over the filter cloth, centering both on the grid plate. Raise the base up to the cylinder by turning the hand wheel. Check the filter paper to be certain that there are no folds, creases or other possible obstructions before closing the hand wheel tightly, thus securing the base plate to the cylindrical chamber. A torque wrench may be placed on the hand wheel, and when the torque reads 50 foot pounds, the wheel is secure and should not leak or “blow out”. (This is applicable when filter paper is used, no filter cloth. If filter cloth is used, only a 1 ply of layer of filter cloth should be used. Due to the porosity of filter cloth, it is very difficult to stop the liquid from transferring through the pore spaces, so some leakage may appear when using filter cloth.) With no filter media extending onto the gasket of the filter disk, the filter will seal with only 30 foot pounds of torque applied. It is possible to trim the filter cloth to fit inside of the filter chamber, without extending onto the gasket area that seals with the cylinder.

B. Open the hinged swing-away lid (top plate) by turning the hand wheel in a counter clock- wise direction until the top plate is clear from the cylinder and swinging it out to the side. Then, pour the pulp (slurry) to be filtered into the filter cylindrical chamber, slowly at first until the filter paper is entirely covered with slurry. If the slurry is added too fast, there is a danger of damaging the filter paper. When the slurry has been added (up to 11 gallons), take a water hose and wash any clinging particles from the wall of the filter of damaging the filter paper. After the pulp has been added. and the feed!

C. Swing the lid into position and tighten by turning that hand wheel in a clockwise direction, securing the top plate to the cylindrical chamber. A torque wrench may be placed on the hand wheel, and when the torque reads 50 foot pounds, the wheel is secure and should not leak. *(This is applicable when filter paper is used, no filter cloth. If filter cloth is used, only a 1 ply of layer of filter cloth should be used. Due to the porosity of filter cloth, it is very difficult to stop the liquid from transferring through the pore spaces, so some leakage may appear when using filter cloth.)

D. Slowly turn the air supply valve on so as to avoid a rapid surge of air into the filter chamber. While slowly turning the air on, inspect the base of the filter for any leaks which could cause loss of product.

E. The filtrate will emerge from the base piping as a small to full flow depending on the nature of the pulp being filtered. When the filtrate flow ceases and only air is being dis- charged, shut off the main air supply valve. Then slowly open the pet cock to release the air. Do Not Stand Near the Air Release Valve. When all of the air has been discharged, from the filter chamber, the base plate may be opened to discharge the filter cake of solids.

F. When the air pressure has dissipated to equilibrium, the base can be released and lowered to recover the filter cake. Spatulate the inside of the cylinder. Pick up the cloth/filter paper and dump the cake into a container.

