WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier. Upon completion of the installation, these instructions should be handed to the user of the appliance for future reference.

In the Commonwealth of Massachusetts this product must be installed by a licensed plumber or gas fitter.

FEATURING: Electronic Ignition and Power Venting

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Principle of Operation:
When a hot water faucet is opened, the flow of water through the heater causes the gas valve to open. At the same time a microswitch is activated which sends a spark to the pilot. The flame sensor confirms that the pilot has been lighted and allows the first two burners to ignite. The flame sensor confirms correct activation and all burners ignite. The pilot goes out. The power exhaust system runs as long as the burners are on. The heat exchanger coils absorb the heat generated by the burners and transfer heat to the water. When the hot water faucet is shut off, the gas valve automatically closes and the burners turn off, followed immediately by the exhaust system. Your hot water faucet is an ignition key to turn on the water heater, giving you control over your hot water energy use. Every time you turn off your hot water faucet, the energy consumption for hot water returns to zero.

FEATURES
- Electronic Pilot Ignition
- On/Off switch to activate system
- Power Venting with safety shutoff
- Copper heating coils for endless supply of hot water.
- Burner output proportional to hot water flow demand for maximum energy efficiency.
- Safety flame sensor at pilot burner.
- Automatic overheating protection shut-off sensor.
- Stainless steel burners with stabilized blue flame.
- Built-in corrosion resistant power venter.
- Compact space saver: mounts on a wall with two hooks.
- Easily removable one-piece cover.
- Easy one person installation.
- Adjustable water flow restrictor to ensure that water flow demand will not exceed the heating capacity of the heater.

UNPACKING THE AQUASTAR HEATER
This heater is packed securely. The box includes one water connection fitting, a control knob, a gas pressure regulator, a pressure relief valve, an incandescent particle tray, two hooks for hanging the heater, this manual and a warranty registration card. **Do not lose this manual as there is a charge for replacement.** Please complete and return the enclosed warranty registration card. The FXHOOD horizontal vent terminator is supplied separately from the 125FX water heaters. There is a set of installation instructions in the FXHOOD box.

AquaStar 125FX LP and 125FX NG Specifications

<table>
<thead>
<tr>
<th></th>
<th>AQ125FXNG</th>
<th>AQ125FXLPG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas input</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max.</td>
<td>130 000 Btu/hr</td>
<td>125 000 Btu/hr</td>
</tr>
<tr>
<td>min.</td>
<td>28 000 Btu/hr</td>
<td>28 000 Btu/hr</td>
</tr>
</tbody>
</table>

Water Connection 1/2" Thread fitting NPT
H x W x D 29 3/4" x 18 1/4" x 8 3/4"

Vent 4"

Gas Connection 1/2" NPT thread

Min. Water Pressure 18 Psi
Max. Water Pressure 150 Psi

Shipping Weight 50.6 LB
Net Weight 44 LB

2.0 GPM at 90° rise
4.0 GPM at 45° rise

Min. Water Flow 1/2 gal/min

120V/60Hz 1.2 Amps

LP GAS Supply Pressure (before Aquastar regulator) min. 11" W.C. max. 14" W.C.*

Required LP GAS pressure at inlet tap while Aquastar is operating: 10.5" W.C.

LP GAS Burner Manifold pressure while Aquastar is operating at maximum input: 9.9" W.C.

Natural Gas Supply Pressure (before Aquastar regulator) min.: 7" W.C. max.: 14" W.C.*

Required Natural Gas Pressure at inlet tap while Aquastar is operating: 5.7" W.C.

Natural Gas Burner Manifold pressure while Aquastar is operating at maximum input: 5.38" W.C.

* Inlet gas pressure before Aquastar regulator must not exceed this value. Pressure may need to be adjusted for high altitudes, see page 10.
MINIMUM INSTALLATION CLEARANCES FROM COMBUSTIBLE AND NON COMBUSTIBLE MATERIALS FOR ALCOVE OR CLOSET INSTALLATIONS

<table>
<thead>
<tr>
<th></th>
<th>MODEL 125FX</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP (A)</td>
<td>12 &quot;</td>
</tr>
<tr>
<td>FRONT (B)</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>BACK</td>
<td>0 &quot; *</td>
</tr>
<tr>
<td>SIDES</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>FLOOR (C)</td>
<td>12 &quot;</td>
</tr>
<tr>
<td>VENT DIAMETER</td>
<td>4 &quot;</td>
</tr>
</tbody>
</table>

* On a combustible wall surface the unit should be mounted away from the wall to provide adequate clearance of the vent pipe. See page 5 for instructions.

AQUASTAR MODEL 125FX
GENERAL RULES TO FOLLOW FOR SAFE OPERATION

1. You should follow these instructions when you install your heater. In the United States: The installation must conform with local codes or, in the absence of local codes, the National Fuel Gas Code ANSI Z223.1/NFPA 54.

In Canada: The Installation should conform with CGA B149.1,2 INSTALLATION CODES and/or local installation codes.

2. Carefully plan where you install the heater. Correct combustion air supply and flue pipe installation are very important. If not installed correctly, fatal accidents can be caused by lack of air, carbon monoxide poisoning or fire.

3. The place where you install the heater must have enough ventilation. The National Fire Codes do not allow gas fired water heater installation in bathrooms, bedrooms or any occupied rooms normally kept closed. See the section below on locating the heater.

4. You must install your heater so that the venting complies with all requirements. See section on Venting the Heater, pages 6 and 7.

5. The appliance must be disconnected from the gas supply piping system during any pressure testing at pressures in excess of 1/2 Psig (3.5 kPa).

The appliance must be isolated from the gas supply piping during any pressure testing of the gas supply piping system at test pressures in excess of 1/2 Psig (3.5Kpa). The appliance and its gas connection must be leak tested before placing the appliance in operation.

6. Keep water heater area clear and free from combustibles and flammable liquids. Do not locate the heater over any material that might burn. Do not install heater over carpeting.

7. Correct gas pressure is critical for the optimum operation of this heater (see specifications on page 2 and chart on page 9). Gas piping must be sized to provide the required pressure at the maximum output of the heater. Check with your local gas supplier, and see the section on connecting the gas supply.

8. Should overheating occur or the gas supply fail to shut off, turn off the gas supply at the manual gas shut off valve on the gas line.

9. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.

10. When installed, the appliance must be electrically grounded in accordance with local codes or, in the absence of local codes, in accordance with the National Electrical Code ANSI/NFPA 70 and/or the CSA 22.1 Electrical Code.

PROPER LOCATION FOR INSTALLING YOUR HEATER

Carefully select the location of your new heater. For your safety and for proper heater operation, you must provide an abundant supply of combustion air and a proper venting installation.

The heater may still operate even when improperly vented. It will, however, be less efficient and could eventually damage the heater. It could even result in human sickness or death due to oxygen deprivation and carbon monoxide poisoning. Before installing the unit, be certain you have the correct heater for your type of Gas – Propane or Natural Gas. Identification labels are found on the shipping box, and on the rating plate which is located on the right side panel of the cover. Also, each burner orifice is stamped with a number (79 for LPG and 120 for Natural Gas).

