

Aluminum Series

High Efficiency Gas-Fired Boiler

DIELECTRIC ISOLATION & ANTIFREEZE PROTECTION ADDENDUM

This addendum applies to series :

UB90, UB95, Q90, Q95M, K90, K95M, BW9 & GWB9, FW95M& OL95M

WARNING

You **MUST** follow these instructions to prevent damage to the boiler's heat exchanger that can be caused by inadequate dielectric isolation, incorrect water treatment or antifreeze application. Failure to comply could result in possible severe personal injury, death or substantial property damage.

The instructions in this addendum replace all related information in the Boiler Installation Manual, The User's Manual, or any other supplemental instruction or addendum.



Apply this information in place of any related information in the Installation, Operation and Maintenance Manual Accompanying this boiler.

• DIELECTRIC ISOLATION

Two (2) 1-1/4" X 1-1/4" Female to female dielectric isolation unions are shipped loose in boiler parts bag. Install the Dielectric Isolation unions at the boiler supply line and return line. Isolation fittings should be installed nearest the boiler prior to system piping connections.

• WATER TREATMENT and ANTIFREEZE PROTECTION

MUST be applied for **ALL** aluminum series high efficiency gas-fired boilers using antifreeze protection.

WARNING



Install boiler so that the gas ignition system components are protected from water (dripping, spraying, rain, etc) during appliance operation and service (circulator replacement, etc).


System and Operating Precautions

Applies to ALL Aluminum High Efficiency Gas-Fired Water Boilers

WARNING

Clean the System First

BEFORE connecting the boiler to the heating system, clean and flush the system thoroughly. Ensure the system is free of sediment, flux and any residual boiler water additives.

 Systems having antifreeze that is not recommended must be completely flushed to ensure no old antifreeze remains. In older systems obviously discolored, murky or dirty water; or a pH reading outside the acceptable range (between 7.0 and 8.0) are indications that the system should be cleaned or treated. Thoroughly flush the system with clean water to remove any sediment or contaminants. Sludge and iron oxide deposits can cause rapid breakdown of inhibitors.

Flushing with clean water is preferred. If chemical cleaners are used, use only those recommended for use with aluminum boilers. Follow the chemical cleaner manufacturer's instructions completely.


DO NOT mix different manufacturer's products.

WARNING

Eliminate System Leaks

Continuous addition of make-up water will constantly add oxygen to the system. Eliminate all system leaks. All system leaks must be repaired immediately.

Make sure the expansion tank is operational and properly sized. Undersized expansion tanks cause relief valve weeping and substantial make-up water addition.

 Operation of this boiler in a system containing significant amounts of dissolved oxygen can cause severe heat exchanger corrosion damage.

This boiler is not designed for use in systems containing regular additions of make-up water. Regular additions of make-up water may cause severe heat exchanger damage. System leaks may not always be visible. An unseen system leak will become obvious if boiler pressure decreases when make-up valve is closed.

This boiler is designed for a closed loop hydronic heat system **ONLY!** This boiler is not suitable for natural gravity type installations, or any other open type system.


WARNING

Fill Water and Chemistry

Make sure that the water used to fill the system meets the requirements:

System fluid pH must be maintained between 7.0 and 8.0.

Maintain water hardness below 7 grains hardness.

 Filling with chlorinated potable water is acceptable. **DO NOT** fill boiler with water containing chlorine in excess of 100 ppm.

DO NOT use inhibitors or other additives that are not listed at the end in this addendum.

Consult a local water treatment specialist for recommendations if any of the above is outside the stated ranges.

System and Operating Precautions

Applies to ALL Aluminum High Efficiency Gas-Fired Water Boilers

WARNING

General Guidelines When Using Antifreeze

- **Use only antifreeze products recommended for use with aluminum boilers, as specifically listed in this addendum. See Table 1.**

- Continuous addition of make-up water will dilute the power of the antifreeze and change the buffers ability to maintain pH.
- Flush old antifreeze from the system. Flush the boiler and system separately.
- Do not use antifreeze unless absolutely required.
- Antifreeze, if needed, must be of a type listed on the next page due to their operational characteristics of : type 356 T6 aluminum at operating temperatures between 20°F (-6.7°C) and 250°F (121°C). (See Table 1 for allowable products.)
- Always clean system prior to using antifreeze as previously stated in this supplement.
- Be sure to follow the antifreeze manufacturer's instructions for use, safe handling and storage of their products. Refer to the MSDS (Material Safety Data Sheets) provided by the antifreeze manufacturer for potential hazards and first aid procedures for exposure or ingestion.
- Antifreeze will raise the pH of the hydronic solution in a heating system above the recommended level due to the corrosion inhibitors. The solution must be treated to maintain a pH within the recommended level. Follow antifreeze manufacturer's instructions to adjust the pH.
- If the system has leaked, the water and antifreeze chemistry will need to be adjusted. To avoid damage to the boiler, check the pH

and chemistry of the boiler solution and consult the antifreeze manufacturer for recommendations.

- It is recommended that a pH reading be taken annually, and adjusted as necessary. Follow antifreeze/inhibitor manufacturer's instructions for details on how to adjust the pH.
- Antifreeze solutions can break down over time. Failure to check antifreeze chemistry on an annual basis may result in accelerated corrosion of boiler and other system components. Consult with the antifreeze manufacturer for recommendations.
- Use of antifreeze in any boiler will reduce heating capacity as much as 10-20%. This must be taken into consideration when sizing the heating system, pumps and expansion tank. Consult antifreeze manufacturer's literature for specific information on reduced capacity.
- Using the antifreeze manufacturer's instructions, determine the freezing temperature needed and use the correct amount of antifreeze. Never exceed 50% antifreeze by volume.
- The boiler operating pressure must remain below 15 psi for antifreeze solutions that specify a maximum of 250°F (121°C). Otherwise, increase the system operating/tank pressure to 20 psig. **Note: Refer to expansion tank manufacturer instructions for adjusting tank pressure.**

System and Operating Precautions
Applies to ALL Aluminum High Efficiency Gas-Fired Water Boilers

Table 1 Antifreeze Products

Approved Aluminum Antifreeze & Inhibitor Suppliers	
Noburst AL Antifreeze	Noble Company P. O. Box 350 Grand Haven, MI 49417 www.noblecompany.com Tel: 800-878-5788 Fax: 231-799-8850
Rhogard Antifreeze & Pro-Tek 922 Inhibitor*	Rhomar Water Management, Inc. P. O. Box 229 Springfield, MO 65801 www.rhomarwater.com Tel: 800-543-5975 Fax: 417-862-6410
* Pro-Tek 922 Inhibitor may be used to adjust the pH level of the hydronic system, but on occasion may not resolve the pH issue. In these cases, flush the system and refill with untreated water and antifreeze suitable for aluminum heat exchangers, as listed in this supplement.	
Alphi-11	Hydronic Agencies, Ltd. (Fernox North Distributor) 15363 117 Avenue Edmonton, AB T5M 3X4 Canada www.hydronicagencies.com Tel: 780-452-8661 Fax: 780-488-2304 Fernox www.fernox.com
Intercool NFP-30,40,50 AA Intercool RPH-15*	Interstate Chemical 2797 Freedland Road P.O. Box 1600 Hermitage, PA 16148-0600 www.interstatechemical.com Tel: 800-422-2436 Fax: 724-981-8383
* This product may be used to adjust the pH level of the hydronic system, 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 boiler manufacturer approved antifreeze suitable for Aluminum heat exchangers.	