G. Wash the filter chamber, cover and base with a jet of water and the filter is ready for reuse.

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

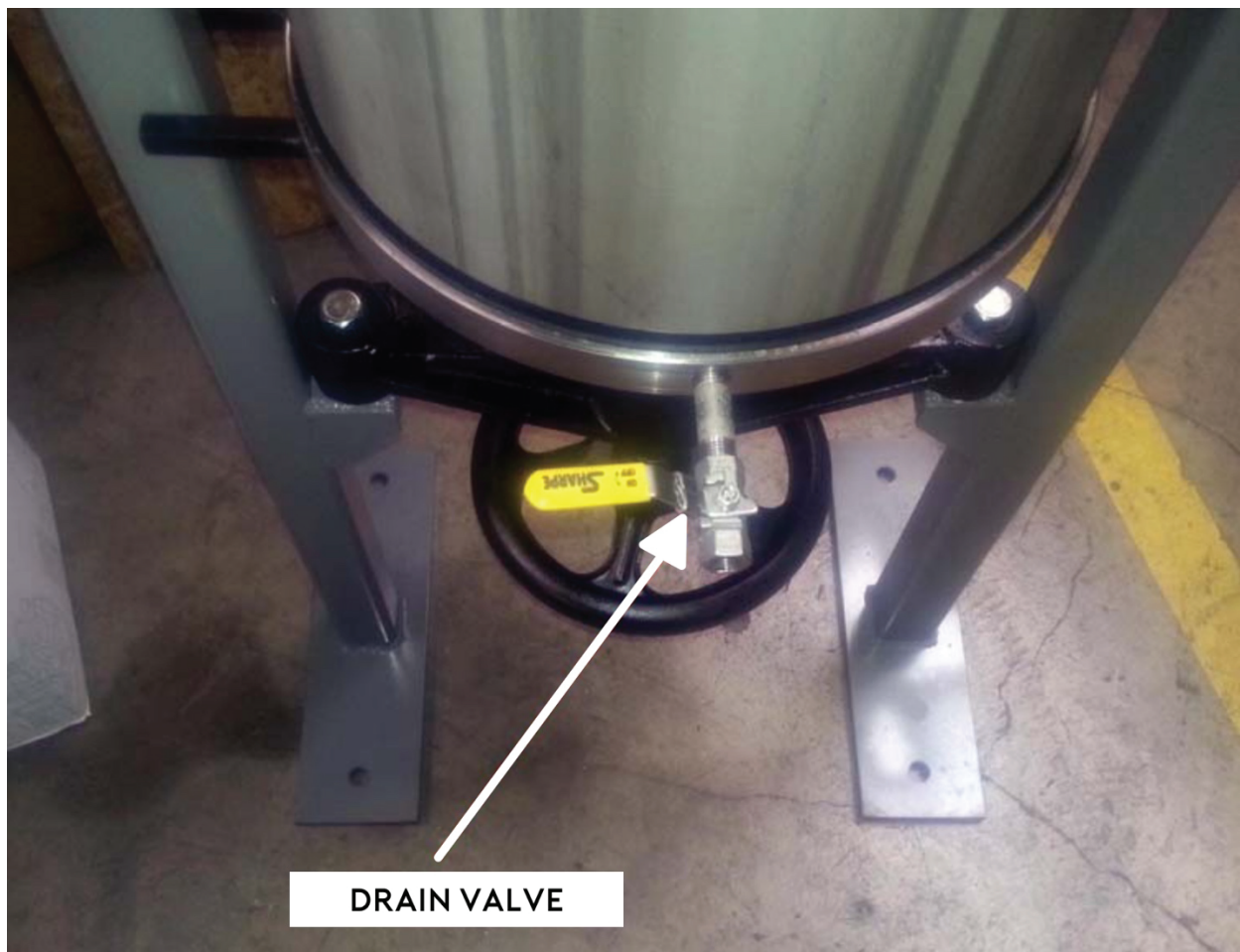
Time can sometimes be saved by flocculating the pulp (slurry) using anionic and/or cationic flocculants to increase the filtration rates on fine material.

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, Cytec can supply all of the flocculants and information on their application required.

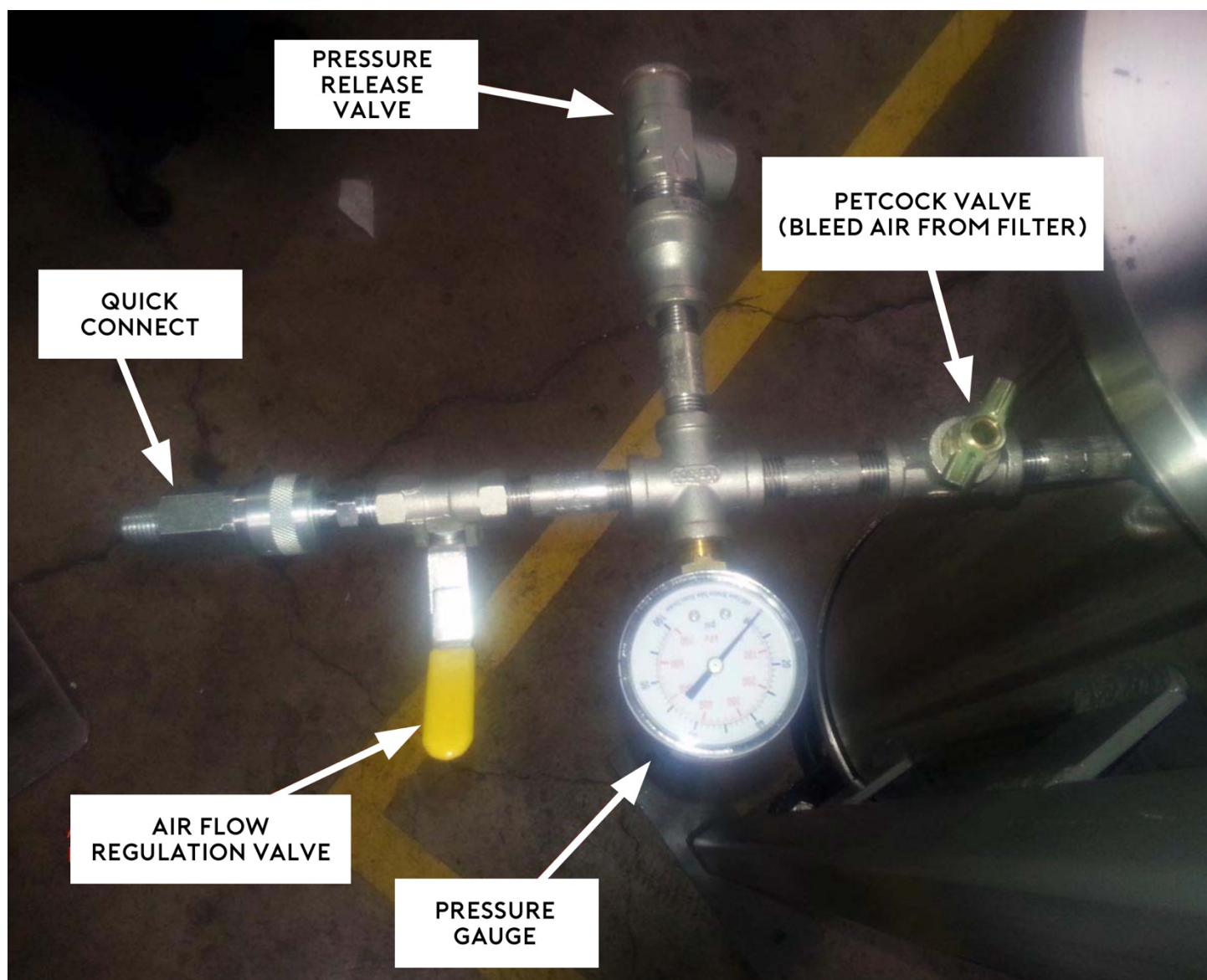
A good, solid seal between the filter medium, plate and filter chamber is essential. The yoke, when tightened firmly, should produce a tight seal. When sealing the chamber, the torque readings can give an accurate indication that the chamber is sealed. For filtering with filter paper (no filter cloth), a torque reading of foot pounds should be adequate for sealing the filter. When filter cloth and filter paper or only filter cloth is used, it may not be possible to prevent all leaking, since liquid will flow through the pores of the cloth, but any such leakage should be minimal. Normally, it is recommended that the bottom filter plate be tightened with the filter empty.

