

Use and Care Guide

100 Series



An AIRXCEL Brand

AHM-125-D02
DIESEL



Thank you for equipping your RV, coach, or caravan with an Aqua-Hot hydronic heating system! We deeply value your business and we are grateful for the trust you have placed with Aqua-Hot Heating Systems, LLC. Our customers are our top priority and we are committed to providing best-in-class products, service, and support.

We understand how important comfort is to you as a recreational vehicle or manufactured home owner; therefore, we have designed a heating system to significantly improve all of your comfort levels. Additionally, the Aqua-Hot hydronic heating system is a low-emissions, fuel efficient system that adds thousands of dollars in value to your RV or home.

We know that you must be eager to get underway, but take time to read and understand this Use and Care Guide to understand the basic functionality of the Aqua-Hot. This guide should be maintained in legible condition and kept in a safe, accessible location for future reference.

Should you have any suggestions on how we can better serve you, please do not hesitate to contact us.

Technical Support can be contacted at (800) 685-4298. Hours of operation are 7:00am to 4:00pm (MST) Monday through Friday.

The Aqua-Hot heating system is protected by the finest warranty in the industry (read about it at the back of this manual).

Important Notes:

- A qualified installer or service technician must perform equipment installation or service. Contact Aqua-Hot for Factory Authorized Service Centers or Certified technicians located near you at www.aquahot.com/service-help, or call us at (800) 685-4298.
- Warranty work must be performed by an Aqua-Hot Factory Authorized Service Center.
- Your on-product identity label contains the specifications of your unit. Factory settings may be adjusted by the vehicle manufacturer, confirm final setting with your dealer.



- Follow this guide exactly. Failure to do so may result in a fire or explosion resulting in property damage and/or personal injury.



Comfort Zone #1: Comfortable Cabin Heat.

Get heat where you want it, when you want it. This Aqua-Hot system puts heat where you need it. Therefore, your interior temperatures will be just right. Don't hesitate to crank up the heat because the Aqua-Hot system doesn't remove moisture from the air. From now on, you will have to blame the dry skin and itchy eyes on Mother Nature!

Comfort Zone #2: Quiet Operation

Say goodbye to rude awakenings from the forced air furnace, you're an Aqua-Hot owner now! The Aqua-Hot is quiet when operating, so you'll never have to turn up the TV, yell across the room, or have an interrupted night of sleep again due to your heating system.

Comfort Zone #3: Comfortable Hot Water

Take showers knowing that your tank-less Aqua-Hot is ready and waiting to deliver hot water. The freedom to take a hot shower when you want makes your experience much more like home.

Comfort Zone #4: Low Emissions

Aqua-Hot's new low emission systems are fume-less and odorless. It's good for you, good for your neighbor, and good for the environment.



Comfort Zone #5: Large Service Networks

You won't need to service your Aqua-Hot often, but when you do, you can be confident in our Certified Service Centers that are close by and trained to assist you with all of your Aqua-Hot specific needs.

Comfort Zone #6: Adds Value

The NADA Recreational Vehicle Guide lists Aqua-Hot as adding thousands of dollars to the value of a RV or caravan. That value will pay off when it's time to trade up or sell.

Comfort Zone #7: Low Fuel Costs

There's no need to burn fuel each time heat or hot water is needed. The Aqua-Hot heats a boiler tank and uses the heat stored in the liquid of the boiler tank to provide interior heat. Aqua-Hot's 100 Series uses TribridHot™ technology to power the Aqua-Hot system by pulling heat from one or a combination of heat sources. Use the electric setting to keep the boiler tank up to temperature and for light heating needs. Use the burner when colder conditions require or when using hot water.

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Caution Notes

As you read this information, take particular note of the NOTICE, CAUTION, WARNING, and DANGER symbols when they appear. This information is important for safe and efficient use of the Aqua-Hot system.

NOTICE signals a situation where potential damage to the Aqua-Hot could occur.

NOTICE

CAUTION signals a situation where potential harm or risk of minor or moderate injury could occur if you do not follow instructions.



CAUTION

WARNING signals a hazardous situation where potential harm, risk of serious injury, or death could result if instructions are not followed.



WARNING

DANGER signals a situation where immediate risk of serious injury or death will result if instructions are not followed.



DANGER

NOTE: This manual will also use notes sections similar to this one to draw attention to features and practices which must be observed.

Read all instructions before using the Aqua-Hot unit. Aqua-Hot Heating Systems is not liable for damage resulting from failing to follow instructions contained in this, and any other Aqua-Hot documentation relevant to this unit.

- Read this user manual before using the Aqua-Hot System to reduce the risk of injury to persons or damage to the equipment.
- The product identity label contains specifications of the unit, to what standard it has been tested, and important safety notices.



- Disconnect electric wiring to the Aqua-Hot System before welding or plasma cutting the RV to avoid damage to equipment.
- The Aqua-Hot tank and heating loop operate at 7.0 PSI. Maximum testing air pressure to the tank must not exceed 18 PSI. Exceeding this rating will cause internal damage to the Aqua-Hot.
- DO NOT connect the 12-volt DC power to the Aqua-Hot if the vehicle requires welding.
- At maximum operating temperature, the coolant will be very hot and scalding hot vapor or coolant may result in serious burns or injury. Be aware of hot surfaces.



If the information in this manual is not followed exactly, a fire or explosion may result, causing property damage, personal injury or death.

- Use special caution when children are present. Children must not be allowed to play with the heater or perform cleaning and maintenance.
- At maximum operating temperatures, the hot air outlet will be very hot that may result in serious burns or injury. Be aware of hot surfaces.
- The burner produces very hot temperatures that can ignite surrounding flammable materials. The burner should be turned off when loading or unloading flammable materials.

NOTE: Aqua-Hot recommends regular exercise of the Aqua-Hot heating system to avoid issues with starting after a several-month idle period.

Safety Features

Low-Voltage Shutdown

The Aqua-Hot Controller is designed to operate between 11V DC and 16V DC. If the Controller detects that it is receiving voltage below 11.8V DC, a System Voltage fault will trigger a display on the LCD screen. If the Controller system drops below 11.2V DC for 30 seconds, it will discontinue operation of the Aqua-Hot heating system.

Over-Current

An Over-Current fault condition occurs when too much current is drawn by a component, usually a fan or pump. When this fault is triggered, the output channel is shut off until the system has been reset or power-cycled.

Over-Temperature

An over-temperature fault will occur if your Aqua-Hot heating system has reached 218° F. The Controller will deactivate the heater and display an over-temperature fault on the LCD display screen.

Low-Level Cutoff

If the system senses low fluid levels, the heating system will shut down all fans, heat sources, and pumps until the unit is adequately refilled.

WARNING!

Read and understand all instructions **before** using the Aqua-Hot unit and the external diesel burner. Aqua-Hot Heating Systems is not liable for damage resulting from failing to follow instructions contained in this, and any other Aqua-Hot documentation relevant to this unit.

Improper installation, operation, adjustments, service, and maintenance can cause personal injury or loss of life. Reference this Use & Care Guide **before** operation.

NOTE: Contact your Authorized Service Center or Aqua-Hot Heating Systems if you have any questions **before** starting any operation, service, or maintenance. Information can be found online at www.aquahot.com.

Safe Operation

The Aqua-Hot Heating system consists of an electric heating element and an external diesel burner. The electric element and/or the external diesel burner heat an **ethylene glycol** and water mixture, that flows through tubing and into heat exchangers to heat a zone that calls for heat. The heating system also heats domestic water for hot water use in the shower or at hot water faucets.

Locate the Aqua-Hot LCD screen (shown below) inside the RV (contact the vehicle manufacturer if unable to find), tap the screen to wake, tap on either the “ELECTRIC” to turn on the Electric Element or “BURNER” to turn on the external diesel burner. It will take approximately 20 minutes to get the glycol fluid up to operating temperature. After the tank is to temperature, you can turn on the heat on your RV thermostat or run hot water.

