Technical Service Bulletin:

Anode Rod Inspection

Models: LT160/1, LT200/1, LT300/1, S32, SM80/5, SM100/5, SM300/1, SM400/1, ST150/2, ST300/2, ST400/3, ST500/3, ST750/3, ST1000/3, SU54/5, SU80/5, SU100/5

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Please read this entire document prior to proceeding with any work.

WARNING:

- This work may require removing inspection covers and/or anode rods from the storage tank and possible contact with pressurized hot water. If you are not qualified to work on such equipment, please obtain the services of a professional with these qualifications.

This bulletin is a supplement to the product manuals supplied with the above listed models, and its recommendations must be followed to ensure the longevity of the product and to maintain full warranty coverage.

Background

Most hot water storage tanks manufactured and sold in the US, including the Buderus models listed above, are made of steel. Steel when exposed to water will rust and corrode; corrosion can be defined as the electrochemical eating away of metal. To protect the hot water storage tank manufacturers employ two levels of protection, a porcelain enamel coating on the inner tank surface exposed to the water and the insertion of a sacrificial anode rod.

What is an Anode Rod, and How Does it Work?

The anode rod is a replaceable sacrificial component of most hot water storage tanks and its purpose is to protect the steel tank against the elements of corrosion. Over a period of time, depending on water quality, the anode rod will naturally deplete as it sacrifices and deteriorate. Eventually, it loses it's effectiveness completely. If this is allowed to happen, the storage tank itself will be attacked by water corrosion and will eventually leak.

It is the responsibility of the installer to ensure that the tank is supplied with potable water that meets the requirements laid out in Fig.2. Damage caused to the product by failing to do so will not be covered under warranty.

Anode Rod Inspection Procedure and Frequency

The locations of the anode rods, and the procedure to remove them, varies between models. Refer to the installation manual that was supplied with the product for model specific directions.

Electronic versions of the manual can be downloaded from our website: www.bosch-thermotechnology.us

How Often Should The Anode Rod Be Inspected, Or Replaced?

See Table 1 below as general guideline and refer to the specific model installation manual for complete details.

Tank Model	Quantity of Anode Rods in Tank	Anode Rod Inspection Minimum Frequency*	Anode Rod Minimum Acceptable Diameter (along entire length)
LT160/1, LT200/1, LT300/1	1	1 Year	5/8"
S32	1	1 Year	5/8"
SM80/5, SM100/5	2	1 Year	5/8"
SM300/1, SM400,1	2	1 Year	1/2"
ST150/2, ST300/2	1	1 Year	3/4"
ST400/3, ST500/3, ST750/3, ST1000/3	1	1 Year	3/4"
SU54/5, SU80/5, SU100/5	2	1 Year	5/8"

Table 1

* In installations where the water is particularly aggressive/corrosive in nature, stored at high temperature, and/or in a high-volume usage application, you will need to increase the frequency of anode rod inspections accordingly. If the anode rod depletes, corrosion will begin to attack the tank and will eventually result in a water leak. **Tank leak failure due to a depleted anode rod is not covered under warranty.**

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Water Quality Requirements

This product must be supplied with potable water that is free from particulates, corrosive chemicals, and other contaminants, and meets the chemistry criteria shown in Table 2 below:

Ph MIN.	Ph MAX.	Hardness	Conductivity (µS/cm) MIN.	Conductivity (µS/cm) MIN.
6.5	9.5	≥ 36 ppm ≥ 2.1 Grain/US Gallon ≥ 2° dH	130	1500

Table 2

Anode Rod Examples - New and Depleted

Figure 1 shows a brand new anode rod on the right, and a "bad", depleted anode rod on the left that must be replaced immediately.

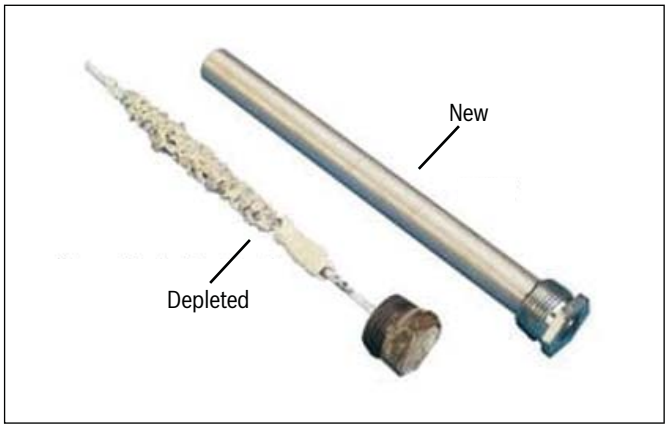

Figure 1

Figure 2 shows a used anode rod that has started to pit but is still in good working order. You will notice that its diameter is consistent along its length with no pieces missing.

Figure 2

Figure 3 below shows another anode rod that is almost completely depleted and must be replaced immediately.

Figure 3

If you have any questions regarding the information provided in this document, please contact the Bosch Technical Support Department by phone at 1-800-283-3787, or via email at boiler.techsupport@us.bosch.com

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