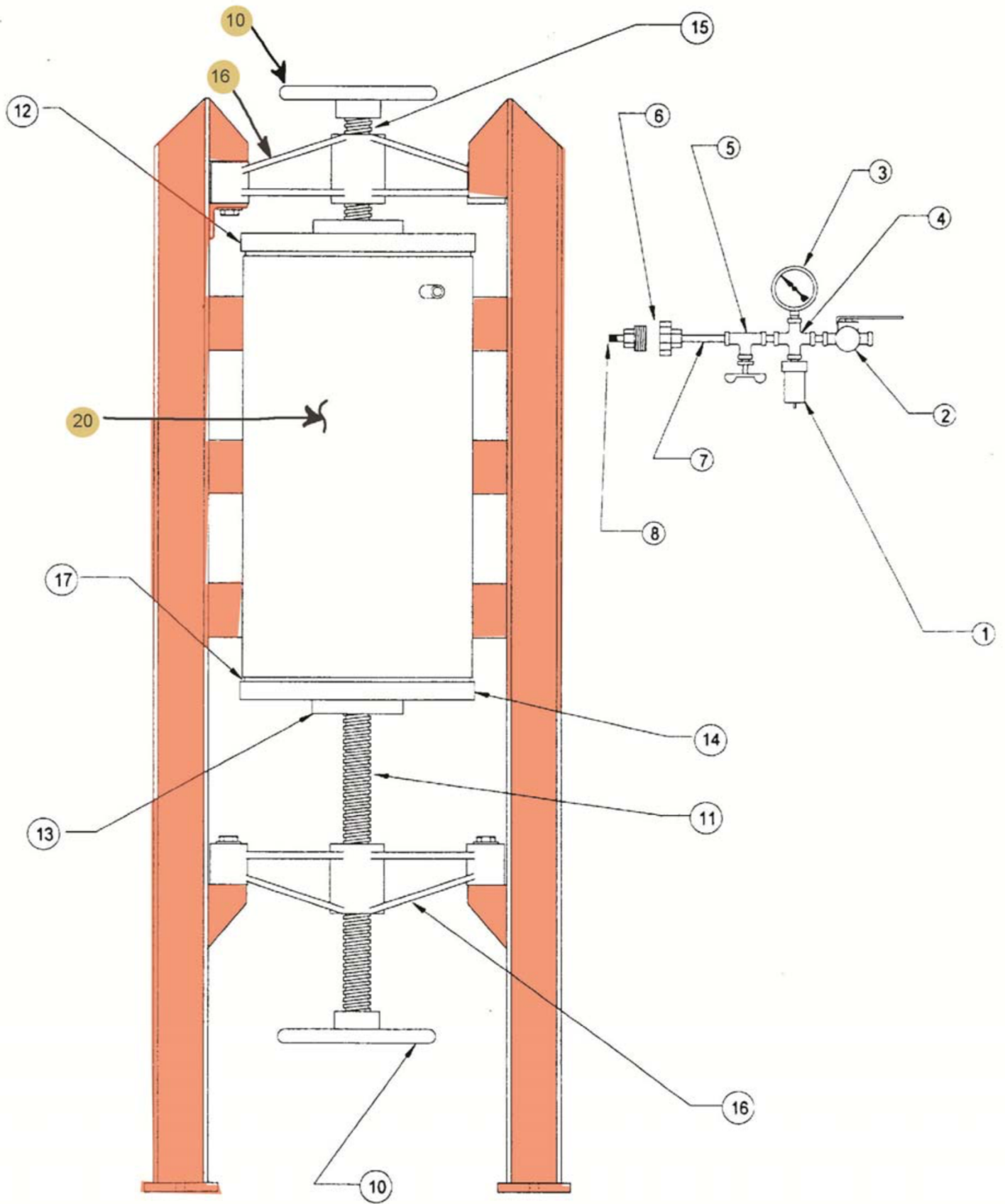
Occasionally it may be advisable on the mild steel model to lightly sand paper the bottom surface of the filter chamber to dislodge any rust accumulation. Your Sepor Pressure Filter will give you many years of service. After the equipment is put into service, we suggest extra paper, filter cloth and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

