

Installation, Operation & Maintenance Manual



Triple Clear
Water Solutions

WH-45-2-B
CARTRIDGE FILTER
150 PSIG RATED FILTER UNIT

Dear Customer,

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Thank you for purchasing this high quality filter housing from Triple Clear. This pressure vessel has been manufactured from the highest quality materials by skilled craftsmen. Each vessel undergoes rigorous testing prior to shipping to ensure your satisfaction.

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1. General Requirements:

a. Safety Pressure Relief

1) We strongly recommend that a pressure relief valve be used to prevent over-pressurizing the vessel. Over-pressurizing could cause serious damage to both the unit and the operator. The installation of pressure relief valve(s) is the responsibility of the owner/operator. The allowable working pressure and temperature(s) are marked on the vessel's name plate. The pressure relief should be installed in a location so that it is not isolated from the vessel by process stop valves

2) For further information on pressure relieving devices see:

ASME VIII Div.1 UG 131-UG 140

b. Management System Responsibilities: The user has the responsibility to establish and maintain a management system that ensures the vessel is not operated without overpressure protection including but not limited to:

- 1) Establishing the pressure relief philosophy and the administrative controls requirements.
- 2) Establishing procedures to ensure that the equipment is adequately protected against overpressure.
- 3) Ensuring that authorization to operate identified valves is clear and that personnel are adequately trained for this task.
- 4) Establishing periodic safety inspections.

c. Pressure indicating device: Device range should be graduated with an upper limit that is neither less than 1.25 times the set pressure nor more than twice the maximum allowable working pressure of the vessel.

d. Pressure and temperature limitations:

- MAWP 150 PSI @ 300°F
- Cartridge Maximum operation temperature 180°F

e. Registration: Depending on size, pressure, and contents, local laws may require the pressure vessel to be registered within 30 days of installation and be subject to periodic inspections by the governing authority.

f. Electrical Devices attached on or near vessels require ground fault power supply and may require hazard class ratings.

g. Venting may release condensed vapors into the air. Operator exposure and ignition sources including static may need to be controlled.

h. Recommended Clearances:

- 36" above the cover for removal of filters.

2. Operation, Installation & Servicing

WARNING: RELIEVE ALL PRESSURE BEFORE SERVICING VESSEL



Contents under pressure. Relieve pressure in accordance with manufacturer instructions. FAILURE TO DO SO MAY RESULT IN SERIOUS BODILY INJURY.



- a. Carefully remove all shipping materials.** Remove plugs from the inlet and outlet openings. Safely dispose of shipping materials.
- b. Securing:** Once you have decided where your vessel will be located, the base plate should be secured to the floor with the appropriate fasteners.
- c. Piping and Inlet/Outlet Connections:**
- Connections 2" pipe.
 - Care should be taken when the piping is installed so that you do not place piping loads on the vessel. The design of piping supports and expansion joints are the customer's responsibility.
 - The inlet service line should be connected to the inlet located at the upper side.
 - The outlet service line should be connected to the outlet located lower side of the force field filter when standing in front of the system.
- d. Valves and Ports:** Valves should be operated slowly. There are two ¼" NPT gauge ports and one ¼" port on the vessel cover. These ports can be used for pressure gauges or special fittings.
- e. Grounding and Integrity Testing:** Some installations require electrical grounding of all equipment, be sure to provide adequate grounding where necessary. Be sure to double check connections for integrity. This vessel has been factory pressure tested for leaks. Improper installation connections will result in leakage.
- f. Flow Rates:**
- Filter cartridge life: 0-18 psid
 - Maximum differential pressure: 20 psid
 - Flow range: 1-45 gpm
 - Maximum flow rate: 50 gpm water
- g. Opening vessel:** Relieve all pressure before opening. Upon receiving your new system, you will notice the vessel closure is a swing-bolt style. Unscrew each eye nut far enough so that it swings away from the lid bracket and can be removed. The body is now ready for separation. You will notice on the top rim of the vessel body an "O" ring. This gasket sits between the two metal surfaces of the cover and vessel body to prevent leakage.

WARNING: DO NOT LOOSEN BOLTS WHILE UNDER PRESSURE



Contents under pressure. Relieve pressure in accordance with manufacturer instructions. FAILURE TO DO SO MAY RESULT IN SERIOUS BODILY INJURY.



h. Filter System Start-Up Procedure:

- 1) Verify the inside each vessel is clean and free of debris; clean as necessary.
- 2) Install a filter into Stage 1:
 - a) Remove the stage 1 filter from its box.
 - b) Using scissors, cut the end of the bag that contains the filter and remove filter from bag.
 - c) Slide the cartridge into the vessel body such that the o-rings are in the "up" position
 - d) Insert the o-rings into the filter housing head until they are no longer visible.
 - e) Close the cover, align the swing-bolts with the slots and fasten bolts.
 - f) Prior to fully commissioning system, it is recommended to flush the system for 5-minutes to waste.
- 3) Verify cover lids are securely fastened. You are now ready to open the flow to the inlet service line. Slowly open the inlet service line approximately 25% of normal operational flow. After vessel is pressurized and vented, slowly open outlet service line unit valve until completely open. Complete opening of inlet service line until desired flow rate is reached. Do not exceed 20 psid through the filter under any circumstances. Operating the filter unit with a high differential may cause damage to cartridge, filter system and/or downstream equipment. Inspect filter media regularly to prevent excessive drop through the filter unit.

i. Cartridge Change-Out Procedure: For best results, the cartridge should be changed when the differential pressure is between 10 to 15 pounds per square inch. The differential pressure can be calculated with the use of gauges connected to the inlet and outlet. The outlet pressure is subtracted from the inlet pressure. The result is the differential pressure or delta P. Cartridges are available in a wide variety of styles and are sold separately. Remove the dirty filter and dispose of it according to proper company, local and federal requirements. Relieve all pressure and drain the filter housings. Reference procedure for opening vessel and installing filters.

