



EFFECTIVE 1/15

English, Français (ET Canada)

USA & Canada : 1-866-869-3118

1120 North Main Street • Elkhart, IN 46514

Internet: http://www.atwoodmobile.com

Should you require further information, contact your dealer or nearest Atwood Mobile Products.

Follow this instruction to insure safe operation of the furnace. This book contains instructions covering the operation and maintenance of your furnace. Keep with unit at all times.

LOCATION AND PHONE NUMBERS QUALIFIED SERVICE CENTERS

- Website <u>http://www.atwoodmobile.com</u>
- Call 866-869-3118 for Atwood Service Center List

"FOR COMPLETE INSTALLATION INSTRUCTION REFER TO THE INSTALLATION OWNER'S MANUAL"



FOR YOUR SAFETY READ ALL INFORMATION BEFORE OPERATING FURNACE

SAFETY SYMBOLS

SAFETY ALERT SYMBOLS

Safety symbols alerting you to potential personal safety hazards. Obey all safety messages following these symbols.

Avoid possible injury or death



Installation of this appliance must be made in accordance with the written instructions provided in this manual. No agent, representative or employee of Atwood or other person has the authority to change, modify or waive any provision of the instructions contained in this manual.

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Refer to the installation instructions and/or owner's manual provided with this appliance.

Be sure the furnace and all ignition systems are "OFF" during any type of refueling and while vehicle is in motion or being towed.

WARNING FIRE OR EXPLOSION

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

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this appliance.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

- Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.
- Improper servicing could result in dangerous operation, serious injury, and death or property damage.
- Before servicing, disconnect all electrical power to furnace.
- When serving controls, label all wire prior to disconnecting, reconnect wires correctly.
- Verify proper operation after servicing.
- DO NOT store or use gasoline or other flammable vapors and/or liquids in the vicinity of this or any other appliance.
- DO NOT use the furnace cabinet area as a storage compartment.
- DO NOT block furnace outlet registers or return air grills.
- Keep all insulating material away from furnaces

- DO NOT touch exterior exhaust grills, when furnace is operating.
- Supervise young children in the same room as the furnace.

WARNING POSSIBLE INJURY OR DEATH

Do not operate furnace while vehicle or trailer is in motion.

- DO NOT refuel gasoline tanks or LP tanks unless the gas has been turned OFF at the LP tank disabling all gas appliances and pilot lights.
- DO NOT over fill LP gas tanks.
- LP tanks must be filled by a qualified gas supplier only. Follow tank manufacture's operating instructions located on tank.

Liquid gas from an over filled tank can be forced through the pressure regulator resulting in high pressure gas escaping, causing fire/explosions.

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Refer to the installation instructions and/or owner's manual provided with this appliance.
- Installations, repairs and preventive maintenance should be done by a qualified Service Technician only.

WARNING POSSIBLE INJURY OR DEATH

If the user of this appliance fails to maintain it in the condition in which it was shipped from the factory or if the appliance is not used solely for its intended purpose or if appliance is not maintained in accordance with the instructions in this manual, then the risk of a fire and/or the production of carbon monoxide exists which can cause personal injury, property damage or loss of life.



- Doors must be properly sealed and draft cap and assemblies must be adjusted and sealed correctly to prevent carbon monoxide from entering coach.
- Combustion air must NOT be drawn from within any living area.
- DO NOT vent exhaust into living area or outside into an enclosed porch area.
- DO NOT vent any other appliance with venting systems serving the furnace.
- DO NOT allow snow or any objects to block exhaust system of furnace.

WARNING POSSIBLE INJURY OR DEATH

Do not install screens over the intake air or exhaust vents for any reason. Screens will become restricted and cause unsafe furnace operation. Accessories are being marketed for RV products which we do not recommend. For your safety, only factory authorized parts are to be used on your furnace.

WARNING POSSIBLE INJURY OR DEATH

Do not use this appliance if any part has been under water. A flooddamaged furnace is extremely dangerous. Attempts to use the furnace can result in fire or explosion.

A qualified service agency should be contacted to inspect the furnace and to replace all gas controls, control system parts, electrical parts that have been wet or the furnace if deemed necessary. Listed below are several safety related items that you the (owner) should follow each heating season to assure continued safe operation of the furnace. A periodic inspection of the furnace by a qualified service agent is also recommended.

