

INSTALLATION, OPERATING, AND SERVICE INSTRUCTIONS

HEAT-FLO HOT WATER STORAGE/ BOOSTER TANKS

MODELS 30-ST, 40-ST, 40L-ST, 60-ST, 60L-ST
80-ST, 115-ST, 80-ST-C, 115-ST-C



Intertek

*Conforms to UL STD 174 and NSF/ANSI 372
Certified to CAN/CSA STD C22.2 No. 110-94*

For service or repairs to the water heater, call your heating contractor. Your water heater has been manufactured to provide years of service. In order to insure proper service, the following information is provided to assist in enabling the installation, operation, and maintenance of this water heater. For your comfort, safety, and convenience, we recommend that this water heater be installed and serviced by a plumbing professional. When the installation is completed, keep this manual with the water heater. Information and specifications outlined in this manual in effect at the time of printing of this manual. Heat-Flo reserves the right to discontinue, change specifications, or change system design at any time without notice.

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Bulletin 10-ST-010115

Safety Information

The following terms and symbols are used to bring attention to the presence of various risk levels, or to important information concerning product life.

DANGER

Indicates presence of a hazard, which will cause severe personal injury, death, or substantial property damage if ignored.

WARNING

Indicates the presence of a hazard, which can cause severe personal injury, death, or substantial property damage if ignored.

CAUTION

Indicates the presence of a hazard, which can cause minor personal injury or damage if ignored.

NOTICE

Indicates special instructions on installation, operation, or maintenance, which are important but not related to personal injury hazards.

IMPORTANT INFORMATION – READ CAREFULLY

NOTE: The equipment shall be installed in accordance with those installation regulations required in the area where the installation is to be made. These regulations shall be carefully followed in all cases. Authorities having jurisdiction shall be consulted before the installations are made.

All wiring on water heaters must be in accordance with the National Electrical Code (latest edition) and/or local regulations in the US, and in accordance with the Canadian Electrical Code (latest edition) and/or local regulations in Canada.

▲ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury, or loss of life. Read and understand the entire manual before attempting installation, start-up, operation, or service. Installation and service must be performed only by an experienced, skilled installer or service agency.

This water heater contains very hot water under high pressure. Do not unscrew any pipe fittings or attempt to disconnect any components of this water heater without positively assuring that the water is cool and has no pressure. Always wear protective clothing and equipment when installing, starting up or servicing this water heater to prevent scalding injuries. Do not rely on the pressure and temperature gauges to determine the temperature and pressure of the water heater. This water heater contains components that become very hot when the boiler is operating. Do not touch any components unless they are cool.

Failure to follow all instructions in the proper order can cause personal injury or death. Read all instructions, including all those contained in component manufacturers' manuals before installing, starting up, operating, maintaining, or servicing the water heater.

▲ CAUTION

To reduce the risk of excessive pressures and temperatures in this water heater, install temperature and pressure protective equipment required by local codes but no less than a combination temperature relief valve certified by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials, as meeting the requirements for Relief Valves and Automatic Shutoff Devices for Hot Water Supply Systems, ANSI Z21.22-latest edition. This valve must be marked with a maximum set pressure not to exceed the marked working pressure of the water heater. Install the valve into an opening provide and marked for this purpose in the water heater, and orient it or provide tubing so that any discharge from the valve will exit only within 6 inches above, or at any distance below, the structural floor, and cannot contact any live electrical part. The discharge opening must not be blocked or reduced in size under any circumstances.

Improper water quality will reduce the life of the water heater. Hard water, sediment, high or low PH and high levels of chlorides in the domestic water should be avoided. Be sure that PH levels fall between 6 and 8 and dissolved chlorides are less than 100 ppm. A filter must be used where sediment is greater than 5 microns in size in the water supplied to the unit. A water softening system is recommended for areas with hard water. In cases where water quality is unknown, a qualified water treatment expert should be consulted.

NOTICE: Damage to tanks caused by improper water quality is not covered under the warranty.

▲ DANGER

DO NOT store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. If you smell gas vapors, DO NOT try to operate any appliance - DO NOT touch any electrical switch or use any phone in the building. Immediately, call the gas supplier from a remotely located phone. Follow the gas supplier's instructions or if the supplier is unavailable, contact the fire department. Do not operate any appliance until the leakage is corrected.

▲ DANGER

This water heater is supplied with an adjustable thermostat to control the water temperature. Hot water temperatures required for automatic dishwashers and laundry use can cause scald burns resulting in serious personal injury and/or death. The temperature at which injury occurs varies with the person's age and the time of exposure. The slower response time of disabled persons increases the hazard to them. **NEVER** allow small children to use a hot water tap or to draw their own bath water. **NEVER** leave a child or disabled person unattended in a bathtub or a shower.