Follow the guidelines below:

1. National building codes require that you do not install this appliance in bathrooms, bedrooms, unvented closet or any occupied rooms normally kept closed.

2. Simultaneous operation of other appliances such as exhaust fans, ventilation systems, clothes dryers, fireplaces or wood stoves could create a vacuum effect in your home which could cause dangerous combustion by-products to spill back into your home rather than venting to the outside through the flue. Confirm that your Aquastar is venting properly when all these other appliances are running. See page 6 to test venting performance.

Do not obstruct the flow of combustion air to the appliance. This appliance is power vented and uses room air. Note: Electrical power is required to operate the power exhaust. Proper air supply to the appliance is essential. If installed near a clothes dryer it is very important that the dryer be properly vented. Failure to properly vent a dryer could result in a gradual accumulation of lint on the water heater fin coils and burners, leading to a dangerous condition of vent blockage and poor, unsafe combustion.

3. Your hot water lines should be kept short to save energy. It is always best to have hot water lines insulated.

WARNING: DO NOT INSTALL IN AN AREA WHERE IT COULD FREEZE. This heater is neither designed for nor approved for outside installation. Drain the heater entirely if freezing temperatures are anticipated in area where heater is installed by disconnecting both the inlet and outlet water connections from the heater (disconnect the outlet flex line from where it connects to the copper heat exchanger). Additionally, remove the drain plug under the water valve. See Fig 1.

WARNING: Flammable materials, gasoline, pressurized containers, or any other items or articles that are potentially fire hazards must NOT be placed on or adjacent to the heater. The appliance area must be kept free of all combustible materials, gasoline and other flammable vapors and liquids.
COMBUSTION AIR REQUIREMENTS

The AquaStar water heater holds cold water in its copper heat exchanger and brass water valve when not in use. Because of this, any cold air that comes in through the unit’s vent pipe is capable of freezing these components. This Installation Manual specifies the vent length requirements and the amount of combustion air required for this unit. When all requirements are followed, the unit will operate properly and safely. However, there may still be a risk of freezing due to negative draft if all the combustion appliances in the area are not being supplied with a sufficient amount of make-up air. A wood stove or furnace can rob the make-up air in the AquaStar’s vent pipe, leaving the cold infiltrating air capable of freezing the cold water in the AquaStar heat exchanger. To prevent this the FXHOOD horizontal vent terminator, which is supplied separately with the water heater, needs to be installed on the end of the horizontal vent run (see page 7). The FXHOOD is a CSA approved vent terminator for the Aquastar 125FX and has a built in back draft flapper.

Observe the following instructions concerning combustion air.

Appliances located in unconfined spaces:

a) An unconfined space is one whose volume is greater than 50 cubic feet per 1000 Btu per hour of the combined rating of all appliances installed in the space. That would be 6500 cubic feet for the AquaStar 125FX alone.
b) In unconfined spaces in buildings of conventional frame, masonry, or metal construction, infiltration is normally adequate to provide air for combustion, ventilation, and dilution of flue gasses.

Appliances located in confined spaces: The confined space must be provided with two permanent openings, one commencing within 12 inches of the top and one commencing within 12 inches of the bottom of the enclosure. Each opening must have a minimum free area of one square inch per:
- 1000 Btu/hr if all air is taken from inside the building.
- 2000 Btu/hr if all air is taken from the outside by horizontal ducts.
- 4000 Btu/hr if all air is taken from the outside by direct openings or vertical ducts.

Or the confined space must be provided with one permanent opening or duct that is within 12 inches of the ceiling of the enclosure. This opening must have a minimum free area of one square inch per:
- 3000 Btu/hr if all air is taken from the outside by a direct opening or vertical duct.

Louvres, grills and screens have a blocking effect. If the effective free area is not known, assume it is 20 % to 25% of the total opening for wood louvers and 60 % to 75% for metal louvers. Refer to the National Fuel Gas Code for complete information. In buildings of tight construction all air should be taken from outside.

This product is not approved for manufactured homes (mobile home), recreational vehicles (RV) or boats. Reference ANSI Z21.10.3.
This product is neither designed or approved for outside installations.

CLEARANCES

The Aquastar 125FX is design certified for installation on a combustible wall and for installation in an alcove or closet with the minimum clearances to combustible and non-combustible construction listed below

A. Top 12 inches (305 mm)
B. Front 4 inches (102 mm)
C. Back 0 inches*
D. Sides 4 inch (102mm)
E. Bottom 12 inches (305 mm)

* On a combustible wall surface the unit should be mounted away from the wall to provide adequate clearance of the vent pipe. Clearance from the vent pipe is dependent upon the clearance rating of the venting material used. See VENTING section.
MOUNTING INSTALLATION

The Aquastar 125FX is design certified for mounting on a wall. Secure the two L shaped hooks, which are provided with heater, to a wall surface. Place them 13 ¼" apart as shown in Fig 2.

Do not install this appliance on a carpeted wall or over floor covering which is combustible, such as carpet. The heater must be mounted on a wall using appropriate anchoring materials. If wall is a stud wall sheathed with plasterboard, it is recommended that support board(s) either 1x4’s or 1/2” (minimum) plywood first be attached across a pair of studs and then the heater should be attached to the support boards. See Fig 2.

NOTE: Additionally the 125FX should be spaced away from any combustible wall surface to provide the necessary clearance that the venting material specifies must be maintained between the vent pipe and a combustible surface. See VENTING section. Also, review the FXHOOD horizontal vent terminator instruction sheet (provided with the FXHOOD) prior to installation.

In earthquake-prone zones, CEC recommends that installers use a large washer and lag screw through the existing holes used to hang the heater to affix the upper third of the heater to the mounting board. To affix the lower third of the heater, CEC recommends that two new holes be drilled in the heater’s frame, each one 16 inches below the top two holes, and that washers and lag screws be used to secure the lower portion of the heater to a spacing board.

Expansion and contraction of piping due to changing water temperature in the pipes imparts movement to the heater which, if mounted directly to a brittle, friable board, such as plasterboard, can cause failure of mounting.

The incandescent particle tray (shipped loose in the carton with the water heater) must be attached at the bottom of the water heater front cover at the time of installation. Use the screws provided. See figure 3.

NOTE: Additionally the 125FX should be spaced away from any combustible wall surface to provide the necessary clearance that the venting material specifies must be maintained between the vent pipe and a combustible surface. See VENTING section. Also, review the FXHOOD horizontal vent terminator instruction sheet (provided with the FXHOOD) prior to installation.
VENTING

WARNING: Do not reduce the vent pipe size and do not common vent with any other vented appliance or stove.