- Inspect furnace venting. Venting must be free of obstructions, void of soot and properly terminated to the atmosphere. Make sure that the vent assembly is positioned tight against outer door.
- Periodically inspect the vent for obstructions or presence of soot. Soot is formed whenever combustion is incomplete. This is your visual warning that the furnace is operating in an unsafe manner. If soot is present, immediately shut furnace down and contact your dealer or a qualified service person.
- Keep furnace clean. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, pet hair etc. It is imperative that control compartments, burners, and circulating air passageways of the appliance be kept clean and unobstructed.
- The motor is permanently lubricated and requires no oiling.
- Keep the furnace area clear of any combustible materials, gasoline, or other flammable vapor and liquids.
- Before operating furnace, check the location of the furnace vent to make sure it will not be blocked by the opening of any door on the trailer. If it can be blocked, do not operate the furnace with the door open.
- Do not restrict the flow of combustion air or the warm air circulation to the furnace. To do so could cause personal injury and/or death.
- Never operate the furnace if you smell gas. Do not assume that the smell of gas in your RV is normal. Any time you detect the odor of gas, it is to be considered life threatening and corrected immediately. Extinguish any open flames including cigarettes and evacuate all persons from the vehicle. Shut off gas supply at LP gas bottle. (See safety notice in this manual).
- Immediately shut furnace down and call a service agency if furnace cycles erratically or delays on ignition.
- Never attempt to repair the furnace yourself. Seek the help of a qualified service person.
- Never restrict the ducting installed by your trailer manufacturer. To do so could cause improper furnace operation.
- Do not install air boosters in the duct system. Such devices will cause the furnace to cycle on limit and to have erratic sail switch operation.
- Clothing or other flammable material should not be placed on or near the appliance.
- Always follow the Operating Instructions. Do not deviate from the step-by-step procedures.
- When considering add-on rooms, porch or patio, attention must be given to the venting of our furnace. For your safety, do not terminate furnace vent inside add-on rooms, screen porch or onto patios. Doing so will result in products of combustion being vented into the room or occupied areas.
- In any installation in which the vent of the appliance can be covered due to the construction of the RV or some special feature of the RV such as slide out, pop-up etc. Always insure that the appliance cannot be operated by setting the thermostat to the positive "OFF" position and shutting off all electrical and gas supply to the appliance. Never operate furnace with vent covered.
- DO NOT use petroleum or citrus type cleaner on plastic parts, as damage may occur.

OPERATING INSTRUCTIONS

NOTE: During initial firing of this furnace a burn-off of excess paint and oils remaining from manufacturing process may cause "smoking" for 5 – 10 minutes.

• FOR YOUR SAFETY READ BEFORE OPERATING •

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. DO NOT try to light the burner Α. by hand.
- BEFORE OPERATING FURNACE smell all around appliance area for gas and check fitting with a leak test solution. Be sure to smell next to R floor because some gas is heavier than air and will settle near floor.

WHAT TO DO IF YOU SMELL GAS

- Extinguish and open flame
- Evacuate all persons from the vehicle.
- Shut off the gas supply at the gas container or source.
- Do not touch and 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 gualified service technician, contact the nearest fire department.
- Do not turn on the gas supply until the gas leak(s) has been repaired.
- С Use only your hand to turn a gas control valve. Never use tools. If the valve will not turn by hand, don't try to repair it. Call a qualified Service Technician. Forcing or attempting to repair may result in a fire or explosion.
- D Do not use the appliance if any part has been under water, immediately call a gualified Service Technician to inspect the appliance and to replace any part of control system and any gas control which has been under water.

OPERATING INSTRUCTIONS

- STOP! Read the safety information above. 1.
- 2. Set the thermostat to the lowest setting.
- Turn "OFF" all electric power to the appliance. 3.
- This appliance is equipped with an ignition device which automatically lights the burner. DO NOT try to light the burner by hand. 4.
- Open the control access panel. 5.
- Turn "OFF" switch (circuit breaker or manual switch) to the "OFF" position. 6.
- 7.
- Wait (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" under FOR YOUR SAFETY READ. If you don't smell gas, go to the next step. 8
- 9 Turn the valve power switch to the "ON" position.
- 10. Close the access panel.
- 11. Turn all electric power to the appliance "ON".
- Set thermostat to desired setting. 12.
- 13. If the appliance will not operate, follow the instructions "To Turn OFF Gas To Appliance" and call your Service Technician or gas supplier.

TO TURN OFF GAS TO APPLIANCE

- Set the thermostat to lowest setting. 1.
- Turn "OFF" all electric power to the appliance if service is to be performed. 2.
- Open the access panel to turn "OFF" electrical switch. Models with no exterior access door have a switch located outside of the furnace on the left 3. front side.
- Close the control access panel.

rianglequed warning **FIRE OR EXPLOSION**

- DO NOT alter the furnace to a positive grounding system.
- DO NOT use battery charger to supply power to DC model furnaces even when testing.
- DO NOT connect 120 VAC to 12 VDC furnaces.



atmosphere and that all combustion air supplied to burner is drawn from outside atmosphere.

WARNING POSSIBLE INJURY OR DEATH

Should the gas supply fail to shut off or if overheating occurs, shut off the gas valve to the furnace before shutting off the electrical supply."

SERVICING

WARNING POSSIBLE INJURY OR DEATH

Your furnace should be inspected by a qualified service agency yearly before turning the furnace on. Particular attention should be given to the following items.

- Doors must be properly sealed and vent cap assembly must be installed correctly and sealed were needed.
- Combustion air must NOT be drawn from within any living area.
- DO NOT vent exhaust into living area or outside into an enclosed porch area.
- DO NOT vent any other appliance with venting systems serving the furnace.
- DO NOT allow snow or any objects to block exhaust system or combustion air to the furnace.
- Inspect furnace installation and vent termination to be sure furnace is properly secured in place, that vent terminates to the atmosphere, and that vent tubes overlap properly and vent is tight against outer door. (See installation manual supplied with furnace). All exhaust system tubes must overlap no less than 1-1/4". All air intake tubes must overlap no less than 1/2" and be positioned for proper function.
- 2. Inspect chamber and venting to assure that these components are physically sound, without holes or excessive corrosion and that the installation and/or reinstallation are in accordance with Atwood Mobile Products Installation Instructions. (Reference Installation Manual supplied with furnace.)
- 3. Check the base on which furnace is mounted. Be sure it is physically sound, void of any sagging, deterioration, etc.
- Inspect furnace, the venting, ducting and the gas piping to furnace for obvious signs of deterioration. Correct any defects at once. Always verify proper operation of furnace after servicing.
- Do not allow flue gas exhaust to have extended contact with exterior sidewall of recreation vehicle. It will cause the material to degrade over time.
- 6. You, as the owner/user, should inspect the furnace monthly during the heating season for presence of soot on vent. Operating the furnace under this condition could lead to serious property damage, personal injury or loss of life. If soot is observed on the vent, immediately shut furnace down and contact a qualified service agency.

	FIRE OR EXPLOSION					
٠	Use the correct gas specified for your furnace.					
•	Only a qualified Service Technician may convert an AFLAC					
	series furnace from LP to NAT or NAT to LP					

GAS CONVERSION

All models, except the AFLAC series, are designed for LP GAS ONLY and cannot be converted to natural gas. To verify the setting of your furnace, open furnace door and check the model number on the labels, (see table below). Use only the type of gas your furnace has been set for.

Model	Gas Type
All - AFSA	LP ONLY
All – AFS	LP ONLY
All – AFM	LP ONLY
All – AFLD	LP ONLY
All – AFLA	LP or NATURAL

- AC model units come equipped with a convertible gas control.
- Each unit is supplied with two main burner orifices. One will be installed the other will be attached to the valve.
- Each orifice will be clearly marked with a drill size as shown below.
- The pressure settings of the convertible valve are set based on the orifice being used pressure can be check based on the rating plate information or table below. Valves are not adjustable.
- Use Loctite #RC609 or some other thread lock sealant on orifice threads when installing a new orifice.
- A 1/8" NPT plug is provided in the valve to make a connection to check gas pressure.

GAS TYPE	BTU/HR	LINE PRESSURE	REG. PLUG SETTING	DRILL SIZE
Propane (LP)	35,000	11" W.C.	10.2" W.C.	#51
Propane (LP)	40,000	11" W.C.	10.0" W.C.	#49
Natural (NAT)	35,000	7" W.C.	4.0" W.C.	3.0mm
Natural (NAT)	40,000	7" W.C.	3.5" W.C.	#30

W.C.= water column

VALVE CONVERSION



ANNUAL PREVENTATIVE MAINTENANCE INSPECTION

A qualified RV service technician should perform the following preventative maintenance and safety checks ANNUALLY. Failure to properly maintain the furnace may void the furnace warranty and can result in unsafe furnace operation. Preventative maintenance not covered under warranty.

