

## Installation Specifications

### The Water

An analysis of the water should preferably be submitted when proposing to use the **ION ScaleBuster**<sup>®</sup> with industrial or well water. The use of the **ION ScaleBuster** (also known as **ISB**<sup>®</sup>) with water with a temperature over 60°C (140°F) is not always desirable. The manufacturer should be consulted if it is intended to install the **ScaleBuster** in a system of piping with water temperatures over 60°C (140°F) 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.

### The ION ScaleBuster<sup>®</sup>

The **ION ScaleBuster** is physical device for inline installations only and must be kept wet once usage commences.

The pressure drop with proper use of the **ScaleBuster** is minimal. It should be noted that the flow rate of the chosen **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 **ScaleBuster** the direction of the water flow can be from either end of the device. The model and size of **ScaleBuster** to be selected should be determined by the maximum flow rate demand in the system of installation. In residential, the size of the water meter will typically determine the size of the **ScaleBuster**.

### The Installation (see diagrams on p. 3)

It is recommended that a company specialising in this field should install the **ScaleBuster**. 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 **ScaleBuster** installed.

When installing the **ScaleBuster** in a stainless, mild (black) or galvanized steel or copper piping system the device must be electrically bridged using suitable bonding wire. When installing the **ScaleBuster** in a plastic piping system, 2 pieces of piping of a metallic nature at least twice the length of the **ScaleBuster** (*recommended* – 30 times the pipe diameter) must be inserted into the pipeline before and after the **ScaleBuster**. In those cases, a grounding wire must be connected to a **physical grounding** point.

The **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, it reduces friction so you can tighten more with the same turning force.



## Torque

These are the recommended maximum torque for the threaded **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 the soldering. The **ScaleBuster** must not be levered or turned against the screw joint ends or flange couplings. Pipe wrench or spanners should only be used on the couplings and never on the **ScaleBuster** body itself. The **ScaleBuster** must be installed with zero potential (i.e., with good grounding).

## Central Warm Water Processing with a Circular Flow System

If the heating equipment, which is being protected by **ION ScaleBuster**, also contains a warm water circulation loop, an additional **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. In case the system has multiple loops, each and every one should be equipped with one **ScaleBuster**.

### Caution! Additional Information about the Flanges ION ScaleBuster (all EF models DN50 and above or UF models 2" and above)

To ensure the correct installation of the flanged device, only proper standard flange seals (DN for **ScaleBuster** EF models, ASME/ANSI gaskets for **ScaleBuster** UF models) should be used. If the 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. If these requirements are disregarded the warranties will be null and void.

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 **ScaleBuster** be pulled apart using attachment bolts to make the device fit!

## Filter

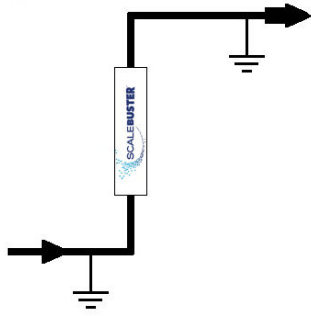
If a fine filter is present then the **ION ScaleBuster** should always be installed *downstream* of the fine filter – even in a circulation flow system. It is recommended that a fine filter should be installed upstream of the **ScaleBuster** if there are problems with debris due to bad corrosion etc.



## Electrical Earth (Ground) Bonding

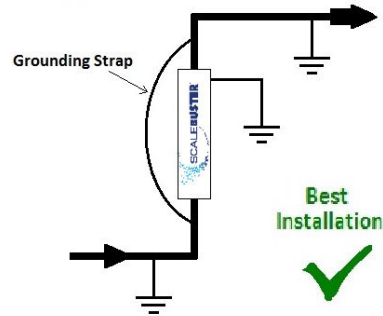
### Schematic A

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



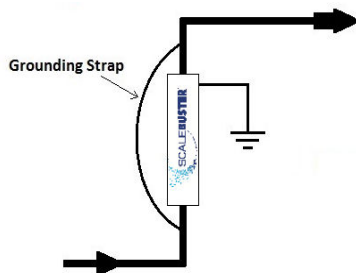
### Schematic B

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



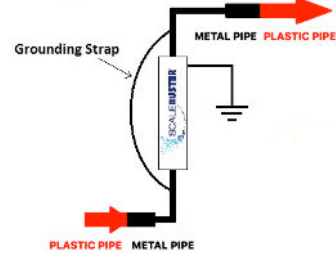
### Schematic C

Where pipe-work is not adequately grounded (earthed).



### Schematic D

Where **ISB** is installed into plastic (non-metal) pipe-work it is important that **metal** sections are installed both before and after the **ISB**.



The ideal length of **METAL** pipe-work **before** and **after** the **ISB** should be **x30** the pipe diameter wherever possible.

*Remember!*

*If in doubt, please contact your ION ScaleBuster® Distributor.*



## Electrical Earth Bonding

Electrical earth bonding (or grounding) is essential to enhance the performance of **ION ScaleBuster** in addition to providing a safe continuity of earth bonding for other purposes. When plastic (or any other non-metal) pipes are used be sure to bond the actual **ScaleBuster** to a grounding point (earth) to achieve an effective earth (ground).

### For a successful installation of the ION ScaleBuster

1. If in doubt use a qualified installer (check with your local **ScaleBuster** Distributor).
2. Install with the correct flanges and gaskets for the particular installation.
3. Care must be taken to ensure that connecting joints requiring applied heat (welding/soldering) must not be used in the vicinity of the **ScaleBuster** because the conducted heat will damage the unit's interior, causing possible failure of the **ScaleBuster**.
4. 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.
5. The water pressure must not be above the Max. Pressure on the **ScaleBuster** label (i.e., Threaded units: 145 psi (UT models), 10 bar (ET models); Flanged units: 150 psi or 300 psi (UF models), 16 bar or 40 bar (EF models). If in doubt check with your **ScaleBuster** Distributor.
6. The temperature of the water should not be higher than 60°C (140°F) for optimum performance.
7. Always connect earth/earth (grounding) bridge across The **ScaleBuster** making sure a good earth (ground) connection is achieved. When the piping isn't properly earthed (grounded) – it must be connected to an actual grounding point.
8. **ScaleBuster** is designed for the use with potable water as well as industrial purposes.
9. **ScaleBuster** is best installed in the cold water feed supply lines. In certain instances, such as central heating, hot water returns and cooling towers, **ScaleBuster** should be installed in the cool end of the recirculating system if possible.
10. Check that you have a genuine **ION ScaleBuster** - it should carry the **ISB**<sup>®</sup> Hologram on the label.
11. Register your new **ScaleBuster** with the serial number (see label), invoice number and date on <http://scalebuster.com/warranty/register/> . The warranty becomes void if you fail to register within 30 days from the date of the invoice.
12. For installation animation videos please scan the QR code on the package or here:

