Service Manual

Gen 1 SERIES

Aqua-Hot
An AIRXCEL Brand

Gen 1 DIESEL
AHE-GXN-DX1

Gen 1 GASOLINE
AHE-GXN-GX1

Contents

⚠ WARNING

WHAT TO DO IF YOU SMELL GAS

- Evacuate all persons from the vehicle.
- Shut off the gas supply at the gas container or source.
- Do not touch any electrical switch or use any phone or radio in the vehicle.
- Do not start the vehicle's engine or electric generator.
- Contact the nearest gas supplier or qualified service technician for repairs.
- If you cannot reach a gas supplier or qualified service technician, contact the nearest fire department.
- Do NOT run the first operation until it has been confirmed there are no gas leaks.
- Do not turn on the gas supply until the gas leak(s) have been repaired.

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.

⚠ DANGER

Water temperature over 125°F can cause severe burns instantly, or death from scalds. Children, disabled, and elderly are at highest risk of being scalded. See instruction manual before setting temperature at water heater. Feel water before bathing or showering! Temperature limiting valves are available.

System Overview

The Aqua-Hot Gen 1 Heater is a Heating System that can provide interior heat and hot water using a built-in electric heating element and a fuel-fired burner.

There are three options for heating:

- **FUEL Mode**: the heater automatically adjusts power according to temperatures.
- **Electric Mode**: manually select either the 900W or 1800W heating mode according to the power supply capacity of the shore power.
- **Hybrid Mode**: the system will control the use of electric and fuel heating based on the power demand on the system.

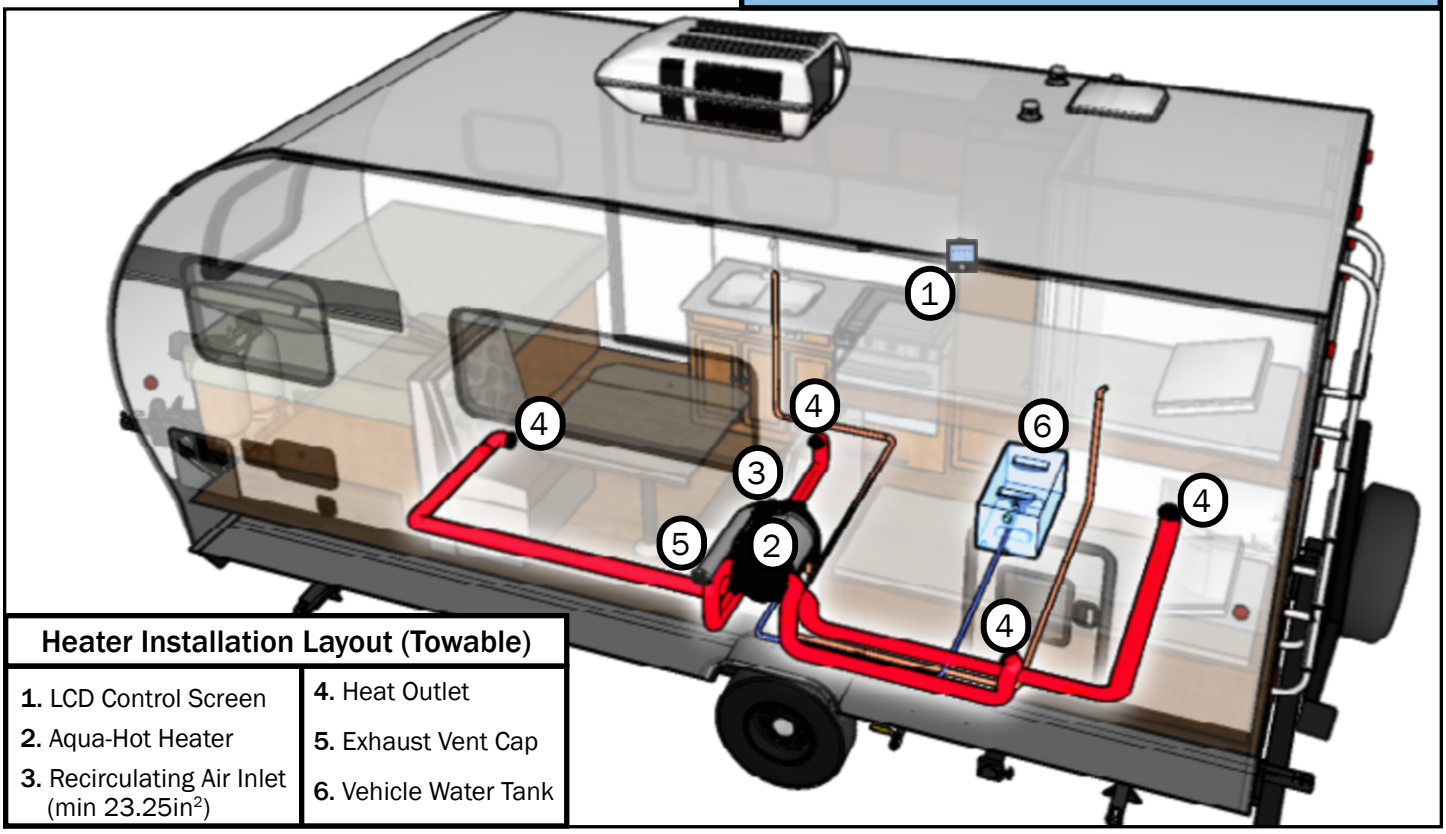
The Aqua-Hot Heating system consists of an electric heating element and a fuel-fired burner. The heater with supplementary indirect water heating is for use in RVs only to heat the space and domestic water.

The room heater works by pulling air into the heater by a fan, heated up, and dispensed into the RV's interior by ductwork.

Locate the LCD screen (shown below) inside the RV (contact the vehicle manufacturer if unable to find), press and hold the turn knob to wake, use the rotary button to select the desired energy mode. Click the rotary button to confirm. It will take approximately 20 minutes to warm up the domestic water, but there is no wait to use interior heat mode. After the Gen 1 is to temperature, you can activate interior heat in your coach via the thermostat/LCD or run hot water.

Should additional assistance be needed, please contact the Technical Support at 574-AIR-XCEL (574-247-9235), Monday through Friday, between 7:00am and 4:00pm MST.

NOTE: The illustration below is just sample for the layout of the Aqua-Hot heating system. Actual placement may vary on the individual design of the RV. For questions or assistance, contact us at 574-AIR-XCEL (574-247-9235).



Heater Installation Layout (Towable)	
1. LCD Control Screen	**4.** Heat Outlet
2. Aqua-Hot Heater	**5.** Exhaust Vent Cap
3. Recirculating Air Inlet (min 23.25in^2)	**6.** Vehicle Water Tank

Figure 1

Introduction to this Document

Welcome to the Aqua-Hot Gen 1 Service Manual. This manual will serve as a guide for diagnosing and repairing the Aqua-Hot, how to perform standard maintenance, and guide you through troubleshooting procedures to repair the Aqua-Hot. This service manual is designed to aid trained and qualified technicians to properly service and troubleshoot the Aqua-Hot Gen 1.

Each section in this manual is dedicated to the diagnosis of specific components within the Aqua-Hot which may be inhibiting the operation of the heater.

Troubleshooting and diagnosis of the Aqua-Hot is most efficiently and effectively accomplished with the Aqua-Hot LCD display.

Figure 2

If additional assistance is needed in diagnosing and repairing the Aqua-Hot, please contact our Technical Service Department at 574-AIR-XCEL (574-247-9235) from 7:00am to 4:00pm MST Monday through Friday.

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

WARNING

In order to avoid overheating, do NOT cover the heater.

WARNING

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

WARNING!

Read and understand all instructions ***before*** servicing 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.

Improper installation, adjustments, service, and maintenance can cause personal injury or loss of life. Reference the service and user manuals ***before*** maintenance or service.

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

- The product identity label contains specifications of the unit, to what standards 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 Gen 1 tank *must* have a cold water inlet pressure regulator set to 45PSI or below to avoid damage to the tank.
- Use caution when working on or near any gas systems.
- DO NOT connect the 12-volt DC power to the Aqua-Hot if the vehicle requires welding.
- At maximum operating temperature, the hot air outlet could be very hot that may result in serious burns or injury. Be aware of hot surfaces.
- Use special caution when children are present. Children must not be allowed to play with the heater or perform cleaning and/or maintenance.
- Installation and repairs may only be carried out by an authorized, factory-trained Aqua-Hot technician. The heating system must be serviced in accordance with local codes, or, in the absence of local codes, follow NFPA 1192. National safety regulations must be adhered to.

Operational Overview

Energy Setting

The Aqua-Hot Gen 1 heater has three available energy sources: Fuel, Electric and Hybrid.

Fuel

When “Fuel” is selected in the energy setting menu the heater will use on-board fuel to generate heat.

Electric

In the energy setting menu, EL1 or EL2 can be selected. EL1 activates 900 Watts of electric heating elements. EL2 activates 1800 Watts of electric heating elements. EL2 can only be used when 20A 110AC service is available.

Mix Mode (Hybrid)

Hybrid mode is activated by selecting MIX1 or MIX 2. In each mode the burner is activated along with supplemental heat from the electric elements. In MIX1 900 Watts of electric heating is supplied. In MIX2, 1800 Watts of electric heating is supplied. MIX2 should only be used when 20A 110AC service is available.

NOTE: In Mix mode, the electric element will take priority over the burner unless the heating demand cannot be met by the electric element, in which case the burner will activate.

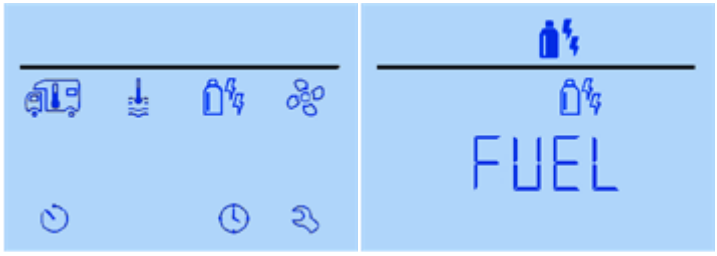


Figure 3

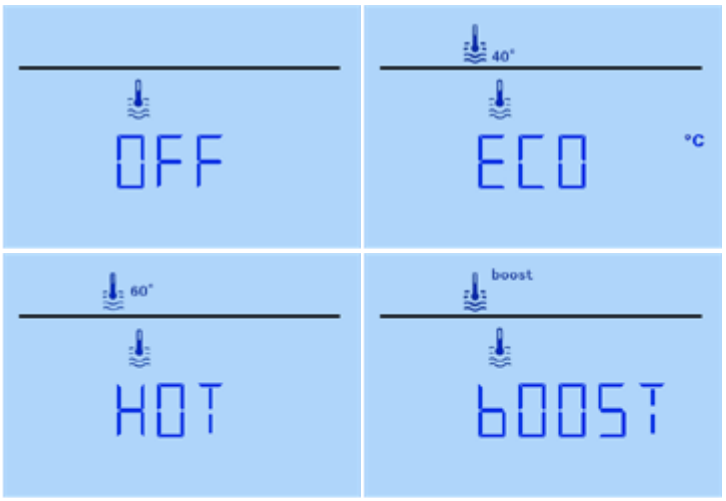


Figure 4

Heating Mode

The Aqua-Hot Gen 1 has three available heating modes: Interior Heat, Hot Water, and Combination.

Interior Heat

When interior heating is activated the burner or electric elements heat a heat exchanger. Air is forced across the heat exchanger and warmed. Ducting routes the warm air throughout the vehicle. The external temperature sensor reads the temperature of the vehicle and activates the flow of warm air through the vehicle.

Hot water

When hot water mode is activated the burner or electric elements heat a heat exchanger. The heat exchanger transfers heat to the water tank and warms the water. When a hot water faucet is opened, hot water flows from the tank through the faucet. Cool domestic water is pumped back into the tank, which remains full, and is heated.

Combination

When both hot water and interior heat modes are activated, the heat from the burner or electric elements is distributed to both hot air and hot water. If boost water mode is selected, interior heat will be temporarily paused to prioritize the creation of hot water.

Working Mode	Energy Mode
OFF	Water heating is off - icon will not show
ECO	Water Temperature target of 104°F
HOT	Water Temperature target of 140°F
BOOST	Prioritizes water heating for 40 minutes or until the water temperature reaches 140°F (60°C)

Maintenance Schedule

Monthly Maintenance

- Check the exhaust and air intake systems
  Ensure there is no damage or leaks, inspect the exhaust bulkhead gasket for a proper seal. Replace any damaged components.
- Check the fuel system
  Check for abrasion along the fuel line. Inspect the rubber couplers for cracking. Ensure there are no leaks. Replace any damaged components.
- Check the vent air path
  Check for blockages in cold air return path. Check the ducting for any damage.

1000-Hour Maintenance

To maintain the Aqua-Hot at its full potential, it is highly recommended to have the burner tuned up after 1000 hours of burner run time:

NOTE: If white or black smoke is seen, this is a good indicator that service is necessary.

- Cleaning the burner: replace fuel filter, clean combustion chamber, clean glow plug, clean flame sensor.
- Inspecting the exhaust and air intake lines for damage and ensuring they are clear
- Checking the fuel lines for any leaks
- Checking the hoses and wiring to make sure there are no damage or cracks.

Cleaning the Combustion Chamber

Over time carbon deposits can build up within the combustion chamber and must be removed. Follow the procedure below to clean the combustion chamber.

1. Gain access to the combustion chamber by removing the 4 screws on the front cover and removing the cover. Plumbing fittings may need to be removed before the cover comes off.
2. Remove the 4 110V heating element leads using a 7mm socket.
3. Remove the ventilation fan housing by loosening the 4 3mm socket screws.
4. Remove the plastic heating element guard by loosening the four 3mm socket screws.
5. Remove the aluminum burner face plate by loosening the 6 3mm socket screws.
   - Be careful not to damage or lose any gaskets while removing the burner.
6. Slide the faceplate, flame tube, and burner out of the combustion chamber.
7. Using a brass or nylon wire brush, clean all carbon deposits off of the heat exchanger fins.
8. Vacuum debris out of the chamber.
9. Assembly is the reverse of disassembly.
   - Replace gaskets as necessary.

Cleaning the Glow Plug

- Follow the procedure (page 13) to gain access to the glow plug.
- Using a wire brush, scrub the carbon deposits off the glow plug.
- Reinstall the glow plug following the procedure on page 13.

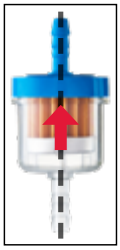
Cleaning the Flame Sensor

- Follow the procedure (page 20) to gain access to the flame sensor.
- Using a wire brush, scrub the carbon deposits off the flame sensor.
- Reinstall the flame sensor following the procedure on page 20.

Fuel Filter Replacement (diesel heaters only)

Diesel-fired Gen 1 heaters use an in-line fuel filter to ensure safe and reliable operation. Follow the procedure below to replace the fuel filter.

Fuel Filter Replacement Procedure:



1. Locate the fuel filter under the vehicle.
2. Loosen the hose clamps on each side of the filter.
3. Remove the hose couplers from each side of the filter.
4. Install the hose couplers on the new fuel filter.
   - Ensure the arrow on the filter is pointing in the direction of fuel flow as shown to the right.
5. Tighten the hose clamps on each side of the new fuel filter.

Priming the Fuel Lines:

NOTE: It is ***required*** to prime the fuel lines after servicing the fuel system.

1. Locate the fuel inlet at the front of the heater.
2. Loosen the hose clamp.
3. Remove the check valve and fuel line from the rubber hose coupler and place the fuel line into a fuel safe container.
   - Ensure the check valve remains with the fuel line from the pump.
4. At the LCD screen navigate to settings, select GoOil. The fuel pump will start pumping.
5. Allow the GoOil feature to purge the air out of the fuel system.
6. Under the vehicle, inspect the clear section of fuel tubing for any air bubbles. If bubbles are found select GoOil again.
   - The fuel filter may not fill completely. This is normal.
7. Once all air bubbles are purged from the fuel system reinstall the fuel line into the rubber hose coupler.
8. Tighten the hose clamp on the fuel inlet.
9. At the LCD screen activate the heater and check for proper operation of the burner.

NOTE: It is recommended to run the burner once a month (~20 minutes) to ensure optimum heater condition.

DIESEL Heater

Aqua-Hot®
An *AIRXCEL* Brand

For full details and installation requirements, please see installation and owner's manuals.

Minimum Service Clearances
Front - 4 Inches
Back - 1 Inch
Sides - 0.5 Inch
Top - 2 Inches
Bottom - No Clearance Necessary

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.

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

Listing 20L01

Max Tank Pressure	65 PSI
Tank Capacity	2.6gal (10L)
Power (DC)	12VDC, 10A, 120W Max
Power (AC)	120VAC, 15.6A, 1800W Max
Burner	Diesel, 13,650 BTU/hr

Model Number: AHE-GXN-DX1
Serial Number: XXXXXXXX

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.

Figure 5

Main Technical Specifications		
Rated Voltage	DC12V	
Operating Voltage Range	DC10.5V - 16V	
Short-Term Max Power	8 - 10A	
Average Power Consumption	1.8 - 4A	
Fuel Type	**DIESEL**	
Fuel Heat Power (W)	2000	4000
Fuel Consumption (g/H)	240/270	510/550
Quiescent Current	1mA	
Warm Air Delivery Volume	169 CFM (max)	
Water Tank Capacity	2.6gal (10L)	
Maximum Pressure of Water Pump	40 PSI	
Maximum Pressure of System	65 PSI	
Rated Electric Supply Voltage	110V	
Electrical Heating Power	900W	1800W
Electrical Power Dissipation	7.8A	15.6A
Working Environment	5°F - +176°F	
Weight (lbs)	34.4lbs (dry)	
Dimensions (in)	20.1 x 17.7 x 11.8	

⚠ CAUTION

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

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.

GASOLINE Heater

Aqua-Hot®
An *AIRXCEL* Brand

For full details and installation requirements, please see installation and owner's manuals.

Minimum Service Clearances
Front - 4 Inches
Back - 1 Inch
Sides - 0.5 Inch
Top - 2 Inches
Bottom - No Clearance Necessary

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.

Meets or Exceeds: UL 307B, UL 174
CSA/CAN B140.0-06
CAN/CSA-C22.2 No. 110-94

Listing 20L01

Max Tank Pressure	65 PSI
Tank Capacity	2.6gal (10L)
Power (DC)	12VDC, 10A, 120W Max
Power (AC)	120VAC, 15.6A, 1800W Max
Burner	Gasoline, 13,650 BTU/hr

Model Number: AHE-GXN-GX1
Serial Number: XXXXXXXX

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.

Figure 6

Main Technical Specifications		
Rated Voltage	DC12V	
Operating Voltage Range	DC10.5V - 16V	
Short-Term Max Power	8 - 10A	
Average Power Consumption	1.8 - 4A	
Fuel Type	**GASOLINE** (87 octane or higher)	
Fuel Heat Power (W)	2000	4000
Fuel Consumption (g/H)	240/270	510/550
Quiescent Current	1mA	
Warm Air Delivery Volume	169 CFM (max)	
Water Tank Capacity	2.6gal (10L)	
Maximum Pressure of Water Pump	40 PSI	
Maximum Pressure of System	65 PSI	
Rated Electric Supply Voltage	110V	
Electrical Heating Power	900W	1800W
Electrical Power Dissipation	7.8A	15.6A
Working (Environment)	5°F - +176°F	
Weight (lbs)	34.4lbs (dry)	
Dimensions (in)	20.1 x 17.7 x 11.8	

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.

⚠ CAUTION

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

Aqua-Hot Gen 1 Heater

1. Heater
2. Air Intake Inlet
3. Exhaust Outlet
4. Controller Cover
5. Plastic Frame Feet
6. Aluminum Frame Feet
7. Circulated Air Intake
8. Cold Water Connection (Inlet)
9. Fuel Connection
10. Hot Water Connection (Outlet)
11. Fan for Combustion Air
12. Water Tank
13. Warm Air Outlets (Upper)
14. Warm Air Outlets (Lower)
15. Recessed Grips
16. Electronic Control Unit
17. LCD Control Screen