This appliance must be vented horizontally to the outside with a sealed 4" single wall vent pipe. The appliance’s flue gasses are under positive pressure and must travel through a single wall 4" pipe that is sealed gas tight. The 4" single wall vent pipe can be either stainless steel (AL29-4C) or galvanized steel with at least 26 gauge. CEC recommends the use of stainless steel vent pipe (which is equipped with sealing gaskets) for ease of installation and durability. When using galvanized vent pipe a minimum of 4 sheet metal screws per connection must be installed and all seams must be sealed with an approved high temperature silicone sealant. The vent system must be gas tight. See Fig. 4 for suggested venting installation diagrams.

The 125FX shall not be vented in combination with any other appliance. This appliance may only be vented horizontally with a dedicated sealed single wall vent. The 125FX shall not be vented into masonry chimneys or existing vertical vents of any material.

CAUTION: 125FX vent system must be installed by a qualified agency in accordance with these instructions. If improperly installed a hazardous condition such as explosion or Carbon Monoxide poisoning could result. Controlled Energy Corporation will not be responsible for improperly installed appliances.

Establish vent clearances that comply with vent manufacturer’s specifications. In all cases follow local codes. See table below.

The vent diameter must be 4". The appliance should be located as close to the point of termination as possible (see Fig. 5 for locating the terminator). The vent system should be as straight and short as possible. The vent pipe must be 4" single wall stainless steel (AL29-4C) or galvanized steel pipe of 26 minimum gauge. Maximum vent length is 15 feet (4.6 m) with two 90-degree elbows. Subtract 5 feet from the total vent length for each additional 90-degree elbow used. No more than four 90-degree elbows may be used. Any short vertical portion of vent pipe used in the vent system shall be considered part of the allowable 15 feet (4.6 m) maximum run. Support the vent run at 4 foot intervals with overhead hangers. Horizontal sections of vent must rise ¼" for every foot of horizontal length. Any vent section greater than 45 degrees is considered an elbow.

Note: Single wall pipe should not be used in concealed, unoccupied or unheated locations. Listed thimbles or collars are necessary to pass through wall partitions. If the vent system passes through combustible areas where the vent clearance requirements cannot be maintained, it is permissible to chase straight sections of sealed 4 inch single wall vent through 5 inch (or greater) Type-B vent. The distance to combustibles using this chase technique is 1 inch. Note: Type-B vent should never be used as the actual vent system for the 125FX, as it is not gas tight.

Freeze Warning:
As mentioned on Page 5, negative air pressure in cold climates will cause a reverse airflow in the vent system that can freeze and damage the Aquastar heat exchanger when not in use. To prevent this the FXHOOD horizontal vent terminator, which was supplied separately with the water heater, needs to be installed on the end of the horizontal vent run (see page 8). The FXHOOD is a CSA approved vent terminator for the Aquastar 125FX and has a built in back draft flapper.

Flue Gas Sensor:
The 125FX is equipped with a Flue Gas Sensor; it’s mounted on the left side of the draft diverter (Flue Gas Sensor - #33 on page 19). Before leaving the installation site verify proper Flue Gas Sensor operation by temporarily blocking termination outlet. Once blocked then operate the heater, the unit should shut down within 1-3 minutes when the flue gases are blocked. You must reset the electrical power to the heater after this safety test has been conducted, otherwise the unit will not operate.

<table>
<thead>
<tr>
<th>Venting Material Options</th>
<th>Exhaust vent diameter</th>
<th>Exhaust vent maximum distance</th>
<th>Vent pipe within an unenclosed space</th>
<th>Vent pipe within an enclosed space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single wall stainless steel (AL29-4C) sealed vent pipe</td>
<td>4 inch</td>
<td>15 feet (4.6 m) with two elbows. Less 5 feet for each additional elbow.</td>
<td>*See manufacturer’s specifications</td>
<td>*See manufacturer’s specifications</td>
</tr>
<tr>
<td>Single wall galvanized vent pipe (min. 26 gauge and sealed with high temperature silicone)</td>
<td>4 inch</td>
<td>15 feet (4.6 m) with two elbows. Less 5 feet for each additional elbow.</td>
<td>6 inches</td>
<td>NOT PERMISSIBLE</td>
</tr>
</tbody>
</table>

*Stainless steel (AL29-4C) vent pipe manufacturer’s are Z-Flex, Protech and Heat Fab. The manufacturer’s specified clearances are identified on the venting material. NOTE: clearance distances are variable depending if the vent pipe is installed in an enclosed or unenclosed space, the exhaust flue gas temperature and the orientation of the vent pipe.
Fig 4: Some Venting Guide Suggestions

An approved side wall vent terminal must be used when the water heater is vented through a side wall. Locate in accordance with ANSI Z223.1 and local applicable codes. See Fig 5 for restrictions in location of vent terminal in relation to opening doors and windows, grade, and forced air inlets. Be certain that snow and ice will not interfere with the vent.

4" single wall venting only. Use stainless steel (AL29-4C) or galvanized pipe of 26 minimum gauge must be used. Each connection must be properly sealed.

Approved Vent Terminal (FXHOOD or other approved terminal)
The FXHOOD is design approved with the Aquastar 125FX and has a built in back draft flapper to prevent negative air from freezing the Aquastar – see Fig. 5 for restrictions in location of vent terminal.

Approved Vent Terminal (FXHOOD or other approved terminal)
4" single wall venting only. Use stainless steel (AL29-4C) or galvanized pipe of 26 minimum gauge must be used. Each connection must be properly sealed.

HORIZONTAL SIDE WALL
* Maximum 15 feet with 2 elbows.
Deduct 5 feet for each additional elbow.
The approved vent terminal must be installed so that flue gases will not jeopardize people, overheat combustible structures or enter into buildings, and so that proper clearances are maintained (See Fig 5).

- The vent terminal shall not be less than 7 feet above a public walkway.
- The vent terminal shall terminate at least 3 feet above any (mechanical) air inlet within 10 feet.
- The vent terminal shall not be within a 6-foot radius from a gas meter or regulator.
- The vent terminal shall be a minimum of 6 feet from any combustion air inlet.
- The vent terminal shall terminate from an opening window, at least 4 feet below or 4 feet horizontally from the opening.
- The vent terminal shall terminate from a door, at least 1 foot above and 4 feet horizontally from the door.
- The vent terminal shall not be less than 3 feet from an adjacent building.
- The vent terminal shall not be less than 1 foot above grade.

Fig 5: Side wall exit locations for mechanical draft vent terminals
GAS CONNECTIONS

NOTE: The AquaStar 125FX is supplied with a gas pressure regulator that must be installed on the heater before attaching the gas supply line. See figure 6. Failure to install the gas regulator as shown in figure 6 will be a violation of CSA certification of the unit. The regulator supplied with the heater is preset for the gas shown on the rating plate to the correct pressure. It is an appliance level regulator designed for (low inlet) pressure (less than 1/2 Psig or 15" W.C.) DO NOT connect to an unregulated or high pressure propane line or to a high pressure commercial natural gas line.

Fig. 6 - Appliance pressure regulator
(with directional arrow on reverse side pointing up)

GAS LINE SIZING

The pressure regulator provided with the heater is adjusted to deliver the proper gas pressure (as indicated on the rating plate and in the manual for altitude up to 2000 feet (660 meters) above sea level. On appliances being installed above 2000 ft (660 meters) elevation, the inlet gas pressure should be set at installation to the value shown below.