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS WATER HEATER.

WARNING – When using electrical appliances, safety precautions should be taken to reduce the risks of fire, electric shock, and injury. These precautions include the following:

- This water heater must be grounded. Connect only to a properly grounded outlet. See “GROUNDING INSTRUCTIONS” found in Section IV.
- Install or locate this water heater only in accordance with the provided installation instructions.
- Use this water heater only for its intended use as described in this manual.
- Do not use an extension cord set with this water heater. If no outlet is available adjacent to the water heater, contact a qualified electrician to have one properly installed.
- As with any appliance, close supervision is necessary when used by children.
- Do not operate this water heater if it has a damaged cord or plug, if it is not working properly, or if it has been damaged or dropped.
- Your water heater should be installed and serviced only by qualified personnel. Contact nearest authorized service facility for examination, repair, or adjustment.

SAVE THESE INSTRUCTIONS

Hot Water Storage/ Booster Tanks

Heat-Flo offers quality, well-insulated hot water storage tanks that provide the abundant hot water that today's homes require. Homes with multiple baths, hot tubs, and body sprays increase the requirement for the "dump loads" that tankless coils, instantaneous water heaters, and plate heat exchangers can not provide. By adding hot water storage, the system designer can achieve an energy efficient balance between heat input and storage by taking full advantage of a high efficiency heat source. The result will be reduced burner cycling, and abundant hot water.

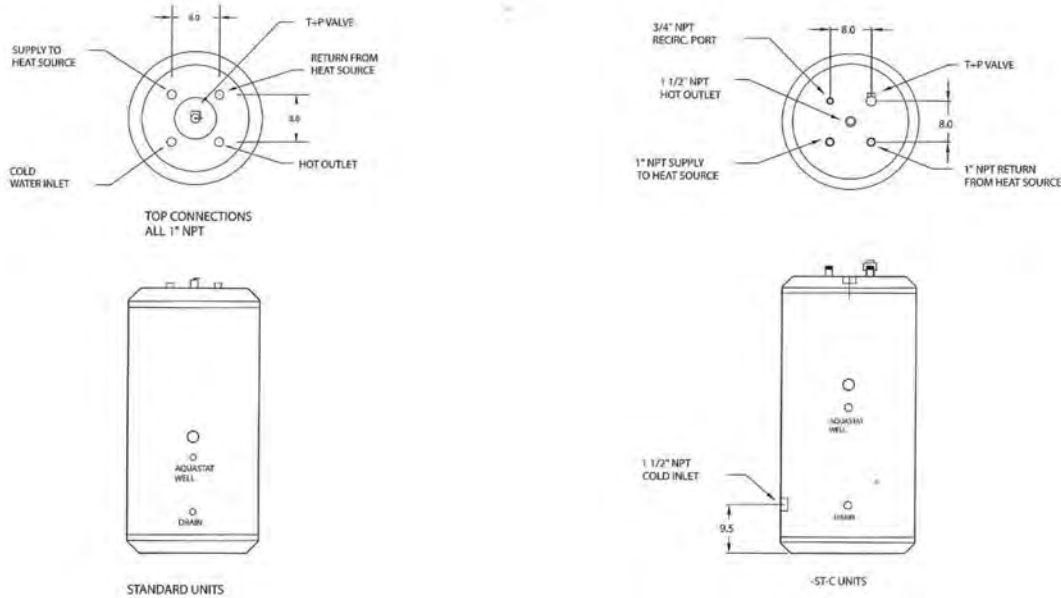
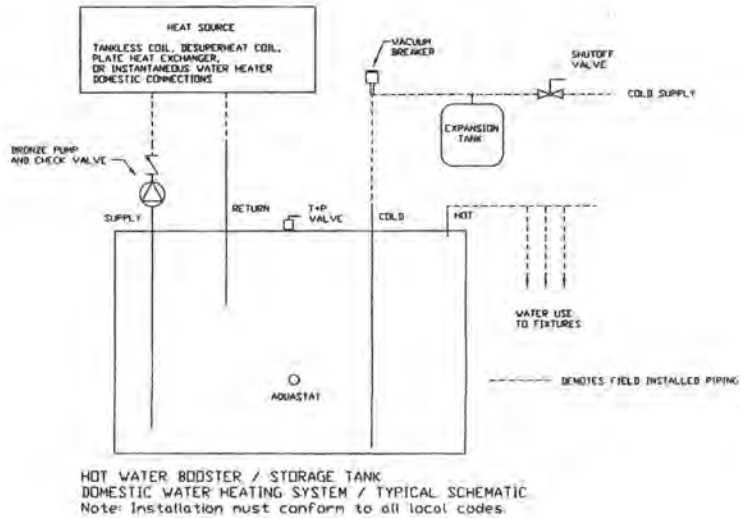


Figure 1



Features and Benefits Include:

1. Quality Design and Construction

- All stainless Steel.
- R-12 insulation, less than 1 deg. F/hr. heat loss.
- Flexible thermoplastic jacket that will not dent or corrode.
- Stainless steel dip tubes.

