



Greensand Filter

For Iron & Hydrogen Sulfide removal

Product Manual



Your Neotec Greensand Filter

Congratulations on choosing the Neotec Greensand Filter (NGF). This system will remove iron & hydrogen sulfide from your water in addition to visible impurities. The Neotec System is designed for years of reliable & trouble-free service.

Problems caused by Iron & Hydrogen Sulfide in water?

Iron is a common element found in most water supplies, particularly well water. The human body needs iron as an essential nutrient for development. However, high iron content in water causes several problems making it essential to remove Iron from the water supply.



Excessive Iron causes deposits on pipelines, pressure tanks, water heaters and water softeners, reducing the available water flow and pressure. It affects the flavor and color of food and water. It may react with tannins in coffee, tea and some alcoholic beverages to produce a black sludge which affects both taste and appearance.



Iron causes reddish-brown staining of laundry, porcelain, dishes, utensils and even glassware. Soaps and detergents do not remove these stains, and use of chlorine bleach and alkaline builders (such as sodium and carbonate) may intensify the stains.

A problem that frequently results from iron or manganese in water is iron bacteria. These nonpathogenic (not health threatening) bacteria occur in soil, shallow aquifers and some surface waters. The bacteria feed on iron in water and form red-brown (iron) slime in toilet tanks and can also clog water systems.

Hydrogen sulfide (also commonly referred to as Sulfur), although, not a cause of

staining, gives water an obnoxious, "rotten egg" odor that can make it unbearable to drink, cook with or even bathe in. Because it is a weak acid, hydrogen sulfide can also promote corrosion and its presence in the air causes silver to tarnish in seconds. High concentrations are flammable and can be poisonous.

The Neotec Greensand Filter removes these contaminants, giving you continuous clean water. You can now say good-bye to those unsightly rusty red stains that spoil your plumbing fixtures, sinks & kitchen appliances and, of course, the offensive rotten-egg smell caused by hydrogen sulfide.

What is Greensand?

Manganese Greensand (Greensand for short) is formulated from glauconitic greensand on which a shiny, hard finite thickness manganese oxide coating is formed and is firmly attached to every grain by a controlled process. Manganese greensand has a high buffering or

oxidation-reduction capacity due to this well-defined manganese oxide coating, rendering it unique ion-exchange capability. It is this capability that is utilized to remove iron, manganese, and hydrogen sulfide from water.

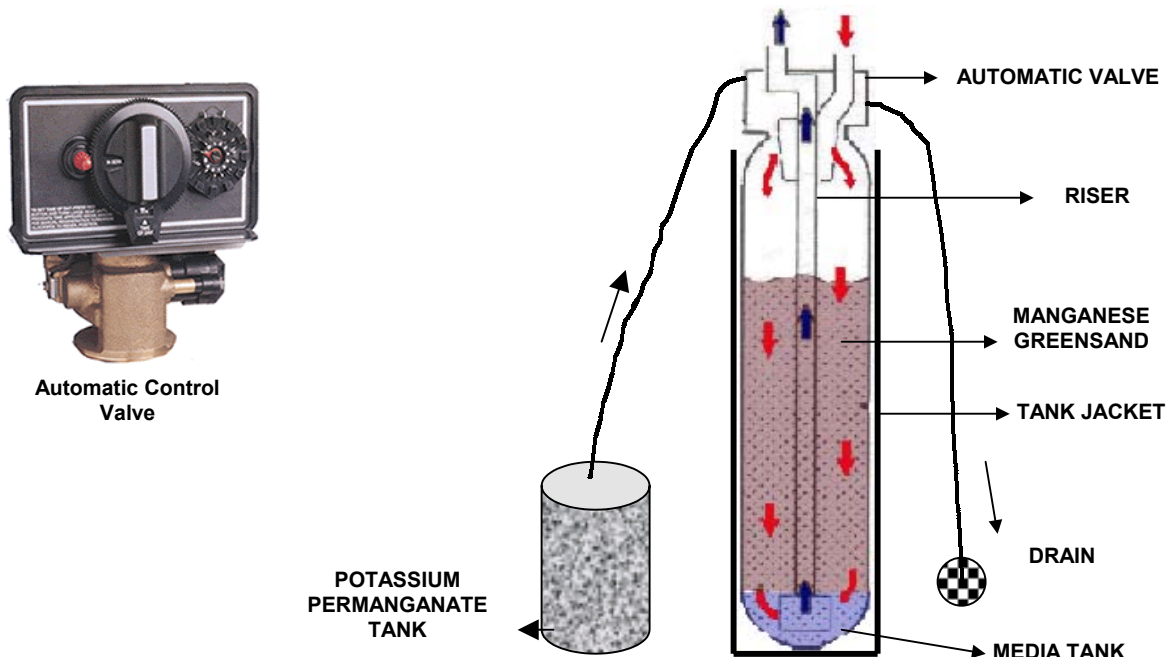
Functional Description

The purification process involves passing water through a bed of manganese greensand. Soluble iron and manganese are oxidized and precipitated by contact with higher oxides of manganese on the greensand granules. Hydrogen Sulfide is reduced by oxidation to an insoluble sulfur precipitate. These precipitates are then filtered by the bed and removed by "backwashing" (an automatically controlled process where the flow of water is reversed).

