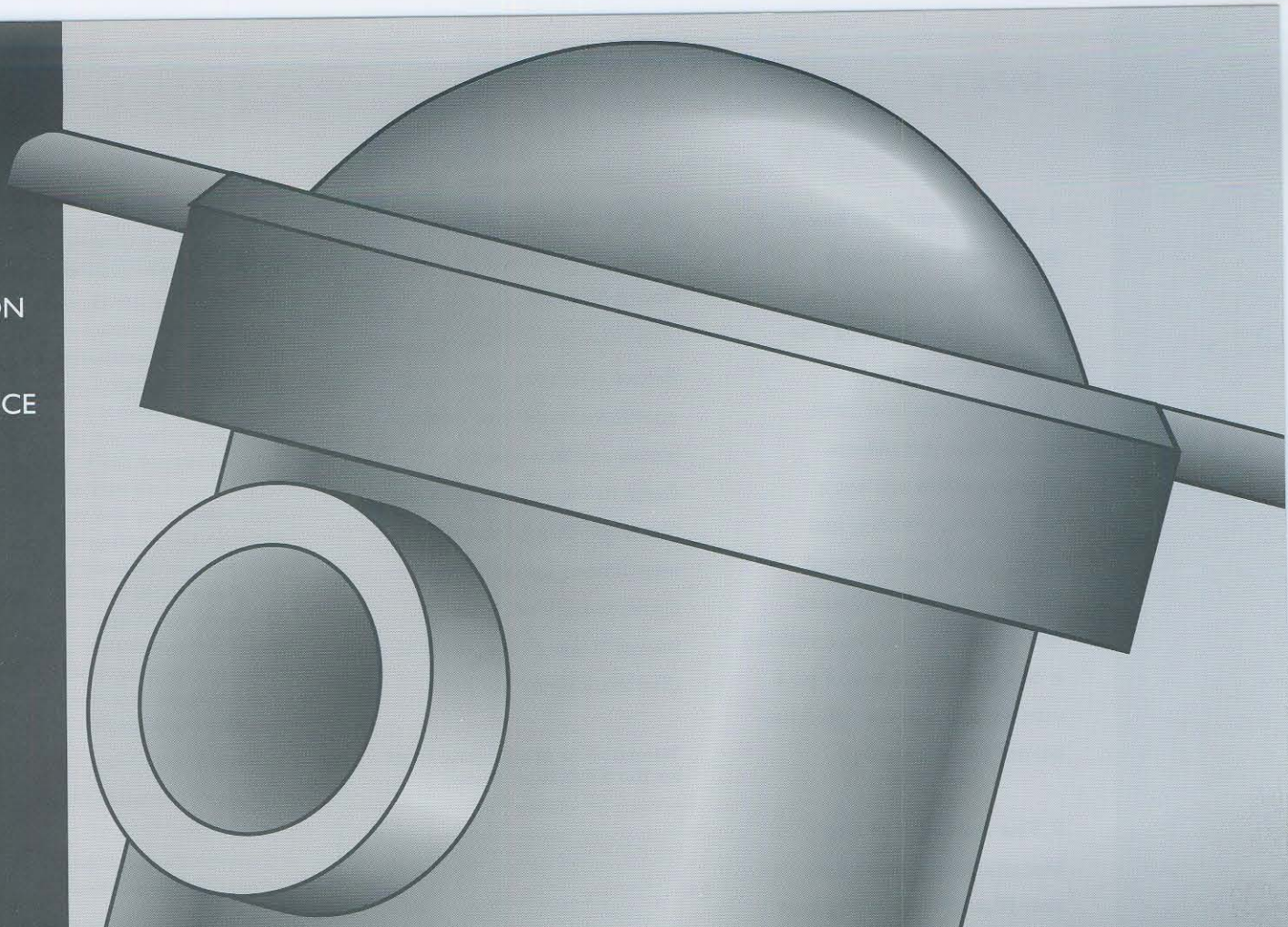
INSTALLATION
OPERATION
MAINTENANCE



X100™

CONVERTIBLE FILTER HOUSING

OPERATOR
STUDY
GUIDE

READ AND UNDERSTAND
ENTIRE MANUAL BEFORE
OPERATING THIS VESSEL

FSI®

1. This manual has been prepared for the safe installation, operation, and maintenance of FSI pressure vessels.

Warning labels have been reprinted in this manual. Warning labels are not a substitute for reading and understanding this manual. All labels must be replaced when legibility is lost or visibility is blocked. Labels have a part number in the lower left-hand corner for reordering.

