

# 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 boiler's heat exchanger 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.

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



Apply this information in place of any related information in Installation, Operation & 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 Dielectric Isolation unions at boiler supply line and return line. Install isolation fittings nearest 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 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 boiler to heating system, clean and flush system thoroughly. Verify system is free of sediment, flux and any residual boiler water additives.

Systems having antifreeze not recommended must be completely flushed to ensure no old antifreeze remains. In older systems obviously discolored, murky or dirty water; or pH reading outside acceptable range (between 7.0 and 8.0) are indications the system should be cleaned or treated. Thoroughly flush 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. If chemical cleaners are used, use only those recommended for use with aluminum boilers. Follow 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 system. Eliminate all system leaks. All system leaks must be repaired immediately.

Verify 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 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 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

Verify water used to fill system meets these requirements:

System fluid pH 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 local water treatment specialist for recommendations if any of above requirements is outside 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 listed in this addendum. See Table 1.**
- Continuous addition of make-up water will dilute power of antifreeze and change buffers ability to maintain pH.
- Flush old antifreeze from system. Flush boiler and system separately.
- Do not use antifreeze unless required.
- Antifreeze, if needed, must be of type listed on 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 stated in this supplement.
- Be sure to follow antifreeze manufacturer's instructions for use, safe handling and storage of their products. Refer to MSDS (Material Safety Data Sheets) provided by antifreeze manufacturer for potential hazards and first aid procedures for exposure or ingestion.
- Antifreeze will raise pH of hydronic solution in heating system above recommended level due to corrosion inhibitors. Solution must be treated to maintain a pH within recommended level. Follow antifreeze manufacturer's instructions to adjust pH.
- If system has leaked, water and antifreeze chemistry will need to be adjusted. To avoid damage to boiler, check pH and chemistry of boiler solution and consult the antifreeze manufacturer for recommendations.
- It is recommended that pH reading be taken annually, and adjusted as necessary. Follow antifreeze/inhibitor manufacturer's instructions for details on how to adjust pH.
- Antifreeze solutions can break down over time. Failure to check antifreeze chemistry on annual basis may result in accelerated corrosion of boiler and other system components. Consult with antifreeze manufacturer for recommendations.
- Use of antifreeze in any boiler will reduce heating capacity as much as 10-20%. Take into consideration when sizing heating system, pumps and expansion tank. Consult antifreeze manufacturer's literature for specific information on reduced capacity.
- Using antifreeze manufacturer's instructions, determine freezing temperature needed and use correct amount of antifreeze. Never exceed 50% antifreeze by volume.
- Boiler operating pressure must remain below 15 psi for antifreeze solutions that specify a maximum of 250°F (121°C). Otherwise, increase 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**

<b>Compatible Aluminum Antifreeze &amp; Inhibitor Suppliers</b>	
<b>Noburst AL Antifreeze</b>	Noble Company P. O. Box 350 Grand Haven, MI 49417 <a href="http://www.noblecompany.com">www.noblecompany.com</a> Tel: 800-878-5788 Fax: 231-799-8850
<b>Rhogard Antifreeze &amp; Pro-Tek 922 Inhibitor*</b>	Rhomar Water Management, Inc. P. O. Box 229 Springfield, MO 65801 <a href="http://www.rhomarwater.com">www.rhomarwater.com</a> 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.	
<b>Alphi-11</b>	Hydronic Agencies, Ltd. (Fernox North Distributor) 15363 117 Avenue Edmonton, AB T5M 3X4 Canada <a href="http://www.hydronicagencies.com">www.hydronicagencies.com</a> Tel: 780-452-8661 Fax: 780-488-2304 Fernox <a href="http://www.fernox.com">www.fernox.com</a>
<b>Intercool NFP-30,40,50 AA Intercool RPH-15*</b>	Interstate Chemical 2797 Freedland Road P.O. Box 1600 Hermitage, PA 16148-0600 <a href="http://www.interstatechemical.com">www.interstatechemical.com</a> Tel: 800-422-2436 Fax: 724-981-8383
<b>Hercules cryo-tek™-100/Al</b>	Hercules Chemical Company, Inc. 111 South Street Passaic, NJ 07055 <a href="http://www.herchem.com">www.herchem.com</a> Tel: 800-221-9330 Fax: 800-333-3456
* This product may be used to adjust pH level of hydronic system, but on occasion may not resolve pH issue. In these cases it is recommended to flush system and refill with untreated water and new boiler manufacturer approved antifreeze suitable for Aluminum heat exchangers.	