NOTE: SYSTEM MUST BE ISOLATED AND PRESSURE RELIEVED PRIOR TO ATTEMPTING TO OPEN FILTER VESSELS.

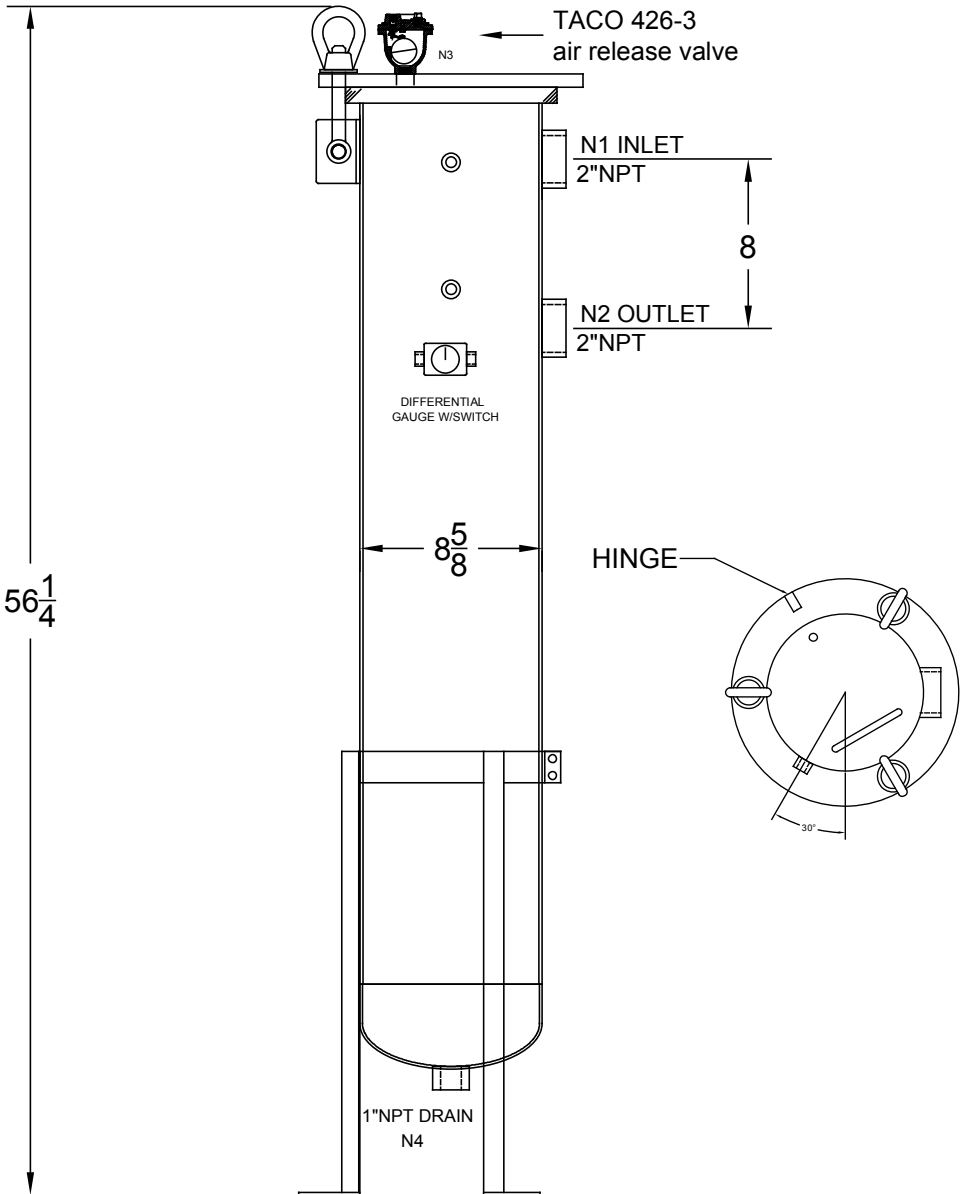
j. Prohibited service conditions: Cyclic/pulsing pressure, non-compatible fluids, lethal service, highly corrosive fluids, Fluid Hammer.

3. Parts List and Filter Diagram:

Provided prompt and periodic inspections of various components and replacement of worn parts, this vessel will provide many years of reliable and premium service. The following is a recommended spare parts list, followed by a diagram of your filter vessel.

Replacement Filter	TC-FF1-35	TC-FF1-35
Replacement Parts	150151 O-ring Cover SRH/UF 9ID EPR 350134 Swingbolt Set 5/8 (1)	

allow 35" clearance for removal of filter



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