2. The location of the Installation, Operation and Maintenance Manual for the filter vessel.

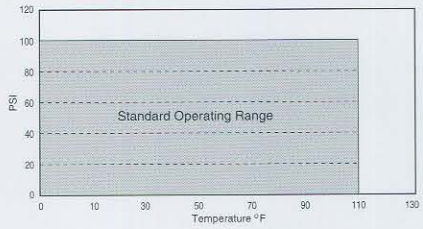
The end user is to place the Installation, Operation, and Maintenance Manual on each vessel upon final installation. The manual must be visible and accessible to the operator.

3. Chemical Compatibility of the filter and the fluid being filtered.

PROTECTIVE CLOTHING

Before operating this vessel, operator should wear protective gloves and face shield. Refer to Material Safety Data Sheet (MSDS), for specific instructions for handling the liquid, as supplied by the manufacturer of the material. (See Warnings)

Temperature of operating range for the X100 Filter Vessel.



WARNINGS

Before use, consult chemical compatibility guidelines.
This vessel is manufactured from talc filled polypropylene. The maximum operating pressure is rated at 100 PSI with water where the temperature does not exceed 110°F. The operating pressure may vary when using other substances and temperatures. Although this housing material has a wide range of chemical resistance, there are several factors that affect or restrict the usage, i.e., temperature and concentration of solutions. Therefore the user should refer to published reference materials for chemical compatibility.

A partial list follows:

- **Compass Corrosion Guide—Section B.**
- **Compass Chemical Resistance Guide for Elastomers.**
- **Dow Chemical Resistance Guide.**
- **DuPont Chemical Resistance and Fluid Compatibility.**

Failure to comply with the chemical compatibility guidelines may result in extensive vessel structural integrity failure.
Such failure could result in severe injury to the user.

Hot and/or chemically active liquids can cause serious injury.

Wear protective face shield and clothing.

4. Mounting Location.
Locate the filter away from direct sunlight and all heat sources that could elevate its temperature beyond the maximum allowable. See lid for maximum temperature rating.

MOUNTING

Hard pipe the filter housing in place with 2 inch sch. 80 plastic piping. Secure the inlet and outlet pipe to provide filter support. If it is desirable to support the filter and its contents, polypropylene legs and floor mounting pads are a standard option. The legs can be shortened by saw cutting. Note: The plastic legs are used in conjunction with hard piping to provide rigid filter support. For filters requiring solid floor mounting, stainless steel or carbon steel support legs are a standard option.

The height of the support legs can be adjusted by moving the belly bands of the leg assembly up or down the filter housing. Maximum floor to filter outlet is 13 1/4 inches.
Use commercially available 3/8 inch diameter floor anchors.