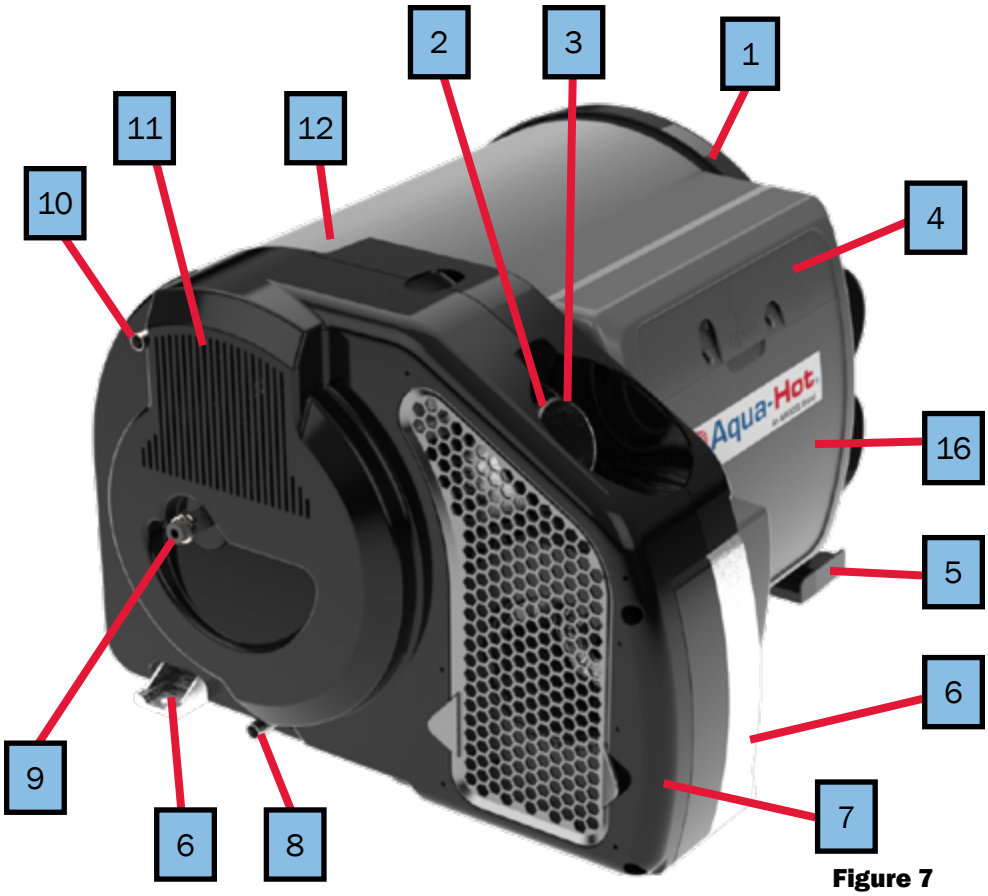


Figure 7

Figure 8

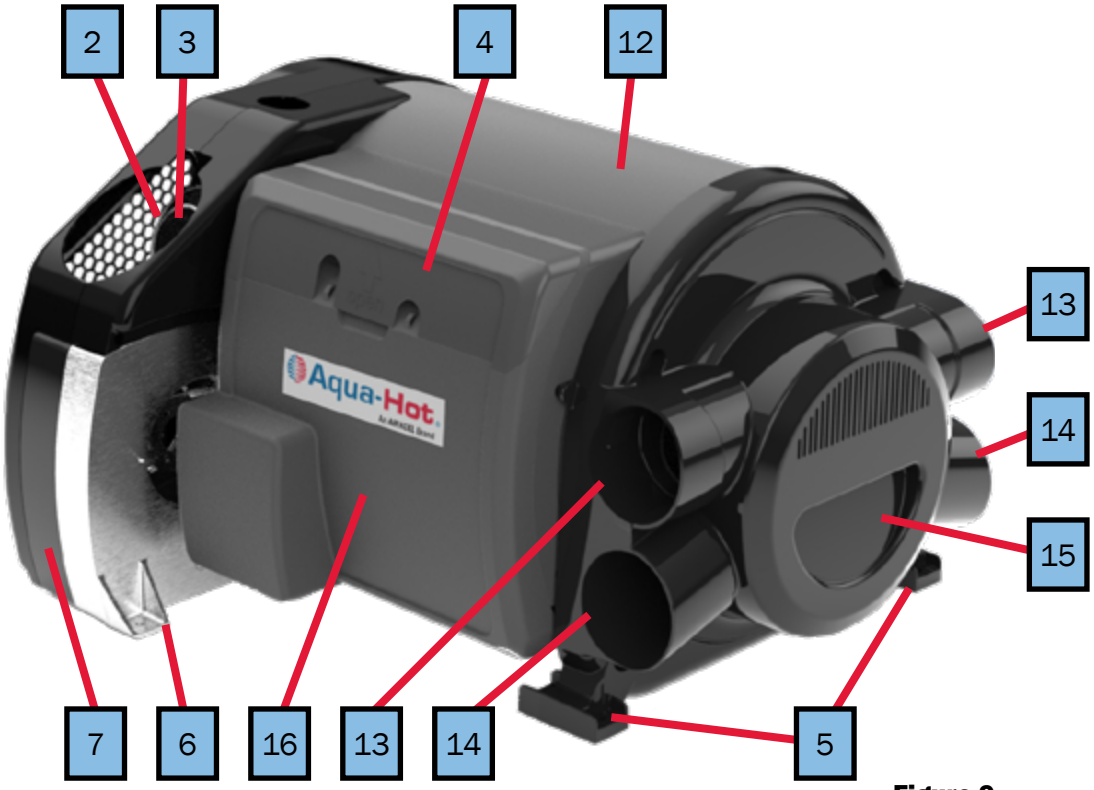
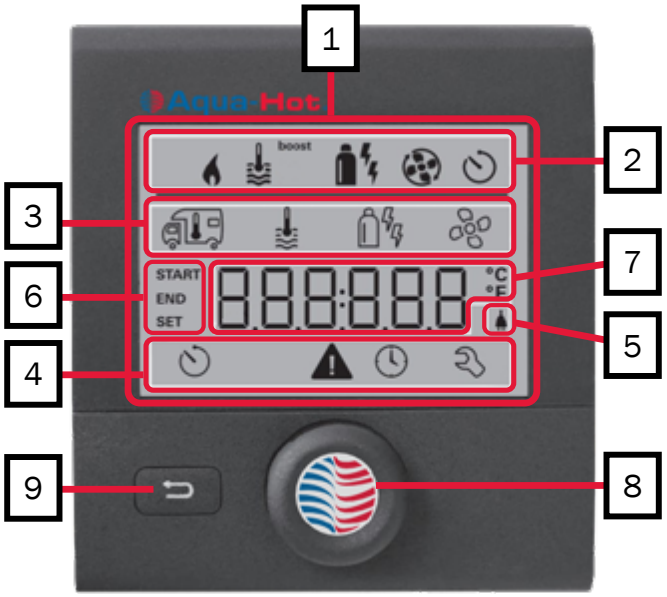


Figure 9

Operating the LCD



1 Display Area	6 Timing Display
2 Status Display	7 Parameter Setup Display
3 Menu Bar (top)	8 Rotary Button/Knob
4 Menu Bar (bottom)	9 Return Button
5 110/220V Electrical Display	

NOTE: For more detailed information on the LCD and operation, please reference the owner's manual.

Display and Control Section:

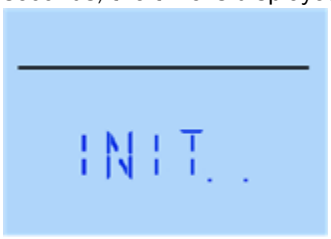
- The information is displayed on the screen with a back-light
- In the menu bar (#3, 4), the function of the LCD can be selected. The operating parameters are shown on the status bar (2) and display bar (5, 6).
- After the 110V is supplied to the system, the 110V power supply indication column (5) displays the power supply sign
- During heater operation, set the parameter bar (7) to display start/end times, and room temperature.
- Press the return button (9) to return to previous interface.

Rotary button (8)

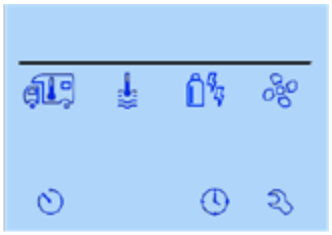
- Select, modify, and save icons for menu bars 3 & 4 by rotating the knob.
- Tap the button to confirm saving and return to main menu.
- Press and hold the button (+3seconds) to turn on/off LCD.

Power ON:

Hold the rotary button for 3seconds to turn on LCD. After a few seconds, the time is displayed as 00:00.

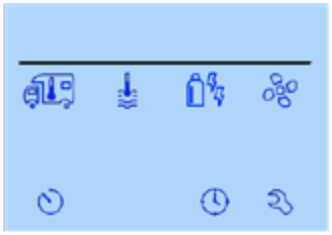


Click the rotary button to display the initial options in the display.



Clock setting (current time setting)

- Click the rotary button to display the icon in the menu bar (3).

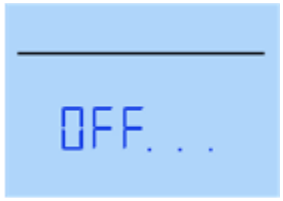


- Use the rotary button to select "Set Clock" icon in the menu bar (4).
- Click the rotary button to enter the clock settings.

- Use the rotary button to set the time.
  "A--" is displayed in the morning and "P--" is displayed in the afternoon
- Click the rotary button again to determine the time, then the minute display flashes.
- Set the minute with the rotary button.
- Click the rotary button to confirm the value and exit the clock setting.
- Rotate button to start
- Press the rotary button for 3 seconds, the LCD will start.

Shutdown

Press the rotary button for more than 3s at the initial interface to shut down. When the LCD switch is turned off, the heating process and any connected equipment are also automatically turned off. The parameters before shutdown are retained.



Post-Purge Process (Cool-Down Cycle)

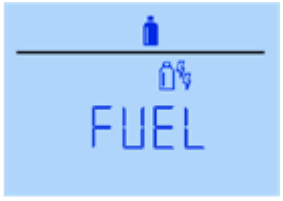
Since the heater has a higher residual heat after heating and a post-cleaning need, the fan typically runs for a few minutes for cooling.

Heating Function Settings

The heating function setting should first set the fuel, and then select water heating or room heating or simultaneous heating, and finally set the fan speed. The default heating function settings is the fuel setting fuel and the fan speed setting ECO.

Fuel Setting

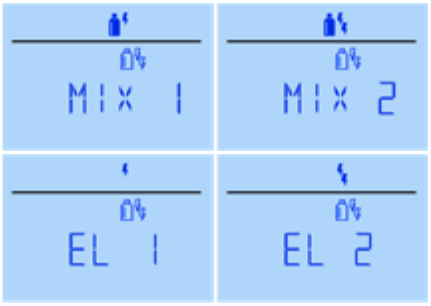
- Rotate the button to select the fuel icon in the menu bar (3).
- Click on the selected icon.



- Use the rotary button to select the desired fuel mode.
- Click the rotary button to confirm.

If the fuel type is not selected, once the heater starts to operate (room temperature, hot water icon is activated), the status bar shows the type of fuel selected during the previous heating process or the fuel type set at the factory.

Working Mode	Fuel Mode
GAS	LPG/Diesel/Gasoline
MIX 1	Electric 900W + GAS
MIX 2	Electric 1800W + GAS
EL 1	Electric 900W
EL 2	Electric 1800W

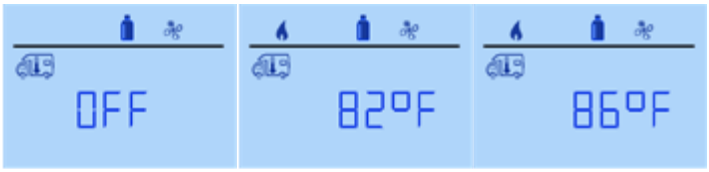


Adjustment of Interior Temperature

- Click the rotary button to display the icon in the menu bar (3). Select the room temperature heating system with the rotary button according to the connected device.
- Confirm the selection by clicking the rotary button on the selected room temperature icon.
- Use the rotary button to select the desired temperature.
- Click the rotary button to confirm its value.

Temperature Display	°C / °F
Temperature Range	5-30°C / 41-86°F
Increments	1° C/F

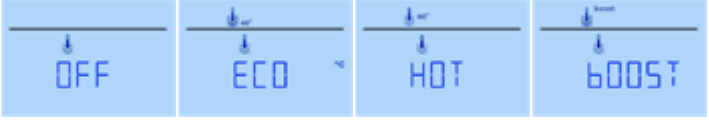
This flame icon will be on when room temperature heating starts, this icon will flash until the predetermined room temperature is reached.



Adjustment of Water Heating

- Click the rotary button to display the icon in the menu bar.
- Use the rotary button to select the desired water temperature setting level.
- Click the rotary button to confirm

Working Mode	Fuel Mode
OFF	Water heating is off - icon will not show
ECO	Water Temperature target of 40°C
HOT	Water Temperature target of 60°C
BOOST	Prioritizes water heating for 40 minutes or until the water temperature reaches 140°F (60°C)



Systems Overview

Combustion

The combustion air system supplies the burner with clean air from outside the vehicle and safely exhausts any combustion gases outside the vehicle. Air is drawn in through the intake/exhaust outlet port. The port has a plastic cover to separate the intake air from the exhaust gases while also shielding the system from rain. Intake air is routed to the burner through the large diameter intake tube connected to the intake/exhaust outlet and the inlet port on the heater.

The Gen 1 is a forced draft burner which uses a combustion blower fan to draw in air and evacuate exhaust. The air temperature is measured by the intake air temperature sensor and used to adjust combustion based on the air temperature. In the diesel and gasoline fired Gen 1 heaters, the air fuel mixture is ignited by a glow plug and monitored by a thermostatic flame sensor.

The hot combustion gases pass through the heat exchanger and exit the vehicle through the exhaust tube. The exhaust tube runs inside of the intake tube and attaches the exhaust/intake outlet port.

Fuel

The fuel system supplies the Gen 1 with fuel from the on-board fuel supply. For diesel and gasoline fired Gen 1 heaters, the fuel system is made up of a fuel pickup tube, blue plastic fuel line, a fuel pump and damper assembly, clear plastic fuel line, a check valve and an assortment of couplers and clamps.

The fuel pump is controlled by the heater to provide the correct volume of fuel to sustain combustion. The damper acts to smooth the pulses of fuel delivered by the pump. The fuel flows into the fuel inlet port and into the combustion chamber.

NOTE: It is important to ensure that the fuel line is not kinked or damaged, does not leak, and is routed away from any hot components or electrical wiring.

Ventilation Air

The ventilation air system heats air from the cabin of the vehicle and redistributes it throughout the vehicle based on the external temperature sensor. Air is drawn into the heater by the ventilation fan and forced through the heat exchanger. The heat exchanger transfers heat from the combustion gases or electric elements into the ventilation air. The air temperature is monitored by the warm air sensor which determines the firing rate of the burner. The warm air passes through a system of ducting, connected to the rear of the heater, to ensure even heat distribution.

Water

Water is plumbed to the Gen 1 from the domestic water system of the vehicle. A 2.6 gallon water tank surrounds the heat exchanger and is used to heat and store hot water. The water temperature sensor, overheat sensor and 110VAC overheat disconnect switch are attached to the tank to measure the temperature of the water. The water temperature sensor controls when the selected heat source is active. The overheat sensors prevent the heat source from remaining active in case of an overheat.

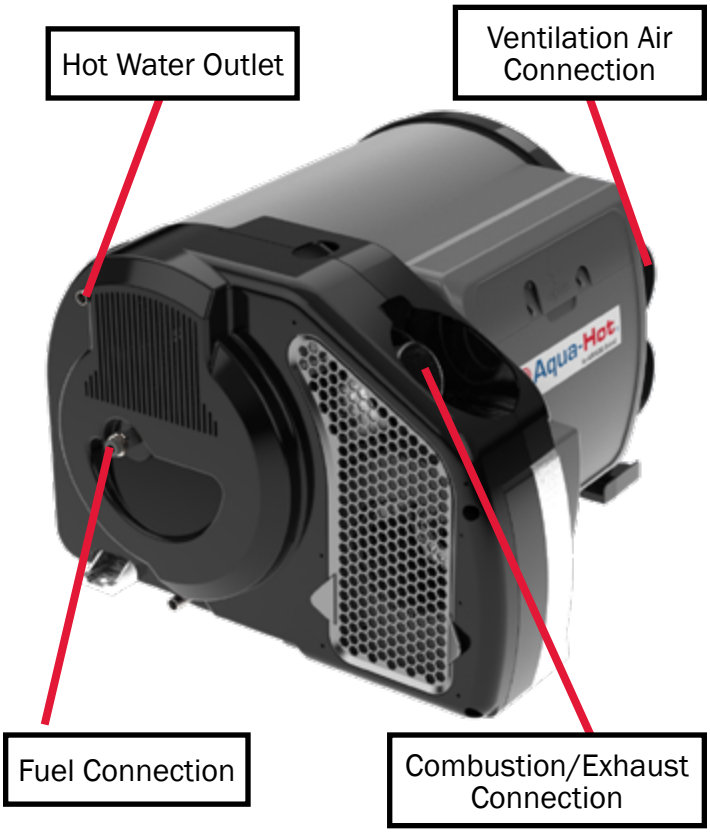


Figure 10

Glow Plug

In the diesel and gasoline Gen 1 heaters, a glow plug is used to ignite the air/fuel mixture inside the combustion chamber. The glow plug is an electric heating element which reaches high enough temperatures to ignite the mixture.

Troubleshooting Procedure

- To test the glow plug, remove the screw terminals on the connection labeled X7 on the PCB.
- With a multimeter test the resistance between the two wires. The resistance should be 0.2ohm.
- The glow plug is located inside the burner. It can be removed using a 12mm open end wrench.
- After removing the glow plug, clean any carbon build up using a wire brush.
- Inspect the glow plug for cracks and damage. If the glow plug is damaged, replace the glow plug.

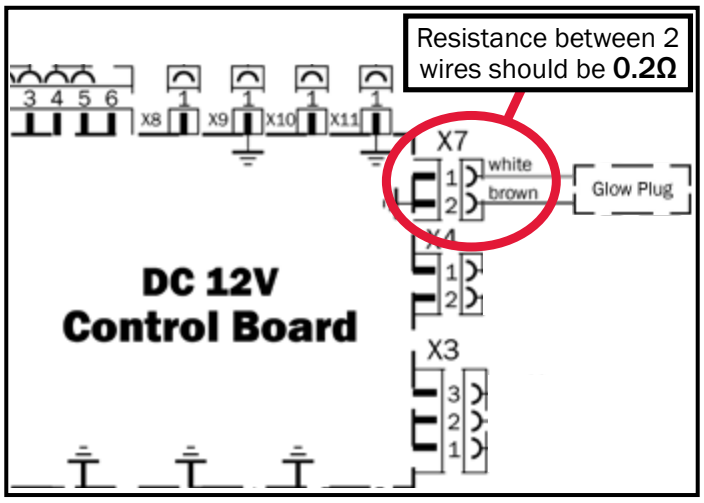


Figure 11

Replacement Procedure

1. Gain access to the glow plug by removing the seven screws on the front cover and removing the cover.
   - Plumbing fittings may need to be removed before the cover comes off.

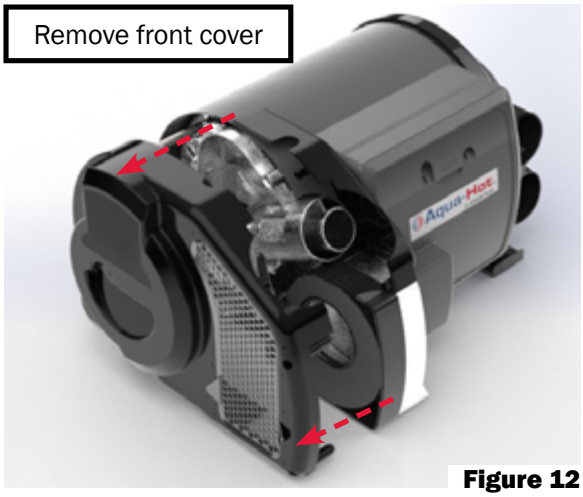


Figure 12

2. Remove the four 110V heating element leads using a 7mm socket.
3. Remove the ventilation fan housing by loosening the four 3mm socket screws.
4. Remove the plastic heating element guard by loosening the four 3mm socket screws.
5. Remove the aluminum burner face plate by loosening the six 3mm socket screws.
6. Loosen and remove the three 3mm socket screws attaching the burner to the face plate.
7. Remove the E-clip on the fuel tube.
8. Slide the burner off the face plate.
9. Cut the glow plug wires 3” from the glow plug. Leave enough wire length on the harness to connect the new glow plug.
10. Unthread the glow plug from the burner using a 12mm wrench.
11. Thread the new glow plug into the burner and tighten using a 12mm wrench.
12. Cut the new glow plug wires 3” from the glow plug.
13. Connect the new glow plug wires to the heater harness using the provided connectors. Be sure to match the wire colors before connecting.
14. Reinstall the burner, and face plate.
    - Use new gaskets.
15. Reinstall the heating element guard, heating element leads, ventilation fan housing and front cover.
16. Reattach the electrical box and front cover.

Fuel Pump

Gen 1 heaters fueled by diesel and gasoline use a metering pump to deliver the precise volume of fuel required to sustain combustion. The fuel pump is connected to the fuel lines using a system of couplers and clamps. If crimp style clamps are used to secure these connections, the clamps will have to be cut off and replaced when replacing the fuel pump.

NOTE: It is important to take care to not damage the rubber couplers when cutting the clamps.

Connected to the fuel pump is the fuel damper. The fuel pump provides pulses of fuel to the heater and the damper acts to smooth out the pulses of fuel into a more consistent flow.

Troubleshooting Procedure

1. At the LCD control panel, select fuel mode and turn on either interior heating or hot water (Figure 13).
2. As the heater begins to start an audible tapping should be heard coming from the fuel pump.
   - If no tapping is heard or felt when touching the fuel pump, check the wiring to the fuel pump for damage. Ensure the fuel pump is receiving voltage during the start attempt. The voltage signal to the fuel pump will be a short pulse and may be too fast for some multimeter's. If no voltage is present, ensure the proper operating mode has been selected before replacing the PCB.
   - If tapping is heard during the start attempt:
     - Remove the fuel line from the front of the heater.
     - Place the fuel line into a cup and attempt to start the heater again.
     - Measure the amount of fuel pumped out of the fuel line during a start attempt.
       - **DIESEL**: If the fuel measures less than 18ml ± 1ml, check the fuel system for leaks and blockages.
       - **GASOLINE**: If the fuel measures less than 16ml ± 1ml, check the fuel system for leaks and blockages.
       - Ensure there are no air bubbles in the fuel lines indicating a leak.

Resolve all issues before replacing the fuel pump.

Please follow instructions to ensure safe operation. Always check for any fuel leaks before operating the burner.

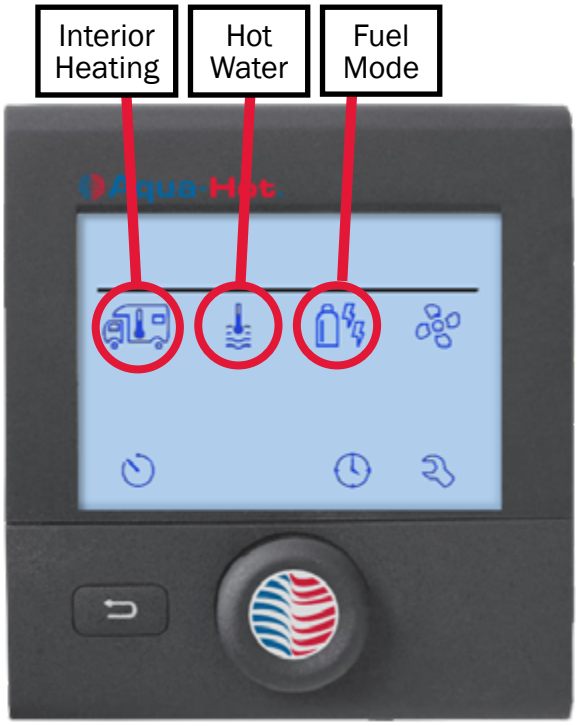


Figure 13

Figure 14

DANGER

Failure to follow instructions on the fuel delivery system can cause damage to the Aqua-Hot, the burner, or the RV. It may cause serious personal injury. Please follow instructions carefully.

Check Valve

The diesel and gasoline fired Gen 1 heaters include a check valve in the fuel supply line. This valve prevents the fuel from draining back into the fuel tank when the heater is not in operation. The check valve is located close to the front of the heater, connected to the fuel inlet port - see #9 in the Figures below.

Over time, debris can deposit on the check valve causing the valve to stick open or closed.

- Ensure fuel can flow freely through the check valve.
- Ensure fuel does not drain back into the tank.
- Clean or replace the check valve if necessary.

Fuel Pickup Tube

A fuel pickup tube is installed in some applications to provide a port to attach the fuel system of the Gen 1 heater to the fuel tank of the vehicle. Reference Figure 15 below - #2.

- The fuel pickup tube must have a leak proof seal with the surface of the fuel tank.
- The pickup tube must terminate at least 1" (25mm) from the bottom of the fuel tank and should be approximately at the same level as the on board generator pickup tube.
- On some applications, the auxiliary fuel port supplied by the vehicles manufacturer will be used.

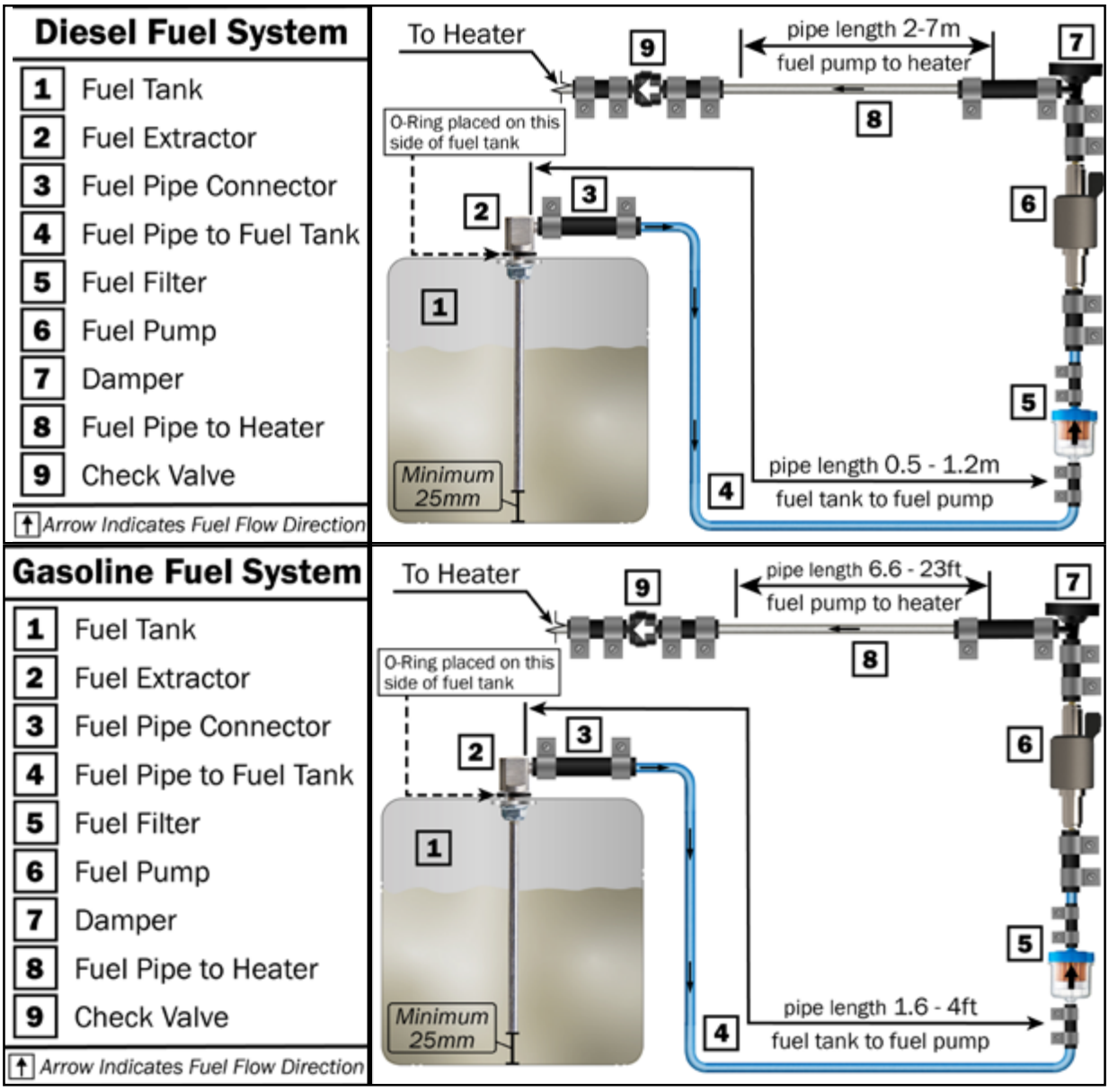


Figure 15

Vent Motor

The ventilation motor is used to force air throughout the vehicle when in interior heating mode. The ventilation motor should spin freely without grinding or squealing. If a noise is heard, ensure the ventilation fan blade is not contacting any parts of the heater. If noise persists, replace ventilation motor.

If the ventilation motor does not spin while interior heating mode is selected:

- Start by checking the wiring for damage.
- Check for voltage on the plug at the board (the electrical cover will need to be removed). This will not be constant voltage.
    - If voltage is present, replace the blower motor.
    - If no voltage is present at the PCB, ensure the correct heating mode is selected before replacing the PCB.

Typically, the vent motor will not activate while in hot water mode. If the heater experiences excessively high temperatures the ventilation motor can be activated to cool the heater while in hot water mode.

Replacement Procedure:

1. Remove the seven screws on the front cover and remove the cover (Figure 16). Plumbing fittings may need to be removed before the cover comes off.
2. Remove the ventilation fan housing by loosening the four screws.
3. With a long 2.5mm Allen key, loosen the set screw on the hub of the fan blade and slide the blade of the shaft.
4. Loosen the three motor mount screws and remove the motor.
5. Disconnect the wires from the harness.
6. Assembly is the reverse of disassembly. Ensure the fan blade hub is flush with the motor shaft before tightening the set screw.

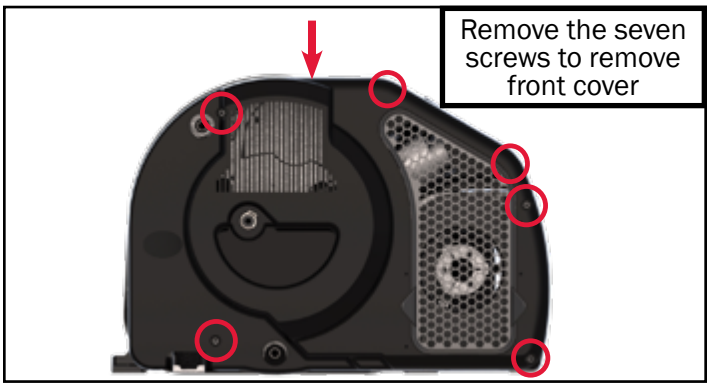


Figure 16

Combustion Motor

The combustion fan motor drives the combustion fan to force air through the combustion system. The combustion fan will activate when the heater is set to fuel mode, with either hot water or interior heat selected.

- Ensure the fan spins freely and no grinding or squealing is heard. An O-ring seal is used between the combustion fan and the heater. Ensure this O-ring is in good condition.
- Ensure there is voltage supplied to each of the three wires connected to the fan motor. This voltage will not be constant.
    - If voltage is present but the fan does not spin, replace the motor.
    - If no voltage is present, remove the electrical cover and check for voltage directly at the PCB. If no voltage is present at the PCB, ensure the heater is in the correct operating mode before replacing PCB.

Replacement Procedure:

1. Remove the seven screws on the front cover and remove the cover (Figure 16). Plumbing fittings may need to be removed before the cover comes off.
2. Remove the three screws connecting the fan body to the heater.
3. Disconnect the electrical plug.
4. Assembly is the reverse of disassembly. Ensure the O-ring seal is seated properly during reassembly.

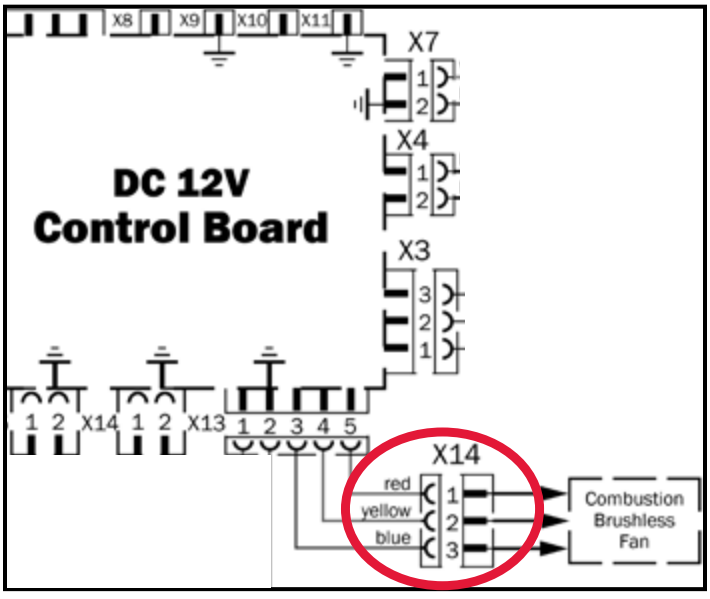


Figure 17

Intake Air Temperature Sensor

The intake air temperature sensor reads the temperature of the air being fed into the combustion chamber. A faulty **IAT** could display “E027H” or “E028H ”.

To test the **IAT** check the resistance between X13-1 and X13-2. Resistance at 77°F should be 10k ohm.

Replacement Procedure:

1. Remove the electrical box cover from the side of the unit by removing the two Phillips head screws.
   - Be sure to disconnect power from the heater before removing the electrical covers.
2. Disconnect the intake temperature sensor from the PCB by removing the X13 plug.
3. Gain access to the intake air temp sensor by removing the seven screws on the front cover and removing the cover. Plumbing fittings may need to be removed before the cover comes off.
4. Disconnect the combustion fan from the heater harness.
5. Remove the four 110V heating element leads using a 7mm socket.
6. Remove the ventilation fan housing by loosening the four 3mm socket screws.
7. Remove the plastic heating element guard by loosening the four 3mm socket screws.
8. Remove the aluminum burner face plate by loosening the six 3mm socket screws.
9. Slide the **IAT** sensor out of the aluminum casting and remove the rubber mount.
10. Cut the **IAT** sensor wires close to the old sensor.
11. Connect the new sensor wires to the heater harness using the supplied connectors. Ensure the wire colors match before connecting.”
12. Assembly is the reverse of disassembly.

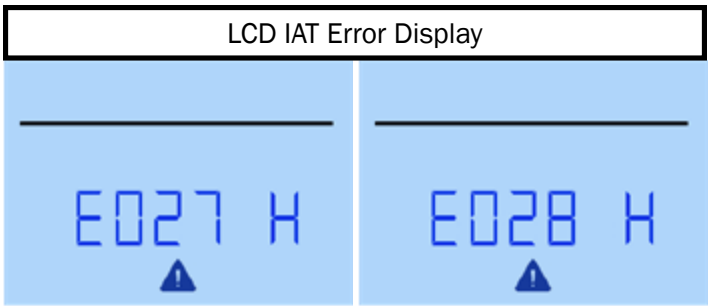


Figure 18

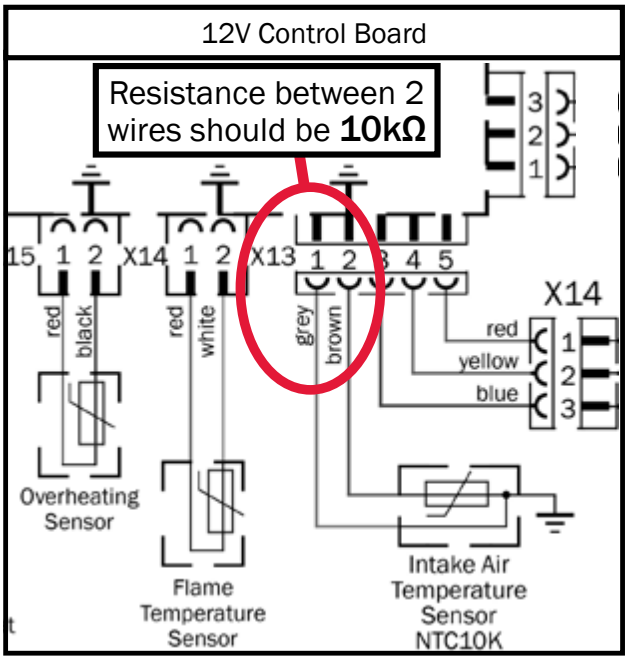


Figure 19

Flame Sensor

The flame sensor, located in the center of the combustion chamber, is a temperature probe that identifies the presence of flame in the combustion chamber.

As the temperature rises due to the flame, the resistance of the sensor increases. This is interpreted by the PCB and used to read the status of the flame. A faulty flame sensor may display “E033H”.

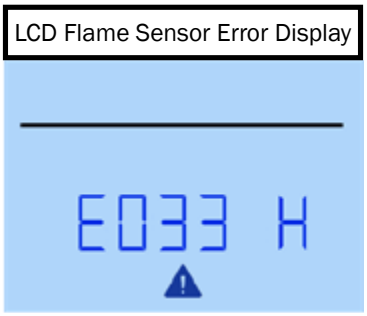


Figure 20

Over time carbon deposits can build up on the flame sensor, reducing its effectiveness.

Cleaning the sensor with a wire brush or steel wool can resolve most issues.

Before removing the sensor to clean, ensure voltage is present on the red wire at the PCB during a start attempt. If no voltage is present, diagnose the PCB.

The resistance of the sensor should be 1.3ohm at 70°F. This can be measured by unplugging the connector at the PCB and measuring resistance between the two pins on the harness.

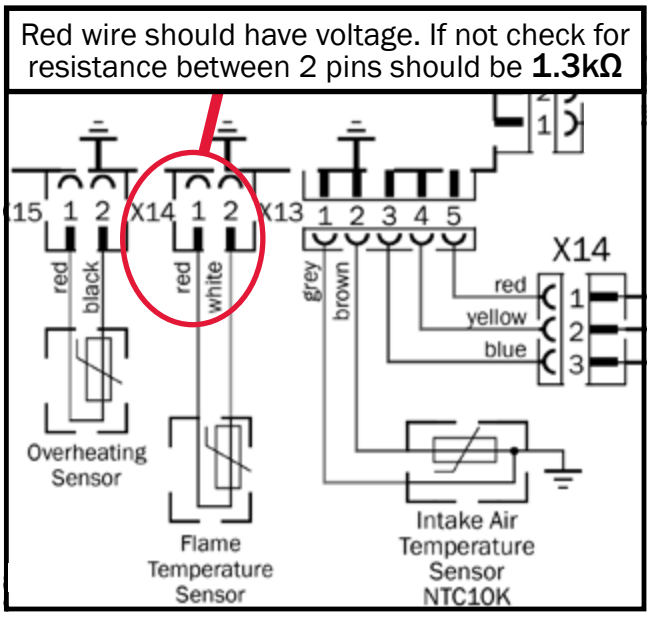


Figure 21

Replacement Procedure:

1. Gain access to the flame sensor by removing the seven screws on the front cover and removing the cover. Plumbing fittings may need to be removed before the cover comes off.
2. Cut the red and black wires connected to the flame sensor 2” from the body of the sensor.
3. Unthread the flame sensor from the heater using a 12mm wrench.
4. Thread the new flame sensor into the heater and tighten using a 12mm wrench.
5. Cut the new flame sensor wires 2” from the body of the sensor.
6. Using the provided butt splice connectors, connect the red wires and the black wires.
7. Reattach the front cover and plumbing.

Water Overheat Switch & Water Temp Sensor

The Gen 1 heater has two sensors on the water tank. In hot water mode, the water temperature sensor reads the temperature of the water in the tank and turns on the selected heat source when necessary. The water overheat sensor shuts off the heat source when the tank temperature exceeds the limit of the sensor.

To test the water overheat switch, remove the X18 plug and check resistance between the yellow wires. Resistance should be less than 1ohm .

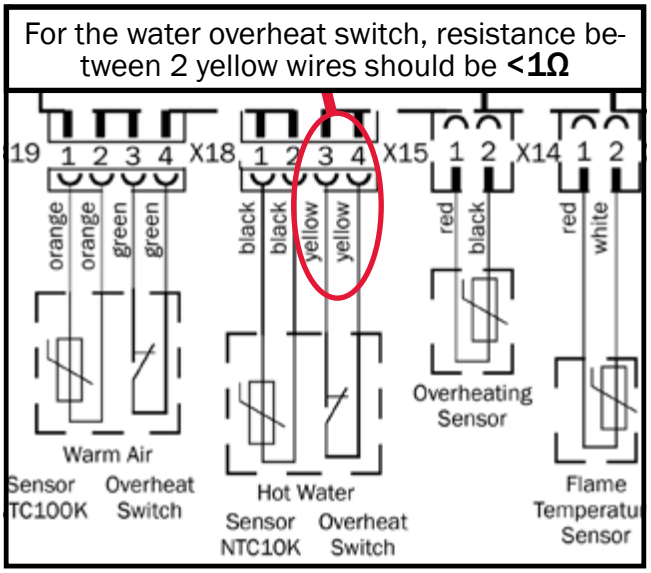


Figure 22

To test the water temperature sensor, remove the X18 plug and measure resistance between the black wires. Resistance should be 10K ohm at 77°F.

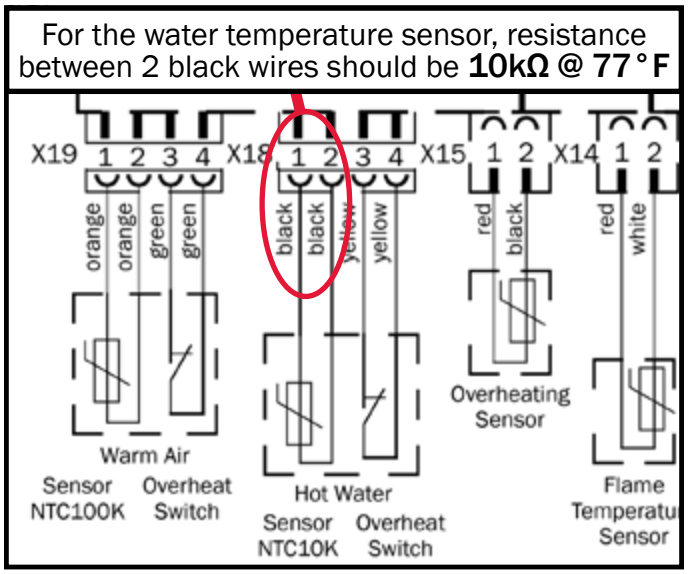


Figure 23

Replacement Procedure:

1. Remove the electrical cover on the side of the heater.

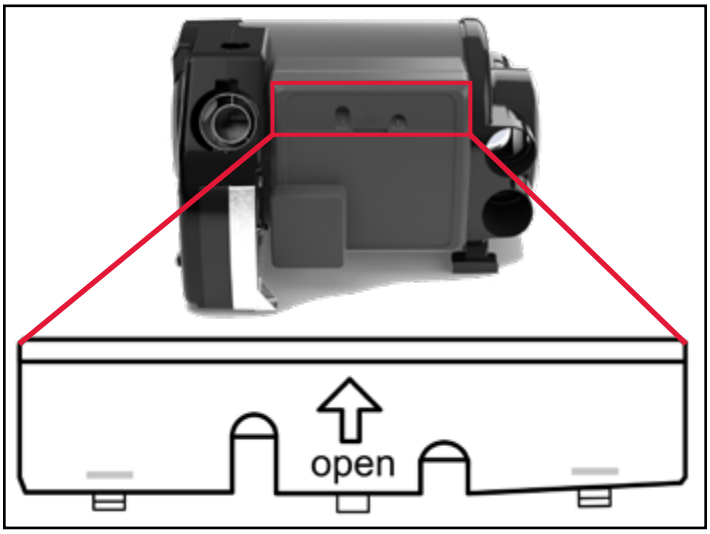


Figure 24

2. Remove the 7mm nuts attaching the overheat sensor and the water temp sensor to the tank.
3. Unplug the X18 connector on the PCB.
4. Feed the wires out from under the PCB housing.
5. Reassembly is the reverse of assembly.

Warm Air Sensor/Overheat

The warm air sensor measures the temperature of the heated air exiting the heat exchanger. It is used to ensure the hot air remains at a safe temperature while also providing efficient heating.

The burners input firing rate is adjusted based off the temperature reading from the warm air sensor. At 77°F, the resistance of the sensor should be 100K ohm.

The warm overheat switch will shut off the burner in case of overheating. The switch will automatically reset once the heater reaches a safe temperature.

If an overheat occurs "E042H" will be displayed. Power cycling the heater will clear the fault, but it is important to determine the cause of the fault.

NOTE: Repeated overheating can damage the heater. Ensure there are no blockages in the ventilation air path and open all duct outlet covers.

- To test, ensure the heater is cool.
- Disconnect the X19 plug on from the PCB.
- Measure the resistance between the green wires on the connector. It should be less than 1ohm.

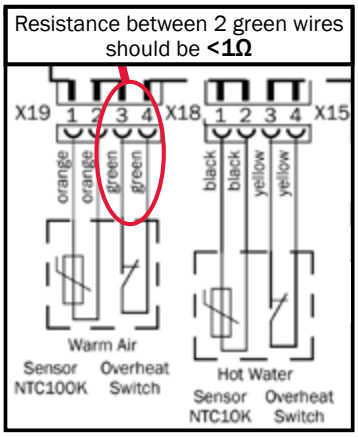


Figure 25a

- Measure resistance between the orange wires and ensure it is 100K ohm at 77°F.

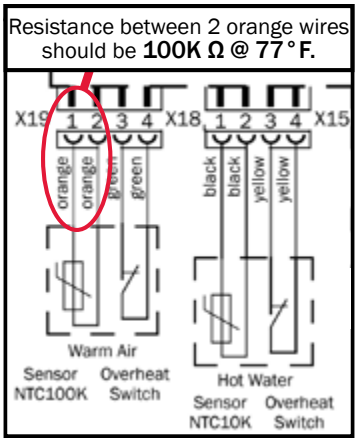


Figure 25b

Replacement Procedure:

1. Remove any ducting attached to the rear cover of the heater.
2. Remove the rear cover by loosening the four 8mm nuts on the back of the heater.

Figure 26

3. Gently slide the rear cover away from the heater without damaging any wires.
4. Slide the heat shield out of the rear cover.
5. Loosen the screw attaching the warm air sensor to the heat shield.
6. Remove the electrical cover on the side of the heater.
7. Locate and disconnect the X19 plug.
8. Connect the replacement sensor to the PCB at the X19 plug.
9. Route the wires in the same path as the old sensor wires.
10. Reattach the sensor to the heat shield using the original hardware.
11. Reassembly is the reverse of disassembly.

DANGER

Failure to disconnect all power supplies and/or allow the unit to cool before servicing could cause serious damage and/or personal injury.

LCD Screen

The LCD is the main control panel for the heater. All user inputs will be done at the LCD. There are two electrical connections made to the LCD. A network cable connects the LCD to the heater. Power and ground are supplied to the LCD through a separate two wire connection. Without power the screen will not light up.

Replacement Procedure:

NOTE: Remove the knob to access the one screw that attaches the LCD to the bracket.

Make sure to reuse the same screw, as using a different screw will prevent the knob from working and will break the mounting bracket.

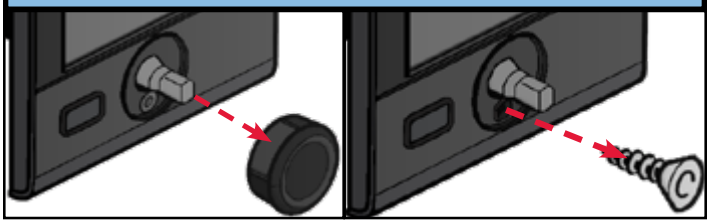


Figure 27

1. Remove the LCD from the wall by pulling the bottom of the LCD away from the wall.
   - The LCD bracket will remain attached to the wall and can be reused with the replacement LCD.
2. Disconnect the 12v power line, and network cable from the old LCD.
3. Connect the 12v power line, and the network cable, to the new LCD.
4. Snap the new LCD into the mounting bracket.

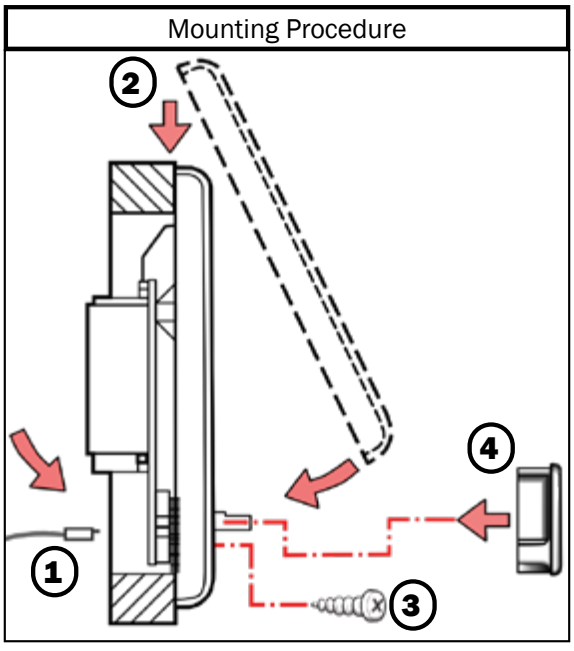


Figure 28

Window Status

The window status sensor is an optional accessory that can be installed on the window of the vehicle. When the window is opened the sensor will shut off the heater to prevent exhaust gases from entering the living space.

If no window switch is used, the X8 & X9 pins will be jumped on the PCB.

The window status sensor can be temporarily bypassed by installing a wire between X8 & X9 on the PCB.

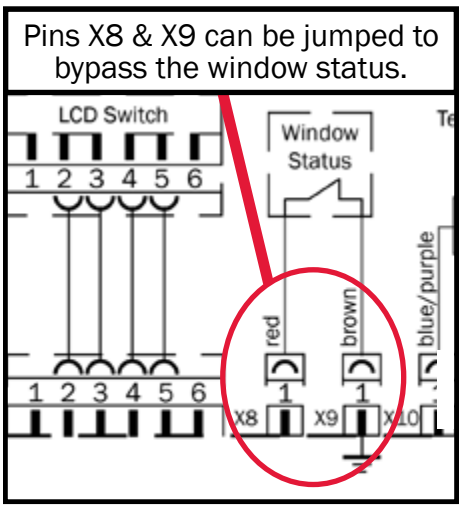


Figure 29

External Temp Sensor (Thermistor)

The external temp sensor measures the temperature in the vehicle. When in interior heat mode, the heater turns the heat source on/off based on the temperature read by this sensor.

To test the external temperature sensor, disconnect the X10 and X11 plugs on the PCB. Measure resistance between the two wires. At 77°f the resistance should be 10K ohms.

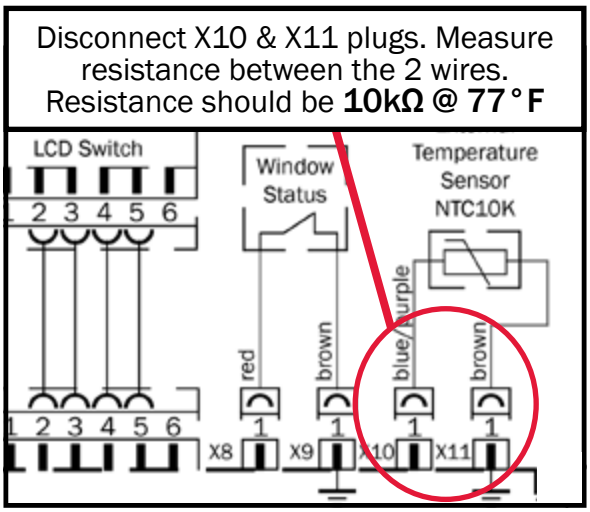


Figure 30

Replacement Procedure:

1. Remove the two screws on the top and bottom of the sensor.
2. Gently pull the sensor off the wall, feeding the wires out of the hole.
3. Located and cut the splice connections between the sensor wires and the wiring in the wall.
4. With new crimp connectors, splice the two wires on the replacement sensor to the two wires in the wall.
5. Reattach the new sensor to the wall using the original hardware.

Water Tank Overheat Switch (110V AC)

The water tank overheat switch disconnects power to the electric heating element when the tank temperature reaches 194°F.

Testing Procedure:

- Remove the four screw terminals on the overheat switch.
- Test resistance between each pair of terminals. The resistance should be less than 1 ohm.

Replacement Procedure:

1. Remove the electrical cover on the side of the unit.
2. Remove the wires connected to the overheat switches.
3. Loosen and remove the 7mm nuts mounting the switches to the tank.
4. Assembly is the reverse of disassembly.

12V DC PCB

The DC PCB controls all the DC-powered components of the Gen 1 heater.

Testing Procedure:

- Ensure the PCB is supplied with 12VDC at the X1 & X2 plugs.
- Ensure the fuse (F1) is in good order.
- Check the PCB for signs of damage.

Replacement Procedure:

1. Remove the clip in access panel on the top of the electrical box.
2. Remove the electrical box cover by loosening the two Phillips screws in the upper corners.
3. Disconnect all electrical connections on the PCB.
4. Loosen the Phillips screw towards the top of the PCB.
5. Hold the clips on the sides of the PCB open and slide the PCB out of the electrical box.
6. Assembly is the reverse of disassembly.

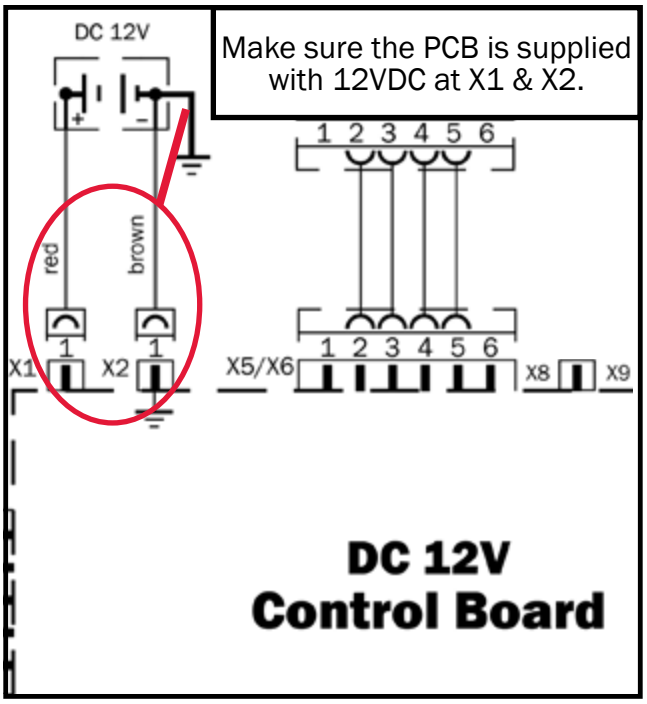


Figure 31

110V AC PCB

The AC PCB controls all 110VAC components in the Gen 1 heater.

WARNING

Before **testing/service, disconnect 110VAC power.**

Testing Procedure:

- Ensure the breaker supplying the heater with 110VAC is not tripped.
- Check all connections on the board for signs of arcing or loose connection.
- Ensure the 10A fuse is in good order.

Replacement Procedure:

1. Remove the clip in access panel on the top of the electrical box.
2. Remove the electrical box cover by loosening the two Phillips screws in the upper corners.
3. Disconnect all electrical connections on the PCB.
4. Loosen the Phillips screw towards the top of the PCB.
5. Hold the clips on the sides of the PCB open and slide the PCB out of the electrical box.
6. Assembly is the reverse of disassembly.

110V AC Electric System

The Gen 1 contains two 900W resistive heating elements. The resistance of each element should be between 13 – 15ohms. The resistance between the element lead and ground should be infinite.

NOTE: The resistive heating elements cannot be replaced.

Water Tank

The Gen 1 heater has a 2.6gal storage tank for hot water.

- Ensure the tank is not corroded and no leaks are present.
- Verify that all water fittings connected to the tank have a good seal.

NOTE: The water tank cannot be replaced.

Winterization

To avoid freeze damage to the system, the heater must be drained through the drain valve completely. If water is left in the system in below freezing temperatures, it can cause severe damage to the system that is not covered under warranty.

- Turn off power supply and open hot water faucets in the RV.
- Place a container under the drain valve to catch the water.
- Open the drain valve and allow the water to drain out completely.

When the RV is driving or in storage, the temperature range should not fall below -40°F or rise above +185°F to prevent damage to the electronic components.

It is recommended to winterize if the RV will be stored for a long time or the system will not be used, and it is below freezing.

Procedure:

1. At the LCD turn off the heater. Wait several minutes for the post purge cycle to complete.
2. Disconnect electrical power to the heater.
3. Turn off the RV water pump.
4. Open all hot and cold-water faucets.
5. Open the heater drain valve. Wait for all the water to drain from the system.
   - If the vehicle is not level, water will remain in the tank.
6. Follow RV manufacturer's instructions for draining entire water system.

Disinfecting the Domestic Water System

The water tanks must be cleaned regularly, minimum of twice a year. It is recommended to use chlorine-free, RV water system descaler.

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 system, be sure to follow NFPA 1192 Standard of Recreational Vehicles "Instructions for Disinfection of Potable Water Systems" or any other applicable local standards for Potable Water Systems.

Air Intake & Exhaust

The intake and exhaust tubes provide fresh air to the burner, and safely evacuate the combustion gases out of the vehicle. The intake tube is a corrugated 3" black tube. The exhaust is a 2" aluminum tube that runs inside of the intake tube. Both tubes are routed from the heater to the wall cowl which provides a secure pass-through point for the exhaust gases to exit the vehicle.

- Ensure the exhaust and intake tubes are not damaged or kinked.
- Check both tubes for obstructions including water that might have collected within the tubes.
- If water is found in the tubes, re-route the tube to prevent any low spots from collecting water.

Exhaust & Air Intake System

1. Exhaust Tube
2. Air Intake Tube
3. Exhaust Tube Clamp
4. Wall Cowl (Inner)
5. Wall Cowl (Outer)
6. Clamp
7. Hose Clamp
8. Cowl Seal
9. Screws
10. Exhaust Tube Connection
11. Intake Tube Connection

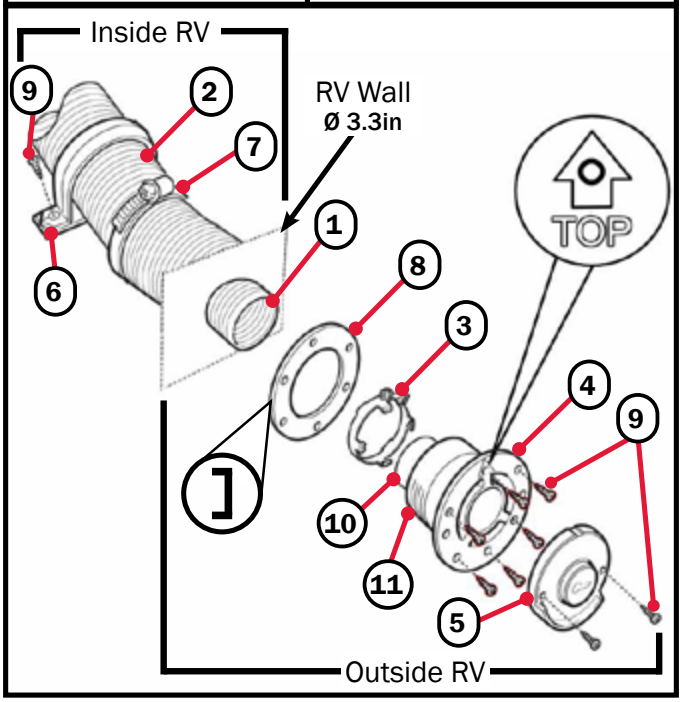


Figure 32

Exhaust Attachment Methods

There should be 0.8in (20mm) of pipe exposed at the end of the exhaust - pipe should be compressed, not straightened.

- Insert the exhaust pipe (#2) on the exhaust port as deep as possible.
- Attach the clamp (#1) on top and tighten.
- Place the air intake pipe (#4) over the inlet port.
- Place the clamp (#3) and tighten.

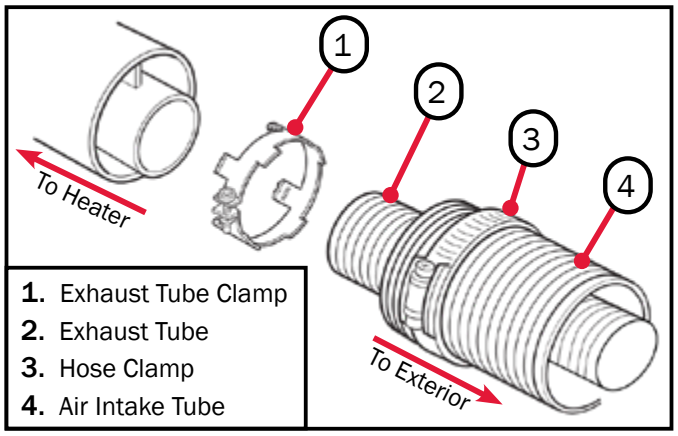


Figure 33

When using a internal muffler style exhaust:

- Insert exhaust pipe with o-ring (#2) into the exhaust port as deep as possible.
- Attach c-clip (#1) into the two holes on the heater's exhaust port to secure the exhaust in place.
- Place the air intake pipe (#4) over the inlet port.
- Place the clamp (#3) and tighten.

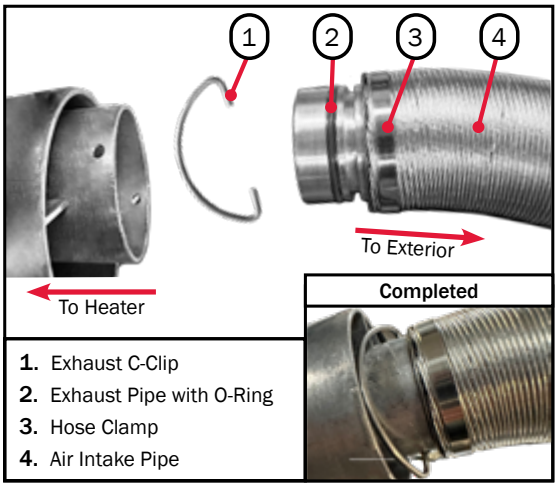


Figure 34

Air Heat Exchanger

The Gen 1 heater uses a heat exchanger to transfer heat from the flame of the burner to the hot air or water distributed throughout the vehicle.

NOTE: Any blockages or restrictions in the heat exchanger can reduce performance and be dangerous.

Troubleshooting

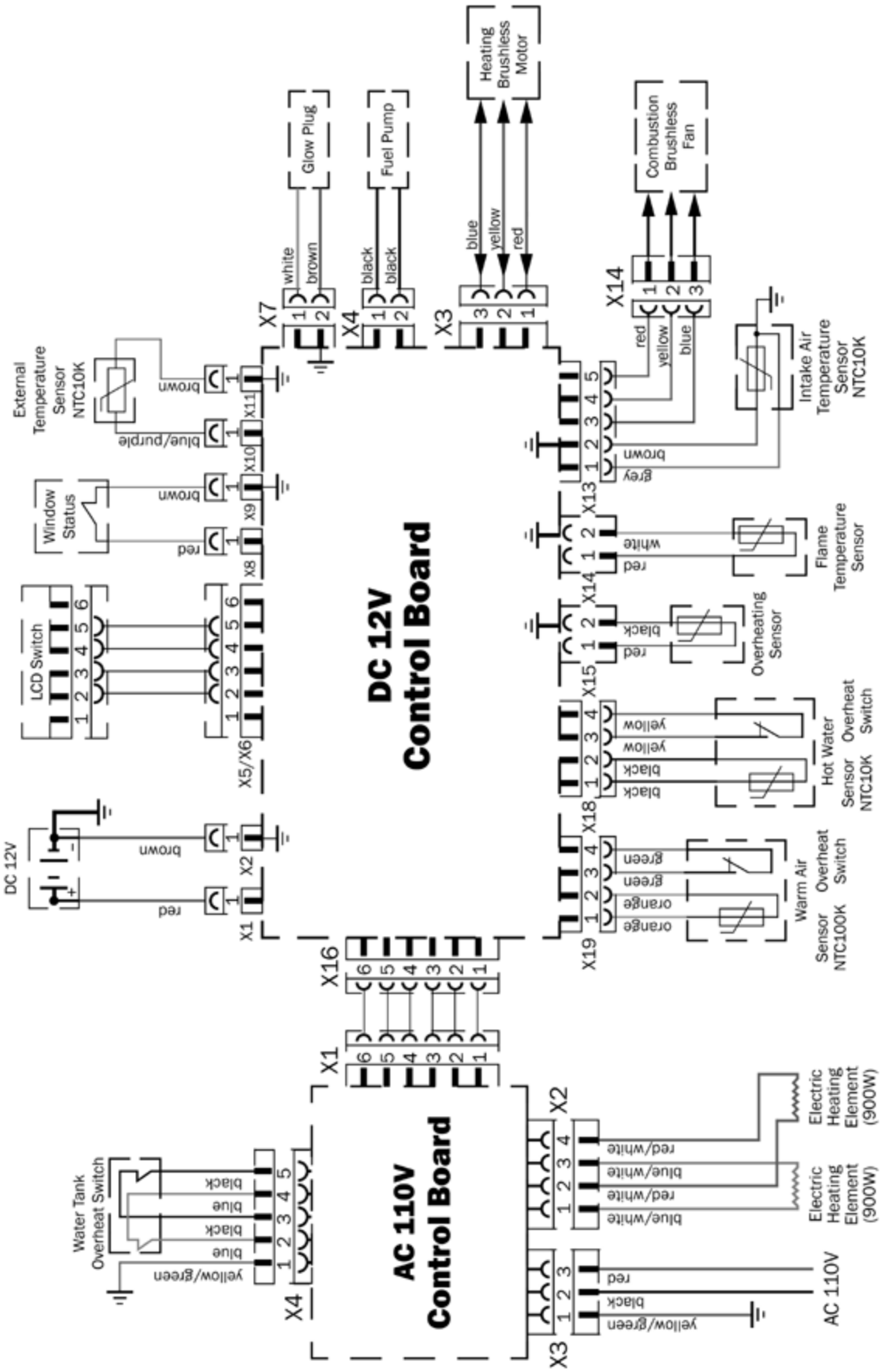
- Ensure that the system is supplied with electrical power and there are no blown fuses.
- Ensure that there is at least ¼ tank of fuel in the vehicle fuel supply and the fuel filter (*diesel only*) is not clogged.
- Make sure all the electrical and plumbing connections are connected and secure.
- Ensure there are no faults on the LCD. If there are, determine the fault and remedy. Refer to the table below for the fault code.

Fault Codes			
Error Code	**Fault Name**	**Remedy**	
10	Over-voltage	Check vehicle power supply	
11	Low Voltage	Check vehicle power supply	
21	Warm air outlet temperature sensor disconnect	Check temperature sensor connections (Page 20)	
22	Warm air outlet temperature sensor short circuit	Check temperature sensor wiring (Page 20)	
23	Water temperature sensor disconnect	Check temperature sensor connections (Page 19)	
24	Water Temperature sensor short circuit	Check temperature sensor wiring (Page 19)	
25	External temperature sensor disconnect	Check temperature sensor connections (Page 22)	
26	External Temperature sensor short circuit	Check temperature sensor wiring (Page 22)	
27	Combustion support temperature sensor disconnect	Check temperature sensor connections (Page 22)	**IAT Sensor**
28	Combustion support temperature sensor disconnect	Check temperature sensor wiring (Page 22)	**IAT Sensor**
31	Combustion Failure	• Check fuel supply system (Page 15) • Check intake and exhaust (Page 24) • Check ignition/glow plug (Page 13) • Check DC power supply • Check flame sensor (Page 18)	
32	Combustion failure		
33	Flame sensor fault	• Check flame sensor wiring • Check flame sensor (Page 18)	
41	Warm air outlet overheats	• Check air outlet for blockages • Open all vent covers • Check air overheat switch (Page 20)	
42	Warm air overheat switch protection	• Check air outlet for blockages • Check air overheat switch (Page 20)	
43	Water overheat	• Check water tank levels • Ensure heater tank is full • Check sensor wiring/connections • Check air outlet for blockages	

Error Code	Fault Name	Remedy
44	Warm air overheat switch protection	• Check air outlet for blockages • Open all vent covers • Check warm air overheat switch
45	Overheat fault	• Check air outlet for blockages • Check water temperature sensor • Check warm air sensor
51	Communication fault	• Check network cable • Check heater power • Check PCB
61	Fuel Pump Open Circuit	• Check fuel pump lead for damage • Check fuel pump wire connections • Check fuel pump • Check PCB
62	Fuel pump Short Circuit	• Check fuel pump lead for damage • Check fuel pump wire connections • Check fuel pump • Check PCB
63	Electric element circuit broken	• Check power supply voltage • Check resistance at room temp (0.2Ω/12V) • Check 110V AC PCB
65	No power to electric element	• Check 110V AC PCB
81	Combustion fan disconnect	• Check combustion fan wiring • Check combustion fan
82	Combustion blower boot failure	• Check blower motor lead wire • Check combustion air blower
83	Combustion blower speed too low	• Check combustion air blower motor • Check combustion fan wiring
84	Warm air blower motor disconnect	• Check warm air blower motor • Check warm air blower wiring
85	Warm air blower motor boot failure	• Check blower motor lead wire • Check warm air blower motor
86	Warm air blower speed too low	• Check warm air blower motor • Check warm air blower wiring
110	Window alarm	• Close window • Check window alarm bridge/wiring
120	Low Voltage Fault	• Check power supply and connections
220	220V Disconnect	• Check AC 220V/110V power supply

Heater Lock-out Reset Procedure

To reset the heater from a lock-out, simply turn off the heater and disconnect power supply to the heater, wait for 20 seconds, then reconnect power supply and restart the system.


DC 12V Control Board
AC 110V Control Board
DC 12V
brown
red
X1
X2
X5/X6
LCD Switch
Window Status
brown
red
X8
X9
X10
X11
External Temperature Sensor NTC10K
brown
blue/purple
X7
white
brown
Glow Plug
X4
black
black
Fuel Pump
X3
blue
yellow
red
Heating Brushless Motor
X14
red
yellow
blue
Combustion Brushless Fan
X13
brown
grey
Intake Air Temperature Sensor NTC10K
X14
white
red
Flame Temperature Sensor
X15
black
red
Overheating Sensor
X18
black
black
yellow
yellow
Hot Water Sensor NTC10K
Overheat Switch
X19
orange
orange
green
green
Warm Air Sensor NTC100K
Overheat Switch
X16
X1
X2
X3
X4
AC 110V
yellow/green
black
red
blue/white
red/white
blue/white
red/white
Electric Heating Element (900W)
Electric Heating Element (900W)
Water Tank Overheat Switch
yellow/green
blue
black
blue
black
1 2 3 4 5 6

ELX-001-030
Electric Element Wiring Harness

ELX-000-621
LCD Control Display Cable

ELX-001-040
Water Tank Temperature Overheat Cables

ELX-001-140
12V to HV PCB Jumper Cable

ELX-001-160
12V DC Power Cable

ELX-001-170
Window Sensor Jumper Cable

ELX-001-180
Water Tank Temperature Sensors
(Updated Diesel Version)

ELX-001-240
12V Circuit Board (Gasoline)

ELX-001-371
LCD Control Display

ELX-001-380
Water Tank Temperature Overheat Trigger
(Updated Diesel/Gasoline Version)

ELX-001-120
Air Distribution Sensors

ELX-001-400
12V Circuit Board (Updated Diesel Version)

ELX-D01-930
110V Circuit Board (Diesel)

ELX-G01-930
110V Circuit Board (Gasoline)

EXX-001-030
Blower Fan Plastic Housing

EXX-001-100
Blower Fan Motor (Updated Diesel Version)

EXX-001-120
Blower Fan Motor

EXX-001-140
Blower Fan Wheel

EXX-001-220
Intake/Exhaust Outlet Port

EXX-001-260
Air Duct Mounting Bracket

EXX-001-270
Intake Tubing Bracket

Black Tubing connects unit to exhaust cap
Silver tubing connects unit to exhaust end cap.
EXX-001-770 & EXX-001-880 (combined) for Diesel heaters

EXX-001-280
Air Intake & Exhaust Assembly

HDX-001-710
M6x26 Self-Tapping Screw

EXX-001-180
Intake/Exhaust Sealing Gasket

EXX-001-290
Ducting Couplers

EXX-001-300
Ducting Tees

EXX-001-390
Combustion Fan Assembly

EXX-001-510
50-70mm Ducting Clamps

EXX-001-690
40mm Vent Cover

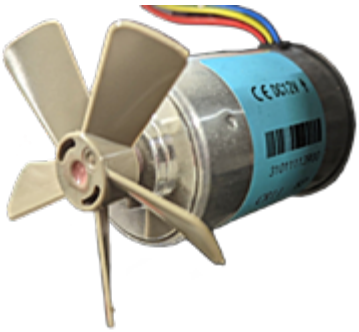
Silver tubing connects unit to exhaust end cap.

EXX-001-770
Exhaust Tubing

Black Tubing connects unit to exhaust cap

EXX-001-780
Air Intake Tubing

EXX-001-880
Air Duct Tubing



EXX-001-900
Combustion Fan Assembly (Updated Diesel Version)

FLX-001-050
Fuel Tank Standpipe

FLX-001-380
4.1mm ID Fuel Line Coupler

FLX-001-390
3.5mm ID Fuel Line Coupler

FLX-001-400
Fuel Filter (Diesel Only)

FLX-001-420
Clear Fuel Line (Pump to System) 2mm ID, 4mm OD

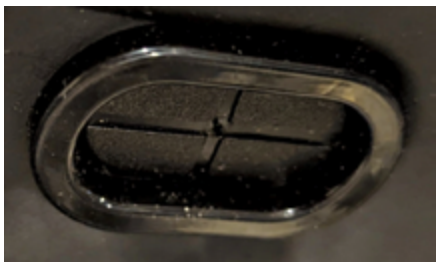
FLX-001-430
Fuel Check Valve

FLX-001-460
Blue Fuel Line (Fuel Tank to Pump) 1.5mm ID, 5mm OD

FLX-001-730
Fuel Pump Mount

FLX-001-760
Fuel Pump Assembly

HDX-001-030
Fuel Pump Cable, 6.8m Length



HDX-001-070
Oval Grommets

HDX-001-100
C-Clip for Exhaust Tubing

HDX-001-270
Exhaust Clamp

HDX-001-300
M5.5 x 32 Self-Drilling Screws

HDX-001-420
9-11mm Fuel Line Clamp

HDX-001-430
8-10mm Fuel Line Clamp

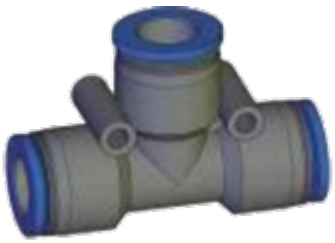
HDX-001-700
Worm Drive Clamp 70-90mm

PLX-001-120
Quick Connect Reducer **SPG12-10**

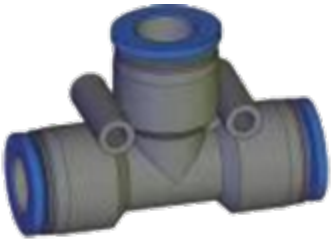
PLX-001-130
Quick Connect Reducer **SPG16-10**

PLX-001-050
Quick Connect Coupler **SPU-12**

PLX-001-060
Quick Connect Coupler **SPU-16**



PLX-001-070
Quick Connect Tee **SPE-12**



PLX-001-080
Quick Connect Tee **SPE-16**

Aqua-Hot
An AIRXCEL Brand

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.

Service Manual

Gen 1 SERIES

Aqua-Hot
An AIRXCEL Brand

Gen 1 DIESEL
AHE-GXN-DX1

Gen 1 GASOLINE
AHE-GXN-GX1

Aqua-Hot Heating Systems, LLC
7501 Miller Drive, Frederick, CO 80504

Visit us online at www.aquahot.com
Call us at 574-AIR-XCEL (574-247-9235).