

Operation Manual



Organic Scavenger

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Section 1.1**WARNINGS AND CAUTIONS****WARNINGS**

- Read this manual in its entirety before operating the Organic Scavenger Device.
- Misuse, improper operation, and/or improper monitoring of this equipment could result in serious injury, death, or other serious reactions to the end users of the equipment.

CAUTIONS

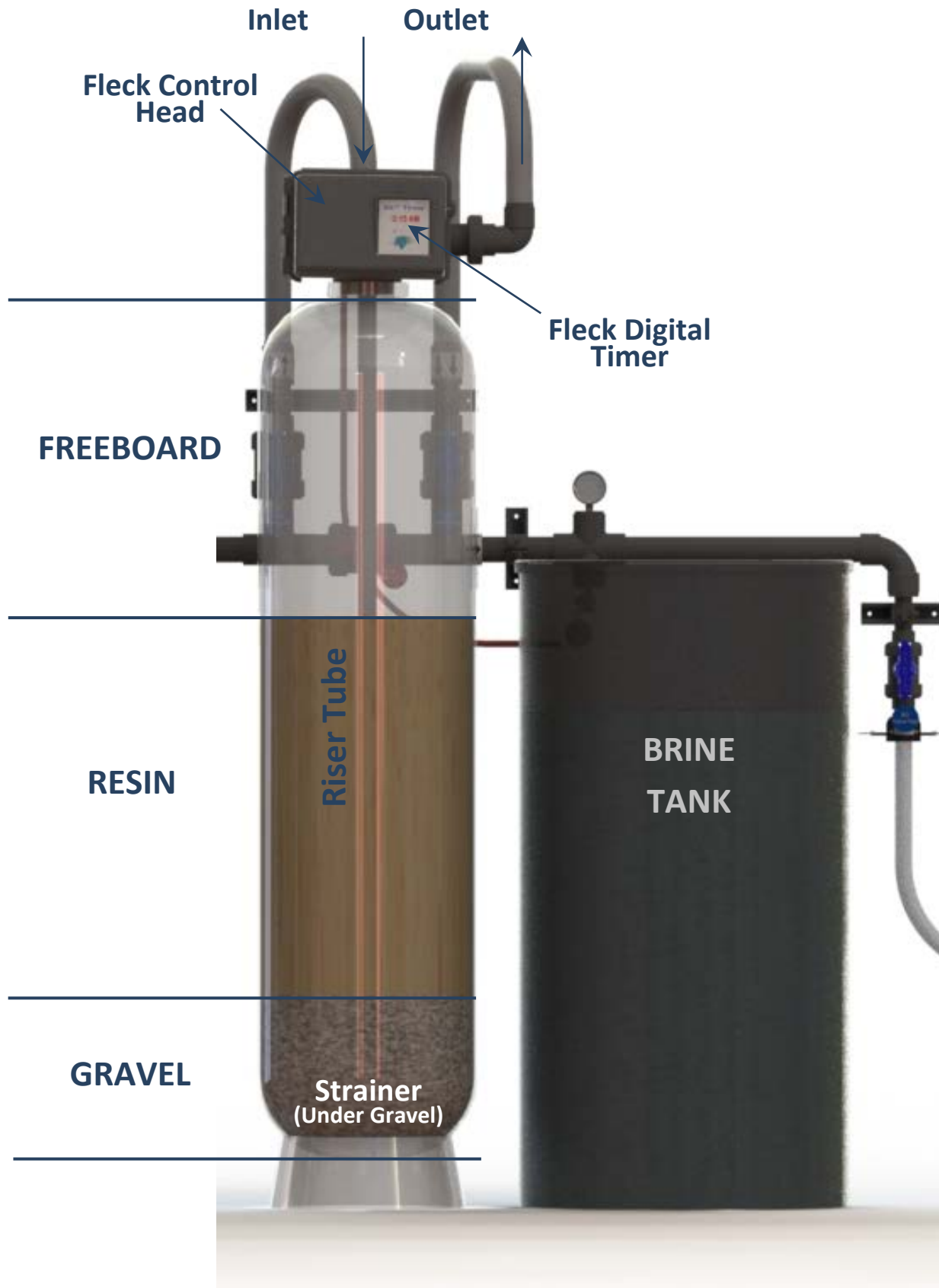
- When used as a medical device, Federal law restricts this device to sale by or on the authority of a physician. Per CFR 801.109 (b)(1).
- It is the responsibility of the governing body of the facility to ensure that all applicable regulations regarding the installation and operation of this system are observed.
- Only authorized personnel can install, perform service, or perform maintenance to the Ultrafiltration for High Purity Distribution System.
- To be used only for pre-treatment of water prior to reverse osmosis (RO).