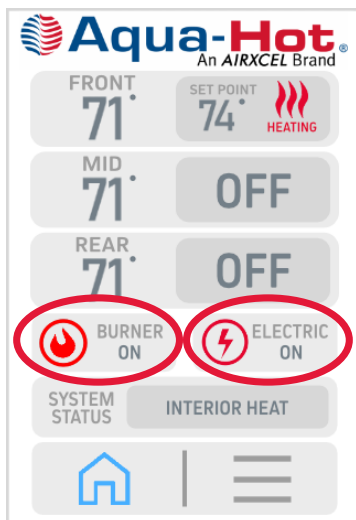


Figure 1

General Care

The Aqua-Hot AHM-125D’s fluid levels should be checked regularly to ensure it is at the proper level. It should be checked when the Aqua-Hot is at maximum operating temperature - when the external diesel burner completes a cycle or when the electric element disengages.


It is necessary to take precautions during any user maintenance. Note that the fluid will be very hot, and any scalding hot vapor or coolant could cause serious burns or injury.

Intended Use

This manual explains the operation and care of the Aqua-Hot heating system and controller. These instructions are approved for the Aqua-Hot AHM-125D model for recreational vehicles only. Not for use in boats.

Service and repairs may only be carried out by an authorized, factory-trained Aqua-Hot technician. The heating system must be installed/serviced in accordance with local codes, or, in the absence of local codes, follow NFPA 1192.

- The vehicle owner is responsible for correct operation of the appliance.
- The Aqua-Hot AHM-125D must comply with the codes and regulations of the country it is being used in. National and local codes must be followed, or follow NFPA 1192.
- Make sure to properly winterize the Aqua-Hot’s domestic water system when not in use and/or any time the heater is stored where freezing temperatures may be experienced. The Aqua-Hot warranty will not cover claims for freeze damage. Please refer to page 16 for proper winterization of the Aqua-Hot.
- In order to provide the best freeze protection, boil-over protection, anti-corrosion, and rust protection, a mixture of 50/50 Ethylene Glycol antifreeze and distilled water is recommended. The Aqua-Hot AHM-125D boiler tank holds approximately 2 gallons. See page 15 for info.
- If operation of the system is expected at altitudes greater than 6,000 feet, remove the air inlet filter and route the inlet hose in such a way to protect it from water, dirt and debris ingestion



CAUTION

As with any appliance, allow the Aqua-Hot to completely shut down **BEFORE** disengaging the RV 12V power disconnect.

Aqua-Hot M125D Heating System

- | | |
|----------------------------------|-------------------------------------|
| 1. Heating Solution Tank | 11. Aqua-Hot Controller |
| 2. Plate-to-Plate Heat Exchanger | 12. LCD Screen |
| 3. Tempering Valve | 13. AC High-Limit Thermostat |
| 4. Three-Way Valve | 14. Float Switch |
| 5. Cozy Heat Exchanger | 15. AC Activation Relay |
| 6. Burner Circulation Pump | 16. Fluid Fill Port w/ Radiator Cap |
| 7. External Diesel Burner | 17. Tank Temperature Sensor |
| 8. Fluid Circulation Pump | 18. AC Electric Element |
| 9. Coolant Out | 19. Domestic Cold-Water Inlet |
| 10. Coolant In | 20. Domestic Hot-Water Outlet |

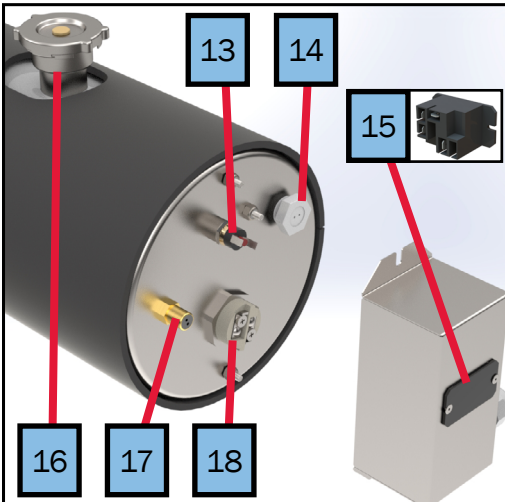


Figure 2

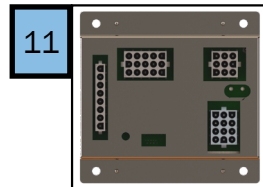


Figure 3

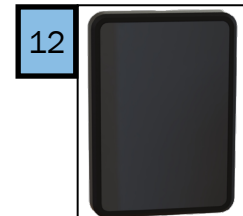


Figure 4

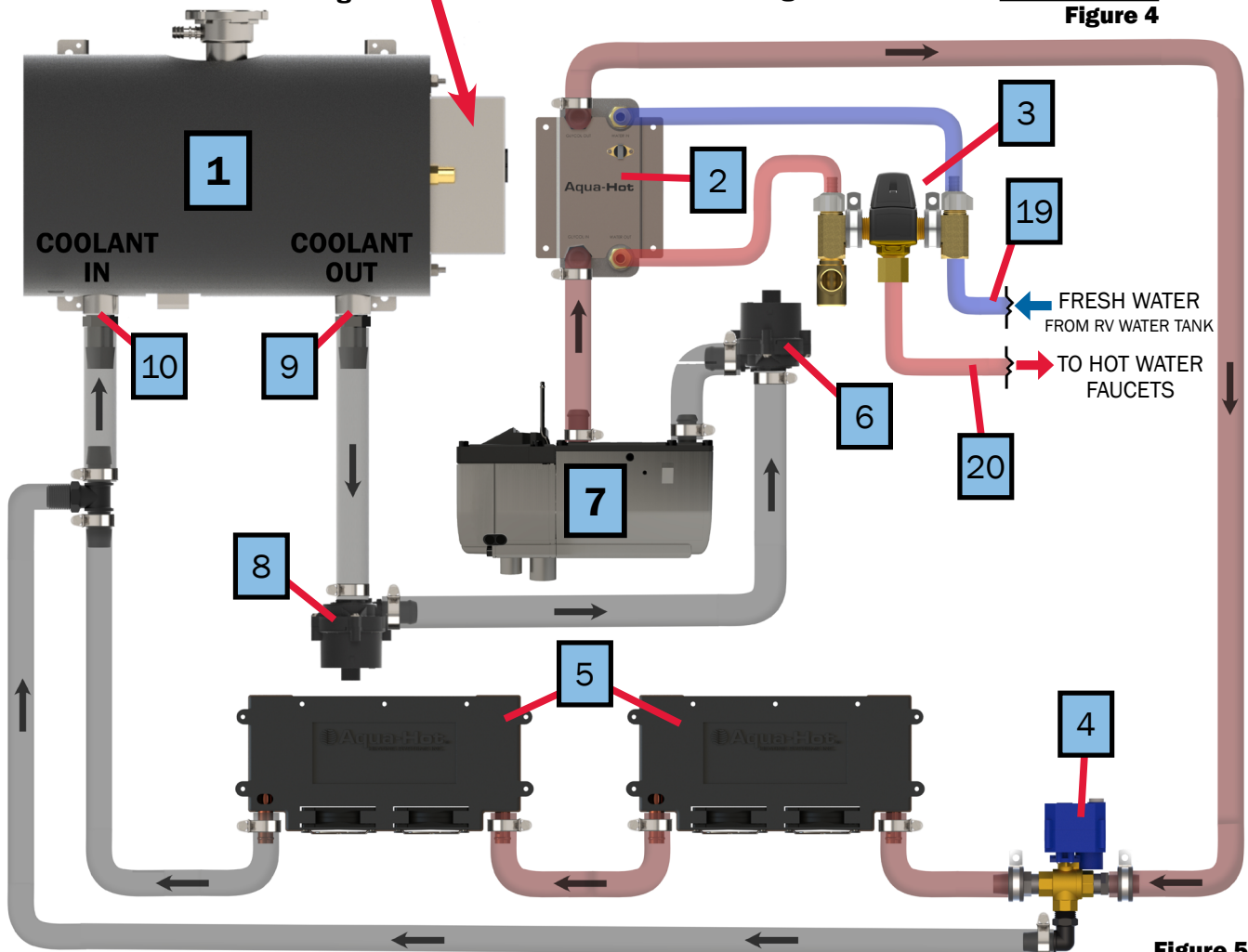


Figure 5



Figure 6

Diesel Burner	
1. Combustion Air Fan	12. Fuel Pipe
2. Burner Outer Casing	13. Coolant Pump
3. Burner Inner Casing	14. Fuse
4. Combustion Chamber	15. Main Harness Connector
5. Glow Plug	16. Fuel Pump
6. Flame Sensor	17. Exhaust Pipe
7. Temperature sensor	18. Coolant outlet Pipe
8. Over-Heat Sensor	19. Coolant Inlet Pipe
9. Burner Controller	20. Burner
10. Air Inlet Pipe	21. Diesel Fuel Filter
11. Muffler	



Figure 7

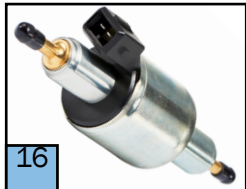


Figure 8

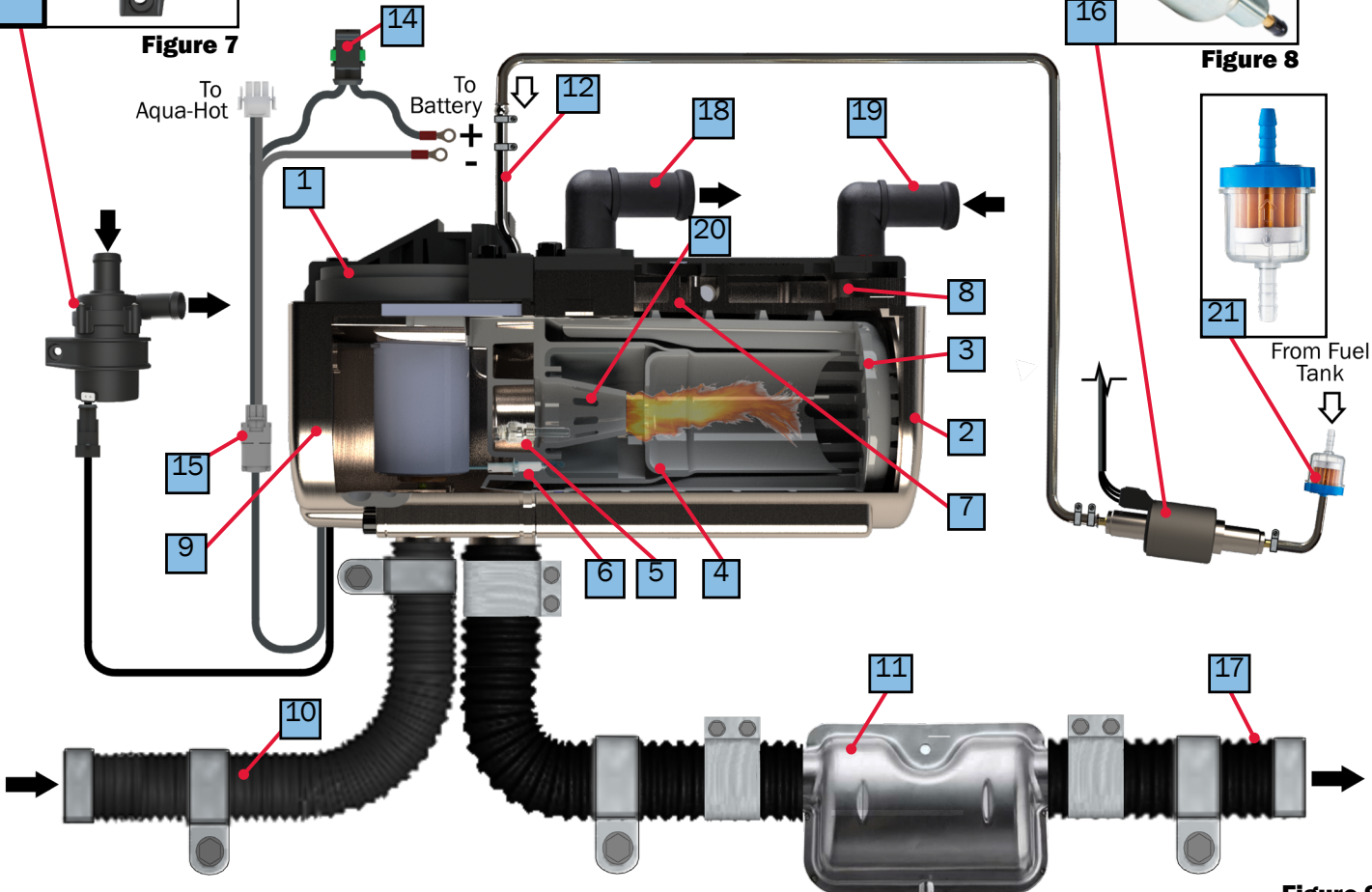


Figure 9

System Features

The Aqua-Hot AHM-125D Series is a Hydronic Heating System that can provide heat and hot water on demand using a built-in electric heating element and an external diesel burner.

The Aqua-Hot Heating System is a 2-in-1 system

1. Interior Heating System: Provides quiet, comfortable interior heat and even temperatures.
2. Tank-less Hot Water System: Provides a flow of comfortable hot water.

The Aqua-Hot uses one or a combination of the following heat sources:

- When plugged into shore power, or powered by a generator, the electric element lets you use the power you are already paying for to provide heat in mild conditions and meet your light duty hot water needs.
- The external diesel burner can be utilized with the Aqua-Hot to heat and produce hot water.

Bring the Aqua-Hot to Operating Temperature:

Your Aqua-Hot hydronic heating system heats an **ethylene glycol** antifreeze and distilled water solution that is stored in the Aqua-Hot's boiler tank. This water and antifreeze solution must be up to operating temperature before the Aqua-Hot will provide interior heat or comfortable hot water. To bring the Aqua-Hot up to temperature, navigate to the climate page of the LCD screen, and tap either the "ELECTRIC" or "BURNER" icon. Depending on the ambient temperature, it may take up to 20 minutes for the Aqua-Hot's water and antifreeze solution to reach operating temperature.

Once the tank is up to operating temperature, the electric element may be used to maintain the operating temperature and provide light duty hot water and interior heat.

For continuous hot water, or for heat in colder conditions, it is recommended to utilize the external diesel burner.

All vehicle installations must comply with the requirements listed in the Recreational Vehicle Industry Association's (RVIA) ANSI/NFPA 1192 Handbook for Recreational Vehicle Standards.



An **AIRXCEL** Brand

Exhaust system **MUST NOT** terminate beneath the vehicle and not less than 3 feet from an openable window.

Combustion Air **MUST BE** supplied from outside the vehicle.
Suitable for water (potable) heating and space heating.
THIS APPLIANCE OPERATES ON BOTH DC AND AC POWER.

USE COPPER CONDUCTORS ONLY!

Use a circuit breaker that cuts power at 20-Amps maximum for over-current protection for the 120-VAC power supply.

Mount the heater and unit to provide easy access for service.

For Detailed Information, reference the Owner's Manual or contact Aqua-Hot Heating Systems Inc. at 574-AIR-XCEL (574-247-9235).

Minimum Service Clearances

Front - Open Access	Back - 0 Inches
Top - 8 Inches	Sides - 1 Inch

This appliance must be installed in accordance with local codes or, in the absence of local codes, the Standard for Recreational Vehicles, ANSI A119.2/NFPA 1192 or CAN/CSA-Z240 RV.



Listing 20L01

Meets or Exceeds: **UL 307B, UL 174**
CSA/CAN B140.0-03
CAN/CSA-C22.2 No. 110-94

Max Tank Pressure	7 PSI
Watts (DC)	57W
Watts (AC)	1500W
Tank Capacity	2.0 gal (Ethylene Glycol)
Volts/Amps	12VDC, 7A
Volts/Amps/Frequency	120VAC, 13.75A, 50/60Hz
Burner Model	5kW Coolant Heater
Burner Fuel	Diesel
Burner Rating	17,061 BTU/hr

Manufacture Date: MM/DD/YYYY
Model: AHM-125-D02 S/N: M125D02-XXXXXX__

7755 Miller Drive • Frederick, CO 80504 • 574-AIR-XCEL • www.aquahot.com

NOTE: This product label is attached to the side of the Aqua-Hot, and provides a ready reference to specifications, test standards, and important safety notices.

Operational Overview

The heating features are powered by the external DC diesel burner and/or the AC electric element on the AHM-125D. These maintain the temperature of the Aqua-Hot's antifreeze and water heating solution to provide hot water and interior heat.

External Diesel Burner:

The diesel burner is the Aqua-Hot's primary and most powerful heat source, and provides all of the heating and hot water needs when cold temperatures exist, and/or when there is a high demand for hot water. It can be activated by tapping BURNER to ON on the LCD screen shown below.

The burner has 2 modes: ON and OFF. When the burner is ON, the burner will keep the tank temperature between 160°F and 180°F. The burner will toggle between ON and OFF as needed, using temperature readings from the RV interior thermistors. In OFF mode, the burner is off and will not provide any heat to the Aqua-Hot tank.

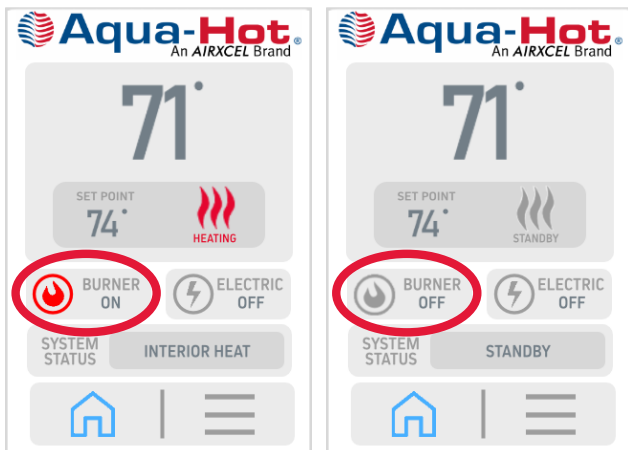


Figure 10

Electric Element:

The electric element is the Aqua-Hot's secondary heat source and can be used when plugged into shore power. The electric element will work to maintain tank temperature at 5°F below the heater activation threshold. It can be activated by tapping on the ELECTRIC button of the LCD screen interface.

The electric element has 2 modes: ON and OFF. When the electric element is ON, the electric element will keep the tank temperature between 165°F and 180°F. The electric element will toggle between ON and OFF as needed, using temperature readings from the RV interior thermistors. In OFF mode, the electric element is off and will not provide any heat to the Aqua-Hot tank.

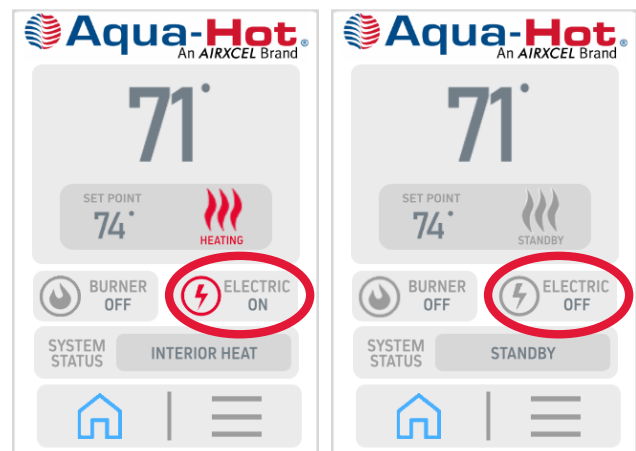


Figure 11

Controlling Heat Levels with Room Thermostat:

When the Aqua-Hot is on and up to operating temperature, adjust the room thermostat to the desired temperature and it will automatically activate the Aqua-Hot's heating functions to maintain the desired interior temperature.

Different manufacturers may use different types of thermostats. Please contact the dealer or manufacturer for the exact type, location, and thermostat operation.

Aqua-Hot 3.5in. LCD Display

The Aqua-Hot electronic display provides direct diagnostics and control of the Aqua-Hot. This display is directly interfaced with the Aqua-Hot to relay real-time operational information such as unit diagnostics, warnings, faults, and operating conditions. Please contact Aqua-Hot, or your vehicle manufacturer, for more information.



Figure 12

Using Hot Water:

When hot water is requested, domestic water from the RV's fresh water tank is transported through the domestic water line, that goes into a heat exchanger located in the Aqua-Hot. The water is then heated by transfer from the heated antifreeze and distilled water solution. The heated domestic water then flows through the tempering valve to be mixed with cool water from the fresh water tank to achieve an appropriate temperature before it flows to the faucet.

Heat Priority Option:

The Aqua-Hot comes equipped with a three-way valve (sometimes known as the summer/winter valve). This controls the flow of the antifreeze and water heating solution within the Aqua-Hot to deliver either hot water or interior heat as priority. Tapping on this element will change the valve's orientation. When this element is activated, it overrides the automatic function and orients the valve to interior heat. When the element is not activated, the unit is in automatic mode and the valve is automatically oriented based on the Low-Temperature Cut-Off.

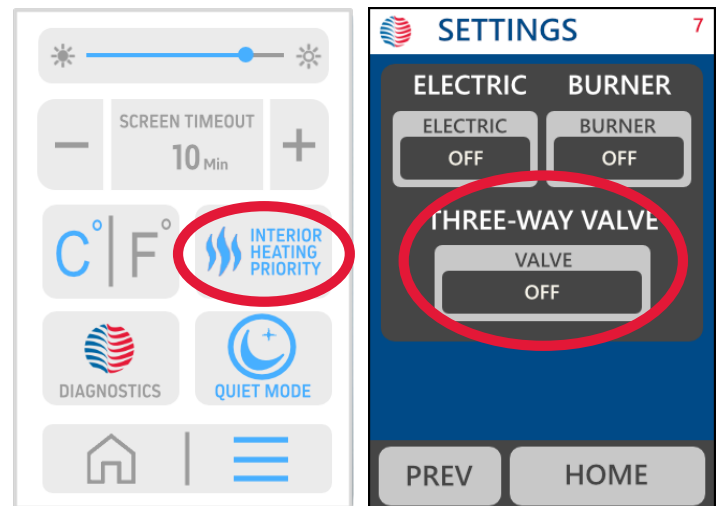


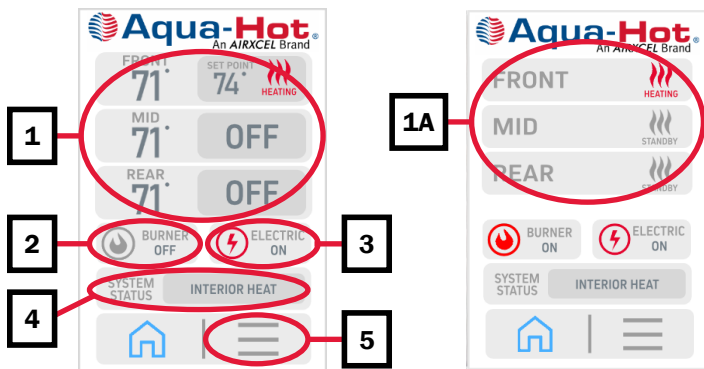
Figure 13

Operating the LCD & Aqua-Hot

This section will outline the basic operating instructions for the Aqua-Hot LCD Screen.

Climate Pages:

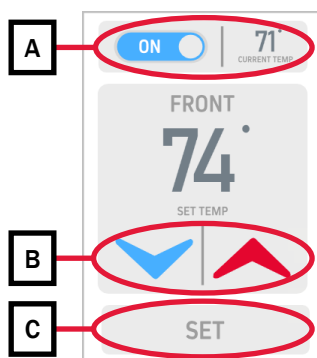
The climate pages are for all intents and purposes the “Home” of the LCD screen. From here, the end-user will select their interior temperature set-points, activate or deactivate the diesel burner and/or the electric element.



Zone Control **1** **1A**

Precise zone control display will differ depending on the type of zone thermostats/thermistors used within the RV.

Section 1A demonstrates the appearance of the zone control section when ON/OFF thermostats are used within the RV. In this use-case, these buttons serve only as ON/OFF toggle switches.



Section 1 demonstrates the appearance of the zone control section when thermistors are used. Tapping on one of the zones shown above will display a new screen where the interior temperature can be set.

Section **A**

This section shows the current zone temperature (shown as 71°F in the example above) as well as a button to turn the zone on or off. (Setting specific temperatures can

only be done *if* thermistors are installed. Thermostats would only show ON/OFF.)

If the zone temperature is set, but this item is not set to ON, the zone heat exchanger will not activate.

Section **B**

These arrows are used to increase or decrease the desired set-point temperature of the zone thermistor.

Section **C**

After the desired temperature set-point has been selected tap “SET” on the LCD to set that temperature. The Aqua-Hot will now work to maintain this interior temperature, and the screen will return home.

External Diesel Burner Activation **2**

The external diesel burner of the Aqua-Hot can be activated by tapping on the “burner” item on-screen. The diesel burner has two modes: ON and OFF.

ON:

While set to ON, the Aqua-Hot burner will work to maintain a tank temperature of 180° F.

OFF:

While off, the burner will not serve to provide any heat to the boiler of the Aqua-Hot whatsoever.

Electrical Element Activation **3**

Similar to the external diesel burner, tapping this button will signal to the controller to activate the AC electric relay, energizing the 1500W electric element within the Aqua-Hot. The electric heating element has two modes: ON and OFF.

ON:

While set to ON, the electric element will work to maintain a tank temperature of 180° F.

OFF:

While off, the element will not serve to provide any heat to the boiler of the Aqua-Hot whatsoever.

System Status 4

This item will indicate the current operational status of the Aqua-Hot. If any faults have triggered, those will be displayed here.

During normal operation, this should display either INTERIOR HEAT or HOT WATER relating to the priority and position of the 3-way valve.

While in INTERIOR HEAT mode, the 3-way valve is oriented so as to circulate heated antifreeze and water solution through the heating zones of the RV.

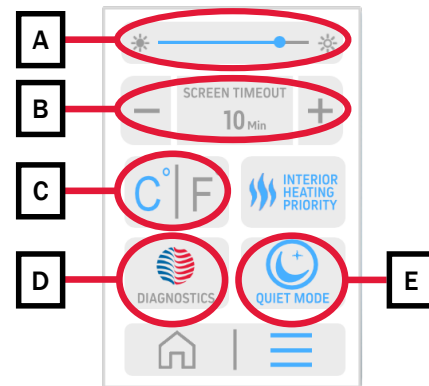
While in HOT WATER mode, the 3-way valve is oriented so that the heated antifreeze and water solution is circulated immediately back into the boiler tank. This is known as “stirring” the tank, and it is done to provide as much heat as possible to the domestic water line while water is flowing.

Module Options 5

Tapping on the module options screen (the 3 lines on the bottom right of the home screen) will display the screen shown above. This is known as the Module Options screen. From here, it is possible to access unit diagnostics, activate Quiet Mode, change the temperature units, adjust screen brightness, and unit timeout.

Screen Timeout A

The screen timeout item sets the amount of time required to allow the screen to shut-off when idle.



Screen Brightness B

This setting changes the screen brightness.

Unit of Measurement C

This setting will change the display units of the Aqua-Hot. Either Fahrenheit or Celsius can be selected.

Diagnostics D

Tapping on this element will direct you to the Aqua-Hot’s built-in diagnostic, testing, and troubleshooting tools.

Quiet Mode E

This option toggles the Aqua-Hot’s quiet mode. Quiet mode is a setting where the speed and output of the heat exchanger fans is reduced to 80%. This is done to reduce noise of the heat exchangers.

Please note that this feature must be activated and deactivated as needed.

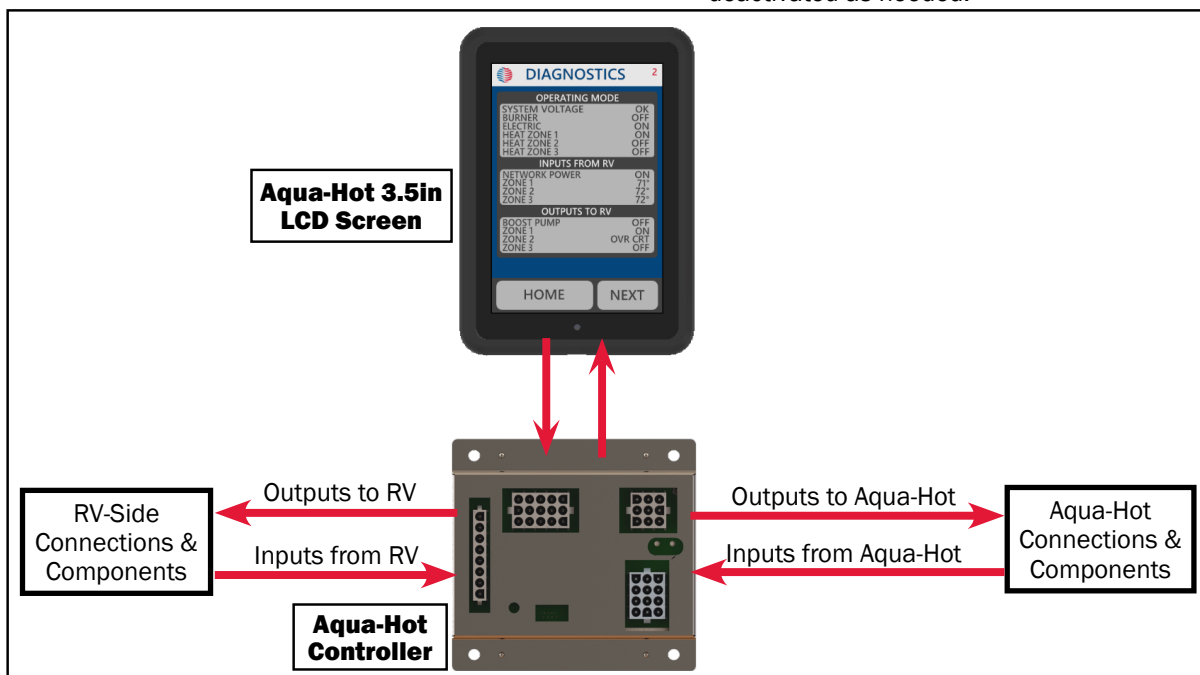


Figure 14

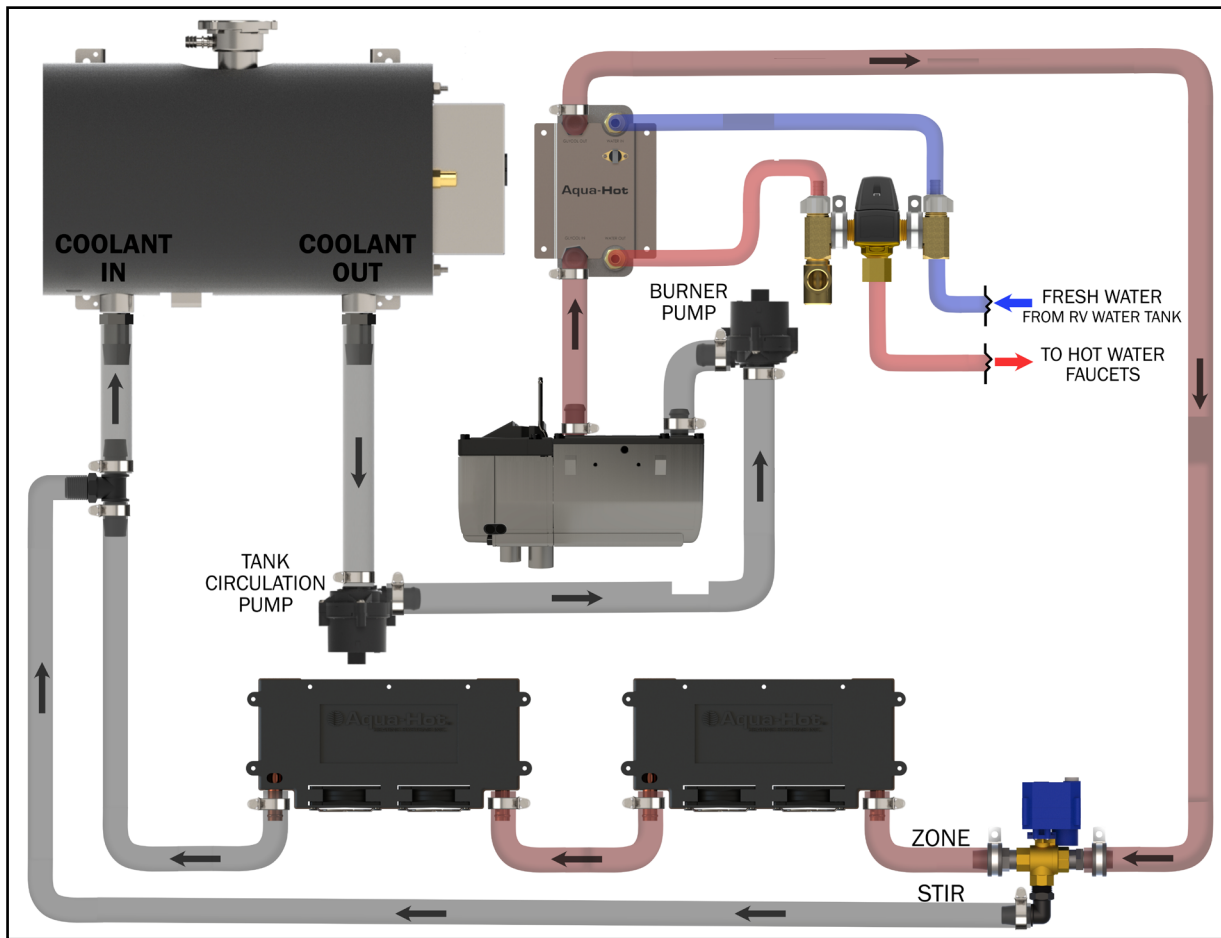


Figure 15

NOTE: This is just a sample for the layout of the diesel burner with the Aqua-Hot and heat exchangers. Actual placement may vary on the individual design of the RV. For questions or assistance, contact Aqua-Hot at (800) 685-4298.

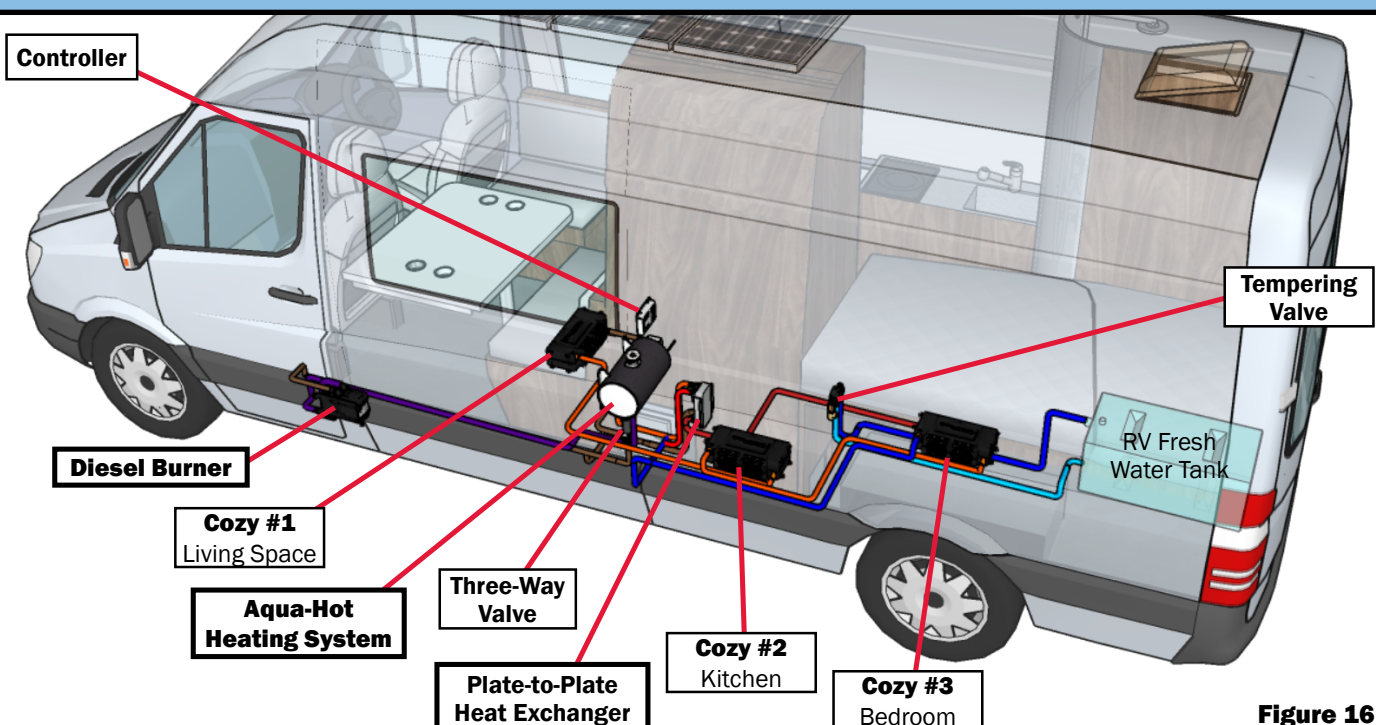
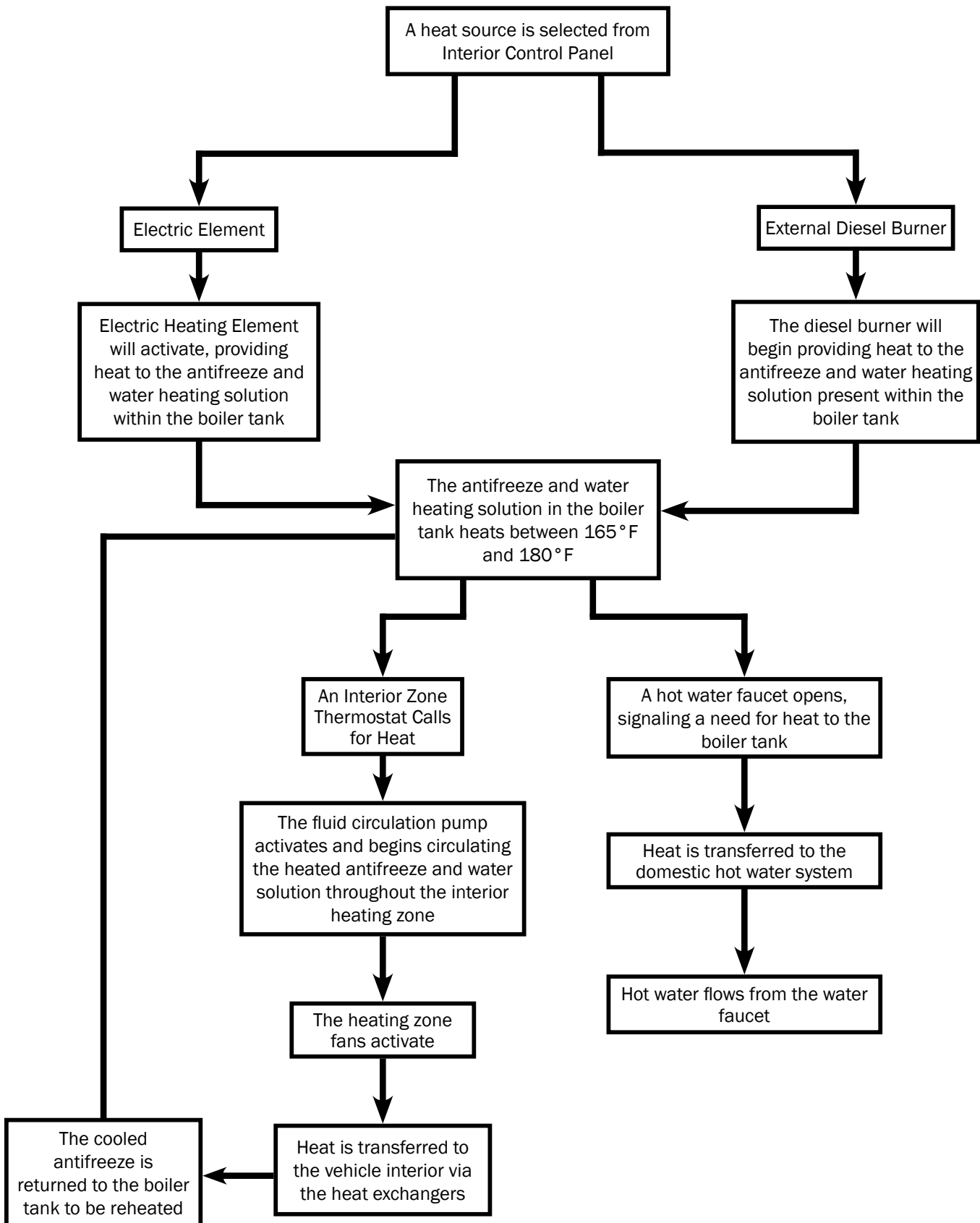


Figure 16


Operational Flow Chart



Maintenance Schedule

Annual Maintenance

Check the Aqua-Hot's antifreeze and water heating solution to ensure that it is at the proper level about once a year. Please note that the coolant level should **ONLY** be checked when the Aqua-Hot is completely cold.



DANGER

The system should ***NOT*** be checked when the fluid is warm - the M125 is a pressurized system and cause personal injury.


NOTE: It is also recommended to run the diesel burner at least once a month for a full cycle (at least 20 minutes) to ensure optimum heater condition.

To maintain the Aqua-Hot at its full potential, it is highly recommended to have the diesel burner tuned up annually. This involves replacing the fuel filter, cleaning the burner, inspecting the exhaust and combustion air lines for damage and ensuring they are clear, checking the fuel lines for any leaks, and checking the hoses and wiring to make sure there are no damage or cracks.

Replenishing the Heating Solution


If the antifreeze and water heating solution needs replenishing, remove the boiler tank cap and fill it. Replace the cap when this is complete. **DO NOT** operate the unit without first replacing the cap of the tank.

The Aqua-Hot does not need regular replacement of the antifreeze and water heating solution, but in the event that more antifreeze is required, contact Aqua-Hot Heating Systems to purchase antifreeze, or for guidance in selecting an appropriate antifreeze product for use with this unit.



DANGER

When the Aqua-Hot is at maximum operating temperature, the coolant is very hot. If the Aqua-Hot heating system is accessed, scalding by hot vapor or coolant may occur. Before cleaning or servicing, disconnect all power supplies.



WARNING

DO NOT operate the external diesel burner and/or electric heating element without antifreeze and water heating solution present in the Aqua-Hot's boiler tank. Doing so will cause serious damage to the heater.

Overheat Protection

Every Aqua-Hot is equipped with an overheat protection device. This is commonly known as the high-limit thermostat. This thermostat operates by maintaining a circuit while the unit is below 218°F.

In the event of an overheat condition, the high limit thermostat will cut the operating signal to the external diesel burner, and/or the electric element. When this signal is interrupted, the electric element and diesel burner will immediately disengage. Contact Aqua-Hot Heating Systems for assistance in locating a qualified person to service this heater.



WARNING

DO NOT attempt to reset the high-limit thermostat after an overheat condition until the unit has been serviced by a qualified technician. Failure to do so could result in damage to the unit, personal injury, or death.

In order to provide the best freeze protection, boil-over protection, anti-corrosion, and rust protection, a mixture of 50/50 ethylene glycol antifreeze and distilled water is recommended. The Aqua-Hot AHM-125D boiler tank holds approximately 2 gallons.

The mixture may be modified to provide the most adequate freezing, boiling, and rust/anti-corrosive protection. A 50/50 mixture of ethylene glycol and distilled water has a freeze point of approximately -35°F and a boiling point of approximately 223°F. Refer to the table below to determine the best protection mixture ratio and also reference page 20 for the proper tool and instructions for use in measuring the system's antifreeze mixture ratio.

Ethylene Glycol to Distilled Water Ratio												
Freeze Point (°F)	32	25	20	15	10	5	0	-10	-20	-30	-40	-50
Concentration (%)	0	10	16	21	25	29	33	39	44	48	52	56

Winterizing the Aqua-Hot

The Aqua-Hot's domestic water heating system must be completely drained of domestic water at any time the heater is stored where freezing temperatures may be experienced. Please follow these instructions when winterizing the Aqua-Hot domestic water heating system.

NOTE: The Aqua-Hot can continue to be used for interior heat once the domestic hot water system has been winterized.

1. Completely drain the fresh water storage tank.
2. Disconnect the domestic water demand pump suction line from the fresh water storage tank.
3. Attach an adequate piece of hose onto the suction side of the domestic water demand pump.
4. Place the opposite end of the hose into an adequate supply of non-toxic RV winterization antifreeze (FDA certified as GRAS must be used) and allow the fluid to pump through.
5. Open and close all interior and exterior water faucets one at a time, until ONLY pure RV antifreeze is present. Perform this procedure for both cold and hot water faucets.
6. Remove the hose and reconnect the domestic water demand pump's suction line to the fresh water storage tank.



WARNING

Not winterizing the Aqua-Hot when freezing temperatures are present will result in serious damage to the Aqua-Hot domestic water heating system. Ensure that FDA approved "GRAS" antifreeze rated for winterization is used when winterizing this unit.

De-Winterization

To de-winterize the Aqua-Hot system, completely fill the fresh water storage tank. Open and close the interior and exterior faucets, one at a time, until only clear water is present.

NOTICE

Disinfecting the Domestic Water System


The Aqua-Hot Heating components are not compatible to prolonged exposure to sodium hypochlorite (bleach or liquid bleach.) Using products containing bleach, including water refreshers, may cause corrosion of the domestic water lines, resulting in a catastrophic failure of the Aqua-Hot system by creating leaks that cannot be repaired. This damage is not covered by the Aqua-Hot warranty.

If disinfecting the hot water heating system, be sure to follow NFPA 1192 Standard on Recreational Vehicles "Instructions for Disinfection of Potable Water Systems."

General Troubleshooting

Should the Aqua-Hot Hydronic Heating System fail to operate, complete the following checks:

1. Verify that the Aqua-Hot is supplied with electrical power.
2. Make sure there is an adequate supply of diesel fuel (at least ¼ tank).
3. Ensure that the Aqua-Hot boiler tank has an adequate supply of antifreeze and water heating solution by checking the level at the boiler tank. If the level is low, reference the maintenance section of this guide for refilling instructions.



DANGER

The system should ***NOT*** be checked when the fluid is warm - the M125 is a pressurized system and cause personal injury.

4. Verify the functionality of any in-line fuses connected to the Aqua-Hot. Replace these fuses if necessary.
5. Ensure that all RV-side hot water faucets are closed.
6. Visually inspect the interior of the Aqua-Hot to ensure that there are not any pinched or damaged wires.
7. Locate the high-limit thermostat within the Aqua-Hot (see Figure 17). Test the thermostat for functionality, and replace if necessary.
8. Locate and test the ETS module (Figure 17) for functionality. Replace if necessary.
9. Locate and test the fluid circulation pump. Replace if necessary.
10. Locate the three-way valve and test it for functionality. Replace if necessary.
11. Make sure there are no faults displayed on the LCD screen as shown to the right.

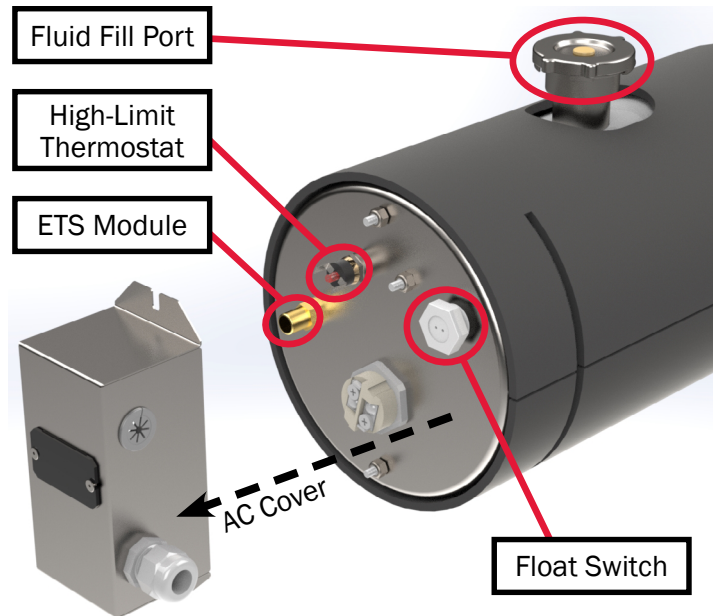


Figure 17

NOTE: The float switch is located on the Aqua-Hot's boiler tank, as shown above. If the antifreeze solution in the tank drops below the level of the float switch, the Aqua-Hot will not operate.

