



⚠ Safety Information **Checklist for Operation of Pressurized Liquid Filters**

Filtration Systems filter vessels are designed to filter liquids under pressure, in accordance with the temperature and pressure restrictions stamped on the nameplate. The **SAFEsystem** upgrade does not alter the pressure and temperature specifications of our filter housings or modify standard operating procedures.

- 1) Follow the Instructions in the "Installation, Operating & Safety Manual for Liquid Filter Housings and Filter Bags". Save both the Manual and Instruction Guide for review by all personnel who use this equipment.
- 2) Wear protective garments, splash protection, eye protection and respirators, as required.
- 3) Securely fasten the lid hardware prior to pressurizing a filter vessel.
- 4) "O-Rings" are subject to wear and should be checked each time the filter vessel is opened. Replacement of O-Rings must be done prior to pressurization of the filter vessel. Be certain that the O-Ring material is both chemically and thermally compatible with the liquid being filtered. Liquid compatibility includes all materials in contact with the liquid under elevated pressures and temperatures.
- 5) When opening a housing, *always* relieve pressure to the vessel before loosening the lid hardware.
- 6) In certain operating environments, static electrical charges or sparks may cause combustion or explosion of volatile materials. Properly ground equipment as required.
- 7) Removing filter media from packaging may also produce static electrical sparks. To avoid risk of combustion or explosion, never open static packaging in or around areas containing potentially flammable or explosive materials, liquids or gases.
- 8) Dispose of filter media properly. A filter bag that has been used with a hazardous liquid may contain residual amounts of this material and should be handled with the same safeguards that would be used in handling hazardous and/or toxic material. Media should be disposed of in accordance with federal, state and/or local laws or requirements.

Improper use of pressurized filter vessels may result in injury or property damage. Any misuse or modification to our products will void both the manufacturer's warranty as well as the ASME certification of ASME Code vessels. Safety information does not by itself eliminate any danger. Information or warnings are not a substitute for proper accident prevention measures.

Lethal Service

Filtration Systems vessels are not designed for lethal service. "Lethal Service" refers to vessels containing lethal substances, poisonous gases or liquids of such a nature that a very small amount of the gas or vapor of the liquid (mixed or unmixed) is dangerous to life when inhaled. In addition, substances of this nature that are stored under pressure, or may generate pressure if stored in a closed vessel, are considered lethal.

Product Identification

All **Filtration Systems** filter vessels have a unique serial number that can be identified by our factory. Nameplates, specifying both the serial number and maximum allowable pressure and temperature ratings are permanently affixed to all housings.

Product Specifications

With over 30 years of industry expertise and proven performance, Filtration Systems offers quality products at responsible prices. We continually strive to improve our products through ongoing research and development; therefore, we reserve the right to change specifications without notice.

Intellectual Property

As with all **Filtration Systems** patented products, the **SAFEsystem**[™] offers exclusive manufacturing technology designed to complement our equipment. This company is committed to protecting its patents, trademarks, and proprietary rights from those who would wrongfully use them. The **SAFEsystem**[™] is protected by Patent 5,893,969. **SAFEsystem**[™], **Zero-Bypass**[™] and **Filtration Systems**[™] are trademarks of Mechanical Mfg. Corporation. **Accufit**[®] and **Ultrafit**[®] are registered trademarks of Mechanical Mfg. Corporation, Filtration Systems division.

Warranty

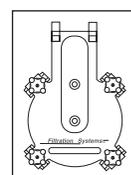
Filtration Systems warrants our products to be free from defects in workmanship for a period of one year from the date of purchase, when used in accordance with our specific guidelines. Our only obligation and a customer's remedy, subject to our inspection and evaluation, shall be to replace the product or refund the purchase price.

Limitation of Liability

Filtration Systems shall not be held responsible or liable for any loss resulting from the resale, direct or indirect misuse, incidental or consequential damages, arising out of the use of this product.