Section 1.2**THEORY OF OPERATION**

The SWT Organic Scavenger is specifically engineered to provide continuous, automatic reduction of organic material from the facility softened influent water. Organic scavengers use anion resin which also removes some alkalinity. For this reason it is strongly recommended to pretest the influent softened water at the potential site with the exact resin that would be used in the organic scavenger. SWT has pretest cylinders filled with organic scavenger media that should be used for this purpose. It is important to follow the accompanying instructions for the proper use of the pretest cylinder. Providing SWT with the results of this test will allow SWT to evaluate the feasibility of using an organic scavenger at that site.

Section 1.3

SYSTEM ILLUSTRATION



Section 2.1**SPECIFICATIONS****ELECTRICAL AND WATER REQUIREMENTS:**

Water Requirements: Softened, Tempered water.

Electrical Requirements: 120 VAC from uninterruptable, ground fault protected.

Drain Requirements: Must facilitate at least 10 gpm.

SPECIFICATIONS:

<u>MODEL</u>	<u>K-A-MT-2D25-408</u>	<u>K-A-MT-2D25-410</u>
Tank Size *	24" x 72"	24" x 72"
Service Flow	32 gpm	32 gpm
Drain Flow	10 gpm	10 gpm
Pressure Drop (Δ)	< 15 psi	< 15 psi
Control Head	Fleck 2850	
Control Timer	Fleck SXT Digital	
Cu. Ft	8	10
Port Inlet	1 1/2"	
Port Outlet	1 1/2"	
Drain	1"	
Media Amount	8 cu.ft.	10 cu.ft.
Media Material	Macroporous Polyacrylic Resin and/or Macroporous Polystyrene Resin	
Gravel Size	1/4" x 1/8"	
Gravel Amount	150 lbs	

* Other sized tanks are available as well as custom tanks and applications.

Section 3.1**INSTALLATION**

1. The organic scavenger must be placed after the softener and before the carbon filters. Identify the location where the unit will be placed and verify that it is in a well-lit, with level, smooth floor, easy access location with access to a 120 VAC electrical outlet. (Some installations may require swapping the locations of the carbons and softeners)
2. The unit will be connected by 1 ½" PVC hose into the pretreatment water supply manifold. It needs to have a bypass valve and inlet and outlet valve ready to connect to the organic scavenger.
3. Assemble the unit (Add riser tube, gravel, and media to tank and then install head).
4. Connect the inlet, and outlet to the pretreatment manifold and the brine tubing to the brine tank.
5. It is recommended to always regenerate the softener before the organic scavenger to ensure soft water for the regeneration cycle. Check the backwash time for the carbon filters to ensure no interference between the organic regeneration time and the carbon backwash times.
6. Connect up the Reverse Osmosis electrical lockout wire to the organic scavenger.
7. Carefully fill the organic scavenger with water.
8. Let the resin soak for a period of time (minimum of 30 minutes) and then forward rinse for 10 minutes. At the end of the rinse cycle, the filter is ready to use.
9. Document the pH before and after the organic scavenger. Ensure that the pH is within the expected range. If the pH is lower than 7, cracking the bypass valve open may be desirable.
10. Document the chlorine using the DPD method before and after the organic scavenger. Ensure that the chlorine reduction is within the expected range. If not, consult SWT.

Section 4.1**OPERATION**

1. The operations of the organic scavenger is completely automatic. Once the system has been setup, little operator action is necessary.
2. The operation of unit is identical to the softener. Those activities associated with the use of the softener will apply to the organic scavenger. However, instead of testing for softness, the organic scavenger needs pH testing.
3. The pH of the organic scavenger downstream water will rise to that before the organic scavenger upon exhaustion of the media. Thus, if the pH is higher than after regeneration, most likely the media needs more salt or more media. If the pH is below 7 then some blending may be required. By cracking the bypass valve, usually enough water passes to increase the pH to around 7. As with the softener, the organic scavenger needs to be tested at the end of the day.

Setting Timer

See SXT Timer Manual for details.

Control Head

See Control Head Manual for details.

