



waterlesscartridges

distributors of the  **FALCON** brand
WATERFREE TECHNOLOGIES

Installation Guidelines - Ion ScaleBuster®

Water

An analysis of the water should preferably be submitted when proposing to use the Ion ScaleBuster® with industrial or well water. The use of the Ion ScaleBuster® with water at a temperature over 140°F (60°C) is not always desirable. Please consult your distributor if you intend to install the Ion ScaleBuster® in a system of piping with water temperatures over 140°F (60°C) or where the values of the 'drinking water directive' (TVO-conductivity and/or pH values) are exceeded. There should be no significant variation in the water quality or operating conditions during usage.

Ion ScaleBuster®

The Ion ScaleBuster® is designed for inline installations only and must be kept wet once usage commences.

The pressure drop with proper use of the Ion ScaleBuster® is minimal. It should be noted that the flow rate of the chosen Ion ScaleBuster® should be at or above the nominal flow rate of the connected water system but below maximum flow rate as noted on the specification of the specific model. Due to the symmetrical construction of the Ion ScaleBuster®, the direction of the water flow can be from either end of the device. The model and size of Ion ScaleBuster® to be selected should be determined by the maximum flow rate demand in the system of installation. In residential installations, the size of the water meter will typically determine the size of the Ion ScaleBuster®.

Installation

Always employ qualified personnel to install the Ion ScaleBuster®.

Ion ScaleBuster® should be installed vertically, if space allows, upstream of any pressure boosters or pumps. Depending on the length and model of the device selected, a section of the piping should be removed, two compatible coupling connections installed properly and then the Ion ScaleBuster® installed.

When installing the Ion ScaleBuster® in stainless, black/galvanized steel or copper piping systems the device must be electrically bridged using suitable bonding wire. When installing the Ion ScaleBuster® in a plastic piping system pieces of piping of a metallic nature at least the length of the Ion ScaleBuster® must be inserted into the pipeline before and after the Ion ScaleBuster®. In these cases a grounding wire must be connected to a physical grounding point.

The Ion ScaleBuster® should be installed as close as possible to the individual pieces of equipment to ensure their protection (e.g. heat exchangers, pumps etc.).

NOTE: The Teflon tape (or liquid) doesn't create a seal but reduces friction so you can tighten more with the same turning force.



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Torque

These are the recommended torque for the threaded Ion ScaleBuster® models:

½" (all models)	65 Nm (+/- 10%)
¾" (all models)	90 Nm (+/- 10%)
1"	150 Nm (+/- 10%)
1.1/4"	240 Nm (+/- 10%)
1.1/2"	290 Nm (+/- 10%)
2"	305 Nm (+/- 10%)

Caution! During installation in a copper piping system the Ion ScaleBuster® must not be exposed to the heat from soldering. The Ion ScaleBuster® must not be levered or turned against the screw joint ends or flange couplings. Pipe wrenches/spanners should be used only on the couplings and never on the Ion ScaleBuster® itself. The Ion ScaleBuster® must be installed with zero potential (good grounding).

Central Warm Water Processing with a Circular Flow System

If the heating equipment being protected by Ion ScaleBuster® also contains a warm water circulation loop, an additional Ion ScaleBuster® should be incorporated in the pipe work of the loop to provide protection against scale and corrosion. This ensures efficient after-treatment and enables the whole system to be protected. Where systems have multiple loops, each should be equipped with one Ion ScaleBuster®.

Caution! Additional Information about the Flanges Ion ScaleBuster® (all E models above DN50 or U models above 2")

To ensure the correct installation of the flanged device, only proper standard flange seals should be used (DN for Ion ScaleBuster® E models, ASME/ANSI gaskets for Ion ScaleBuster® U models). If gaskets are damaged or lost during installation new proper standard gaskets should be obtained. Further, the bolts must be secured using washers with spring rings (supplied). Failure to comply will necessarily void the warranty.

