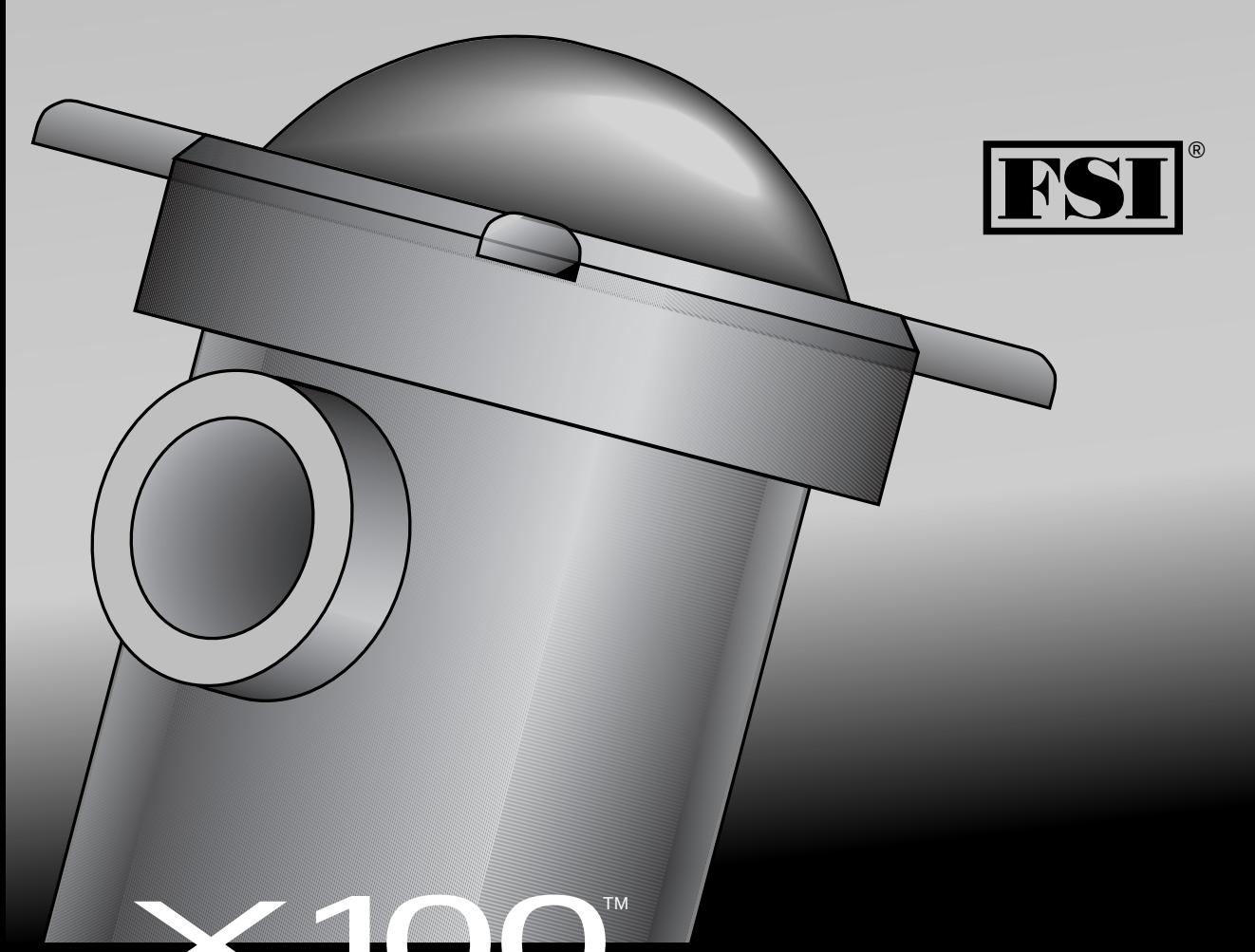
INSTALLATION
OPERATION
MAINTENANCE



# X100™ FILTRATION SYSTEM

# INSTALLATION INSTRUCTIONS

**1. 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 appropriate 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.