NOTE: The gas pressures specified below refer to pressures taken at the pressure tap on the gas inlet pipe just above the regulator (See Fig 6). These readings should be taken while the heater is operating at full input – i.e. maximum water flow with the temperature dial selector turned all the way clockwise.

MAXIMUM INLET GAS FLOW PRESSURE SETTING

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Natural Gas inches W.C:</th>
<th>Liquid Propane inches W.C:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0' - 2.000 ft</td>
<td>5.7&quot;</td>
<td>10.5&quot;</td>
</tr>
<tr>
<td>2.000 ft - 4.500 ft</td>
<td>4.6&quot;</td>
<td>8.4&quot;</td>
</tr>
</tbody>
</table>

Above 4.500 ft consult your local gas provider.

GAS LINE SIZING

-It is strongly recommended that the Natural Gas pipe be Black Iron pipe the entire distance from the outside meter to the inlet of the Aquastar regulator. 1/2" Black Iron pipe up to 10 feet, 3/4" Black Iron pipe up to 40 feet and 1" Black Iron pipe up to 125 feet distances. Flex line tubing is NOT recommended, but if used then oversize it.

-It is strongly recommended that the LP Gas pipe be semi-rigid copper or Black Iron pipe from the outside regulator to the inlet of the Aquastar regulator. For semi-rigid copper piping: 5/8" up to 20 feet and 3/4" up to 50 feet distances. For Black Iron piping: 1/2 “ up to 30 feet and 3/4" up to 150 feet distances. Flex line tubing is NOT recommended, but if used then oversize it.

THESE FIGURES ARE FOR AQUASTAR SUPPLY ONLY, ALL OTHER APPLIANCES IN THE BUILDING WILL NEED TO BE INCLUDED IN THE PIPE SIZING.

National Fuel Gas Code requires that a sediment trap (drip leg) be installed on gas appliances not so equipped. The drip leg must be accessible and not subject to freezing conditions. Install in accordance with the recommendations of the serving gas supplier.

WARNING: The heater must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of .5 psig. The water heater must be isolated from the gas supply piping system by closing the manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or greater than .5 psig.

The water heater, including the pressure regulator provided with it, must not be operated at gas supply pressures in excess of .5 psig. If overpressure has occurred, such as through improper testing of the gas lines or malfunction of the supply system, the gas valve and regulator must be checked for safe operation.

When your connections are made, check for gas leaks at all joints (not just the ones you made). Apply some soapy water to all gas fittings and gas valve. Soap bubbles are a sign of a leak.

NOTE: Do not apply soap solution to pilot filter screen or pilot orifice area. If you have a leak, shut off the gas. After verifying that required gaskets are in place, tighten appropriate fittings to stop leak. Turn the gas on and check again with a soapy solution. Never test for gas leaks using a match or flame.
GAS PIPING, CONNECTIONS

Before connecting the gas supply, check the rating plate on the right side of the front cover to be sure that the heater is rated for the same gas to which it will be connected.

In the United States: The installation must conform with local codes or, in the absence of local codes, the National Fuel Gas Code ANSI Z223.1/NFPA 54.

In Canada: The Installation should conform with CGA B149 INSTALLATION CODES and/or local installation codes.

FOR NATURAL GAS

Maximum Capacity of pipe in Cubic Feet of Gas per Hour for Gas Pressure of 0.5 Psig or less and a Pressure drop of 0.3 in Water Column.

(Based on a 0.60 Specific Gravity Gas) Btu numbers given in thousands.

<table>
<thead>
<tr>
<th>Nominal Iron Pipe Size, Diameter inches</th>
<th>Length of Black Iron Pipe, Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>10  20  30  40  50  60  70  80  90  100  125  150  175  200</td>
</tr>
<tr>
<td>3/8</td>
<td>0.364 32  22  18  15  14  12  11  10  9  8  8  7  6</td>
</tr>
<tr>
<td>1/2</td>
<td>0.493 72  49  40  34  30  27  25  23  22  21  18  17  15  14</td>
</tr>
<tr>
<td>3/4</td>
<td>0.622 132 92  73  63  56  50  46  43  40  38  34  31  28  26</td>
</tr>
<tr>
<td>1</td>
<td>1.049 520 350 285 245 215 195 180 170 160 150 130 120 110 100</td>
</tr>
<tr>
<td>1 1/4</td>
<td>1.308 1050 730 590 500 440 400 370 350 320 305 275 250 225 210</td>
</tr>
<tr>
<td>1 1/2</td>
<td>1.610 1600 1100 890 760 670 610 560 530 490 460 410 380 350 320</td>
</tr>
<tr>
<td>2</td>
<td>2.067 3050 2100 1650 1450 1270 1150 1050 990 930 870 780 710 650 610</td>
</tr>
<tr>
<td>2 1/2</td>
<td>2.469 4800 3300 2700 2300 2000 1850 1700 1600 1500 1400 1250 1130 1050 980</td>
</tr>
<tr>
<td>3</td>
<td>3.068 8500 5900 4700 4100 3600 3250 3000 2800 2600 2500 2200 2000 1850 1700</td>
</tr>
<tr>
<td>4</td>
<td>4.026 17,500 12,000 9,700 8,300 7,400 6,800 6,200 5,800 5,400 5,100 4,500 4,100 3,800 3,500</td>
</tr>
</tbody>
</table>

FOR LP GAS

Maximum Capacity of Pipe in Thousands of BTU per Hour of Undiluted Petroleum Gases (at 11 inches Water Column Inlet Pressure) (Based on a Pressure Drop of 0.5 Inch Water Column).

Maximum Capacity of Semi-Rigid Tubing in Thousands of BTU per Hour of Undiluted Liquified Petroleum Gases (at 11 inches Water Column Inlet Pressure) (Based on a Pressure Drop of 0.5 Inch Water Column)

* Source National Fuel Gas Code NFPA 54, ANSI Z223.1 - No Additional Allowance is necessary for an ordinary number of fittings.
WATER CONNECTIONS

Install the heater centrally in the building if possible and make hot water piping runs as short as possible. When facing the heater, the cold water inlet will be on the right and the hot water outlet on the left.

Although water piping throughout the building may be other than copper, copper or galvanized piping should be used when connecting to the heaters ½" male NPT flex connectors (follow local codes if more stringent). Plastics or other PEX type plumbing line materials are not suitable for connecting directly to the water heater. Keep water inlet pipe to no less than ½" (19.05mm) diameter to allow the full flow capacity. If the cold and hot connections to the heater are reversed, the heater will not function.

The 125FX is provided with one flexible type connector that must be connected to the cold inlet fitting of the water valve as shown in Fig. 7. The union end of the flexible connector should be attached to the rear inlet port of the water valve with the supplied washer gasket. No pipe dope or thread tape is to be used at this joint. The ½" flexible hot water outlet line is supplied attached to the heater.

Be certain there are no loose particles or dirt in the piping. Blow out or flush the lines before connecting to the water heater. Full port valves should be installed on both the cold water supply and hot water outlet lines to facilitate servicing the heater (see Fig. 7). For installation on a private well system with the use of a pressure tank, the lowest pressure range setting recommended is 30-50 psi (2.07-3.45 bar).

Connecting the pressure relief valve (PRV)

The listed pressure relief valve supplied with the heater must be installed at the time of installation. Should a discharge line be added to the PRV no valve is to be placed between the PRV and the heater. No reducing coupling or other restriction may be installed in the discharge line. The discharge line must be installed such that it allows complete drainage of both the PRV and the line. The location of the PRV must be readily accessible for servicing or replacement and be mounted as close to the water heater as possible. To install the PRV, a suitable fitting connected to an extension on a “T” fitting can be sweated to the hot water line. See Fig 8.
ELECTRICAL CONNECTIONS

⚠️ WARNING: For safety reasons, disconnect the power supply to the heater before any service or testing is performed.

⚠️ WARNING: This heater must be electrically grounded in accordance with the most recent edition of the National Electrical Code, NFPA 70. In Canada, all electrical wiring to the heater should be in accordance with local codes and the Canadian Electrical Code, CSA C22.1 Part 1. Do not rely on the gas or water piping to ground the metal parts of the heater.

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring error can cause improper and dangerous operation. Verify proper operation after servicing.

The AquaStar 125FX requires an electrical power supply from 120VAC 60Hz circuit and must be properly grounded.
- A means for switching off the 120 VAC power supply must be provided.
- The heater is wired as shown in the wiring diagram. (Fig 9).

Fig 9: Wiring Diagram for AQ 125FX
OPERATING INSTRUCTIONS

Before operating the heater, make sure that the system is filled with water.

Open the cold water inlet supply to the heater fully. Open a hot water faucet to permit the water to fill the heater and the piping and to eliminate the air trapped in the system. Close the hot water faucet after the water flows freely and all the air has escaped from the system. The water heater is now ready to operate.

FOR YOUR SAFETY READ BEFORE OPERATING YOUR HOT WATER HEATER

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

A. This appliance is equipped with electronic ignition for lighting the pilot and main burners. When turning the heater on, follow these instructions exactly.

B. Before operating the unit, set the On/Off switch to the On (●) position. The On/Off switch is located behind the flip-down coverplate on the front panel strip. Smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS
- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor’s phone. Follow the gas supplier’s instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in the on/off control button. Never use tools. Follow these instructions exactly. If control button is jammed, close the gas supply and call a qualified service technician. Attempted forceful repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

LIGHTING AND OPERATING INSTRUCTIONS

1. STOP! Read the safety information on the front panel of the heater.

2. The gas valve must be turned off by putting the On/Off switch to position "O" (see fig. 10). Wait five (5) minutes to clear out any gas. If you smell gas, STOP! Follow "B" in the safety information above. If you don’t smell gas, go to next step.

3. This water heater is equipped with a safety pilot burner and an automatic ignition control system.

4. Set the ON/OFF switch (flip down cover plate on front panel strip) marked ○ / ● to the “●” position. In this position the water heater is ready to use.

5. Verify that the power supply to the appliance is turned on.

6. Turn the hot water faucet on to the minimum flow required to activate the heater. The automatic ignition system first ignites the safety pilot burner which then ignites the main burner in about 4 seconds. The power exhaust will then activate.

7. The pilot flame will extinguish 10-30 seconds after the burners come on. The burners will remain on until the hot water tap is turned off.

NOTE: On a first time installation, existence of air in the gas supply line and in the water line may cause some ignition delay. In that case, repeatedly open and close the hot water tap in order to restart the ignition process until all the air has been purged.

TO TURN OFF GAS TO APPLIANCE

Turn off the manual lever on the gas supply line to the heater and set the ON/OFF switch to the OFF (○) position, see Fig. 10.

SETTING THE WATER TEMPERATURE

To operate the heater, set the ON/OFF switch to position “●”. The switch is located behind the flip down cover plate on the front panel strip.

To shut down the gas to the heater, set the ON/OFF switch to position “○”

Temperature Adjustment Knob

Decrease temperature and increase flow

Increases temperature and decreases flow

Fig. 10 - Principles of Operation

The AquaStar 125FX LP and 125FX NG water heaters have a gas control that modulates burner input in response to flow. Its purpose is to ensure that the hot water temperature will remain steady, although the demand for water flow might vary (down to 1/2 gal/minute). To adjust the temperature on your AquaStar, turn on a hot water faucet to its maximum flow. At the AquaStar, turn the large knob located beneath the main gas controls on the front of the heater all the way to the right (clockwise). See Fig 11. This will produce a temperature rise of approximately 90°F at flow rates between .5 and 2.0 gallons per minute. Given that average incoming water temperatures are 50°F, this heater will produce approximately 140°F water at these flow rates. Turning the dial all the way to the left (counterclockwise) will produce a temperature rise of approximately 45°F for flow rates between 1.0 and 4.0 gallons per minute. This will result in a higher flow rate, but at cooler temperatures. Turning the dial to locations in between will give various temperatures between...
140° and 95°F at various flow rates between 2.0 and 4.0 gallons per minute. The position you select on the temperature selector dial will depend on the temperature of the incoming water (50°F is average in the U.S.). In warm weather regions where the incoming cold water is generally warmer, or during the hot weather months in some other areas a midway setting on the temperature selector knob will produce a temperature rise of about 70°F, giving an output of approximately 120°F. At this setting, if it is still necessary, one could mix a small amount of cold water in a shower and have a comfortable shower at about 3 gallons/minute. During the colder months, or in cold climate areas, it might be necessary to set the control all the way clockwise to the right for maximum temperature rise. Do not supply the AquaStar 125FX with preheated water. For this type of application, purchase a solar model 125 B LPS or 125 B NGS.

If the inlet water temperature to the water heater is very warm the heater can produce temperatures that may be found to be too hot. A temperature balance shower valve can automatically mix in cold water to reduce such hot water temperature, in the event of any temperature instability with the use of a temperature balance shower valve, refer to shower valve manufactures instructions for internal adjustment setting. Adjustments should be made to the hottest setting in the shower valve. Additionally the temperature control of the heater can be adjusted to produce a more comfortable hot water temperature.

**Water Valve** (Part # 8707002802): The water valve on this heater should be serviced periodically. Lubricate component #36 on page 20 with a small amount of silicon, faucet or lithium grease every two years to keep its o rings fresh and pushrod sliding smoothly. Every 3-5 years replace component #36 on page 20. The frequency will depend on the mineral content of the water and conditions of use or whenever signs of corrosion appear at the gas and water valve joint. Periodically check that the water inlet filter (#27 on page 20) is clean as well.

**NOTE:** If water valve is removed, be sure to also inspect the o ring seal on the end of the right hand side water pipe before re-installing. Lubricating the o ring with lithium or faucet and valve grease is recommended.