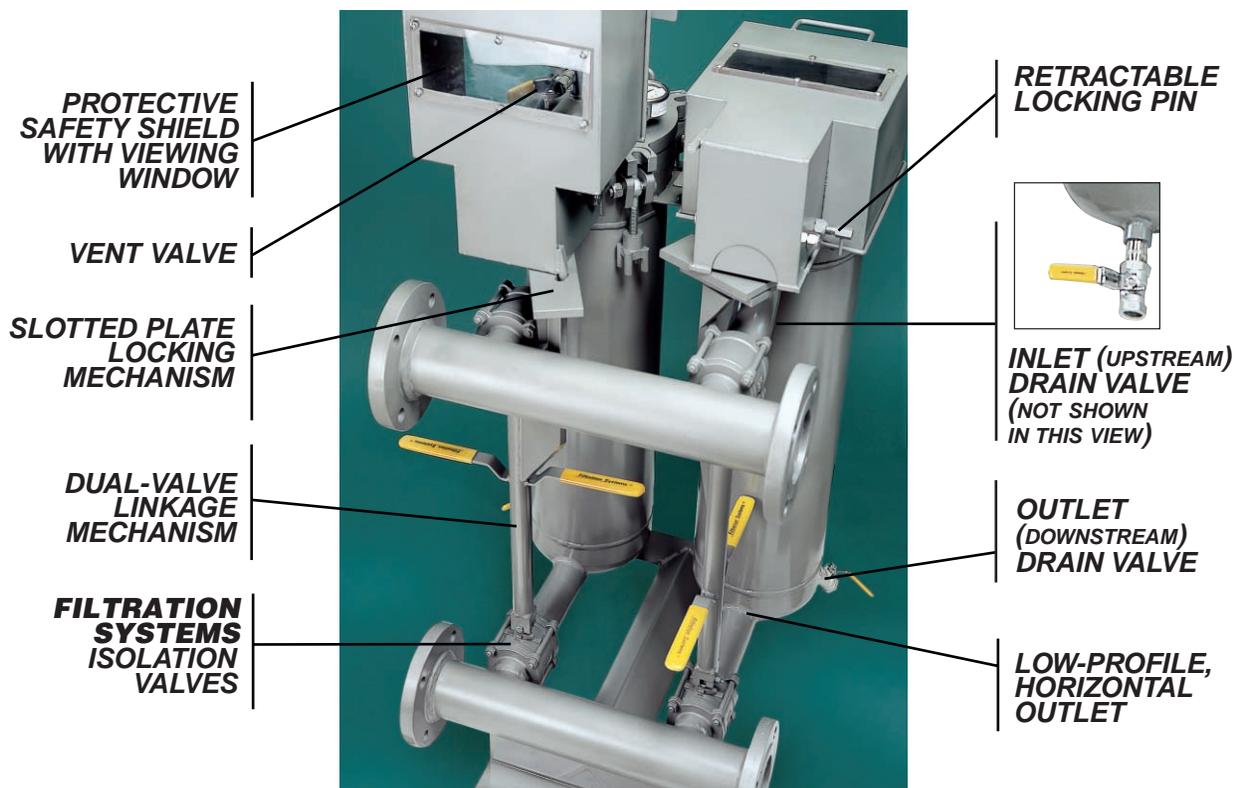
Filtration Systems

Division of Mechanical Mfg. Corporation
10304 N.W. 50th Street • Sunrise, FL 33351 USA
Tel: 954-572-2700 • Fax: 954-572-3401
<http://www.filtrationsystems.com>



SAFEsystem™

Safety Apparatus Filter Enhancement



When in the closed position, the dual-valve linkage ensures that the vessel is “off-line” and safe to open. If either the vessel lid or Safety Shield is left open, the filter will not operate.

SAFEsystem Instruction Guide

Start Up Procedure:

The following procedures are mandatory for all users operating ASME Code filter vessels upgraded with the **SAFEsystem**. *Full compliance to these instructions is essential.*

⚠️ Look for this symbol to point out important safety precautions or warnings. It means attention! Your safety is involved. Failure to obey a safety warning may result in property damage or serious injury to you or others.

⚠️ Prior to operating this equipment, users must read the “Installation, Operating & Safety Manual for Liquid Filter Housings and Filter Bags”. These procedures apply to every housing equipped with the **SAFEsystem** Upgrade (ASME Code Individual, Duplex, and Multi-Housing Systems).

⚠️ Caution: Protective Garments and Eye Protection are recommended, as required.

Step 1. Verify that the Inlet Drain Valve (Upstream), the Outlet Drain Valve (Downstream) and the Vent Valves are closed prior to start-up.

Step 2. Close the lid of the filter housing after retracting the spring-loaded Locking Pin Mechanism. Re-engage the Locking Pin to maintain the Safety Shield in the upright position. The Locking Pin Mechanism prevents unintentional closure of both the Safety Shield and filter vessel lid. **LID SEALING PROCEDURE:** Bring all the hold-down bolts into position and hand tighten the rear bolts on the cover. Hand tighten the front bolts on the cover. Final torque should be done by repeating these steps until the cover is tightly and evenly closed. This procedure should be followed to ensure complete sealing. We recommend approximately 30-50 ft lbs of torque on the hold-down bolts. After torquing the lid closure bolts, disengage the Locking Pin Mechanism to release the Safety Shield and allow it to close over the lid of the housing.

Step 3. Open the Isolation Valves by turning the Dual-Valve Linkage Mechanism a full ninety degrees (90°). This action locks the Safety Shield into its closed position, putting the filter vessel into operation.

Shut Down Procedure:

Step 1. Close the Isolation Valves by turning the Dual-Valve Linkage Mechanism a full ninety degrees (90°). This takes the vessel “off-line”, and releases the Safety Shield from its locked position, allowing access to the vessel lid.

⚠️ Do Not Open the Safety Shield or Filter Vessel at this Time. Observe the pressure and temperature gauges closely. Proceed only if the readings are within safe limits.

Step 2. Lift the Safety Shield. Immediately engage the Locking Pin Mechanism, securing the Safety Shield into its fixed, upright position. **Do not open the vessel lid at this time.**

Step 3. Open the Outlet Drain Valve located on the Low-Profile Horizontal Outlet. Slowly open the 3/4” drain valve and capture the liquid in an appropriate container (e.g., suitable for the *filtered* material that you are evacuating). This process will also “bleed” the vessel of any residual pressure remaining in the isolated filter.

Step 4. Open the Vent Valve located on the top of the filter vessel lid. This will promote faster gravity drainage when used in conjunction with the outlet drain valve.

Step 5. Open the Inlet Drain Valve located on the inlet elbow. If there is any unfiltered residual liquid, collect it in a suitable container.

Step 6. The housing may now be opened for media replacement. Be certain that both the Safety Shield and vessel lid are secured in the open position by the Locking Pin Mechanism to prevent accidental closure. Refer to the “Installation, Operating & Safety Manual for Liquid Filter Housings and Bags” for further instructions regarding media replacement.



Slotted Plate Locking Mechanism
Periodic adjustment may be necessary.