- **AIR WHEEL:** Clean and clear any obstructions. Operating furnace with any obstructing in the blower will damage wheel making replacement necessary and cause over heating cycling.
- See drawing to check which plug to use marking is on side of adjustment reg. plugs. Furnace come with LP plug installed and the natural plug in the bag with the natural gas orifice. NAT or LP is stamped on the side. The type of gas being used must match the plug and orifice in use when installed.
- 2. Unscrew plug and remove from valve reg. tower. DO NOT remove rod from inside the reg. tower or make any adjustments.
- A. When set for LP and NAT is required: Unscrew plug and replace the correct plug into tower for NAT. NAT should now be visible. Finger tighten plug or with small wrench. DON'T over tighten.

- B. When set for NAT and LP is required: Unscrew plug and replace plug with the correct plug into tower for LP.
 LP should now be visible.
 Finger tighten plug or with small wrench. DON'T over
- tighten.4. This plug has been factory calibrated for this valve only. DO NOT modify and DO NOT use plug on any other valve.
- Install the correct main burner orifice per the chart.

ORIFICE REPLACEMENT

- 1. Remove gas line from valve.
- Remove burner assembly by removing 3 screws from back wall of control box.
- 3. Remove two screws holding the burner to the manifold.
- 4. Unscrew the orifice with a 7/16" wrench or socket and replace with the correct orifice per the chart corresponding to type of gas required, which corresponds to the regulator plug setting.
- 5. Replace two screws holding burner to manifold.
- 6. Reinstall the burner assembly and put the three screws back into the control wall.
- 7. Replace the gas line and check for leaks.
- 8. After converting furnace, IN PLAIN SIGHT, put "converted" sticker (provided in you conversion packet) next to model number label.
- BURNER: Requires no adjustment, inspect annually. Burner should be cleaned with a wire brush to remove debris and corrosion build up.
- **COMBUSTION CHAMBER:** Check air intake and flue areas for internal obstructions (wasp or bird nests, etc.) To clean obstructions-remove the combustion chamber, flush with water and completely dry before replacing. Replace combustion chamber if any cracks or holes are found. This condition is not field repairable.
- CONTROL COMPARTMENT: Remove dirt and lint.
- DUCTING: Must be cleaned and clear of obstructions. Reconnect any ducts that have become loose.
- GAS PRESSURE TEST: Using a U-tube Water Monometer the entire piping system must be maintained within a range of 10-14" W.C. when all appliances are in operation. Test the gas connections for leaks with a leak test solution.
- GAS SUPPLY SYSTEM: To test for gas leaks, perform a pressure drop test according to current ANSI standards.
- GASKETS: Inspect all gaskets for tight seals, DO NOT reuse gaskets – always replace with new. Worn seals my allow carbon monoxide to enter the living areas and cause illness or death.
- **GENERAL:** Physical support system must be sound, without sagging cracks gaps, etc.
- MOTOR: Requires no oiling. Permanently sealed and lubricated.
- RETURN AIR: Must be cleaned and clear of obstructions.
- **VENTING:** Exhaust tube and furnace chamber tube must overlap no less than 1-1/4" and be positioned against the door for proper function.
- VOLTAGE: Low voltage can cause furnace to overheat and cycle. High voltage can cause unbalanced combustion and excessive motor wear. DC voltage should be maintained 11 to 13.6 VDC at the furnace during operation for best performance. Check power with applicable power sources (generator, battery and converter).
- WIRE CONNECTIONS: Check for loose, disconnected or worn insulation areas.