2. Easy Installation

- All Connections are on top on standard units. Connecting to a high efficiency wall-mount boiler or instantaneous water heater is about as easy as it gets.
- Units are provided with two separate connections for heat source supply and return and an aquastat. The result is excellent temperature control and no guesswork. These two connections are hydraulically decoupled from cold and hot. High hot water draw rates will not affect the circulator/ control performance.
- Drain valve and T&P Valve are factory installed.
- Honeywell L4080B control is standard.

3. Residential and Commercial

- Models available with 30, 40, 60, 80, and 115 gallon tanks.
- Banking together 80 and 115 gallon units for applications with high water heating demands.

Model	Storage Volume (Gal.)	Dimensions (Inches)		Piping Connections - N.P.T		Max Working Pressure (psi)	Approx. Shipping Wt. (Lbs.)
		Height	Diameter	Cold/ Hot In/ Out	Heat Source Supply/ Return		
30-ST	30	34.0	23.5	1	1	150	75
40-ST	40	44.0	23.5	1	1	150	90
40L-ST	42	36.0	28.0	1	1	150	90
60-ST	60	62.0	23.5	1	1	150	115
60L-ST	60	46.0	28.0	1	1	150	110
80-ST	80	56.0	28.0	1	1	150	140
115-ST	115	74.0	28.0	1	1	150	175
80-ST-C	80	56.0	28.0	1 1/2	1	150	140
115-ST-C	115	74.0	28.0	1 1/2	1	150	175

Fully insulated stainless steel tanks, including L4080B aquastat. Brass drain and T&P valves are factory installed. Dip tubes in tank located to circulate water through the heat source and return to the tank.

Pre-installation Considerations

Inspect shipment carefully for signs of damage. All equipment is carefully inspected and packed. Heat-Flo's responsibility ceases upon delivery of the water heater to the carrier in good condition. Any claims for damage or shortage must be filed immediately against the carrier by the consignee. No claims for variances or shortages will be allowed by the Manufacturer, unless they are presented within sixty days after receipt of the equipment.

Installation must conform to the requirements of the authority having jurisdiction. In the absence of such requirements, installation must conform to the National Plumbing Code and the National Electrical Code ANSI/NFPA No. 70 (current edition).

IMPORTANT CONSIDERATIONS BEFORE INSTALLATION

1. Tank sizing:

Choose the water heater model based on the expected water usage for the given site.

Factors that increase water demand dramatically include high flow shower heads, hot tubs, and the use of more than one shower at a time. Increase the tank size if these factors are present. **Consult ASHRAE sizing guides and other references.**

LOCATING THE WATER HEATER

The water heater should be located in an area where water leakage from the tank or connections will not result in damage to areas adjacent to the water heater or to lower floors of the structure. When such a location cannot be avoided, a suitable drain pan must be installed under the water heater, and the drain pan must be connected to a drain. The drain pan depth must be suitable for draining and collecting water. The piping to drain must be at least 3/4" diameter and be pitched for proper drainage.

The water heater should be installed as close to the boiler as is practical for easy access for service. The unit is designed for installation on combustible flooring and in alcoves, closets, etc.

The minimum clearances from combustible surfaces are:

Bottom _____ 0"

Left, Right, and Rear Sides _____ 1"

Front _____ 1"

Top _____ 6"

The minimum clearances for service are:

Bottom _____ 0"

Left, Right, and Rear Sides _____ 3"

Front _____ 30"

Top _____ 6"

ADDITIONAL RECOMMENDED COMPONENTS

1. **Shut-Off Valves:** Allows the isolation of the water heater from the boiler system during service.
2. **Unions:** Allows for easy locating or removal.
3. **Vacuum Breaker:** Protects the water heater from collapse if a hot tank is valved off to service other components in the system.
4. **Thermal expansion tank. If the water heater is installed in a closed water supply system, such as a system having a back flow preventer, a check valve, or a pressure reducing valve in the cold water supply line, the installation of a thermal expansion tank is required.**

NOTICE

For California installation this water heater must be braced, anchored, or strapped to avoid falling or moving during an earthquake. See instructions for correct installation procedures. Instructions may be obtained from California Office of the State Architect.