**Pilot Flame:** The pilot flame should burn with a clean, sharp, blue flame and should resemble the diagram in Fig. 12. If the flame is soft and yellow, the pilot burner orifice may need to be cleaned or serviced. The pilot flame should be approximately 2 inches long, extending past the flame sensor. If the flame is too small, it will not reach the flame sensor and the burners will not come on.

**Correct gap between pilot burner tip and electrode tip**

**Fig. 12 - Characteristic Pilot Flame**

To clean the pilot burner and/or the pilot orifice: Turn off the gas at the unit (Position ‘O’). Remove the cover of the heater. To do so, pull off the temperature adjustment knob and unscrew and remove the temperature knob collar. Pull main cover out toward you and lift up and out. THE FOLLOWING OPERATIONS SHOULD BE PERFORMED BY A QUALIFIED SERVICE PERSON:

**Vent System:** Should be checked annually. Clean and repair as needed.

**Fig. 11 - Temperature Adjustment Knob**

MAINTENANCE AND SERVICE

⚠️ REVIEW MAINTENANCE TABLE ON THE BACK OF THIS MANUAL

Approximately once a year, the AquaStar should be checked and cleaned. To remove the front cover, first remove the incandescent particle tray, then pull off the temperature adjustment knob and unscrew and remove the plastic collar. Unscrew the central screw located at the bottom of the front cover. Pull main cover out toward you and lift up and out. THE FOLLOWING OPERATIONS SHOULD BE PERFORMED BY A QUALIFIED SERVICE PERSON:

**Water Valve** (Part # 8707002802): The water valve on this heater should be serviced periodically. Lubricate component #36 on page 20 with a small amount of silicon, faucet or lithium grease every two years to keep its o rings fresh and pushrod sliding smoothly. Every 3-5 years replace component #36 on page 20. The frequency will depend on the mineral content of the water and conditions of use or whenever signs of corrosion appear at the gas and water valve joint. Periodically check that the water inlet filter (#27 on page 20) is clean as well.

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**Pilot Flame:** The pilot flame should burn with a clean, sharp, blue flame and should resemble the diagram in Fig. 12. If the flame is soft and yellow, the pilot burner orifice may need to be cleaned or serviced. The pilot flame should be approximately 2 inches long, extending past the flame sensor. If the flame is too small, it will not reach the flame sensor and the burners will not come on.

**Correct gap between pilot burner tip and electrode tip**

**Fig. 12 - Characteristic Pilot Flame**

To clean the pilot burner and/or the pilot orifice: Turn off the gas at the unit (Position ‘O’). Remove the cover of the heater. To do so, pull off the temperature knob and unscrew and remove the temperature knob collar. Pull main cover out toward you and lift up and out. The pilot orifices should also be cleaned or replaced. Do not enlarge the orifice (see fig. 13). Do not use any wire or sharp object to clean orifices. Natural gas orifices are large enough that you can usually clean them by blowing through them. LP orifices, on the other hand, are too small to clean and should be replaced. See #3 in Trouble Shooting Section. To access the pilot orifice, remove 2 screws holding pilot assembly in place. Then loosen the compression fitting and lift up pilot burner to expose pilot orifice.
3. Water flow is not sufficient to activate heater.
Water flow rate at faucet is below minimum flow needed to activate heater. When temperature adjustment knob is turned all the way clockwise, the AquaStar model 125FX requires 1/2 gallon per minute flow to activate the heater. As a reference, this is a flow which would fill a quart jar in 30 seconds. If the temperature adjustment knob is turned fully counterclockwise, a flow rate of 1.1 gallons/minute is required to activate the heater.

4. Bad fuse
Check the viability of the fuse (see Fig 9 (#9) for location of fuse). Replace if necessary.

5. Water inlet filter is clogged
Water flow is restricted, preventing flow needed to activate heater. Clean water inlet filter screen.

6. Cross over in water lines
To confirm there is no cross-over in the plumbing, shut off the cold water supply to the AquaStar water heater and open a hot water faucet. There should not be any water flowing at that faucet. Water running is a sign of a plumbing cross-over. Consult your plumber.

7. Microswitch needs to be adjusted or replaced.
If you do not hear a click when a tap is opened, the microswitch needs to be adjusted. See Fig. 15 (#11) for location and see Fig. 14 for adjustment. The microswitch may need to be replaced.

8. Cold incoming water connection made to wrong side of heater
Make sure cold water inlet connection is on the right side when you are facing the AquaStar.

9. Water valve parts may be dirty or components damaged
First check that venturi is free of dirt particles. Water valve and component parts must be totally free of dirt.
Mineral deposits can eventually (3-5 years in hard water areas) corrode the water valve parts to a point where they will need replacing. Any sign of moisture at the bleed hole is a sign that the water valve needs to be replaced immediately.

10. Poor circuit connections at the ECO (overheat sensor) or the flue gas safety device
Ignition spark will not operate if the electrical circuit is interrupted. Check that the connections to the ECO are secure and tighten if necessary.

11. Reset electrical power to heater
If resetting the electrical power corrected the symptom then likely the unit’s Safety Spill switch (Flue gas safety device - #33 on page 19) had tripped from a flue blockage during the previous usage. Inadequate combustion air to the room area can also cause the unit to improperly vent. Improper venting or insufficient combustion air must be corrected. Consult a licensed professional to inspect the installation.

SPARKS APPEAR AT PILOT WHEN HOT WATER TAP IS TURNED ON, BUT PILOT AND BURNERS WILL NOT IGNITE

1. Air in the Gas Line
Note: Normally this is a problem only at the time of initial installation, after the pipes have been worked on, or after a propane tank has been allowed to empty, or after the heater has been shut down for a long time.
Bleed all the air trapped in the gas line by turning the hot water faucet on and off until the air has been cleared from the line.

2. No gas to the AquaStar
   A. Gas cock on gas line may not be open
   B. Gas regulator may be shut or damaged. Replace or unlock the regulator. Note: The regulator furnished with the heater is exclusively designed for low gas pressure (less than ½ psig). Excessive pressure will lock it up. Locking usually happens when the gas pressure between the gas tank and the water heater’s gas regulator has not been properly regulated. See Page 2 for recommended correct gas pressure. To unlock a regulator, consult your gas supplier or a gas technician.

3. Pilot orifice clogged or gas valve is dirty
   Clogging of the pilot burner can be caused by dust in the air or dirt in the gas. The pilot orifice or gas filter may need to be cleaned or replaced. See Fig. 13.

4. Water valve assembly needs to be checked
   If the pilot orifice is clean, the water valve assembly should be checked. The adjustment screw on the water valve micro-switch may not be tight enough (fig. 14). Remove central cap beneath micro-switch assembly, carefully loosen the adjustment screw until the pilot light ignites. At that point retighten the screw one and a half turns. See Fig 14.

5. Pilot electrovalve switch may need to be replaced (see fig 9).
   Measure millivoltage at pilot electrovalve (see Fig 9).

6. Control Box may need to be replaced (see Fig 9).
   Check wire connections and test operation of control box (see Fig 9).

