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Warranty Department

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Technical Service Bulletin

Date Issued	Model Year(s) Affected	Model(s) Affected	TSB #
June 26, 2007	All with Aqua Hot heat	All below	319

Brand

All ☐		American Star ☐		Mountain Aire ■	
		Dutch Star ■		Kountry Aire ■	
		Kountry Star ☐		Essex ■	
Scottsdale ☐		Northern Star ☐		London Aire ■	

Type

All ☐	T T ☐
F W ☐	C A ☐
D P ■	D B ■

- ■ Air Conditioning & Heating
- ☐ Appliances & Accessories
- ☐ Cabinets & Furniture
- ☐ Chassis Components
- ☐ Construction Components
- ☐ Electrical Components
- ☐ Exterior Components
- ☐ Interior Components
- ☐ Plumbing & Bath Components
- ☐ Windows, Awnings, Vents, & Doors

Description of Problem

Aqua-Hot Technical Service Bulletin regarding water compatibility in the Aqua-Hot hydronic heating system.

Recommended Solution

Review information contained in the attached manufacturers Service Bulletin. All questions and requests for information should be directed to Aqua-Hot at 1-800-685-4298 or www.aqua-hot.com.

If you have any questions regarding this T.S.B., please contact a Warranty Service Representative at Newmar Corporation.

Aqua-Hot® HEATING SYSTEMS INC.

February 21, 2007

SERVICE BULLETIN #140

PRODUCT: Aqua-Hot and Hydro-Hot Hydronic Heating Systems
MODEL(S)/SERIAL #: All Aqua-Hot and Hydro-Hot Hydronic Heating Systems
SUBJECT: Water Quality Recommendations

This service bulletin addresses the need to use distilled, de-ionized, or soft water within the Heating System's Boiler Tank and applies to all Aqua-Hot and Hydro-Hot Hydronic Heating Systems; however, please note that propylene glycol antifreeze is only required in Aqua-Hot Heating Systems with a serial number of 03-725 and greater and Hydro-Hot Heating Systems with a serial number of 03-586 and greater. Due to increasing water hardness throughout North America over the past decade, Aqua-Hot Heating Systems Inc. is now issuing a new recommendation regarding the type of water that should be used within the "Boiler Tank" of any Heating System as outlined below. This enhanced water quality recommendation will help to ensure maximum performance and longevity of the Heating System's Boiler Tank and associated components.

Water Usage

Water has two functions within the Aqua-Hot and Hydro-Hot Heating Systems:

1) Domestic Water is heated on-demand whenever it passes through the Heating System's Tankless Hot Water System (e.g., showers, etc.).
2) Water is also utilized within the Heating System's Boiler Tank solution of antifreeze and water to store and provide heat. This bulletin only addresses the effect of hard water inside the Heater's Boiler Tank.

Recommendation

Use only distilled, de-ionized, or soft water within the Heating System's Boiler Tank.

- Aqua-Hot Heating Systems Inc.'s primary Boiler antifreeze supplier (CAMCO Manufacturing, Inc.) has begun recommending the use of distilled, de-ionized, or soft water.
- Not utilizing one of the aforementioned types of water can deplete the corrosion inhibitors within the antifreeze.
- Galvanic corrosion can begin to take place within the Boiler Tank after the depletion of the corrosion inhibitors. This chemical reaction can cause the antifreeze and water solution to become acidic and corrode metal Boiler Tank components.

Antifreeze Concentration

Aqua-Hot Heating Systems Inc. recommends a 50/50 solution of water and propylene glycol Boiler antifreeze. This concentration should yield a Freeze Point of approximately -28°F and a Boiling Point of approximately 222°F. If using a Boiler antifreeze other than the aforementioned CAMCO brand, please contact the antifreeze supplier for specific freeze and boiling point information. Also, please reference Aqua-Hot Heating Systems Inc.'s Technical Bulletin #127 for additional information.

Background Information

The Heating Systems are filled with a "Boiler" antifreeze, which is a propylene glycol (or ethylene glycol in serial numbers prior to Aqua-Hot 03-725 and Hydro-Hot 03-586) and water solution specially formulated for use in a heating application. Boiler antifreeze can be purchased from several different suppliers and is usually available in a pre-mixed (ready-to-use) form or a concentrated form that must be diluted before use. The supplier of pre-mixed antifreeze is responsible for the use of high quality (distilled, de-ionized, or soft) water when preparing their antifreeze for sale.

Concentrated Boiler antifreeze should be diluted with distilled, de-ionized, or soft water which is 80 ppm or less in Total Hardness. The local water agency should have up-to-date water quality reports which should indicate if the local tap water is within this guideline.

What are the potential effects of using hard water in the Boiler antifreeze solution?