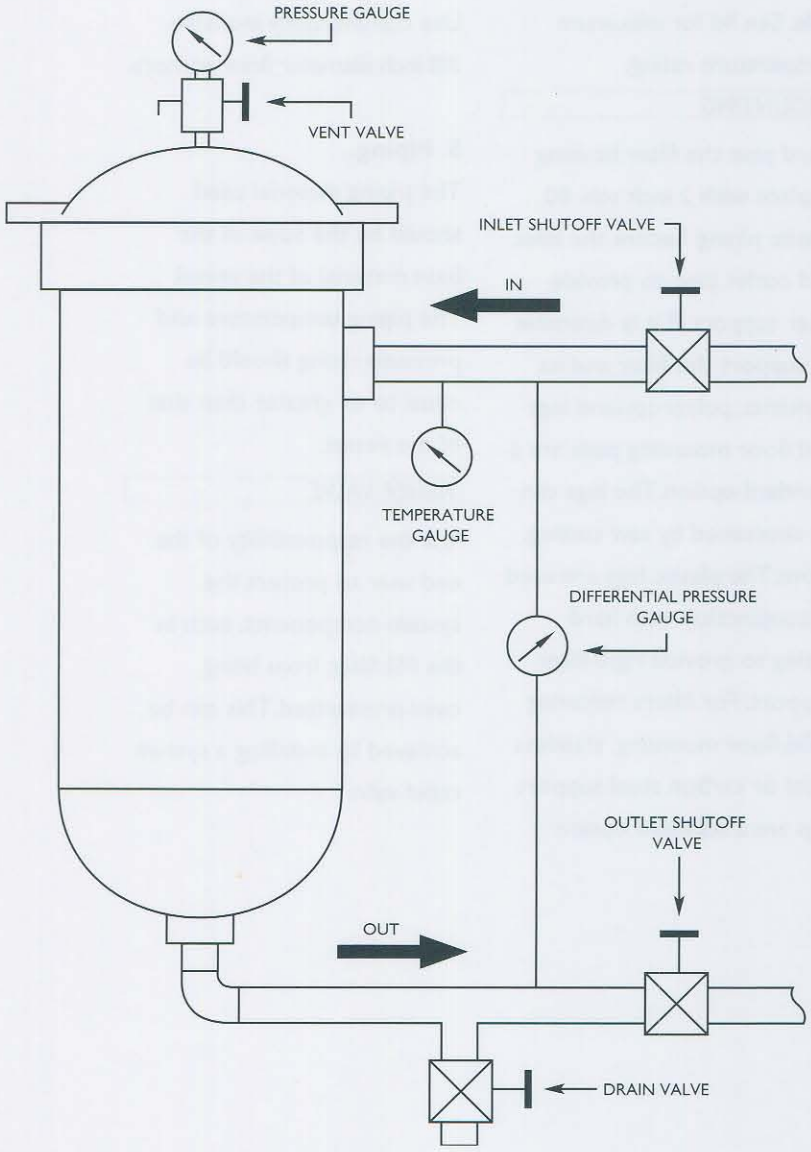
5. Piping.
The piping material used should be the same as the base material of the vessel. The piping temperature and pressure rating should be equal to or greater than that of the vessel.

RELIEF VALVE

It is the responsibility of the end user to protect the system components, such as the FSI filter, from being over-pressurized. This can be achieved by installing a system relief valve.

PRESSURE GAUGE, TEMPERATURE GAUGE, AND VENT VALVE

FSI does not supply the vessel pressure gauge, temperature gauge, or the vent valve. It is the responsibility of the end user to obtain, install, and maintain the proper components. Refer to Figure 1 (See Warnings)

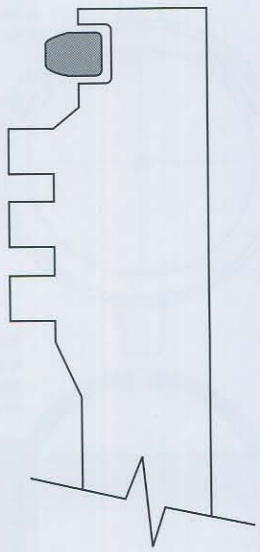


(Figure 1)

6. Gasket.

GASKET INSTALLATION

Clean the gasket groove.
Slip the gasket over the filter and into the groove.
Make sure the gasket is not twisted and the bevelled edges are facing out.
Apply a small amount of sanitary O-ring lubricant to the outside of the gasket.
Use only FSI replacement gaskets.
Refer to Figure 2
(See Warnings)



(Figure 2)

7. Opening and Closing the Filter.

OPENING

To isolate the filter:

1. Turn off and lock out pump.
2. Turn off inlet shutoff valve.
3. Turn off outlet shutoff valve.
4. Drain filter (vent valve may have to be cracked open).
5. Filter should have no internal pressure.
6. Check pressure gauge for zero PSI.
7. Remove lid manually by turning counterclockwise.
   A gentle tap against the handle may be necessary, if the lid was over tightened.