PILOT SPARKS CONTINUOUSLY WITH NO WATER RUNNING

1. Microswitch needs adjustment
   If no water is running, but pilot electrode continuously sparks, the microswitch screw to the water valve needs adjustment. See Figure 14.

2. Poor circuit connections at the flue gas safety device
   The burners will not come on if the powered fan exhaust is not working. Check that the unit is plugged in and that the sensors for the flue gases are secure.

3. Confirm the ECO connections are secure.

4. The Control Box may need to be replaced (see Fig. 9).
   Check wire connections and test operation of control box (see Fig 9).

5. Burner electrovalve switch may need to be replaced (see Fig. 9).

MAIN BURNERS GO OUT DURING HOT WATER USE

1. Deficient exhaustion of flue gases
   Check that vent is correct and clear of any obstructions, that sensors for flue gases are secure and that electrical connection has been made. If the heater will not come back on, it will be necessary to turn the electrical supply to the heater off and then on again.

2. Flow rate diminished below activation rate
   Be certain that water flow is not less than required amount to activate heater.

3. Unbalanced pressure in waterlines
   The added restriction caused by the Aquastar in the hot water system can result in uneven pressures between the cold and the hot. In such cases when mixing cold water at the tap, the lower hot water pressure may be overpowered by a much higher cold water pressure, which may cause the Aquastar burners to shut down (deactivate). Make sure faucet aerators or shower heads are free of minerals. Do not add any flow restrictor to the shower head.
   Typically this deactivation symptom is a result of the hot water being too hot to use comfortably. Warm inlet water generally causes this. Lowering the control knob setting and/or reducing the inlet gas supply to the heater should correct this deactivation symptom.

4. ECO (overheat sensor) tripped due to overheating
   Do not feed preheated water to this water heater.

5. Minimum inlet pressure on well pressure tank is inadequate
   Check the inlet water pressure. For installation on a private well system with the use of a pressure tank, the lowest pressure range setting recommended is 30-50 psi (2.07-3.45 bar).
1. Temperature Selection too high
Turn the temperature adjustment knob counter-clockwise (to the left) to lower the maximum water temperature.
**Note:** This will increase the activation flow rate.

2. Inlet water temperature is very warm (60°-75°F)
Reduce inlet gas supply to lower the heaters degree rise.
**Note:** Only the Model 125BS should be used if the inlet water is preheated.
**NOTE:** Only the model 125B LPS or 125B NGS should be used if the inlet water is preheated.

3. Inlet filter screen is clogged, restricting flow
Remove screen and clean it.

---

**WATER IS NOT HOT ENOUGH**

1. Temperature selection is set too low.
Change the setting. Turn the temperature selector knob clockwise (to the right). **Note:** this will decrease the activation flow rate.

2. Gas pressure is insufficient
It is extremely important for a tankless instantaneous water heater to have the right size gas line to obtain the correct gas pressure. See specifications on page 2. Unlike storage tank water heaters, the burners of a tankless water heater must be very powerful to heat water instantaneously since they do this only at the time hot water is actually being used. It is therefore imperative that the gas pressure requirement be met exactly. Insufficient gas pressure will directly affect the water temperature at the time of usage. See page 2 for correct gas pressure settings and see page 11 for proper gas line sizing.

3. Gas supply is insufficient
Make sure your main gas line is fully opened. If using LP gas, be sure that the size of the propane tank is adequate to supply the required gas pressure. See gas pipe sizing chart on page 11.

4. Cold water is mixing with the hot water between the AquaStar and the outlet
Compare water temperature at outlet of the AquaStar (hold the AquaStar’s outlet pipe with your hand) and at the tap. If these two are very different, check for mixing valve or plumbing crossover (see “NO SPARK AT THE PILOT” paragraph 4). Where automatic “anti-scald” valves are needed. See step 9 under the problem NO SPARK AT THE PILOT. White vinegar should be applied first to any corrosion before the loosening of screws.

5. Parts in water valve are dirty or damaged, which will prevent the gas valve from being fully opened.
If the internal water valve parts are damaged from water quality or use, or there is evident corrosion where the water valve and gas valve connect, then immediate service is needed. See step 9 under the problem NO SPARK AT THE PILOT. White vinegar should be applied first to any corrosion before the loosening of screws.

---

**HOT WATER TEMPERATURE FLUCTUATES / UNIT DEACTIVATED**

1. Unbalanced pressure in waterlines
The added restriction caused by the Aquastar in the hot water system can result in uneven pressures between the cold and the hot. In such cases when mixing cold water at the tap, the lower hot water pressure may be overpowered by a much higher cold water pressure, which may cause the Aquastar burners to shut down (deactivate). Make sure faucet aerators or shower heads are free of minerals.

**Do not add any flow restrictor to the shower head.**
Typically this deactivation symptom is a result of the hot water being too hot to use comfortably. Warm inlet water generally causes this. Lowering the control knob setting and/or reducing the inlet gas supply to the heater should correct this deactivation symptom.

2. Temperature balance valves
If the inlet water temperature to the water heater is very warm the heater can produce temperatures that may be found to be too hot. A temperature balance shower valve can automatically mix in cold water to reduce such hot water temperature, in the event of any temperature instability with the use of a temperature balance shower valve, refer to shower valve manufactures instructions for internal adjustment setting. Adjustments should be made to the hottest setting in the shower valve. Additionally the temperature control of the heater can be adjusted to produce a more comfortable hot water temperature. See SETTING THE WATER TEMPERATURE section.

3. Cold water is mixing with the hot water between the Aquastar and the outlet
See #4 under “NO SPARK AT THE PILOT”.

4. Inlet water pressure is erratic due to inadequate supply water pressure or saturated pressure tank on well system
Check the inlet water pressure. For installation on a private well system with the use of a pressure tank, the lowest pressure range setting recommended is 30-50 psi (2.07-3.45 bar). Confirm that the pressure tank is not water logged.

5. Gas pressure is too low
See page 2 for correct specifications.

---

**EXHAUST FAN DOES NOT OPERATE**

1. Check the fuse (see fig 9)
2. Check all electrical connections
3. Check adjustment of microswitch (see Fig. 14)

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**FAN CIRCULATES WHEN HOT WATER IS SHUT OFF**

1. Check adjustment of microswitch (see Fig. 14)

---

**FAN OPERATES WITHOUT WATER FLOW**

1. Unplug the heater and first check that all electrical and electronic connections in the heater are clean and tight.
2. Check adjustment of microswitch (see Fig. 14).
3. Control box may need to be replaced (see Fig 9). Check wire connections and test operation of control box (see Fig 9).
Fig. 15 - Diagram of AquaStar 125FX