The rubberized model is equipped with a stainless steel drain, and requires a stainless steel drain requires some periodic maintenance, and that is that it be flushed with water after use to prevent any corrosives from chemically reacting with the stainless steel. The rubberized filter should be flushed with water after each use also, to prevent premature deterioration of the rubber lining.



Top, Air Inlet Valve Arrangement





SEE NEXT PAGE FOR DESCRIPTIONS

PARTS LIST FOR MILD STEEL 11.5 GALLON PRESSURE FILTER • 070B-001

#	ITEM #	ITEM DESCRIPTION	QTY REQ.
1	500ST020	PRESSURE RELIEF VALVE	1
2	500ST013	BRASS BALL VALVE 1/4" NPT	1
3	500ST227	PRESSURE GAUGE 2"	1
4	400ST022	1/4" NPT CROSS TEE	1
5	400ST032	1/4" NPT TEE	1
8	400ST041	1/4" NPT CLOSE NIPPLE	3
9	500ST015	1/4" NPT PETCOCK	1
10	070B-E024	HANDWHEEL	2
11	070B-E015	CLAMP SCREW BOTTOM	1
12	070B-E002MS	FILTER LID TOP MS	1
13	070B-E018	LID FLANGE	2
14	070B-E003MS	FILTER BOTTOM	1
15	070B-E016	CLAMP SCREW TOP	1
16	070B-E020	FILTER YOKE MS	2
17	070B-E014	FILTER GASKETS	2
18	070B-E001MS	CYLINDER, TUBE AND FRAME MS	1

PARTS LIST FOR STAINLESS STEEL 11.5 GALLON PRESSURE FILTER • 070B-003

#	ITEM #	ITEM DESCRIPTION	QTY REQ.
1	500ST035SS	PRESSURE RELIEF VALVE	1
2	500ST012	SS BALL VALVE 1/4" NPT	1
3	500ST227	PRESSURE GAUGE 2"	1
4	400ST021SS	1/4" NPT CROSS TEE	1
5	400ST511	1/4" NPT TEE	1
8	400ST040SS	1/4" NPT CLOSE NIPPLE	3
9	500ST015	1/4" NPT PETCOCK	1
10	070B-E024	HANDWHEEL	2
11	070B-E015	CLAMP SCREW BOTTOM	1
12	070B-E002SS	FILTER LID TOP SS	1
13	070B-E018	LID FLANGE	2
14	070B-E003SS	FILTER BOTTOM SS	1
15	070B-E016	CLAMP SCREW TOP	1
16	070B-E020	FILTER YOKE MS	2
17	070B-E014	FILTER GASKETS	2
18	070B-E001SS	CYLINDER, TUBE AND FRAME SS	1

11.5 GALLON FILTER ACCESSORIES

#	ITEM #	ITEM DESCRIPTION	QTY REQ.
1	070B-005	14" DIAMETER FILTER CLOTH, 1 PLY	1
2	070B-007	14" DIAMETER FILTER PAPER, 100 PACK	1