Refer to Figure 1

8. Remove filter bag or cartridge with caution. Insert new filter bag, or cartridge.
   Note: The recommended differential pressure across a filter element before changing is: 10-15 PSI for bag filters, 10-15 PSI for cartridges.

WARNINGS

Vent valve exhaust can be dangerous — direct exhaust to a safe place.

Do not open vessel under pressure; escaping fluid under pressure can cause serious injury.

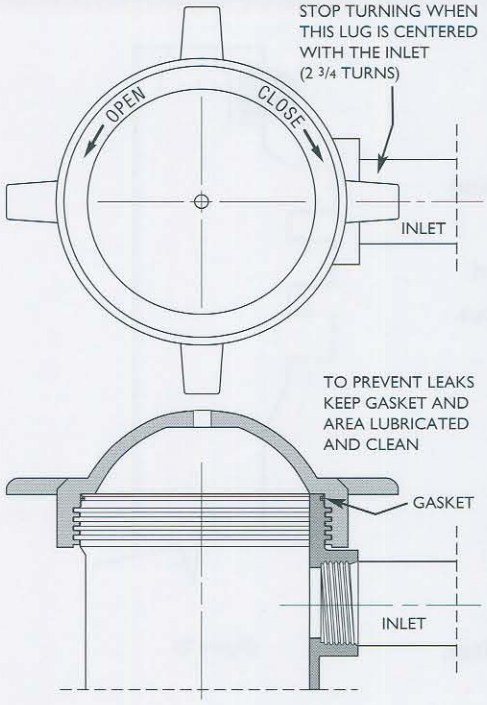
Gasket can fail, causing serious injury. Gasket material must be chemically and temperature compatible with fluid being filtered.

CLOSING

1. Lubricate the gasket with a small amount of sanitary O-ring lubricant.
2. Turn the lid clockwise until it bottoms out.
   STOP. Additional force will not enhance the seal; it may cause the threads to stick.

Refer to Figure 3

3. Before opening the inlet valve, close the drain valve and vent valve.



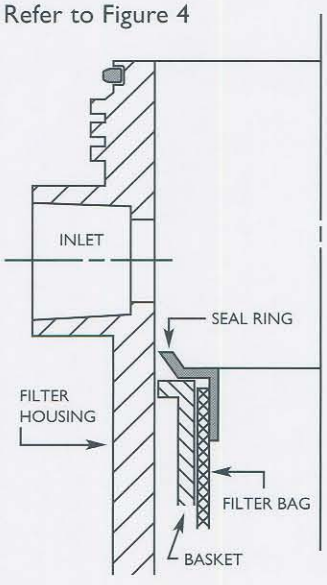
(Figure 3)

Gasket seals on the sides. Tightening beyond the inlet center line WILL NOT increase sealability.

8. Converting from a cartridge filter to a bag filter.

1. Clean the inside of the filter housing. Do not scratch the molded interior surface.
2. Pull out the cartridge conversion plate.
3. Drop the basket in.

Refer to Figure 4



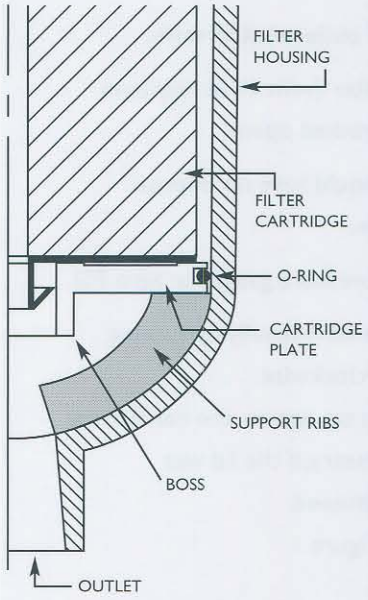
(Figure 4)

Insert filter bag into the basket.
Make sure the bag seal ring bottoms out against the basket shoulder.
The ring seals against the filter wall.