1. Heat exchanger
2. Pilot assembly
3. Burner manifold gas pressure test nipple
4. Main gas burner
5. Pilot gas tubing
6. Gas valve
7. Electric control box
8. Power cord
9. On/off switch
10. Temperature adjustment selector
11. Microswitch
12. Gas inlet gas pressure test nipple
13. Exhaust Fan
14. Flexible hot outlet
Fig. 16 - INTERIOR COMPONENTS DIAGRAM AND PARTS LIST
### Fig. 16
**INTERIOR COMPONENTS DIAGRAM AND PARTS LIST 125FX**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Cover</td>
<td>8 705 421 775</td>
</tr>
<tr>
<td>2</td>
<td>Temperature adjustment knob</td>
<td>8 702 000 111</td>
</tr>
<tr>
<td>3</td>
<td>Temperature adjustment collar</td>
<td>8 700 403 008</td>
</tr>
<tr>
<td>4</td>
<td>Draft diverter</td>
<td>8 705 505 451</td>
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<tr>
<td>5</td>
<td>Heat exchanger</td>
<td>8 705 406 235</td>
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<tr>
<td>6</td>
<td>Overheat sensor (ECO)</td>
<td>8 707 206 040</td>
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<tr>
<td>7</td>
<td>Main burner</td>
<td>8 708 120 298 NG</td>
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<tr>
<td>7</td>
<td>Main burner</td>
<td>8 708 120 296 LPG</td>
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<tr>
<td>8</td>
<td>Burner assembly washer</td>
<td>8 710 103 060</td>
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<tr>
<td>10</td>
<td>Pilot burner</td>
<td>8 708 105 006</td>
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<td>10</td>
<td>Pilot burner</td>
<td>8 708 105 491 LPG</td>
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<td>Piezo electrode</td>
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<td>Pilot tube</td>
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<td>Washer pilot tube</td>
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<td>15</td>
<td>Gas valve</td>
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<td>Gas valve</td>
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<td>Diaphragm switch</td>
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<td>Diaphragm switch</td>
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<td>Pilot electrovalve</td>
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<td>18</td>
<td>Burner electrovalve</td>
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<td>19</td>
<td>Cold water pipe</td>
<td>8 701 705 627</td>
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<td>20</td>
<td>Exhaust fan assembly</td>
<td>8 707 204 023</td>
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<td>21</td>
<td>Exhaust fan cable</td>
<td>8 704 401 168</td>
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<td>22</td>
<td>Outlet flex hose</td>
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<td>23</td>
<td>Washer</td>
<td>8 700 103 658</td>
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<td>24</td>
<td>Water valve</td>
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<td>25</td>
<td>Water valve cover</td>
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<td>26</td>
<td>Diaphragm</td>
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<td>27</td>
<td>Water inlet filter</td>
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<td>Water valve selector screw</td>
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<td>Volumetric water governor</td>
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<td>30</td>
<td>Venturi</td>
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<td>31</td>
<td>Electric control box</td>
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<td>32</td>
<td>Fuse T2.5A</td>
<td>1 904 521 342</td>
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<td>33</td>
<td>Flue Gas Sensor</td>
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<tr>
<td>34</td>
<td>Microswitch</td>
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<td>35</td>
<td>Set of cables</td>
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<td>36</td>
<td>Pushrod</td>
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<td>37</td>
<td>Washer connection gasket</td>
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<td>38</td>
<td>Water elbow fitting</td>
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<td>39</td>
<td>Connecting pipe hot</td>
<td>8 700 715 178</td>
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<td>Water valve set screw</td>
<td>8 703 401 051</td>
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<tr>
<td>41</td>
<td>Washer</td>
<td>8 710 103 045</td>
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<tr>
<td>42</td>
<td>Flame sensor</td>
<td>8 708 107 007</td>
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</tbody>
</table>
Fig. 17 - Flow chart of Aquastar 125 FX

Operation

Safety

(safety circuit always active and reactive anytime during operation of the appliance)

Operation

Pre-start procedure

Ignition procedure
LIMITED WARRANTY

Aquastar

General
Aquastar water heaters are warranted by the Manufacturer (BOSCH) through Controlled Energy Corp. Controlled Energy Corp. (CEC) will furnish a replacement heat exchanger and will furnish a replacement of any other part which fails in normal use and service within the applicable periods specified below, in accordance with the terms of this warranty. The CEC replacement will be warranted for the unexpired portion of the original warranty. This warranty will be valid only for water heaters in possession of the original purchaser as recorded on the warranty card.

The heat exchanger
When the unit is professionally installed: If the heat exchanger fails within fifteen (15) years after the original installation and operation CEC will furnish a replacement heat exchanger. However, if the water heater is installed in other than a single family dwelling this heat exchanger warranty is limited to two (2) years from date of original installation and operation.

* The 15 year warranty period on the heat exchanger is reduced to ten (10) years if the unit is not installed by a plumber or licensed gas fitter.

Exceptions
This warranty will not apply:
1. to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with the printed instructions provided;
2. to damage or abuse, accident, neglect or freezing and other acts of nature;
3. to damage resulting from operation with either the flame sensor rod or overheat sensor removed;
4. to failure of the heat exchanger resulting from the operation of the water heater in a corrosive atmosphere or at water temperatures exceeding the maximum rating, or if the water heater is not supplied with potable water;
5. to defects or damage cause by any attachment or modification, including any energy-saving device.

All other parts
If any other part fails within two (2) years after original installation and operation, CEC will furnish a replacement part free of charge.

Service labor costs
This warranty does not cover any labor costs associated with service, removal or re-installation of part(s). All such costs must be borne by the Purchaser. Additionally, this warranty does not cover any labor costs associated with service, removal or re-installation of the original water heater or a replaced water heater.

NOTE : the water heater must be free of damaging scale deposits and not subject to gas pressures greater than those shown on the rating plate, which must not be altered, defaced or removed.

How to Make a Claim
Any claim for warranty parts should be made to your local dealer, distributor or to CEC. If CEC, please contact the Technical Support Department:

Controlled Energy Corp.
340 Mad River Park
Waitsfield, VT 05673
Phone: 800-642-3111
www.controlledenergy.com/tech

In most cases, the dealer or distributor will be able to promptly honor your claim and subsequently notify CEC. However, all replacements are made subject to validation by CEC of in-warranty coverage. The damaged or defective item must be made available in exchange for the replacement.

Miscellaneous
No one is authorized to make any other warranties on behalf of CEC. It is expressly understood that the replacement warranty of CEC shall be in lieu of any and all other warranties, express or implied, including warranties of merchantability or fitness for a particular use or purpose, and further that CEC shall not be liable for any loss or damage directly or indirectly arising from the use of the hot water heater, or for any consequential damages arising from such use (including damages from water leakage). CEC’s sole liability with respect to any defect shall be for the replacement of the defective part(s). Some states do not allow such limitations and exclusions, so the above may not apply to you.

This warranty gives specific legal rights. You may also have other rights which vary from state to state.
### MAINTENANCE TABLE  see page15

<table>
<thead>
<tr>
<th></th>
<th>EVERY YEAR</th>
<th>EVERY 2 YEARS</th>
<th>EVERY 3-5 YEARS</th>
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<td>INSPECT WATER FILTER SCREEN</td>
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<td>INSPECT VENT ASSEMBLY</td>
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</tr>
<tr>
<td>INSPECT MAIN BURNER</td>
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