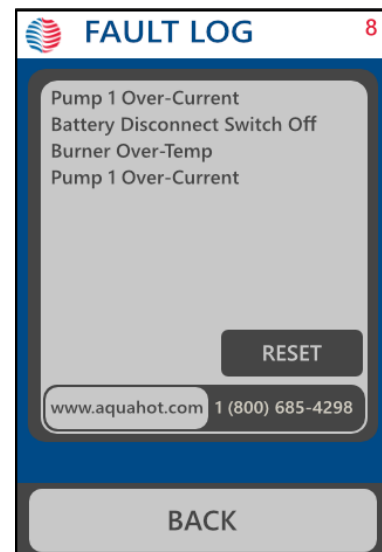
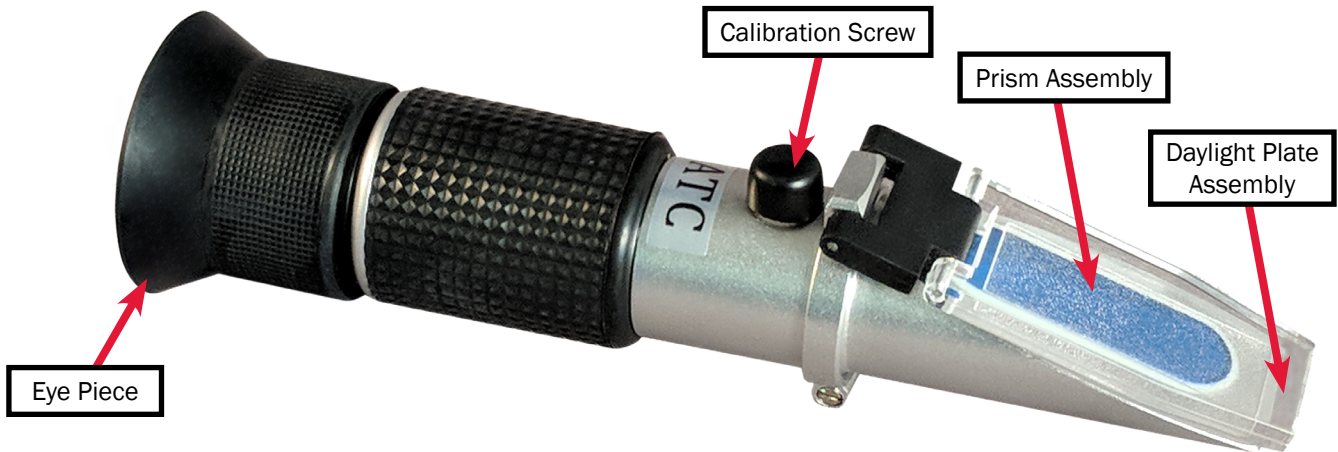


Figure 18

DATE	SERVICE PERFORMED	SERVICE CENTER

DATE	SERVICE PERFORMED	SERVICE CENTER

Measuring Antifreeze Using a Refractometer

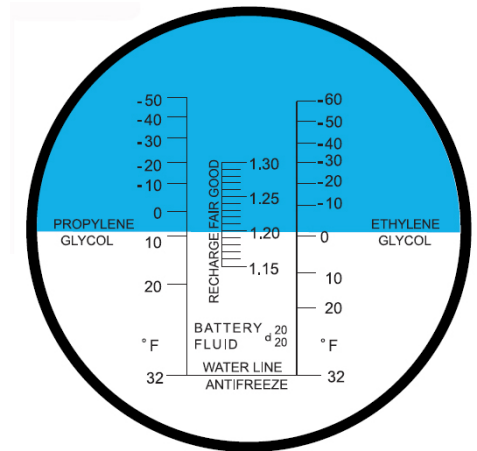


Properly Apply Antifreeze to the Prism Assembly

Use the guide below to properly apply the ethylene glycol mixture to the prism assembly of the refractometer. Once that is complete, peer through the eyeglass of the refractometer to continue to the next step.

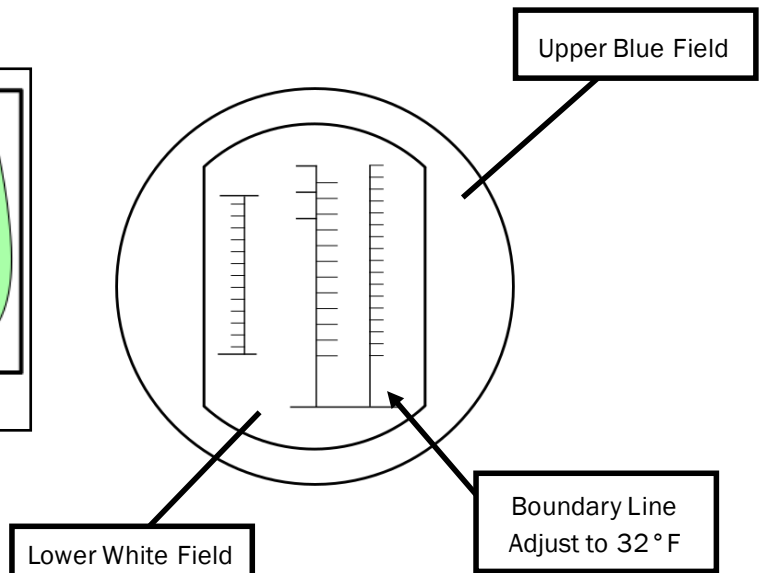
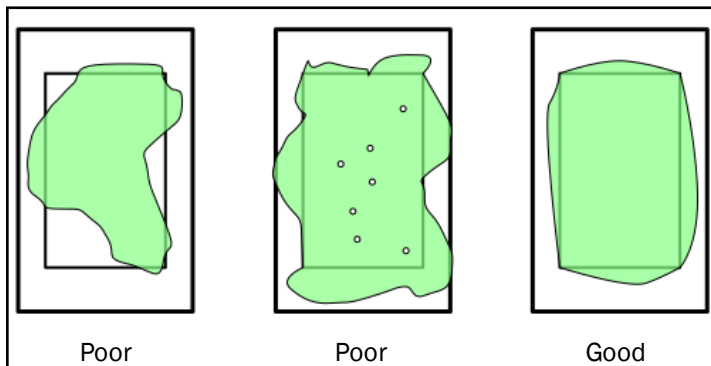
Adjust the Boundary Line

Once the glycol solution has been properly applied, adjust the calibration screw until the boundary line labeled “Ethylene Glycol” is set to 32 °F. The graphic to the right has been designed as an aid, but note that it may differ from what is shown in the refractometer sight glass.



Refractometer Sight Glass

Application of Ethylene Glycol





AQUA-HOT™ (2) YEAR LIMITED WARRANTY

Aqua-Hot Heating Systems Inc. warrants the AQUA-HOT heater to the original owner to be free from defects in material and workmanship under normal conditions of designed usage and service as outlined in the installation and operator manuals for a period of two (2) years covering both parts and labor beginning on the date of purchase of the vehicle by the original owner. Replacement parts are covered for the remainder of the heating systems warranty. All purchased replacement parts will carry a six months, (180) days warranty.

This warranty does not apply to scheduled maintenances items such as fuel filters and fuel nozzles, damage or failure of the AQUA-HOT heater or the vehicle into which it was installed due to improper installation, assembly, maintenance, abuse, neglect, accident, or the use of parts not supplied by Aqua-Hot Heating Systems, Inc. Aqua-Hot Heating Systems is not responsible for incidental or consequential damages.

The intent of this warranty is to protect the end user of the heating system from such defects, which might have occurred in the manufacture of the product. The warranty is not intended to protect the end user from problems, which are outside the ability of Aqua-Hot Heating Systems control.

To obtain a warranty repair authorization or information, please contact the Tech Support Department at 1-800-685-4298 (7:00am to 4:00pm Mountain Standard Time).

My Comfort Zones are On-Board

Vehicle:

Purchased From:

Dealer Information:

Name:

Location:

Phone Number:

Heating System:

Serial Number:



Scan the QR code on the right with your mobile device to take you to the website to register your Aqua-Hot product.

Use and Care Guide

100_{SERIES}

 **Aqua-Hot**[®]

An AIRXCEL Brand



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