

# Nelsen AIO™

AIR INJECTION OXIDIZING FILTER SYSTEM

for Iron and Sulphur Removal



*Operation &  
Maintenance  
Manual*

5600SXT Systems

2510SXT Systems

# Nelsen AIO Filter System

## *General Information Specification Sheet*

The **Nelsen AIO** Filter, when properly applied, is an efficient and cost effective system for the removal of iron and sulphur. The **Nelsen AIO** maintains a compressed “air pocket” in the top of the tank while the system is in service. As the water passes thru the air pocket, iron and sulphur are oxidized. Additionally, dissolved oxygen is added to the water. The **Nelsen AIO** filter media bed then removes the iron and sulphur from the water.

A daily backwash will remove accumulated iron and replenish the filter media bed. The regeneration process also adds a fresh air pocket to the system.

<b>Application Parameters</b>	<b>w/Iron Filter Media</b>	<b>w/Iron-Sulphur Media</b>
pH (Minimum)	6.8	6.8
Iron (Maximum)	7 ppm	2 ppm
Sulphur (Maximum)	4 ppm	8 ppm

## ***Installation***

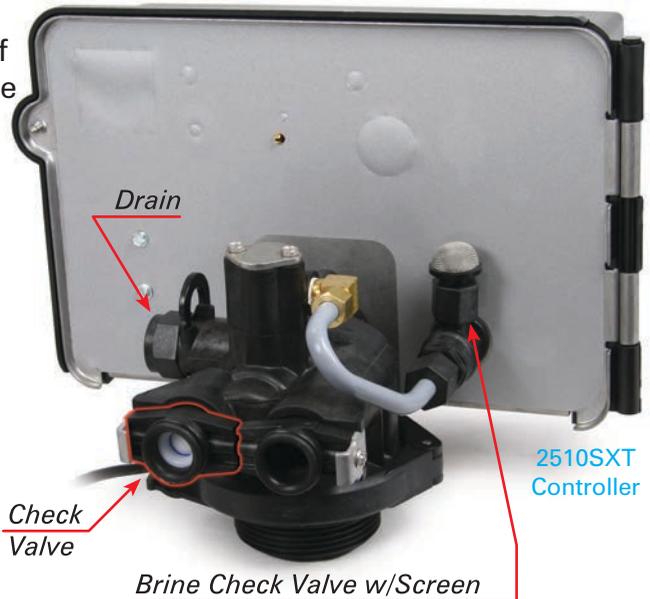
- Install the **Nelsen AIO** after the supply lines to outside faucets (unless outside faucets need to be free of iron). Also, install the **Nelsen AIO** after any sediment filters or neutralizing filters (ie, calcite, corosex), if applicable.
- The **Nelsen AIO** should be installed before a water softener or any taste/odor filters (if applicable).
- Insure the inlet check valve is connected as shown to the inlet side of the control valve. The drain line should be installed in accordance with local plumbing codes. Due to the release of the air during regeneration, the drain line must be securely fastened at the end, and anchored throughout the run.
- Insure the brine line check valve with screen is installed on the brine valve. This is the AIR DRAW point of entry.

## System Limitations

- Chlorine or other strong oxidizers will damage the filter media bed of these systems and should never be used.
- The **Nelsen AIO** Filter utilizes air, oxidation and filtration for the removal of Iron and Sulphur. This process will leave some air or effervescence in the water. The effervescence may give the water a milky appearance and is



5600SXT  
Controller



2510SXT  
Controller

Check  
Valve

Brine Check Valve w/Screen

simply excess air in the water. While a certain amount of effervescence will always be present, it may be most noticeable during the first 30 days after installation of the system.

## Media Loading Guide

If it is necessary to load your new **Nelsen AIO** Filter System with the filter media provided, please follow these guidelines.

1. Place the media tank on a level surface in an area with adequate ventilation. Proper precautions should be taken to cover your eyes, mouth and nose before pouring the medias into the tank.
2. After removing the control valve, center the riser tube in the tank and place the PVC plug in the riser to prevent media from entering the tube. It is important that the riser tube stays properly centered in the tank as the media is installed.
3. The **Base Media** layers are bagged and marked **Media 1**, **Media 2** and **Media 3**. It is necessary to load the tank beginning with the bag marked **Media 1** followed by the bag marked **Media 2**, finally installing **Media 3**. For proper operation of the system, the media must be properly layered in the tank. Once the first three media layers are installed, add the box marked **BIRM** to the tank ( $\frac{3}{4}$  cubic foot for

an Iron Filter and ½ cubic foot for an Iron/Sulphur Filter). When assembling an Iron/Sulphur Filter a ¾ cubic foot box of **CENTAUR** (provided) is to be installed as the top layer of media. (The addition of CENTAUR is not necessary with an Iron Filter.)

4. Once the medias have been installed, carefully assemble the valve to the tank. The riser tube must be properly centered in the valve and should not be forced as the valve is installed. The check valve that is provided must be installed on the inlet of the unit.
5. Complete the installation process per local plumbing codes.

## ***Regeneration Cycle (59 minutes)***

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1. **Backwash** (14 minutes)  
During this cycle, the water carrying the iron runs to the drain. Untreated water is available during regeneration.
2. **Air Recharge** (40 minutes)  
During this cycle, the unit empties the water to the drain and is recharged with air, oxidizing the media. The sound of air being recharged will be heard. Air bubbles should go down to the drain before proceeding to the next step. Adjust cycle time if necessary.
3. **Rapid Rinse** (1 minute or Off)  
During this cycle, water enters the tank, compressing the air into a pocket at the top of the tank.
4. **Brine Refill** (Off)
5. **Unit Returns to the In-Service Position**

**NOTE:** Due to the air pocket, exceeding 80 psi will adversely impact performance.

The frequency and time of regeneration can be changed due to the following reasons.

- Need for the unit to regenerate at a different time of day (DO NOT regenerate any other softener/filter at the same time as the Nelsen AIO, since this will interfere with the regeneration process).
- In conditions of high water usage and/or high levels of iron, the unit may need to regenerate more frequently than once every three days. The unit can be set for daily regeneration or to regenerate every two days. DO NOT set the regeneration frequency for a longer period than 3 days, as the filter medium can become fouled with iron, rendering the unit ineffective.