The flanged devices have indicator strips between the device and the flange. The warranty becomes void if one or both of the strips are damaged either through rotation of the flange thus causing leaks or due to levering or some similar activity. Under no circumstances should the Ion ScaleBuster® be pulled apart using attachment bolts to make the device fit.



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Filters

If a fine filter is present then the Ion ScaleBuster® should be installed downstream of the fine filter – even in a circulation flow system. However, it is recommended that a fine filter should be installed upstream of the Ion ScaleBuster® if there are problems with debris due to bad corrosion etc.

Electrical Earth Bonding

Important

Electrical earth bonding (grounding) is essential to and instrumental in the correct performance of Ion ScaleBuster®. See the schematics (below) for guidance on earth bonding - for both metal and plastic pipework.

Proper earthing is also essential for safety reasons - consult a qualified electrician.

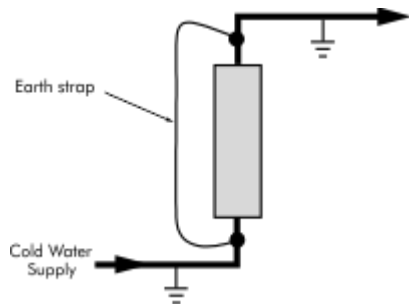
Earth bonding clamp straps and cables are not always included with this product – this will be dependent upon the model.

For a successful Installation

- If in doubt use a qualified installer (check with your local Ion ScaleBuster® distributor).
- Install with the correct flanges and gaskets for the particular installation.
- Care must be taken to ensure that connecting joints requiring applied heat (welding/soldering) must not be used in the vicinity of the Ion ScaleBuster® - Conducted heat will damage the unit's interior, causing possible failure of the Ion ScaleBuster® .
- Check the orientation of the installation flanges on the pipeline is correct so as not to cause radial displacement of the flanges or other stresses.
- Water pressure must not be above the maximum pressure on the Ion ScaleBuster® label (i.e., Threaded units: 145 psi (U models), 10 bar (E models); Flanged units: 150 psi or 300 psi (U models), 16 bar or 40 bar (E models). If in doubt check with your Ion ScaleBuster® distributor.
- The temperature of the water should not be higher than 140°F (60°C) for optimum performance.
- Ion ScaleBuster® will work slightly more efficiently when installed vertically.
- Always earth / earth bridge across the Ion ScaleBuster® making sure a good earth (ground) connection is achieved.
- Ion ScaleBuster® is designed for the use with potable water as well as industrial purposes.
- Ion ScaleBuster® is best installed in the cold water feed supply lines. In certain instances, such as central heating, hot water returns and cooling towers, Ion ScaleBuster® should be installed in the cool end of the recirculating system, if possible.
- Check that you have a genuine Ion ScaleBuster® – it should carry the ISB Hologram on the label.

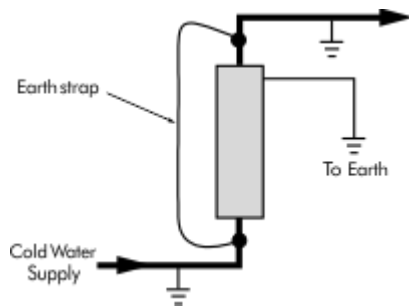
Schematic A

Where pipework is metal, properly grounded (earthed) and with no feedback from any stray currents from electrical equipment upstream.



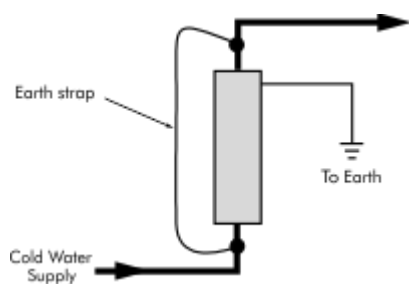
Schematic B

Where pipework is metal, properly grounded (earthed) but with the potential/actual feedback of stray currents from electrical equipment upstream.



Schematic C

Where pipework is not adequately grounded (earthed).



Schematic D

Where plastic pipework is present, install metal pipes immediately before and after the Ion ScaleBuster® - pipe dia. x 30 – e.g. 15mm x 30 = 450mm per length.