Hard water possesses a high level of calcium and magnesium ions, which depletes the boiler antifreeze's corrosion inhibitors. This causes the antifreeze solution to begin turning acidic, which can corrode the Heating System's Boiler Tank and associated components prematurely.

What should be done to monitor the antifreeze mixture?

Aqua-Hot Heating Systems Inc. recommends checking the pH level (alkalinity) of the Boiler antifreeze heating solution on an annual basis. The alkalinity of the antifreeze should be monitored, as galvanic corrosion will only occur if the pH is out of balance. The pH of the Boiler antifreeze should remain between 7.5 and 9.3; if it tests lower than 7.5, galvanic corrosion may be accelerated.

It is also advisable to check the antifreeze concentration level of the solution by checking the Freeze and Burst Points with a Refractometer. Please contact Aqua-Hot Heating Systems Inc.'s Technical Support Department at 1-800-685-4298 for additional information.

Can the corrosion inhibitors be replaced in the antifreeze?

In most cases an "inhibitor recharge" fluid can be added to the antifreeze solution to restore the corrosion resistance qualities of the antifreeze. (Reference Aqua-Hot Heating Systems Inc. part number MSX-351-060.)

Can the antifreeze concentration level be restored to proper levels?

If it is found that the antifreeze solution has a Freeze Point significantly higher than -28°F, concentrated antifreeze (reference Aqua-Hot Heating Systems Inc. part number MSX-300-275) can be added to bring the antifreeze and water heating solution back to proper levels.

How can it be determined if the Aqua-Hot or Hydro-Hot Heating System requires the use of a propylene glycol based Boiler antifreeze and water heating solution?

Aqua-Hot Hydronic Heating Systems with serial number 03-725 and greater and Hydro-Hot Hydronic Heating Systems with serial number 03-586 and greater require the use of propylene glycol Boiler antifreeze. Ethylene glycol must not be used in these Heating Systems. The following Aqua-Hot and Hydro-Hot models may require a propylene glycol based Boiler antifreeze and water heating solution; reference the Heating System's Serial Number. Also, please note that those models requiring propylene glycol will be clearly marked with warning labels.

Aqua-Hot models:

AHE-100-03S	AHE-100-04S	AHE-450-DE1
AHE-120-03X	AHE-120-04X	AHE-450-DM1
AHE-130-03X	AHE-130-04X	AHE-600-D01
		AHE-675-D01

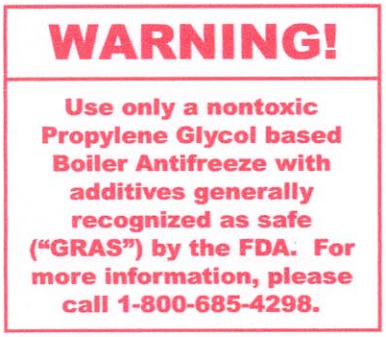
('03 model Aqua-Hot Hydronic Heating Systems with Serial Number 03-725 and higher require the propylene glycol based Boiler antifreeze solution.)

Hydro-Hot models:

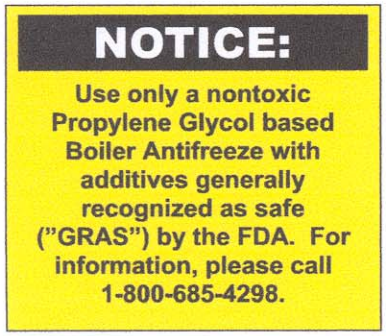
HHE-200-08E	HHE-200-09E
HHE-500-08E	HHE-500-09M

('08 model Hydro-Hot Hydronic Heating Systems with Serial Number 03-586 and higher require the propylene glycol based Boiler antifreeze solution.)

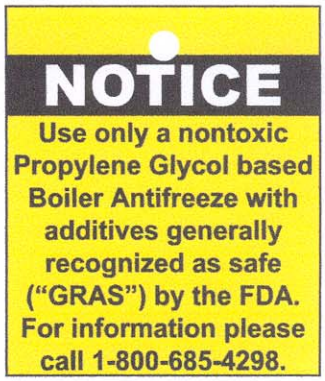
NOTE: Please note that all Aqua-Hot and Hydro-Hot Heating Systems requiring a propylene glycol based Boiler antifreeze solution are clearly marked with the following labels:



or



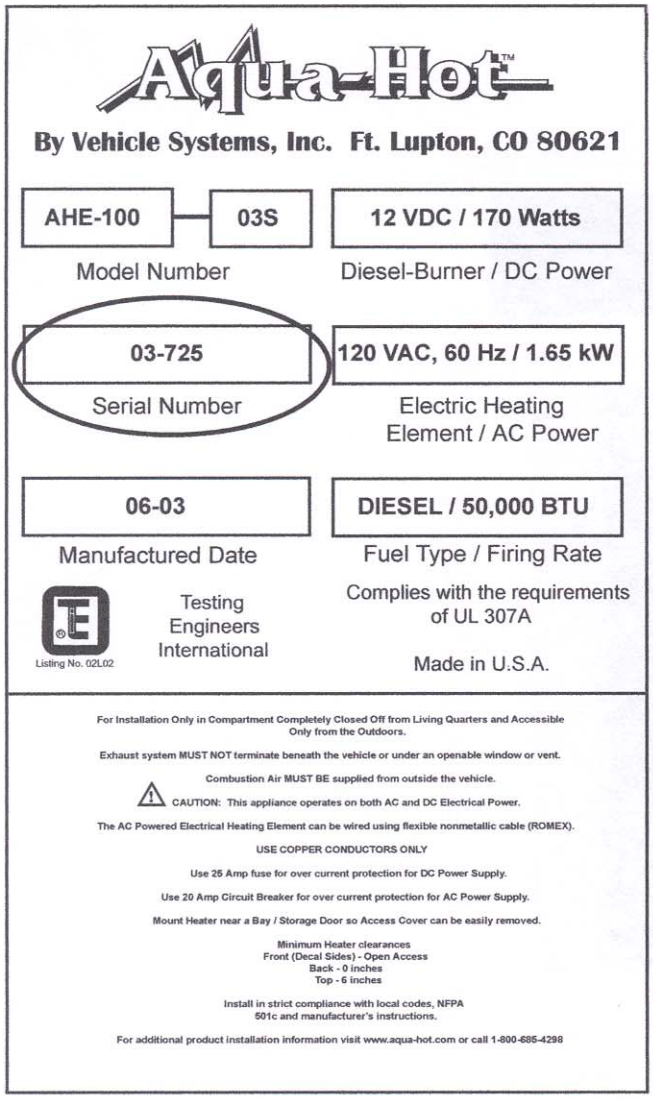
or



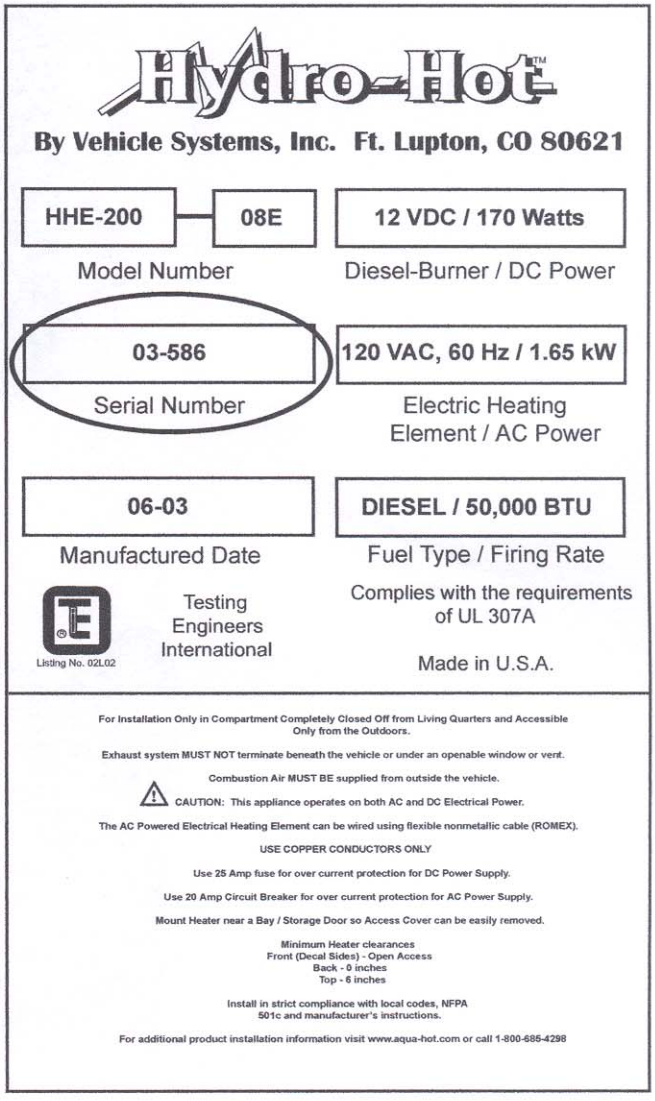
Should distilled, de-ionized, or soft water be used if the Aqua-Hot or Hydro-Hot Heating System uses an Ethylene Glycol based antifreeze and water heating solution?

Because of the effect hard water can have with any type of antifreeze on the Heating System's Boiler Tank, Aqua-Hot Heating Systems Inc. now recommends the use of distilled, de-ionized, or soft water for all their Hydronic Heating Systems' antifreeze and water heating solutions.

Aqua-Hot I.D. Label



Hydro-Hot I.D. Label



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