Section 5.1

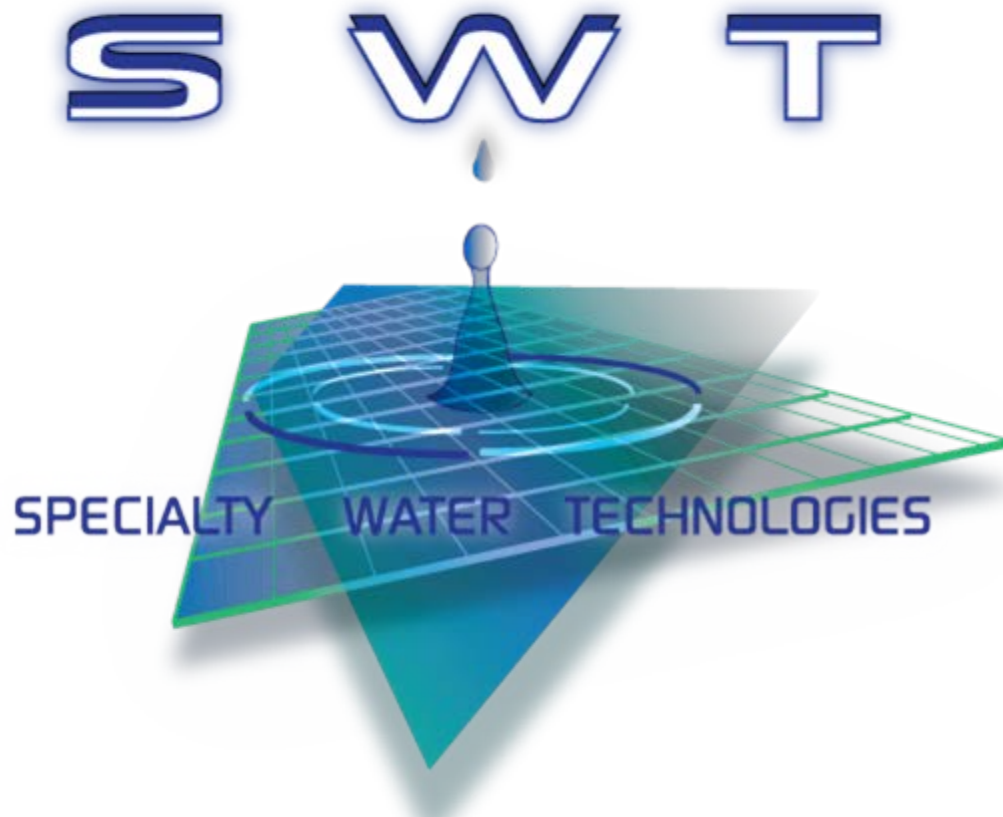
ROUTINE MAINTENANCE

TROUBLESHOOTING GUIDE

Problem	Possible Causes
pH after scavenger is low at start of day but high at the end of the day.	The media is exhausted: <ul style="list-style-type: none"> • Not enough brining during regeneration • Not enough media in tank • Media is fouled • Influent water demand increased
pH after scavenger is high at the start of the day (same as influent water)	The media was not regenerated: <ul style="list-style-type: none"> • Verify there is salt in the brine tank • Verify that the head valve draws brine • Verify that water is available at the time of regeneration. Does manual regeneration fix problem?
pH of water after scavenger is too low (below 7)	Influent water chemistry changed: <ul style="list-style-type: none"> • Blending may be needed
Chlorine high after organic scavenger	Test chlorine with test strips and by DPD method. If similar, chlorine is not organic.

Section 5.1**ROUTINE MAINTENANCE**

1. Periodic media regeneration with sodium hydroxide (caustic soda) will help to clean the resin of organic fouling and help extend the life of the resin. This is done by preparing in the brine tank the following recipe (per cubic foot of resin):
 - 10 gallons of water
 - 10 lbs of salt
 - 1 lb of sodium hydroxide (caustic soda)
2. This solution is then fed into the organic scavenger using the normal regeneration cycle. The solution is going to be drawn at 2.0 gpm. Therefore the solution will be drawn for approximately 50 minutes. If the media is fouled (versus preventative procedure), it is recommended to pull out the plug from the electrical outlet and let the final solution dwell in the tank for a couple of hours or as time permits. Then plug the adapter back into the electrical supply and let the head complete the regeneration cycle. If the resin is severely fouled, the procedure may need to be repeated. If hot water is available for this procedure, the effectiveness of the cleaning will be greatly enhanced.



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