9. Converting from a bag filter to a cartridge filter.

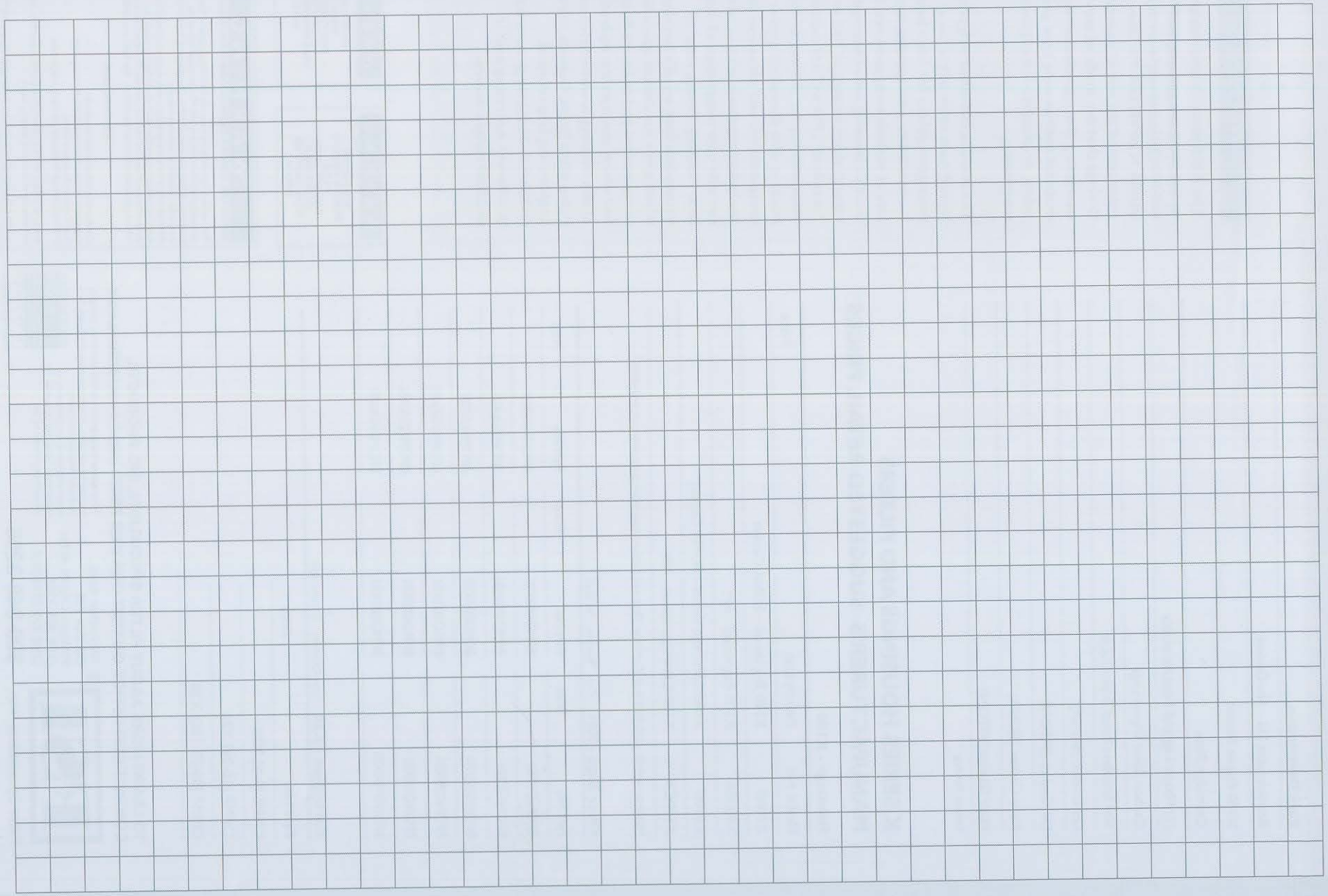
1. Remove the basket.
2. Clean the inside of the filter housing.
   Do not scratch the molded interior surface.
3. Lubricate the cartridge conversion plate with a small amount of sanitary O-ring lubricant.
4. Slide the plate into the housing with the boss facing down. Push the plate firmly against the support ribs.