When the oxidizing capacity of the manganese greensand is exhausted, the

bed has to be regenerated with a weak potassium permanganate (KMNO_4) solution, which is stored in a separate tank. 2 ounces of KMNO_4 per cubic foot are utilized to carry out effective regeneration.

During the backwashing and regeneration process, an automatic control valve mounted on the media tank reverses the water flow to clean the bed of trapped impurities and then draws KMNO_4 from the storage tank to regenerate the media. This is followed by rinsing after which the system is ready for use again.



Greensand filters are generally installed at the point-of-entry. A qualified Neotec Service Representative can install the system wherever you desire*. Another

manual explaining the settings and features of the control valve is included with your system.

*Extra Service Charges may apply. It is recommended to have the system at the point of entry with proper drainage and electrical connection. Please allow sufficient space for maintenance.

How is the Neotec Greensand Filter different from ordinary filters?

Neotec Greensand Filters are manufactured to stringent quality parameters with the best available components. Each system features:

- High quality manganese greensand with high iron reduction capacity over a wide pH range.

- Low attrition losses for longer bed life
- Fully automatic backwash valve
- No increase in product water TDS
- Reliability
- Ease of operation

Maintenance

The Neotec greensand filter is designed for trouble-free operation. However, you will need to refill the potassium permanganate tank from time to time. Note that if the system operates without KMNO₄, the media life will be reduced considerably and may cause staining. The

Greensand media gets exhausted anywhere between 4-10 years (depending on the amount of iron being removed and regular maintenance) after which you will need to re-bed your system with fresh media. Call your dealer for service & spares.

Troubleshooting

In the rare event that you experience any problem with your Neotec Greensand Filter System, the following table may be useful. In most cases you can rectify the problem on your own.

Problem	Possible Solution
I still get stains on my plumbing fixtures	<ul style="list-style-type: none">▪ Make sure the bypass valve is in service position.▪ Make sure the power-cord for the valve is plugged in.▪ Make sure there is sufficient Potassium Permanganate in the storage tank.▪ Check the valve injector for plugging. Clean if required

If you are still unable to get the system running properly or there is a different problem, please call your dealer immediately for assistance.

Warranty

NEOTEC Water Treatment (referred to as The Company) hereby warrants its equipment as follows:

- 1) The company warrants its Greensand Filter controls to be free of defects due to workmanship or materials, under normal use and service for FOUR YEARS from date of purchase. If defective due to workmanship or materials, and if reported within one (1) month from equipment failure, the Company will, at its option, repair or replace the product.
- 2) FIBREGLASS TANKS are warranted for a period of ten (10) years from the date of manufacture against defects due to poor workmanship or materials.
- 3) This warranty is valid only when the unit is installed and adjusted according to factory specifications by Neotec authorized personnel only. It does not include standard maintenance items.
- 4) If the system performance is affected due to any of the following reasons, the warranty will be void and necessary charges, as may be determined from time to time by The Company, will be applicable:
 - Change in raw water quality
 - Damage from abuse, neglect, accident, fire, flood or any other act of God.
 - Damage resulting from unauthorized alterations, attachments, or repairs.
 - Failure or malfunction occurring due to the system being operated in a corrosive and contaminated atmosphere.
 - Failure due to repair or service performed by any person or company other than those approved by Neotec.
- 5) The obligation to repair defective parts does not require replacement of the complete unit. Service which includes replacement of defective parts, repair work or adjustments within the warranty period should be handled by, or through the authorized dealer from whom the system was purchased.
- 6) This warranty becomes void if the serial number is removed or defaced.
- 7) In no event shall Neotec be liable for incidental, special, direct, indirect, consequential or multiple damages such as, but not limited to, water damage, lost business or profits arising out of the sale or use of the Neotec AC System even if advised of the possibility of such damages.
- 8) **NO OTHER WARRANTY EXPRESSED OR IMPLIED IS APPLICABLE TO THIS UNIT.**

MODEL NUMBER.....

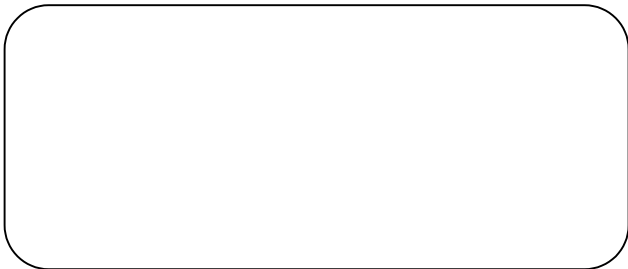
SERIAL NUMBER.....

DATE INSTALLED.....

INSTALLED BY.....

DEALER NAME.....

Authorized Dealer:



Neotec Water Treatment

36, Industrial Parkway South,

Aurora, ON L4G 3W2

Canada

1-888-779-2837

www.neotecwater.com



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