

Technical service bulletin

Boiler water chemistry and freeze prevention guidelines

Buderus

Introduction



NOTE:
Please read this entire document prior to proceeding with any installation or maintenance of a GB142 Series Boiler

- The purpose of this bulletin is a supplement to the Buderus GB142 Boiler Applications/Service Manuals.
- These guidelines must be followed in order to avoid damaging the aluminum heat exchanger in the appliance. Failure to follow these guidelines may result in an appliance warranty that is void. Any questions, please contact the Buderus Technical Service Department at 1-800-283-3787.

Reference Document

- 72149400 - 05/2005 US/CA (EN)
Servicing Instructions - Condensing Gas Boiler
Logamax plus GB142-24/30/45/60

Water Chemistry Guidelines

(for untreated water and glycol systems)

- System fluid pH must be maintained between 7 and 8.5.
- Use untreated water only to fill the system.
- Do not use TSP (tri-sodium phosphate).
- Do not use water from salt bedding type exchangers (ion exchanger) used to soften the water.
- Do not use inhibitors or other non-approved additives.
- No toxic chemicals such as used for boiler treatment shall be introduced into the water used for space heating.
- When using oxygen permeable PEX pipes from radiant floor heating systems, the system must be separated by installing a heat exchanger.
- This boiler is not suitable for natural gravity type installations, or any other open type system.
- Always flush the system piping (old or new installations) prior to the installation of the boiler. Failure to do so can cause old sediment, flux, to raise system pH. Flush the system with clean untreated water.
 - o Flush each zone separately and make sure all radiators are opened.
- Use a properly sized and working expansion vessel.
- Do not exceed the maximum permissible flow rate(s) through the boiler. Excessive flow can cause erosion damage to the aluminum heat exchanger: (GPM=gallons per minute, LPM=liters per minute)

- o **GB142/24** = 11 GPM (42 LPM) - Low speed for Grundfos UP1558FC pump.
- o **GB142/30** = 11 GPM (42 LPM) - Low or Med. speed for Grundfos UP1558FC pump.
- o **GB142/45** = 15 GPM (57 LPM) - Med. or High speed for Grundfos UP1558FC pump.
- o **GB142/60** = 20 GPM (76 LPM) - High speed for Grundfos UP1558FC pump.

Aluminum safe anti-freeze, treatment and additive guidelines

- Do not use automotive anti-freeze or any ethylene glycol based solutions.
- Only use the anti-freeze manufacturer's outlined in this section of this document.
- We recommend that a pH reading is taken after the system has been in operation for a period of time, and adjusted as necessary.
- Do not exceed 50% anti-freeze by volume. This can interfere with heat transfer and can cause sludge to develop in the boiler. This may cause damage to the heat exchanger.
- Determine the freezing temperature need and correct amount of anti-freeze.
- Use the anti-freeze manufacturer's data to determine the anti-freeze concentration by volume.

The following are suppliers of Aluminum safe anti-freeze products for use in a hydronic heating system:

- **Noble Company** - PO Box 350 - Grand Haven, MI 49417
 - o Phone: 1-800-878-5788
 - o Fax: 231-799-8850
 - o Website: www.noblecompany.com
 - o Approved product:
 - Noburst-AL anti-freeze (available in 5 gallon containers).
- **Rhomar Water Management, Inc.** - PO Box 229 - Springfield, MO 65801
 - o Phone: 1-800-543-5975
 - o Fax: 417-862-6410
 - o Website: www.rhomarwater.com
 - o Approved products:
 - Rhogard anti-freeze (available in 5 gallon containers).
 - Pro-Tek 922 inhibitor* (available in 1 gallon containers).

* - this product may be used to adjust pH, but on occasion may not resolve the pH issue. In these cases, it is recommended

to flush the system and refill with untreated water and new Buderus approved anti-freeze.

- Be sure the follow the manufacturer's instructions for use, safe handling, and storage.
- Refer to the MSDS (Material Safety Data Sheet) provided by the manufacturer for potential hazards and first aid procedures for exposure and ingestion.

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