**2. 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.

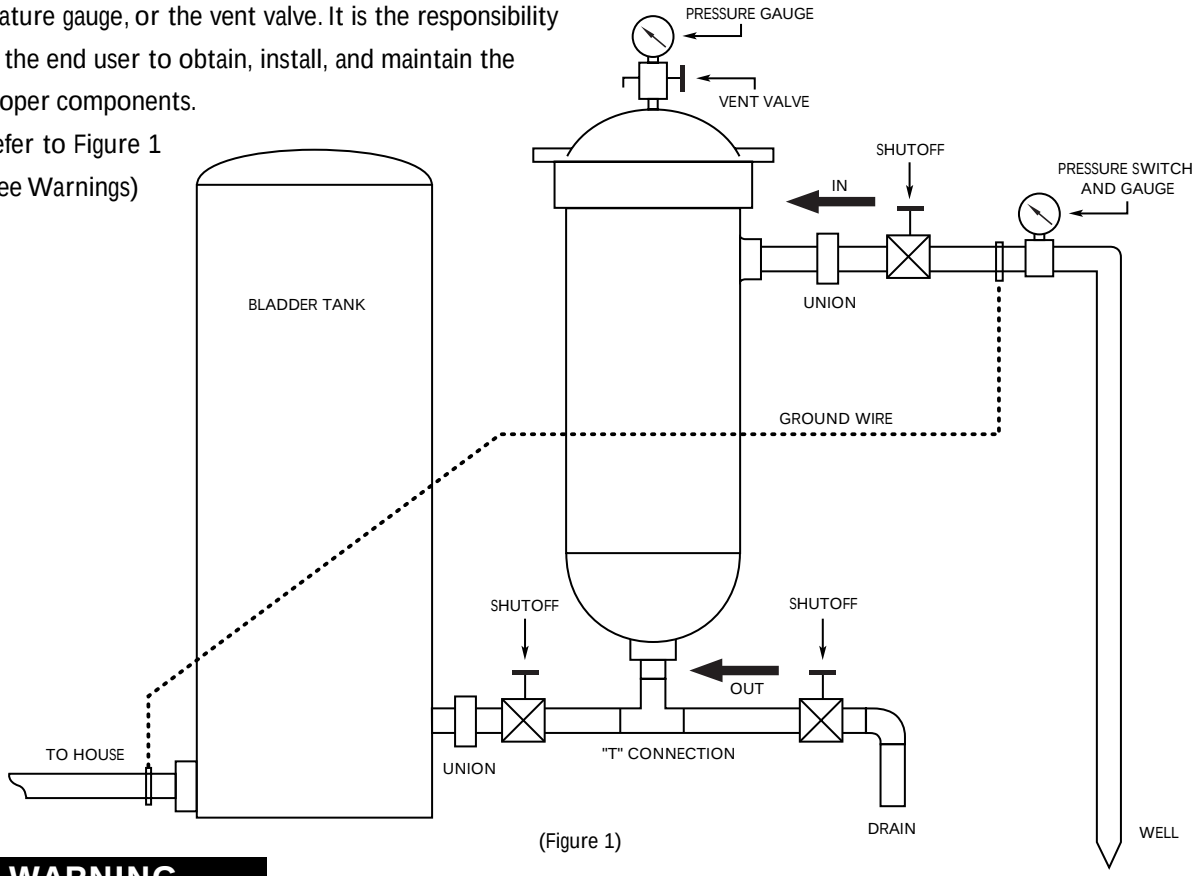
READ AND UNDERSTAND ENTIRE MANUAL BEFORE OPERATING THIS VESSEL

*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)

**Use ONLY Teflon tape without adhesive backing to seal joints.**




(Figure 1)

## WARNING

Risk of electrical shock. If your water pipes are used to ground your house's electrical system, install a No. 8 AWG (8.4mm$^2$) jumper wire (or larger) around the filter (see Figure 1). The jumper wire must be connected at both ends by a pressure wire fitting or other connection that satisfies NEC or CEC and local codes. Consult a building inspector or licensed electrician for more information.

### 3. Gasket.

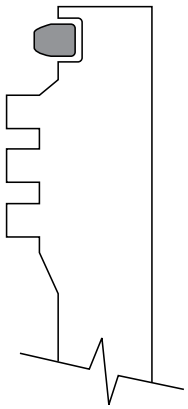
*GASKET INSTALLATION*

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)

### 4. 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

## FILTER ELEMENT CHANGES

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.

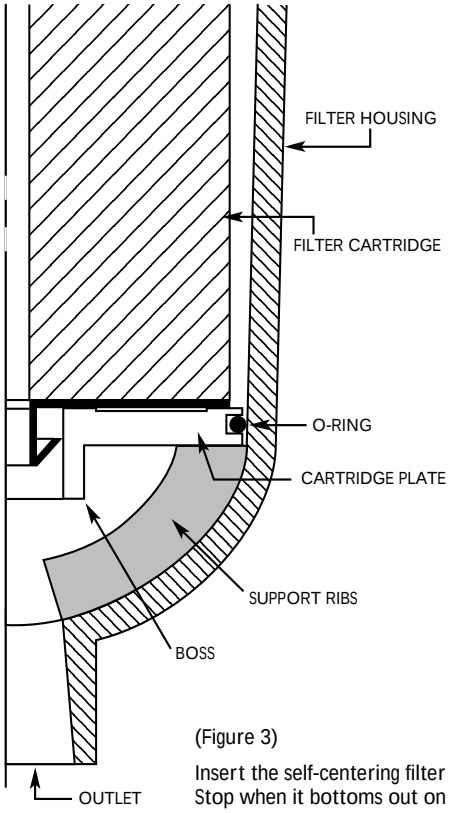
*CLOSING*

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

**5. 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 3



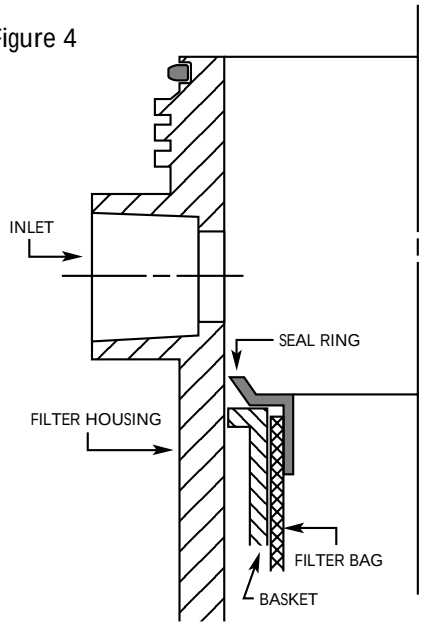

(Figure 3)

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

**6. 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.

PLEASE READ AND UNDERSTAND ALL WARNINGS

## 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.**

## 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.**

**Consult the FSI Engineering Department (1-800-348-3205) for pressure limits at different operating and/or ambient temperatures.**

## W A R N I N G

**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 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.**

**W A R N I N G**

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

**W A R N I N G**

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

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