Refer to Figure 5



(Figure 5)

Insert the self-centering filter cartridge.
Stop when it bottoms out on the cartridge plate.



OPTIONS & REPLACEMENT PARTS

Part Description
Replacement Lid - No Gasket
X100 Plastic Basket
Cartridge Plate
(2) Plastic Leg and Foot Assembly
Carbon Steel Tripod Legs
304 Stainless Steel Tripod Legs
Lid Gasket (BUNA)
Lid Gasket (VITON)
Plate Gasket (BUNA)
Plate Gasket (VITON)

Patents Pending

X SERIES HOUSINGS AND FILTERS MANUFACTURER'S SUGGESTED RETAIL PRICES

Housings - X100

Model No.	Description	Price
X100B	X100 Bag Vessel - BUNA Gasket	
X100BA	X100 Bag Vessel - API	
X100C	X100 Cartridge Vessel - BUNA Gasket	
X100CA	X100 Cartridge Vessel - API	

Housings include - Lid, Basket or Cartridge Plate and Gaskets (Leg-Foot assemblies not included)

Filter Bags - X01 Case Quantity - 50 Bags

Part No.	Price	Part No.	Price	Part No.	Price
BPONG1X01		BPMO100X01		BPOMF0AX01	
BPONG5X01		BPMO150X01		BPOMF1AX01	
BPONG10X01		BPMO200X01		BPOMF2AX01	
BPONG25X01		BPMO300X01		BPOMF10AX01	
BPONG50X01		BPMO600X01		BPOMF25AX01	
BPONG100X01		BPMO800X01		BPOMF90AX01	

Cartridges - X20 Case Quantity - 6 Cartridges

Part No.	Price
CMMF [1-5] X20	
CMMF [10-25] X20	
CMMF [50-75-100] X20	

TO LEARN MORE ABOUT FILTER SPECIALISTS, INC. PRODUCTS, CONTACT OUR OFFICE OR VISIT OUR WEB PAGE: http://www.fsifilters.com.

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MANUFACTURED IN THE USA
PRINTED IN USA

WARNINGS

The X100 vessel is only designed to use lathe cut gaskets made of self-energizing material such as BUNA N or VITON. FSI does not recommend the use of gaskets or O-rings that are made of non-self energizing (i.e. non-elastomeric) material such as rope type gaskets, teflon, or graphite-impregnated materials.

The X100 is talc-filled polypropylene. Please refer to chemical resistance guides for filter housing compatibility with specific chemicals at various temperatures. Only use this housing with chemical vs. temperature ratings of "+" or "excellent". FSI will not assume responsibility for the use of this housing with chemicals and/or at temperatures and pressures that are not compatible with or within the safe operating range of this filter housing. Please refer to nameplate data on this housing which gives maximum operating temperature and pressure limits, and which assumes the operation of this housing is with chemically compatible fluids. Consult the FSI Engineering Department (1-800-348-3205) for pressure limits at different operating and/or ambient temperatures.

WARNING

BEFORE USE
REMOVE RED CAP PLUG
REPLACE WITH COMPATIBLE PLUG VALVE OR GAUGE

WARNING

WITH WATER SERVICE
MAX PRESSURE
100 PSI
MAX TEMPERATURE
110°F

WARNING

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SUCH FAILURE COULD RESULT IN SEVERE INJURY TO THE USER.

X100OPMAN-005-902
Part No. RMLX100OPMAN