

Unit Description

Noritz's ScaleShield Water Conditioning System is a unique product providing superior limescale prevention and corrosion control. The Scale Shield conditions water at a constant rate resulting in consistent scale prevention and corrosion control for predictable periods of time. ScaleShield works by:

- Keeps scale-causing minerals in solution inhibiting limescale formation.
- Changes the shape of precipitated limescale preventing accumulation.
- Coats wetted surfaces with a micro-thin layer that acts a shield.
- Helps soften and remove existing limescale over time.

In many cases, the ScaleShield Water Conditioning Systems offer many of the same advantages as conventional water softening systems, except at a lower cost with little professional maintenance. When it comes to protecting your Noritz tankless water heater, no other product offers the level of protection from limescale and corrosion than ScaleShield.

Selection Guide

Unit	Model	Description
NR66 & NR71 Series	SS-HB-1	Installation on cold-water line feeding tankless water heater only.
NR83 & NR98 Series		
NR111, NRC111, NCC199, & NC250 Series	SS-HB-2	Installation on cold-water line feeding tankless water heater only.
NC380 Series		2 units required on cold-water line feeding tankless heater only.
Whole House / Commercial		Contact Noritz

Refer to the above selection guide to ensure the correct application of ScaleShield unit(s).

Specifications:

Models	SS-HB-1	SS-HB-2
Max. Pressure	125psi	125psi
Max. Temperature	100°F	100°F
Connection Size	3/4" Female NPT	3/4" Female NPT
Accessories	3 Way Bypass Valve	3 Way Bypass Valve
Cartridge	HBC-1	HBC-2

Important Note: Do not install the ScaleShield unit where it is exposed to direct sunlight. If installed outdoors, ensure the system is covered or insulated from exposure to direct sunlight and/or to protect it from freezing.

Prior to Installing System:

1. The ScaleShield water conditioning system must be installed on a cold-water line prior to the tankless water heater. The unit will treat either the hot side only, or the whole house. Refer to the selection chart on the opposite page to ensure the correct cartridge is being used.
2. Determine the flow direction of the incoming water line. The unit is shipped with mounting bracket attached with the inlet port on the left side. If needed, remove and reverse the mounting bracket for right side inlet port configuration.
3. It is recommended that a 3-way by-pass be used on all installations in order to isolate the system for maintenance. The use of unions is also recommended. Refer to bypass diagrams below.
4. Observe water pressure. If pressure exceeds 125 psi, use a pressure regulator prior to the system.
5. Securely mount the system using supplied bracket whenever possible.
6. The system must be installed with the cartridge and sump directly below the feed head.
7. Install the system where the housing is in an accessible location for cartridge change. Allow a 2" space under the cartridge housing in order to unscrew it from the head.

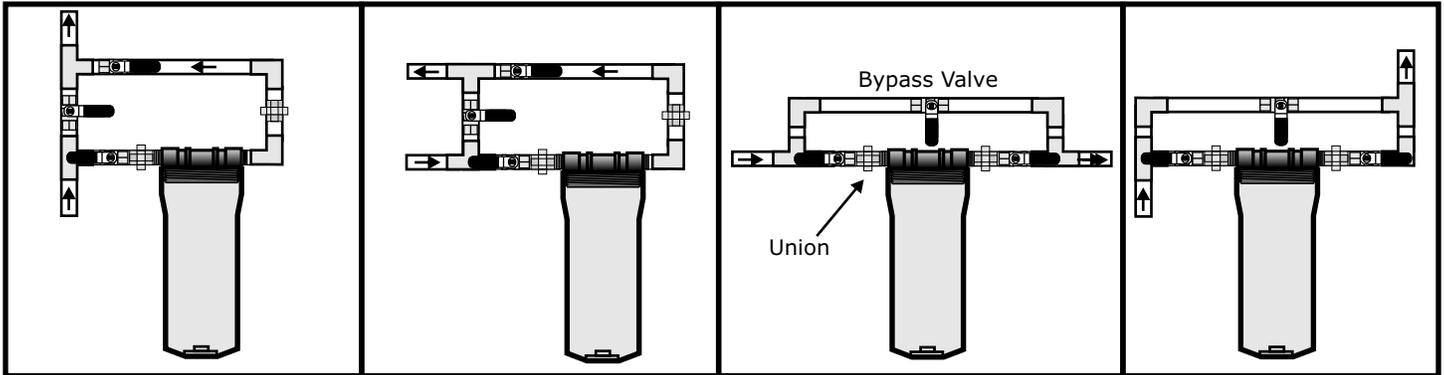
Connection and Start- Up:

1. Turn off water supply.
2. Use either Teflon tape and/or pipe dope on 3/4" male threaded fittings prior to connecting them to the female threaded ports on the system head. Do not over tighten the fittings into the ports.
3. Do not sweat fittings close to the system head unless precautions are taken against excessive heat.

Connection and Start- Up:

5. If the housing and cartridge were removed during installation, take the filter cartridge and push it up onto the 3/4" stem in the bottom of the head so that it hangs by itself vertically under the head. With care not to bump the cartridge, replace the filter housing on the head by screwing it on. Make sure o-ring is seated correctly in housing, and **hand tighten until snug***, ensuring the bottom of the cartridge is centered..
 6. Once installation is complete, turn on water supply and allow water to enter into the unit. Purge air from the unit by opening water lines, then close lines and check for leaks.
 7. Make sure the bypass valve is in closed position.
- * **Hand tighten housing only. Use Filter Wrench for housing removal only.**

Bypass Configurations

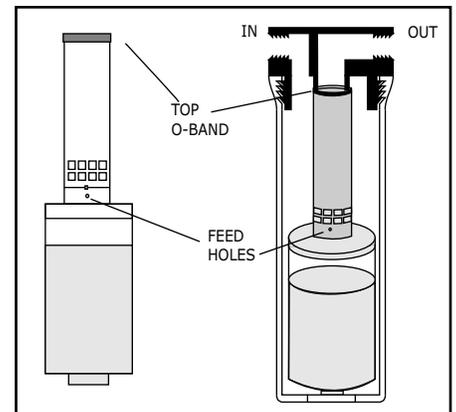


Operation:

Under normal operation, the inlet and outlet valves should be in the open position and the bypass valve closed. The product will dissolve over time and the level of the cartridge will drop. Replace the cartridge when the product level nears the bottom of the cartridge. Cartridge life will vary depending on water usage and cartridge type. Cartridges should last 6-12 months on most residential applications.

Cartridge Replacement:

1. Close inlet valve only. Open water line downstream of system to relieve pressure from the line. Once pressure is released, close the outlet valve, then using the filter wrench, unscrew the housing and remove.
2. Remove the spent cartridge **ensuring that the top o-band does not remain on the stem in the middle of the head.**
3. Take the replacement filter cartridge and push it up onto the 3/4" stem in the bottom of the head so that it hangs by itself vertically under the head. With care not to bump the cartridge, replace the filter housing on the head by screwing it on. Make sure o-ring is seated correctly in housing, and **hand tighten until snug**, ensuring that the bottom of the cartridge is centered.
4. Open outlet valve, then slowly open inlet valve. Purge are from system by opening line downstream of unit, then check the unit for leaks. Ensure bypass is closed. If system leaks, replace o-ring and recheck.



Trouble Shooting:

There are two maintenance requirements for correct system operation. **1) Replace the cartridge when needed.**

2) Ensure that the feed holes on the cartridge are not plugged. In some applications where water hardness and alkalinity are high, feed holes may begin to "weep" a white material from the feed holes. This material may eventually build up and clog the feed holes rendering the system ineffective. There may also be evidence of a harmless white powder-like substance at the bottom of the housing. In such applications, the feed holes on the cartridge will need to be periodically cleaned. **Follow cartridge replacement procedures and clean the feed holes taking care not to tip the cartridge to one side.**

ScaleShield unit includes:

- (1) Cartridge Housing (inlet/Outlet Head and Transparent Housing w/ O-ring)
- (1) ScaleShield Water Conditioning Cartridge (HBC-1 or HBC-2)
- (1) Mounting Bracket w/ 4 Screws
- (1) Filter Housing Wrench
- (1) Installation/Operating Instructions

For Further Information:
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BYPASS LINE / VALVE