Water Quality

Improper water quality will reduce the expected life of the water heater. Hard water, sediment, high or low Ph, and high levels of chlorides in the domestic water should be avoided. Sediment and hard water will eventually coat the heating coil inside the water heater and reduce the rate of hot water production and may eventually cause a failure. High or low Ph and/or high chloride concentrations will cause corrosion and eventually failure. A filter is strongly recommended where sediment is present in the water. A water softening system is recommended for areas with hard water. In an area where the water quality is not known, a water quality test should be performed.

WARNING:

Do not operate the Heat-Flo water heaters in areas where the Ph is above 8.0 or below 6.0, and/or with chloride concentrations greater than 100 parts per million (ppm). Heat-Flo's standard warranty does not cover problems caused by improper water Ph or excessive levels of chlorides.

NOTICE

Damage to tanks caused by improper water quality is not covered under the warranty.

PIPING

DOMESTIC WATER PIPING (See Figure 1, Pg. 3)

1. Drain the domestic water system.
 - Shut off the cold water supply at the main shutoff valve.
 - Open one or more faucets to relieve the pressure.
 - Open the system drain, leaving the faucets open.

2. Position the water heater in its final location
3. Connect the cold water supply piping.
 - Install piping onto cold inlet connection.
 - Connect to cold water supply connection using a union, a heat trap, a shut-off valve, a vacuum breaker, an expansion tank (where required), and a filter (recommended to prevent sediment buildup).

NOTICE

If installing on a city supply, a properly sized thermal expansion tank is required and should be installed in accordance with the product installation manual.

If a water heater is installed in a closed water supply system, such as one having a backflow preventer in the cold water supply, a check valve in the cold water supply, or a pressure reducing valve in the cold water supply means shall be provided to control thermal expansion.

The appliance, when installed, must be grounded in accordance with the local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70.

▲ WARNING

If this product is connected to a cold water supply line that has a check valve, a backflow preventer, a pressure reducing valve, or a check valve in the water meter, it is a requirement that a properly sized thermal expansion tank be installed in the cold water inlet line. *There will be no warranty on applications where there is no pressure control.*

4. Connect the domestic hot water piping.
 - Install piping onto hot water supply connection using a union, a heat trap, and a shut off valve.
 - Pipe the relief valve discharge so that the discharge from the valve will exit only within 6 inches above, or at any distance below, the structural floor and so that it cannot contact any live electrical part. The discharge opening must not be blocked or reduced in size under any circumstances.

▲ WARNING

Install a discharge line so that water discharged from the temperature and pressure relief valve will exit within six (6) inches above, or any distance below, the structural floor and cannot contact any live electrical part. The discharge line is to be installed to allow for complete drainage of both the temperature and pressure relief valve and the discharge line. The discharge opening must not be subjected to blockage or freezing.

DO NOT thread, plug, or cap the discharge line. It is recommended that a minimum clearance of four (4) inches be provided on the side of the water heater for servicing and maintenance of the combination temperature and pressure relief valve.

Do not place a valve between the combination temperature and pressure relief valve and the tank!

5. Fill the water heater.
 - Open all faucets to allow air to purge from the tank and piping. Remove screens on faucets.
 - Open domestic hot water shut-off valve.
 - Open cold water inlet shut-off valve.
 - Purge all of the air from the domestic water system. Allow water to run so the tank is completely purged of any debris. Run the water long enough to change at least five tank volume changes.
 - Close all faucets. Reinstall all of the screens in the faucets.
 - Check the system for leaks. Repair as required.

OPERATION

STARTUP

After the water heater has been plumbed and wired and the boiler water piping is purged of air, the water heater is ready to be started.

1. The tank thermostat is factory pre-set to 125 degrees F and will call for heat if the water in the tank is lower than that (125 deg. F).
2. On a call for heat, the tank thermostat contacts close to start the circulator.
3. After the tank has reached the temperature setting, the tank thermostat opens and de-energizes the circulator.

▲ WARNING - SCALDING!

This water heater can deliver scalding temperature water at any faucet in the system. Be careful when using hot water to avoid scalding injury. By setting the thermostat on this water heater to obtain an increased water temperature, you create the potential for scald injury. To protect against injury, you should install an ASSE approved mixing valve (a device to limit the temperature of water to protect against scald injury via mixing hot and cold water supply) in the water system. This valve will reduce point of discharge temperature in branch supply lines. Such valves are available from a local plumbing supplier. Please consult with a plumbing professional.

SCALD RELATIONSHIPS

The tank thermostat controls the maximum water temperature in the water heater. If it is set too high, the resulting hot water can cause painful scalding with possible serious and permanent injury. The temperature at which this occurs varies with a person's age, and the length of time in contact with the hot water. The slower response time of infants, older, or handicapped people increase the hazard for them.

WATER TEMPERATURE ADJUSTMENT

It is recommended that the thermostat be set for the lowest possible temperature that satisfies your needs. This will also provide you with the lowest energy consumption and cost.

Check the water temperature at a hot water faucet soon after the tank thermostat has satisfied, and the circulator and the boiler have turned off. Adjust as needed.


Lowering the thermostat setting will not have an immediate effect on the water temperature because the stored water will have to be used and the thermostat must go through the cycle of heating cold water and satisfying at the new, lower temperature. Additional temperature checks should follow the completion of a heating cycle. Further adjustments may be required after you have used the water heater.

The table below details the approximate relationship of water temperature and time with regard to scald injury and may be used as a guide in determining the safest water temperature for your applications.

APPROXIMATE TIME/ TEMPERATURE RELATIONSHIPS IN SCALDS	
120°F (52°C)	More than 5 Minutes
125°F (52°C)	1-1/2 to 2 Minutes
130°F (54°C)	About 30 Seconds
135°F (57°C)	About 10 Seconds
140°F (60°C)	Less than 5 Seconds
145°F (63°C)	Less than 3 Seconds
150°F (66°C)	About 1-1/2 Seconds
155°F (68°C)	About 1 Seconds

The scald label shown to the right can be found on all Heat-Flo Indirect Water Heaters and Storage tanks. Take note and use caution when adjusting the temperature settings with your water system. Be sure to always feel the water before bathing or showering, especially when drawing a bath for an infant or elder.

▲ 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, see manual.

– Important **WARNING** information on the following page. –

▲ WARNING

It is the responsibility of the installing contractor to see that all controls are correctly installed and are operating properly when the installation is complete.

DO NOT operate the water heater with jumpered or absent controls or safety devices.

DO NOT tamper with or alter the water heater and/ or controls.

DO NOT operate the water heater if any external part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system that is or had been under water.

DO NOT install this water heater on carpeting. This water heater is suitable for installation on combustible flooring.

DO NOT operate this water heater without first being certain it is filled with water.

MAINTENANCE

The water heater is intended to provide many years of reliable service. Components, such as thermostats and relief valves, may be subject to failures that require service. Depending on the quality of the water supply, sediment and/or scale may coat the heating coil in the tank and reduce hot water recovery rate. Failure to use the correct procedures or parts can result in unsafe operation.

The owner should arrange to have the following inspections and simple maintenance procedures done at the suggested frequencies.

1. Domestic Water Piping (Annual)

- Check all piping for signs of leakage at the joints, unions and shut-off valves. Repair as required.

2. Temperature and Pressure Relief Valve (Annual)

- The temperature and pressure relief valve should be checked to ensure that it is in operating condition. To check the relief valve, lift the lever at the end of the valve several times. The valve should seat properly and operate freely. If water does not flow, remove and inspect for obstructions or corrosion. Replace with a new valve of the recommended capacity as necessary. Do not attempt to repair the valve, as this could result in improper operation and a tank explosion. In areas with poor water conditions, it may be necessary to inspect the temperature and pressure relief valve more often than once a year.

▲ CAUTION

Before manually operating the valve, make sure that a drain line has been attached to the valve to direct the discharge to an open drain. Failure to take this precaution could mean contact with extremely hot water discharging from the valve during this checking operation.

If the temperature and pressure relief valve on the heater discharges periodically or continuously, it may be due to thermal expansion of water in a closed water supply system, or it may be due to a faulty relief valve. Thermal expansion is the normal response of water when it is heated. In a closed system, thermal expansion will cause the system pressure to build until the relief valve actuation pressure is equaled. Then the relief valve will open, allowing some water to escape, slightly lowering the pressure. Contact your water supplier or local plumbing inspector on how to control this situation.

ABOVE ALL, DO NOT PLUG THE TEMPERATURE AND PRESSURE RELIEF VALVE. THIS IS NOT A SOLUTION AND CAN CREATE A HAZARDOUS SITUATION.

3. Sediment (Annual except where harsh water quality may require more frequent service)

- Depending on water conditions, a varying amount of sediment may collect in the tank. Levels requiring service are indicated by a small temperature difference between the boiler supply and return lines, and a reduced recovery rate. Repeated flushing usually clears such material. As a preventive measure, water should be drawn from the drain valve until it runs clear and the installation of a water filter should be considered.

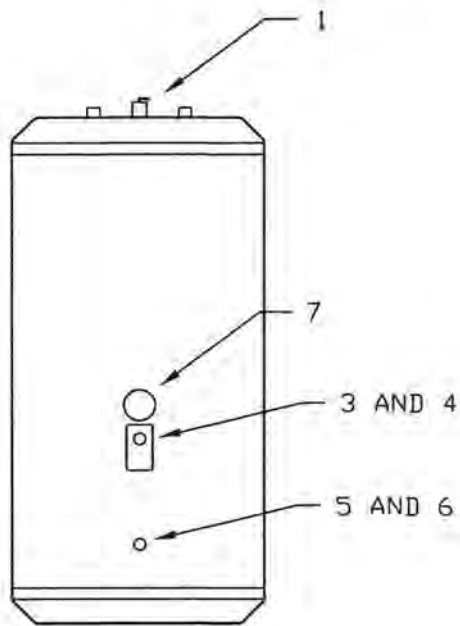
4. Inspect Anode (annual)

- The purpose of the magnesium anode is to reduce the damaging effects of aggressive water on the water heater. Aggressive water will cause the anode(s) to erode. The anode(s) must be inspected at least annually to determine whether a new anode should be installed. Use anode replacement parts supplied by Heat-Flo only. Heat-Flo anodes are 1-1/4 NPT and are made with magnesium, brass, and stainless steel. There is no steel in a Heat-Flo anode. Severe or rapid deterioration of the anode indicates very aggressive water. If this occurs, have the water tested to verify whether it is within the limits outlined on page 6. Failure to inspect the anode regularly and replace if necessary could result in damage to the water heater. If this unit is installed and maintained according to the instructions and conditions in this manual, this product will last for a long time.

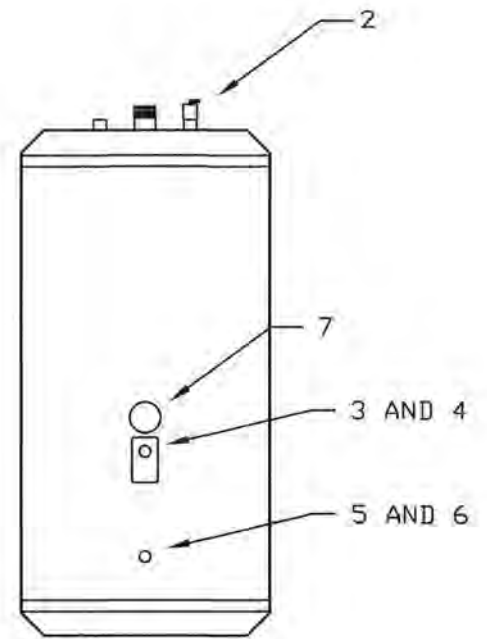
1. Close domestic water isolation valves.
2. Drain the water heater completely and allow it to cool off.
3. Remove the anode cover on the front of the unit. See figures on pages 2 and 3. The temperature control can be turned to the side to allow easier access.
4. After the water heater has drained and cooled, remove the anode using a 1 3/4" 6-point socket and a breaker bar.
5. Inspect the anode and replace if needed. The anode should be replaced when more than 6" of core wire is exposed. The anode should be replaced with a Heat-Flo supplied anode only. See above. The brass hex on the anode is 1 1/4 NPT and installs into a 1 1/4 stainless half coupling on the shell of the tank. This part will need to be properly Teflon taped and coated with a quality Teflon based pipe sealant.
6. Replace the inspection cover.
7. Refill the water heater, and restore to operation.
8. Verify operation of boiler and water heater.

Replacement Parts List

	Description	Heat-Flo Part Number
1	Temperature and Pressure Relief Valve Watts 3/4" 100XL-8	Valve 75 - WATTS-STAN100
2	Temperature and Pressure Relief Valve Watts 3/4" 40XL-8	Valve 75 - WATTS40XL8
3	Aquastat Well, 1/2"	Aquastat-Well
4	Honeywell 4080B Aquastat	Aquastat-L4080B
5	1/2" X 3-1/2" Nipple	Nipple-5035-316
6	1/2" Drain Valve	Valve-50-LGND-107554
7	Anode (See pgs 16, 17)	ANODE-ROD-ASSY-1.315-17WCAP



STANDARD UNITS



ST-C UNITS

Heat-Flo, Inc.
LIMITED WARRANTY
FOR HOT WATER STORAGE TANKS

These Heat-Flo, Inc. warranties protect your indirect-fired water heater. These warranties are applicable to the original purchasers only.

WARRANTY COVERAGE FOR RESIDENTIAL USAGE

The warranties listed in this section shall apply to Heat-Flo, Inc., indirect-fired water heaters used in a residential setting by the original consumer purchases only. A “residential setting” as used herein shall mean usage in a single-family dwelling in which the original consumer purchaser of the indirect-fired water heater resides on a permanent basis. “Residential setting” shall also mean usage in a multiple family dwelling provided that a Heat-Flo, Inc. indirect-fired water heater services only one (1) dwelling in a multiple family dwelling. The term “residential setting” shall not include any usage of the indirect-fired water heater above 150 degrees Fahrenheit.

Heat-Flo, Inc. warrants that it will repair or replace, at its option, without charge, any defective or malfunctioning component of the water heater during the first year after the original date of installation in the dwelling. It is expressly agreed between Heat-Flo, Inc. and the original consumer purchaser that repair or replacements are the exclusive and sole remedy of the original consumer purchaser.

During the remaining lifetime of the water heater, Heat-Flo, Inc. will repair or replace, at its option, without charge, any water heater having a defect or malfunction that results in a water leak from outer the jacket, inner tank, or heat exchanger as a result of normal use and service. It is expressly agreed between Heat-Flo, Inc. and the original consumer purchaser that the repair or replacement is the exclusive and sole remedy of the original consumer purchaser.

Should a defect or malfunction result in a leakage of water within the above-stated warranty periods due to defective material or workmanship, malfunction, or failure to comply with the above warranty, such defect or malfunction having been verified by an authorized Heat-Flo, Inc. representative, then Heat-Flo, Inc. will replace the defective or malfunctioning water heater with a replacement water heater of the nearest compatible model available at the time of replacement.

If Heat-Flo, Inc. is unable to repair or replace a water heater so as to conform to this warranty, after a reasonable number of attempts, then Heat-Flo, Inc. will provide at its option, either a replacement product, or a full refund of the purchase price. These remedies are the consumer purchaser’s exclusive remedies for breach of the warranty.

WARRANTY COVERAGE FOR COMMERCIAL USAGE

The warranties listed in this section shall apply to Heat-Flo, Inc. water heaters used in a commercial setting by the original consumer purchasers only. A “commercial setting” as used herein shall mean any usage not falling within the above definition of a “residential setting”. A Heat-Flo, Inc. water heater shall be deemed used in a “commercial setting” if at any time it is operated at a temperature above 150 degrees Fahrenheit.

Heat-Flo, Inc. warrants that it will repair or replace, at its option, without charge, any defect or malfunctioning of the water heater during the first year after the original date of delivery to the original consumer purchaser. It is expressly agreed between Heat-Flo, Inc. and the original consumer purchaser that the repair or replacement is the exclusive and sole remedy of the original consumer purchaser.

During the second through fifth years after the original date of delivery to the original consumer purchaser, Heat-Flo, Inc. will repair or replace, at its option, without charge, any water-heater having a defect or malfunction that results in a water leak from the outer jacket, inner tank, and heat exchanger as a result of normal use and service. It is expressly agreed between Heat-Flo, Inc. and the original consumer purchaser that the repair or replacement is the exclusive and sole remedy of the original consumer purchaser.

Should a defect or malfunction result in a leakage of water within the above-stated warranty periods due to defective material or workmanship, malfunction, or failure to comply with the above warranty, such defect or malfunction having been verified by an authorized Heat-Flo, Inc. representative, then Heat-Flo, Inc. will replace the defective or malfunction water heater with a replacement indirect water heater of the nearest comparable model available at the time of replacement.

If Heat-Flo, Inc. is unable to repair or replace the water heater so as to conform with this warranty after a reasonable number of attempts, then Heat-Flo, Inc. will provide, at its option, either a replacement product, or a full refund of the purchase price. These remedies are the exclusive remedies of the original consumer purchaser See reverse side for exclusions, limitations, remedies and service request information.

WHAT IS NOT COVERED BY EITHER OF THESE WARRANTIES

Heat-Flo, Inc. does not warrant:

1. Defects or malfunctions resulting from improper installation or failure to maintain and operate an indirect-fired water heater in accordance with the printed instructions which accompany the water heater.
2. Defects or malfunctions resulting from consumer damage, such as: (A) improper maintenance or (B) misuse, abuse, accident, or alteration.
3. Defects or malfunctions on indirect-fired water heaters where the original serial number cannot be readily determined.
4. Service calls not involving malfunction or defects in materials or workmanship, and the original consumer purchaser shall pay for such calls.
5. Water heaters installed outside of the United States and Canada.
6. Water heaters repaired or altered without prior written approval of Heat-Flo, Inc. so as to affect adversely their reliability.
7. Components of an indirect-fired water heater which are not defective, but must be replaced during the warranty period as a result of reasonable wear and tear.
8. Components of an indirect-fired water heater which are subject to warranties, if any, given by their manufacturers. Heat-Flo, Inc. does not adopt these warranties.
9. Malfunctions resulting from, or repairs necessitated by, a failure to maintain an indirect-fired water heater free of water sediments or scale deposits.
10. This warranty does not extend to labor costs, shipping charges, delivery expenses, or administrative fees incurred by the original household consumer purchaser in repairing or replacing an indirect-fired water heater.
Heat-Flo, Inc. will not accept claims for labor costs incurred by the original consumer purchaser in removing or reinstalling an indirect-fired water heater.
11. Malfunctions resulting from, or repairs necessitated by, uses of the indirect-fired water heater for purposes other than that for which it was designed, or resulting from flood, fire, wind, or lightning.