WARRANTY

Atwood Mobile Products hydro flame™ FURNACE LIMITED WARRANTY

Atwood Mobile Products LLC warrants to the original owner and subject to the below mentioned conditions, that this hydro flame[™] product will be free of defects in material or workmanship for a period of two years from the original date of purchase. Atwood's liability hereunder is limited to the replacement of the product, repair of the product, or replacement of the product with a reconditioned product at the discretion of the manufacturer. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other cause not arising from defects in material workmanship. This warranty extends to the original owner of the product only and is subject to the following conditions:

- For two years from the date of purchase, Atwood will repair or replace any part defective in material or workmanship. This warranty includes reasonable labor charges required to remove and replace the part. Service calls to customer's location are not considered part of these charges and are, therefore, the responsibility of the owner.
- 2. This warranty does not cover the following items classified as normal maintenance:
 - ADJUSTING gas pressure, voltage, loose wire connections, and/or thermostat heat anticipator.
 - CLEANING air wheels, burner and/or burner orifice
 - **CLEANING OR ADJUSTING** heat chamber, heat ducting, return air opening, and/or exhaust tubes.
- 3. In the event of a warranty claim, the owner must contact, in advance, either an authorized Atwood Service Center or the Atwood Service Department. Warranty claim service must be performed at an authorized Atwood Service Center (a list will be provided at no charge) or approved by the Consumer Service Department, 1120 North Main, Elkhart, IN 46514 USA. Phone: 1-866-869-3118.
- RETURN PARTS MUST BE SHIPPED TO ATWOOD "PREPAID". Credit for shipping costs will be included with the warranty claim. The defective parts become the property of Atwood Mobile Products LLC and must be returned to the Atwood Mobile Products, Quality Assurance Dept., Salt Lake City Operations, 1874 South Pioneer Road, Salt Lake City, Utah 84104, USA.
- 5. This warranty applies only if the unit is installed according to the installation instructions provided and complies with local and state codes.
- 6. The warranty period on replacement parts is the unused portion of the original warranty period.
- Damage or failure resulting from misuse (including failure to seek proper repair service), misapplication, alterations, water damage, freezing, or not using genuine Atwood parts are the owner's responsibility.
- Atwood does not assume responsibility for any loss of use of vehicle, loss of time, inconvenience, expense for gasoline, telephone, travel, lodging, loss or damage to personal property or revenues. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.
- 9. Any implied warranties are limited to (2) two years. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.
- 10. Replacement parts purchased outside of the original furnace warranty carry a 90 day warranty. This includes the part at no charge and reasonable labor charges to replace it.

This hydro flame furnace is designed for use in recreation vehicles for the purpose of heating air as stated in the "data plate" attached to furnace. Any other use, unless authorized in writing by the Atwood Engineering Department, voids this warranty.

FURNACE EXTENDED SERVICE CONTRACT

TERM AND PROVISIONS:

- Written approval by Atwood must be obtained prior to having any repairs made or parts replaced under these Warranties at other than an Atwood Authorized Service Center. A list can be obtained by calling 1-866-869-3118 or going online at: Website <u>http://www.atwoodmobile.com</u>.
- 2. Air freight or postage charges shall be borne by party claiming under Warranties. The Original Purchaser shall have the full responsibility of making the furnace or RV available for repair or replacement at Atwood Mobile Products, LLC, Salt Lake Operations or at an Atwood Authorized Service Center. Service calls are not covered under the normal two year warranty.
- Atwood's Authorized Service Centers are neither agents nor employees of Atwood and at all times will be acting as independent contractors with the Original Purchaser. Atwood will reimburse service centers for warranty service rendered on a direct basis only.
- 4. Repairs, replacement parts, and or furnace replacement authorized by Atwood shall be subject to the remainder of the warranty, of any of the aforesaid two year period.

EXCLUSIONS

(SPECIFICALLY EXCLUDED FROM THE WARRANTIES)

- 1. Incidental or consequential damages.
- 2. Damage resulting from improper installation, misuse, neglect, accident or use in violation of instructions furnished by Atwood Mobile Products, LLC.
- 3. Equipment and parts which have been altered in any way whatsoever without written authorization from Atwood Mobile Products, LLC.
- 4. All repairs and replacement parts not authorized by Atwood Mobile Products, LLC.
- 5. Preventative maintenance.

LIMITATIONS

- The maximum liability of Atwood Mobile Products, LLC in connection with this limited warranty shall not in any event exceed the original price paid for the furnace claimed to be defective or unsuitable.
- 2. Components manufactured by any supplier other than Atwood Mobile Products, LLC shall bear only that warranty made by the manufacture or supplier of that product.

EXTENDED SERVICE ORDER FORM



To qualify for any of these options, they must be purchased within 90 days of the vehicle or product purchase. Prices listed are in US DOLLARS-please make check amount accordingly. Upon receipt of this completed card together with your check or money order, Atwood will send you a written confirmation of the options you selected.

Elkhart, IN 46514

Atwood