OWNER'S RESPONSIBILITIES

The owner or installer must:

1. Have the storage tank installed with a vacuum relief valve and a temperature and pressure relief valve in accordance with local, state, and federal codes and ordinances bearing the listing marks of the American Society of Mechanical Engineers (A.S.M.E).
2. Operate the storage assembly at a pressure below that shown on the rating plate on the pressure relief valve.
3. Keep the tank free of scale deposits.
4. **Make provisions so if the tank or any component part or connection should leak, the resulting flow of water will not cause damage to the area in which it is installed.**

The warranty hereunder does not apply to defects resulting from:

1. Freezing, excessive pressure, or leaks at water connections.
2. Failure of a component, control or component part other than a component part manufactured solely by HFI.
3. Any cause similar to the above, not resulting solely due to defective material and/or workmanship.
4. Water Quality: The warranties extended by HFI are conditioned upon potable water with a Ph not to exceed 8.0 and not below 6.0, and/ or chloride concentrations not to exceed 100 parts per million (ppm). HFI specifically disclaims liability of any kind resulting from or relating to potable water that does not match these characteristics.

LIMITATION OF WARRANTIES AND REMEDIES

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND ARE GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, AND ANY OBLIGATION, LIABILITY, RIGHT, CLAIM, OR REMEDY IN CONTRACT OR TORT, WHETHER OR NOT ARISING FROM HEAT-FLO, INC.'S NEGLIGENCE, ACTUAL OR IMPUTED.

THE REMEDIES OF THE ORIGINAL CONSUMER PURCHASES SHALL BE LIMITED TO THOSE PROVIDED HEREIN TO THE EXCLUSION OF ANY OTHER REMEDIES INCLUDING WITHOUT LIMITATION, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, PROPERTY DAMAGE, LOST PROFIT, OR DAMAGES ALLEGED TO HAVE BEEN CAUSED BY ANY FAILURE OF HEAT-FLO, INC. TO MEET ANY OBLIGATION UNDER THIS AGREEMENT INCLUDING THE OBLIGATION TO REPAIR AND REPLACE SET FORTH ABOVE.

NO AGREEMENT VARYING OR EXTENDING THE FOREGOING WARRANTIES, REMEDIES, OR THIS LIMITATION WILL BE BINDING UPON HEAT-FLO, INC. UNLESS IN WRITING AND SIGNED BY A DULY AUTHORIZED OFFICER OF HEAT-FLO, INC.

THE WARRANTY STATED HEREIN IS NOT TRANSFERABLE AND SHALL BE FOR THE BENEFIT OF THE ORIGINAL CONSUMER PURCHASER OF A WATER HEATER ONLY.

These warranties give you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages so this limitation or exclusion may not apply to you.

These are the only written warranties applicable to water heaters manufactured and sold by Heat-Flo, Inc. Heat-Flo, Inc. neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said water heaters.

SERVICE REQUESTS

FOR SERVICE UNDER THESE WARRANTIES CONTACT HEAT-FLO, INC., AT THIS ADDRESS:

Heat-Flo, Inc., P.O. Box 612, Uxbridge, MA 01569

At the time a claim is filed the original consumer purchaser must present a copy of the original sales receipt, and a deed, utility bill, or equivalent document evidencing both ownership of the water heater and installation in the dwelling or commercial property owned by the original consumer purchaser. With regard to claims made by original consumer purchasers of water heaters used in commercial settings as that term is defined herein, in no event shall notification of a service request be received later than five years from the date of purchase.

The obligations under this warranty apply only to domestic hot water tank installations where the warranty registration card has been completed by the owner of the site of the original installation and received by Heat-Flo in accordance with the terms and conditions herein set out and Heat-Flo has been notified of the alleged defect or deficiency within forty eight (48) hours from the occurrence or discovery of the alleged defect or deficiency. Heat-Flo, Inc. reserves the right to change specifications or discontinue models without notice.

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Providing Solutions through Superior Design.

Heat-Flo, Inc.

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